

PROJECT MANUAL

JOEL COWAN PARKWAY GATEWAY PLANTINGS FOR THE TOWN OF TYRONE

Project Number: PW-2024-24



Prepared By: Town of Tyrone

December 5, 2024

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ADVERTISEMENT FOR BIDS

Owner: Town of Tyrone

Project Name: JOEL COWAN PARKWAY GATEWAY PLANTINGS

Project Number: PW-2024-24

Project Location: Town of Tyrone – SR-74 Joel Cowan Parkway

Description of Project/Services: Project includes landscaping approximately 8,500 sqft total in the right-of-way of SR-74 at the northbound and southbound Town of Tyrone monument signs with all related accessories as shown on the plans and called for in the Contract Documents and Technical Specifications

Bid/Submittal Due Date: January 15, 2025

Service Cost Range: \$40,000 - \$50,000

PROJECT DOCUMENTS MAY BE OBTAINED FROM: <https://www.tyronega.gov/bid-items>

- The Contractor is required to submit a bid bond at the amount listed in the contract documents.
- The Contractor is required to submit a payment bond and a performance bond in the amount of 100% of the contract price.
- All public notices, addendum and other documents shall be posted at <https://www.tyronega.gov/bid-items>
- Licensure: To be considered for selection, persons or firms must be properly licensed in accordance with the requirements of the Official Code of Georgia Annotated, as amended, at the time of proposal submission.
- All communication shall be in writing with the Project Manager listed below. Preferred method of communication is email.

Project Coordinator/Manager: Scott Langford, PE Title: Public Works Director & Town Engineer

Address: Street: 950 Senoia Road

City: Tyrone

State: Georgia

ZIP: 30290

EMAIL: slangford@tyrone.org

Phone: 770-487-4038

Pre-submittal Conference: None

Submittal Due Date: January 15, 2025 Time: 10:00 AM

Location: Tyrone Town Hall

Submittal Delivery Address:

Hand Delivery: Tyrone Town Hall

Attn: Scott Langford, PE

950 Senoia Road

Tyrone, GA 30290

Mail Services: Town of Tyrone

Attn: Scott Langford, PE

950 Senoia Road

Tyrone, GA 30290

Approved By: 

(Town Manager)

(ASSISTANT TOWN MANAGER)

Date: 12/6/2024

INFORMATION FOR BIDDERS

ALL BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed when submitted. Only one copy of the BID form is required. In case of discrepancy between unit prices and extended prices, unit prices shall prevail. The Engineer will correct any such errors and/or any errors in the summation of the extended prices. The Total Base Bid Amount shall be the sum of the Lump Sum prices, the corrected extended prices, and any pre-printed required allowances.

The OWNER may waive any informalities or minor defects 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 shall not be considered. No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof. Should there be reasons why the Contract cannot be awarded within the specified period, the time may be extended by mutual written agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired. All work shall be performed within the land owned and/or rights-of-way of the Town of Tyrone.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve the Contractor from fulfilling any of the conditions of the Contract.

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 for five percent of the total amount of the BID may be used in lieu of a BID BOND.

A Performance BOND and a 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.

Attorney-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.

Qualifications:

Bidder may be required to submit at least 3 references of similar work completed in the last two years.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the Performance BOND and Payment BOND within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within ten (10) days of receipt of acceptable Performance BOND, Payment BOND and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed quadruplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within ten (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 written agreement between the OWNER AND CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (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.

The OWNER may make such investigations as deemed necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The General Contractor shall have a minimum of 5 years of experience with projects of similar type and scope of work. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of such, BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional, qualified or obviously unbalanced BID will not be accepted.

Award of the Contract will be made to the lowest responsive and responsible BIDDER on the basis of the lowest actual bid amount for the Contract, which is defined as the base bid less any deductions for "allowed" deductive alternates, plus any additions for "allowed" additive alternates listed in the Bid Schedule. The Owner reserves the right to delete or modify portions of the work in order to meet constraints caused by budget limitations

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS prior to bid. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the SUPPLEMENTAL GENERAL CONDITIONS.

The low BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when required to do so by the OWNER.

The ENGINEER on this project is:

Scott A. Langford, P.E.

Public Works Director and Town Engineer

Town of Tyrone

950 Senoia Road

Tyrone, GA 30290

slangford@tyrone.org

770-487-4038

The OWNER / PROJECT MANAGER on this project is:

Scott A. Langford, P.E.

Public Works Director and Town Engineer

Town of Tyrone

950 Senoia Road

Tyrone, GA 30290

slangford@tyrone.org

770-487-4038

BID

Proposal of _____; hereinafter called "BIDDER", organized and existing under the laws of the State of _____, doing business as _____ (Insert "a corporation", "a partnership", or "an individual" as applicable). To the Town of Tyrone, hereinafter called "OWNER".

In compliance with the Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of
JOEL COWAN PARKWAY GATEWAY PLANTINGS
FOR THE TOWN OF TYRONE, GEORGIA PW-2024-24
in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to its own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete the PROJECT within Sixty (60) consecutive calendar days hereafter. BIDDER further agrees to pay as liquidated damages the sum of \$250.00 for each consecutive day thereafter as provided in Section 15 of the General Conditions.

BIDDER acknowledges receipt of the following ADDENDUM:

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the following unit prices or lump sum including all applicable taxes and fees:

BID SCHEDULE

No.	Item	Estimate Quantity	Unit	Unit Price	Total Price
	<u>Southbound Gateway</u>				
1	Demolition, Mobilization, and Grading, complete	1	LS		\$
2	Clearing, Grubbing, and Trimming	1	LS		\$
3	Bed Preparation & Soil Amendments	1	LS		\$
4	C. Canadensis / Eastern Redbud - 2.5" Cal.	10	EA		\$
5	I. 'Nellie R. Stevens'/Nellie R. Stevens Holly - 2.5" Cal.	3	EA		\$
6	L. Chinese rubrum 'Daruma'/Daruma Loropetalum - 3 Gal.	17	EA		\$
7	M. Capillaris / Pink Muhly Grass - 3 Gal.	25	EA		\$
8	M. PP 33,507 CPBRAE / Blushing Drift Rose	24	EA		\$
9	H. 'Stella De Oro' / Stella De Oro Daylily - 3 Gal.	34	EA		\$
10	Long-Leaf Pinestraw Mulch	2000	SF		\$
11	Tif-Tuf Bermuda Sod	400	SF		\$
	<u>Northbound Gateway</u>				
12	Demolition, Mobilization, and Grading, complete	1	LS		\$
13	Clearing, Grubbing, and Trimming	1	LS		\$
14	Bed Preparation & Soil Amendments	1	LS		\$
15	C. Canadensis / Eastern Redbud - 2.5" Cal.	7	EA		\$
16	I. 'Nellie R. Stevens'/Nellie R. Stevens Holly - 2.5" Cal.	5	EA		\$
17	L. Chinese rubrum 'Daruma'/Daruma Loropetalum - 3 Gal.	36	EA		\$
18	M. Capillaris / Pink Muhly Grass - 3 Gal.	38	EA		\$
20	M. PP 33,507 CPBRAE / Blushing Drift Rose	24	EA		\$
21	H. 'Stella De Oro' / Stella De Oro Daylily - 3 Gal.	54	EA		\$
22	Long-Leaf Pinestraw Mulch	3500	SF		\$
23	Tif-Tuf Bermuda Sod	900	SF		\$
24	Special Allowance	1	LS	\$2,500.00	\$2,500.00

Total of Base Bid plus Allowance - \$ _____

BID ALTERNATE SCHEDULE

No.	Item	Estimate Quantity		Unit	Unit Price	Total Price
	NONE	0		LS	\$	\$0.00

Total of Bid Alternates - \$ 0.00

TOTAL CONTRACTED AMOUNT: \$
(Base Bid, Allowances, and Alternates)

Notes:

1. The Owner reserves the right to modify project scope, as necessary to meet project budget limitations, based on prices bid.
2. Include with the Bid, a copy of current Business License (Occupational Tax Certificate) and proof of applicable licensing issued by Georgia Secretary of State.

Respectfully Submitted:

Signature

Company's Legal Name

Printed Name

Address

Title

City, State, Zip Code

License No.

Date

SEAL - (if BID is by a corporation)

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS: that we, the undersigned as Principal, and as Surety, are hereby held and firmly bound unto Town of Tyrone, Georgia as OWNER in the penal sum of 5% for the payment of which, well and truly to be made, we hereby jointly severally bind ourselves, successors and assigns.

Signed, this day of _____, 20____. The condition of the

above obligation is such that whereas the Principal has submitted to Town of Tyrone, Georgia a certain BID, attached hereto and hereby made a part hereof to enter into a contract in

writing, for:

JOEL COWAN PARKWAY GATEWAY PLANTINGS

for the TOWN OF TYRONE, GEORGIA - PROJECT NUMBER: PW-2024-24

NOW, THEREFORE,

A. If said BID shall be rejected, or

B. If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for faithful performance of said contract, and for the payment of all persons performing labor furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extensions of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

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

Principal L . S .

Surety

By: _____	_____
(Address)	(Surety)
_____	_____
(Address)	(Address)

	(Address)

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

AGREEMENT

THIS AGREEMENT, made this day of _____, 20__ by and between the Town of Tyrone, Georgia, hereinafter called "Owner" and _____ doing business as (an individual), or (a partnership), or (a corporation) hereinafter called "Contractor".

WITNESSETH: That for and in consideration of the payments and agreements herein aftermentioned:

1. The CONTRACTOR will commence and complete the construction of:

JOEL COWAN PARKWAY GATEWAY PLANTINGS

FOR THE TOWN OF TYRONE, GEORGIA.

PW-2024-24

2. The CONTRACTOR will furnish all of the materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the PROJECT described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 10 calendar days after the date of the NOTICE TO PROCEED and will work continuously to complete the same within 60 calendar days.
4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of \$ _____ or as shown in the bid schedule.

5. The terms "Contract Documents" MEANS and includes the following:

- (A) Advertisement for BIDS
- (B) Information for BIDDERS
- (C) BID
- (D) BID BOND
- (E) Agreement
- (F) General Conditions
- (G) SUPPLEMENTAL GENERAL CONDITIONS & SPECIAL CONDITIONS
- (H) Payment BOND
- (I) Performance BOND
- (J) NOTICE OF AWARD
- (K) NOTICE TO PROCEED
- (L) CHANGE ORDER
- (M) SPECIFICATIONS prepared or issued by the Town of Tyrone, date 12/05/2024
- (N) ADDENDA:
 - No. _____, dated _____.
 - _____, dated _____.
 - _____, dated _____.

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

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.
8. Any dispute which may arise under this agreement shall be resolved under the laws of the State of Georgia and venue shall be proper in Fayette County, Georgia.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized official, this Agreement in Quadruplicate (four) copies shall be deemed an original on the date first above written.

OWNER:
TOWN OF TYRONE, GEORGIA

BY: _____

NAME: Eric Dial
(Please Print)

TITLE: Mayor

(SEAL)
ATTEST:

Name: _____

(Please Print)

Title: _____

CONTRACTOR:

BY: _____

NAME: _____
(Please Print)

Address: _____

Employer Identification

Number: _____ - _____

(SEAL)

ATTEST:

Name: _____

(Please Print)

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called PRINCIPAL, and

(Name of Surety)

(Address of Surety)

hereinafter called SURETY, are held and firmly bond unto

TOWN OF TYRONE, GEORGIA

(Name of Owner)

950 SENOIA ROAD, TYRONE, GA 30292

(Address of Owner)

hereinafter called OWNER, in total aggregate 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, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

THIS 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:

JOEL COWAN PARKWAY GATEWAY PLANTINGS

FOR THE TOWN OF TYRONE, GEORGIA

PROJECT NUMBER: PW-2024-24

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

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way 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 it is expressly agreed that the BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the contract not increasing the contract price more than 20 percent so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, or the Contract shall include any alteration, addition, extension, or the modification of any character whatsoever.

IN WITNESS WHEREOF, this instrument is executed in four counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20____.

ATTEST:

(Principal) Secretary (SEAL)

Principal

(Witness as to Principal)

By: _____

(Address)

(Address)

(Surety)

ATTEST:

(Witness to Surety)

(Attorney-in-Fact)

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract so the Town will date the bonds. If CONTRACTOR is partnership, all partners should execute BOND.

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

Surety companies must present financial statements for the prior three (3) years as proof of financial responsibility. The Owner reserves the right to review said financial statements and reject any surety not deemed financially able to assume the responsibility of this Contract.

Such bond shall not be deemed accepted until approved by Owner's Attorney.

Do not date bonds. The Town will date the bonds with the contract and other documents.

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called PRINICPAL,
and

(Name of Surety)

(Address of Surety)

hereinafter called SURETY, are held and firmly bound unto

TOWN OF TYRONE GEORGIA

(Name of Owner)

950 SENOIA ROAD, TYRONE.GA 30292

(Address of Owner)

hereinafter called OWNER, and unto all persons, firms, and corporations who or which may furnish labor, or who furnish materials to perform as described under the contract and to their successors and assigns in the total aggregate 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, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these present.

THIS 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:

JOEL COWAN PARKWAY GATEWAY PLANTINGS

PROJECT NIMBER: PW-2024-24

NOW, THEREFORE, if the PRINCIPAL shall promptly make payment to all persons, firms, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extensions or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and for all labor cost incurred in such WORK including that by a SUBCONTRACTOR, and to any mechanic or materialman lienholder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that beneficiaries or claimants hereunder shall be limited to the SUBCONTRACTORS, and persons, firms, and corporations having a direct contract with the PRINCIPAL or its SUBCONTRACTORS.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way 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 suit or action shall be commenced hereunder by any claimant: (a) Unless claimant, other than one having a direct contract with the PRINCIPAL, shall have given written notice to any two of the following: The PRINCIPAL, the OWNER, or the SURETY above named within ninety (90) days after such claimant did or performed the last of the work or labor, if furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the PRINCIPAL, OWNER, or SURETY, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer. (b) After the expiration on one (1) year following the date of which PRINCIPAL ceased work on said CONTRACT, is being understood, however, that if any limitation embodied in the BOND is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this SURETY BOND and whether referring to this BOND, the contract shall include any alteration, addition, extension or modification of any character whatsoever.

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

IN WITNESS WHEREOF, this instrument is executed in four counterparts, each one of which shall be deemed an original, this the ____ day of _____, 20 ____.

ATTEST:

Principal

(Principal) Secretary

(SEAL)

By _____ (s)

(Witness as to Principal)

(Address)

(Address)

(Surety)

ATTEST:

(Witness to Surety)

By _____
(Attorney-in-Fact)

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract so the Town will date the bonds. If CONTRACTOR is partnership, all partners should execute BOND.

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

Surety companies must present financial statements for the prior three (3) years as proof of financial responsibility. The Owner reserves the right to review said financial statements and reject any surety not deemed financially able to assume the responsibility of this Contract.

Such bond shall not be deemed accepted until approved by Owner's Attorney.

Do not date bonds. The Town will date the bonds with the contract and other documents.

GENERAL CONDITIONS

- | | |
|--------------------------------|-----------------------------|
| 1. Definitions | 15. Time for Completion and |
| 2. Additional Instructions and | Liquidated Damages |
| Detail Drawings | 16. Correction of Work |
| 3. Schedules, Reports, and | 17. Subsurface Conditions |
| Records | 18. Suspension of Work., |
| 4. Drawings and Specifications | Termination, and Delay |
| 5. Shop Drawings | 19. Payments to Contractor |
| 6. Materials, Services, and | 20. Acceptance of Final |
| Facilities | Payment as Release |
| 7. Inspection and Testing | 21. Insurance |
| 8. substitutions | 22. Contract Security |
| 9. Patents | 23. Assignments |
| 10. Surveys, Permits, | 24. Indemnification |
| Regulations | 25. Separate Contracts |
| 11. Protection of Work, | 26. Subcontracting |
| Property, Persons | 27. Engineer's Authority |
| 12. Supervision by Contractor | 28. Land and Rights-of-Way |
| 13. Changes in Work | 29. Guaranty |
| 14. Changes in Contract Price | 30. Arbitration |

1. DEFINITIONS

- 1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated and shall be applicable to both the singular and plural thereof:
- 1.2 ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications, or corrections.
- 1.3 BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.
- 1.4 BIDDER - Any person, firm, or corporation submitting a BID For the WORK.
- 1.5 BONDS -- Bid, Performance, and Payment Bonds and other instruments of surety, furnished by the CONTRACTOR and the CONTRACTOR'S surety in accordance with the CONTRACT DOCUMENTS.

- 1.6 CHANGE ORDER A written order to the CONTRACTOR authorizing an addition, deletion, or revision in WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.
- 1.7 CONTRACT DOCUMENTS - The contract, including Advertisement for BIDS, Information for BIDDERS, BID, BID BOND, Agreement, Payment BOND, Performance BOND, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, AND ADDENDA.
- 1.8 CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.
- 1.9 CONTRACT TIME - The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.
- 1.10 CONTRACTOR - The person, firm, or corporation with whom the OWNER has executed the Agreement.
- 1.11 DRAWINGS The parts of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.
- 1.12 ENGINEER - The person, firm, or corporation named as such in the CONTRACT DOCUMENTS.
- 1.13 FIELD ORDER - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.
- 1.14 NOTICE OF AWARD - The written notice of the acceptance of the BID from the OWNER to be the successful BIDDER.
- 1.15 NOTICE TO PROCEED Written communication issued by the OWNER to the CONTRACTOR authorizing him/her to proceed with the WORK and establishing the date for commencement of the WORK.
- 1.16 OWNER A public or quasi-public body or authority, corporation, association, partnership, or an individual for whom the WORK is to be performed.

- 1.17 PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.
- 1.18 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.
- 1.19 SHOP DRAWINGS All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.
- 1.20 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.
- 1.21 SUBCONTRACTOR An individual, firm or corporation having a direct contract with CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.
- 1.22 SUBSTANTIAL COMPLETION - That date certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.
- 1.23 SUPPLEMENTAL GENERAL CONDITIONS - Modifications to General Conditions.
- 1.24 SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.
- 1.25 WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.
- 1.26 WRITTEN NOTICE Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at their last given address, or delivered in person to said party or their authorized representative on the WORK.

- 2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS
 - 2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.
 - 2.2 The additional drawings and instructions thus supplied will. become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.
- 3. SCHEDULES, REPORTS AND RECORDS
 - 3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.
 - 3.2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress schedules showing the order in which the CONTRACTOR proposes to carry on the WORK, including dates at which the various parts of the WORK will be started, estimated date of completion of each part and, as applicable:
 - 3.2.1 The dates at which special detail drawings will be required; and
 - 3.2.2 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.
 - 3.3 The CONTRACTOR shall also submit a schedule of payments that the CONTRACTOR anticipates will be earned during the course of the WORK.
- 4. DRAWINGS AND SPECIFICATIONS
 - 4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental WORK necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.
 - 4.2 In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over general DRAWINGS.

- 4.3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.
5. SHOP DRAWINGS
- 5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWINGS shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWINGS which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.
- 5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.
- 5.3 Portions of the WORK requiring a SHOP DRAWING or sample submission. shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.
6. MATERIALS, SERVICES AND FACILITIES
- 6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.
- 6.2 Materials supplied by the CONTRACTOR and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK

shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies, and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

6.5 Materials, supplies, or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which any interest is retained by the seller.

7. INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3 The CONTRACTOR shall provide at the CONTRACTOR'S expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

7.5 Inspections, tests, or approvals by the ENGINEER or others shall not relieve the CONTRACTOR from the obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The ENGINEER and the ENGINEER'S representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payrolls,

records or personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection or testing thereof.

- 7.7 If any WORK is covered contrary to the written instructions of the ENGINEER it must, if requested by the ENGINEER, be uncovered for the ENGINEER'S observation and replaced at the CONTRACTOR'S expense.
- 7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, if, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

8. SUBSTITUTIONS

- 8.1 Whenever a material, article, or piece of equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue numbers, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general

design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

The ENGINEER and/or OWNER reserves the right to reject any proposed substitution based upon quality or price comparison with specified equipment. The ENGINEER and/or OWNER may also reject any proposed substitution based on previous, unsatisfactory experience with equipment or materials from proposed manufacturer. In the case of such a rejection, the CONTRACTOR shall provide the specified equipment or another approved substitution, at no additional cost to the CONTRACT. CONTRACTOR shall not assume that the terms "or equal" constitutes an automatic approval of a proposed substitution.

9. PATENTS

- 9.1 The CONTRACTOR shall pay all applicable royalties and license fees, and shall defend all suits or claims for infringement of any patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or product of a particular manufacturer or manufacturers is specified, however, if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, the CONTRACTOR shall be responsible for such loss unless the CONTRACTOR promptly gives such information to the ENGINEER.

10. SURVEYS, PERMITS, REGULATIONS

- 10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pipe locations and other working points, lines, elevations and cut sheets.
- 10.2 The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, shall be charged with the resulting expense and shall be responsible for any

mistake that may be caused by their unnecessary loss or disturbance.

- 10.3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses and easements for. permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance therewith, the CONTRACTOR shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

11. PROTECTION OF WORK, PROPERTY, AND PERSONS

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

- 11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. The CONTRACTOR will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. The CONTRACTOR will notify OWNERS of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed. by any of them or anyone of whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions

of the OWNER, of the ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

- 11.3 In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instructions or authorization from the ENGINEER Or OWNER, shall act to prevent threatened damage, injury or loss. The CONTRACTOR will give the ENGINEER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

12. SUPERVISION BY CONTRACTOR

- 12.1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. CHANGES IN THE WORK

- 13.1 The OWNER may at any time, as the need arises, order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.
- 13.2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles the CONTRACTOR to a change in CONTRACT PRICE or TIME, or both, in which event the CONTRACTOR shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days

after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in CONTRACT PRICE OR TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER for further instruction from the OWNER.

14. CHANGES IN CONTRACT PRICE

- 14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:
- a. Unit prices previously approved.
 - b. An agreed lump sum.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- 15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.
- 15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.
- 15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS. In addition to Liquidated Damages, the CONTRACTOR shall reimburse the ENGINEER for additional inspection and engineering services required due to overrun of the contract time, or the overrun of approved extension of contract time. This will be paid at 2.5 times the direct expense to the ENGINEER and will be withheld from the CONTRACTOR'S monthly pay request. The OWNER will pay the ENGINEER directly from the withheld amount.
- 15.4 The CONTRACTOR shall not be charged with liquidated

damages or any excess cost or any payment to the ENGINEER when the delay in completion of the WORK is due to the following and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

- 15.4.1 To any preference, priority or allocation order duly issued by the OWNER.
- 15.4.2 To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and
- 15.4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

16. CORRECTION OF WORK

- 16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.
- 16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17. SUBSURFACE CONDITIONS

- 17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:
 - 17.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

- 17.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.
- 17.2 The OWNER shall promptly investigate the conditions, and if it is found that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless the required WRITTEN NOTICE has been given; provided that the OWNER may, if the OWNER determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.
18. SUSPENSION OF WORK, TERMINATION, AND DELAY
- 18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.
- 18.2 If the CONTRACTOR is adjudged as bankrupt or insolvent, or makes a general assignment for the benefit of its creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of its property, or if CONTRACTOR files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or disregards the authority of the ENGINEER, or otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and its surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment

and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method the OWNER may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

- 18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.
- 18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the contract. In such case the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.
- 18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER terminate the contract and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition, and in lieu of terminating the contract, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days WRITTEN NOTICE to the OWNER and the ENGINEER stop the WORK until paid all amounts then due, in which event and upon resumption of the WORK CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or

both to compensate for the costs and delays attributable to the stoppage of the WORK.

- 18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

19. PAYMENT TO CONTRACTOR

- 19.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER'S title to the material and equipment and protect the OWNER'S interest therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing approval of payment, and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing the reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and re-submit the partial payment estimate. The OWNER will, within ten (10) days of presentation of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate less the retainage. The retainage shall be an amount equal to 10% of said estimate until 50% of the WORK has been completed. At 50% completion, no additional retainage will be withheld, such that total retainage will be gradually reduced from 10% at 50% completion to 5% at 100% completion. At 50% completion or any time thereafter when the progress of the WORK is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than

10% of the value of the WORK completed. The retainage amount withheld in the Contractor's Application for Payments shall be invested by the Owner at the current market rate for the duration of the Project. If the Project is completed within the time limits specified and at the Contract Price specified, subject to any authorized modification thereto, the interest earned on the retainage shall be paid to the Contractor. Any expenses charged by the financial institution for the retainage investment account will be deducted from the interest earned on the account. Payment of the interest to the Contractor shall be made with the final payment, after the Engineer certifies that the Work, including incomplete minor items remaining after substantial completion, has been completed. If the Contractor does not satisfy the time and/or price conditions, the Owner will retain the interest earned on retainage. When the WORK has been substantially completed except for WORK which cannot be completed because of weather conditions, lack of materials or other reasons 'which in the judgment of the OWNER are valid reasons for non-completion, the OWNER may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the WORK still to be completed.

- 19.2 The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.
- 19.3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.
- 19.4 The OWNER shall have the right to enter the premises for the purpose of doing WORK not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.
- 19.5 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be

paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

19.6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demand of SUBCONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, the CONTRACTOR'S Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.7 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or its sureties from any obligations under the CONTRACT

DOCUMENTS or the Performance and Payment BONDS.

21. INSURANCE

- 21.1 The CONTRACTOR shall purchase and maintain such insurance as will protect it from claims set forth below which may arise out of, or result from, the CONTRACTOR'S execution of the WORK, whether such execution be by the CONTRACTOR, any SUBCONTRACTOR, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:
 - 21.1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts;
 - 21.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of employees;
 - 21.1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than employees;
 - 21.1.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and
 - 21.1.5 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.
- 21.2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverages afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.
- 21.3 The CONTRACTOR shall procure and maintain, at the CONTRACTOR'S own expense, during the CONTRACT TIME, liability insurance as hereinafter specified:
 - 21.3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting the CONTRACTOR from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations

under the CONTRACT DOCUMENTS, whether such operations be by the CONTRACTOR or by any SUBCONTRACTOR employed by the CONTRACTOR or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR employed by the CONTRACTOR. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than \$1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$500,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$500,000 aggregate for any such damage sustained by two or more persons in any one accident.

21. 3. 2 The CONTRACTOR shall acquire and maintain, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.
- 21.4 The CONTRACTOR shall procure and maintain, at the CONTRACTOR'S own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the WORK is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of the CONTRACTOR'S employees at the site of the PROJECT and in case any WORK is sublet, the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous WORK under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of its employees not otherwise protected.
21. 5 The CONTRACTOR shall secure, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not

less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, and the OWNER.

22. CONTRACT SECURITY

- 22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance BOND and a Payment BOND in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal Bonds, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payment shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

23. ASSIGNMENTS

- 23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of any right, title or interest therein, or any obligations thereunder, without written consent of the other party.

24. INDEMNIFICATION

- 24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees

from an against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2 In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under Workmen's Compensation acts, disability benefit acts or other employee benefits acts.

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, its agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate the WORK with theirs.

If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT or the OWNER may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTOR'S who are parties to such

Contracts (or the OWNER, if the OWNER is performing the additional WORK) reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate the WORK with the s.

- 25.3 If the performance of additional WORK by other CONTRACTOR'S or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves it in additional expense or entitles it to an extension of the CONTRACT TIME, the CONTRACTOR may make a claim thereof as provided in Sections 14 and 15.

26. SUBCONTRACTING

- 26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.
- 26.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.
- 26.3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of its SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as the CONTRACTOR is for the acts and omissions of persons directly employed by it.
- 26.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.
- 26.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

27. ENGINEER'S AUTHORITY

- 27.1 The ENGINEER shall act as the OWNER'S representative

during the construction period, shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed, and shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

- 27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship, and execution of the WORK. Inspections may be at the factory or fabrication plant of the source of material supply.
- 27.3 The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.
- 27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.
- 28. LAND AND RIGHTS-OF-WAY
 - 28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.
 - 28.2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of way acquired.
 - 28.3 The CONTRACTOR shall provide at its own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.
- 29. GUARANTEE
 - 29.1 The CONTRACTOR shall guarantee all materials supplied by the CONTRACTOR and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the elate of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects due to faulty materials supplied by the CONTRACTOR or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including

the repairs of the damage of other parts of the system resulting from such defects.

The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance BOND shall remain in full force and effect through the guarantee period.

30. ARBITRATION BY MUTUAL AGREEMENT

30.1 All claims, disputes, and other matters in question arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by making an acceptance of final payment as provided by Section 20, may be decided by arbitration if the parties mutually agree. Any agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon in any court having jurisdiction thereof.

30.2 Notice of the request for arbitration shall be filed in writing with the other party to the CONTRACT DOCUMENTS and a copy shall be filed with the ENGINEER. Request for arbitration shall in no event be made on any claim, dispute, or other matter in question which would be barred by the applicable statute of limitations.

30.3 The CONTRACTOR will carry on the WORK and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

SUPPLEMENTAL GENERAL CONDITIONS

1. CONTRACT CHANGES.

All changes which affect the cost of the construction of the project must be authorized by means of a Contract Change Order. The Contract Change Order will include extra work, work for which quantities have been altered from those shown in the bidding schedule, as well as decreases or increases in the quantities of installed units which are different than those shown in the Bidding Schedule because of final measurements. All changes should be recorded on a contract change order as they occur so they may be included in the partial payment estimate. All contract change orders must be approved by the ENGINEER and OWNER.

2. EQUAL OPPORTUNITY CLAUSE

- A. The contractor will not discriminate against any employee or applicant for employment because of race, color, creed, sex, age, marital status, or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, creed, sex, age, marital status or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this equal opportunity clause.
- B. The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, creed, sex, age, marital status, or national origin.

3. PROTECTION OF LIVES AND PROPERTY

- A. In order to protect the lives and health of its employees under the Contract, the CONTRACTOR shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment or work under the Contract.

- 4. The CONTRACTOR alone shall be responsible for the safety, security, efficiency, and adequacy of the construction site

and for its plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation.

4. No official of the OWNER who is authorized in such capacity and on behalf of the OWNER to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspecting, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof. No officer, employee, architect, attorney, engineer, or inspector of or for the OWNER who is authorized in such capacity and on behalf of the OWNER who is in any legislative, executive, supervisory, or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract, or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.
5. The ENGINEER may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any approved partial payment estimate to such extent as may be necessary to protect the OWNER from loss on account of:
 - A. Defective work not remedied.
 - B. Claims filed or reasonable evidence indicating probable filing of claims.
 - C. Failure of CONTRACTOR to make payments properly to subcontractors or for material or labor.
 - D. A reasonable doubt that the WORK can be completed for the balance then unpaid.
 - E. Damage to another contractor.
 - F. Performance of work in violation of the terms of the CONTRACT DOCUMENTS.
6. Where work on unit price items are substantially complete but lack clean-up and/or corrections ordered by the ENGINEER, amounts shall be deducted from unit prices in partial payment estimates to amply cover such clean-up and corrections.
7. When the above grounds in (5) and (6) are cured, payment shall be made for amounts withheld because of them.

CERTIFICATE OF OWNER'S ATTORNEY
Joel Cowan Parkway Gateway Planting
PW-2024-24

I, the undersigned, Dennis Davenport the duly authorized and acting legal representative of the Town of Tyrone, Georgia, do hereby Certify as follows:

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

Signature

Date

SPECIAL CONDITIONS

1. DESCRIPTION OF WORK

The work included in this Contract shall include all labor and materials necessary for landscaping approximately 8,500 sqft total in the right-of-way of SR-74 at the northbound and southbound Town of Tyrone monument signs with all related accessories as shown on the plans and called for in the Contract Documents and Technical Specifications, complete.

It is the intent of these Plans and Specifications that the Contractor shall perform all incidental items of Work and furnish all items of incidental material, and equipment required to construct the completed Project even though such items are not covered in detail in the Contract Documents.

Due to the nature of the project and the potential for unforeseen conditions, it is anticipated that some additional work may be required. An allowance for additional work is to be included in the Base Bid and in any the Additive Alternate Bid, to be used to cover Change Orders resulting from such additional work. These allowances apply only to additional work not shown on the Drawings or required by the Specifications. Should such additional work become evident during the conduct of the work, a cost to correct such work shall be established and if the Owner agrees to incorporate the Work in this Contract, a Change Order will be issued. The amount of the Change Order will be deducted from the appropriate allowance. At the end of the job, if any allowance remains unused, a Change Order will be issued decreasing the Contract amount by the amount of the unused allowance.

Upon Substantial Completion of the project, and before the project has been finalized, the A&E will certify that the project was completed in accordance with the approved stormwater management plan and the contractor shall provide "as-built" plans for all stormwater management facilities and/or practices in the project area.

2. COORDINATION OF WORK

The individual Contractor is responsible for the proper coordination of the Work. The OWNER and the ENGINEER will assist in coordinating the Work schedules, but will not be responsible for proper cooperation and coordination of any Work. Any additional work, expense or delay due to lack of coordination will be the sole responsibility of the Contractor.

3. SPECIAL NOTICE

Bidders are required to inform themselves fully of all laws, ordinances, and conditions relating to the work.

Bidders are required to visit the site and inform themselves as to all conditions, and failure to do so will in no way relieve the successful bidder or bidders from the necessity of furnishing any materials or performing any work that may be required to complete the work in accordance with the true intent and meaning of the Plans and Specifications without additional cost to the OWNER.

4. SUBSURFACE CONDITIONS

It is not represented that the Plans show all underground structures, and whenever necessary the Contractor shall make all explorations and excavations for such purposes, at his own expense. Any subsurface information furnished is for the general information of the bidders and is not guaranteed. Unforeseen conditions shall not constitute a claim for increased compensation under the terms of the Contract, nor constitute a basis for cancellation thereof.

5. SCHEDULING

Scheduling and sequencing of the work shall be done such that continuous, concerted effort is made towards completion of the work. Extended pauses or delays in the work schedule, other than those beyond the control of the Contractor, will not be permitted.

6. COORDINATION WITH UTILITIES

Existing utilities and services shall be protected and maintained by all necessary measures in working condition.

7. LINES AND GRADES

The ENGINEER will furnish sufficient bench marks and dimensions to enable the Contractor to layout the necessary construction lines from the information shown on the Plans. The Contractor shall be responsible for the preservation of all points and elevations furnished and shall bear the expense of setting same if, through negligence or carelessness on his part, they are destroyed. The Contractor shall satisfy himself as to the accuracy of all elevations and points furnished and shall not take advantage of any errors that may have been made.

All lines and grades shall be subject to checking by the ENGINEER, but this checking shall in no way relieve the Contractor from his responsibility for their correctness. The Contractor shall provide such stakes, material, etc., and such field men, and assistance as the ENGINEER may require to establish bench marks and checking and measuring the work.

8. WARNING AND SIGNALS

The Contractor shall be responsible for all signals to the public while the work is in progress, and shall keep amber lights during the entire night at such points as may be necessary; and he shall provide watchmen, signboards, digital message boards, fences, etc., and shall take any precautions that may be necessary to protect life and property.

9. CONSTRUCTION EQUIPMENT

The Contractor shall provide all necessary equipment in good repair for the expedient construction of the work. Any equipment not adapted for the work, or in such repair as to be dangerous to the work or workers shall not be used.

10. TRAFFIC CONTROL

The Contractor shall develop traffic control plans and programs as necessary to provide, erect, and maintain, all necessary barricades, suitable and sufficient lights, danger signals, signs, pilot vehicles, flagmen and other control devices, and take all necessary precautions for the protection of the work and the safety of the public. A minimum of one lane shall remain open to traffic at all times. Contractor shall comply with the Manual for Uniform Traffic Control Devices, latest addition.

11. SANITARY PROVISIONS

The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as necessary to comply with the Regulations of the State Board of Health and all local ordinances. No nuisances will be permitted.

12. SPECIAL INSPECTION

Representatives of the OWNER and the ENGINEER shall have access to the work whenever it is in preparation or progress, and the Contractor will provide proper facilities for such access and inspection.

13. PLANS AND SPECIFICATIONS

Upon request, the ENGINEER shall furnish to the Contractor, free of charge, three (3) copies of the Plans and Specifications. If additional copies are desired by the Contractor, they will be furnished at his expense. The Contractor shall keep one copy of the Plans and Specifications on the site of the work in good order, available to the ENGINEER and to their representatives. All Plans, Specifications, and copies thereof furnished by the ENGINEER are their property. They are not to be used on other work, and with the exception of the signed Contract Set are to be returned to them on request, at the completion of the work.

14. ENVIRONMENTAL PROTECTION

During construction the Contractor shall provide silt barriers, and/or other preventive measures as may be required by governing laws or ordinances to prevent siltation and soil erosion. All such work shall be done without additional cost to the OWNER.

The Contractor will restore all disturbed areas to their present or better condition upon completion of construction.

15. NOTICE TO PROPERTY OWNERS

Contractor shall provide written notice of work schedule to property owners adjacent to immediate work area. Notice shall include approximate work dates, directions regarding on-street parking, sprinkler system operation, trimming of tree limbs, misc. encroachments, etc. Contractor shall submit sample notice to the Engineer for approval.

16. EQUIPMENT STAGING AREAS

Equipment staging/storage areas shall be approved by the Engineer.

17. SPECIALTY SIGNAGE - None

18. ADJUSTMENTS TO EXISTING UTILITIES WITHIN PAVEMENT

Only items listed on the Bid Schedule will be measured for payment.

19. DEBRIS REMOVAL AND CLEAN UP

Contractor shall remove all debris from work area, as necessary to properly complete the work. Debris shall be

disposed of, at a legal offsite location selected by the Contractor, at no additional cost.

Debris and waste materials generated by the work shall be disposed of by the Contractor at a suitable off-site location.

21. TIME OF WORK

No work shall be done between 7:00 p.m. and 8:00 a.m., nor on Sundays or legal holidays, without the written permission of the Owner. However, maintenance or emergency work during these hours may be done without prior permission.

Overtime Notice: If the Contractor for his convenience and at his own expense should desire to carry on his own work at night or outside regular hours, he shall submit written notice to the Engineer and he shall allow ample time for satisfactory arrangements to be made for inspecting the work in progress. The Engineer will be the sole judge of whether on-site inspection is required. The Contractor will pay the Engineer an amount equal to 3.0 times the direct salary cost of the resident inspector for such work, said amount to be deducted from the payments to the Contractor by the Owner.

22. GDOT Specifications – Notice to All Bidders
Contractor to Utilize Georgia Department of Transportation (GDOT) Specifications for Construction, latest edition, (where applicable) for all technical specifications not referenced in these contract documents. Contractor shall meet requirements outlined in GDOT Sampling, Testing, and Inspection Guide for all testing. Contractor shall use suppliers on the appropriate GDOT Qualified Products List, where applicable.

23. REQUIREMENTS FOR THE GEORGIA SECURITY AND IMMIGRATION
COMPLIANCE ACT OF 2006

See the following pages.

(To be executed by successful Bidder, after Notice of Award)

STATE OF GEORGIA

FAYETTE COUNTY

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT OF 2006

WITNESSETH:

1. Pursuant to the Georgia Security and Immigration Compliance Act of 2006, the Contractor understands and agrees that compliance with the requirements of O.C.G.A. § 13-10-91 and Georgia Department of Labor Rule 300-10-1-.02. are conditions of this Agreement. The Contractor further agrees that such compliance shall be attested by the Georgia Department of Labor through execution of the contractor affidavit. The Contractor's fully executed affidavit is attached hereto as Exhibit "A" and is incorporated into this Agreement by reference herein.

2. The Contractor understands and agrees that, in the event the Contractor employs or contracts with any subcontractor or subcontractors in connection with this Agreement, the Contractor shall:

- A. Secure from each such subcontractor and sub-subcontractor an attestation of the subcontractor's compliance with O.C.G.A. § 13-10-91 and Georgia Department of Labor Rule 300-10-1.02 by causing each such subcontractor to execute the subcontractor affidavit required by Georgia Department of Labor Rule 300-10-1-.08, which is attached hereto as Exhibit "B", and sub-subcontractor, hereto as Exhibit "C", or a substantially similar

subcontractor affidavit. The Contractor further understands and agrees that the Contractor shall require the executed subcontractor affidavit to become part of the agreement between the Contractor and each such subcontractor. The Contractor agrees to maintain records of each subcontractor attestation required hereunder for inspection by the Department at any time.

CONTRACTOR AFFIDAVIT UNDER O.C.G.A. 13-10-91(b) (1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the Town of Tyrone, Georgia has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Contractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, 20__ in (city) _____ (state) _____.

Signature

Printed Name and Title of Authorized Officer of Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE ____ Day of _____, 20__.

NOTARY PUBLIC

My Commission Expires: _____

EXHIBIT 'A'

Part 2 of 2

O.C.G.A. 50-36-1 (e)(2) Affidavit

By executing this affidavit under oath, as an applicant for a(n) Contract, as referenced in O.C.G.A. 50-36-1, from Town of Tyrone, Georgia, the undersigned applicant verifies one of the following with respect to my application for a public benefit:

- 1)___ I am a United States citizen.
- 2)___ I am a legal permanent resident of the United States.
- 3)___ I am a qualified alien or non-immigrant under the Federal Immigration and Nationality Act with an alien number issued by the Department of Homeland Security or other federal immigration agency.

My alien number issued by the Department of Homeland Security or other federal immigration agency is: _____

The undersigned applicant also hereby verifies that he or she is 18 years of age or older and has provided at least one secure and verifiable document, as required by O.C.G.A. 50-36-1 (e)(1), with this affidavit.

The secure and verifiable document provided with this affidavit can best be classified as:

(Driver's License, Passport, etc. - Attach copy)

In the making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of O.C.G.A 16-10-2-, and face criminal penalties as allowed by such criminal statute.

Executed in _____(city) _____(state).

Signature of Applicant

Printed Name of Applicant

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE
____ DAY OF _____, 20____

NOTARY PUBLIC
My Commission Expires:

EXHIBIT 'B'

SUBCONTRACTOR AFFIDAVIT UNDER O.C.G.A. 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with _____ on behalf of Town of Tyrone, Georgia has registered with is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor with the information required by O.C.G.A. 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice of receipt of an affidavit from any sub-subcontractor that has contracted with a sub-subcontractor to forward, within five business days of receipt, a copy of such notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Subcontractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, 20__ in (city) _____ (state) _____.

Signature

Printed Name and Title of Authorized Officer of Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE__ DAY OF _____, 21__

NOTARY PUBLIC

My Commission Expires: _____

EXHIBIT 'C'

SUB-SUBCONTRACTOR AFFIDAVIT UNDER O.C.G.A. 13-10-91(b)(4)

By executing this affidavit, the undersigned sub-subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with *(name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract)* and *(name of contractor)* on behalf of Town of Tyrone, Georgia has registered with is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor with the information required by O.C.G.A. 13-10-91(b). The undersigned sub-subcontractor shall submit, at the time of such contract, this affidavit to *(name of subcontractor of sub-subcontractor with whom such sub- subcontractor has privity of contract)* Additionally, the undersigned sub-subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to *(name of subcontractor of sub-sub-subcontractor with whom such sub-subcontractor has privity of contract)*. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Sub-subcontractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on __, ____, 201__ in (city) _____ (state) _____.

Signature

Printed Name and Title of Authorized Officer of Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE ___ DAY OF ----- 210

NOTARY PUBLIC

My Commission Expires: _____

TECHNICAL SPECIFICATIONS

Section 201—Clearing and Grubbing Right-of-Way

201.1 General Description

This work includes clearing, grubbing, removing and disposing of vegetation, buildings and debris within the entire Right-of-Way and easement areas adjacent to the Right-of-Way or as designated by the Engineer. Except, do not remove objects designated to remain or removed according to other sections of these specifications. This work also includes preserving (from injury and defacement) vegetation and objects designated to remain in place.

201.1.01 Definitions

Clearing: Removing and disposing trees, brush, stumps, logs, grass, weeds, roots, decayed vegetable matter, poles, stubs, rubbish, refuse dumps, sawdust piles, and loose boulders of 1 yd³ (1 m³) or less existing outside of the construction limits, debris resting on or protruding through the ground surface, or appearing on the Right-of-Way before final acceptance of the work.

Clearing also includes removing and disposing of obstructions, such as fences, bridges, buildings, and other incidental structures within the Right-of-Way unless the work or a portion of the work is:

- Removed as excavation
- Shown in the Proposal as a separate Pay Item
- Performed by others

Grubbing: Removal from the Right-of-Way and proper disposal of all objectionable matter defined above under clearing, which is embedded in the underlying soil.

Grubbing also includes removing and properly disposing of parking lots, abandoned pavements, sidewalks, driveways, catch basins, drop inlets, pipes, manholes, curbing, retaining walls, utilities, foundations, paved floors, underground tanks (for removal of underground tanks see Section 217), and other structures within the Right-of-Way unless the work or portions of the work are:

- Obstructions removed as one of the excavation items
- Shown in the Proposal as separate Pay Items
- Removed by others
- To be incorporated in the project.

Objectionable Roots: Any of the following types of roots:

- Matted trees and brush roots (regardless of the size of the roots)
- Individual roots more than 0.75 in. (20 mm) diameter
- Individual roots more than 3 ft. (1 m) long regardless of size
- Large quantities of smaller roots present in the top 1 ft. (300 mm) of the finished subgrade or road surface when detrimental to the work as determined by the Engineer.

Stumps: The butt of a tree with a diameter of 4 in. (100 mm) or more.

Section 201 — Clearing and Grubbing Right of Way

201.1.02 Related References

A. Standard Specifications

Section 107—Legal Regulations and Responsibility to the Public

Section 109—Measurement and Payment

Section 160—Reclamation of Material Pits and Waste Areas

Section 161—Control of Erosion and Sedimentation

Section 208—Embankments

Section 215 – Removal of Solid Waste

Section 217—Removal of Underground Storage Tanks

B. Referenced Documents

General Provisions 101 through 150.

201.1.03 Submittals

General Provisions 101 through 150.

201.2 Materials

General Provisions 101 through 150.

201.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

201.3 Construction Requirements

201.3.01 Personnel

General Provisions 101 through 150.

201.3.02 Equipment

General Provisions 101 through 150.

201.3.03 Preparation

General Provisions 101 through 150.

201.3.04 Fabrication

General Provisions 101 through 150.

Section 201 — Clearing and Grubbing Right of Way

201.3.05 Construction

A. General

Establish Right-of-Way and construction lines. The Engineer will designate which trees, shrubs, and plants will remain in the ground. Preserve things designated to remain.

Apply the requirements of Subsection 107.22, Subsection 107.23, and Section 161 to clearing and grubbing operations.

Strip grass immediately ahead of grading.

To prevent the spread of *Introduced Invasive Pest Species*, do the following:

1. Adhere to the restrictions of Section 155.3.05.A for moving soil, mulch, sod or plants, stump wood or timber with soil attached.
2. Adhere to the requirements of Section 155.3.05.B for cleaning of equipment, except that the USDA inspection will not be required for vegetative matter.
3. Dispose of vegetative parts of plants that may reproduce (roots and aboveground parts that bear fruit) by burning on site (where permitted) or bury with a minimum cover of 3 ft. (1 meter) at an approved site. Obtain the Engineer's approval for any other methods of disposal.

B. Clearing

Clear objects within the Right-of-Way and easement areas as follows:

1. Choose a method of clearing that prevents damage to property, trees, or retained shrubbery in or outside of the Right-of-Way.
2. Remove stumps that are part of the clearing operations as specified under Subsection 201.3.05.C, *Grubbing*.
3. Cut the stumps not grubbed as specified in this section.
4. Dispose of cleared materials as specified in Subsection 201.3.05.E.

C. Grubbing

Grubbing consists of removing and disposing objectionable matter embedded in the underlying soil (defined in Subsection 201.3.05.B, *Clearing*) from the Right-of-Way and easement areas.

1. Grubbing Operations

When grubbing, remove abandoned obstructions referenced in Subsection 201.1.01 *Definitions* to the following depths:

- a. Under Pavements: Remove to a depth of at least 3 ft. (1 m) below the finished subgrade.
- b. Underneath Other Structures: Remove to at least 3 ft. (1 m) below the foundations of any proposed structure, including installations such as guard rail posts and utility poles.
- c. Elsewhere in the Right-of-Way and easement areas: Remove as follows:
 - 1) Remove to at least 3 ft. (1 m) below the finished surface of slopes and shoulders and 1 ft. (300 mm) below natural ground outside construction lines.
 - 2) Thoroughly crack or break abandoned structures that may impound water. These structures include concrete floors, basements, and catch basins within 10 ft. (3 m) of finished grade.
 - 3) Break floors so that no section greater than 10 ft.² (1 m²) remains intact.

Section 201 — Clearing and Grubbing Right of Way

2. Except as modified under Subsection 201.3.05.D, use the following procedure to perform grubbing:
 - a. Remove stumps and other matter that cannot be removed by a root rake. Remove stumps to a minimum depth of 2 ft. (600 mm) below the ground line.
 - b. Rake areas containing objectionable roots to a depth of at least 6 in. (150 mm) below the surface.
 - c. Remove remaining objectionable matter by hand or other suitable means. When necessary, remove small roots (see Subsection 201.1.01 *Objectionable Roots*) detrimental to the work.
 - d. Backfill stump holes and compact backfill to the approximate density of the surrounding soil.
 - e. Harrow the area with a heavy-duty disc harrow that penetrates and turns the ground to at least 6 in. (150 mm) deep.
 - f. Remove objectionable matter exposed by the harrowing.
 - g. Level the harrowed areas with blading equipment. Leave the grubbed areas smooth enough for a power mower.

D. Modifications of Clearing and Grubbing

Modify clearing and grubbing as follows:

1. In Excavation Areas

Modify clearing and grubbing in excavation areas as follows:

- a. Harrowing and leveling may be omitted.
- b. Do not fill stump holes except when the bottom of any stump hole extends below the elevation of the finished subgrade. In this case, fill the portion of each hole below subgrade elevation with suitable material compacted to at least the density of the surrounding soil.

2. In Embankment Areas

Modify clearing and grubbing in embankment areas as follows:

- a. Under 4.5 ft. (1.4 m)

Clear and grub areas without modification where the original ground and finished grade differ in elevation 4.5 ft. (1.4 m) or less.
- b. Over 4.5 ft. (1.4 m)

Clear, but do not grub areas covered by embankments exceeding the 4.5 ft. (1.4 m) elevation difference specified in step (a) above. Except the removal of unsound or decayed stumps.

Remove and backfill stumps according to Subsection 201.3.05.C.2. When leaving sound stumps in place, cut them off to no more than 6 in. (150 mm) above the original ground line.
- c. Embankment Areas Over Old Roads

Clear and grub without modification ditches and slopes of old roads to a depth that removes all objectionable matter to provide a firm foundation.

Section 201 — Clearing and Grubbing Right of Way

3. Areas Outside of Roadway

Except as specified in this section, clear and grub the entire Right-of-Way and easement areas outside construction limits and leave it smooth and free from loose boulders and debris that would interfere with power mowers. Exceptions to the above requirements are as follows:

a. Selective Clearing

When the Engineer directs to preserve certain trees and plants, protect them from injury. Trees to be removed shall be felled to prevent injury to standing trees, plants, and improvements to be preserved.

Cut off tree branches overhanging the roadway within 20 ft. (6 m) of the finished grade close to the boles. Also, remove other branches to create a balanced appearance. Grub areas adjacent to selected trees and shrubs without damage to living roots of the selected trees or shrubs.

b. Special Treatment Areas

Clear special treatment areas according to the plan notes.

c. Steep Slopes

Clear or selectively clear slopes that are too steep for power mowers (slopes steeper than 3 horizontal to 1 vertical) and clear or selectively clear slopes that are subject to excessive erosion. Do not grub in these areas.

d. Grassed Areas

Do not grub (if the Engineer approves) reasonably large areas outside construction limits covered with grasses and smooth enough for power mowers. Remove stumps, trees, and other objectionable matter.

4. Bridge Sites

Modify clearing and grubbing at bridge sites as follows:

a. Stream Bridges

Clear the Right-of-Way for stream bridges for the full length of the proposed structure. Cut stumps and brush flush with the ground line.

The Engineer will require a second cutting if high water prevents cutting stumps flush with the ground. If the Engineer requires more than two cuttings, see Subsection 201.5 for payment.

Remove drift and stumps where necessary to permit installation of rip rap, piling, piers, abutments, wing walls, and bents. Properly backfill the holes.

Preserve stump and brush root systems at river and stream banks when they have been cut flush with the ground line.

b. Other Bridges

Clear and grub bridges (other than stream bridges) as specified within this specification for roadway areas and areas outside of the roadway.

Section 201 — Clearing and Grubbing Right of Way

E. Removal and Disposal of Materials

1. Merchantable Timber and Buildings

The Department may dispose of merchantable timber and buildings or may allow a property owner to remove them from the land granted for Right-of-Way before the Contractor begins operation. Therefore, the Department does not guarantee that merchantable timber or buildings will be on the Right-of-Way when the work begins.

Material salvaged from removing timber or buildings becomes the property of the Contractor.

Demolish, remove, and dispose of all building structures within the right of way and easement areas including concrete slabs, footings, foundations, etc. except building structures designated to remain in place. Grade to drain all disturbed ground to a reasonably smooth and pleasing appearance, free from loose boulders and other debris that would interfere with the use of power mowers. Grass all disturbed areas.

Prior to demolition or removal:

- a. Inspect all building structures for the presence of asbestos. The inspection shall be done by an EPA Asbestos Hazard Emergency Response Act (AHERA) accredited inspector whose certification is current.
- b. Provide a copy of all inspection reports including the inspector's credentials to the Engineer.
- c. Provide written notice of intent to demolish to the Georgia Environmental Protection Division (EPD) of the Georgia Department of Natural Resources in accordance with EPD regulations with a copy to the engineer. This notice is required even if there is no asbestos present.

If there is asbestos present, its removal shall be done by a contractor licensed with the EPD in accordance with the Rules of Georgia Department of Natural Resource Environmental Protection Division chapter 391-3-14-04. All asbestos removal and disposal shall be done in accordance with EPD regulations. All asbestos removal shall be considered as Extra Work and payment will be made in accordance with Subsection 109.05.

2. Combustible Material

Abide by Federal, State, and local codes when the Right-of-Way (or any portion of the Right-of-Way) lies within an area where burning is restricted. All combustible material except sawdust piles may be burned on the Right-of-Way except where prohibited by Federal, State, or local air pollution control regulations.

- a. Prevent fire from spreading to adjacent areas and damaging living trees and shrubs designated to remain on the Right-of-Way and easement areas.
- b. Prevent damage to public and private installations either within or adjacent to the Right-of-Way and prevent damage to traveling public.
- c. Obtain suitable areas for burning the combustible material when necessary (at the Contractor's expense). Burning area are subject to the approval of the Engineer.
- d. Dispose of unburned combustible material according to Subsection 201.3.05.E.3. If the disposal area is located on private property, present written authority to the Engineer (signed by the property owner) granting the Contractor and the Department permission to use the area for the purpose intended. Reclaim the disposal area according to Section 160 except that the reclamation is at the Contractor's expense.
- e. Completely remove sawdust within the construction limits. Haul the sawdust to approved disposal areas, or deposit it on the Right-of-Way in a layer less than 3 in (75 mm) deep. Immediately mix the sawdust with the underlying soil by dicing and harrowing. Leave the harrowed surface smooth.

Section 201 — Clearing and Grubbing Right of Way

3. Solid Waste Material

a. Nonregulated Material

- (1) Common fill is defined as soil, rock, brick, concrete without reinforcement, concrete with reinforcement where the reinforcement has been removed flush with the surface of the concrete and cured asphalt, provided that such material does not contain hazardous waste constituents above background levels and the material results from Department funded construction contracts. Such fill is not subject to the Georgia Comprehensive Solid Waste Management Act of 1990 and the Solid Waste Management Rules when used as fill material on Department funded construction contracts or Department property or when used as fill material on property not owned by the Department when all requirements of this specification are fully met. Common fill meeting this definition may be placed as follows:
 - (a) At a permitted municipal, construction and demolition materials or inert landfill fully meeting all requirements of the Solid Waste Rules and Act and any other applicable laws or ordinances.
 - (b) At an off-site engineered fill location in accordance with the following requirements:
 - Place the material in uniform layers 3 ft. thick or less and distributed to avoid the formation of large voids or pockets.
 - Fill voids with finer material.
 - Cover the last layer of fill with at least 2 ft. of soil.
 - Construct the fill according to Section 208, except compact it to at least 90 percent of the maximum laboratory dry density.
 - A Georgia registered professional engineer shall document, certify and submit the following information on behalf of the Contractor to the Department; compaction rates, waste description including average particle size, and the depth of clean earthen fill lying above the engineered fill.
 - (c) On site as compacted fill if prior written approval has been granted by the Engineer and in accordance with the following requirements:
 - As compacted fill incorporated into embankment only. No area shall be excavated for the sole purpose of disposing of common fill.
 - Place the material in uniform layers 3 ft. thick or less and distributed to avoid the formation of large voids or pockets.
 - Fill voids with finer material.
 - Cover the last layer of fill with at least 2 ft. of soil.
 - Construct the fill according to Section 208, except compact it to at least 90 percent of the maximum laboratory dry density.
 - Records of the exact location by station and offsets, amount disposed per location in cubic yards, waste description including average particle size, compaction rates and depth of clean earthen fill lying above the composite materials shall be kept by the Engineer.
 - (d) Materials that may be recycled or reused such as asphaltic concrete, Portland cement concrete, plastic, metal and materials that qualify under EPD regulations for sale or use may be reclaimed by the Contractor.

Section 201 — Clearing and Grubbing Right of Way

b. Regulated Material

- (1) Inert waste is defined as organic debris such as stumps, limbs and leaves, and any of the aforementioned common fill items that do not meet the compaction requirements when placed in an excess materials pit. An inert waste landfill permit shall be obtained in accordance with GDNR/EPD Rules to properly record the disposal of inert waste when compaction requirements are not met at an excess materials pit. If disposed of at a landfill, inert waste may only be disposed at a permitted municipal, construction and demolition materials or inert landfill fully meeting all requirements of the Solid Waste Rules and Act and any other applicable laws or ordinances.
- (2) Construction and demolition waste is defined as construction forms, barrels, scrap metal, and other such by-products of construction not specifically listed above as either common fill or inert waste. Construction and or demolition waste must be disposed of at a permitted municipal, construction and demolition materials, or inert landfill fully meeting all requirements of the Solid Waste Rules and Act and any other applicable laws or ordinances.
- (3) Dispose of oils, solvents, fuels, untreated lead paint residue, and other solid hazardous waste through a properly licensed hazardous waste disposal facility.
- (4) Remove municipal solid waste discovered during construction or shown on the plans according to Section 215.

c. Solid Waste Handling and Disposal Documentation Requirements:

- (1) Waste disposed at a permitted municipal or construction and demolition landfill – all tipping receipts generated by the receiving landfill shall be provided to the Engineer.
- (2) Waste disposed at inert landfill – a copy of the landfill's Permit by Rule notification, and for landfills exceeding one acre, a copy of the landfill's NPDES General Storm water Permit Notice of Intent (NOI) and any local jurisdiction Land Disturbing Activity Permit, if applicable, shall be provided to the Engineer.
- (3) Any necessary documentation regarding a disposal site's permit status must be obtained by the Contractor and verified by the Department before any common fill, inert waste, or other solid waste is allowed to leave the site.
- (4) The documentation listed herein shall be maintained on-site in the project files and at any other location the Department deems necessary until a valid NPDES Notice of Termination is filed.

d. Recyclable materials must be separated from all waste materials and shall be properly stored in containers.

e. Excluding the above allowances, all types of waste shall be handled in full compliance with the following:

- The Georgia Solid Waste Management Rules, as amended (391-3-4)
- Georgia Comprehensive Solid Waste Management Act of 1990, as amended (O.C.G.A. 12-8-20)
- The Georgia Erosion & Sedimentation Act as amended (O.C.G.A. 12-7-1) and any applicable Local and State requirements as well as the General Permits of the Georgia Water Quality Control Act
- Any other applicable Federal, State, or Local rules or laws

Section 201 — Clearing and Grubbing Right of Way

F. Removal of Drift Material from Drainage Structures

Drift material is defined as organic debris, primarily large tree limbs, that are carried by a stream and accumulate at the upstream side of bridges and culverts, impeding navigation and threatening the integrity of the drainage structure. If removal of drift material is required on the project, the following conditions are intended as a minimum to protect aquatic resources during drift removal activities executed by GDOT personnel or contractors.

1. All Project personnel shall be advised of the potential presence of federally and state protected species. These species are protected under the Endangered Species Act of 1973, the Georgia Endangered Wildlife Act of 1973 and the Georgia Wildflower Preservation Act of 1973. There are civil and criminal penalties for harming, harassing, or killing these species.
2. Drift removal shall be accomplished by attaching lift cables or ropes to the drift and hoisting the materials out of the stream from the top of the bridge deck or road surface. Any modifications to this method or any other methods for removal shall be submitted to, and will require prior written approval from, the State Environmental Administrator within the GDOT Office of Environmental Services (Ecology_submittals@dot.ga.gov). Accumulated drift material shall not be dragged across the streambed.
3. Mechanized equipment shall not be allowed to rest upon or contact the streambed. Boats shall be allowed into the stream for the purpose of accessing accumulated drift, provided that water depth is adequate to ensure the watercraft would not contact the streambed.
4. If vegetation clearing is required to accomplish drift removal (e.g. to provide access for boats), mechanized clearing shall not be used within 200 feet of stream banks. Vegetation clearing by hand is permissible.
5. Drift material shall be disposed of outside the project right of way and placed in either a permitted solid waste facility or a permitted inert waste landfill. Refer to Subsection 201.3.05.E.3.b of the Standard Specification and Supplements thereto for additional information.
6. In the event any incident occurs that may cause, or has caused, harm to an aquatic species, the State Environmental Administrator shall immediately be notified by providing a description of the incident and photos of the harmed aquatic species to Ecology_submittals@dot.ga.gov. All activities on or near the structure shall cease, except traffic control and erosion control activities, pending consultation by the Department with the U. S. Fish and Wildlife Service, National Marine Fisheries Service, Georgia Department of Natural Resources, and, if applicable, the lead federal agency.

201.3.06 Quality Acceptance

General Provisions 101 through 150.

201.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

201.4 Measurement

The Department does not measure clearing and grubbing separately for payment. The area is considered the full Right-of-Way width for the length of the Project including slope and construction easement areas shown on the plans.

201.4.01 Limits

General Provisions 101 through 150.

Section 201 — Clearing and Grubbing Right of Way

201.5 Payment

Payment for this Item, completed and accepted, will be made at the lump sum price bid. The payment will be full compensation for all work specified in this Section including final cleanup as required.

If the Engineer requires more than two cuttings to clear the Right-of-Way for stream bridges (according to Subsection 201.3.05.D.4.a), the additional cuttings will be paid for as a Force Account according to Subsection 109.05.

No separate payment will be made for the disposal of solid waste materials.

Payment will be made under:

Item No. 201	Clearing and grubbing	Per lump sum
Item No. 201	Removal of Drift Material	Per lump sum

201.5.01 Adjustments

General Provisions 101 through 150.

Section 700—Grassing

700.1 General Description

This work includes preparing the ground, furnishing, planting, seeding, fertilizing, sodding, and mulching disturbed areas within the Right-of-Way limits and easement areas adjacent to the right-of-way as shown on the plans except as designated by the Engineer to remain natural.

700.1.01 Definitions

General Provisions 101 through 150.

700.1.02 Related References

A. Standard Specifications

Section 160—Reclamation of Material Pits and Waste Areas

Section 163—Miscellaneous Erosion Control Items

Section 718—Wood Fiber

Section 822—Emulsified Asphalt

Section 882—Lime

Section 890—Seed and Sod

Section 891—Fertilizers

Section 893—Miscellaneous Planting Materials

Section 895—Polyacrylamide

B. Referenced Documents

QPL 33

QPL 84

700.1.03 Submittals

Submit manufacturer's product expiration date along with written instructions to ensure proper application, safety, storage, and handling of Polyacrylamide products used in the work.

700.2 Materials

Use materials that meet the requirements of the following specifications:

Material	Section
Wood Fiber Mulch	718.2
Agricultural Lime	882.2.01
Seed	890.2.01
Sod	890.2.02
Fertilizer	891.2.01
Plant Topsoil	893.2.01
Mulch	893.2.02
Inoculants	893.2.04

Section 700 — Grassing

Material	Section
Tackifiers	QPL 33
Anionic Polyacrylamide	QPL 84 & Section 895

A. Seeds

Whenever seeds are specified by their common names, use the strains indicated by their botanical names.

B. Water

Obtain the water for grassing from an approved source. Use water free of harmful chemicals, acids, alkalies, and other substances that may harm plant growth or emit odors. Do not use salt or brackish water.

C. Agricultural Lime

Agricultural lime rates will be based on a laboratory soil test report. The Contractor is responsible for ensuring the tests are performed by an approved laboratory. Provide a copy of test results to the Engineer. Refer to Section 882 Lime and GSP 18 of the Sampling and Testing Inspection manual for additional information on rates, use, handling and sampling procedures.

D. Fertilizer Mixed Grade

Fertilizer analysis and rates will be based on a laboratory soil test report. The Contractor is responsible for ensuring the tests are performed by an approved laboratory. Provide a copy of test results to the Engineer. Refer to Section 891 Fertilizer and GSP 18 of the Sampling and Testing Inspection manual for additional information on rates, use, handling and sampling procedures.

E. Mulch

Use straw or hay mulch according to Subsection 700.3.05.G.

Use wood fiber mulch in hydroseeding according to Subsection 700.3.05.F.1.

700.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

700.3 Construction Requirements

700.3.01 Personnel

General Provisions 101 through 150.

700.3.02 Equipment

Use grassing equipment able to produce the required results.

Never allow the grading (height of cut) to exceed the grassing equipment's operating range.

A. Mulch Material Equipment

Use mulching equipment that uniformly cuts the specified materials into the soil to the required control depth.

B. Hydroseeding Equipment

For hydroseeding equipment, see Subsection 700.3.05.F.

700.3.03 Preparation

General Provisions 101 through 150.

700.3.04 Fabrication

General Provisions 101 through 150.

Section 700 — Grassing

700.3.05 Construction

Follow the planting zones, planting dates, types of seed, seed mixtures, and application rates described throughout this Section. The Engineer has the authority to alter the planting dates as set forth by a period of 2 weeks. This 2-week period may be applied to either the beginning of the specified planting and/or to the end of the end of the specified planting season.

In general:

- Obtain the Engineer's approval before changing the ground cover type.
- Do not use annual rye grass seeds with permanent grassing.
- Follow the planting zones indicated on the Georgia State Planting Zone Map, below.
- Sod may be installed throughout the year, weather permitting.
- For permanent grassing, apply the combined amounts of all seeds for each time period within each planting zone and roadway location listed in the Seeding Table, below. Do not exceed the amounts of specified seed.



NON-NATIVE GRASS SEEDING TABLE 1

(Temporary and Permanent Seed Types for Shoulders, Medians and Slopes 3:1 or Flatter)

Common Name	Botanical Name	Class/Type	Rate/Acre	Planting Zone	Planting Dates
Common Bermuda Grass (Hulled)	<i>Cynodon dactylon</i>	Required Permanent Grass	10 (11)	1	April 16 – August 31
Common Bermuda Grass (Unhulled)			10 (11)		
Common Bermuda Grass (Hulled)	<i>Cynodon dactylon</i>	Required Permanent Grass	10 (11)	2,3,4	April 1 – October 15
Common Bermuda Grass (Unhulled)			10 (11)		
Bahala Grass	<i>Paspalum motatum</i>		10 (11)		
Rye Grass, Millet, Cereal Grass (Oats)	<i>Lolium penne</i> ssp. <i>Multiflorum</i> , <i>Echinochloa cursgalli</i> , <i>Avena sativa</i>	Temporary Grass	50 (56)	1	September 1- April 15
Rye Grass, Millet, Cereal Grass (Oats)	<i>Lolium penne</i> ssp. <i>Multiflorum</i> , <i>Echinochloa cursgalli</i> , <i>Avena sativa</i>	Temporary Grass	50 (56)	2,3,4	October 16- March 31

NON-NATIVE SEEDING TABLE 2

(Temporary and Permanent Seed Types for back slopes, fill slopes and areas which will not be subject to frequent mowing, slopes steeper than 3:1)

Common Name	Botanical Name	Class/Type	Rate/Acre	Planting Zone	Planting Dates
Interstate Lespedeza	<i>Lespedeza sericea</i>	Permanent Grass	50(56)	1,2	March 1 – August 31
Weeping Lovegrass	<i>Eragrostis curvula</i>	Temporary Grass	10(11)		
Interstate Lespedeza	<i>Lespedeza sericea</i>	Permanent Grass	75(84)	1,2	September 1- February 28
Tall Fescue	<i>Festuca arundinacea</i>	Temporary Grass	50(56)		
Interstate Lespedeza	<i>Lespedeza sericea</i>	Permanent Grass	50(56)	3,4	April 1 – October 31
Weeping Love Grass	<i>Eragrostis curvula</i>	Temporary Grass	10(11)		
Interstate Lespedeza	<i>Lespedeza sericea</i>	Permanent Grass	50(56)	3,4	November 1 – March 31
Weeping Love Grass	<i>Eragrostis curvula</i>	Temporary Grass	10(11)		

NATIVE GRASS SEEDING TABLE 3

For Non-mowable Slopes or Areas Designated as Permanent Native Grass Plots.

(Plant native seed mixes on back slopes, fill slopes and areas which will not be subject to frequent mowing (slopes steeper than 3:1).

Common Name	Botanical Name	Class/Type	Rate/Acre	Planting Zone	Planting Dates
Canada Wild Rye	<i>Elymus canadensis</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Virginia Wild Rye	<i>Elymus virginicus</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Bottle-brush Grass	<i>Hystrix patula</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Little Bluestem	<i>Schizachyrium scoparium</i> (<i>Andropogon scoparius</i>)	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Indiangrass	<i>Sorghastrum nutans</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Eastern Gama Grass	<i>Tripsacum dactyloides</i>	Warm Season	Minimum 2 (2)	1,2,3,4,1,2,3,4	March 31 - August 31
Rice Cut Grass	<i>Leersia oryzoides</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Deertongue	<i>Panicum clandestinum</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Switchgrass	<i>Panicum virgatum</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Woolgrass	<i>Scirpus cyperinus</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
River Oats	<i>Chasmanthium latifolium</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Purple Top	<i>Tridens flavus</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31

See plan sheets/plant lists for detailed native restoration and riparian mitigation seed mix combinations to be applied at a minimum rate total of 10 (11) lbs. per acre (kg/hectare) for each combined mix. If the mix is not provided in the plan sheets, use a minimum of 3 species based on planting dates shown above.

HERBACEOUS PLANT SEEDING TABLE 4

(Approved for Riparian Mitigation or for Seed Mixes on Slopes Steeper than 3:1-Requiring Permanent Planting)

Common name	Botanical name	Class/type	Rate/Acre	Planting Zone	Planting Dates
Joe Pye Weed	<i>Eupatorium fistulosum</i>	Herbaceous Perennial	Minimum 2 (2)	1,2,3,4	September 1 – May 1
Ironweed	<i>Vernonia novaboracensis</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,
White snakeroot	<i>Ageratina altissima</i> (<i>Eupatorium rugosum</i>)	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Swamp milkweed	<i>Asclepias incarnata</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,
Frost aster	<i>Aster pilosus</i> (<i>Symphotrichum pilosum</i>)	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Partridge pea	<i>Chamaecrista fasciculata</i> (<i>Cassia fasciculata</i>)	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,
Lance-leaf coreopsis	<i>Coreopsis lanceolata</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Tall coreopsis	<i>Coreopsis tripteris</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Boneset	<i>Eupatorium perfoliatum</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Sneezeweed	<i>Helenium autumnale</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Swamp sunflower	<i>Helianthus angustifolius</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,
Fringed loosestrife	<i>Lysimachia ciliata</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1

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Wild bergamot	<i>Monarda fistulosa</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Mountain mint	<i>Pycnanthemum tenuifolium</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Black-eyed susan	<i>Rudbeckia hirta</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Goldenrod	<i>Solidago nemoralis</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Butterfly Weed	<i>Aesclepias tuberosa</i>	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,

Species	Rates per 1000 sq. ft.	Rates per Acre	Planting Date By Zone		
			1 & 2	2	3 & 4
Rye (Grain)	3.9 lbs	168 lbs	8/1 - 11/30	8/15 - 12/1	9/1 - 2/28
Ryegrass	0.9 lbs	40 lbs	8/1 - 11/30	9/1 - 12/15	9/15 - 1/1
Rye & Annual Lespedeza	0.6 lbs 0.6 lbs	28 lbs 24 lbs	3/1 - 4/1	2/1 - 3/1	2/1 - 3/1
Weeping Lovegrass	0.1 lbs	4 lbs	3/15 - 6/15	3/15 - 7/15	3/15 - 7/15
Sudangrass	1.0 lbs	60 lbs	4/1 - 8/31	4/1 - 8/31	3/15 - 8/1
Browntop Millet	1.1 lbs	50 lbs	4/1 - 6/30	4/1 - 7/15	4/1 - 7/15
Wheat	3.9 lbs	168 lbs	9/1 - 12/31	9/1 - 12/31	9/15 - 1/31

For native restoration and riparian mitigation seed mix combinations, use Table 4 for approved native herbaceous seed types in combination with Table 3 of native grass seeds. Native restoration and riparian seed mixes should incorporate a mix of 60% native grass types (see Table 3) and 40% native herbaceous types (see Table 4) applied at a minimum rate total of 10 (11) lbs. per acre (kg/hectare) for each combined mix.

TABLE 5: TEMPORARY GRASS - SPECIES, SEEDING RATES AND PLANTING DATES

When stage construction or other conditions prevent completing a roadway section continuously, apply temporary grassing to control erosion. Temporary grassing is used to stabilize disturbed areas for more than sixty (60) calendar days. Temporary grass may be applied any time of the year, utilizing the appropriate seed species and application rate as shown in the chart above. Apply mulch to areas planted in temporary grass at the rate of ¼ inch to 1.5 inches. Do not place slope mats on areas planted in temporary grass.

A. Ground Preparation

Prepare the ground by plowing under any temporary grass areas and preparing the soil as follows:

1. Slopes 3:1 or Flatter

On slopes 3:1 or flatter, plow shoulders and embankment slopes to between 4 in. and 6 in. (100 mm and 150 mm) deep.

Plow front and back slopes in cuts to no less than 6 in. (150 mm) deep. After plowing, thoroughly disk the area until pulverized to the plowed depth.

2. Slopes Steeper Than 3:1

Serrate slopes steeper than 3:1 according to plan details when required.

On embankment slopes and cut slopes not requiring serration (sufficient as determined by the Engineer), prepare the ground to develop an adequate seed bed using any of the following methods as directed by the Engineer:

- Plow to a depth whatever depth is practicable.
- Use a spiked chain.
- Walk with a cleated track dozer.
- Scarify.

Disking cut slopes and fill slopes is not required.

3. All Slopes

a. Obstructions

Remove boulders, stumps, large roots, large clods, and other objects that interfere with grassing or may slide into the ditch.

b. Topsoil

Spread topsoil stockpiled during grading evenly over cut and fill slopes after preparing the ground.

Push topsoil from the top over serrated slopes. Do not operate equipment on the face of completed serrated cuts.

4. Native Restoration Areas, Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas.

For Permanent Grassing in native restoration areas, multitrophic native planting areas, riparian areas, stream restoration areas, and wetland and stream mitigation areas, provide the minimum ground preparation necessary to provide seed to soil contact. Riparian areas may also be seeded using the no-till method. The no-till method is defined by planting permanent grass seeds using a drill-type seeder over existing vegetation without plowing or tilling soil. Ensure that existing vegetation is less than 3 inches in height (this may be achieved by mowing or using a mechanical string trimmer).

B. Grassing Adjacent to Existing Lawns

When grassing areas adjacent to residential or commercial lawns, the Engineer shall change the plant material to match the type of grass growing on the adjacent lawn. The Contract Unit Price will not be modified for this substitution.

C. Temporary Grassing

Apply temporary grassing according to Subsection 163.3.05.F. Determine lime requirements by a laboratory soil test. Refer to seeding Table 5 for species, amounts of seed and planting dates.

In March or April of the year following planting and as soon as the weather is suitable, replace all areas of temporary grass with permanent grass by plowing or overseeding using the no-till method. If the no-till method is used, ensure that temporary grass is less than 3 in. in height (this may be achieved by mowing). Additional mulch will be required only if the temporary grass does not provide adequate mulch to meet the requirements of Subsection 700.3.05.G, *Mulching*.

Temporary grass, when required, will be paid for according to Section 163.

Projects that consist of asphalt resurfacing with shoulder reconstruction and/or shoulder widening: Type II Wood Fiber Blanket is used to stabilize disturbed areas, no till seeding will be used when permanent grassing is applied and the areas will not be re-disturbed.

D. Applying Agricultural Lime and Fertilizer Mixed Grade

Apply and mix lime and fertilizer as follows:

1. Agricultural Lime

Uniformly spread agricultural lime on the ground at the approximate rate determined by the laboratory soil test.

- a.** Agricultural Lime may be used as filler material in mixed grade fertilizer in lieu of inert material. The use of agricultural lime as filler material is to be shown on the fertilizer bag or invoice from the supplier. Do not deduct any amount of fertilizer when lime is used as filler.

2. Fertilizer Mixed Grade

Uniformly spread the fertilizer selected according to Subsection 700.2.D over the ground or by use of hydroseeding.

For bid purposes base estimated quantities on an initial application of 400 lb./acre of 19-19-19.

3. Mixing

Before proceeding, uniformly work the lime and fertilizer into the top 4 in. (100 mm) of soil using harrows, rotary tillers, or other equipment acceptable to the Engineer.

On cut slopes steeper than 3:1, other than serrated slopes, reduce the mixing depth to the maximum practical depth as determined by the Engineer.

Omit mixing on serrated slopes.

4. Native Restoration Areas, Multitropic Native Planting Areas, Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas

Omit the application of lime and fertilizer within riparian areas.

E. Seeding

Prepare seed and sow as follows:

1. Inoculation of Seed

Inoculate each kind of leguminous seed separately with the appropriate commercial culture according to the manufacturer's instructions for the culture.

When hydroseeding, double the inoculation rate.

Protect inoculated seed from the sun and plant it the same day it is inoculated.

2. Sowing

Weather permitting, sow seed within 24 hours after preparing the seed bed and applying the fertilizer and lime.

Sow seed uniformly at the rates specified in the seeding tables. Use approved mechanical seed drills, rotary hand seeders, hydroseeding equipment, or other equipment to uniformly apply the seed. Do not distribute by hand.

To distribute the seeds evenly sow seed types separately, except for similarly sized and weighted seeds. They may be mixed and sown together.

Do not sow during windy weather, when the prepared surface is crusted, or when the ground is frozen, wet, or otherwise non-tillable.

3. Overseeding

Temporary grass areas that were prepared in accordance with Subsection 700.3.05.A, may be overseeded using the no-till method. The no-till method is defined by planting permanent grass seeds using a drill-type seeder over existing temporary grass without plowing or tilling soil and in accordance with Subsection 700.3.05.C.

4. Riparian Seed Mix shall be used when specified in the plans. A mix of at least three (3) species from Seeding Table 3 (Native Grasses) and at least two (2) species from Seeding Table 4 (Approved Riparian Mitigation - Herbaceous Plants). The seed, shall be applied as Permanent Grassing within those areas designated on the plans. The kinds of seed, shall be used according to the appropriate Planting Dates given in the tables.

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F. Hydroseeding

Hydroseeding may be used on any grassing area. Under this method, spread the seed, fertilizer, and wood fiber mulch in the form of a slurry. Seeds of all sizes may be mixed together. Apply hydroseeding as follows:

1. Use wood fiber mulch as a metering agent and seed bed regardless of which mulching method is chosen. Apply wood fiber mulch at approximately 500 lbs./acre (560 kg/ha).
2. Prepare the ground for hydroseeding as for conventional seeding in Subsection 700.3.05.A.
3. Use specially designed equipment to mix and apply the slurry uniformly over the entire seeding area.
4. Agitate the slurry mixture during application.
5. Discharge slurry within one hour after being combined in the hydroseeder. Do not hydroseed when winds prevent an even application.
6. Closely follow the equipment manufacturer's directions unless the Engineer modifies the application methods.
7. Mulch the entire hydroseeded area according to Subsection 700.3.05.F.1, above, and Subsection 700.3.05.G, below. Native Restoration Areas, Multitropic Native Planting Areas, Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas may be hydroseeded. When hydroseeding in these areas only use water, seed and wood fiber mulch.

G. Mulching

Except as noted in Subsection 700.3.05.B and Subsection 700.3.05.C, apply mulch immediately after seeding areas as follows:

Areas with permanent grass seed and covered with slope mats or blankets will not require mulch.

Evenly apply straw or hay mulch between 3/4 in. and 1-1/2 in. (20 mm and 40 mm) deep, according to the texture and moisture content of the mulch material.

Mulch shall allow sunlight to penetrate and air to circulate as well as shade the ground, reduce erosion, and conserve soil moisture. If the type of mulch is not specified on the plans or in the Proposal, use any of the following as specified.

1. Mulch with Tackifier

Apply mulch with tackifier regardless of whether using ground or hydroseeding equipment for seeding.

- a. Mulch uniformly applied manually or with special blower equipment designed for the purpose. When using a blower, thoroughly loosen baled material before feeding it into the machine so that it is broken up.
- b. After distributing the mulch initially, redistribute it to bare or inadequately covered areas in clumps dense enough to prevent new grass from emerging (if required).
Do not apply mulch on windy days.
- c. Apply enough tackifier to the mulch to hold it in place. Immediately replace mulch that blows away. If distributing the mulch by hand, immediately apply the tackifier uniformly over the mulched areas.
 - Tackifier: Use a tackifier listed in the Laboratory Qualified Products Manual and apply at the manufacturer's recommended rates.

2. Walked-in-Mulch

Apply walked-in-mulch on slopes ranging in steepness from 5:1 to 2:1 and treat as follows:

- a. Immediately walk it into the soil with a cleated track dozer. Make dozer passes vertically up and down the slope.
 - b. Where walked-in-mulch is used, do not roll or cover the seeds as specified in Subsection 700.3.05.E.3.
3. Apply only wheat straw mulch on Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas after they have been seeded. The wheat straw mulch is to be applied with a maximum thickness of 1 in.

H. Sod

Furnish and install sod in all areas shown on the plans or designated by the Engineer.

1. Kinds of Sod

Use only Common Bermudagrass (*Cynodon dactylon*) or one of the following Bermudagrass varieties:

Tifway 419

Tifway II

Tift 94

Tifton 10

Midlawn

Midiron

GN-1

Vamont

No dwarf Bermuda types shall be used. Sod shall be nursery-grown and be accompanied with a Georgia Department of Agriculture Live Plant License Certificate or Stamp. Sod shall consist of live, dense, well-rooted material free of weeds and insects as described by the Georgia Live Plant Act.

2. Type and Size Of Sod:

Furnish either big roll or block sod. Ensure that big roll sod is a minimum of 21 in. wide by 52 ft. long. Minimum dimensions for block sod are 12 in. wide by 22 in. long. Ensure all sod consists of a uniform soil thickness of not less than 1 in.

3. Ground Preparation

Excavate the ground deep enough and prepare it according to Subsection 700.3.05.A to allow placing of sod. Spread soil, meeting the requirements of Subsection 893.2.01, on prepared area to a depth of 4 in.

4. Application of Lime and Fertilizer

Apply lime and fertilizer according to Subsection 700.3.05.D within 24 hours prior to installing sod.

5. Weather Limitation

Do not place sod on frozen ground or where snow may hinder establishment.

6. Install Sod

Install Sod as follows:

- Place sod by hand or by mechanical means so that joints are tightly abutted with no overlaps or gaps. Use soil to fill cracks between sod pieces, but do not smother the grass.
- Stake sod placed in ditches or slopes steeper than 2:1 or any other areas where sod slipping can occur.
- Use wood stakes that are at least 8 in (200 mm) in length and not more than 1 in. (25 mm) wide.
- Drive the stakes flush with the top of the sod. Use a minimum of 8 stakes per square yard (meter) to hold sod in place.
- Once sod is placed and staked as necessary, tamp or roll it using adequate equipment to provide good contact with soil.
- Use caution to prevent tearing or displacement of sod during this process. Leave the finished surface of sodded areas smooth and uniform.

7. Watering Sod

After the sod has been placed and rolled or tamped, water it to promote satisfactory growth. Additional watering will be needed in the absence of rainfall and during the hot dry summer months. Water may be applied by Hydro Seeder, Water Truck or by other means approved by the Engineer.

8. Dormant Sod

Dormant Bermuda grass sod can be installed. However, assume responsibility for all sod through establishment and until final acceptance.

9. Establishment

I. Application of Nitrogen

Apply nitrogen at approximately 50 lbs./acre (56 kg/ha) when specified by the Engineer after plants have grown to 2 in. (50 mm) in height.

One application is mandatory and must be applied before Final Acceptance.

Apply nitrogen with mechanical hand spreaders or other approved spreaders capable of uniformly covering the grassed areas. Do not apply nitrogen on windy days or when foliage is damp.

Do not apply nitrogen between October 15 and March 15 except in Zone 4.

1. Native Restoration Areas, Multitropic Native Planting Areas, Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas

Do not apply nitrogen to these areas.

J. Application of Polyacrylamide (PAM)

1. Prepare soil according to project plans and specifications prior to applying PAM.
2. Apply PAM according to manufacturer's recommendations and the requirements listed herein.
3. Apply Polyacrylamide (PAM) to all areas that receive permanent grassing.
4. Apply PAM (powder) before grassing or PAM (emulsion) to the hydroseeding operation.
5. Use only anionic PAM.
6. Ensure that the application method provides uniform coverage to the target and avoids drift to non-target areas including waters of the state.
7. Achieve > 80% reduction in soil loss as measured by a rainfall simulator test performed by a certified laboratory (1-hour storm duration, 3 in. (75 mm) rainfall per hour).
8. Ensure uniform coverage to the target area and minimize drift to non-target areas. Apply anionic PAM to all cut and fill slopes, permanently grassed or temporarily grassed, either prior to grassing or in conjunction with hydroseeding operations. Mulch will not be eliminated.
9. Use application rates in accordance with manufacturer's instructions.
10. Do not exceed 200 lbs./acre/year (224 kg/ha/year).
11. Do not include polyacrylamide when planting in Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas

700.3.06 Quality Acceptance

The Engineer may require replanting of an area that shows unsatisfactory growth for any reason at any time.

Except as otherwise specified or permitted by the Engineer, prepare replanting areas according to the specifications as if they were the initial planting areas. Use a soil test or the Engineer's guidance to determine the fertilizer type and application rate, then furnish and apply the fertilizer.

700.3.07 Contractor Warranty and Maintenance

A. Plant Establishment

Before Final Acceptance, provide plant establishment of the specified vegetation as follows:

1. Plant Establishment
Preserve, protect, water, reseed or replant, and perform other work as necessary to keep the grassed areas in satisfactory condition.
2. Watering
Water the areas during this period as necessary to promote maximum growth.
3. Mowing
Mow seeded areas of medians, shoulders, and front slopes at least every 6 months. Avoid damaging desirable vegetation.

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In addition, mow as necessary to prevent tall grass from obstructing signs, delineation, traffic movements, sight distance, or otherwise becoming a hazard to motorists.

Do not mow lespedezas or tall fescue until after the plants have gone to seed.

4. Do not mow riparian areas, stream restoration areas, or wetland and stream mitigation areas after planting.

B. Additional Fertilizer Mixed Grade

Apply fertilizer based on the initial soil test report at half the recommended rate each spring after initial plant establishment. For bid purposes apply 200 lbs./acre of 19-19-19. Continue annual applications until Final Acceptance. This additional fertilizer will be measured and paid for at the Contract Unit Price for fertilizer mixed grade.

Do not apply additional fertilizer to Native Restoration Areas, Multitropic Native Planting Areas, Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas.

C. Growth and Coverage

Provide satisfactory growth and coverage, ensuring that vegetation growth is satisfactory with no bare spots larger than 1 ft.² (0.1 m²). Bare spots shall comprise no more than 1 percent of any given area. An exception is given for seed not expected to have germinated and shown growth at that time.

D. Permissible Modifications

When all Items of the work are ready for Final Acceptance except for newly planted repaired areas or other areas with insufficient grass, the Contractor may fill the eroded areas or treat bare areas with sod obtained, placed, and handled according to Subsection 700.3.05.H.

Carefully maintain the line and grade established for shoulders, front slopes, medians, and other critical areas.

Sod as described above will not be paid for separately but will be an acceptable substitute for the satisfactory growth and coverage required under this specification. These areas treated with sod are measured for payment under the Item for which the sod is substituted.

700.4 Measurement

A. Permanent Grassing

Permanent Grassing will be measured for payment by the acre (hectare).

B. Mulches

Straw or hay mulch applied to permanent grassing areas will be measured by the ton (megagram). Wood fiber mulch furnished by the Contractor for permanent grassing is not measured for separate payment.

C. Quantity of Sod

Sod is measured for payment by the number of square yards (meters) , surface measure, completed and accepted.

D. Water

Water furnished and applied to promote a satisfactory growth is not measured for payment.

E. Quantity of Lime and Fertilizer Mixed Grade

Lime and fertilizer are measured by the ton (megagram). Lime used as a filler in fertilizer is measured by the ton (megagram).

F. Quantity of Nitrogen Used for Permanent Grassing

Nitrogen is measured in pounds (kilograms) based on the weight of fertilizer used and its nitrogen content.

G. Replanting and Plant Establishments

No measurement for payment is made for any materials or work required under Subsection 700.3.06 and Subsection 700.3.07.

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H. Temporary Grass

Temporary grass is measured for payment by the acre (hectare) according to Section 163.

I. Seeded Native Restoration Areas, Multitropic Native Planting Areas, Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas

Seeded Native Restoration Areas, Multitropic Native Planting Areas, Riparian areas, Stream Restoration area, and Wetland and Stream Mitigation areas will be measured by the acre (hectare) and included under the pay item *Native Restoration and Riparian Seeding*.

700.4.01 Limits

General Provisions 101 through 150.

700.5 Payment

As grassing and planting progress, the Contractor will receive full measurement and payment on regular monthly estimates provided the work complies with the specifications.

A. Permanent Grassing

Permanent grassing will be paid for at the Contract Price per acre (hectare), complete and in place. Payment is full compensation for preparing the ground, seeding, wood fiber mulch, polyacrylamide, and providing plant establishment, soil tests and other incidentals.

B. Straw or Hay Mulch

Straw or hay mulch required for Permanent Grassing will be paid for according to Section 163.

C. Fertilizer Mixed Grade

Fertilizer mixed grade will be paid for at the Contract Price per ton (megagram). Payment is full compensation for furnishing and applying the material.

D. Lime

Lime will be paid for at the Contract Price per ton (megagram). Lime used as filler in fertilizer will be paid for per ton (megagram). Payment is full compensation for furnishing and applying the material.

E. Nitrogen

Nitrogen will be paid for at the Contract Price per pound (kilogram) of nitrogen content. Payment is full compensation for furnishing and applying the material.

F. Sod

1. Sod will be paid by the square yard (meter) in accordance with the following schedule of payments. Payment is full compensation for ground preparation, including addition of topsoil, furnishing and installing live sod, and for Plant Establishment.
2. 70 percent of the Contract Price per square yard will be paid at the satisfactory completion of the installation.
3. 20 percent of the Contract Price will be paid upon satisfactory review of sod which is healthy, weed free and viable at the inspection made at the end of the first spring after installation.
4. 10 percent of the contract price will be paid upon satisfactory review of sod that is healthy, weed free and viable at the Final Acceptance.

G. Temporary Grass

Temporary Grass will be paid for under Section 163.

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H. Seeded Native Restoration Areas, Multitropic Native Planting Areas, Riparian Areas, Stream Restoration Areas, and Wetland and Stream Mitigation Areas

Seeded Native Restoration Areas, Multitropic Native Planting Areas, Riparian areas, Stream Restoration area, and Wetland and Stream Mitigation areas will be paid for at the Contract Price per acre (hectare), complete and in place. Payment is full compensation for preparing the ground, seeding, and providing plant establishment and other incidentals, and included under the pay item "Native Restoration and Riparian Seeding".

Payment will be made under:

Item No. 700	Permanent grassing	Per acre (hectare)
Item No. 700	Agricultural lime	Per ton (megagram)
Item No. 700	Fertilizer mixed grade	Per ton (megagram)
Item No. 700	Fertilizer nitrogen content	Per pound (kilogram)
Item No. 700	Sod	Per square yard (meter)
Item No. 700	Native Restoration and Riparian Seeding	Per acre (hectare)

700.5.01 Adjustments

General Provisions 101 through 150.

Section 701—Wildflower Seeding

701.1 General Description

This work includes preparing the ground, furnishing and planting wildflower and companion grass seeds, applying fertilizer, and applying lime, if necessary, to areas designated on the plans.

701.1.01 Definitions

General Provisions 101 through 150.

701.1.02 Related References

A. Standard Specifications

Section 882—Lime

Section 890—Seed and Sod

Section 891—Fertilizers

B. Referenced Documents

General Provisions 101 through 150.

701.1.03 Submittals

General Provisions 101 through 150.

701.2 Materials

A. General

Use materials that meet the requirements of the following specifications:

Material	Specification
Agricultural Lime	882.2.01
Companion Grass Seed	890.2.01
Fertilizers	891.2.01

B. Wildflower Seed

Use seed from the latest season's crop.

Use seed that meets the minimum germination rates listed in the Wildflower Seeding Table with 98 percent seed purity and 0.5 percent weed seed. Proportion seed mixture according to the Wildflower Seeding Table.

WILDFLOWER SEEDING TABLE

Approx. % by Weight	Botanical Name	Common Name	% Germination
1.5	Achillea millefolium	White Yarrow	50
5.0	Centaurea cyanus	Cornflower	60
5.0	Chamecrista fasciculate	Partridge Pea	N/A

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Approx. % by Weight	Botanical Name	Common Name	% Germination
10.0	<i>Coreopsis lanceolata</i>	Lance-leaved Coreopsis	40
10.0	<i>Coreopsis tinctoria</i>	Plains Coreopsis	65
5.0	<i>Delphinium ajacis</i>	Rocket Larkspur	60
5.0	<i>Escholzia californica</i>	California Poppy	60
5.0	<i>Gaillardia aristata</i>	Perennial Gaillardia	45
10.0	<i>Gaillardia pulchella</i>	Annual Gaillardia	45
2.5	<i>Monarda citriodora</i>	Lemon Mint	40
10.0	<i>Nemophila menziesii</i>	Baby Blue Eyes	70
1.0	<i>Oenothera speciosa</i>	Pink Primrose	N/A
2.0	<i>Papaver rhoeas</i>	Corn Poppy	60
10.0	<i>Rubeckia hirta</i>	Black-Eyed Susan	60
5.0	<i>Salvia farinacea</i>	Blue Sage	40
3.0	<i>Solidago</i> spp.	Goldenrod	N/A
10.0	<i>Trifolium incarnatum</i>	Crimson Clover	80
100% total mixplant at a rate of 12 lbs./acre (13 kg/ha)			

C. Companion Grass

Apply nurse or companion grass as follows:

Planting Season	Grass	Rate per Acre (Hectare)
October 1 to February 28	Tall Fescue	5 lbs (5.5 kg)

D. Fertilizer Mixed Grade

Select fertilizer mixed grade such as 10-10-10, 6-12-12, 5-10-15, or any other analysis within the following limits:

- Nitrogen 5 to 10 percent, phosphorus 10 to 15 percent, and potassium 10 to 15 percent

701.2.01 Storage, Delivery, and Handling

Use seed delivered in original sealed packages bearing the producer's guaranteed analysis for percentages of species mixture, minimum germination rates, and purity of seed.

701.3 Construction Requirements

701.3.01 Personnel

General Provisions 101 through 150.

701.3.02 Equipment

Use approved mechanical seed drills, drop spreaders, and rotary spreaders to distribute seed.

701.3.03 Preparation

A. Planting Limits

Before preparing the ground, stake planting limits according to the plans and as approved by the Engineer.

701.3.04 Fabrication

General Provisions 101 through 150.

701.3.05 Construction

A. Ground Preparation

Prepare the ground as follows:

1. Plow between 4 in. to 6 in. (100 mm to 150 mm) deep.
2. After plowing, thoroughly disk the area until pulverized, then smooth the surface.
3. Remove large clods, boulders, stumps, rocks, and other foreign particles that will interfere with the work and seedling growth.
4. Wait 2 weeks after preparation, then spray new growth with 1 gal per acre (9 L per hectare) of Roundup™ herbicide.
5. Wait at least 10 days before proceeding.

B. Application of Lime and Fertilizer Mixed Grade

Apply lime and fertilizer as follows:

1. Lime
Uniformly spread agricultural lime on the ground at the approximate rate determined by the Engineer. If the pH is 6.0 or higher, no lime is required.
2. Fertilizer Mixed Grade
Spread the fertilizer, mixed according to Subsection 701.2.D, uniformly over the ground at approximately 200 lbs./acre (225 kg/ha).
3. Mixing
Before doing further work on the area, blend the lime and fertilizer uniformly into the top 4 in. (100 mm) of soil using harrows, rotary tillers, and other equipment approved by the Engineer.

C. Seeding

Weather permitting, sow seed within 24 hours of applying the fertilizer and lime to the seed bed as follows:

1. Sow seed uniformly according to the rate specified in Subsection 701.2.B. Use approved mechanical seed drills or mix seed with dry sand and spread it with either a drop spreader or rotary spreader.
2. Cover the seed to no more than 1/8 in. (3 mm) deep.
3. After seeding, roll the area with a cultipacker or similar equipment to ensure good soil contact for seedling germination.

D. Mulching

After rolling the seed bed, apply 1 ton per acre (2 Mg per hectare) of wood fiber mulch.

701.3.06 Quality Acceptance

A. Replanting

The Engineer may require replanting an area that shows unsatisfactory growth.

Except as otherwise specified by the Engineer, prepare replanting areas the same as the initial planting with the following exception:

- Use a soil test or the Engineer's guidance to determine the fertilizer type and application rate, then furnish and apply the fertilizer.

Section 701 — Wildflower Seeding

B. Providing Growth and Coverage

Ensure that wildflower growth and coverage conforms with the intent of the Contract for the vegetation, except for seed not expected to germinate and show growth at that time.

Ensure that vegetation shows a satisfactory visible growth with no bare spots larger than 1 ft.² (0.1 m²). Bare spots shall be infrequent, comprising no more than 1 percent of a given area.

701.3.07 Contractor Warranty and Maintenance

A. Plant Establishment

Preserve, protect, water, reseed or replant, and perform other work as necessary to keep the wildflower areas in satisfactory condition.

B. Watering

Keep planted areas moist for 4 to 6 weeks during seedling germination and development.

Following initial growth, water the wildflower areas enough to promote maximum growth.

C. Mowing

Mow once a year in late fall after seedheads have matured. Avoid damaging desirable vegetation.

701.4 Measurement

A. Wildflower Seeding

The number of acres (hectares) completed according to the above requirements and accepted by the Engineer is measured for payment.

B. Wood Fiber Mulch

Mulch furnished and applied is not measured separately.

C. Water

Water furnished and applied to promote a satisfactory growth is not measured for payment.

D. Agricultural Lime

Lime is measured by the ton (megagram).

E. Mixed Grade Fertilizer

Fertilizer is measured by the pound (kilogram).

701.4.01 Limits

Work required under Subsection 701.3.06 and Subsection 701.3.07 is not measured for payment.

701.5 Payment

Wildflower seeded areas will be paid for as follows:

A. Wildflower Seeding

When plants are satisfactorily planted, 80 percent of the Contract Unit Price bid per acre (hectare) will be paid on the next estimate.

Until Final Acceptance, perform required maintenance according to Subsection 701.3.07 when necessary or as ordered by the Engineer.

At Final Acceptance, the remaining 20 percent will be paid. Payment is full compensation for preparing ground, providing wildflower and companion grass seed, applying seed, watering, mulching, and establishing plants.

Section 701 — Wildflower Seeding

B. Mixed Grade Fertilizer

Fertilizer will be paid for at the Contract Price per pound (kilogram). Payment is full compensation for furnishing and applying the material.

C. Lime

Lime will be paid for at the Contract Price per ton (megagram). Payment is full compensation for furnishing and applying the material.

Payment will be made under:

Item No. 701	Wildflower seeding	Per acre (hectare)
Item No. 701	Fertilizer mixed grade	Per pound (kilogram)
Item No. 701	Agricultural lime	Per ton (megagram)

701.5.01 Adjustments

General Provisions 101 through 150.

Section 702—Vine, Shrub, and Tree Planting

702.1 General Description

This work includes furnishing and planting vines, shrubs, trees and plants, treating regenerated areas, and environmental mitigation planting for riparian buffers and tidal marsh areas.

702.1.01 Definitions

General Provisions 101 through 150.

702.1.02 Related References

A. Standard Specifications

- Section 108—Prosecution and Progress
- Section 214—Mitigation Site Construction
- Section 700—Grassing
- Section 882—Lime
- Section 891—Fertilizers
- Section 893—Miscellaneous Planting Materials

B. Referenced Documents

- Standardized Plant Names
- ANSI A300 Part 1 Pruning Standards
- ANSI Z60.1 American Standards for Nursery Stock

702.1.03 Submittals

A. Certificates of Inspection

Submit certificates of inspection with the invoice for each shipment of plants as required by law for transportation. File certificates with the Engineer before the material is accepted. Plants may be rejected at the site regardless of Federal or State government inspections at the place of growth.

B. Substitutions

When both primary and alternate plants are specified, use the alternate only after providing written proof that the primary plants specified are not available. In this case a Supplemental Agreement is not required to use the alternate plants.

When a primary or an alternate plant cannot be furnished, provide the Engineer written proof that neither is available. A Supplemental Agreement is required for substitute plants in this case.

Use approved substitute plants, as designated by the Engineer, equal in value to specified plants. Request substitutions at least thirty (30) days before the end of the planting season in the area.

702.2 Materials

Ensure that materials meet the requirements of the following specifications:

Material	Section
Water	700.2.B
Agricultural Lime	882.2.01
Fertilizers	891.2.01

Section 702 — Vine, Shrub, and Tree Planting

Material	Section
Plant Topsoil	893.2.01
Landscape Mulch	893.2.02
Vines, Shrubs, Trees, and Miscellaneous Plants	893.2.03
Tree Paint	893.2.06
Prepared Plant Topsoil	893.2.07
Stakes	893.2.08
Organic Soil Additives	893.2.09

A. Plant Specifications

Furnish plants according to the plant name and specifications included on the plan sheets.

1. Plant Names

Ensure that the botanical and common names of plants specified conform to the most current edition of Standardized Plant Names, as adopted by the American Joint Committee on Horticultural Nomenclature.

2. Plants should be clearly labeled at the nursery. Labels should remain on the plants until inspected by the engineer.

3. Grades

Ensure that plants meet the grade requirements of the most current American Nursery and Landscape Association ANSI Z60.1 and any other requirements.

Caliper used for establishing plant grades or trunk sizes is measured according to the American Nursery and Landscape Association ANSI Z60.1. Plant trees with straight stems and symmetrical branches according to their natural growth. Trees with broken or damaged terminal or main stems will be rejected. There shall be a single dominant leader to the top of the all large canopy shade trees. There can be a double leader in the top 10% of the tree height.

Trees should be rooting into the root ball so that soil or media remains intact and trunk and root ball move as one when lifted, but not root bound. The trunk should bend when gently pushed and should not be loose so it pivots at or below the soil line.

There shall be no roots greater than 1/10 diameter of the trunk circling more than one-third the way around in the top half of the root ball. Roots larger than this may be cut provided they are smaller than one-third the trunk diameter.

The leaf-bearing crown should be full and uniform. Leaves should show no evidence of chlorosis, necrosis, disease or insect infestation.

B. Bare root seedlings

Use nursery-grown bare root seedlings which are a minimum of three (3) ft. (1 meter) in height above the ground with a 1/4 in. (6.35mm) caliper, and a minimum primary root length of five in. (5) unless specified differently on the plan drawings.

Use approved substitute plants, as designated by the Engineer, equal in value to specified plants. Request substitutions at least 30 calendar days before the end of the planting season in the area. Wet swale bare root *Juncus effuses* shall be fresh divisions with a full, dense root base.

C. Nursery Plants

Unless otherwise specified, use plants stock-grown in a licensed nursery under intensive care and cultivation for at least one year. The largest branches of shade trees should be spaced at least 6 inches apart. The branch system shall be normally developed and free of disease, injurious insects, disfiguring knots, sun-scald, injuries, bark abrasions, dead or dry wood, broken terminal growth, or other disfigurements. Stems should show no evidence of die-back. Ensure that proper certificates of inspection and a complete list of the nursery growers accompany nursery grown plants. See Subsection 893.2.03.

Section 702 — Vine, Shrub, and Tree Planting

D. Approval and Selection of Materials and Work

Select materials and execute operations required under the specifications and drawings with the approval of the Engineer. Remove rejected materials from the site promptly.

702.2.01 Delivery, Storage, and Handling

A. Bare-Rooted Plants

Protect bare root plants from drying out until planted. Uncovered roots without moisture-loss gel coating shall be exposed to air no longer than 15 minutes.

B. Balled and Burlapped Plants (B&B)

1. Burlap shall be a natural biodegradable material. Do not use synthetic burlap.
2. Replace plants rejected because of broken or loose balls, or balls of less diameter than that specified.
3. Protect the roots of balled and burlapped plants from moisture loss, unless they are planted immediately after they are delivered.
4. Plants shall be harvested with the ball of earth in which they are growing intact.

C. Container-Grown Plants

Keep container-grown plants moist but well drained until planted. Handle plants by the container or soil ball and not by the top growth.

D. Heeled-in Plants

Properly maintain heeled-in plants until they are planted. Do not allow plants to remain heeled-in over the summer or for over 30 days without the Engineer's consent.

E. Injury Prevention

Injured plants will be rejected. Protect tops of shrubs and trees while in transit to prevent windburn.

F. Live Willow Stake Material

Live stakes shall be moistened, capable of rooting, without injury and stripped of all stems and leaves with a minimum of scarring. The stakes shall be from 5 to 8 ft. (1.5m to 2.4m) in length with a basal end of 0.5 to 1.5 in. (1.27cm to 3.8cm) in diameter. The top ends shall be blunt and cut square and the butt ends angled.

702.3 Construction Requirements

702.3.01 Personnel

General Provisions 101 through 150.

702.3.02 Equipment

General Provisions 101 through 150.

702.3.03 Preparation

A. Inspect Plant Material before Digging

The Engineer will inspect trees or plants from the bidder's source for acceptability and conformity to specification requirements for approval by the Engineer. When rejecting the trees or plants, the Engineer reserves the right to pursue and examine other sources of plants to find acceptable specimens. This change will not constitute an increase in cost to the State.

B. Clear and Grub

Clear and grub the planting area before planting or beginning to prepare the plant bed, unless noted differently on the plans. See Section 201.

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C. Prepare Plant Bed

Prepare for planting as follows:

1. Planting Limits

Stake planting limits according to plan details and the Engineer. Have the Engineer approve the method of plant identification before planting.

For median plantings, keep any woody plant a minimum of 3 ft. (1m) from the edge of the plant bed to avoid vegetative growth into the roadway.

For stream buffers identified as "Stream Buffer" or "wet swales", on plans, the plant species shall be planted in a random, intermixed manner throughout the entire planting area. At the edges of the planting zone, keep new plants a minimum of 8 ft. (2.4m) from existing trees or permanent structures.

2. Applications of Soil Additives

a. Apply fertilizer and lime to the plant bed according to the soil test report.

b. Spread an organic soil additive, (See Subsection 893.2.09), evenly throughout the designated area to at least 2 in. (50 mm) deep. Thoroughly dig it into the soil to at least 6 in. (150 mm) deep using a rotary hoe type tiller or other equipment that evenly mixes the soil, lime, fertilizer, and organic soil additive.

c. Till the area until the surface is smooth and free of weeds, roots, rocks, and other debris, to the satisfaction of the Engineer.

d. If the planting area lies within a multitrophic native planting area, stream buffer, wetland, wet swale, or marsh the addition of fertilizer or lime is prohibited.

702.3.04 Fabrication

General Provisions 101 through 150.

702.3.05 Construction

A. Seasonal Limitations for Planting

For geographic seasonal limitations, refer to the Planting Zones Map found in Subsection 700.3.05. Plant in Zones 1 and 2 between October 15 and March 15. Plant in Zones 3 and 4 between November 1 and January 1.

B. Planting Operations

Plant using the method called for on the details and plan sheets. Before beginning planting of each area, have available the necessary materials including prepared plant topsoil (see Subsection 893.2.07), water, stakes, and mulch. Plants shall be installed as straight/upright as possible. Any plants found to be leaning or broken will not be accepted or paid for by the engineer.

When seasonal limitations and weather conditions permit, continuously water, mulch, guy, provide tree guards, and stake as indicated on the plans and details until completing the last operation.

After completing planting, provide a method for retaining water adjacent to the plant according to the details shown on the plans or as directed by the Engineer.

Protect marsh restoration areas from vehicles and machinery. Typical protective barriers are not to be used in tidal areas. Stakes that remain secure and are taller than the highest tide, flagged with highly visible flagging tape, are required to mark the area to be protected and off-limits for vehicles and machinery.

3. Planting by the Pit Method

a. Placing Bare-Rooted Plants

Plant bare-rooted plants delivered to the pit area. Protect roots from drying out until placing them in the pit.

1) Center plants in pits and spread roots as they originally grew.

2) Cover and prepare the topsoil according to details shown on the plans.

b. Placing Balled and Burlapped Plants

Immediately plant these plants after they are delivered to the pit site.

Section 702 — Vine, Shrub, and Tree Planting

- 1) The pit diameter shall be a minimum of 3 times the diameter of the rootball. Center the ball in the prepared pit, leaving the top of the ball 1 in. (25 mm) above the top of the ground for settlement.
 - 2) Cut away and remove the top 1/3 of burlap from the rootball. Cut all ropes and twine, pull the nails, and drop the remaining burlap to the bottom of the hole. Cut away and remove all wire from the root ball.
 - 3) Partially fill the pit with prepared plant topsoil and compact the soil enough to hold the ball firmly. Add mycorrhizal inoculant to plant topsoil if specified in plans.
- c. Placing Container-Grown Plants
- 1) When the container is delivered to the pit site, split the container from top to bottom and carefully remove the plant.
 - 2) The pit diameter shall be a minimum of 3 times the diameter of the rootball. Spread into the hole any major roots growing around the container or prune them to remove any circular growth.
 - 3) Place the ball in the center of the prepared pit, leaving the top of the ball 1 in. (25 mm) above the top of the ground for settlement.
 - 4) Partially fill the pit with prepared plant topsoil and compact the soil enough to hold the ball firmly. Add mycorrhizal inoculant to plant topsoil if specified in plans.
- d. Completing Pit Plantings
- After placing pit plantings, water plants thoroughly the same day regardless of weather or soil moisture conditions.
- 1) After the water has soaked in, add prepared plant topsoil and compact firmly up to 2 in. (50mm) below the adjacent ground.
 - 2) Stop compacting when the compacted prepared topsoil is 2 in (50 mm) below the adjacent ground.
 - 3) Fill the remainder of each pit with loose, prepared plant topsoil according to the details shown on the plans.
 - 4) Prepare the loose topsoil to retain water adjacent to the plant according to the Plans or as directed by the Engineer.
- e. Live Stake Plantings
- 1) Plant live willow stakes at four (4) ft. (1.2m) intervals or as indicated on the drawings with the buds facing upward.
 - 2) Eighty (80) percent of the stake shall be installed below ground, leaving twenty (20) percent extending above ground.
 - 3) Stakes shall be placed deep enough to reach the water table during the dry season at an angle perpendicular to the slope.
 - 4) Pack soil firmly around the hole after installation.
 - 5) Install live willow (*Salix spp.*) stakes only in the dormant season, according to the planting details and landscape plan notes.
 - 6) Replace any live stakes that split during installation.
4. Planting using a Dibble, Hoedad, or Reinforced Planting Shovel for Wet Swale and Bare Root Seedlings.
- Planting shall only be done when there is adequate moisture in the ground and when the ground is not frozen. Provide proper root positioning and contact with the soil and eliminate all air pockets around roots. Roots of seedlings shall not be pinched or bent in a sideways or upturned direction.
- Each tree, division, or seedling shall be inserted into the hole such that the root collar of the tree will be at ground level after backfilling is complete. Allowance for burying the root collar below ground level shall not exceed one-half inch in depth. In no case shall planting result in the root collar remaining above ground level. The soil back-filled around the root system shall be compacted sufficiently to support the plant. Mow or use a

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string trimmer to a height of 1 in. (25 mm) in the area designated for restoration. Do not trim wet swales or retention basins where standing water is present.

Grass the area designated for restoration with a native restoration or riparian seed mix and apply wheat straw mulch to the area before planting seedlings.

Plant within 48 hours after mowing or string trimming the site.

5. Restoration and enhancement of tidal marsh areas are subject to possible wave energy, requiring the use of a plant anchor for each plant. See planting plan sheets and details for plant anchor and anchoring descriptions.

C. Landscape Mulching

1. For Pit Plantings

Follow these requirements when mulching for pit plantings:

- a. Where the distance between plants is 8 ft. (2.4 m) or less, spread mulch throughout and 3 ft. (900 mm) beyond the outermost plants. Where plants are more than 8 ft. (2.4 m) apart, apply mulch in a circular fashion around each plant, forming a ring 5 ft. (1.5 m) in the outside diameter.
- b. If plant pits are greater than 5 ft. (1.5 m) in diameter, ensure that the mulch extends out to cover the berm as shown in the planting details on the plans.
- c. Apply mulch within 3 days of planting at least 4 in. (100 mm) in depth to obtain a compacted depth of at least 3 in. (75 mm).
- d. Compaction occurs naturally. Check compaction at least two months after spreading and exposing the mulch to the elements.
- e. If the compacted depth is less than 3 in. (75 mm), apply additional mulch to deficient areas within 1 month following notification.
- f. Apply mulch to a uniform depth and remove lumps for a neat appearance. Tuck mulch neatly against all paving edges, drainage structures, and where planting beds meet grassed areas.
- g. Leave a 1 in. (25 mm) to 2 in. (50 mm) ring of non-mulched area directly around all tree trunks.
- h. Do not mulch with Cypress Mulch.

2. For Plantings using a Dibble, Hoedad, or Reinforced Shovel

Apply landscape mulch according to Subsection 702.3.05.C.1 with the following exceptions:

- a. Apply mulch before planting.
 - b. Use only wheat straw mulch in restoration areas.
 - c. Ensure that the mulch coverage is open enough to allow seed germination to take place and dense enough to conserve moisture in the seed bed.
3. For Native Multitrophic or Stream Buffer Restoration Planting Areas, wheat straw shall be the only types of mulch used.
 4. Do not use mulch in a tidal marsh area. Do not mulch wet swale or retention ponds where standing water is present.

D. Wrapping

Do not wrap the trunks of tree unless specified in the plans. When wrapping is specified, tightly wrap the trunks of deciduous trees over 1.25 in. (32 mm) in caliper. Wrap in strip burlap or waterproof crepe tree wrapping paper or other approved materials.

1. Begin wrapping at the ground and extend spirally up and beyond the first rosette of branches with an overlap of one half the width of the wrapping material.
2. Tie the wrapping material securely with binder twine spaced every 12 in. (300 mm) for the full length of the wrapping. Wrap immediately after planting.

Section 702 — Vine, Shrub, and Tree Planting

E. Staking and Guying

1. Do not use staking and guying unless specified in the plans or details.
2. Perimeter Staking
3. Place perimeter stakes 2 in. x 2 in. x 36 in. (50 mm x 50 mm x 900 mm). Stake the perimeter of indicated regenerated areas within specified planting dates according to the Plans or as directed by the Engineer. Keep staking for tidal marsh areas secured with supports taller than the highest tide with highly visible flagging tape to mark the area as off-limits for vehicles and machinery.
4. Vine, Shrub, and Miscellaneous Plant Staking
5. Use stakes to identify isolated vines, shrubs, and miscellaneous plants outside of solid mulched beds according to plan details.
6. Tree Staking and Guying
7. Stake trees using a system that will prevent trees from leaning or tilting and keep the root ball stable until the roots become anchored. The system should allow the top some movement and flexibility without damaging the tree.

F. Pruning

1. Prune plants on the site before planting and after initial inspection by the Engineer as needed for the health of the plant. Never prune severely to get plants to meet specifications.
 - a. Follow ANSI A300 Part 1 standards and use approved tools designed for pruning.
 - b. Lopping, topping, or shearing trees or shrubs is not permitted.
 - c. Prune back damaged, scarred, frayed, split, and skinned branches, limbs, and roots to live wood nearest to the next sound, outside lateral bud, branch, limb, or root.
 - d. Leave the terminal leaders or buds in trees intact.
 - e. Prune roots, when necessary, as directed by the Engineer.
 - f. Prune Crape Myrtles to maintain natural form only. Severely cutting back or stump pruning crape myrtles is not permitted. Remove sucker growth from Crape Myrtles.
 - g. Damaged, scarred, frayed, split and skinned branches, limbs and roots shall be pruned back to live wood nearest to the next viable outside lateral bud, branch, limb or root.

G. Watering

1. Apply water in a manner to prevent erosion. Water plants deeply and thoroughly at the time of planting. Water after applying fertilizer called for in Subsection 702.3.05.H and as necessary to maintain enough moisture to promote plant growth. Use water reservoir bags if specified in plans or details.
 - a. Apply enough water to wet the soil to a depth slightly below the roots. Direct the water to the ground around the plant, not the tops.
 - b. Do not allow plant foliage to dry out or plants to defoliate from lack of water. Remove plants in such condition from the site immediately. Apply supplemental watering to maintain vigorous growth and to keep plants moist and as directed by the Engineer.
 - c. Apply water once per week throughout the planting season in which the plants are installed. Follow Subsection 702.3.07.B and 702.3.07.C for shrub and tree watering requirements throughout the life of the project.

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H. Spring Application of Fertilizer

1. Method and Rate of Application

Follow these requirements when applying fertilizer in the spring:

a. Trees

Apply a slow-release fertilizer according to soil test results. Assume 8-12-12 with a rate of 1 cup (0.25 L) per caliper inch of tree for bidding purposes.

2. Shrubs and vines

Fertilize shrubs according to soil test results with a slow release fertilizer by spreading fertilizer around the base of the plant and working it into the soil by hand. Assume 6-12-12 with a rate of 0.5 cup (0.12 L) per foot of shrub height for bidding purposes.

Bed Areas

Spread fertilizer on bed areas (defined by method of planting in Subsection 702.3.05.B), over the mulch according to soil test results. Assume 3 lbs./100ft² of 6-12-12 for bidding purposes. Thoroughly water in the plants.

3. Native Restoration or Stream Buffer Areas

The addition of fertilizer or lime is prohibited within the native restoration or stream buffer planting areas.

4. Tidal March Areas

The addition of fertilizer or lime is prohibited within marsh areas.

5. Time of Spring Fertilizer Application

Apply fertilizer in the spring in Zones 1 and 2 (with reference to the Planting Zones specified in Subsection 702.3.05.A) between April 1 and April 15. Apply between March 15 and April 1 for Zones 3 and 4.

For late plantings, do not apply fertilizer less than 30 days after the plantings.

6. Additional Fertilizer

Approximately one month after the spring fertilizer is applied; the Engineer will inspect planted areas and determine if an additional application of fertilizer is needed for any plant or group of plants.

If the Engineer determines additional fertilizer is required, apply fertilizer according to soil test results between June 15 and July 15th.

I. Tree Guards for Stream Buffer Saplings

Each planted bare root, sapling-sized plant shall be fitted with a tree guard to protect the saplings from wildlife browsing. The tree guards shall be at least 36 in. tall, with appropriately sized wooden stakes or bamboo to securely support the tree guard [i.e., a 4 ft. (1.2 meter) stake for a 36 in. (914.4 mm) guard]. Mesh tube-type tree guards are required. Vexar tubes, or equivalent, are to be used. All tree guards shall be removed from the saplings at final inspection.

J. Restoration and Cleanup

Restore areas where existing grass has been damaged or scarred during planting operations at no expense to the Department. Restore the disturbed areas to their original conditions as directed by the Engineer. Clean up debris, spoil piles, and containers and leave the Project area clean.

Clean up and remove all debris, spoil piles, containers, water reservoirs, trash, etc. and leave the project area in an acceptable condition. Inspect all installed erosion control devices weekly and clean out or repair as required.

Remove all erosion control devices at final acceptance unless otherwise instructed by the Engineer.

702.3.06 Quality Acceptance

Preserve the plants in a healthy growing condition and keep plants moist, particularly during drought conditions (no rain for any two-week period). The acceptability of the plant material planted and maintained as specified will be determined at the end of an establishment period.

The plant establishment period is the period from the last planting specified in Subsection 702.3.05.B until the following October 1. Plant all plants in one planting season unless otherwise approved by Engineer.

Section 702 — Vine, Shrub, and Tree Planting

A. First Establishment Period

At the end of the first planting season, the first establishment period begins. The Department will make the first semi-final inspection 30 days before the end of the first establishment period. Replace dead, dying, diseased, unsatisfactory, and missing plants, by January 20 of the next (second) planting season. For stream buffer areas, all replacement plants shall be tagged with 18 in. (457.2 mm) lengths of brightly-colored survey tape. Tree guards shall be placed around all replacement saplings. All costs for replanting, tagging and tree guards for replacement trees shall be included in the contract price bid for the original planting.

B. Second Establishment Period

At the end of the second planting season, the second plant establishment period begins. The Department will make the second semi-final inspection 30 days before the end of the second establishment period. Again, replace dead, dying, diseased, unsatisfactory, and missing plants, by January 20 of the next (third) planting season. For stream buffer areas, all replacement plants shall be tagged with 18 in. (457.2 mm) lengths of brightly-colored survey tape. Tree guards shall be placed around all replacement saplings. All costs for replanting, tagging and tree guards for replacement trees shall be included in the contract price bid for the original planting.

C. Final Inspection

The Department will make the final inspection of the plants during May, following any needed replacements during the previous planting season. Assume responsibility for the plants until the Final Acceptance of the project or a portion of the project.

702.3.07 Contractor Warranty and Maintenance

Project maintenance includes, but is not limited to, watering, cultivating, weeding, pruning, repairing, adjusting guys and stakes, and performing other work as ordered by the Engineer until final acceptance.

Promptly remove from the project area dead plants or those that no longer conform to the requirements of Subsection 702.2.A.2.

Mow the entire right-of-way within the limits of the project up to a maximum of four times per calendar year. Do not mow native restoration areas, wet swales, or riparian mitigation sites.

A. Leaning Trees

Straighten leaning trees as directed by the Engineer. Follow Staking and Guying requirements for replacements or repairs as per Subsection 702.3.05.E.

B. Shrub Maintenance

1. Pruning

Prune dead or diseased limbs to provide for plant health and appearance as directed by the Engineer.

2. Landscape Mulching

Continuously maintain shrub and tree beds with a clean, freshly mulched appearance using the mulch originally specified. See Subsection 702.3.05.C. Do not mulch shrub and tree beds within riparian mitigation sites.

- a. Apply a 2 in. (50 mm) loose layer of specified mulch (top-dressing) on top of all areas, including tree pits, initially mulched, at the following times:

- 1) In August, during the first plant establishment period.
- 2) In April, during the second plant establishment period.
- 3) In August, during the second plant establishment period.
- 4) In April, prior to the final inspection.

3. Applying Fertilizer

See Subsection 702.3.05.H.

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4. Applying Pesticides

- a. Inspect all planted or seeded vegetation for insects, grubs, mites, diseases, etc., once every two weeks. Apply insecticides, fungicides, and herbicides according to the manufacturer's recommendations to effectively control or eradicate the problem.
- b. Perform all pesticide applications under the direct supervision of a trained licensed commercial pesticide operator whose license includes subcategory 27 – Right of Way Pest Control. Carry the pesticide license/certification on the work site during applications. Carry all labeling associated with the chemical being applied at the work site.
- c. Submit all product information data sheets and EPA approval numbers on all pesticides proposed to be used prior to application for approval.
- d. Notify the Engineer a minimum of 48 hours prior to any and all pesticide applications.
- e. Add a blue dye to all spray applications unless approved otherwise by the Engineer.
- f. Monitor the weather and spray under proper weather conditions. Spraying shall not occur when the weather is greater than 10 miles per hour.
- g. Wear the proper safety attire. Wear long sleeve shirts, long pants, gloves, and safety glasses. Wear or use any additional protective safety attire or gear as recommended by the product's manufacturer.
- h. Repair any damage that is a result of mishandling or misuse of materials, at no expense to the Department, to the satisfaction of the Engineer.
- i. For stream buffer and marsh restoration areas, pesticides are not to be used unless approved by the Department Ecology Manager.

5. Edging

- a. Edge all shrub pits, shrub beds, and tree pits once a month throughout the life of the project such that the vee-cut edging detail specified on the plans is maintained. Prevent grass and weeds from growing over or into the shrub beds and tree pits.
- b. Use equipment specifically designed for edging. Line trimming equipment shall not be used.

6. Watering

- a. Check all planted material once a week throughout the contract for dryness by removing the mulch from their base and "sampling the soil" approximately 4 in. (100mm) deep. Water if the soil is not moist.
- b. Water all planted material if a drought (no rain for two weeks) occurs. Provide the water required to meet the watering requirements.
- c. Water each plant thoroughly until the ground is saturated to a depth slightly below the root ball. Apply water in a manner to prevent erosion.

Section 702 — Vine, Shrub, and Tree Planting

7. Weed Control

Perform weed control throughout the project, a minimum of once every two weeks, in all areas within the project limits to maintain tree pits, shrub beds, sidewalks, curb and gutter, walkways, ditch paving, concrete medians, and other pavement weed free. Meet the following conditions:

- a. Perform weed control to prevent weeds from becoming established, setting seed, or from becoming visible in the planting beds.
- b. Completely remove all undesirable plants (weeds) by hand pulling. Removal of weeds may be accomplished using herbicides if approved by the Engineer. However, the use of herbicides is prohibited in stream buffer areas unless approved by the Department Ecology Manager.
- c. Apply an approved pre-emergent herbicide twice each year, once in the spring and once in the fall, throughout the contract. The use of pre-emergent herbicides is prohibited in stream buffer areas. Apply pre-emergent to all shrub beds and tree pits. Notify the Engineer 48 hours prior to spraying. Use a blue dye in all applications unless approved otherwise by the Engineer.
- d. Eradicate all invasive exotic pest plants found within the project limits throughout the life of the project, including stream buffer and marsh areas. Volunteer, non-invasive plant material within stream buffer restoration areas is acceptable.
- e. Dispose off site on a daily basis all weed, exotic plants, clippings, litter, and debris generated.

8. Policing

Remove debris such as paper, broken limbs, bottles, cans, etc., a minimum of the first and third week of each month from all areas within the project limits while maintaining the site.

9. Mitigation Areas

Pruning, mulching, edging, and applying spring fertilizer are not required within wet swales, native restoration areas, stream buffers and regenerated forest areas.

C. Tree Maintenance

1. Watering

See Subsection 702.3.07.B.6

2. Landscape Mulch

See Subsection 702.3.07.B.2

3. Fertilizer

See Subsection 702.3.05.H.

4. Abnormal Conditions

Periodically (once every two weeks) observe trees and shrubs for abnormal conditions such as insects, borers, web worms, red spiders, etc., and immediately treat.

5. Sucker Growth

Remove sucker growth once a month. Sucker growth is the shoots that sprout out around the base of the tree trunk.

6. Pruning and Deadwood

Remove deadwood at least two times a year. Prune dead branches. Paint cuts, and wounds or scars with tree paint only when specified in the plans. Do not top Crape Myrtles. See Subsection 702.3.05.F.

7. Pesticide Control

NOTE: Apply pesticides as necessary to control harmful insects and diseases. Follow the manufacturer's instructions. See Subsection 702.3.07.B.4. NOTE: Use chemicals according to Federal, State and county directives on environmental control that carry an EPA approval number.

8. Weed Control

See Subsection 702.3.07.B

Section 702 — Vine, Shrub, and Tree Planting

9. Staking and Guying

Remove all support guy wires, strapping and stakes from plants which have gone through one complete growing season.

702.4 Measurement

A. Plants

Plants of the name and size specified are measured for payment according to the number planted that are still living and viable and in an acceptable condition at the time of Final Acceptance. A viable plant must have a minimum of 75 percent of the leaf-bearing crown with healthy foliage.

B. Fertilizer

Spring application fertilizer applied to planted and regenerated areas will be the actual number of pounds (kilograms) placed and accepted. Fertilizer, lime, and plant topsoil used in prepared plant topsoil or plant bed preparation are not measured for separate payment. For stream buffer and marsh areas, the addition of fertilizer or lime is prohibited.

C. Perimeter Stakes

Perimeter stakes is not measured for payment unless such item is shown as a separate Pay Item in the proposal.

D. Clearing and Grubbing

Clearing and grubbing is not measured for payment unless the Item is shown as a separate Pay Item in the proposal.

E. Landscape Mulch

The quantity of landscape mulch and top-dressing measured for payment will be the actual number of square yards (meters) completed as specified and accepted. The presence of weeds or other growth, or foreign material, will be cause for rejection.

702.4.01 Limits

General Provisions 101 through 150.

702.5 Payment

A. Plants

Plants measured for payment will be paid for as follows:

1. After planting satisfactorily, the Department will pay 50 percent of the Contract Unit Price bid per each on the next estimate.
2. Until Final Acceptance, perform all required maintenance according to Subsection 702.3.07 when necessary or as ordered by the Engineer.

If the Contractor fails to properly maintain the landscaping, daily charges shall be assessed against any money due or that may become due the Contractor in accordance with the schedule of deductions shown in Subsection 108.08, but not less than \$150 per calendar day, and will continue until project maintenance is approved by the Engineer.

The charges are in addition to those specified for delay or failure in completing the Work within the specified time.

3. After the first semi-final inspection, the Department will pay 15 percent of the Contract Unit Price bid per each of the live, viable plants.
4. After the second semi-final inspection, the Department will pay 15 percent of the Contract Unit Price bid per each of the live, viable plants.

Section 702 — Vine, Shrub, and Tree Planting

5. At Final Acceptance, the Department will pay the remaining 20 percent less the Full Contract Unit Price bid per each plant not accepted.

Payments are full compensation for furnishing, planting, replanting as required, pruning, staking, guying, soil conditioning, and preparing plant beds, including applying additives, digging plant pits, preparing plant topsoil and mulch, disposing of waste material, and maintaining the plants during the plant-establishment period.

B. Fertilizer

All grades of fertilizer applied in the spring, measured as specified above, are paid for at the Contract Price per pound (kilogram) or per ton (megagram), whichever is indicated in the proposal. Payment is full compensation for furnishing and applying and for watering regenerated areas.

For native restoration, stream buffer and marsh restoration areas, the addition of fertilizer or lime is prohibited.

C. Perimeter Stakes

Perimeter stakes will not be measured for payment. The cost will be included in the overall contract price.

D. Landscape Mulch

Landscape mulch measured for payment will be paid for as follows:

1. After mulching satisfactorily, the Department will pay 40 percent of the Contract Unit Price bid per square yard (meter).
2. After satisfactorily completing mulch (topdressing) in August of the first plant establishment period, the Department will pay 15 percent of the Contract Unit Price bid per square yard (meter).
3. After satisfactorily completing mulch (topdressing) in April of the second plant establishment period, the Department will pay 15 percent of the Contract Unit Price bid per square yard (meter).
4. After satisfactorily completing mulch (topdressing) in August of the second plant establishment period, the Department will pay 15 percent of the Contract Unit Price bid per square yard (meter).
5. After satisfactorily completing mulch (topdressing) in April of the final planting season, (a month before the Final Inspection), the Department will pay 15 percent of the Contract Unit Price bid per square yard (meter). Such payment shall be full compensation for furnishing, installing, topdressing, and maintaining mulch as required.
6. Do not mulch marsh restoration areas.
7. Do not apply additional applications of mulch after the initial application in stream buffer restoration areas.

Payment will be made under:

Item No. 702	Plant Name and Size	Per each
Item No. 702	Fertilizer, Spring Application	Per ton (megagram)
Item No. 702	Landscape Mulch	Per square yard (meter)
Item No. 702	Spring Application Fertilizer	Per pound (kilogram)
Item No. 702	Live Stakes and Planting	Per each
Item No. 702	Perimeter Stakes	Per each
Item No. 702	Bare Root Seedling Planting	Per each

702.5.01 Adjustments

General Provisions 101 through 150.

Section 703—Tree Wells, Tree Walls, and Root Protection

703.1 General Description

This work includes protecting the root systems of selected trees and shrubs with retaining walls, tree wells, and porous material.

703.1.01 Definitions

General Provisions 101 through 150.

703.1.02 Related References

A. Standard Specifications

Section 607—Rubble Masonry

Section 834—Masonry Materials

Section 842—Clay Pipe

Section 893—Miscellaneous Planting Material

B. Referenced Documents

General Provisions 101 through 150.

703.1.03 Submittals

General Provisions 101 through 150.

703.2 Materials

Use materials that meet the requirements of the following specifications:

Material	Section
Mortar and Grout	834
Masonry Stone	834
Clay Underdrain Pipe	842.2
Clay Drain Tile	842.2
Porous Material	893.2.05
Tree Paint	893.2.06

703.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

703.3 Construction Requirements

703.3.01 Personnel

General Provisions 101 through 150.

703.3.02 Equipment

General Provisions 101 through 150.

Section 703 — Tree Wells, Tree Walls, and Root Protection

703.3.03 Preparation

General Provisions 101 through 150.

703.3.04 Fabrication

General Provisions 101 through 150.

703.3.05 Construction

A. Excavating and Filling Foundations

Avoid unnecessarily injuring root systems when excavating for tree wells and tree walls.

Excavate and fill foundations to these requirements:

- To the elevations shown on the plans or as directed
- To the full widths and lengths of footings shown on the plans

Where the soil under tree wells or tree walls is unstable, backfill the foundation area with broken stone, coarse gravel, or other approved material and firmly tamp it.

Ensure that foundations firmly and uniformly support masonry.

B. Constructing Masonry

Build the tree wells and tree walls from rubble masonry according to Plan details. Use rubble masonry according to Section 607.

C. Providing Drainage

Provide adequate well drainage using weep holes, pipe drains, drain tile, or porous material as shown on the plans.

D. Protecting Tree Roots

Where tree root protection is required, spread porous material loosely to the extent and depths indicated on the Plans, or as directed by the Engineer. Before spreading porous material, clean the tree root protection area of vegetation. Before backfilling over a tree or plant that will be preserved, place porous material above its roots.

E. Damaging Plants

Avoid cutting roots or damaging trees and shrubs while building tree wells and tree walls and placing the porous material to protect the roots.

When making necessary cuts, use sharp tools and cut cleanly according to the best horticultural practices. Immediately cover with tree paint, all scarred or cut surfaces 1 in. (25 mm) or more in diameter.

703.3.06 Quality Acceptance

General Provisions 101 through 150.

703.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

703.4 Measurement

A. Tree Well and Tree Wall

Tree well and tree wall masonry completed and accepted is measured for payment in cubic yards (meters).

B. Porous Material

Porous material for tree root protection, placed and accepted, is measured for payment in cubic yards (meters) as measured loose in the vehicle at the point of dumping.

Section 703 — Tree Wells, Tree Walls, and Root Protection

C. Drain Pipe or Tile

Drain pipe or drain tile is measured for payment in linear feet (meters) along the center of each line, lateral, or riser from ends-to-center or center-to-center of junctions and fittings.

D. Excavation, Paint, and Replacement or Disposal of Material

No measurement or payment is made for excavation, tree paint, replacement of unsuitable material, or disposal of surplus material. These are considered a part of the Pay Item to which each pertains.

703.4.01 Limits

General Provisions 101 through 150.

703.5 Payment

Rubble masonry for tree wells and walls and porous material for tree root protection will be paid for at the Contract Unit Price per cubic yards (meters).

Clay drain pipe or drain tile will be paid for by the linear foot (meter).

Payment will be made under:

Item No. 703	Rubble masonry for tree wells and walls	Per cubic yard (meter)
Item No. 703	Porous material for tree root protection	Per cubic foot (meter)
Item No. 703	Drain pipe ____ in. (mm)	Per linear foot (meter)
Item No. 703	Drain tile ____ in. (mm)	Per linear foot (meter)

703.5.01 Adjustments

General Provisions 101 through 150.

Section 705—Transplanting Trees

705.1 General Description

This work includes transplanting existing trees at new locations as shown on the plans and as directed by the Engineer.

705.1.01 Definitions

General Provisions 101 through 150.

705.1.02 Related References

A. Standard Specifications

Section 700—Grassing

Section 891—Fertilizers

Section 893—Miscellaneous Planting Material

B. Referenced Documents

General Provisions 101 through 150.

705.1.03 Submittals

General Provisions 101 through 150.

705.2 Materials

Use materials that meet the requirements of the following specifications:

Material	Section
Plant Topsoil	893.2.01
Fertilizer	891.2.01
Mulch	893.2.02
Stakes	893.2.08
Staking Wire	(See planting details)
Rubber Hose	(See planting details)
Tree Paint	893.2.06
Water for Plant Growth	700.2

705.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

705.3 Construction Requirements

705.3.01 Personnel

Have skilled workers transplant according to the best horticultural practices.

Section 705 — Transplanting Trees

705.3.02 Equipment

Have tree transplanting equipment as detailed in the plans and specifications on the project site and in satisfactory condition before construction begins.

Excavate trees and tree pits with the Vermeer-type tree spade or tree mover or equivalent approved mechanized equipment.

705.3.03 Preparation

General Provisions 101 through 150.

705.3.04 Fabrication

General Provisions 101 through 150.

705.3.05 Construction

A. Transplanting Operations

Follow these procedures when transplanting trees:

1. Trunk and Branch Protection
Protect trunks and branches from breaks or bruises. Spray trees in leaf with an approved antidesiccant before digging.
2. Pruning
Prune trees before transplanting as directed by the Engineer. Remove broken or badly bruised branches with a clean cut.
3. Securing Roots
Dig trees to secure as many roots as possible. Maintain a tight, firm ball during the moving operations.
4. Excavating
Excavate trees and tree pits. Use the excavated material to backfill the pits from which the existing trees were removed.
5. Placing Trees in Pits
Place transplanted trees into new pits. Backfill voids between the ball and the pit with clean, washed sand and tamp. Thoroughly water the sand in with a root feeder or water needle.
6. Applying Topsoil and Mulch
Apply plant topsoil to the transplanted tree according to plan details. Mulch a minimum 6 ft. diameter tree pit with 3 in. (75 mm) of mulching material.
7. Staking and Anchoring Trees
Stake or anchor trees according to planting details or as directed by the Engineer.

705.3.06 Quality Acceptance

Replace severely damaged or disfigured trees that the Engineer determines were damaged by operations. Replace with trees of approximately the same size, genus, species, variety, and quality at the Contractor's expense.

705.3.07 Contractor Warranty and Maintenance

A. Watering

After the initial watering, make four additional waterings at two-week intervals.

B. Guarantee Period

A guarantee period is not required for the transplanting work.

Section 705 — Transplanting Trees

705.4 Measurement

The quantity of transplanted trees paid for under this Item is the number transplanted.

Size is determined by tree caliper (diameter) measurement at a point 12 in. (300 mm) above the natural ground surface. Where tree caliper exactly coincides with a break point in the Pay Item size intervals, that tree is classed in the lower size interval.

705.4.01 Limits

General Provisions 101 through 150.

705.5 Payment

Transplanting trees will be paid for at the Contract Unit Price. Payment is full compensation for the work and materials including plant topsoil, fertilizer, mulch, stakes, staking wire, rubber hose, tree paint, water, and incidentals necessary to complete the Item.

Payment will be made under:

Item No. 705	Transplanting trees, ____ in. (mm) to ____ in. (mm) caliper	Per each
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705.5.01 Adjustments

General Provisions 101 through 150.

Section 706—Turf Establishment

706.1 General Description

This work includes providing a hardy and permanent ground cover at designated locations. The cover is subject to the Engineer's approval.

706.1.01 Definitions

General Provisions 101 through 150.

706.1.02 Related References

A. Standard Specifications

Section 700—Grassing

B. Referenced Documents

General Provisions 101 through 150.

706.1.03 Submittals

General Provisions 101 through 150.

706.2 Materials

Select a viable ground cover according to Section 700.

706.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

706.3 Construction Requirements

706.3.01 Personnel

General Provisions 101 through 150.

706.3.02 Equipment

General Provisions 101 through 150.

706.3.03 Preparation

General Provisions 101 through 150.

706.3.04 Fabrication

General Provisions 101 through 150.

706.3.05 Construction

General Provisions 101 through 150.

706.3.06 Quality Acceptance

Refer to Subsection 700.3.06 *Quality Acceptance* and Subsection 700.3.07 *Contractor Warranty and Maintenance* for acceptance of a viable ground cover.

706.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

706.4 Measurement

No field measurements are required. Measurement is calculated from known dimensions as follows:

A. Type A—Grading and Drainage Projects

[Project length (PL) minus bridge and exception* length (BL)] times [right-of-way width or Engineer-specified width (RW) minus roadbed width (RBW)] equals ____ square feet divided by 43,560 ft.²/acre equals pay quantity in acres.

[Project length (PL) minus bridge and exception* length (BL)] times [right-of-way width or Engineer-specified width (RW) minus roadbed width (RBW)] equals ____ square meters divided by 10,000 m² equals pay quantity in hectares.

$$(PL - BL) \times (RW - RBW) = \text{____ ft}^2 \div 43,560 \text{ ft.}^2/\text{acre} = \text{pay quantity in acres}$$

$$(PL - BL) \times (RW - RBW) = \text{____ m}^2 \div 10,000 \text{ m}^2 = \text{pay quantity in hectares}$$

B. Type B: Base and Paving Projects

[Project length (PL) minus bridge and exception* length (BL)] times [unpaved shoulder width (SW) plus 6 ft. for each roadway side (RS)] = ____ square feet divided by 43,560 ft.²/acre= pay quantity in acres.

[Project length (PL) minus bridge and exception* length (BL)] times [unpaved shoulder width (SW) plus 1.8 m for each roadway side (RS)] = ____ square meters divided by 10,000 m² = pay quantity in hectares.

$$(PL - BL) \times (SW + 6RS) = \text{____ ft.}^2 \div 43,560 \text{ ft.}^2/\text{acre} = \text{pay quantity in acres}$$

$$(PL - BL) \times (SW + 1.8RS) = \text{____ m}^2 \div 10,000 \text{ m}^2 = \text{pay quantity in hectares}$$

C. Type C: Complete Project

[Project length (PL) minus (bridge and exception* length (BL)] times [right-of-way width or Engineer-specified width (RW) minus plan paved surface width (PPW)] equals square feet divided by 43,560 ft.²/acre= pay quantity in acres.

[Project length (PL) minus (bridge and exception* length (BL)] times [right-of-way width or Engineer-specified width (RW) minus plan paved surface width (PPW)] equals square meters divided by 43,560 ft.²/acre= pay quantity in hectares.

$$(PL - BL) \times (RW - PPW) = \text{____ ft}^2 \div 43,560 \text{ ft.}^2/\text{acre} = \text{pay quantity in acres}$$

$$(PL - BL) \times (RW - PPW) = \text{____ m}^2 \div 10,000 \text{ m}^2 = \text{pay quantity in hectares}$$

*Exception means major road intersections and Plan exceptions, not side roads, drives, etc.

706.4.01 Limits

General Provisions 101 through 150.

706.5 Payment

The turf establishment area will be paid for at the Contract Price per acre (hectare). Payment is full compensation for equipment, labor, seed, fertilizer, and any other materials necessary to complete the Item.

Payment will be made under:

Item No. 706	Turf establishment, type_____	Per acre (hectare)
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706.5.01 Adjustment

General Provisions 101 through 150.

Section 708—Plant Topsoil

708.1 General Description

This work includes furnishing and applying approved plant topsoil at the locations shown on the plans or as directed by the Engineer and according to these specifications.

708.1.01 Definitions

General Provisions 101 through 150.

708.1.02 Related References

A. Standard Specifications

Section 104—Scope of Work

Section 106—Control of Materials

Section 107—Legal Regulations and Responsibility to the Public

Section 893—Miscellaneous Planting Materials

B. Referenced Documents

General Provisions 101 through 150.

708.1.03 Submittals

General Provisions 101 through 150.

708.2 Materials

A. Plant Topsoil Materials

Use plant topsoil that meets the requirements of Subsection 893.2.01.

B. Sources of Material

Except as modified in this Section, furnish plant topsoil material according to Section 106.

1. Plant Topsoil Obtained from the Work

The requirements of Subsection 104.06, *Right in and Use of Material Found on the Work* are in effect for plant topsoil obtained from the work.

- a. Obtain the quantity of plant topsoil called for on the plans.
- b. Use plant topsoil material present on the Project as long as the topsoil meets the specifications applying to the Item.
- c. Excavate for topsoil only within the construction limits of the project. Obtain topsoil from embankment areas, excavation areas, or borrow excavation pits.
- d. When obtaining plant topsoil from borrow excavation pits or the roadway, cross section the excavated areas a second time before beginning regular excavation.

2. Plant Topsoil Furnished by the Contractor

When insufficient material is obtainable from the work, obtain additional topsoil offsite.

The Contract Price will include the costs necessary to locate, purchase, and deliver the required amount of acceptable material to the Work.

708.2.01 Delivery, Storage, and Handling

For the purpose of measurement, the Contractor may haul plant topsoil in any type of vehicle, provided the vehicle when loaded to capacity and traveling over public roads and streets meets the provisions of Subsection 107.14, *Load Restrictions*.

When using pans or scrapers, the capacity will be the manufacturer's rated capacity.

708.3 Construction Requirements

708.3.01 Personnel

General Provisions 101 through 150.

708.3.02 Equipment

General Provisions 101 through 150.

708.3.03 Preparation

General Provisions 101 through 150.

708.3.04 Fabrication

General Provisions 101 through 150.

708.3.05 Construction

A. General Requirements

Unless otherwise specified in the plans, uniformly spread plant topsoil to at least 2 in. (50 mm) loose depth.

1. Erosion Control

Only use plant topsoil on slopes where the gradient is 3:1 or flatter.

To reduce loss of plant topsoil by erosion, place the soil shortly before and in conjunction with grassing operations.

Place topsoil and complete grassing within specified seasonal limits.

2. Spreading Procedure

Before applying plant topsoil, scarify the designated areas 6 in. to 8 in. (150 mm to 200 mm) deep.

Mix the plant topsoil, lime when required, and the first application fertilizer with the underlying soil when preparing the soil for grassing. Spread and smooth the topsoil uniformly.

B. Plant Topsoil Obtained from The Work

1. Stockpiling

When obtaining topsoil from the work site, strip and stockpile the topsoil in suitable locations in advance of grading operations.

Just before grassing, remove the plant topsoil from the stockpile and spread it over the designated areas.

If grassing is started before grading operations are finished, if feasible, haul the topsoil from undisturbed areas before grading begins directly to the areas designated for the topsoil, eliminating the cost of stockpiling and removing the stockpile.

2. Surplus Material

When stockpiling more material than specified in the Contract, use the surplus material as additional plant topsoil material if directed by the Engineer.

After constructing the Item, use the surplus material left in the stockpiles to maintain the Item or to fill washes that occur within a reasonable haul distance.

Otherwise, remove or dress down the remaining material as directed by the Engineer, without additional compensation.

Section 708 — Plant Topsoil

C. Plant Topsoil Furnished by Contractor

When locating, obtaining, and paying for plant topsoil from pits outside the right-of-way, excavate the topsoil and haul it directly to the designated areas just before the planting begins.

Notify the Engineer, according to Subsection 893.2.01, *Plant Topsoil*, of the source of the material. The Engineer will inspect the topsoil. If the material is suitable, the Engineer will specify the permissible excavation depth. If the permissible excavation depth is exceeded, the material obtained from the areas will be rejected.

708.3.06 Quality Acceptance

After placing the plant topsoil, replace material lost by erosion at no expense to the Department.

708.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

708.4 Measurement

Accepted plant topsoil for this Item is measured by the cubic yard (meter) of material delivered in vehicles to the designated areas for plant topsoil. Only vehicles loaded to full capacity are measured for payment. No payment will be made for material delivered in partially filled vehicles.

Plant topsoil is not measured for payment when it is used for an Item that includes the cost of the plant topsoil in the price bid per Unit for the Item.

708.4.01 Limits

General Provisions 101 through 150.

708.5 Payment

Plant topsoil, eligible for payment, will be paid for at the Contract Unit Price per cubic yard (meter). Payment is full compensation for furnishing the material, removing objectionable matter from the material, loading and unloading, stockpiling and removing from the stockpile, hauling, spreading, preparing the ground, pulverizing, mixing, remixing, and for all maintenance.

Payment will be made under:

Item No. 708.	Plant topsoil	Per cubic yard (meter)
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708.5.01 Adjustments

General Provisions 101 through 150.

NOTICE TO ALL BIDDERS

**CONTRACTOR TO UTILIZE GEORGIA DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS FOR
CONSTRUCTION, LATEST EDITION, (WHERE APPLICABLE)
FOR ALL TECHNICAL SPECIFICATIONS NOT REFERENCED
IN THESE CONTRACT DOCUMENTS.**

**CONTRACTOR TO UTILIZE ALL CURRENT APPLICABLE
SPECIAL PROVISIONS AND SUPPLEMENTAL GEORGIA
DEPARTMENT OF TRANSPORTATION SPECIFICATIONS,
LATEST EDITION (WHERE APPLICABLE).**