GEORGIA DEPARTMENT OF TRANSPORTATION

Roadside Enhancement and Beautification Council Grant

Agreement

Contract Number: 48400-410-IGOMT2402493

Maximum Grant Award Amount: $50,000.00

This AGREEMENT is made and entered into on_____(hereinafter referred to as "Effective Date") by and between the **Georgia Department of Transportation,** an agency of the State of Georgia**,** located at One Georgia Center, 600 West Peachtree Street, Northwest, Atlanta, Georgia 30308 (hereinafter referred to as "GDOT" or the "Department");

AND

City of Lawrenceville
435 W Pike St
Lawrenceville, GA 30046

an entity that is qualified to receive the funding (hereinafter referred to as the "Grantee") (The Department and the Grantee are sometimes referred to herein individually as a "Party" and collectively as the "Parties").

WITNESSETH:

WHEREAS, the Grantee has submitted to GDOT an application to obtain funding from the Roadside Enhancement and Beautification Council Grant (hereinafter referred to as "Application"), which is attached hereto as Attachment A and is incorporated by reference; and

WHEREAS, The Grantee desires to obtain funding for a landscape and beautification project, as further described in its Application (hereinafter sometimes referred to as the "Project"); and

WHEREAS, the Department desires to provide funding for the Project to the Grantee.

NOW, THEREFORE, in consideration of these premises and the mutual promises and agreements hereinafter set forth, the Parties hereby agree as follows:

1. Scope. The Grantee agrees to provide, install and maintain the Project in accordance with the proposed project description in its Application, subject to reasonable adjustments or modifications as a result of review by the Department and GDOT policy.

2. The Grantee shall abide by the following as it relates to the Project:

    a. The Special Encroachment Permit, to be issued at a later time, upon GDOT approval of Grantee's Special Encroachment Permit application;

    b. The Mowing and Maintenance Agreement executed by the Parties in conjunction with the GDOT's issuance of Grantee's Special Encroachment Permit;

    c. The **GDOT Policy for Landscaping and Enhancements** (Policy No. 6755-9) found at http://mygdot.dot.ga.gov/applications/gdotpubs/PolicyandProcedures/06C734F6-60E3-49FC-E309-C753D2FC62B1.pdf;

    d. The USDOT/FHWA, A Manual on Uniform Traffic Control Devices – current edition;

    e. The GDOT Standard Specifications for Construction of Transportation Systems, current edition, Section 202—Random Clearing and Grubbing, Section 700—Grassing, Section 702—Vine, Shrub, and Tree Planting, which are attached hereto as Attachments E, F and G, respectively, and incorporated by reference as if fully set forth herein.

    f. ANSI Z 60.1 American Standard for Nursery Stock – current edition;

    g. GDOT Scenic Byway Program and Corridor Management Plan Guidelines and Requirements, as applicable found at http://www.dot.ga.gov/DriveSmart/Travel/ScenicByways/BywayDesignationGuide.pdf

    h. The Americans with Disabilities Act, 42 U.S.C. § § 12101 to 12213; and

    i. Georgia Security and Immigration Compliance Act, O.C.G.A. § 13-10-91.

3. Landscape Guidelines. Grantee shall follow GDOT's Policy for Landscaping and Enhancements (Policy No. 6755-9) and/or other directives given by the Landscape Architecture unit of GDOT's Office of Maintenance.

4. The Grantee hereby certifies that all requirements of the Application and this Agreement are understood, and that all information provided in the Application is true and correct, and represents the desires of the local government entity where the Project will be installed.

5. All obligations of the Grantee under this Agreement will be performed by the Grantee or a subcontractor of the Grantee. No work will be completed by GDOT.

6. Term of Agreement: This Project must be completed by the Grantee within thirty (30) months from the Effective Date. Completion is defined as the final inspection and acceptance of the Project by the Department Permit Inspector, as per Department Policy 6755-11. The Policy will be made available upon request.

7. Award Amount: Grantee's budget is attached hereto as Attachment B and incorporated herein by reference. The Department agrees to pay the Grantee a sum of $ 50,000.00 (hereinafter, "Award Amount"), subject to the terms and conditions set forth herein. The Award Amount is the maximum amount that the Department will be obligated to pay, regardless of whether the Grantee's budget for the Project (Attachment B) exceeds the Award Amount. Payment of the Award Amount will be made to the Grantee on a reimbursement basis to offset costs incurred by Grantee for landscaping, including plant materials, and associated installation costs on the Project. In addition, the Grantee agrees that no part of the Award Amount will be used to pay indirect costs. In no instance shall the Department be obligated to pay in excess of the Award

Amount. If the Grantee completes the work for less than the Award Amount, the Department is only obligated to reimburse the actual amount expended for the Project.

8. Invoice/Reimbursement Payment:

   a. To claim reimbursement, Grantee must first submit the following documents to the Department within ninety (90) calendar days after Project completion to the "Bill To" address in the purchase order. :
      - Encroachment Permit
      - Final, approved landscape plans on 8 ½ x 11 sheets of paper
      - Final Project budget
      - Completed and signed E-Verify Form(s), including Grantee, Contractor, and Subcontractors (Attachment D)

   b. Upon timely submission of the documents listed in subsection (a) of this Section 8, the Grantee shall be allowed to submit an invoice, using the sample Invoice and Invoice Cover Letter form attached to this Agreement (Attachment C), to the Department for reimbursement only after the Project is complete.

   c. The Department will pay the Grantee upon receipt of a properly prepared invoice using the Invoice and Invoice Cover Letter form (Attachment C). The invoice must include evidence that the Project is complete (e.g., digital "Before and After" pictures, etc.) and all supporting invoices and receipts. Please return the invoice promptly to expedite payment.

   d. All requests for payment shall be subject to Grantee not being declared in default of its obligations under the specific conditions in paragraph 13, below.

9. Records: The Grantee shall maintain all books, documents, papers, accounting records, and other evidence pertaining to costs incurred on the Project and shall make such material available for inspection by the Department and any reviewing agencies at all reasonable times during the period of this Agreement and for three (3) years from the date of final payment under the Agreement. The Grantee shall furnish copies of such documentation upon request. Furthermore, the Grantee understands that it is subject to, and shall comply with, the Georgia Open Records Act at O.C.G.A. 50-18-70 et seq.

   The Grantee agrees that the provisions of this paragraph 9 shall be included in any contracts it may make with any subcontractor, assignee, or transferee.

10. Usage: The Grantee agrees the Department may photograph the Project and display or use any information submitted by the Grantee under this Agreement without payment to the Grantee other than what is set forth in paragraph 7 herein. Grantee shall work with the Department's Office of Communication team, upon request.

11. Notices: Any notice under this Agreement shall be deemed duly given if delivered by hand (against receipt) or if sent by registered or certified mail – return receipt requested, to a Party hereto at the address set forth below or to such other address as the Parties may designate by notice from time to time in accordance with this Agreement.

If to the Department: Georgia Department of Transportation
600 West Peachtree Street
Atlanta, GA 30308
Attn: Office of Maintenance

If to the Grantee: The City of Lawrenceville

435 W Pike St
Lawrenceville, GA 30046

Attn: Mayor David Still

12. Indemnification: The Grantee shall be responsible for any and all damages to property or persons and shall save harmless the Department, its officers, agents, and employees from all suits, claims, actions or damages of any nature whatsoever resulting from the negligence of the Grantee or the Grantee's agent in the performance of work under this Grant Award and work related to the Project.

    The Grantee hereby indemnifies and hold harmless the Department, its officers, agents, and employees from and against any and all claims, damages, losses and expenses arising out of the Grantee's or Grantee's agent's negligent acts, errors or omissions in the performance of this Agreement.

    These indemnities shall not be limited by reason of the listing of any insurance coverage.

13. Reallocation of funds: The occurrence of any one or more of the following events shall constitute cause for the Department to declare the Grantee in default of its obligations under the Agreement and will result in the withdrawal of the Grant Award Amount and the reallocation of funds to another grantee:
    a. The Grantee fails to return the signed agreement within forty-five (45) days of notice of award letter;
    b. The Grantee fails to obtain the Special Encroachment Permit within one (1) year from the Effective Date;
    c. The Grantee's Special Encroachment Permit status changes to cancelled, without a timely valid renewal or extension;
    d. The Grantee fails to complete the Project within twelve (12) months of the date the Special Encroachment Permit is approved; or,
    e. The Grantee fails to request reimbursement of funds within ninety (90) calendar days after Project completion.

    To the extent that any of the above listed events occur, the Grant Award Amount will no longer be available to the Grantee.

14. Amendment: The Parties recognize and agree that it may be necessary or convenient for the Parties to amend this Agreement so as to provide for the orderly implementation of all the undertakings described herein. The Parties, thus, agree to cooperate fully in connection with such amendments if and as necessary. However, no change, modification, or amendment to this Agreement shall be effective unless the same is reduced to writing and signed by the Parties hereto.

15. Governing Law: This Agreement is executed in the State of Georgia, and all matters pertaining

to the validity, construction, interpretation and effect of this Agreement shall be governed by the laws of the State of Georgia.

16. Assignment: Except as herein provided, the Parties hereto will not transfer or assign all or any of their rights, titles or interests hereunder or delegate any of their duties or obligations hereunder without the prior written consent of the other Party, which consent will not be unreasonably withheld.

17. Non-Waiver: No failure of either Party to exercise any right or power given to such Party under this Agreement, or to insist upon strict compliance by the other Party with the provisions of this Agreement, and no custom or practice of either Party at variance with the terms and conditions of this Agreement, will constitute a waiver of either Party's right to demand exact and strict compliance by the other Party with the terms and conditions of this Agreement.

18. Continuity: Each of the provisions of this Agreement will be binding upon and inure to the benefit and detriment of GDOT and Grantee and the successors and assigns of GDOT and Grantee.

19. Time of the Essence: All time limits stated herein are of the essence of this Agreement.

20. Preamble, Recitals and Exhibits: The Preamble, Recitals and Exhibits hereto are a part of this Agreement and are incorporated herein by reference.

21. Severability: If any one or more of the provisions contained herein are for any reason held by any court of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provision hereof, and this Agreement will be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

22. Captions: The brief headings or titles preceding each provision hereof are for purposes of identification and convenience only and should be completely disregarded in construing this Agreement.

23. Interpretation: Should any provision of this Agreement require judicial interpretation, it is agreed that the court interpreting or construing the same shall not apply a presumption that the terms hereof shall be more strictly construed against one Party by reason of the rule of construction that a document is to be construed more strictly against the Party who itself or through its agent prepared the same, it being agreed that the agents of all Parties have participated in the preparation hereof.

24. Execution: Each of the individuals executing this Agreement represents that they are authorized to execute this Agreement on behalf of their respective entities.

25. No Third-Party Beneficiaries: Nothing contained herein shall be construed as conferring upon or giving to any person, other than the Parties hereto, any rights or benefits under or by reason of this Agreement.

26. Attachments:
    A. Scope of Project
        A.1. Landscape Plans
        A.2. Stipulations
    B. Budget
        B.1. Budget
        B.2. Grant Amount Adjustment Notes
    C. Sample Invoice & Cover Letter
    D. E-Verify Forms
    E. Section 202
    F. Section 700
    G. Section 702

27. Entire Agreement: This Agreement constitutes the entire agreement and understanding between the Parties hereto and replaces, cancels, and supersedes any prior agreements, understandings relating to the subject matter hereof; and all prior representations, agreements, understandings, and undertakings between the Parties hereto with respect to the subject matter hereof are merged herein.

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The signature page is on the following page.

IN WITNESS WHEREOF, the Parties have caused the authorized representatives of each to execute this Agreement on the day and year first above written.

<table>
<tr><td>GEORGIA DEPARTMENT OF TRANSPORTATION</td><td>City of Lawrenceville</td></tr>
<tr><td>By: _____

COMMISSIONER

Date: _____</td><td>By:_____

Title: _____</td></tr>
<tr><td rowspan="2">ATTEST

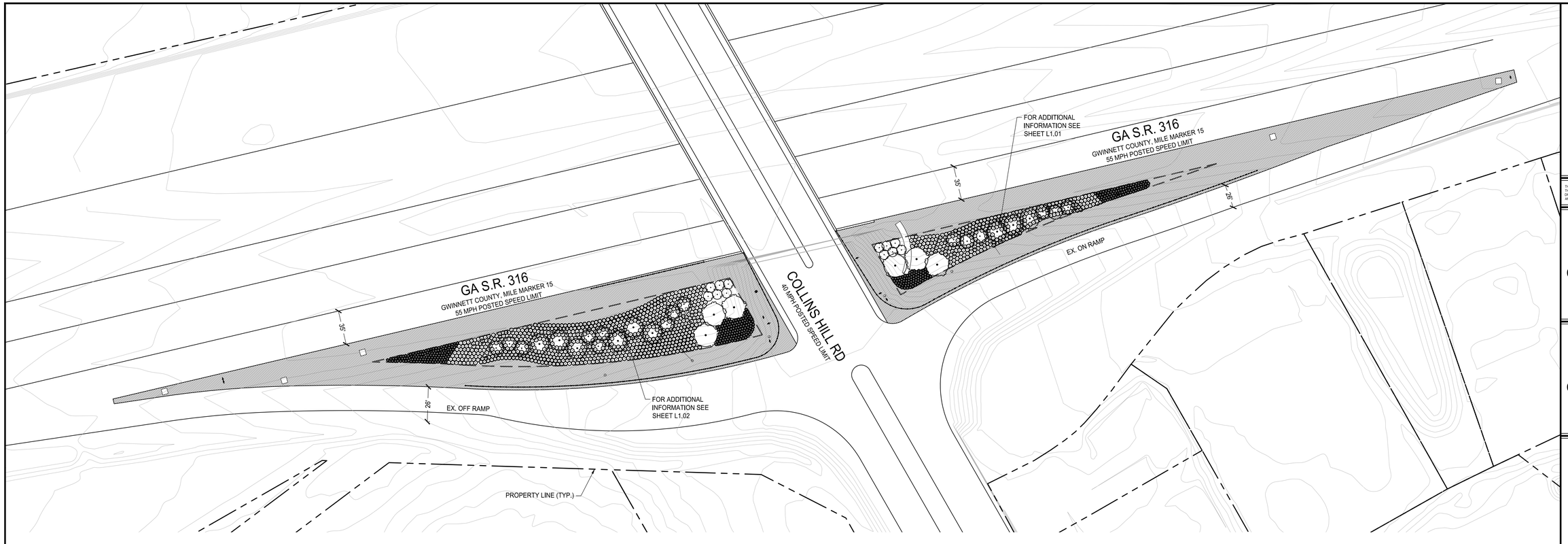
_____

Treasurer</td><td>ATTEST:

Title: _____</td></tr>
<tr><td>FEI #</td></tr>
</table>

ATTACHMENT A

A.1 LANDSCAPE PLANS



NOTE: THERE ARE NO EXISTING BILLBOARDS WITHIN 500' OF SITE.

811 Know what's **below.** **Call** before you dig.

0 50' 100' 150'

SCALE: 1" = 50 '

LOSE DESIGN
SPACES FOR LIFE.

DRAFT
NOT FOR
CONSTRUCTION

DRAFT
NOT FOR
CONSTRUCTION

SR 316/COLLINS HILL ROAD LANDSCAPE

CITY OF LAWRENCEVILLE

GA

LAWRENCEVILLE

SUBMITTALS / REVISIONS

NO.	DATE	DESCRIPTION
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SHEET TITLE

OVERALL LANDSCAPE PLAN

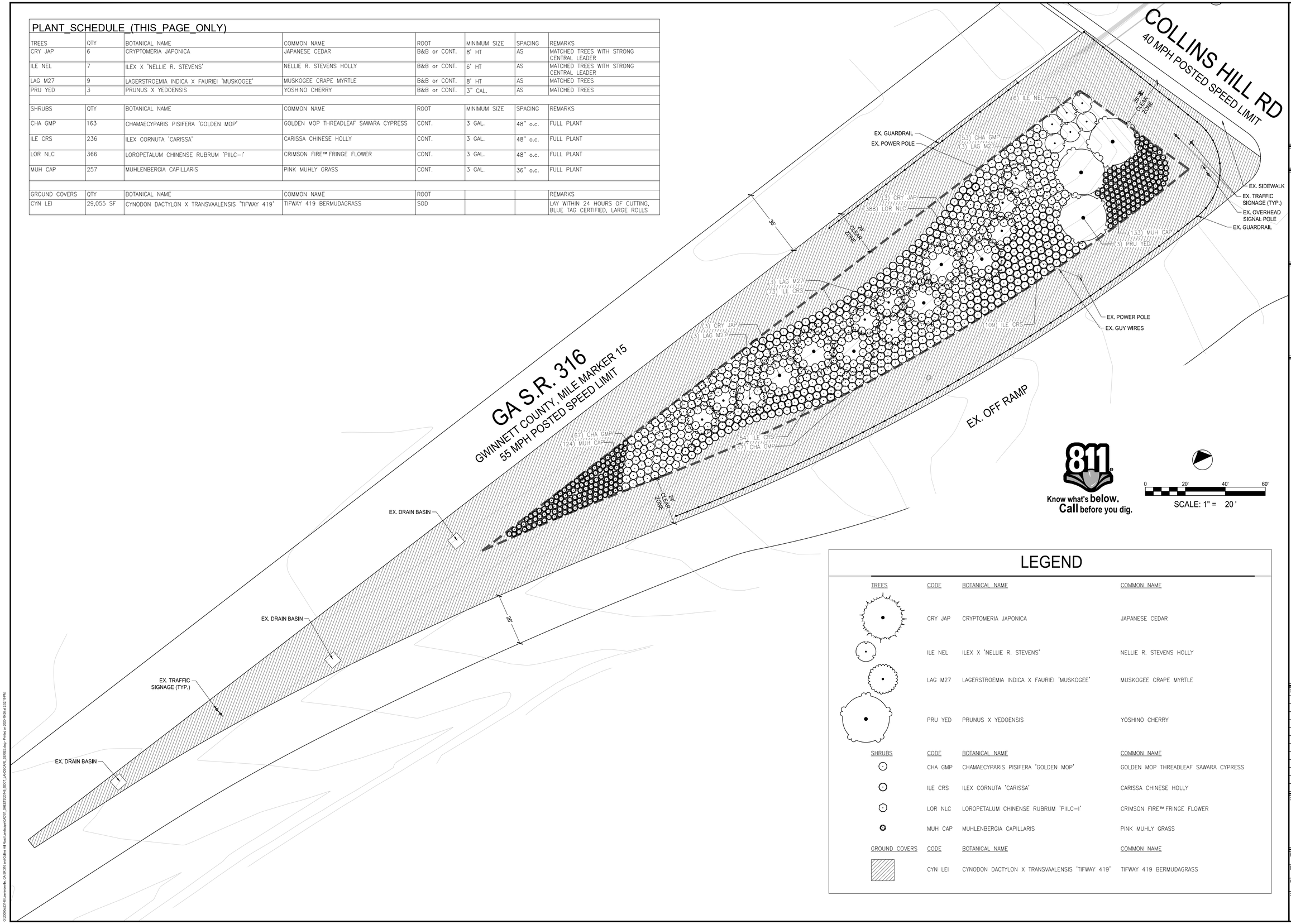
PROJECT NO. 23148	DATE 10/19/2023
DRAWN BY MTC	SCALE 1" = 50'
CHECKED BY WA	

SHEET NO.

L1.00

PLANT_SCHEDULE_(THIS_PAGE_ONLY)

TREES	QTY	BOTANICAL NAME	COMMON NAME	ROOT	MINIMUM SIZE	SPACING	REMARKS
CRY JAP	6	CRYPTOMERIA JAPONICA	JAPANESE CEDAR	B&B or CONT.	8' HT	AS	MATCHED TREES WITH STRONG CENTRAL LEADER
ILE NEL	7	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	B&B or CONT.	6' HT	AS	MATCHED TREES WITH STRONG CENTRAL LEADER
LAG M27	9	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE'	MUSKOGEE CRAPE MYRTLE	B&B or CONT.	8' HT	AS	MATCHED TREES
PRU YED	3	PRUNUS X YEDOENSIS	YOSHINO CHERRY	B&B or CONT.	3" CAL.	AS	MATCHED TREES
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	ROOT	MINIMUM SIZE	SPACING	REMARKS
CHA GMP	163	CHAMAECYPARIS PISIFERA 'GOLDEN MOP'	GOLDEN MOP THREADLEAF SAWARA CYPRESS	CONT.	3 GAL.	48" o.c.	FULL PLANT
ILE CRS	236	ILEX CORNUTA 'CARISSA'	CARISSA CHINESE HOLLY	CONT.	3 GAL.	48" o.c.	FULL PLANT
LOR NLC	366	LOROPETALUM CHINENSE RUBRUM 'PIILC-I'	CRIMSON FIRE™ FRINGE FLOWER	CONT.	3 GAL.	48" o.c.	FULL PLANT
MUH CAP	257	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	CONT.	3 GAL.	36" o.c.	FULL PLANT
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	ROOT			REMARKS
CYN LEI	29,055 SF	CYNODON DACTYLON X TRANSVAALENSIS 'TIFWAY 419'	TIFWAY 419 BERMUDAGRASS	SOD			LAY WITHIN 24 HOURS OF CUTTING, BLUE TAG CERTIFIED, LARGE ROLLS



Know what's **below.** **Call** before you dig.

0 20' 40' 60'

SCALE: 1" = 20'

LEGEND

TREES	CODE	BOTANICAL NAME	COMMON NAME
	CRY JAP	CRYPTOMERIA JAPONICA	JAPANESE CEDAR
	ILE NEL	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY
	LAG M27	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE'	MUSKOGEE CRAPE MYRTLE
	PRU YED	PRUNUS X YEDOENSIS	YOSHINO CHERRY
SHRUBS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	CHA GMP	CHAMAECYPARIS PISIFERA 'GOLDEN MOP'	GOLDEN MOP THREADLEAF SAWARA CYPRESS
	ILE CRS	ILEX CORNUTA 'CARISSA'	CARISSA CHINESE HOLLY
	LOR NLC	LOROPETALUM CHINENSE RUBRUM 'PIILC-I'	CRIMSON FIRE™ FRINGE FLOWER
	MUH CAP	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS
GROUND COVERS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	CYN LEI	CYNODON DACTYLON X TRANSVAALENSIS 'TIFWAY 419'	TIFWAY 419 BERMUDAGRASS

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SR 316/COLLINS HILL ROAD LANDSCAPE

CITY OF LAWRENCEVILLE

GA

LAWRENCEVILLE

SUBMITTALS / REVISIONS		
NO.	DATE	DESCRIPTION

SHEET TITLE

LANDSCAPE PLAN

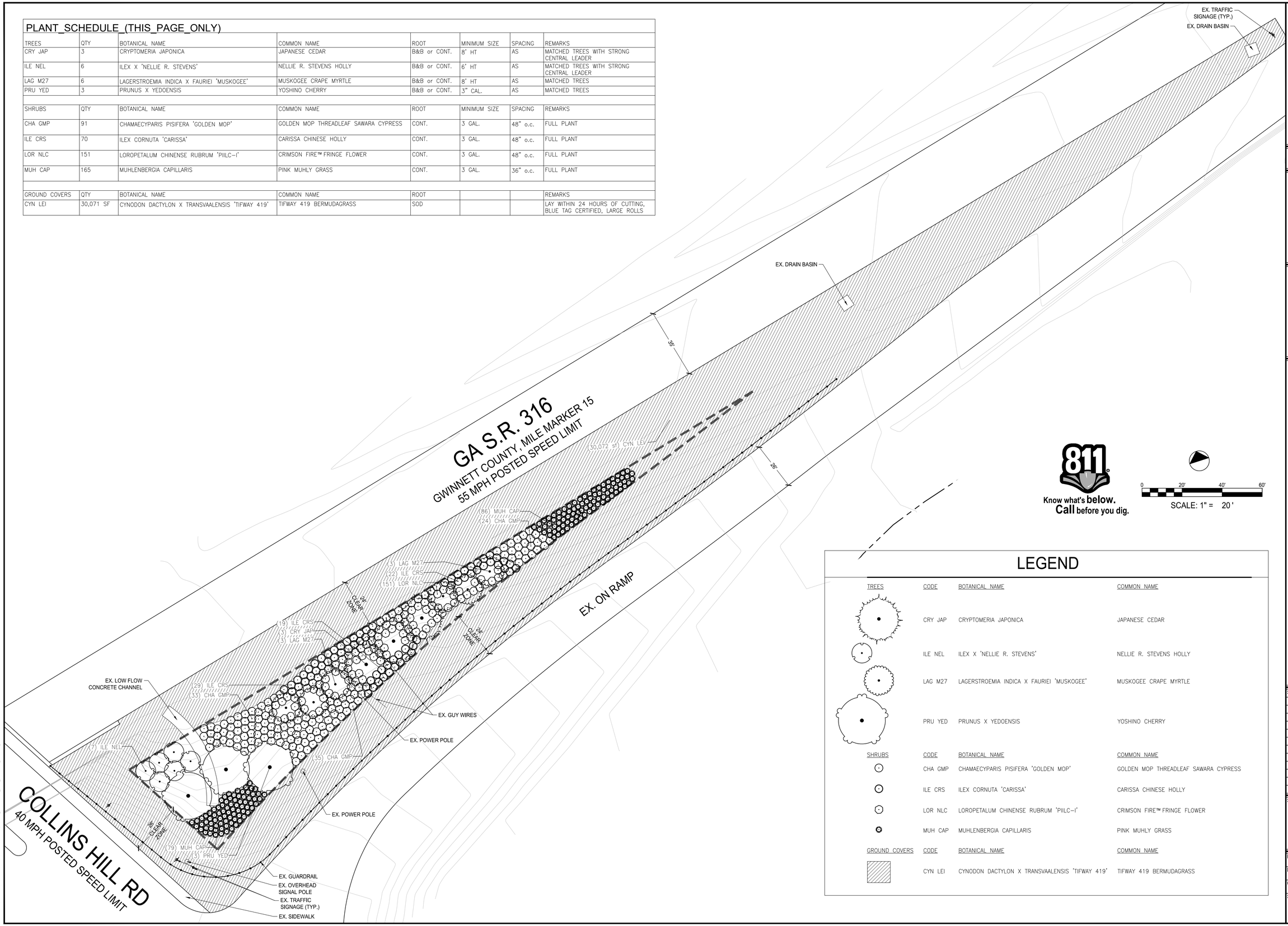
PROJECT NO. 23148	DATE 10/19/2023
DRAWN BY MTC	SCALE 1" = 20'
CHECKED BY WA	

SHEET NO.

L1.02

PLANT_SCHEDULE_(THIS_PAGE_ONLY)

TREES	QTY	BOTANICAL NAME	COMMON NAME	ROOT	MINIMUM SIZE	SPACING	REMARKS
CRY JAP	3	CRYPTOMERIA JAPONICA	JAPANESE CEDAR	B&B or CONT.	8' HT	AS	MATCHED TREES WITH STRONG CENTRAL LEADER
ILE NEL	6	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	B&B or CONT.	6' HT	AS	MATCHED TREES WITH STRONG CENTRAL LEADER
LAG M27	6	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE'	MUSKOGEE CRAPE MYRTLE	B&B or CONT.	8' HT	AS	MATCHED TREES
PRU YED	3	PRUNUS X YEDOENSIS	YOSHINO CHERRY	B&B or CONT.	3" CAL.	AS	MATCHED TREES
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	ROOT	MINIMUM SIZE	SPACING	REMARKS
CHA GMP	91	CHAMAECYPARIS PISIFERA 'GOLDEN MOP'	GOLDEN MOP THREADLEAF SAWARA CYPRESS	CONT.	3 GAL.	48" o.c.	FULL PLANT
ILE CRS	70	ILEX CORNUTA 'CARISSA'	CARISSA CHINESE HOLLY	CONT.	3 GAL.	48" o.c.	FULL PLANT
LOR NLC	151	LOROPETALUM CHINENSE RUBRUM 'PIILC-I'	CRIMSON FIRE™ FRINGE FLOWER	CONT.	3 GAL.	48" o.c.	FULL PLANT
MUH CAP	165	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	CONT.	3 GAL.	36" o.c.	FULL PLANT
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	ROOT			REMARKS
CYN LEI	30,071 SF	CYNODON DACTYLON X TRANSVAALENSIS 'TIFWAY 419'	TIFWAY 419 BERMUDAGRASS	SOD			LAY WITHIN 24 HOURS OF CUTTING, BLUE TAG CERTIFIED, LARGE ROLLS



811 Know what's **below.** **Call** before you dig.

0 20' 40' 60'

SCALE: 1" = 20 '

LEGEND

TREES	CODE	BOTANICAL NAME	COMMON NAME
	CRY JAP	CRYPTOMERIA JAPONICA	JAPANESE CEDAR
	ILE NEL	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY
	LAG M27	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE'	MUSKOGEE CRAPE MYRTLE
	PRU YED	PRUNUS X YEDOENSIS	YOSHINO CHERRY
SHRUBS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	CHA GMP	CHAMAECYPARIS PISIFERA 'GOLDEN MOP'	GOLDEN MOP THREADLEAF SAWARA CYPRESS
	ILE CRS	ILEX CORNUTA 'CARISSA'	CARISSA CHINESE HOLLY
	LOR NLC	LOROPETALUM CHINENSE RUBRUM 'PIILC-I'	CRIMSON FIRE™ FRINGE FLOWER
	MUH CAP	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS
GROUND COVERS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**
	CYN LEI	CYNODON DACTYLON X TRANSVAALENSIS 'TIFWAY 419'	TIFWAY 419 BERMUDAGRASS

LOSE DESIGN SPACES FOR LIFE.

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CONSTRUCTION

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CONSTRUCTION

SR 316/COLLINS HILL ROAD LANDSCAPE

CITY OF LAWRENCEVILLE

GA

LAWRENCEVILLE

SUBMITTALS / REVISIONS		
NO.	DATE	DESCRIPTION

SHEET TITLE

LANDSCAPE PLAN

PROJECT NO. 23148	DATE 10/19/2023
DRAWN BY MTC	SCALE 1" = 20'
CHECKED BY WA	

SHEET NO.

L1.01

ATTACHMENT A

A.2 STIPULATIONS

No stipulations.

ATTACHMENT B

B.1. BUDGET

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LAWRENCEVILLE GA SR 316 AND COLLINS HILL RD LANDSCAPE

OPINION OF PROBABLE COST
11/1/2023

Project No.23148

DESCRIPTION	QUANTITY	UNIT	UNIT PRICE		SUBTOTAL	NOTES
CONSTRUCTION COSTS						
GENERAL SITE						
DEMOLITION/ WASTE DISPOSAL	1	LS	$10,000.00	$	**10,000.00**	BUDGET
BED PREP	25,000	SF	$1.00	$	**25,000.00**	BUDGET
TRAFFIC CONTROL	1	LS	$8,000.00	$	**8,000.00**	BUDGET
			GENERAL SITE SUBTOTAL	$	**43,000.00**	
LANDSCAPE						
JAPANESE CEDAR	9	EA	$750.00	$	**6,750.00**	BUDGET, INCLUDES INSTALL
NELLIE R. STEVENS HOLLY	13	EA	$750.00	$	**9,750.00**	BUDGET, INCLUDES INSTALL
MUSKOGEE CRAPE MYRTLE	15	EA	$750.00	$	**11,250.00**	BUDGET, INCLUDES INSTALL
YOSHINO CHERRY	6	EA	$750.00	$	**4,500.00**	BUDGET, INCLUDES INSTALL
GOLDEN MOP	254	EA	$45.00	$	**11,430.00**	BUDGET, INCLUDES INSTALL
CARISSA HOLLY	306	EA	$45.00	$	**13,770.00**	BUDGET, INCLUDES INSTALL
CRIMSON FIRE FRINGE FLOWER	517	EA	$45.00	$	**23,265.00**	BUDGET, INCLUDES INSTALL
PINK MUHLY GRASS	422	EA	$40.00	$	**16,880.00**	BUDGET, INCLUDES INSTALL
SOD	59,126	SF	$1.00	$	**59,126.00**	BUDGET, INCLUDES INSTALL
			AMENITIES SUBTOTAL	$	**128,971.00**	
			CONSTRUCTION COST SUBTOTAL	$	**171,971.00**	
			CONTRACTOR FEES & OVERHEAD (10% SD)	$	**17,197.10**	
			DESIGN CONTINGENCY (20% SD)	$	**34,394.20**	
			CONSTRUCTION COST TOTAL	$	**223,562.30**	
			RECOMMENDED CONSTRUCTION COST BUDGET	$	**225,000.00**	

NOTES:
1. Unless otherwise noted, all unit prices reflect the furnishing of all labor, mobilization, materials, supplies, services, etc. and all items of cost, overhead, profit, insurance, taxes, fees permits, etc.

ATTACHMENT B

B.2. GRANT AMOUNT ADJUSTMENT NOTES

No grant amount adjustment.

ATTACHMENT C
SAMPLE INVOICE & COVER LETTER

INVOICE COVER LETTER FOR REIMBURSEMENT

To: Georgia Department of Transportation:
Email: APInvoices@dot.ga.gov **Preferred Method**
Mail: Georgia Department of Transportation
PO Box 746459
Atlanta, GA 30374-6459
404-631-1397

CONTRACT ID # 48400-410-IGOMT2402493
P.O. # _____

Project No.: A000848
P.I. No.: A000848

Total Grant Amount: $ _____

Org ID # 4846200000

Please provide reimbursement for our according to the charging information above in the amount of :

Invoice No. _____

County: _____

F.E.I.N. _____

_____

Submitted By GRANTEE
ADDRESS _____
_____
CITY STATE ZIP CODE

By signature below, I hereby certify that the above amount, supported by the attached detail statements, is for work completed on the above project. Reimbursement for the GDOT share of this invoice is requested.

_____ Date:

_____
Contact Signature – Grantee

Attachment D

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT/

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT

Contractor's Name:	
Address:	
Solicitation/Contract No.:	
Solicitation /Contract Name:	

CONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned Contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, entity or corporation which is engaged in the physical performance of services on behalf of the Georgia Department of Transportation 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 sub-Contractors 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

(EEV/E-Verify Company Identification Number)

Date of Authorization

_____

Name of Contractor

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

_____ _____

Printed Name (of Authorized Officer or Agent of Contractor)

Title (of Authorized Officer or Agent of Contractor)

_____ _____

Signature (of Authorized Officer or Agent)

SUBSCRIBED AND SWORN BEFORE ME ON

Date Signed

_____

Notary Public

[NOTARY SEAL]

My Commission Expires: _____

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT

Contractor's Name:	
Sub-Contractor's (Your) Name	
Sub-Contractor's Address:	
Solicitation/Contract No.:	
Solicitation /Contract Name:	

SUB-CONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. §13-10-91, stating affirmatively that the individual, entity or corporation which is engaged in the physical performance of services under a contract with _____ (name of Contractor) on behalf of the Georgia Department of Transportation 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 will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the 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 that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the 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 (EEV/E-Verify Company Identification Number)

Date of Authorization

_____

Name of Sub-Contractor

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

_____ _____

Printed Name (of Authorized Officer or Agent of Contractor)

Title (of Authorized Officer or Agent of Contractor)

_____ _____

Signature (of Authorized Officer or Agent)

Date Signed

SUBSCRIBED AND SWORN BEFORE ME ON

_____

_____ [NOTARY SEAL]

Notary Public

My Commission Expires: _____

Revised 7/24/2018

ATTACHMENT E

SECTION 202

Section 202—Random Clearing and Grubbing

202.1 General Description

This work includes clearing and grubbing borrow and material pits. See Subsection 107.23. It also includes such ditch inlets, outlets, channel changes, and easement areas where clearing and grubbing are required but not shown on the plans.

202.1.01 Definitions

General Provisions 101 through 150.

202.1.02 Related References

A. Standard Specifications

Section 107—Legal Regulations and Responsibility to the Public

Section 201—Clearing and Grubbing Right-of-Way

B. Referenced Documents

General Provisions 101 through 150.

202.1.03 Submittals

General Provisions 101 through 150.

202.2 Materials

General Provisions 101 through 150.

202.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

202.3 Construction Requirements

202.3.01 Personnel

General Provisions 101 through 150.

202.3.02 Equipment

General Provisions 101 through 150.

202.3.03 Preparation

General Provisions 101 through 150.

202.3.04 Fabrication

General Provisions 101 through 150.

202.3.05 Construction

Perform the work according to Section 201.

202.3.06 Quality Acceptance

General Provisions 101 through 150.

202.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

202.4 Measurement

The area of completed and accepted clearing and grubbing is measured in acres (hectares). Only the area cleared and grubbed as shown on the Plans or as designated by the Engineer is measured.

The Department will make no separate payment for removing grass, weeds, debris, small underbrush, other vegetation from cultivated lands, and isolated trees or stumps. Include the cost for removing these items in the price bid for other Pay Items.

202.4.01 Limits

General Provisions 101 through 150.

202.5 Payment

The Department will pay for Clearing and Grubbing and Clearing at the Contract Unit Price per acre (hectare), which is full compensation for all work specified.

Payment will be made under:

Item No. 202	Clearing and grubbing	Per acre (hectare)
Item No. 202	Clearing	Per acre (hectare)

202.5.01 Adjustments

General Provisions 101 through 150.

ATTACHMENT F

SECTION 700

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

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.

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.

Planting Zone Map

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)	*Cynodon dactylon*	Required Permanent Grass	10 (11)	1	April 16 – August 31
Common Bermuda Grass (Unhulled)			10 (11)		
Common Bermuda Grass (Hulled)	*Cynodon dactylon*	Required Permanent Grass	10 (11)	2,3,4	April 1 – October 15
Common Bermuda Grass (Unhulled)			10 (11)		
Bahaia Grass	*Paspalum motatum*		10 (11)		
Rye Grass, Millet, Cereal Grass (Oats)	*Lolium penne spsp. Multiflorum, Echinochloa cursgalli, Avena sativa*	Temporary Grass	50 (56)	1	September 1- April 15
Rye Grass, Millet, Cereal Grass (Oats)	*Lolium penne spsp. Multiflorum, Echinochloa cursgalli, Avena sativa*	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	*Lespedeza sericea*	Permanent Grass	50(56)	1,2	March 1 – August 31
Weeping Lovegrass	*Eragrostis curvula*	Temporary Grass	10(11)		
Interstate Lespedeza	*Lespedeza sericea*	Permanent Grass	75(84)	1,2	September 1- February 28
Tall Fescue	*Festuca arundinacea*	Temporary Grass	50(56)		
Interstate Lespedeza	*Lespedeza sericea*	Permanent Grass	50(56)	3,4	April 1 – October 31
Weeping Love Grass	*Eragrostis curvula*	Temporary Grass	10(11)		
Interstate Lespedeza	*Lespedeza sericea*	Permanent Grass	50(56)	3,4	November 1 – March 31
Weeping Love Grass	*Eragrostis curvula*	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	*Elymus canadensis*	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Virginia Wild Rye	*Elymus virginicus*	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Bottle-brush Grass	*Hystrix patula*	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Little Bluestem	*Schizachyrium scoparium* (*Andropogon scoparius*)	Warm Season	Minimum 2 (2)	1,2,3,4	March31- August 31
Indiangrass	*Sorghastrum nutans*	Warm Season	Minimum 2 (2)	1,2,3,4	March 31- August 31
Eastern Gama Grass	*Tripsacum dactyloides*	Warm Season	Minimum 2 (2)	1,2,3,41,2,3,4	March 31- August 31
Rice Cut Grass	*Leersia oryzoides*	Warm Season	Minimum 2 (2)	1,2,3,4	March 31- August 31
Deertongue	*Panicum clandestinum*	Warm Season	Minimum 2 (2)	1,2,3,4	March 31- August 31
Switchgrass	*Panicum virgatum*	Warm Season	Minimum 2 (2)	1,2,3,4	March 31- August 31
Woolgrass	*Scirpus cyperinus*	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
River Oats	*Chasmanthium latifolium*	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Purple Top	Tridens flavus	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	*Eupatorium fistulosum*	Herbaceous Perennial	Minimum 2 (2)	1,2,3,4	September 1 – May 1
Ironweed	*Vernonia novaboracensis*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,
White snakeroot	*Ageratina altissima* (*Eupatorium rugosum)*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Swamp milkweed	*Asclepias incarnata*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,
Frost aster	*Aster pilosus* (*Symphyotrichum pilosum*)	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Partridge pea	*Chamaecrista fasciculata* (*Cassia fasciculata*)	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,
Lance-leaf coreopsis	*Coreopsis lanceolata*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Tall coreopsis	*Coreopteris tripteris*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Boneset	*Eupatorium perfoliatum*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Sneezeweed	*Helenium autumnale*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Swamp sunflower	*Helianthus angustifolius*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	March 1 - August 31,
Fringed loosestrife	*Lysimachia ciliata*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1

Wild bergamot	*Monarda fistulosa*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Mountain mint	*Pycnanthemum tenuifolium*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Black-eyed susan	*Rudbeckia hirta*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Goldenrod	*Solidago nemoralis*	Herbaceous Perennial	Up to 10(11)	1,2,3,4	September 1 – May 1
Butterfly Weed	*Aesclepias tuberose*	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 ¾ 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 fetilizer 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.

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 (Cyndon 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.

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 than1 ft.^{2} (0.1 m^2). 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.

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.

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.

ATTACHMENT G

SECTION 702

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

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.

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.

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.

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 innoculant 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 innoculant 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

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 trucks 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.

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.

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.

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.

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.

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 Mrytles. 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

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.

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.