

Bid Package
For
South Church Street
Gateway Enhancement
CITY OF SPARTANBURG

JOB NO. 2316

September 11, 2023

Proposal No 2324-10-17-01

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Legal Notice

Request for Proposal for

South Church Street Gateway Enhancements

September 11, 2023

NOTICE IS HEREBY GIVEN – The City of Spartanburg is seeking proposals from vendors to provide construction services for Enhancements to the South Church Street Gateway in the City of Spartanburg.

Bids are invited upon the several items and quantities of work as follows:

Removal of existing plant material, rocks, concrete, debris ect., clearing, grading, and site preparation for the instillation of irrigation and landscaping. This project includes the installation of multi zone irrigation systems, installation of Trees (Approximately 56), Shrubs/grasses (Approximately 3600), Fescue sod, (Approximately 65000 S.F.), and Hardwood mulch (Approximately 328 C.Y.)

There will be a mandatory pre-bid meeting on site Tuesday September 26, 2023 at 10:00 AM at the Intersection of S. Church St. and League St. Spartanburg, SC 29306.

Proposal No: 2324-10-17-01

The City of Spartanburg, hereby, notifies all proposers that it will affirmatively ensure that all disadvantaged and women’s business enterprises will be afforded full opportunity to submit proposals in response to this invitation and will not be discriminated against on the grounds of gender, race, color, or national origin in consideration for an award.

The City of Spartanburg reserves the right to reject any or all proposals or to waive any informality in the qualifications process. Proposals may be held by the City of Spartanburg for a period not to exceed sixty (60) days from the date of the opening of Proposals for the purpose of reviewing the Proposals and investigating the qualifications of prospective parties, prior to awarding of the Contract. The vendor that is awarded the proposal will be required to obtain a “City of Spartanburg Business License and Permits”. Vendors must have the insurance requirements in described in the bid documents.

Each bid must be accompanied by a Bid Bond or Bank Cashier’s Check payable to the Owner for five (5) percent of the total amount of the Bid. Please seal your bid bond or Cashier’s Check in a separate envelope titled BID BOND to be opened first.

Drawings and Specifications may be purchased from ARC, Construction Documents, including Drawings and Technical Specifications are on file and can be purchased at ARC located at 7092 Howard Street #K, Spartanburg, SC 864 585-8388.

Contract documents may be examined at the offices of the Owner, (City of Spartanburg), or Associated General Contractors in Greenville, South Carolina and Charlotte.

Technical questions regarding the scope of services should be directed to Josh Baker Grounds Maintenance Manager, 864-562-4272 or by email at jbaker@cityofspartanburg.org . Questions regarding the bid should be directed to Carl Wright, Procurement and Risk Manager at 864-596-2790 and 864-596-2049 or by email at cwright@cityofspartanburg.org. Questions regarding Minority and Women Business participation should be directed to Kensley Aiken, Community and Minority Relations Specialist, at 864-591-4349 or by email at kaiken@cityofspartanburg.org.

Sealed Proposals shall be submitted to Carl Wright, Procurement and Property Manager, on or before **October 17, 2023 at 3:00**, City Hall, 145 W. Broad Street, at which time they will be publicly opened and read aloud in the Training Room, same location. Complete proposal package also available at www.cityofspartanburg.org by following the links for bid opportunities.

Proposals can be hand delivered or mailed to the following address:

City of Spartanburg
P.O. Box 5107
145 W. Broad Street
Spartanburg, SC. 29304

Attn: Procurement and Property Division

For further information and complete Proposal Package, please contact the Procurement and Property office at (864) 596-2049. Complete proposal package also available at www.cityofspartanburg.org by following the links for Invitations for bids.

Proposal No: 2324-10-17-01

INFORMATION FOR BIDDERS

Bids will be received and opened as specified in the advertisement.

1. Bids

Each Bid must be submitted in a sealed envelope, as advertised. Each sealed envelope containing a BID must be plainly marked on the outside as BID for City of Spartanburg for **South Church Street Gateway Enhancement**, and the envelope should bear on the outside the Bid Number, name of BIDDER, his/her address, all license information, etc., typed thereon and sealed. If forwarded by mail, the sealed envelope contained in the BID must be enclosed in another envelope addressed to the OWNER as advertised.

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions herein and may waive any informality or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified will not be considered.

All bids shall be on the printed form contained herein or on copies thereof, and shall be for all labor, material and equipment required to complete the work embraced in the contract in accordance with the plans and specifications. Bid Documents shall include the Bid, the Bid Quantity, the Non-Collusion Affidavit and the Statement of Bidder's Qualification. Bids shall be typewritten or completed in ink. All blank spaces for bid prices must be filled in, in figures, or in both words and figures if so indicated in the bid form. In addition, any other information requested in the bid form must be completed.

Each BIDDER is required to state in his proposal his/her name and place of residence and the names of all persons interested with him; in case of a corporation, the names of other than the president and secretary need not be given. Reference shall be furnished to establish the skill and business standing of the BIDDER.

If the Contract is awarded, it will be awarded by the Local Public Agency to a responsible Bidder on the basis of the lowest Bid and the selected Alternative Bid items, if any. The Contract will require the completion of the work according to the Contract Documents.

If called for in the bid, each bidder shall submit a price for all alternates listed therein. Failure to do so will result in the bid being considered incomplete and may result in rejection of the bid.

On the first sheet of the bid form, the bidder shall write his/her name and address, his/her bidder's license number; and contractor's license number, if required. In South Carolina, where a mechanical contract amounts to \$10,000 or more, the name and license number of the sub-contractor, where his/her bid is used, shall also be shown.

Following the BID opening, the OWNER shall determine the Items, Alternates, and Additions to be performed. Total BIDS will be calculated by adding the amounts BID by each BIDDER for such ITEMS, Alternates, and Additions, less the Deductions, so selected by the Owner in determining the low responsive, responsible BID. The OWNER reserves the right to reject any and all BIDS.

The successful BIDDER will be further required to furnish the OWNER with a complete breakdown of the total sum BID items to the satisfaction of the PUBLIC WORKS DIRECTOR, before signing the contract documents.

The Owner reserves the right to hold bids for a period of sixty (60) days after date of opening and to award the contract at any time during that period.

2. INTERPRETATIONS OR ADDENDA

No oral interpretation will be made to any Bidder as to the meaning of the Contract Documents or any part thereof. Every request for such an interpretation shall be made in writing to the Local Public Agency. Any inquiry received seven or more days prior to the date fixed for opening of Bids will be given consideration. Every interpretation made to a Bidder will be in the form of an Addendum to the Contract Documents, and when issued, will be on file in the office of the Local Public Agency and the office of the Engineer at least five days before Bids are opened. In addition, all Addenda will be mailed to each person holding Contract Documents, but it shall be the Bidder's responsibility to make inquiry as to the Addenda issued. All such Addenda shall become part of the Contract and all Bidders shall be bound by such Addenda, whether or not received by the Bidders.

Each bidder shall acknowledge receipt of all addenda in the spaces provided in the bid form. It shall be each bidder's responsibility to assure him that all addenda have been received. No claim for failure to receive addenda will be considered.

3. INSPECTION OF SITE

Each Bidder should visit the site of the proposed work and fully acquaint himself/herself with the existing conditions there relating to construction and labor, and should fully inform himself/herself as to the facilities involved, the difficulties and restrictions attending the performance of the Contract. The Bidder should thoroughly examine and familiarize himself/herself with the Drawings, Technical Specifications, and all other Contract Documents. The Contractor by the execution of the Contract shall in no way be relieved of any obligation under it due to his/her failure to receive or examine any form or legal instrument or to visit the site and acquaint himself/herself with the conditions there existing and the Local Public Agency will be justified in rejecting any claim based on facts regarding which he/she should have been on notice as a result thereof.

4. ALTERNATIVE BIDS

No alternative bids will be considered unless alternative bids are specifically requested by the technical specifications.

5. BID GUARANTY

Each Bid must be accompanied by a BID BOND payable to the OWNER for five percent of the total amount of the Bid. As soon as the BID prices have been compared, the OWNER will return the bonds of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the payment bond and performance bond have been executed and approved, after which it will be returned. A Certified check may be used in lieu of a BID BOND. A performance bond and payment bond, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract in the form attached hereto. Attorneys-in-fact who sign BID BONDS or payment bonds and performance bonds must file with each bond a certified and effective dated copy of their power of attorney.

6. COLLUSIVE AGREEMENTS

Each Bidder submitting a Bid to the Local Public Agency for any portion of the work contemplated by the documents on which Bidding is based shall and attach thereto, an affidavit substantially in the form herein provided, to the effect that he/she has not entered into a collusive agreement with any other person, firm, or corporation with regard to any Bid submitted.

Before executing any subcontract the successful Bidder shall submit the name of any proposed subcontractor for prior approval.

7. STATEMENT OF BIDDER'S QUALIFICATIONS

Each Bidder shall upon request of the Local Public Agency submit on the form furnished for that purpose (a copy of which is included in the Contract Documents), a statement of the Bidder's qualifications, his/her experience record in constructing the type of improvements embraced in the contract, his/her organization and equipment available for the work contemplated, and when specifically requested by the Local Public Agency, a detailed financial statement. The Local Public Agency shall have the right to take such steps as it deems necessary to determine the availability of the Bidder to perform his/her obligations under the Contract and the Bidder shall furnish the Local Public Agency all such information and data for this purpose as it may request. The right is reserved to reject any Bid where an investigation of the available evidence or information does not satisfy the Local Public Agency that the Bidder is qualified to carry out properly the terms of the Contract.

8. UNIT PRICES

The unit price for each of the several items in the proposal of each Bidder shall include its pro-rata share of overhead so that the sum of the products obtained by multiplying the quantity shown for each item by the unit price Bid represents the total Bid. Any Bid not conforming to this requirement may be rejected as informal. The special attention of all Bidders is called to this provision, for should questions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities nor extra compensation allowed, provided the net monetary value of all such additive and subtractive changes in quantities of such items of work (i.e., difference in cost) shall not increase or decrease the original contract price by more than twenty-five (25%) percent, except for work not covered in the Drawings and Technical Specifications.

The quantities listed in the proposal form are to be considered as approximate and are to be used only for the comparison of the BIDS and as basis for computing amounts of security or penal sums of bonds to be furnished. The unit prices to be tendered by the BIDDERS are to be tendered expressly for the scheduled quantities as they may be increased or decreased. Payments, except for lump sum contracts, and except for lump sum items in unit price contracts, will be made to the CONTRACTOR for the actual quantities only of work performed or materials furnished in accordance with the plans and specifications, and it is understood that the scheduled quantities of work to be done and materials to be furnished may each be increased or diminished without in any way invalidating the unit BID prices.

9. CORRECTIONS

Bids which are incomplete, unbalanced, conditional or obscure, or which contain additions not called for, erasures, alterations or irregularities of any kind or which do not comply with the contract documents may be rejected at the option of the Owner.

Erasures or other changes in the Bids must be explained or noted over the signature of the Bidder.

10. TIME FOR RECEIVING BIDS

Bids received prior to the advertised hour of opening will be securely kept, sealed. The officer whose duty it is to open them will decide when the specified time has arrived, and no Bid received thereafter will be considered: except that when a Bid arrives by mail after the time fixed for opening, but before the reading of all other Bids is completed, and it is shown to the satisfaction of the Local Public Agency that the non-arrival on time was due solely to delay in the mail for which the Bidder was not responsible, such Bid will be received and considered.

11. OPENING OF BIDS

At the time and place fixed for the opening of Bids, the Local Public Agency will cause to be opened and publicly read aloud every Bid received within the time set for receiving Bids, irrespective of any irregularities therein. Bidders and other persons properly interested may be present, in person or by representative.

12. WITHDRAWAL OF BIDS

Bids may be withdrawn on written or telegraphic request dispatched by the Bidder in time for delivery in the normal course of business to the time fixed for opening; provided, that written confirmation of any telegraphic withdrawal over the signature of the Bidder is placed in the mail and postmarked prior to the time set for Bid opening. The Bid guaranty of any Bidder withdrawing his/her Bid in accordance with the foregoing conditions will be returned promptly.

13. AWARD OF CONTRACT: REJECT OF BIDS

The Contract will be awarded to the responsible Bidder submitting the lowest Bid complying with the conditions of the Invitation for Bids. The Bidder to whom the award is made will be notified at the earliest possible date. The Local Public Agency, however, reserves the right to reject any and all Bids and to waive any informality in Bids received whenever such rejection or waiver is in its interest. The Local Public Agency reserves the right to consider as unqualified to do the work of general construction any Bidder who does not habitually perform with his/her own forces the major portions of the work involved in construction of the Improvements embraced in this Contract.

14. EXECUTION OF AGREEMENT: PERFORMANCE BOND, PAYMENT BOND, BUSINESS LICENSE

Subsequent to the award and within ten (10) days after the prescribed forms are presented for signature, the successful Bidder shall execute and deliver to the Local Public Agency an Agreement in the form included in the Contract Documents such number of copies as the Local Public Agency may require.

Having satisfied all conditions of award as set forth elsewhere in these documents, the successful Bidder shall, within the period specified in this document, furnish a surety bond in a penal sum not less than the amount of the Contract as awarded, as security for the faithful performance of the Contract, and for the payment of all persons, firms, or corporations to whom the Contractor may become legally indebted for labor, materials, tools, equipment, or services of any nature including utility and transportation services, employed or used by him/her in performing the work. Such bond shall be in the same form as that included in the Contract Documents and shall bear the same date as, or a date subsequent to that of the Agreement. The current power of attorney for the person who signs for any surety company shall be attached to such bond. This bond shall be obtained from companies holding certificates of authority as acceptable sureties (31 CFR 223).

The failure of the successful Bidder to execute such Agreement and to supply the required bond or bonds within ten days after the prescribed forms are presented for signature, or within such extended period as the Local Public Agency may grant, based upon reasons determined sufficient by the Local Public Agency, shall constitute a default, and the Local Public Agency may either award the Contract to the next lowest responsible Bidder or re-advertise for Bids, and may charge against the Bidder the difference between the amount of the Bid and the amount for which a Contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the Bid Bond. If a more favorable Bid is received by re-advertising the defaulting Bidder shall have no claim against the Public Agency for a refund.

The NOTICE OF AWARD shall be accompanied by the necessary Agreement and bond forms.

15. NOTICE TO PROCEED

The NOTICE TO PROCEED shall be issued within 10 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 10 day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

16. WAGES AND SALARIES

Attention of Bidders is particularly called to the requirements concerning the payment of not less than the prevailing wage and salary rates specified in the Contract Documents and the conditions of employment with respect to certain categories and classifications of employees.

The rates of pay set forth under the General Wage Determination for the State of South Carolina are the minimums to be paid during the life of the Contract. It is therefore, the responsibility of Bidders to inform themselves as to local labor conditions, such as the length of work day and work week, overtime compensation, health and welfare contributions, labor supply and prospective changes or adjustments of rates.

17. EQUAL EMPLOYMENT OPPORTUNITY

Attention of Bidders is particularly called to the requirement for ensuring that employees and applicants for employment are not discriminated against because of their race, color, religion, sex, or national origin.

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

The offerer's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

18. ILLEGAL ALIENS/WORKERS

Attention to bidders is also called to requirements to verify the hiring eligibility of its employees as required under South Carolina's Eligible Immigration Reform Act, S. C. Code Ann., 41-8-10, et seq. by either registering and participating in the Federal Work Authorization Program (e-verify) pursuant to the Statute or employ only workers who at the time of their employment possess a valid South Carolina Driver's License or Identification Card or are eligible to obtain same or possess a valid Driver's License or Card from another state deemed by the Director of the Department of Motor Vehicles to have requirements at least as strict as those in South Carolina. Bidder also understands that he/she will comply with the Statute in its entirety and agrees to provide the Public Agency with documentation to establish applicability of the Statute.

19. GENERAL GUARANTY

Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the Improvements embraced in this Contract by the Local Public Agency or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express warranties of responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting there from which shall appear within a period of 12 months from the date of final acceptance of the work. The Local Public Agency will be given notice of defective materials and work with reasonable promptness.

20. LOCAL PUBLIC AGENCY

Wherever the term "Local Public Agency" is referenced in the contract documents, it shall mean the Owner which is the City of Spartanburg.

21. TAXES

Attention is called to the following provisions of the South Carolina Tax laws: South Carolina law requires that a withholding tax of two percent (2%) be withheld from payments made to non-resident contractors performing a business of temporary nature in South Carolina, and provided the contract exceeds \$10,000. The withholding of two percent (2%) may be waived provided the nonresident taxpayer posts with the South Carolina Tax Commission a non-resident withholding tax bond. This provision insures the South Carolina Tax Commission that the non-resident contractor will comply with applicable provisions of the Income Tax Act of 1926, as amended. The prime contractor or employer of the non-resident contractor is held responsible for the tax due to be withheld and must withhold the tax unless he is notified by the South Carolina Tax Commission that a non-resident withholding bond has been posted covering the contract in question.

In addition to the above, the non-resident contractor is required to act as withholding agent for the State of South Carolina and withhold tax from wages paid to his employees working in South Carolina. It is the responsibility of the non-resident contractor to apply for an employer account number and file the quarterly withholding reports on or before the appropriate due dates.

22. ENGINEER

Wherever the "Engineer" is referenced in the contract documents, it shall mean the City Public Works Director, P. O. Drawer 1749, Spartanburg, S. C. 29304, telephone (864) 596-2837.

PROPOSAL FOR
South Street Gateway Enhancement

~~PROPOSAL # 2324-10-17-01~~

CITY OF SPARTANBURG

Job No. 2316

BID

FROM:

BIDDER _____ **Date** _____

Address _____ **Telephone** _____

Bidder's License No. _____

Contractor's License No. _____

TO: CITY OF SPARTANBURG (OWNER)

145 West Broad Street
Post Office Drawer 5107
Spartanburg, S. C. 29304

The undersigned, as bidder, hereby declares that the only person, or persons, interested in this bid as principal(s) is, or are, named herein, and that no other person has any interest in the bid or the contract to be entered into; that this bid is made without connection with any person, company or parties making a bid; and that it is in all respects fair and in good faith without collusion or fraud.

The bidder further declares that he has examined the site of the work and informed himself/herself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the contract documents relative thereto; and that he/she has satisfied himself/herself as to the work to be performed.

The bidder further proposes and agrees, if this bid is accepted, to contract with the Owner in the attached form of agreement, to furnish all material, equipment, tools, apparatus means of transportation, and labor necessary to complete the project in full and complete accordance with the contract documents, to the full and entire satisfaction of the Owner, at the prices and amounts listed below.

The bidder further agrees to commence work on the date stipulated in the notice to proceed and to fully complete the project within the number of consecutive calendar days thereafter as listed below. The bidder also agrees to pay as liquidated damages, the sum as listed below for each consecutive calendar day thereafter the project remains incomplete.

Completion Time: 90 days

Liquidated Damages: \$300.00 per day

The undersigned Bidder agrees that if this Proposal shall be accepted, the undersigned will, within ten (10) days after notifications of such acceptance, enter into the contract for their performance of all work proposed under this improvement within the number of calendar days as stated herein, and, as a guaranty of the faithful performance thereof, to furnish at the time of executing the contract a performance bond in an amount not less than one hundred

percent (100%) of the total amount bid, and with sureties subject to the approval of the Owner. Upon failure to execute the contract and bond as aforesaid, it is agreed that the undersigned shall forfeit check accompanying this proposal to the Owner as liquidated damages caused by such failure.

The work consists of the approximate quantities shown herein 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 will correspond with the estimated quantities.

In case of error in extension, the unit price shall govern rather than the amount. For lump sum items, the individual amounts shall govern the total of the bid in case of discrepancy.

The Owner may delete from the contract any or all of the alternates listed in the bid form.

The prices and amounts listed below include all labor, materials, tools, equipment, transportation, removal, overhead, profit, insurance, taxes, etc., to cover the finished work in place.

Request for Proposal # 2324-10-17-01 South Church Street Gateway Enhancement

(Company Name)

submit herewith our proposal in response to the bid request.

Unit Cost

Item	Description	Unit	Qty	Unit Price	Total
1	Clearing, Grading, and Site Preparation (Landscape areas shown on drawings)	L.S.	1		
2	Irrigation Systems as shown on Irrigation drawing (Water meter will be installed by City)	L.S.	1		
3	Plant Material (See Unit Cost Sheet 3-A)				
4	Tall Rescue Sod	S.F.	3700		
5	Triple Hammered Hardwood Mulch (3" thick)	C.Y.	328		
6	Traffic Control	L.S.	1.0		
7	Erosion Control	L.S.	1		
8	Mobilization	L.S.	1		
Totals					

Total Base Bid Written in Words

Signature of Company Representative

Print Name & Title

Date

The work consists of the approximate quantities shown herein 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 will correspond with the estimated quantities.

In case of error in extension, the unit price shall govern rather than the amount. For lump sum items, the individual amounts shall govern the total of the bid in case of discrepancy. The owner may delete from the contract any of the line items listed in the bid form.

The amounts listed above include all labor, materials, tools, equipment, transportation, removal, overhead, profit, insurance, tax, etc. to cover the finished work in place.

Request for Proposal # 2324-10-17-01
South Church Street Gateway Enhancement
Plant Material Unit Cost

Item	Description	Unit	Qty	Unit Price	Total
TREES					
1	CERCIS CANADENSIS 'RUBY FALLS' (15 Gal.)	Ea.	6		
2	CHIONANTHUS RETUSUS 'TOKYO TOWER' (B & B /2.5 Cal.)	Ea.	14		
3	CORNUS ELLIPTICA 'ELSBRY' EMPRESS OF CHINA DOGWOOD™ (15 Gal.)	Ea.	3		
4	JUNIPERUS CHINENSIS 'TORULOSA' (B & B /8' Min.)	Ea.	2		
5	JUNIPERUS VIRGINIANA 'BRODIE' (B & B /10' Min.)	Ea.	8		
6	MAGNOLIA X SOULANGEANA 'DARK ALEXANDRINA' (B & B)	Ea.	3		
SHRUBS/ORNAMENTAL GRASS					
11	AZALEA INDICA 'FORMOSA' (3 Gal.)	Ea.	14		
12	CEPHALOTAXUS HARRINGTONIA 'PROSTRATA' (3 Gal.)	Ea.	109		
13	FATSIA JAPONICA 'SPIDERS WEB' (3 Gal.)	Ea.	24		
14	FORSYTHIA X INTERMEDIA 'NIMBUS' (3 Gal.)	Ea.	44		
15	HELLEBORUS X HYBRIDUS 'DARK AND HANDSOME' (1 Gal.)	Ea.	108		
16	HYDRANGEA MACROPHYLLA 'BLUSHING BRIDE' (3 Gal.)	Ea.	22		
17	HYDRANGEA PANICULATA 'LITTLE LIME' (3 Gal.)	Ea.	76		
18	ILEX CORNUTA 'NEEDLEPOINT' (3 Gal.)	Ea.	70		
19	ILEX GLABRA 'LEXFARROWTRACEY' (3 Gal.)	Ea.	166		
20	JUNIPERUS CHINENSIS 'PARSONII' (3 Gal.)	Ea.	39		
21	JUNIPERUS RIGIDA 'ALL GOLD' (3 Gal.)	Ea.	42		
22	LEUCOTHOE KEISKEI 'OPSTAL 50'™ (1 Gal.)	Ea.	164		
23	LIRIOPE MUSCARI 'VAREGATA' (1 Gal.)	Ea.	96		
24	LOROPETALUM CHINENSE RUBRUM 'RUBY' (5 Gal.)	Ea.	31		
25	MULLENBERGIA CAPILLARIS / PINK MUHLY GRASS (3 Gal.)	Ea.	38		
26	NANDINA DOMESTICA 'GULF STREAM' (3 Gal.)	Ea.	10		
27	ASPIDISTRA ELATOR (1 Gal.)	Ea.	704		
28	CAREX OSHIMENSIS 'EVERILLO' (1 Gal.)	Ea.	669		
29	ELYMUS ARENARIUS 'BLUE DUNE' / BLUE DUNE LYME GRASS (1 Gal.)	Ea.	228		
30	ROHDEA JAPONICA (1 Gal.)	Ea.	593		
Totals					

Bidder acknowledges receipt of the following Addenda:

Addenda Received: No. _____

Date _____

The undersigned further agrees that in case of failure on his part to execute the said contract and bonds within 10 consecutive calendar days after written notice has been given of the award of the contract, the check and/or bid bond accompanying this bid and the monies payable thereon will be paid into the funds of the Owner as liquidated damages for such failure; otherwise, said check or bid bond will be returned to the undersigned.

The bidder further purposes and agrees hereby to commence the work with adequate forces and equipment within 10 days after being notified by the Owner or Engineer to proceed, and to complete the work within the specified time.

ATTACHED HERETO is a certified check on the _____
_____ Bank of _____ and/or bid bond
with the _____ Company for the sum of _____
Dollars (_____), made payable to the Owner as a bid guarantee.

The attached completed and executed Debarred Firms certification is hereby made a part of this bid.

Address:

_____ Firm _____

_____ By _____ (L.S.)

Title _____

(SEAL is bid is by a corporation)

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of South Carolina)

ss.

County of Spartanburg)

_____, being first duly sworn,
deposes and says that:

- 1) He/She is _____ OF _____, the Bidder that has submitted the attached Bid:
- 2) He/she is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid:
- 3) Such Bid is genuine and is not a collusive or sham Bid:
- 4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Spartanburg, S.C. or any person interested in the proposed Contract; and
- 5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(signed) _____
Title

Subscribed and sworn to before me this

_____ day of _____, 20____

Title

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____,
(Corporation, Partnership or Individual)

hereinafter called Principal, and

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

CITY OF SPARTANBURG

(Name of Owner)

145 WEST BROAD STREET, SPARTANBURG, SOUTH CAROLINA 29306

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

Dollars, \$ _____ 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 _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

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 may extensions thereof which may be granted by the OWNER, with or without notice to the Surety 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 expenses 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 stipulate and agrees that no change, extension of time, alteration or addition to the terms of the contract or to 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 _____
(number)
counterparts, each one of which shall be deemed an original, this the
_____ day of _____, 20____.

ATTEST:

Principal

(Principal Secretary)

(SEAL)

BY _____ (s)

(Address)

(Witness as to Principal)

(Address)

(Surety)

ATTEST:

BY _____
Attorney-in-Fact

Witness as to Surety

(Address)

Address

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR in 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.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

CITY OF SPARTANBURG

(Name of Owner)

145 WEST BROAD STREET, SPARTANBURG, SOUTH CAROLINA 29306

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

Dollars, \$ _____ 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 _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREOF, 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 or 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 stipulate and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed there under 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 _____
(number)
counterparts, each one of which shall be deemed an original, this the
_____ day of _____, 20_____.

ATTEST:

Principal

(Principal Secretary)

BY _____ (s)

(SEAL)

(Witness as to Principal)

(Address)

(Address)

(Surety)

ATTEST:

(Surety) Secretary

(SEAL)

Witness to Surety

BY _____
Attorney-in-Fact

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR in 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.

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00700-01. SCOPE OF DRAWINGS AND SPECIFICATIONS:

- A. *Any provisions contained in the specifications or shown on standard drawings which are not applicable to the work under this contract shall be disregarded.*
- B. *The Owner will be responsible for the adequacy of the general design of the finished work. The design of standard products used in the work; temporary work required to protect existing work or adjoining property; and temporary work required to keep existing or new facilities in operation shall be the sole responsibility of the Contractor.*
- C. *Reference to standard Specifications (ASTM, AWWA, ANSI, etc.), national codes, local or state codes, and laws and ordinances shall mean the latest edition of said document in effect at the time of taking bids, unless specifically stated otherwise.*
- D. *It is the intent that the work under this contract shall result in a complete, properly usable and operating installation, structure, or plant; and that workmanship shall be of the best quality consistent with the materials and construction methods shown on drawings and as specified.*
- E. *The words "furnish", "furnish and install", "install" and "provide" or similar words shall mean, unless otherwise specifically stated, "furnish and install complete in place and ready for service".*
- F. *Incidental work and miscellaneous accessories not specifically mentioned or shown, but necessary for the proper completion of the work, shall be provided without change in the contract price. Such incidental work and accessories shall be of the same quality as specified for the major component of which the incidental work or accessory is an essential part.*
- G. *The work of all trades under this contract shall be coordinated by the Contractor in such a manner as to obtain the best workmanship possible for the entire project. All components of the work shall be installed or erected in accordance with the best practices of the particular trade.*
- H. *The Contractor shall be responsible for making the construction of habitable structures completely weatherproof, and for making equipment and utility installations properly perform the specified function. If he is prevented from so doing by any limitations of the drawings or specifications, the Contractor shall immediately notify the Engineer in writing of such limitations before proceeding with construction in the area where the problem or limitation exists.*
- I. *Materials or methods described by words which have a well known technical or trade meaning shall in fact refer to that recognized standard. Standard specifications or manufacturer's literature, when referenced, are intended to establish the minimum acceptable requirements.*
- J. *Any reference to manufacturer's brand or trade names or model numbers is intended merely to establish the standard of quality required for the particular product or material. Products or materials of other manufacturers, which in the opinion of the Engineer are equal to that specified with respect to quality, workmanship and economy of operation, and are suitable for the purpose intended, will be acceptable.*
- K. *The Contractor shall be responsible for making all necessary arrangements with governmental departments, public utilities, public carriers, service companies and corporations owning or controlling roadways, railways, water, sewer, gas, electrical, telephone and telegraph facilities, such as pavements, track, piping, wires, cables, conduits, poles, guys, etc., including incidental*

structures connected therewith, that are encountered in the work in order that such items may be properly shored, supported, protected or relocated. He shall give all proper notices, shall comply with the requirements of such parties in the performance of his work, shall permit entrance of such parties on the project in order that they may perform their necessary work, and shall pay all charges and fees made by such parties for this work.

- L. The Contractor's attention is called to the fact that there may be delays on the project due to work to be done by governmental agencies, public utilities and others in repairing or moving poles, conduits, etc. The Contractor shall cooperate with the above parties, in every way possible, so that construction can be completed in the least possible time.*
- M. Unless otherwise specified, the Contractor shall provide at his expense all tests and testing services required by the contract documents.*

00700-02. PERMITS:

The Contractor shall be responsible for procuring any permits for the use of property beyond the limits of the Owner's property or a permanent rights-of-way as necessary for working or storage space during the prosecution of the work.

00700-03. SUBMISSIONS, REPORTS, RECORDS AND DATA:

- A. The Contractor shall submit all schedules, quantities, costs, payrolls, reports, estimates, records, shop drawings, details and other data as required by the contract documents or as may be specifically requested.*
- B. The apparent successful bidder shall furnish to the Engineer for approval a complete cost breakdown of his bid, within 10 days after submission of bids. The breakdown shall include all items for each unit of construction, and shall show the cost for labor, materials and equipment, other necessary costs, and the total cost for each unit of work. Bidders shall consult with the Engineer prior to submitting the breakdown to insure a complete understanding of the requirements. Names of the project superintendent and others responsible for the work shall be included.*
- C. The Contractor shall furnish periodic itemized estimates for work done for the purpose of making partial payments thereon. The costs employed in making up these estimates will be used only for determining the basis of partial payments and will not be considered as a basis for changes in the contract price.*
- D. The Contractor shall notify the Engineer of the source of all materials and equipment required for the work, and shall supply samples of materials as specified in the technical sections or at the Engineer's request. Samples shall be submitted for approval by the Engineer prior to purchase and delivery to the job. Unless otherwise specified, three samples of each type or grade of material, showing construction, color, finish, etc., shall be submitted.*
- E. Prior to submittal of any shop drawings, the Contractor shall prepare a list of all materials, equipment and items that require shop drawings and submit this list to the Engineer. The list shall include each specific item along with the applicable specification section. The Engineer reserves the right to require shop drawings on any item, whether or not specified. Shop drawings will not be reviewed until this list is submitted to the Engineer.*

00700-04. JOB SITE DRAWINGS AND SPECIFICATIONS:

- A. *The Contractor shall maintain, in good and legible condition at the job site, one complete set of working drawings and specifications for the work, including all shop drawings. Such drawings and specifications shall be available for use by the Engineer or his/her representative at all times.*
- B. *The drawings and specifications shall be marked, or notes acceptable to the Engineer provided, in order to reflect as-built conditions. Changes indicating such conditions shall be kept current at all times. Upon completion of the project, this complete set of drawings and specifications or notes, showing as-built conditions, shall be returned to the Engineer.*

00700-05. PROHIBITED INTEREST:

No official of the Owner who is authorized by the Owner to negotiate, make, accept or approve or to take part in negotiating, making, accepting or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, will become directly or indirectly interested personally in this matter or in any part thereof. No officer, employee, architect, attorney, engineer or representative of or for the Owner who is authorized by the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, will 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.

00700-06. MUTUAL RESPONSIBILITY OF CONTRACTORS:

If, through acts of neglect on the part of the Contractor, any other contractor or subcontractor suffers loss or damage on the work, the Contractor agrees to settle with the other contractor or subcontractor by agreement or arbitration if the other contractor or subcontractor agrees. If any other contractor or subcontractor asserts any claim against the Owner on account of damage alleged to have been sustained, the owner will notify the Contractor, who shall indemnify and save harmless the Owner against any such claim.

00700-07. ORDER AND PROSECUTION OF WORK:

- A. *The Contractor shall not begin any work on the project without first notifying the Owner and the Engineer. The notice shall be in writing and shall be received by the Owner and the Engineer at least three days prior to the beginning of work. Any work done without prior notice will not be accepted. Upon request, the Contractor shall meet with the Owner and Engineer prior to beginning work in order to discuss and clarify all phases of the work.*
- B. *The Contractor shall be solely responsible for the means, methods and sequence of construction, and for the safety of workers and other persons on the construction site and of all materials and equipment to be incorporated in the work. The work shall be prosecuted at as many different points, at such times, in such sections and with such forces as may be necessary to secure its completion within the contract time. The Contractor shall not suspend work without the prior approval of the Owner or Engineer.*
- C. *Pipeline work shall be prosecuted in such a manner that completed portions of the work can be*

- D. *properly dressed off as work progresses. In case of work on streets and highways, two or more crews shall not work on contiguous areas at the same time. Streets and roads shall be dressed off as soon as work is completed therein.*

00700-08. PUBLIC CONVENIENCE AND PROTECTION:

- A. *During progress of the work, the convenience and protection of the public must be provided for and interference held to a minimum.*
- B. *The Contractor shall, at all times, conduct the work in such a manner as to insure the least practicable obstruction to public travel. The convenience of the general public and of the residents along and adjacent to the area of the work shall be provided for in a satisfactory manner, consistent with the operation and local conditions. Roads and streets shall be kept open at all times or suitable detours provided. When necessary to close streets, suitable signs and barriers shall be placed immediately adjacent to the work, at such locations as traffic demands, and the Owner, law enforcement agencies, fire departments and parties operating emergency vehicles shall be notified before the street is closed and again as soon as it is opened. Access to fire hydrants and other fire fighting equipment shall be maintained at all times.*
- C. *When necessary, the Contractor shall provide watchmen, and lights to burn between twilight and sunrise, and shall erect and maintain barriers and all other necessary protection about the work at his own expense. He/She shall also take other precautions necessary to protect life, limb and property. The owner reserves the right to remedy any neglect on the part of the Contractor in connection with protection of the work after 24 hours notice in writing; and, in cases of emergency, the Owner will have the right to remedy any neglect without previous notice; and in either case deduct the cost of such remedy from money due to the Contractor.*

00700-09. SANITARY PROVISIONS:

The Contractor shall provide temporary toilet facilities for the use of construction personnel. These facilities shall be maintained in a clean and sanitary condition, and shall comply with all applicable codes and regulations. Temporary sanitary facilities shall be removed upon completion of the work and the premises left clean. Construction personnel shall not use permanent washroom facilities in existing facilities or new work except by written permission of the Owner.

00700-10. EXISTING FACILITIES:

- A. *Dimensions and elevations indicated on the drawings in reference to existing structures, location of utilities, sewer inverts, or other information on existing facilities, are based on the best available data, but are not guaranteed by the Owner. The Owner will not be responsible for their accuracy. Before proceeding with any work dependent upon such data, the Contractor shall field check and verify all dimensions, grades, inverts, lines, elevations, or other conditions or limitations at the site of the work to avoid construction errors or damage to existing facilities. If 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 conditions, or to repair damage to existing facilities, shall be assumed by the Contractor without additional cost to the Owner.*

- B. *In executing the work, the Contractor shall exert every effort not to damage existing facilities or to break into them. Damage that is done thereto shall be promptly repaired by the Contractor at his own expense. He/She shall not interrupt or interfere with operation of the existing facilities during construction except when absolutely necessary. Whenever existing facilities or utilities must be taken out of service, the Contractor shall consult with the Engineer and the Owner as to procedure, and shall be governed by their decision.*
- C. *The Owner does not guarantee that all existing buildings, structures, fences, pipelines, electrical lines, conduit, telephone cable, service connections or other facilities are shown on the drawings. It shall be the Contractor's responsibility to locate and protect all such existing facilities prior to beginning construction.*
- D. *Existing surface or subsurface improvements, such as pavement, curbs, sidewalks, pipes, utilities, footings, structures (including portions thereof), trees and shrubbery, not indicated on the drawings or specified to be removed or altered, shall be protected from damage at all times during construction.*
- E. *All such improvements damaged during construction shall be restored to a condition equal to that existing at the time of award of contract.*
- F. *The Contractor shall connect his/her work to each part of the existing work or work previously installed in accordance with the drawings and specifications to provide a complete installation.*
- G. *The Contractor shall do all cutting and patching of the work required to make the several parts fit together properly and to receive the work of others. The Contractor shall not endanger the work of others by cutting, excavating or otherwise altering their work, and shall not cut or alter the work of others without the written consent of the Engineer. All cut and patched work shall be restored to the satisfaction of the Engineer.*
- H. *The Contractor shall be responsible for removing and disposing of obstructions or obstacles at the job site or along the right-of-way to the satisfaction of the Engineer. Minor obstructions shall be removed and properly disposed of or protected and re-erected in as good condition as existing, at the same or other locations, and directed by the Engineer.*
- I. *Fences, at the site or along the right-of-way, which interfere with construction operations, shall be maintained by the Contractor until completion of work, unless written permission is obtained from the Owner to leave the fence dismantled until construction is completed. The Contractor shall remove, rebuild and extend fences as necessary to keep livestock away from the construction area or from straying away. Upon completion of work, all fences shall be restored to their original location and condition, unless otherwise noted. The Contractor shall purchase new material, if necessary, to replace all materials damaged, lost or destroyed.*

00700-11. WORK DURING INCLEMENT WEATHER:

No work shall be done except by permission of the Engineer when the weather is unfit for good and careful work to be performed. If the severity of the weather continues, the Contractor, upon the direction of the Engineer, shall suspend all work until instructed to resume operations by the Engineer, and the contract time will be extended as required to cover the duration of the order. Work damaged during periods of suspension due to inclement weather shall be repaired and/or replaced by the Contractor at his/her own expense.

00700-12. RIGHTS-OF-WAY:

- A. *The Owner will obtain all land and rights-of-way necessary for all work under this contract. If all land and rights-of-way are not obtained before construction begins, the Contractor shall start work only upon such land and rights-of-way previously obtained by the Owner, and no claim for damages will be allowed because of such delay. If the Owner is unable, for any reason, to obtain the land and rights-of-way necessary for the work, the contract time will be extended as required to cover the time lost by such delay.*
- B. *The Contractor shall confine his construction operations to the immediate vicinity of the locations shown on the drawings, and in no case shall he/she encroach beyond the limits of the Owner's property or rights-of-way. He/She shall place materials, equipment, supplies, etc., so as to cause the least possible damage to property and interference with traffic.*
- C. *The Contractor shall locate the limits of the rights-of-way, or property lines, prior to beginning construction. He/She shall be responsible for damage to trees, crops or other property outside the limits of the right-of-way, and shall make satisfactory settlement for damage directly with the property owner involved.*
- D. *Where timber is located on the property or right-of-way, the Contractor shall preserve and protect from damage all trees that do not directly interfere with the prosecution of the work. The Contractor shall not cut any tree greater than 6 inches in diameter and located more than 8 feet from the centering of the ditch or structure without first consulting the Engineer.*
- E. *Except where specifically directed otherwise by the property owner, all grassed areas within the construction right-of-way and adjacent disturbed areas shall be restored to original or better condition. Within 30 days after backfilling, topsoil shall be replaced and seed planted, fertilized and watered until a permanent grass cover satisfactory to the Engineer and property is obtained. If necessary, a temporary grass cover shall be provided until a permanent cover can be established. If required by the property owner, shrubbery shall be replaced to the satisfaction of the Engineer and property owner.*

00700-13. WORK ON HIGHWAY RIGHT-OF-WAY:

- A. *The Contractor shall not begin work in the right-of-way of any State, County or City Department of Transportation until he has secured the necessary permits. He shall conform to all requirements of the Department of Transportation in the prosecution of this portion of the work. Each bidder shall contact the local Department of Transportation representative to determine the exact requirements for work to be done.*
- B. *The Contractor shall provide full time flagmen, with appropriate red flags, at all times when work is in progress along highways. Suitable warning and descriptive signs shall be placed at each end of the working area while work is in progress along highways. These signs shall be well tended, and shall be placed at sufficient distances from the work so that ample warning is given to approaching traffic. Signs shall be adequately lighted at night.*
- C. *Where pipe is installed in open cut across a highway, the cut shall be immediately backfilled and all work of repairing the pavement completed immediately. The Contractor shall keep at least one full lane open for traffic at all times. Any subsequent settlement shall be immediately corrected and repaired.*
- D. *Where a pipeline crossing under a highway is installed within encasement pipe as shown, the encasement pipe shall be provided as specified in the technical sections.*

- E. *Unless otherwise indicated, no excavated material shall be placed on the pavement side of the ditch along highways. The least possible amount of ditch shall be left open when work is not in progress, and equipment shall be removed from the pavement and shoulders during shutdown periods. Shoulders of roadways shall be left in good acceptable condition, and all disturbed topsoil and grass shall be replaced.*

00700-14. WORK ON RAILROAD RIGHT-OF-WAY:

- A. *The Contractor shall not begin work on railroad property until he has secured the necessary permits. He/She shall conform to all requirements of the railroad in the prosecution of this portion of the work.*
- B. *Where a pipeline crosses under a railroad, a larger encasement pipe shall first be installed and the pipe laid in it. The work shall be done in accordance with requirements of the railroad company. Encasement pipe shall be provided as specified in the technical sections, and shall be of the size shown on the drawings.*
- C. *The Contractor shall furnish the railroad company the following:*
- 1) *Certificate of Workman's Compensation or Employer's Liability insurance according to state law.*
 - 2) *Certificate of the Contractor's Public Liability Insurance, to protect the Contractor and subcontractor:*
 - a) *For loss of life or injury to person in an amount not less than \$150,000 for any one person, and not less than \$300,000 for any one accident.*
 - b) *For property loss or damage in an amount not less than \$150,000 for any one accident, and not less than \$300,000 aggregate.*
 - 3) *The original policy of Railroad Protective Liability insurance naming the railroad company as the insured:*
 - a) *For loss of life or injury to person in an amount not less than \$150,000 for any one person, and not less than \$300,000 for any one accident.*
 - b) *For property loss or damage in an amount not less than \$150,000 for any one accident, and not less than \$300,000 aggregate.*
 - c) *The Railroad Protective Liability policy shall show the location and description of the work and the name of the Owner for whom the work is done.*
- D. *The Contractor shall pay the cost of flagmen and other expenses of the railroad in protecting traffic. He shall notify the railroad of the time that the work will be done and shall not begin work until authorized by railroad officials.*

00700-15. USE OF PREMISES:

- A. *The Contractor shall confine his equipment, the storage of materials and equipment, and his/her*

operations to areas permitted by law, ordinances, permits, the requirements of the contract documents, and as directed by the Owner and Engineer, and shall not unreasonably encumber the premises with materials or equipment.

- B. The Contractor shall not overload any part of any structure with weights that will endanger its safety, nor shall he subject any part of the work to stresses or pressures that will endanger it.*
- C. The Contractor shall comply with and enforce the Owner's rules and instructions in connection with signs, advertisements, fires, smoking, and the routing and parking of vehicles on the premises.*
- D. Unless otherwise directed by the Engineer, the Contractor shall notify the Engineer, with a copy to the Owner, of all blasting operations at least 48 hours before such operations begin.*

00700-16. LINES AND GRADES:

- A. The Engineer will establish control points and base lines for control of the work, and will establish bench marks and determine their elevation. The Contractor shall provide such stakes and non-technical assistance as the Engineer may require for the work.*
- B. The Contractor shall have on the job, at all times, a man who is capable of setting stakes and replacing damaged stakes, and who understands the value and use of stakes and cut sheets, to whom the Engineer may deliver information. The Contractor shall furnish and set necessary batter boards and other means of control and shall be fully responsible for their accuracy. Lines and grades will be established as follows:
 - 1) For sewers and storm drains, the Contractor shall stake all offset lines with trench centers. These shall be set sufficiently off from the center line to allow for construction, and not over 50 feet apart when using batter boards. The Contractor shall be responsible for protecting all stakes and shall make necessary replacements. After stakes have been set, the Contractor shall determine necessary elevations and furnish necessary cut sheets for field use. Copies of all cut sheets shall be furnished to the Engineer.*
 - 2) For water mains, the Engineer will stake necessary control points to establish the center line of the main, which is to be located by the Contractor. The Engineer will also indicate locations of fire hydrants and valves.*
 - 3) For plant or building work, the Engineer will stake a construction base line, establish a bench mark and give its elevation to the Contractor. The Contractor shall stake all individual structures, provide batter boards, and set elevations for the work.**
- C. The Contractor shall establish all necessary lines and reference points for partitions, walls, floors, ceilings, openings, etc., both before and after concrete, masonry and other "roughing-in" materials are placed. Locations of all lines and points shall be verified by and overall distance check, end to end or side to side as applicable, of all intermediate dimensions.*

00700-17. SITE DATA:

The Owner will make available to all prospective bidders, prior to the receipt of bids, information that he/she may have as to sub-surface conditions in the vicinity of the work, topographical maps, or other information that may assist the bidder in properly evaluating the amount and character of the work required for construction. Such information is given, however, as being the best information available to the Owner at the specific location without

the assumption of responsibility for its accuracy or for any conclusions that the Contractor might draw therefrom. The Contractor shall satisfy himself as to the nature of the work, shall investigate all other matters which may in any way affect the work under this contract, and shall determine the character of equipment and facilities needed preliminary to and during the prosecution of work. No verbal agreement or conversation with any officer, agent or employee of the Owner or the Engineer, either before or after the execution of this contract, shall affect or modify any of the terms or obligations contained herein.

700-18. EQUIPMENT INSTALLATION:

When equipment of any kind is to be installed in a building or structure, and minor changes are necessary in the building or structure to accommodate the equipment, such changes shall be considered incidental to the proper completion of the work, and shall be made by the Contractor without additional compensation therefore.

00700-19. QUANTITIES OF ESTIMATES: *The estimated quantities of work to be done and materials to be furnished under this contract shown in any of the documents, including the bid, are given for use in comparing bids and to indicate approximately the total amount of the contract. The Owner reserves the right to increase or decrease the amount of work under this contract as specified elsewhere in these contract documents.*

00700-20. CLEANING UP:

- A. *During construction, the Contractor shall maintain the site and adjacent public and private property, including streets and highways, free from accumulations of waste, debris, rubbish and dirt caused by his operations. Dry materials and rubbish shall be wet down as necessary to prevent blowing dust.*
- B. *At completion of the work, the Contractor shall remove all waste materials, rubbish, tools, construction equipment and machinery, surplus materials and temporary facilities, and shall clean all exposed finished surfaces to prepare the project for occupancy by the Owner.*
 - 1) *Grease, dust, dirt, stains, labels, fingerprints and other foreign materials shall be removed from all exposed finished surfaces. All surfaces so designated shall be polished to a shine finish.*
 - 2) *Marred or damaged surfaces shall be repaired, patched or touched up to the specified finish or to match adjacent surfaces.*
 - 3) *Floors and paved surfaces shall be broom clean. Other surfaces of the grounds shall be raked clean.*
 - 4) *Both sides of all glass surfaces shall be cleaned.*
- C. *Cleaning and disposal operations shall be conducted in accordance with local ordinances and anti-pollution laws. Wastes shall not be disposed of into streams or waterways.*

00700-21. INSPECTION CERTIFICATES, BONDS AND GUARANTEES:

Upon final completion of the work and prior to submission of certificate for final payment, the Contractor shall have had electrical plumbing, heating and other work, as applicable inspected by the proper authorities as required by the technical sections of the specifications and all applicable codes, laws and ordinances. Before final payment is made, the Contractor shall submit all inspection certificates to the Engineer covering such work, signed by the proper authorities, together with all required bonds and guarantees.

00700-22. ESTIMATES NOT TO PREVENT FINAL REJECTION:

Final inspection and acceptance of the work will take place at completion of the work under this contract. Any inspection or acceptance of materials and workmanship at mills, shops or elsewhere to facilitate the progress of the work will not preclude rejection of such materials or workmanship thereafter if the same is found unsuitable or not in complete accordance with the contract documents.

00700-23. FINAL INSPECTION:

Upon written notice from the Contractor that the work is complete, the Engineer, Owner and applicable jurisdictional agencies will make a final inspection, and will notify the Contractor in writing of all defective, incomplete or otherwise unacceptable work revealed by the inspection. The Contractor shall immediately correct all such deficiencies to the satisfaction of the Engineer.

00700-24. GUARANTEES:

- A. *If, in fulfilling the requirements of this contract, the Contractor disturbs any work guaranteed under another contract, he/she shall restore such disturbed work to a condition satisfactory to the Engineer, and shall guarantee such restored work to the same extent as it was guaranteed under the other contract.*
- B. *All special guarantees applicable to specific parts of the work that may be stipulated in the contract documents shall be subject to the terms of the general one-year guaranty (see General Conditions) during the first year of the life of such special guarantee.*

00700-26. TEMPORARY UTILITIES:

- A. *The Contractor shall provide all equipment, fuel, supplies, services and attendance for interim heating as required during construction to protect the work against damage from cold weather. Unless otherwise specified, the permanent heating system shall not be used to provide temporary heat. The Contractor's proposed methods of heating shall be submitted to the Engineer for approval.*
- B. *During construction, the Contractor shall provide all interim electrical power and wiring required for operation of power tools, equipment and machinery and for temporary lighting. Lighting shall be provided where necessary for proper workmanship, inspection and safety. Temporary electrical service shall be installed and maintained by a qualified electrical contractor approved by the Engineer. The Contractor shall pay all charges for electrical service required for temporary power and lighting.*

00700-27. UNAUTHORIZED DISCHARGES:

During construction, the Contractor shall be solely responsible for prevention of unauthorized discharges of wastewater and sludge which may result in such environmental problems as fish kills, contaminated water supplies and the interruption of the intended use of certain stream segments. Such unauthorized discharges are a violation of state law and will be strictly enforced in accordance with all applicable laws and regulations. The Contractor shall be liable for all civil penalty assessments as prescribed for such violations.

End of Section

SECTION 32 84 00 - IRRIGATION SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes piping, valves, sprinklers, controls and wiring for automatic control irrigation systems.
- B. Extent of the underground irrigation system is shown in the plans, schedules and notes.
- C. Provide all labor. Materials and equipment required or inferred from the Drawing and Specifications to complete the Work of this Section.
- D. Provide a complete and operable system for the irrigation of all landscapes areas on the project site, unless indicated otherwise. The Drawings and specifications are intended to include all items obviously necessary and requisite for the proper irrigation of the project.
- E. The contractor shall be responsible for adjusting head locations, nozzle type and size, and any other system components so that the irrigation system layout is coordinated with actual field conditions. Such adjustments shall be made at no cost to the Owner except, when authorized in writing, such adjustments which will be compensated for at an agreed upon cost.

1.3 DEFINITIONS

- A. Lateral Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.
- B. Drain Piping: Downstream from circuit-piping drain valves. Piping is not under pressure.
- C. Mainline Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.
- D. The following are industry abbreviations for plastic materials:
 - 1. ABS: Acrylonitrile-butadiene-styrene plastic.
 - 2. FRP: Fiberglass-reinforced plastic.
 - 3. PA: Polyamide (nylon) plastic.
 - 4. PE: Polyethylene plastic.
 - 5. PP: Polypropylene plastic.
 - 6. PTFE: Polytetrafluoroethylene plastic.
 - 7. PVC: Polyvinyl chloride plastic.
 - 8. TFE: Tetrafluoroethylene plastic.
 - 9. HDPE: High Density Polyethylene plastic.

1.4 PERFORMANCE REQUIREMENTS

- A. Head-to-head coverage irrigation system for lawns and exterior plants as shown or indicated on associated plans.
- B. Drawings are diagrammatic and generally indicate the Work to be installed. The Drawings do not indicate all off-set fittings that may be necessary. The Contractor shall furnish such items as may be required to complete the work.
- C. Location of Sprinklers and Specialties: Design location is approximate. Make minor adjustments necessary to avoid plantings and obstructions such as signs and light standards. Maintain 100 percent irrigation coverage of areas indicated.
- D. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated:
 - 1. Irrigation Main Piping: 200 psi.
 - 2. Lateral Piping: 200 psi.

1.5 SUBMITTALS

- A. Approval: Obtain approval from Landscape Architect for all submittals prior to the beginning of Work, unless otherwise approved.
- B. Product Data: Individual copies for product data shall be submitted with each product identified within the data by highlighting, circling or other method of identification. Include pressure ratings, rated capacities, and settings of selected models, if applicable, for the following:
 - 1. Electrical Control Valves.
 - 2. Quick Coupler Valves.
 - 3. Isolation Valves.
 - 4. Valve boxes.
 - 5. Sprinklers.
 - 6. Controllers and associated communication equipment.
 - 7. Control cables. Include splice kits.
 - 8. Decoders.
 - 9. Grounding equipment.
 - 10. Master Valve
 - 11. Flow Sensor
 - 12. PVC fittings.
 - 13. PVC Primer and Cement.
 - 14. Mainline, Lateral and Sleeve piping.
 - 15. Mainline and Lateral pipe fittings.
 - 16. Inline Drip Tubing and Fittings.
- C. As-Built Drawings: Any changes in the layout and or arrangements of the proposed irrigation system, or any other differences between the proposed system and actual installed conditions are to be recorded by the Irrigation Contractor in the form of an "As-Built" Drawing. As-Built Drawing to be produced in an electronic format using AutoCAD. Provide the Owner and the Landscape Architect and AutoCAD & PDF file along with five (5) hard copies of the As-Built Drawings before Work under this Contract will be considered for Acceptance. All automatic and manual valves, hose bibs or quick couplers, wire splice, and pressurized mainline locations shall be show with actual field dimensions in feet and inches from tow

permanent reference points so they may be located easily in the field. Submittals of approved As-Built Drawing will precede any Application for Final Payment by the Contractor.

- D. Operation and Maintenance Data: For irrigation systems, to include in emergency, operation, and maintenance manuals, including data for the following:
 - 1. Automatic control valves.
 - 2. Isolation valves.
 - 3. Sprinklers.
 - 4. Control systems.
- E. Test Reports: Field test results of the irrigation supply well to include flow rates, and recovery rates.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Engage a firm or firms specializing in irrigation system installation. Installer shall have successfully completed five 2 wire control system projects similar in material, size, scope and complexity to that indicated for this Project that have resulted in construction with a record of successful in-service performance.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a qualified testing agency, and marked for intended use.
- C. Codes and Standards: Perform the work in compliance with applicable requirements of governing authorities having jurisdiction. County regulations supersede these specifications. Notify Landscape Architect in writing of all discrepancies immediately.
- D. Approval and Selection of Materials and Work: The selection of all materials and the execution of all operations required under the Drawings and Specifications is subject to the approval of the Owner and Landscape Architect. They have the right to reject any and all materials and any and all work which, in their opinion, does not meet the requirements of the Contract Documents at any state of the operations. Remove rejected Work and or materials from the project site and replace promptly.
- E. Do Not Make Substitutions: If the Contractor desires to make substitutions of materials, sufficient descriptive literature and material samples must be furnished to establish the material as an equal substitute. In addition, the Contractor must state his reasons for desiring substitute materials and any potential cost savings. Submit this request and information to the Landscape Architect.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.8 PROJECT CONDITIONS

- A. The irrigation system is designed to operate under the following conditions. A minimum of 50 psi water pressure at the tap, and at least a 21 gpm available water supply.

- B. Insurance on irrigation materials or equipment stored or installed is the responsibility of the Contractor. Such insurance shall cover fire, theft and vandalism. Should the Contractor elect not to provide for such insurance, he will in no way hold the Owner responsible for any losses incurred by the aforementioned acts. The Contractor is responsible for all costs incurred in replacing damaged or stolen materials or equipment prior to Substantial Completion of the Work.
- C. Obtain all required permits and pay all required fees, at no additional cost to the Owner. Any penalties imposed due to the failure to obtain permits or pay fees are the responsibility of the Contractor.
- D. Provide and maintain all passageways, guard fences, warning lights and other protective devices required by the local authorities.
- E. Existing grades: Existing grades will be within .2 feet of grades shown on the Civil Engineering Drawings at the time of work. Determine conditions of existing grades prior to beginning the Work. When irregular or incomplete grading conditions are encountered, notify the Owner in writing before beginning the Work. Determine location of existing drainage patterns and maintain patterns in completed Work. Perform Work in a manner which will avoid damage to finished grading and drainage patterns. All damage to finished grading and drainage resulting from Work covered in these Contract Documents shall be repaired at the Contractor's expense.
- F. Existing Utilities: Determine location of underground utilities. Perform Work in a manner which will avoid possible damage. Excavate as required. Maintain grade stakes set by other unless removal is mutually agreed upon by parties concerned. All damage to utilities resulting from Work covered in these Contract Documents shall be repaired at the Contractor's expense.
- G. Existing Conditions: Perform irrigation Work in Tree Protection zones and in existing or previously completed landscape areas to avoid damage and disturbance to these areas. Limit work in these areas to only that necessary to perform work specified herein and shown on the Drawings. Return and repair any areas damaged or disturbed while performing the Work to the existing conditions encountered prior to the Work.
- H. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:
 - 1. Notify Owner's Representative no fewer than two (2) days in advance of proposed interruption of water service.
 - 2. Do not proceed with interruption of water service without Owner's Representative's written permission.
- I. Removal of Hardscape: Do not remove hardscape surface unless permitted under the following conditions:
 - 1. Coordinate with Owner's Representative no fewer than two (2) days in advance of proposed hardscape removal.
 - 2. Hardscape removal must not interrupt normal traffic flow on hardscape area.
 - 3. Area of removal must be useable prior to close of work day and completely repaired within 2 days of removal.

1.9 COORDINATION

- A. Coordinate installation of irrigation system with Owner's Representative and/or all other trades on site to insure irrigation system or other work on site will not be damaged. Should contractor fail to coordinate and damages occur it will be the contractor's responsibility to repair damages at his own costs.

1.10 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents:
1. Rotary Sprinkler Units: Equal to two (2) percent of amount installed for each type and size indicated, but no fewer than 10 units.
 2. Spray Sprinkler Units: Equal to two (2) percent of amount installed for each type and size indicated, but no fewer than 10 units.
 3. Electric Control Valve Units: Equal to five (5) percent of amount installed for each type indicated, but no fewer than ten (5) units of each size and type.
 4. Isolation Valves: Equal to five (5) percent of amount installed for each type indicated, but no fewer than two (2) units of each type.
 5. Inline Drip Tubing: 100LF of each type of inline drip tubing used on the site.

1.11 PRE-INSTALLATION MEETING

- A. Conduct a conference\meeting at the Project site. Review methods and procedures related to the site landscape irrigation system including, but not limited to the following:
1. The General Contractor is to contact the Irrigation Consultant and Owner Representative a minimum of 60 days prior to the schedule date of commencement of the irrigation installation.
 2. Meet with Owner Representative and Irrigation Consultant to review Contract documents.
 3. Verify current drawing release date with contractor's documents.
 4. Review submittal procedure including codes, substitutions, product data, qualifications, and As-Built procedures and formats.
 5. Review project conditions including tap & meter Size, permits, utility locations and water conditions.
 6. Review methods and procedures related to irrigation installation.
 7. Review and finalize construction schedule and verify availability of materials, contractor's personnel, equipment, and facilities needed to make progress and avoid delays.
 8. Review warranty guidelines.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 2. Manufacturers: Subject to compliance with requirements, provide and warrantee products by one of the manufacturers specified.

2.2 PIPES, TUBES, AND FITTINGS

- A. Steel Pipe: ASTM A 53/A 53M, Schedule 40, Type S or E, Grade A or B, galvanized with threaded ends.

1. Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106/A 106M, Standard Weight, seamless-steel pipe with threaded ends.
 2. Malleable-Iron Unions: ASME B16.39, Class 150, hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface, and female threaded ends.
 3. Gray-Iron Threaded Fittings: ASME B16.4, Class 125, galvanized, standard pattern.
 4. Cast-Iron Flanges: ASME B16.1, Class 125.
 5. Cast-Iron Flanged Fittings: ASME B16.1, Class 125, galvanized.
- B. Soft Copper Tube: ASTM B 88, Type L (ASTM B 88M, Type B), water tube, annealed temper.
1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper solder-joint fittings. Furnish wrought-copper fittings if indicated.
 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end.
 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
- C. Hard Copper Tube: ASTM B 88, Type L, water tube, drawn temper.
1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end.
 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
- D. PVC Pipe: ASTM D 1785, PVC 1120 compound, SCH 40.
1. PVC Socket Fittings, Schedule 40: ASTM D 2466, 3" and smaller
 2. PVC Threaded Fittings: ASTM D 2464.

2.3 GENERAL DUTY VALVES

- A. AWWA, Cast-Iron Gate Valves: AWWA C509, resilient-wedge nonrising-stem, gray- or ductile-iron body and bonnet gate valve, epoxy coated; with steel stem and 2" operating nut.
1. Minimum Working Pressure: 200 psig.
 2. End Connections: Mechanical join flanged or ring-tite.
 3. Interior Coating: Complying with AWWA C550.
 4. Manufacturers:
 - a. Matco.
 - b. Leemco.
 - c. Approved Equal.
- B. Isolation Valve Boxes: Ten inch circular valve box with 6" SDR 21 PVC pipe riser from top of valve to center line of valve box. Pipe to be centered on operating nut to allow easy access.
1. Operating Wrenches: Furnish total of two (2) steel, tee-handle operating wrenches with one pointed end, stem of length to operate deepest buried valve, and socket matching valve operating nut.
- C. Bronze Gate Valves: MSS SP-80, Class 125, Type 1, non-rising stem, bronze body with solid wedge, threaded ends, and malleable-iron hand wheel.
1. Manufacturers:

- a. NIBCO, Inc.
- b. Approved Equal.

2.4 SPECIALTY VALVES

- A. Quick-Couplers: Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.
 1. Locking-Top Option: Vandal-resistant, locking feature. Include four matching keys with hose swivel for each key.
 2. Manufacturers:
 - a. Rain Bird.
 - b. Or Approved Equal

2.5 CONTROL VALVE BOXES

- A. Plastic Control-Valve Boxes: Box and cover, with open bottom and openings for piping; designed for installing flush with grade. Size for all valves to be standard 14" rectangular.
 1. Shape: Rectangular.
 2. Sidewall Material: ABS or HDPE.
 3. Cover Material: ABS or HDPE.
 - a. Lettering: IRRIGATION.
 - b. Green in color.
 - c. Lockable with hex key mechanism or similar.
 4. Manufacturers:
 - a. Rain Bird.
 - b. Or Approved Equal.

2.6 SPRINKLERS

- A. Description: Plastic housing and corrosion-resistant interior parts designed for uniform coverage over entire spray area indicated, at available water pressure.
 1. Manufacturers: :
 - a. Rain Bird
 - b. Hunter Industries for the MP Rotator nozzles.
 - c. Or Approved Equal.
 2. Pop-up Spray Sprinklers: Fixed or adjustable pattern with screw-type flow adjustment, stainless-steel retraction spring, drain check valve, pressure regulation, co-molded riser seal that seals cap to body and pop-up heights of 6", 12".

3. Pop-up, Rotary Sprinklers: Gear drive, full-circle and adjustable part-circle types with screw-type flow adjustment, stainless-steel retraction spring, stainless steel riser, drain check valve, flow stop valve, minimum of 8 nozzles available, integral rubber cover, adjustable from the top of the sprinkler and pop-up heights of 6", 12".

2.7 ELECTRIC CONTROL VALVES

- A. Description: Electrically controlled hydraulically actuated control valves.

1. Manufacturers:
 - a. Rain Bird.
 - b. Or Approved Equal.

2.8 AUTOMATIC CONTROL SYSTEM

- A. Manufacturers:

1. Rain Bird.
2. Or Approved Equal.

- B. Exterior Control Enclosures: NEMA 250, Type 4, weatherproof, with locking cover and two matching keys; include provision for grounding.

1. Material: Enameled-steel or stainless steel.
2. Mounting: Surface type for wall mounting, concrete mounting base for pedestal.

- C. Control Transformer/Decoder Output: 24VAC 4A secondary, with overload protection and or primary fuse.

1. Decoder Line Output: 32 VAC RMS over 2-wire path
2. Solenoid Capacity: 2 standard 24VAC solenoids per output, maximum output of 15 simultaneously.

- D. Controller Stations for Automatic Control Valves: Each station is variable from approximately 1 minute to 23.9 hours. Include switch for manual or automatic operation of each station.

- E. Timing Device: Adjustable, 24-hour, 365 day clock, with automatic operations to skip operation any day in timer period, to operate every other day, odd-even days, interval days, to operate 8 or more times daily.

1. Manual or Semi-automatic Operation: Allows this mode without disturbing preset automatic operation.
2. Minimum 30 day internal power storage: Automatically powers timing device during power outages.
3. Eight (8) start times.
4. Simultaneous program operation.
5. Test program.
6. One button manual start.
7. Seasonal adjust 25% to 200%.
8. Internal self-diagnostics of controller, bicoders and solenoids.
9. Ten (10) independent programs.
10. Surge Protection: Metal-oxide-varistor type on each station and primary power.
11. Climate Sensor compatible with over-ride capabilities.

12. Remote control capabilities.

F. Wiring:

1. Manufacturers:

- a. Rain Bird
- b. Or Approved Equal

- 2. Feeder-Circuit Cables: No. 14 AWG minimum, between building and controllers.
- 3. Decoder Output Cable: No. 14 Rain Bird "Maxi" cable.
- 4. Splicing Materials: 3M DBR-Y6 as required by manufacturer.

2.9 DRIP IRRIGATION SPECIALTIES

A. Drip Irrigation Emitters: Inline self-cleaning, pressure compensating variety with individual check valves as indicated. In-line emitters will be spaced as per Irrigation Schedule on center. Manual flush valves will be required at all locations necessary for maintenance flush and winterization blow out to assure water has been evacuated prior to freezing temperatures that would cause damage to the tubing or inline emitters.

1. Acceptable Manufacturers:

- a. Rain Bird XFCV
- b. Or Approved Equal

B. Drip Control Zone Kit: Electric control valve, in-line pressure regulator and wye or disc filter, pre-assembled by the manufacture, as shown in the irrigation schedule.

1. Acceptable Manufacturers:

- a. Rain Bird
- b. Or Approved Equal

C. Manual Flush Valves: All drip zones shall be installed with manual flush valve(s), number of valves will be based on the zone size and the number of dead ends.

D. Drip Tubes with Direct-Attach Emitters:

- 1. Tubing: Flexible PE with plugged ends
- 2. Emitters: Devices to deliver water at approximately 15 psi.

- a. Body Material: PE or vinyl, with flow control.
- b. Mounting: Inserted directly into tubing at set intervals, on emitter stake, on PE riser.

PART 3 - EXECUTION

3.1 GENERAL

A. Observation of Work in Progress: During the installation the Landscape Architect/Irrigation Consultant will make regular site visits and reject any work and materials which do not meet the requirements called for in the Contract Documents.

- B. Inspect project site prior to start of Work to determine that all site conditions are acceptable for Work to begin. Inform Landscape Architect/Irrigation Consultant of unsuitable conditions. Do not proceed with installation of the irrigation system until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- C. Locate all existing underground utilities prior to trenching and/or boring operations and protect them against damage during the Work. Obtain utility location from Owner and/or General Contractor and utilize utility locating services when necessary.

3.2 EXAMINATION

- A. Investigate and determine available water supply, water pressure and flow characteristics.
- B. When unanticipated utilities that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Owner for action.

3.3 EARTHWORK

- A. Install warning tape directly above pressure piping, 12 inches (300 mm) below finished grades, except 6 inches (150 mm) below subgrade under pavement and slabs.
- B. Install piping and wiring in sleeves under sidewalks, roadways, parking lots, and railroads.
 - 1. Install piping sleeves prior to hardscape sub-base being installed if possible.
 - 2. Sleeving installed in open trench to be completely backfilled crushed limestone, approved by owners representative and compacted to insure no future settling.
 - 3. Pipe sleeves are to be a minimum of two times the diameter of the pipe in the sleeve.
- C. Provide minimum cover over top of underground piping according to the following:
 - 1. Irrigation Main Piping: Minimum depth of 18 inches from top of pipe to finished grade.
 - 2. Circuit Piping: 12 inches from top of pipe to finished grade within general landscape areas, piping to be a minimum of 3 inches laterally from mainline at all times.
 - 3. Drain Piping: 12 inches.
 - 4. Sleeves: 10 inches from top of pipe for mainlines and 10 inches from top of pipe for laterals.

3.4 EXCAVATION PREPARATION

- A. Set stakes to identify locations of proposed irrigation system. Obtain Owner's Representative's approval before excavation.
- B. Excavate area for pipe installation 4" wider than diameter of pipe.
 - 1. Level trench base to insure consistent contact of pipe to trench bottom.
 - 2. Remove all rocks and other sharp objects.
 - 3. Place pipe in trench snaking from side to side if possible.
 - 4. Backfill to the top of pipe compacting the sides.
 - 5. Backfill in 8" lifts compacting to 90% between lifts until complete.
 - 6. All trenches greater than 4" in width to be restored to grade, $\pm 1/4"$, with sod as approved by Owner's Representative.

7. All trenches 4" or small in width to be restored to grade, $\pm 1/4$ " with a minimum of 3" of topsoil as approved by Owner's Representative.
8. Whenever possible trenching should be outside of a tree dripline. If trenching is done within the dripline it should be at least 10' from existing tree, if 10' is not possible the trenching must be done by hand and all tree roots greater than 1" to be left in place. All tree roots 1" or less may be removed by saw cutting root on either side of the excavation and root removal.

3.5 PIPING APPLICATIONS

- A. Install components having pressure rating as shown on the plan.
- B. Piping above ground may be joined with flanges instead of joints indicated.
- C. Aboveground Irrigation Main Piping: Use the following piping materials for each size range:
 1. NPS 3 and Larger: Steel pipe; malleable-, gray-, or cast-iron fittings; and threaded joints.
 2. NPS 25 and Smaller: Hard copper tube, wrought- or cast-copper fittings, and soldered joints.
- D. Underground Irrigation Main Piping: Use the following piping materials for each size range:
 1. NPS 25 and Smaller: SCH 40, PVC, pressure-rated pipe; Schedule 40, PVC socket fittings; and solvent-cemented joints.
 2. NPS 3 and larger: SCH 40, pressure rated pipe with gasket joint ends, Ductile Iron gasket joint fittings with manufacturer's recommended joint restraint.
- E. Circuit Piping: Use the following piping materials for each size range:
 1. NPS 4 and Smaller: SCH 40, PVC, pressure-rated pipe; Schedule 40, PVC socket fittings; and solvent-cemented joints.
- F. Underground Branches and Offsets at Sprinklers and Devices:
 1. Option: Plastic piping manufactured for this application may be used on sprinkler inlets of 1/2" or smaller instead of pipe and fittings specified, ("swing pipe and spiral barbed elbows). If this is to be used the offset must be more than 12" and less than 18" as per detail.
- G. Risers to Aboveground Sprinklers and Specialties: Type L hard copper tube, wrought-copper fittings, and soldered joints.
- H. Sleeves: SCH 40 PVC pipe and socket fittings; and solvent-cemented joints.
- I. Transition Fittings: Use transition fittings for plastic-to-metal pipe connections according to the following:
 1. Couplings:
 - a. Underground Piping NPS 2-1/2 and Smaller: Manufactured fitting or coupling.
 - b. Underground Piping NPS 3 and Larger: PVC Flange with stainless steel bolts and rubber gasket.
 2. Fittings:
 - a. Aboveground Piping: Plastic-to-metal transition fittings.
 - b. Underground Piping: Union with plastic end of same material as plastic piping.

- J. Dielectric Fittings: Use dielectric fittings for dissimilar-metal pipe connections according to the following:
1. Underground Piping:
 - a. NPS 2 (DN 50) and Smaller: Dielectric coupling or dielectric nipple.
 - b. NPS 2-1/2 (DN 65) and Larger: Prohibited except in control-valve box.
 2. Aboveground Piping:
 - a. NPS 2 (DN 50) and Smaller: Dielectric couplings or dielectric nipples.
 - b. NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Dielectric flange.
 3. Piping in Valve Boxes or Vaults:
 - a. NPS 2 (DN 50) and Smaller: Dielectric union.
 - b. NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Dielectric flange.

3.6 VALVE APPLICATIONS

- A. Aboveground, Shutoff-Duty Valves:
1. NPS 2-1/2 and Smaller: Bronze gate valve.
 2. NPS 3 and Larger: Cast-iron, non-rising stem gate valve.
- B. Isolation Valves:
1. NPS 2-1/2 and Smaller: Bronze non-rising stem gate valve.
 2. NPS 3 and Larger: Cast-iron, non-rising stem gate valve with 2" operating nut.

3.7 PIPING INSTALLATION

- A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings.
- B. Install piping free of sags and bends.
- C. Install groups of pipes parallel to each other with a space between minimum of 4", spaced to permit single valve removal and or servicing.
- D. Install fittings for changes in direction and branch connections.
- E. Install dielectric fittings to connect piping of dissimilar metals.
- F. Install underground thermoplastic piping according to ASTM D 2774 and ASTM F 690.
- G. Lay piping on solid sub-base, uniformly sloped without humps or depressions.
- H. Install PVC piping in dry weather when temperature is above 32 deg F. Allow joints to cure at least 24 hours at temperatures above 32 deg F before testing unless otherwise recommended by manufacturer.

- I. Install water regulators with shutoff valve and strainer on inlet and pressure gage on outlet. Flush the line prior to installation to remove debris. Install the valve so that the flow arrow marked on the valve body tag corresponds to the flow through the line. Install shutoff valve on outlet.

3.8 VALVE INSTALLATION

- A. Electrical Control Valves: Install in valve box with top flush with and perpendicular to grade.
 1. Electrical control valve boxes to be 14" rectangular valve box for standard valves and "Jumbo" valve boxes for drip zone kits.
 2. From bottom of valve to a depth of 6" install washed stone or gravel sized between ¾" and 1" in diameter to create sump and stabilize valve box.
 3. Install valve box extensions as necessary to bring lid level with finished landscape grade.
 4. Control Valves to be installed with center line of valve 12" below finished grade.
- B. Underground, Manual Control Valves: Install with 6" SDR 21 PVC riser from top of pipe to center line of valve box finishing with 10" round valve box level with finished landscape grade.
 1. Install valves and PVC pipe with restrained, gasketed joints as necessary at the same depth as the mainline pipe.

3.9 SPRINKLER INSTALLATION

- A. Flush circuit piping with full head of water prior to installing sprinklers.
- B. Install sprinklers at manufacturer's recommended heights perpendicular to grade.
- C. Locate part-circle sprinklers to maintain a minimum distance of 4 inches (100 mm) from walls and 2 inches (50 mm) from other boundaries unless otherwise indicated.
- D. Adjust all sprinklers to irrigated plant material indicated for the station.

3.10 AUTOMATIC CONTROL SYSTEM INSTALLATION

- A. Obtain approval of controller location from owner's representative prior to installation. Install wall mount controllers approximately 48" -60" above FFE. Securely fasten controller to wall with metallic fasteners appropriate for wall type or install pedestal controller on concrete pad with all necessary conduit installed through the pad to accommodate all wire to controller. All irrigation control wire between controller and control valves to be in 1" SCH 40 PVC electrical conduit.
- B. Install control wire conduit in same trench as mainline piping and at least 4 inches to the side of the piping. Provide conductors of size not smaller than recommended by controller manufacturer. All wire splices not in a valve box to be located in minimum 10" round valve box.

3.11 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.

- B. Ground equipment according to ASIC Grounding Guidelines www.aisc.org. Resistance readings to ground to be as recommended by the manufacturer. If there are no manufacturer's requirements then the controller should have a resistance of 10 ohms or less.
- C. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.12 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 4. Remove and replace units and retest and re-inspect as specified above.

3.13 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service of control system.
- B. Verify that controllers are installed and connected according to the Contract Documents.
- C. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements in Division 16 Sections.
- D. Complete startup checks according to manufacturer's written instructions.

3.14 ADJUSTING

- A. Program controller(s) to insure adequate moisture is available for the root zone of the plant. Insure there is no run-off, over watering or deep percolation. Insure controller operates within irrigation window as defined by Owner's Representative or local governing authorities. See additional controller programming notes on plans provided.
- B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit. Use pressure regulation for each control valve if pressure is higher than recommended for the sprinklers in the circuit.
- C. Adjust sprinklers so they will be 1/8 inch above finish grade in sodded lawns and 1/2 inch above grade in seeded lawns. In shrub beds adjust sprinklers to insure top of sprinkler is at finished mulch levels.
- D. Adjust sprinklers arc and radius to insure no water is sprayed outside of the irrigated area.

3.15 CLEANING

- A. Flush dirt and debris from piping before installing sprinklers and other devices.

3.16 DEMONSTRATION

- A. It is contractors' responsibility to train Owner's maintenance personnel to adjust, operate, and maintain sprinklers, isolation valves, controllers and automatic control valves.

3.17 OBSERVATION AND ACCEPTANCE

- A. Periodic site visits will be made by the Landscape Architect/Irrigation Consultant to review the quality and progress of the work. Work found to be unacceptable must be corrected within five (5) calendar days. Remove rejected materials promptly from the project.
- B. Upon completion of the Work, the Contractor shall notify the Landscape Architect and Owner at least ten (10) days prior to requested date of the site visit for Substantial Completion of all portions of the Work. Landscape Architect/Irrigation Consultant will issue a punch list for all work to be corrected. All work on the punch list must be complete within five (5) working days from the date of the site visit. Where Irrigation Work does not comply with the requirements, replace rejected Work. If such replacements are not completed within the time specified, the Irrigation Contractor may be considered to be in default of the Contract, and the Owner may use the Contract Retainage to hire other Contractors to finish the work.
- C. It will be the responsibility of the Irrigation Contractor to provide reliable communication system (remote control or two way radios) for Substantial Completion and all periodic site visits.
- D. If a site visit to verify Substantial Completion has been scheduled and the Landscape Architect/Irrigation Consultant arrives at the site and determines that the irrigation system is not substantially complete (all system components in place, operational and checked) the Contractor will be responsible for all expenses included but are not limited to the following: mileage, airfare, consultant's time, parking fees, meals, car rental, etc. All incurred expenses will be deducted from the final contract amount.

END OF SECTION 32 84 00

SECTION 02270
SLOPE PROTECTION AND EROSION CONTROL

PART 1. GENERAL

1.1 RELATED WORK

- A. Section 02111 - Stripping, Topsoil Removal, and Stockpiling
- B. Section 02200 - Earthwork
- C. Section 02221 - Trenching, Backfilling, and Compacting
- D. Section 02820 - Grassing

1.2 EROSION AND SEDIMENT CONTROL MEASURES shall be provided in accordance with applicable state and local regulations and as shown on the drawings. All erosion control features shall be in place prior to removal of existing vegetation. All erosion and sedimentary control measures shall be monitored and maintained on a regular basis to assure maximum efficiency in containing sediments within the property during and after earthwork operations until completion of all construction.

1.3 WORK shall include furnishing all labor, equipment and materials needed to complete the work as shown on the drawings and specified herein for installation of erosion control measures and permanent seeding. Materials provided for the installation of erosion control structures and practices shall be subject to the approval of ENGINEER.

1.4 The North Carolina Erosion and Sediment Control Planning and Design Manual shall form part of this specification to the extent referenced.

1.5 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, year of production

1.6 DELIVERY, STORAGE, AND HANDLING

A. Fertilizer

- 1. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- 2. The ENGINEER will not accept fertilizer that is wet, contains foreign debris, or otherwise damaged.

B. Seed

- 1. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- 2. Seed that is wet, moldy, or otherwise damaged is not acceptable.

C. Erosion Control Mat

1. Erosion Control Matting should be delivered wrapped to protect the mat from moisture, abrasion, and ultraviolet radiation.
2. Store out of direct sunlight, dust, and debris.
3. Inspect material prior to deployment, and indicate in writing any deficiencies to the ENGINEER.
4. Installer shall handle all erosion control mat in such a manner as to ensure it is not damaged in any way.
5. In the presence of wind, erosion control mat shall be anchored with sandbags or equivalent. Such anchorage shall be installed during placement and shall remain until mat can be secured as per manufacturer's specification.
6. Examination of erosion control matting, after installation, shall be conducted to ensure that no potentially harmful foreign objects are present. Any objects encountered shall be removed.
7. Any mat overlapping shall be done in accordance with manufacturer's specifications.

PART 2. PRODUCTS

2.1 STRAW BALES shall be either wire bound or string tied

2.2 FERTILIZER shall conform to North Carolina Department of Transportation (NCDOT) Section 1060-2 except as given herein. Fertilizer shall be 16-4-8, slow release, uniform in composition, free-flowing and suitable for application with approved equipment, delivered to the site in bags or other convenient containers, each fully labeled, including the following information: Name and address of manufacturer; name brand or trademark; number of net pounds of ready-mixed material in the package; chemical composition or analysis and guarantee of analysis. Use of liquid fertilizer is subject to approval of the ENGINEER.

2.3 LIME shall conform to NC DOT Section 1060-3

- A. Lime shall be applied at a rate of 2 tons per acre. Lime shall be ground limestone containing not less than 85 percent total carbonates and of a fineness so that 90 percent will pass through a No. 20 mesh sieve and 50 percent will pass through a No. 100 mesh sieve.

2.4 MULCH MATERIAL

- A. Straw: Stalks from oats, wheat, rye, barley, or rice. Furnish in air-dry condition and of proper consistency for placing with commercial mulch blowing.
- B. Wood Cellulose Fiber: Processed to contain no growth or germination-inhibiting factors and dyed an appropriate color to facilitate visual metering of materials application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 3.5 to 5.0. Use with hydraulic application of grass seed and fertilizer.

2.5 GEOTEXTILE for use as filter fabric shall be 6 oz/sq. yd. needle punched nonwoven unless shown otherwise on the Drawings.

2.6 EROSION CONTROL MAT

A. Slope Protection: Rolled erosion control products for slope protection shall be a machine-produced mat of straw, wood excelsior, and/or coconut fiber covered on the top and bottom sides with photo accelerated extruded plastic or woven biodegradable netting having openings no greater than 1 inch x 1 inch. The blanket shall be packaged in a perforated plastic bag and conform to the following physical specifications:

1. Minimum Unit Weight 8 oz/sq. yd. ASTM D 5261

B. Channel Protection: Rolled erosion control products for slope protection shall be a machine-produced mat of mechanically or melt-bonded polymer nettings, monofilaments, or fibers entangled to form a strong, dimensionally stable permanent vegetation reinforcement structure. The mat shall conform to the following:

1. Thickness 0.5" ASTM D 5199

2. Tensile Strength 100 lbs/ft x 100 lbs/ft ASTM D 5035

3. Tensile Elongation < 50 % ASTM D 5035

4. Mass per Unit Area 10 oz./sq. yd. ASTM D 5261

C. Installation: Install matting according to the manufacturer's published installation recommendations for the pertinent applications (slope or channel.)

2.7 SILT FENCE

A. Silt fence materials shall be in accordance with ASTM D6461.

B. During construction, filter fabric silt fences shall be placed downhill of construction activities.

C. Silt fences are to be installed to prevent silt/sediment laden waters from leaving the construction site.

PART 3. EXECUTION

3.1 GENERAL

A. Temporary sediment traps shall be located as shown on drawings and installed in accordance with details and as specified here within. Areas that surround waterways shall be sloped accordingly as to drain disturbed areas into erosion control structures.

B. Temporary sediment traps, silt fences, and inlet protection shall be located as shown on drawings and installed in accordance with details and as specified here within.

C. Area indicated on the drawing shall be fertilized and seeded with temporary or permanent mixtures, (in season) immediately after disturbed areas are to proposed line and grade to avoid unnecessary movement of sediments.

3.2 Stockpiling. All excavated topsoil suitable for reuse as well as excess excavated material (classified as either suitable or unsuitable fill material) shall be stockpiled in areas designated and where the stockpiles will not impede job progress or collect debris generated by the job construction. The stockpiles shall be neatly shaped and free to drain with a minimum cross slope of 2%. Side slopes shall be 3:1 or flatter. The stockpile shall be seeded as soon as possible. All associated erosion control features shall be constructed and maintained until the area is revegetated and stable growth is obtained.

3.3 STRAW BALE BARRIERS

- A. Excavation shall be to the width of the bale and the length of the proposed barrier to a minimum depth of 4 inches.
- B. Bales shall be placed in a single row, lengthwise on proposed line, with ends of adjacent bales tightly abutting one another. In swales and ditches, the barrier shall extend to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale.
- C. Staking shall be accomplished to securely anchor bales by driving at least two stakes or rebars through each bale.
- D. The gaps between bales shall be filled by wedging straw in the gaps to prevent water from escaping between the bales.
- E. The excavated soil shall be backfilled against the barrier. Backfill shall conform to ground level on the downhill side and shall be built up to 4 inches on the uphill side. Loose straw shall then be scattered over the area immediately uphill from a straw barrier.

3.4 INLET PROTECTION

- A. Excavation around the drop inlet shall be performed to accommodate the width of the bale and to a minimum depth of 4 inches.
- B. Placement of bales shall be lengthwise in a single row surrounding the drop inlet. Adjacent bales shall be pressed together and loose straw then wedged between them to prevent water entering between bales.
- C. Staking shall be accomplished to securely anchor bales by driving at least two stakes or rebars through each bale as shown on the drawing.
- D. Backfill shall consist of the excavated soil and be compacted against the straw barrier.

3.5 SEDIMENTATION PONDS/TEMPORARY SEDIMENT TRAP

- A. The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat. The pool area shall be cleared (vegetation in form of grass or other ground cover to remain). Sedimentation ponds shall be constructed to the dimensions and details shown on the drawings.
- B. Embankment shall be free of roots or other woody vegetation, organic materials, large stones and other objectionable material.

1. The outlet for the sediment trap shall consist of a coarse aggregate section of embankment located at the low point of the basin and as shown on drawings.
- C. Earthen embankments shall be seeded with temporary vegetation within 19 days of construction.
- D. Temporary sediment traps shall be removed and the surrounding area stabilized when upslope conditions have stabilized.

3.6 SEEDING, TEMPORARY

- A. Stockpiles and other areas that have been disturbed and will not be utilized for a period of 30 days shall be seeded and mulched in order to prevent erosion.
- B. Seed bed preparation. The areas to be seeded shall be thoroughly tilled to a depth of at least 3" by disking, harrowing or other approved methods. If a crust is formed over the prepared surface as a result of a rain, the surface shall again be made suitable for planting.
- C. Fertilizer, lime, seed, and mulch shall be applied hydraulically or by approved mechanical seeders. No seed shall be sown during high winds or until the surface is in proper condition and suitable for working. Small grass seeds shall be properly mixed and sown in a mixture by a method approved by the ENGINEER to ensure uniform distribution over the area. Immediately after sowing small grass seed, the area shall be rolled with an approved form of roller or cultipacker so the soil about the seed is compacted.
- D. All seeded areas shall be immediately and periodically watered as needed to provide and maintain a quick and satisfactory growth.
- E. Mulching shall be utilized as required to prevent erosion and to help retain moisture for seed growth. When used, mulch material shall be applied at the rate of 2 to 2.5 tons per acre. An approved type mulching machine equipped to inject asphaltic material into the straw uniformity as it leaves the machine shall be used, if available.

3.7 SEEDING, PERMANENT

- A. Final graded areas which receive temporary seeding shall be topseeded with permanent seed mixture in season.
- B. Topsoil shall be removed from the on-site stockpile or off-site borrow sources as applicable, and shall be spread to a uniform thickness of 6" on all newly graded areas. The topsoil shall be graded smoothly to the proper elevations and left in a condition suitable for seeding operations.
- C. Seed Bed Preparation: After the areas to be seeded have been brought to the proper grades, the areas shall be thoroughly tilled to a depth of at least 3" by disking, harrowing or other approved methods. If a crust is formed over the prepared surface as a result of a rain, the surface shall again be made suitable for planting.
- D. Permanent Seed shall be placed between March 1 and June 1 or September 15 and November 15. Planting of permanent seed during other periods shall be done at the risk of the landscape subcontractor and will not be accepted until a complete growing season has elapsed.

- E. Fertilizer, limestone, seed, and mulch shall be applied hydraulically or by the use of approved mechanical seeders.
- F. Hydraulic Application: The materials shall be mixed with water in the machine and kept in an agitated state in order that they may be uniformly suspended in the water. Wood cellulose fiber mulch shall be added to the water slurry in the seeder after the proportionate quantities of limestone fertilizer and grass seed. Unless otherwise directed for specific areas, wood cellulose fiber mulch shall be applied at the rate of 1,000 pounds per acre on slopes or as directed. A soil tackifier may be included. The spraying equipment shall be so designed that when the solution is sprayed over an area the resulting deposits of soil additives and seed shall be equal to the specified amounts.
 - 1. A certified statement shall be furnished, prior to start of work, to the ENGINEER as to the number of pounds of limestone, fertilizer, grass seed, and cellulose per 100 gallons of water, and the number of square yards of seeding that can be covered with the solution specified above. If the green colored cellulose has proven that complete coverage by spraying has not been accomplished, all unsprayed areas shall be patch seeded by hand before germination of the seeded areas.
- G. Mechanical Seeding: Apply lime and fertilizer evenly and incorporate into the top 4 to 6 inches of soil by disking or other approved means. Break up large clods and provide a smooth, uniform surface for seeding.
 - 1. For drill or cultipacker seeders, plant grass seed no deeper than 1/2 inch with field calibrated equipment. For broadcast seeders, apply the correct volume of seed for the area in a uniform, even pattern. Cover broadcast seed by raking or chain dragging, then firm the surface with an approved roller or cultipacker. Apply mulch material at the rate of 3 to 4 tons per acre for straw, 1,000 pounds per acre for wood cellulose fiber from a hydraulic sprayer.
- H. No seed shall be sown during high winds or until the surface is in proper condition and suitable for working. Small grass seeds shall be properly mixed and sown in a mixture by a method approved by the ENGINEER to ensure uniform distribution over the area. Immediately after sowing small grass seed, the area shall be rolled with an approved form of roller or cultipacker so the soil about the seed is compacted.
- I. Maintenance shall begin immediately after each portion is planted and continue until final acceptance in accordance with the following: Lawns shall be protected and maintained by mulching, watering, mowing and replanting as necessary to establish a uniform stand of specified grass. Scattered bare spots, none larger than 12" square, will be allowed. Final acceptance shall be in the form of a written notice from the ENGINEER.

3.8 DUST CONTROL

- A. Dust resulting from the CONTRACTOR'S performance of the Work, either inside or outside the right-of-way, shall be controlled by the CONTRACTOR by applying water.
- B. The CONTRACTOR in the amounts shall provide water and locations as ordered by the ENGINEER.

3.9 MAINTENANCE.

- A. Seeded areas shall be maintained with suitable growth to control erosion.

3.10 FERTILIZER

- A. Apply fertilizer immediately before seeding.
- B. Fertilizer shall be applied at a rate of 1,000 lb. per acre.
- C. Apply after topsoil is raked smooth.
- D. Do not apply fertilizer at same time or with same machine that will be used to apply seed.
- E. Mix thoroughly into upper 3 inches of topsoil.
- F. Lightly water fertilized area to aid in the dispersion of fertilizer.

3.11 SILT FENCE INSTALLATION

- A. Silt fence shall be installed in accordance with ASTM D6462.

END OF SECTION

SECTION 32 93 00 - PLANTS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Soil Preparation.
2. Planting mixes.
3. Trees, shrubs, and groundcovers.
4. Mulch and planting accessories.
5. Maintenance of Trees, Shrubs, and Groundcovers.

B. Related Sections:

1. Division 1: General Requirements
2. Section 32 22 00: Earthwork

1.2 REFERENCES

- A. "Standardized Plant Names" as adopted by the latest edition of the American Committee of Horticultural Nomenclature.
- B. American Standard for Nursery Stock, ANSI Z60.1. American Nursery and Landscape Association, 1250 Eye Street, NW, Suite 500, Washington, D.C. 20005
- C. Standards of Practice of the American Association of Nurserymen.
- D. All standards shall include the latest additions and amendments as of the day of the advertisement for bids.

1.3 QUALIFICATIONS

Landscape planting and related work shall be performed by a firm with a minimum of five years' experience specializing in this type of work. All contractors and their sub-contractors who will be performing any landscape work included in this section of the specification shall be approved by the landscape architect.

1.4 SUBMITTALS

A. Quality Control Submittals:

1. Submit the following materials certification:
 - a. Plant fertilizer(s) analysis.

2. Submit subsurface investigation reports.
 3. Submit photographs of "specimen" plant materials.
- B. Contract Closeout Submittals:
- A. Prior to plant material acceptance, submit written maintenance instructions recommending adequate and reasonable procedures for maintenance of plant materials.
 - B. Provide plant material record drawings:
 1. Legibly mark drawings to record actual construction.
 2. Indicate horizontal locations, referenced to permanent surface improvements.
 3. Identify field changes of dimension and detail and changes made by Change Order.

1.5 QUALITY ASSURANCE

- A. Provide stock true to botanical name and legibly tag plants with botanical name to include variety or cultivar and size in accordance with the Standards of Practice of the American Association of Nurserymen.
- B. Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock."
- C. Plants may be inspected and approved at the place of growth, for compliance with specification requirements for quality, size, and variety.
 1. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of work.
- D. Qualifications: Planting shall be performed by experienced workers familiar with planting procedures.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver fertilizer materials in original, unopened, and undamaged containers showing weight, analysis, and name of manufacturer. Store in manner to prevent wetting and deterioration.
- B. Moving and Storage of Plant Materials: Take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected.
 1. Dig, pack, transport, and handle plants with care to ensure protection against injury. Fully protect plants from damage by sun, wind, drought, water and other injurious conditions during transportation to site and during temporary storage before planting.
 2. Inspection certificates required by law shall accompany each shipment invoice or order to stock and on arrival, the certificate shall be filed with the Landscape Architect.
 3. No plant shall be bound with rope or wire in a manner that could damage or break the branches.

1.7 PROJECT CONDITIONS

- A. Protect existing utilities, paving, and other facilities from damage caused by landscaping operations.
- B. The irrigation system will be installed prior to planting. Locate, protect, and maintain the irrigation system during planting operations. Repair irrigation system components, damaged during planting operations, at Contractor's expense.

1.8 SCHEDULING

- A. Time of Planting: Plant under favorable weather conditions and recommended season for survival and establishment. At option of, and under full responsibility of Contractor, planting operations may be conducted under unseasonable conditions, but without additional compensation.

1.9 WARRANTY

- A. Warrant plant material to remain alive and be healthy, vigorous condition for a period of one year after final acceptance of entire project.
- B. Contractor's Inspection of Owner's Maintenance:
 - 1. During Warranty Period, Contractor shall make periodic visits to site (especially during times of unusually severe weather conditions) to inspect plants installed and guaranteed by him. If he should determine that conditions such as Owner's maintenance, which are not directly under his control, are insufficient to sustain plants, he shall promptly file written notice with Owner and Landscape Architect stating his findings and recommendations for correction.
 - 2. If Landscape Architect concurs with Contractor after inspection of site, or if he should not be authorized to promptly inspect the site at Owner's expense, Contractor then may file written notice with Owner and Landscape Architect that unless proper maintenance, or other necessary work has been completed by a reasonable given date, and sustained thereafter, the terms of Plant Warranty will become null and void for all or stated portions of the work.
- C. Remove from site, promptly upon discovery during periodic visits, dead or other unsatisfactory plants. Mark location safely with stake to facilitate future replacement.
- D. Replace, in accordance with the Drawings and Specifications, all plants that are dead or, as determined by the Landscape Architect, are in an unhealthy or unsightly condition, and have lost their natural shape due to dead branches, or other causes due to Contractor's negligence.
 - 1. The cost of such replacement(s) is at Contractor's expense.
 - 2. Replace during earliest favorable weather and season unless directed otherwise by Landscape Architect.
 - 3. Warrant all replacements plants for 1 year after installation.
- E. Warranty shall not include damage or loss of plants caused by fires, floods, freezing, rains, lightning storms, winds over 75 miles per hour, or winter kill caused by extreme cold and severe winter conditions not typical of planting area; acts of vandalism or negligence on the part of the Owner.

- F. Failure to Remedy Defects: If Contractor fails to remedy any defects in workmanship, materials, or performance that he is responsible for within reasonable length of time as specified in notice from Landscape Architect to Contractor, the Owner may have work done and charge the cost to the Contractor.
- G. Satisfaction of Warranty:
1. Contractor shall request by written notice inspection of final acceptance to take place within one week before or after end of warranty period.
 2. If plants are in satisfactory condition, the Contractor shall receive a written notice of Warranty Compliance.
 3. Replace rejected work and continue maintenance until work is reinspected by Landscape Architect and found acceptable.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Plants shall be true to species and variety specified and nursery-grown in accordance with good horticultural practices under climatic conditions similar to those in the locality of the project for at least two years. They shall have been freshly dug (during the most recent favorable harvest season).
1. All plant names and descriptions shall be as defined in *Hortus Third*.
 2. All plants shall be grown and harvested in accordance with the *American Standard for Nursery Stock*.
 3. Unless approved by the landscape architect, plants shall have been grown at a latitude not more than 325 km (200 miles) north or south of the latitude of the project unless the provenance of the plant can be documented to be compatible with the latitude and cold hardiness zone of the planting location.
- B. Unless specifically noted, all plants shall be of specimen quality, exceptionally heavy, symmetrical, and so trained or favored in development and appearance as to be unquestionably and outstandingly superior in form, compactness, and symmetry. They shall be sound, healthy, vigorous, well branched, and densely foliated when in leaf; free of disease and insects, eggs, or larvae; and shall have healthy, well-developed root systems. They shall be free from physical damage or other conditions that would prevent vigorous growth.
1. Trees with multiple leaders, unless specified, will be rejected. Trees with a damaged or crooked leader, bark abrasions, sunscald, disfiguring knots, insect damage, cuts of limbs over 20 mm (3/4 in.) in diameter that are not completely closed or flush pruning cuts that do not preserve the collar at the base of the branch will be rejected.
- C. Plants shall conform to the measurements specified, except that plants larger than those specified may be used if approved by the landscape architect. Use of larger plants shall not increase the contract price. If larger plants are approved, the root ball shall be increased in proportion to the size of the plant.
1. Caliper measurements shall be taken on the trunk 150 mm (6 in.) above the natural ground line for trees up to and including 100 mm (4 in.) in caliper, and 300 mm (12 in.) above the natural ground line for trees over 100 mm (4 in.) in caliper. Height and spread dimensions specified refer to the

main body of the plant and not from branch tip to branch tip. Plants shall be measured when branches are in their normal position. If a range of sizes is given, no plant shall be less than the minimum size, and no less than 50 percent of the plants shall be as large as the maximum size specified. Measurements specified are minimum sizes acceptable after pruning, where pruning is required. Plants that meet measurements but do not possess a standard relationship between height and spread, according to the *American Standards for Nursery Stock*, shall be rejected.

- D. Substitutions of plant materials will not be permitted unless authorized in writing by the landscape architect. If proof is submitted in writing that a plant specified is not obtainable, consideration will be given to the nearest available size or similar variety, with a corresponding adjustment of the contract price.
- E. The plant list at the end of this section, or on the drawing, is for the contractor's information only, and no guarantee is expressed or implied that quantities therein are correct or that the list is complete. The contractor shall ensure that all plant materials shown on the drawings are included in his or her bid.
- F. All plants shall be labeled by plant name. Labels shall be attached securely to all plants, bundles, and containers of plant materials when delivered. Plant labels shall be durable and legible, with information given in weather-resistant ink or embossed process lettering.
- G. Selection and Tagging
 - 1. Plants shall be subject to inspection for conformity to specification requirements and approval by the landscape architect at their place of growth and upon delivery. Such approval shall not impair the right of inspection and rejection during progress of the work.
 - 2. All field grown deciduous trees shall be marked to indicate the trees north orientation in the nursery. Place a 1-in. diameter spot of white paint onto the north side of the tree trunk within the bottom 12 inches of the trunk.

H. Balled and Burlapped (B&B) Plant Materials

- 1. Trees designated B&B shall be properly dug with firm, natural balls of soil retaining as many fibrous roots as possible, in sizes and shapes as specified in the *American Standard for Nursery Stock*. Balls shall be firmly wrapped with nonsynthetic, rottable burlap and secured with nails and heavy, nonsynthetic, rottable twine. The root collar shall be apparent at surface of ball. Trees with loose, broken, processed, or manufactured root balls will not be accepted, except with special written approval before planting.

NOTE: Some nurseries practice result in the root flare being buried several inches deep. The top of the root ball may be at ground level, but the root flare actually is too deep. Remove the excess soil on the top of the root ball. Proper planting depth requires the root flare to be at or slightly above the finished grade.

I. Container Plants

- 1. Plants grown in containers shall be of appropriate size for the container as specified in the most recent edition of the *American Standard for Nursery Stock* and be free of circling roots on the exterior and interior of the root ball.
- 2. Container plants shall have been grown in the container long enough to have established roots throughout the growing medium.

J. Bareroot and Collected Plants

1. Plants designated as bareroot or collected plants shall conform to the *American Standard for Nursery Stock*.
 2. Bareroot material shall not be dug or installed after bud break or before dormancy.
- K. Immediately after harvesting plants, protect from drying and damage until shipped and delivered to the planting site. Rootballs shall be checked regularly and watered sufficiently to maintain root viability.
- L. Transportation and Storage of Plant Material
1. Branches shall be tied with rope or twine only, and in such a manner that no damage will occur to the bark or branches.
 2. During transportation of plant material, the contractor shall exercise care to prevent injury and drying out of the trees. Should the roots be dried out, large branches broken, balls of earth broken or loosened, or areas of bark torn, the landscape architect may reject the injured tree(s) and order them replaced at no additional cost to the owner. All loads of plants shall be covered at all times with tarpaulin or canvas. Loads that are not protected will be rejected.
 3. All bareroot stock sent from the storage facility shall be adequately covered with wet soil, sawdust, woodchips, moss, peat, straw, hay, or other acceptable moisture-holding medium, and shall be covered with a tarpaulin or canvas. Loads that are not protected in the above manner may be rejected.
 4. Plants must be protected at all times from sun or drying winds. Those that cannot be planted immediately on delivery shall be kept in the shade, well protected with soil, wet mulch, or other acceptable material, and kept well-watered. Plants shall not remain unplanted any longer than three days after delivery. Plants shall not be bound with wire or rope at any time so as to damage the bark or break branches. Plants shall be lifted and handled with suitable support of the soil ball to avoid damaging it.

M. Mechanized Tree Spade Requirements

Trees may be moved and planted with an approved mechanical tree spade. The tree spade shall move trees limited to the maximum size allowed for a similar B&B root-ball diameter according to the *American Standard for Nursery Stock* or the manufacturer's maximum size recommendation for the tree spade being used, whichever is smaller. The machine shall be approved by the landscape architect prior to use. Trees shall be planted at the designated locations in the manner shown in the plans and in accordance with applicable sections of the specifications.

2.2 ACCESSORIES

A. Planting Soil Mix:

1. Topsoil: As specified on Drawings.
2. Pine Bark: Commercial horticultural preparation, finely ground, free of extraneous and harmful matter.

B. Soil Conditioning Materials:

1. Aluminum Sulfate: Unadulterated, in manufacturer's original, unopened container labeled with analysis and net weight. Use to acidify soil (lower pH) as recommended by soils test report.

2. Limestone: Raw, ground agricultural limestone, containing at least 90 percent calcium carbonate; 90 percent shall pass No. 10 sieve and 50 percent shall pass No. 50 sieve. Use to decrease acidity of soil (raise pH) as recommended by soils test report.
- C. Fertilizer:
1. Superphosphate: Soluble mixture of treated minerals; 20% available phosphoric acid.
 2. Commercial Fertilizers: Conforming to applicable Federal and State law, uniform as to composition, dry, free-flowing, and delivered to site in original unopened containers. Application rate and minimum analysis shall be as recommended by soils test report.
- D. Mulch:
1. Hardwood Mulch: Material shall be mulching grade, uniform in size, and free of foreign matter. Submit sample for approval.
- E. Edging Materials:
- NONE PERMITTED
- F. Miscellaneous Materials:
1. Water: Clean, free from toxic amounts of salt, oil, acid, alkali, organic matter or other substances harmful to plants.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected and fine grading has been approved by Landscape Architect.
- B. Subsurface Drainage Investigation:
1. Required Tests: Subsurface drains have not been included as part of project; therefore, Contractor shall make such reasonable percolation tests, approved by Landscape Architect, 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:
 - a. Wait at least twenty-four (24) hours after rain and dig test pit twelve (12) inches square or 13-1/2 inches in diameter to depth of bottom of plant bed, trench or pit. Remove all loose soil (if standing water is visible, notify the Landscape Architect).
 - b. Quickly fill pit bottom with six (6) inches (approximately 3-1/4 gallons) of water.
 - c. Record length of time from filling until disappearance of water and divide the number of minutes by six (6) to give average time of one (1) inch fall.
 - d. Compare one (1) inch fall time with following table:
 - 1 inch in 0-3 min. indicates rapid absorption.
 - 1 inch in 3-5 min. indicates medium absorption.
 - 1 inch in 5-30 min. indicates slow absorption.

- 1 inch in 30-60 min. indicates semi-impervious soil.
 - 1 inch in over 60 min. indicates impervious soil.
 - e. If soil is indicated to be semi-impervious or impervious, or if water is initially found in test pit, notify Landscape Architect before proceeding further.
 - f. If Contractor does not make test at representative locations and file records of results with Owner and Landscape Architect, or if he plants in areas shown to have poor drainage without written release from Owner, he shall be liable for any future guaranteed replacements due to subsurface water damage.
 - g. If Contractor makes proper tests and files complete records indicating no semi-impervious or worse conditions, he will not be held responsible for future subsurface water damage to work of Contract within Guaranty Period. Owner or Landscape Architect may supervise testing at any time.
2. Relocation or Omission of Plants:
- a. Where subsurface conditions provide inadequate drainage and subsurface drainage system is not to be used as remedy, make reasonable relocation of plants as directed by Landscape Architect.
 - b. Drainage conditions necessitating omission of plants shall be covered by Change Order.
3. Authorization of Drain as Extra Work: Owner may authorize installation of subsurface drains to alleviate moisture problems at locations determined by Landscape Architect. Perform work at negotiated extra cost; begin work only upon receipt of Change Order. Locations, appropriate materials, and construction techniques shall be as directed by Landscape Architect.

3.2 PREPARATION

- A. Utility Verification: **Contractor will be responsible for damages to any unmarked utility.**
- 1. The contractor shall contact the local utility companies for verification of the location of all underground utility lines in the area of the work. The contractor shall be responsible for all damage resulting from neglect or failure to comply with this requirement.
- B. Soil Conditioning:
- 1. Coordinate soil conditioning with soil testing and fine grading operations specified in Section 02200.
 - 2. Adjustment of pH: If the pH range of the soil samples from the proposed planting sites is not acceptable, the Contractor shall, upon receipt of authorization to proceed by Change Order, adjust the pH of the existing soils within the unacceptable areas. Adjust pH by uniformly incorporating required soil conditioning materials at the rate determined by the analysis of the soil test done by the Soils Testing Laboratory.
- C. Location of Plants: Place individual plants and stake plant beds as indicated on Drawings. Notify Landscape Architect for approval prior to planting. Contractor shall make reasonable adjustment of plant locations as recommended by Landscape Architect.
- D. Obstructions:

1. Obstructions at or below grade shall be removed where possible; obstructions such as functioning utilities or objects too massive to be removed with tractor mounted backhoe will require plant relocations as directed by Landscape Architect.
2. Above Ground: Report overhead interference such as wires, overhangs, etc., to Landscape Architect and relocate plantings as directed.
3. Repairs: Contractor shall familiarize himself with the location of all underground and above-ground improvements and take care not to disturb improvements during his installation operations. Contractor shall repair or replace at Contractor's sole expense improvements damaged by his installation operations.

E. EXCAVATION FOR TREES AND SHRUBS

- a. Locations for plants and/or outlines of areas to be planted are to be staked out at the site. Locate and mark all subsurface utility lines. Approval of the stakeout by the landscape architect is required before excavation begins.
- b. Tree, shrub, and groundcover beds are to be excavated to the depth and widths indicated on the drawings. If the planting area under any tree is initially dug too deep, the soil added to bring it up to the correct level should be thoroughly tamped.
 1. The sides of the excavation of all planting areas shall be sloped at a 45 degrees. The bottom of all beds shall slope parallel to the proposed grades or toward any subsurface drain lines within the planting bed. The bottom of the planting bed directly under any tree shall be horizontal such that the tree sits plumb.
 2. Maintain all required angles of repose of the adjacent materials as shown on the drawings. Do not excavate compacted subgrades of adjacent pavement or structures.
- c. For trees and shrubs planted in individual holes in areas of good soil that is to remain in place and/or to receive amendment in the top 150-mm (6 in.) layer, excavate the hole to the depth of the root ball and to widths shown on the drawing. Slope the sides of the excavation at a 45 degree angle up and away from the bottom of the excavation.
 1. In areas of slowly draining soils, the root ball may be set up to 75 mm (3 in.) or 1/8 of the depth of the root ball above the adjacent soil level.
 2. Save the existing soil to be used as backfill around the tree.
 3. On steep slopes, the depth of the excavation shall be measured at the center of the hole and the excavation dug as shown on the drawings.
- D. Detrimental soil conditions: The landscape architect is to be notified, in writing, of soil conditions encountered, including poor drainage, which the contractor considers detrimental to the growth of plant material. When detrimental conditions are uncovered, planting shall be discontinued until instructions to resolve the conditions are received from the landscape architect.

- E. Obstructions: If rock, underground construction work, utilities, tree roots, or other obstructions are encountered in the excavation of planting areas, alternate locations for any planting shall be determined by the landscape architect.
- F. Planting Mixture:
1. Mixture for shrubs, trees and groundcovers: Clean friendly native top soil.
 - a. Add soil amendments necessary to adjust soil to required pH for plant material, as recommended in soil test report.
 - b. Add 1/2 lb. superphosphate per cubic yard for planting mixture.
 2. Place and compact mixture to 6-inch depth in bottom of pit. Reserve enough mixture for back-fill.
 3. Groundcover Beds: Till and pulverize soil to a depth of 6 inches below grade. Mix by tilling the material as described above.

3.3 INSTALLATION

- A. Plants shall be set on flat-tamped or unexcavated pads at the same relationship to finished grade as they were to the ground from which they were dug, unless otherwise noted on the drawings. Plants must be set plumb and braced in position until topsoil or planting mix has been placed and tamped around the base of the root ball. Improper compacting of the soil around the root ball may result in the tree settling or leaning. Plants shall be set so that they will be at the same depth and so that the root ball does not shift or move laterally one year later.

NOTE: Proper planting depth requires the root flare to be at or slightly above the finished grade. It is important to determine how deep the root flare is in the ball before it is placed in the planting hole. Sometimes the top of the ball may need to be raised until the root flare is at the proper planting depth and/or soil must be removed from the top of the ball.

1. Determine the elevation of the root flare and ensure that it is planted at grade. This may require that the tree be set higher than the grade in the nursery.
 2. If the root flare is less than 50 mm (2 in.) below the soil level of the root ball, plant at the tree the appropriate level above the grade to set the flare even with the grade. If the flare is more than 50 mm (2 in) at the center of the root ball the tree shall be rejected.
- B. Lift plants only from the bottom of the root balls or with belts or lifting harnesses of sufficient width not to damage the root balls. Do not lift trees by their trunk or use the trunk as a lever in positioning or moving the tree in the planting area.
- C. Remove plastic, paper, or fiber pots from containerized plant material. Pull roots out of the root mat, and cut circling roots with a sharp knife. Loosen the potting medium and shake away from the root mat. Immediately after removing the container, install the plant such that the roots do not dry out. Pack planting mix around the exposed roots while planting.
- D. The roots of bare-root trees shall be pruned at the time of planting to remove damaged or undesirable roots (those likely to become a detriment to future growth of the root system). Bare-root trees shall have the roots spread to approximate the natural position of the roots and shall be centered in the planting pit. The planting-

soil backfill shall be worked firmly into and around the roots, with care taken to fill in completely with no air pockets.

- E. Cut ropes or strings from the top of shrub root balls and trees smaller than 3 in. caliper after plant has been set. Remove burlap or cloth wrapping and any wire baskets from around top half of balls. Do not turn under and bury portions of burlap at top of ball.
 - 1. Do not immediately remove the ropes and burlap from trees larger than 3 in. caliper. Return to each tree three months after planting (six months for fall-planted material), and cut all ropes around the trunks and tops of the root balls of these trees.
 - 2. Completely remove any waterproof or water-repellant strings or wrappings from the root ball and trunk before backfilling.
- F. Set balled and burlapped trees in the hole with the north marker facing north unless otherwise approved by the landscape architect.
- G. Place native soil, topsoil, or planting mix into the area around the tree, tamping lightly to reduce settlement.
 - 1. For plants planted in individual holes in existing soil, add any required soil amendments to the soils, as the material is being backfilled around the plant. Ensure that the amendments are thoroughly mixed into the backfill.
 - 2. For plants planted in large beds of prepared soil, add soil amendments during the soil installation process.
 - 3. Ensure that the backfill immediately around the base of the root ball is tamped with foot pressure sufficient to prevent the root ball from shifting or leaning.
- H. Thoroughly water all plants immediately after planting. Apply water by hose directly to the root ball and the adjacent soil.
- I. Remove all tags, labels, strings, etc. from all plants.
- J. Remove any excess soil, debris, and planting material from the job site at the end of each workday.
- K. Form watering saucers 100 mm (4 in.) high immediately outside the area of the root ball of each tree as indicated on the drawings.

- M. Pruning
 - 1. Plants shall not be heavily pruned at the time of planting. Pruning is required at planting time to correct defects in the tree structure, including removal of injured branches, double leaders, water-spouts, suckers, and interfering branches. Healthy lower branches and interior small twigs should not be removed except as necessary to clear walks and roads. In no case should more than one-quarter of the branching structure be removed. Retain the normal or natural shape of the plant.
 - 2. All pruning shall be completed using clean, sharp tools. All cuts shall be clean and smooth, with the bark intact with no rough edges or tears. All pruning cuts shall be made just outside of the collar at the base of the branch.
 - 3. Except in circumstances dictated by the needs of specific pruning practices, tree paint shall not be used. The use of tree paint shall be only upon approval of the landscape architect. Tree paint, when required, shall be paint specifically formulated and manufacturing for horticultural use.

4. Pruning of large trees shall be done from a hydraulic man-lift such that it is not necessary to climb the tree.

N. Tree Guying, and Staking

1. Staking and guying shall not be required unless conditions exist (such as high wind exposure, loose soil conditions, small/rounded root balls, etc.) that warrant stabilizing the plant materials. This decision shall be made by the contractor and approved by the owner's representative. Staking may weaken the initial tree development. If required or recommended, staking shall be completed immediately after planting. Trees up to two inches (5 cm) caliper are to be staked with two wood stakes and separate flexible ArborTies. For larger trees use three strands of guying material and ground anchors. Ground anchors are to be driven at approximately a 45° angle to ground plane in line with guying material and distributed at 120° intervals around the trunk. Anchors shall be driven to 2 – 3" above finish grade. Tie guying material to anchor and cap anchor with safety cap.
2. Stakes and guys shall be installed immediately upon approval or planting, and shall be removed at the end of the first growing season. Any trees that is not stable at the end of this time shall be rejected.
3. Leave enough slack in the guy cords to allow the tree to sway. The cords shall be tied loosely above a branch or crotch.

O. Fertilizing

1. Time of Application: Apply at time of planting or promptly thereafter. Do not apply during period of August 16th through March 15th.
2. Methods of Application: Uniformly spread on soil surface prior to mulching at specified rate.
3. Rates of Application: Apply fertilizer at rate and ratio according to recommendations from soil tests. Fertilizer rates listed below are general rates, which may be altered due to specific soil requirements:
 - Trees: 16-4-8 at 2 pounds per inch of caliper.
 - Shrubs: 5-10-10 at 20 pounds per 100 square feet.
 - Groundcovers: 5-10-10 at 2 pounds per 100 square feet.
 - Vines: 5-10-10 at 2 pounds per 100 square feet.
 - Herbaceous Plants: 5-10-10 at 2 pounds per 100 square feet.

P. Mulch

1. Areas to receive mulch: all plant beds and other areas as designated on Drawings shall be mulched.
2. Placement: Place mulch to required uniform depth soon after planting to prevent drying of planting soil around roots. When other operations such as fertilizing do not necessitate delay, mulch promptly after planting; do not delay more than 3 days after plants have been set.

- a. Apply Hardwood Mulch at a uniform depth of 3 inches, except in groundcover beds where it shall be a uniform depth of 2 inches. Work mulch neatly down among plants to give good appearance.

3.4 MAINTENANCE

- A. Maintenance shall begin immediately after each plant is planted and continue until its acceptance has been confirmed by the landscape architect.
- B. Maintenance shall consist of pruning, watering, cultivating, weeding, mulching, tightening and repairing guys and stakes, resetting plants to proper grades or upright position, restoring of the planting saucer, and furnishing and applying such sprays or other materials as necessary to keep plantings free of insects and diseases and in vigorous condition.
- C. Planting areas and plants shall be protected at all times against trespassing and damage of all kinds for the duration of the maintenance period. If a plant becomes damaged or injured, it shall be treated or replaced as directed by the landscape architect at no additional cost.
- D. Watering: Contractor shall irrigate as required to maintain vigorous and healthy tree growth. Overwatering or flooding shall not be allowed. The contractor shall monitor, adjust, and use existing irrigation facilities, if available, and furnish any additional material, equipment, or water to ensure adequate irrigation. Root balls of all trees and large shrubs shall be spot watered using handheld hoses during the first four months after planting, as required to ensure adequate water within the root ball.
- E. During periods of restricted water usage, all governmental regulations (permanent and temporary) shall be followed. The contractor may have to transport water from ponds or other sources, at no additional expense to the owner when irrigation systems are unavailable..

3.5 ACCEPTANCE

- A. Standard for Acceptance of Plantings: Each plant shall be as specified, properly installed and maintained in good health condition. All water saucers and beds shall be neatly formed and mulched. Beds shall be free of weeds and erosion damage.
- B. Work may be accepted in parts when the landscape architect and contractor deem that practice to be in their mutual interest. Approval must be given in writing by the landscape architect to the contractor verifying that the work is to be completed in parts. Acceptance of work in parts shall not waive any other provision of this contract.
- C. Upon acceptance, the Owner will assume plant maintenance.

3.6 CLEANING

- A. Remove from site all excess materials, soil, debris, and equipment. Repair damage resulting from planting operations.

3.7 GUARANTEE PERIOD AND REPLACEMENT

- A. The guarantee period for trees and shrubs shall begin at the date of acceptance.
- B. The contractor shall guarantee all plant material to be in healthy and flourishing condition for a period of one year from the date of acceptance.
- C. When work is accepted in parts, the guarantee periods extend from each of the partial acceptances to the terminal date of the guarantee of the last acceptance. Thus, all guarantee periods terminate at one time.
- D. The contractor shall replace, without cost, as soon as weather conditions permit, and within a specified planting period, all plants determined by the landscape architect to be dead or in an unacceptable condition during and at the end of the guarantee period. To be considered acceptable, plants shall be free of dead or dying branches and branch tips and shall bear foliage of normal density, size, and color. Replacements shall closely match adjacent specimens of the same species. Replacements shall be subject to all requirements stated in this specification.
- E. The guarantee of all replacement plants shall extend for an additional period of one year from the date of their acceptance after replacement. In the event that a replacement plant is not acceptable during or at the end of said extended guarantee period, the landscape architect may elect subsequent replacement or credit for that item.
- F. At the end of the guarantee, the contractor shall reset grades that have settled below the proposed grades on the drawings.
- G. The contractor shall make periodic inspections, at no extra cost, during the guarantee period to determine what changes, if any, should be made in the maintenance program. If changes are recommended, they shall be submitted in writing to the landscape architect. **Claims by the contractor that the owner's maintenance practices or lack of maintenance resulted in dead or dying plants will not be considered if such claims have not been documented by the contractor during the guarantee period.**

3.8 FINAL ACCEPTANCE

- A. At the end of the guarantee period and upon written request of the contractor, the landscape architect will inspect all guaranteed work for final acceptance. The request shall be received at least ten calendar days before the anticipated date for final inspection. Upon completion and re-inspection of all repairs or renewals necessary in the judgment of the landscape architect at that time, the landscape architect shall certify, in writing, that the project has received final acceptance.

END OF SECTION 32 93 00

SECTION 32 92 00 - SEEDING AND SOD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Soil preparation
2. Sodding lawns
3. Plugging lawns
4. Sprigging lawns
5. Seeding lawns
6. Hydroseeding lawns
7. Reconditioning existing lawns
8. Maintenance of lawns

B. Related Sections:

1. Division 1: General Requirements
2. Section 32 80 00: Irrigation
3. Section 32 93 00: Plants

1.2 REFERENCES

- A. "Standardized Plant Names" as adopted by the latest edition of the American Committee of Horticultural Nomenclature.

1.3 SUBMITTALS

A. Quality Control Submittals:

1. Submit the following materials certification:
 - a. Submit sod grower's certification of grass species. Identify source location.
 - b. Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight, and percentages of purity, germination, and weed seed for each grass species.
 - c. Plant fertilizer(s) analysis.
2. Submit soil test reports.
3. Submit materials invoices for the following:

a. Seed.

b. Soil Amendments.

B. Contract Closeout Submittals:

1. Prior to plant material acceptance, submit written maintenance instructions recommending adequate and reasonable procedures for maintenance of grassed areas.

1.4 QUALITY ASSURANCE

- A. Grass types indicated on Drawings comply with "Standardized Plant Names". Names of varieties not listed conform generally with names accepted by the nursery trade.
- B. Qualifications: Grassing shall be performed by experienced workers familiar with grass installation.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Cut, deliver, and install sod within a 48-hour period.
 1. Do not harvest or transport sod when moisture content may adversely affect sod survival.
 2. Protect sod from sun, wind, and dehydration prior to installation.
 3. Do not tear, stretch, or drop sod during handling and installation.

1.6 PROJECT CONDITIONS

- A. Protect existing utilities, paving, and other facilities from damage caused by landscaping operations.
- B. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.
- C. The irrigation system shall be installed prior to grassing. Locate, protect, and maintain the irrigation system during planting operations. Repair irrigation system components, damaged during planting operations, at Contractor's expense.

1.7 SCHEDULING

- A. Perform grass installation only after other work affecting ground surface has been completed.
- B. Time of Grass Installation: Plant under favorable weather conditions and recommended season for grass survival and establishment. At option and under full responsibility of Contractor, planting operations may be conducted under unseasonable conditions, but without additional compensation.

1.8 WARRANTY

- A. Contractor shall warranty turf for a period of sixty (60) days. At the end of the sixty-day period, any turf that has not been established or has died must be replaced by the Contractor at the Contractor's expense.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Sod: An "approved" nursery grown sod composed of grass species indicated on plant schedule. Sod shall be minimum 2 years old. Provide well-rooted, healthy sod, free of diseases, nematodes, and soil borne insects. Provide sod uniform in color, leaf texture, density, and free of weeds, undesirable grasses, stones, roots, thatch, and extraneous material; viable and capable of growth and development when planted.
1. Furnish sod machine stripped in widths of 12 inches to 24 inches in uniform length less than 6 feet with minimum 1 ½" – 2" of soil attached. At time of stripping, grass shall be 1 to 2 inches high cut.

2.2 ACCESSORIES

- A. Topsoil: specified on Drawings.
- B. Commercial Fertilizer: Conforming to applicable Federal and State law, uniform as to composition, dry, free-flowing, and delivered to site in original unopened containers. Application rate and minimum analysis shall be as recommended by soils test report.
- C. Soil Conditioning Materials:
1. Aluminum Sulfate: Unadulterated, in manufacturer's original, unopened container labeled with analysis and net weight. Use to acidify soil (lower pH) as recommended by soils test report.
 2. Limestone: Raw, ground agricultural limestone, containing at least 90 percent calcium carbonate; 90 percent shall pass No. 10 sieve and 50 percent shall pass No. 50 sieve. Use to decrease acidity of soil (raise pH) as recommended by soils test report.
- D. Stakes:
1. Softwood, untreated 3/4-inch dia. x 8 inch long or,
 2. Steel, tee shaped pins, 4-inch head x 8-inch leg
 3. Sod staples
 4. Water: Clean, free from toxic amounts of salt, oil, acid, alkali, organic matter or other substance harmful to plants.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine finish surfaces, grades, topsoil quality, and depth. Do not start grass installation until unsatisfactory conditions are corrected and fine grading has been completed.
- B. Subsurface Drainage Investigation: perform subsurface drainage investigation as specified in Section 32 93 00.

3.2 PREPARATION

- A. Protection of Surrounding Areas: Contractor shall clean pavements at end of working day and before onset of inclement weather to prevent staining by or tracking of materials. Keep pavement and work area in an orderly condition. Dispose of trash and debris created by landscape operations daily.
- B. Limit preparation to areas which will be immediately sodded.

- C. Loosen topsoil of lawn areas to minimum depth of 4 inches. Remove stones over 1 inch in any dimension and sticks, roots, rubbish, and extraneous matter.
- D. Soil Conditioning:
 - 1. Coordinate soil conditioning with soil testing and fine grading operations.
 - 2. Adjustment of pH: Adjust the pH range of the existing soils that are unacceptable according to requirements specified on Drawings. Adjust pH by uniformly incorporating required soil conditioning materials at the rate determined by the analysis of the soil test done by the Soils Testing Laboratory. Soil pH shall be corrected for the grasses specified on the Drawings to a pH range recommended for the species.
 - 3. Peat Moss: Adjust percent of organic material of existing soils that are unacceptable according to minimum requirements specified on Drawings. Spread peat moss uniformly on soil surface.
 - 4. Incorporate peat moss and soil conditioners into the topsoil to a depth of 4 inches by disking or rototilling. Use hand tools where power equipment is inaccessible.
 - 5. Add required fertilizer at rate specified by laboratory test and County Agent for the grass species. If season does not permit immediate fertilization, then fertilizer shall be applied in following spring at recommended rate. Do not apply fertilizer between October 1 and March 1.
 - a. For bid purposes only, the application rate shall be 12-12-12 commercial fertilizer at 20 pounds per 1000 square feet.
 - b. Incorporate fertilizer into the topsoil by disking or rototilling to depth of 4 inches for sodding and 1 inch for seeding. Use hand tools where power equipment is inaccessible.
 - 6. Recompact soil to density specified on Drawings.
- E. Location of Grass Areas: Stake grass areas as indicated on Drawings.
- F. Dampen dry soil prior to sodding, plugging, and seeding.
- G. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to sodding and seeding.
- H. Temporary Cover Grass: If season does not permit planting the specified grass variety, provide temporary cover grass until season permits establishing permanent grass.
 - 1. Seed lawn areas with Annual Ryegrass (*Lolium multiflorum*) at a rate of not less than 10 to 12 lbs. per 1000 square feet. Seed shall be sown as specified under Seeding below.
 - 2. Fertilize, mow grass, and repair eroded areas to maintain neat appearance until time for permanent grassing when cover grass shall be thoroughly disked into topsoil.

3.3 INSTALLATION

- A. Plant lawn areas within 24 hours of soil preparation.
- B. Sodding:

1. Lay boards over sodded areas to protect sod from construction traffic.
2. Do not lay sod on saturated or frozen soil.
3. Lay sod to form a solid mass with tightly-fitted joints. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints in adjacent courses. Remove excess sod to avoid smothering of adjacent grass. Provide sod pad top flush with adjacent curbs, sidewalks, drains, and seeded areas.
4. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and against previously installed row.
5. Top dress sod with topsoil and work into joints with broom or mat.
6. Water sod thoroughly with a fine spray immediately after laying.
7. Roll with light lawn roller to ensure contact with subgrade.

3.4 WATERING

- A. Thoroughly soak lawn areas immediately after installation with fine mist spray until the ground is soaked to a depth of at least 2 inches.

3.5 MAINTENANCE

- A. Maintain lawns until final acceptance of Work.
- B. Maintain grass areas to establish a full, uniform stand of grass free of weeds, undesirable grass species, disease, and turfgrass pests.
 1. Repair, rework, and resod or reseed all areas that have washed out, are eroded, or have not established. Replace undesirable or dead areas with new sod or seed.
 2. Mow lawn areas as soon as lawn top growth reaches a 3" height. Cut back to no more than 1/3rd of height. Repeat mowing as required to maintain specified height. After first mowing, grass shall be mowed every 3 days at the same height. Mowing shall be done using reel type mowers only; no rotary mowers may be used. After third mowing the Owner shall be responsible for mowing, even though grass may not have reached standard for acceptance. Contractor shall advise Owner of proper mowing procedures. Maintain grass at 1" mowing height.
 3. Post-Germination Nitrogen Application: Two and one-half weeks after seeds germinate apply sodium nitrate at 3 to 5 lbs. per 1000 square feet.
 4. Topdressing Fertilizer: After grass has become established, evenly spread topdressing fertilizer at rate recommended by soil laboratory test for the appropriate time of year. Thoroughly water into soil.
 5. Apply herbicides as required to control weed growth or undesirable grass species.
 6. Apply fungicides and insecticides as required to control diseases and turfgrass pests.
 7. Remove sod pegs.
 8. Spot weed.

9. Water as required to maintain lawn.

3.6 ACCEPTANCE

- A. Inspection to determine acceptance of grass areas will be made by the Landscape Architect, upon Contractor's request. Provide notification at least 10 working days before requested inspection date.
 1. Contractor shall be required to produce a satisfactory stand of perennial grass.
 2. Sodded areas will be acceptable provided all requirements, including maintenance, have been complied with, and a healthy, even colored viable lawn is established, free of weeds, undesirable grass species, disease, and insects. The root system shall be sufficient to survive dry periods, winter weather, and be capable of re-establishing in spring.
 3. Scattered bare spots no larger than 4 inches square shall not total more than 3 square feet in any 100 square foot area.
- B. Upon acceptance, the Owner will assume lawn maintenance.

3.7 CLEANING

- A. Remove from site all excess materials, debris, and equipment. Repair damage resulting from sodding and seeding operations.

END OF SECTION 32 92 00

INSURANCE REQUIREMENTS

CONTRACTOR INSURANCE REQUIREMENTS

Contractor shall provide, pay for and maintain in full force and effect, all insurance outlined herein with limits of liability not less than the limits of liability shown covering Contractor's activities, those of any subcontractors or anyone directly or employed by any of them, or by anyone for whose acts any of them might be liable.

Insurer Qualifications

All insurance should be provided through insurance companies authorized to do business in South Carolina with an A M Best's Rating of no less than A and shall be approved by and acceptable to Owner.

Certificates of Insurance

Within **5 (five) days** of execution of Contract but **PRIOR** to commencing Work, Contractor's insurer shall provide to Owner a Certificate of Insurance issued by an authorized representative of its insurer certifying that the insurance as required in this Exhibit is in full force and effect. Certificates should be sent via fax or mail to the following:

Risk Coordinator
City of Spartanburg
P. O. Box 1749
Spartanburg, SC 29304
Fax:# 864-596-2262
Email: kbooker@cityofspartanburg.org

The original of the Certificate is to be sent as well. The Certificate shall include a statement that the policies will not be canceled or non-renewed without 30 days advance written notice to Owner.

Primary Insurance

All insurance coverage required of the Contractor shall be primary over any insurance or self insurance carried by City of Spartanburg.

Duration of Coverage

All required insurance coverage shall be maintained without interruption during the entire term of the Contract plus an additional 3 years for Products and Completed Operations Coverage following final acceptance of the Work by Owner.

Subcontractor's Insurance

The Contractor shall require any Subcontractor to purchase and maintain insurance of same types and limits required herein.

Waiver of Subrogation

The Contractor shall require all policies of insurance as required herein to be endorsed to provide that the insurance company shall waive all of its right of recovery or subrogation against Owner. The Contractor shall require similar waivers from any Sub-contractors.

Additional Insured

The Contractor's insurance policies as required herein with the exception of Workers Compensation shall be endorsed to name Owner as an additional insured.

Insurance Coverage and Limits

Workers' Compensation: The Contractor shall provide and maintain Workers Compensation insurance in each jurisdiction in which the Work is located.

Limits:

Coverage A – State Statutory Benefits	
Coverage B - Employers Liability	\$1,000,000

Specific Coverage:

- United States Longshoremen and Harbor Workers Act
- Coverage endorsement must be provided if any work is to be performed on or around navigable water.

Automobile Liability: Contractor shall provide and maintain Business Auto

Liability insurance covering bodily injury and/or property damage liability arising out of the use of any auto (including owned, hired, and non-owned autos).

Limits:

Combined Single Limit Each Accident:	\$1,000,000
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Commercial General Liability: Contractor shall provide and maintain in full force and effect Commercial General Liability Insurance covering all operations by or on behalf of Contractor on an occurrence basis against claims for bodily injury, personal in-jury, and/or property damage (including loss of use).

Limits:

Each Occurrence	\$1,000,000
General Aggregate	\$2,000,000
Products/Completed Operations	\$2,000,000

Specific Coverage:

Occurrence Form
Blanket Contractual Liability
Underground Explosion and Collapse

Umbrella/Excess Liability: Contractor shall provide and maintain Umbrella/Excess Liability Insurance on an occurrence basis with coverage as broad as underlying policies.

Limits:

Each occurrence:	\$2,000,000
Annual Aggregate:	\$2,000,000

Specific Coverage:

Blanket Contractual Liability
Follow Form Primary

Other Insurance: Any other insurance as specified by Owner in the Contract Documents.

Changes: Exceptions to specified insurance requirements shall be submitted at time of any bid.

CITY OF SPARTANBURG

BUSINESS LICENSE APPLICATION

(864) 596-2055 (864) 596-2424 Fax
P.O. Box 1749 Spartanburg, SC 29304

Year _____ Bus Lic# _____

****All City of Spartanburg Business License expire December 31st of each year****

___ New Business ___ Renewal of License ___ Change of Ownership ___ Change of Location

Name of Business: _____

Mailing Address: _____

Business Location: _____ Start Date: _____

Telephone number: Business () _____ or () _____

Federal Tax ID No. _____ Social Security No. _____

Type of ownership: ___ Sole Proprietor ___ Partnership ___ Corporation ___ Other

Are you a Contractor? ___ Yes ___ No Are you located ___ inside or ___ outside the city limits?

State Contractors License No. _____ SC State Sale Tax No. _____

Do you have Coin Operated Machines? ___ Yes ___ No How many? _____

Do you own the Machines? ___ Yes ___ No What type of Machines? _____

Types of Business or Profession - Please describe in detail products sold or services provided.

Computation of Fees

A. New Business - (Fees are due Prior to beginning operation in the City)

- 1. Estimated total gross sales/revenue for remaining \$ _____
of the year ending December 31, _____
- 2. Calculate and enter fee based on A1. \$ _____

B. Existing Business (After 2nd year of operation)
****Bus License fee is due/payable by last day of February****

- 1. Total actual gross sales/revenue for preceding \$ _____
December 31, _____
- 2. Total Gross receipts \$ _____
- 3. Calculate fee based on B3. \$ _____
- 4. Penalties due (Delinquent after end of February) % \$ _____
- 5. Total Fees \$ _____

Owner Information

Name of Owner _____ Social Security No. _____

Telephone number: () _____ Home () _____

I UNDERSTAND THAT ISSUANCE OF A CITY BUSINESS LICENSE DOES NOT RELIEVE ME OF THE RESPONSIBILITY OF MEETING ALL CITY OF SPARTANBURG ZONING AND BUILDING CODE REQUIREMENTS. I AM SUBJECT TO ALL PROVISIONS OF THE BUSINESS LICENSE ORDINANCE OF THE CITY OF SPARTANBURG.

I CERTIFY THAT THE INFORMATION GIVEN IN THIS APPLICATION IS TRUE.

owner _____ TITLE _____ DATE _____

NOTE: AN ORIGINAL CITY OF SPARTANBURG BUSINESS LICENSE APPLICATION IS INCLUDED IN THIS BID PACKET FOR YOU TO COMPLETE

GOOD FAITH DOCCUMENTATION MUST ACCOMPANY THE BID DOCUMENT

City of Spartanburg, hereby, notifies all proposers that it will affirmatively ensure that all disadvantaged and women's business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of gender, race, color, or national origin in consideration for an award. Each proposer shall attest that they engaged in good faith efforts in an endeavor to achieve the City's M/WBE goal of 10%.

Any questions or any assistance please contact Mrs. Kensley Aiken.

Contact Information

Phone 864-591-4349

Email kaiken@cityofspartanburg.org

INTENT TO PERFORM CONTRACT WITH OWN WORKFORCE

I HERBY CERTIFY THAT IT IS OUR INTENT TO PERFORM 100% OF THE WORK REQUIRED FOR THE ABOVE PROJECT. IN MAKING THIS CERTIFICATION, THE BIDDER STATES THAT THE BIDDER DOES NOT CUSTOMARILY SUBCONTRACT ELEMENTS OF THIS TYPE OF PROJECT, AND NORMALLY PERFORMS AND HAS THE CAPACITY TO PERFORM AND WILL PERFORM ALL ELEMENTS OF THE WORK PROJECT WITH HIS/HER OWN CURRENT WORK FORCES; AND IF THE BIDDER DOES NOT PERFORM 100% OF THE WORK REQUIRED, THE BIDDER WILL PROVIDE A LIST OF SUBCONTRACTORS

THE BIDDER AGREES TO PROVIDE ANY INFORMATION OR DOCUMENTATION TO THE CITY OF SPARTANBURG IN SUPPORT OF THE ABOVE STATEMENT.

THE UNDERSIGNED HEREBY CERTIFIES THAT HE OR SHE HAS READ THIS DOCUMENTATION AND IS AUTHORIZED TO BIND THE BIDDER TO THE COMMITMENTS HEREIN SET FORTH.

The listing of an MWBE shall constitute a representation by the bidder/responder to City of Spartanburg that such MWBE has been contacted and properly apprised of the upcoming City of Spartanburg project. Bidders/Responders are advised that the information contained herein is subject to verification by the Minority & Women Business Enterprise Program Coordinator and that submission of said information is an assertion of its accuracy. These documents are a part of this solicitation and contract. You are required to fill out this information.

I certify that the above information is true to the best of my knowledge:

Signature: _____

Title: _____

Date: _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Signature

Notary Seal

THIS DOCUMENT MUST BE PROVIDED WITH THE SUBMITTAL AND SIGNED BY THE PERSON SIGNING THE SUBMITTAL

MWBE Good Faith Effort Participation Commitment Contract

This form should be filled out completely and *included in your bid document*. This form should also be accompanied by an executed Letter of Intent from each Sub-Contractor firm listed in this form. You may use additional sheets if necessary.

BID NO:	DATE:
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PROJECT NAME:	ADDRESS:	
PRIME CONTRACTOR:	CITY:	STATE:
CONTACT PERSON:	EMAIL:	
TELEPHONE: ()	FAX: ()	

MWBE SUBCONTRACTORS

COMPANY	MWBE CLASS	CITY, STATE	CONTACT	PHONE	TYPE OF WORK TO BE PERFORMED	SUBCONTRACT AMOUNT	% OF WORK
						\$	%
						\$	%
						\$	%
						\$	%
Total MWBE Participation						\$	%
Total Contract Amount						\$	
MWBE CLASSIFICATION							
MBE-B - African American MBE-S - Asian American MBE-H - Hispanic American WBE - American Woman MBE N/A - Native American							

NON-MWBE SUBCONTRACTORS

COMPANY	MWBE CLASS	CITY, STATE	CONTACT	PHONE	TYPE OF WORK TO BE PERFORMED	SUBCONTRACT AMOUNT	% OF WORK
						\$	%
						\$	%
						\$	%
						\$	%
Total Non-MWBE Participation						\$	%
Total Contract Amount						\$	