



INVITATION TO BID

Date: February 16, 2026

BID ID # 1001

The Village of Marvin will be accepting sealed bids for the planned streambank stabilization repairs/construction within the Six Mile Tributary. This work is conducted under the Village's Streamflow Rehabilitation Assistance Program Grant through the North Carolina Department of Agriculture and Consumer Services. The project scope is located along several parcels within the Six Mile Tributary Branch as defined by the attached construction plans. All bids are subject to all conditions, and provisions, etc., set forth herein and attached. A single prime combined bid for all work for will be accepted from February 16, 2026, until March 16, 2026 at 12:00 p.m. E.S.T. The extent of the work is shown on the drawings & specified in the project manual. All sealed bids must be submitted to the Village of Marvin either in person or by mail to the attention of Village Manager, Christina Amos, by 12:00 p.m. E.S.T. at 10006 Marvin School Road, Marvin, NC 28173 at which time and location all bids will be opened publicly and read aloud. Facsimiles or electronic responses are not acceptable. For purposes of exact time determination, the clock in the Village of Marvin Council Room will be used. **LATE BIDS WILL NOT BE ACCEPTED.**

PROJECT DESCRIPTION:

Scope of Work includes various stream stabilization components within the Six Mile Tributary 1 which is a perennial stream with incised banks and limited sinuosity that flows into Six Mile Creek. The surrounding area includes residential land use with mature hardwood forests and a stream buffer corridor that is approximately 200' wide. The purpose of construction is to stabilize portions of the bank and preserve the adjacent stream buffers. The project area is approximately 1.8 total acres including 0.1 acres of disturbed area that include the following:

- Installation of two rock sills (15 LF)
- Installation of stone toe protection along stream banks (85 LF)
- Installation of Coir Fiber Logs along stream banks (280 LF)
- Installation of Live Stake Plantings (420 plants)
- Armoring existing storm pipe outfall with Class II rip rap (5 SY)

All work will be in compliance with NC Department of Agriculture and Consumer Services-Division of Soil and Water Conservation with construction oversight by Dewberry Engineering. All construction shall be in compliance with both agreements as attached to this RFP.

ACCEPTANCE OF BIDS:

It is the intent of the Village to award a Contract to the lowest responsive, responsible Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Village reserves the sole right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Village's judgment, is in the Village's own best interests. Alternates will be reviewed in consideration of the overall project cost to determine feasibility within the project budget. The Village shall accept or reject any alternates in any order or combination. To determine the lowest bidder, the Village shall calculate the sum of the total base bid and/or the deduction or addition of the alternates, if accepted.

SPECIAL CONDITIONS:

Bids must be submitted on the Bid Proposal Form (see Project Manual). Bids made otherwise will be subject to rejection. The above Bid # must be shown on front of the envelope in which this bid is submitted. Village of Marvin assumes no responsibility for unmarked envelopes being considered for award. An authorized company representative is required to sign the Instruction to Bidders page in the space provided and return with their response. Bids not signed will automatically be rejected. If Village offices are closed due to inclement weather, the bids shall be opened at the same scheduled hour on the next day the Village Offices are open to the public after the scheduled bid opening date. In the event that an act of nature occurs preventing a firm to attend a mandatory meeting or submitting a bid on time, the Village of Marvin reserves the right to accept or excuse the firm's tardiness. Each proposal must be accompanied by a Bid Deposit of cash, certified check or a fully executed Bid Bond payable to the Village of Marvin in an amount of five percent (5%) of the gross amount of the base-bid proposal executed in accordance with and conditioned as prescribed by North Carolina General Statute 143-129 as amended. If the successful bidder fails to execute the contract within 30 days after the award or fails to give satisfactory surety is required by law, the above deposit will be retained by the Village of Marvin. All contractors are hereby notified that they must be properly licensed under the laws of North Carolina governing their trades. A Payment and Performance Bond will be required each in the sum equal to 100% of the Contract Sum of the accepted bid total. No Bidder may withdraw his bid within 90 days after the scheduled closing time for receipt of bids. Liquidated damages of \$500/day will be imposed if substantial completion of the project is not reached within 8 months from "Notice To Proceed."

Contractors are hereby notified that the Village of Marvin has a verifiable ten (10) percent goal for the participation by minority businesses in the total value of work for which the contract is awarded in order to follow North Carolina G.S. 143-128. Minority percentages will not be the basis for selecting the low bidder. All minority businesses are encouraged to participate in bidding in this project. The Village of Marvin reserves the right to reject any or all bids and to waive informalities.

All bids must include the following supplemental documents:

- NC General Contractor license number as requested in Project Manual;
- Appropriate HUB forms;
- History documenting experience with projects of similar size, scope and complexity within last three (3) years (documented in the "Representation Form" of Project Manual);
- Proof of bonding;
- Safety history including copies of any complaints, safety violations and/or reports from OSHA
- Current insurance;
- Compliance with E-verify;

INSTRUCTIONS TO BIDDERS:

- a. **Submit all documents as required by the Project Manual.**
- b. Bids, amendments thereto or withdrawal requests received after the time advertised for bid opening will be void regardless of when they were mailed.

- c. Attach complete specifications for any permitted substitutions offered or when amplification is desirable or necessary.
- d. When required, furnish samples, free of expense, prior to the opening of bids.
- e. Address and mark bids as indicated in the project manual.
- f. Neither the Owner or the Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- g. A "No Bid" is considered a response.
- h. Bidders shall comply with all other instructions and conditions as set forth in the project manual even if not explicitly stated herein.

CONDITIONS:

- a. The Village of Marvin reserves the right to reject any and all bids, and to waive all technicalities.
- b. The Village reserves the right to make determination on the final colors of all elevations in any alternates presented prior to the "Notice To Proceed", therefore bids should be reflective of potential change in color schemes as detailed in the plans.
- c. In case of default of contractor, the Village reserves the right to purchase any or all items in default in open market, charging contractor with any excessive costs. Should such change be assessed, no subsequent bids nor the defaulting contractor will be considered until the assessed charge has been satisfied.
- d. All materials and products offered must be guaranteed to meet the requirements of the specifications indicated, given or referred to.
- e. Prices bid must be based upon payment in thirty days. Discounts for payment in less than thirty days will not be considered in making award.
- f. The right is reserved in case tie bids are received to make award as considered to be most advantageous to the Village of Marvin.
- g. The successful bidder shall indemnify and save harmless the Village of Marvin and all Village officials, agents and employees, from all suits or claims of any character brought by reason of infringing on any patent trade mark or copyright.
- h. Bidders must guarantee price for a period of not less than **120 days**.

ATTACHMENTS: CONTRACT WITH STRAP AND DEWBERRY AND CONSTRUCTION DOCUMENTS



Village of Marvin

Enriched by Nature

**PROJECT MANUAL
FOR**

MARVIN STREAMBANK STABILIZATION PROJECT

VILLAGE OF MARVIN, NORTH CAROLINA

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DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract. For other definitions not defined below, see ATTACHEMENT A titled “STREAMFLOW REHABILITATION ASSISTANCE PROGRAM” Grant Contract and/or construction document detail sheets for other definitions.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

INVITATION TO BID

The Village of Marvin will be accepting sealed bids for the planned streambank stabilization repairs/construction within the Six mile Tributary. This work is conducted under the Village's Streamflow Rehabilitation Assistance Program Grant through the North Carolina Department of Agriculture and Consumer Services. The project scope is located along several parcels within the Six mile Tributary Branch as defined by the attached constructions plans. All bids are subject to all conditions, and provisions, etc., set forth herein and attached. A single prime combined bid for all work for will be accepted from February 16, 2026, until March 10th, 2026 at 12:00 p.m. E.S.T. The extent of the work is shown on the drawings & specified in the project manual. All sealed bids must be submitted to the Village of Marvin either in person or by mail to the attention of Village Manager, Christina Amos, by 12:00 p.m. E.S.T. at 10006 Marvin School Road, Marvin, NC 28173 at which time and location all bids will be opened publicly and read aloud. Facsimiles or electronic responses are not acceptable. For purposes of exact time determination, the clock in the Village of Marvin Council Room will be used. **LATE BIDS WILL NOT BE ACCEPTED.**

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For more project information, call Christina Amos, Village Manager at 704-843-1680 or Manager@marvinncc.gov

INSTRUCTIONS TO BIDDERS

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The Village of Marvin (hereafter, “Village” or “Owner”) will receive sealed bids for the following Project: **MARVIN STREAMBANK STABILIZATION PROJECT**

PROJECT DESCRIPTION:

Scope of Work includes various stream stabilization components within the Six Mile Tributary 1 which is a perennial stream with incised banks and limited sinuosity that flows into Six Mile Creek. The surrounding area includes residential land use with mature hardwood forests and a stream buffer corridor that is approximately 200’ wide. The purpose of construction is to stabilize portions of the bank and preserve the adjacent stream buffers. The project area is approximately 1.8 total acres including 0.1 acres of disturbed area that include the following:

- Installation of two rock sills (15 LF)
- Installation of stone toe protection along stream banks (85 LF)
- Installation of Coir Fiber Logs along stream banks (280 LF)
- Installation of Live Stake Plantings (420 plants)
- Armoring existing storm pipe outfall with Class II rip rap (5 SY)

All work will be in compliance with NC Department of Agriculture and Consumer Services-Division of Soil and Water Conservation with construction oversight by Dewberry Engineering. All construction shall be in compliance with both agreements as attached to this RFP.

SPECIAL CONDITIONS:

Bids must be submitted on the Bid Proposal Form (see Project Manual). Bids made otherwise will be subject to rejection. The above Bid # must be shown on front of the envelope in which this bid is submitted. Village of Marvin assumes no responsibility for unmarked envelopes being considered for award. An authorized company representative is required to sign the Instruction to Bidders page in the space provided and return with their response. Bids not signed will automatically be rejected. If Village offices are closed due to inclement weather, the bids shall be opened at the same scheduled hour on the next day the Village Offices are open to the public after the scheduled bid opening date. In the event that an act of nature occurs preventing a firm to attend a mandatory meeting or submitting a bid on time, the Village of Marvin reserves the right to accept or excuse the firm’s tardiness. Each proposal must be accompanied by a Bid Deposit of cash, certified check or a fully executed Bid Bond payable to the Village of Marvin in an amount of five percent (5%) of the gross amount of the base-bid proposal executed in accordance with and conditioned as prescribed by North Carolina General Statute 143-129 as amended. If the successful bidder fails to execute the contract within 30 days after the award or fails to give satisfactory surety is required by law, the above deposit will be retained by the Village of Marvin. All contractors are hereby notified that they must be properly licensed under the laws of North Carolina governing their trades. A Payment and Performance Bond will be required each in the sum equal to 100% of the Contract Sum of the accepted bid total. No Bidder may withdraw his bid within 90 days after the scheduled closing time for receipt of bids. Liquidated damages of \$500/day will be imposed if substantial completion of the project is not reached within 5 months from “Notice To Proceed.”

Contractors are hereby notified that the Village of Marvin has a verifiable ten (10) percent goal for the participation by minority businesses in the total value of work for which the contract is awarded in order to follow North Carolina G.S. 143-128. Minority percentages will not be the basis for selecting the low bidder. All minority businesses are encouraged to participate in bidding in this project. The Village of Marvin reserves the right to reject any or all bids and to waive informalities.

All bids must include the following supplemental documents:

- NC General Contractor license number as requested in Project Manual;
- Appropriate HUB forms;
- History documenting experience with projects of similar size, scope and complexity within last three (3) years (documented in the “Representation Form” of Project Manual);
- Proof of bonding;
- Safety history including copies of any complaints, safety violations and/or reports from OSHA
- Current insurance;
- Compliance with E-verify;

INSTRUCTIONS TO BIDDERS:

- a. **Submit all documents as required by the Project Manual.**
- b. Bids, amendments thereto or withdrawal requests received after the time advertised for bid opening will be void regardless of when they were mailed.
- c. Address and mark bids as indicated in the project manual.
- d. Neither the Owner or the Engineer assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- e. A “No Bid” is considered a response.
- f. Bidders shall comply with all other instructions and conditions as set forth in the project manual even if not explicitly stated herein.

CONDITIONS:

- a. The Village of Marvin reserves the right to reject any and all bids, and to waive all technicalities.
- b. In case of default of contractor, the Village reserves the right to purchase any or all items in default in open market, charging contractor with any excessive costs. Should such change be assessed, no subsequent bids nor the defaulting contractor will be considered until the assessed charge has been satisfied.
- c. All materials and products offered must be guaranteed to meet the requirements of the specifications indicated, given or referred to.
- d. Prices bid must be based upon payment in thirty days. Discounts for payment in less than thirty days will not be considered in making award.
- e. The right is reserved in case tie bids are received to make award as considered to be most advantageous to the Village of Marvin.

INSTRUCTIONS TO BIDDERS

- f. The successful bidder shall indemnify and save harmless the Village of Marvin and all Village officials, agents and employees, from all suits or claims of any character brought by reason of infringing on any patent trade mark or copyright.
- g. Bidders must guarantee price for a period of not less than **120 days**.

TIMELINE:

Project Advertisement	February 16, 2026
Bid Documents Available	February 16, 2026
Bids due by 12:00 PM EST	March 16, 2026
Village Council to Award Contract	April 6, 2026
Permitting 401/404/Floodplain	February-April, 2026
Completion of Project	Fall 2026 (anticipated completion date September 15, 2026)

CONTENT OF BID: Each Bid must contain the following fully-completed forms / documents:

- Instructions to Bidders
- Bid Proposal Form
- Representative Projects Form
- Execution of Bid Form
- Bid Bond
- MBE Forms
- Bidding Substitution Request Form

All Bids shall be placed in a sealed envelope with the following information printed on the outside of the envelope:

BID FOR:	<u>MARVIN STREAMBANK STABLIZATOIN PROJECT</u> BID ID # 1001 <i>Project Name</i>
BIDDER’S NAME:	_____ <i>Contractor’s Name</i>
DO NOT OPEN UNTIL:	<u>March 16, 2026 12:00 p.m. E.S.T</u> <i>Bid Opening Date & Time</i>

BID BOND: Each proposal must be accompanied by a Bid Deposit of cash, certified check or a fully executed Bid Bond payable to the Village of Marvin in an amount of five percent (5%) of the gross amount of the base-bid proposal executed in accordance with and conditioned as prescribed by North Carolina General Statute 143-129 as amended.

BIDS ARE FIRM OFFERS: All Bids shall be firm offers to contract for 120 days from the Bid Deadline. Unless forfeited, Bid Bonds shall be returned to Bidders upon the earlier of Contract Award or 180 days from the Bid Deadline.

BID PHASE CONTACT: For questions regarding the Project or Instructions to Bidders, contact: Christina Amos, Village Manager. The Village will attempt to answer all questions in writing by addenda. THE VILLAGE WILL NOT MAKE ORAL REPRESENTATIONS AND BIDDERS MAY NOT RELY ON ORAL REPRESENTATIONS.

ADDENDA: Addenda will be filed on Village’s website and delivered by email to all persons who have requested Contract Documents. The Bidder shall be responsible for inquiring if Addenda have been issued.

SELECTION CRITERIA: It is the intent of the Village to award a Contract to the lowest responsive, responsible Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Village reserves the sole right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Village's judgment, is in the Village's own best interests. Alternates will be reviewed in consideration of the overall project cost to determine feasibility within the project budget. The Village shall accept or reject any alternates in any order or combination. To determine the lowest bidder, the Village shall calculate the sum of the total base bid and/or the deduction or addition of the alternates, if accepted. Consideration will be given only to Bids from contractors who are properly licensed, bonded, experienced in the class of work proposed and who can refer to projects of similar magnitude and character that have been completed by them.

ONLY 1 BID PER ENTITY: No entity or person may submit or participate in the submission of more than one (1) Bid.

NEGOTIATIONS WITH APPARENT LOW BIDDER: The Village reserves the right to negotiate with the lowest responsive and responsible bidder if the bid exceeds available funds. Negotiations may include reduction in bid price, modification, and/or reduction in scope of the work, substitution of materials, or any other alterations to the work, so that the low bid is reduced to within available funds, including a reasonable fund balance for contingency funds to be available during the course of construction.

CONTRACT AWARD: The Village will inform the Selected Bidder of its selection and request that the Selected Bidder submit the executed Agreement plus insurance certificates and payment and performance bonds. The Selected Bidder shall submit the requested documents so that they are received by Village within 10 calendar days (or such other time as designated by Village) from the date of notice of selection. The Selected Bidder’s failure to do so will result in forfeiture of its bid bond. The contract shall not be deemed awarded and this Agreement shall not be binding on the Village unless and until both the Selected Bidder and Village have both executed the Agreement.

MBE Goal: The MBE participation goal for this contract is 10%.

Signed by: _____ Printed: _____
(Contractor’s authorized company representative)

Contractor’s Name: _____

INSTRUCTIONS TO BIDDERS -- ATTACHMENT 1

BIDDING SUBSTITUTIONS:

1 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

2 BIDDING SUBSTITUTIONS

- A. Bidding Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Bidding and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B. Bidding Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
 - 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
 - 3. The request is fully documented and properly submitted.

3 SUBMITTALS

- A. Bidding Substitution Request: Submit to Project Architect. Bidding Substitution Request must be made in writing to the Project Architect in compliance with the following requirements:
 - 1. Requests for substitution of materials and equipment will be considered if received no later than 10 days prior to date of bid opening.
 - 2. Submittal Format: Submit single electronic copy of each written Bidding Substitution Request, using form included in the Project Manual.
 - a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
 - b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
 - 1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
 - 2) Copies of current, independent third-party test data of salient product or system characteristics.
 - 3) Samples where applicable or when requested by Architect.

- 4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - 5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - 6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from ICC-ES.
 - 7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.
- c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Bidding and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
 - d. Bidder, in submitting the Bidding Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Bidding Substitution Request.

B. Engineer's Action:

1. Engineer may request additional information or documentation necessary for evaluation of the Bidding Substitution Request. Engineer will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Bidding and Contracting Documents.

C. Engineers' approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

INSTRUCTIONS TO BIDDERS – ATTACHMENT 3

BIDDERS SUBSTITUTION/PRIOR APPROVAL REQUEST FORM

Submit this completed form with required attachments to request prior approval of product when specifications list required products by name. Request is not required when specifications list products by name and include the terms "Available Products," "Or equal," or "Or equivalent product; in such circumstances, evaluation will be made at time of Contractor submittal. Refer to Instructions to Bidders.

Project: <u>Marvin Streambank Stabilization Proj</u>	Project No.: <u>1001</u>
To: _____	Specification Section #: _____
_____	Contractor: _____
Attn.: _____	Requested by: _____
Phone: _____	Phone: _____
Email: _____	Email: _____

Specified Product/Fabrication Method

(List name/description; model no.; manufacturer): _____

Required Information for Specified Product:	Attached:
Point by Point Comparative Product Data	<input type="checkbox"/>
Tests	<input type="checkbox"/>
Reports	<input type="checkbox"/>
Fabrication Drawings	<input type="checkbox"/>
Samples (Where Applicable)	<input type="checkbox"/>

Proposed Product/Fabrication Method

(List trade name/description; model no.; manufacturer) : _____

Required Information for Proposed Product:	Attached:
Annotated copy of applicable specification	<input type="checkbox"/> (Required)
Point by Point Comparative Product Data	<input type="checkbox"/> (Required)
Tests	<input type="checkbox"/>
Reports	<input type="checkbox"/>
Fabrication Drawings	<input type="checkbox"/>
Samples (Where Applicable)	<input type="checkbox"/>
List of Related Changes/Modifications:	_____

Differences between proposed substitution and specified product: _____

Proposed product/fabrication method No
affects other parts of the Work Yes: Explain _____

Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product as utilized for this project, except as noted herein.
- Qualifications of manufacturer, installer, and other specified parties meet the specified qualifications.
- Same special warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source for replacement parts, as applicable, is available as that specified.
- Proposed substitution does not affect dimensions and functional clearances, except as noted herein.

**For the Bidder
(Required):**

Submitted by: _____
Signed: _____
Firm: _____
Telephone: _____
Fax: _____
Email: _____

**For the Manufacturer
(Required):**

Submitted by: _____
Signed: _____
Firm: _____
Telephone: _____
Fax: _____
Email: _____

BID DOCUMENTS

1. Bid Proposal Form
2. Representative Projects Form
3. Execution of Bid Form
4. Bid Bond
5. MBE Forms
6. Bidding Substitution/Prior Approval Request Form, if applicable

BID PROPOSAL FORM

PROJECT NAME: MARVIN STREAMBANK STABILIZATION PROJECT
10006 MARVIN SCHOOL ROAD
MARVIN, NC 28173

NAME OF BIDDER: _____

The undersigned bidder hereby offers, in the lump sum amount stated below, to furnish all labor, materials, tools, equipment, apparatus, facilities, transportation and permits for the construction of the Village of Marvin Village Hall at 10006 Marvin School Road, Marvin, NC, if this offer is accepted by the Village.

TOTAL AMOUNT OF BASE BID \$ _____ **LUMP SUM**
(use figures only)

The base bid amount is to be stated in figures only and is the total amount bid for the entire contract work including all applicable allowances and taxes. Any alteration, erasure, or change must be clearly indicated and initialed by the bidder. The bidder agrees that if there are any discrepancies or questions in the figures, the Village will use the lower figure despite the bidder's intent.

Additionally, provide the amounts for the following divisions:

— Rock Excavation/Unsuitable \$ _____ /unit

ALLOWANCES AND UNIT PRICES

Item No.	Description	Unit	Bid Unit Price	Bid Price
1.A.	Mobilization	LS		
2.A.	Pump Around Operation	DAY		
2.B.	Impervious Dike	LF		
2.C.	Tree Protection Fence	LF		
2.D.	Coconut Matting	SY		
2.E.	Seeding and Mulching	SY		
2.F.	Erosion Control Matting – Coir Fiber 700	SY		
3.A.	Rock Sill	LF		
3.B.	Boulder Toe Protection	LF		
3.C.	Live Stakes	EA		
3.D.	Coir Fiber Logs	LF		
3.E.	Class II Rip Rap	SY		
4.A.	Riparian Seed Mix	SY		
5.A.	Concrete Sidewalk	SY		
Total of All Unit Price Bid Items				\$ _____

BID PROPOSAL FORM

ACKNOWLEDGEMENT OF ADDENDA:

The undersigned acknowledges receipt of the following addenda:

No. _____	Dated: _____	No. _____	Dated: _____
No. _____	Dated: _____	No. _____	Dated: _____
No. _____	Dated: _____	No. _____	Dated: _____

SUBMITTED BY:

The undersigned agrees to begin work promptly upon receipt of Notice to Proceed and to pursue the work with an adequate work force to complete the work within **5 months** from the Notice to Proceed. Liquidated Damages of **Five Hundred and 00/100 Dollars (\$500.00)** per calendar day are hereby agreed upon as assessment from the Contractor for failure to complete the work within the time period stated herein.

Company Name: _____

Mailing Address: _____

City/State/Zip: _____

Telephone: _____ Email: _____

Printed Name: _____ Title: _____

Signature: _____ NC Gen. Contractor License #: _____

REPRESENTATIVE PROJECTS FORM

1. Project: _____
Owner: _____
Contract Price: _____
Date Completed: _____
Owner Contact: _____

2. Project: _____
Owner: _____
Contract Price: _____
Date Completed: _____
Owner Contact: _____

3. Project: _____
Owner: _____
Contract Price: _____
Date Completed: _____
Owner Contact: _____

Contractor Name:

EXECUTION OF BID FORM

PROJECT NAME: MARVIN STREAMBANK STABLIZATOIN PROJECT

The person executing the Bid, on behalf of the Bidder, being first duly sworn, deposes and says that:

- (1) It is the intent of the Bidder to enter into this Contract to furnish materials, labor, and equipment required to perform all work specified in accordance with the instructions, terms, conditions, provisions, specifications, plans and all other Contract Documents incorporated into this Invitation to Bid;
- (2) He/she is fully informed regarding the preparation and contents of the attached Bid and of all pertinent circumstances regarding such Bid;
- (3) Neither he/she, nor any official, agent or employee of the Bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is a restraint of free competitive bidding in connection with is Bid;
- (4) He/she will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, disability, or veteran's status; and

Type of Bidder: Sole Proprietor Partnership Limited Liability Company
 Corporation Joint Venture (Check appropriate box)

BIDDER # _____ (# to be filled in by Village)

Name _____

Address _____

Phone _____

Fax _____

Printed Name _____

SIGNATURE _____

Title _____

NC General Contractor's License Number _____

Classification _____

Limits _____

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

Signature

My commission expires _____

BID BOND

(Attach Bond to this sheet)

MBE FORMS

(Attach appropriate forms to this sheet)

BIDDING SUBSTITUTION/ PRIOR APPROVAL REQUEST FORM

(Attach to this sheet, if applicable)

AGREEMENT

1. Agreement for Construction attached in appendix
2. Surety Company Contacts
3. Performance Bond
4. Payment Bond
5. Certificate of Insurance

AGREEMENT FOR CONSTRUCTION

Contractor shall adhere to all conditions within the AIA contracts herein attached within the Appendix of this manual.

To be completed by Village of Marvin:

The Agreement/s herein as attached has been pre-audited in the manner required by the “Local Government Budget and Fiscal Control Act.”

By: _____
Finance Officer

Date: _____

SURETY COMPANY CONTACTS

PERFORMANCE BOND NO.

Surety Name:

Address:

Phone No.:

Contact:

PAYMENT BOND NO.

Surety Name:

Address:

Phone No.:

Contact:

Attach PERFORMANCE BOND to this sheet.

Attach PAYMENT BOND to this sheet.

Attach CERTIFICATE OF INSURANCE to this sheet.

FORMS

1. Contractor's Affidavit Release and Waiver of Claim
2. Contractor's Affidavit of Payment of Debts and Claims
3. State/ County Sales/Use Tax Statement

CONTRACTOR'S AFFIDAVIT RELEASE AND WAIVER OF CLAIM

STATE OF _____ COUNTY OF _____

_____, (Name) _____, (Title)

_____, (Contractor), being first dully sworn, deposes and says that:

The undersigned is authorized to execute this Affidavit, Release and Waiver of Claim on behalf of the Contractor and that he has personal knowledge of all facts set forth herein;

Project: _____ Project No. _____

All payrolls, material bills, sales tax, social security tax, state and federal unemployment insurance, and all other liabilities and taxes owed by the Contractor and arising in any manner from the above-described project have been paid in full;

No claim or lien exists in favor of any supplier of materials or labor or in favor of any subcontractor furnishing materials or labor on the above-described project;

Notwithstanding the foregoing, if the Village of Marvin, or property of the Village of Marvin, is subject to any claim or lien that arises in any manner from the failure of the Contractor to pay any liability described above, the Contractor will indemnify and hold the Village of Marvin harmless for any amount that the Village of Marvin is required to pay to discharge such lien or settle such claim and, further, will pay the Village of Marvin's expenses, costs, and attorney fees incurred in connection therewith;

All claims, suits, and proceedings of every name, description, or nature arising out of the above project against the Village of Marvin, its officers, employees, and agents have been settled;

The Contractor releases and waives any and all claims of every type and description that the Contractor may have against the Village of Marvin arising in any manner from the construction of the above-described project.

By _____ Date _____

Title _____

Sworn to and subscribed before me this _____ day of _____, 20____

(Notary Public)

My commission expires _____

CONTRACTORS' AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS

To: (Owner) _____ Contract For:

Project Name and Address:

Contract Date:

State of North Carolina County of

The undersigned hereby certifies that, except as listed below, he has paid in full or has otherwise satisfied all obligations for all materials and equipment furnished, for all work, labor, and services performed, for all sub-contractors services and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner of his property might in any way be held responsible.

Exceptions:

Contractor:

Address :

By:

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

Notary Public:

My Commission Expires:

Signed _____

Title _____

SUPPLEMENTARY GENERAL CONDITIONS

- I. Scope of Work
- II. Control of Work
- III. Prosecution of Progress
- IV. Measurement and Payment
- V. Miscellaneous

I. SCOPE OF WORK

1.1 ALTERATION OF WORK AND QUANTITIES – CHANGE ORDERS

The Owner (herein referenced within this document to mean the Village of Marvin) reserves and shall have the right to make such alterations in the Work as may be necessary or desirable to complete the Work in the manner acceptable to Owner. Unless otherwise specified herein, the Owner may make such alterations in the Work as may increase or decrease the originally awarded Contract quantities and otherwise may add to or decrease the scope of Work. The alterations will be memorialized in a written Change Order executed by Owner and Contractor.

Pricing the alterations:

The Owner and the Contractor shall negotiate in good faith an appropriate adjustment and shall conclude these negotiations as expeditiously as possible.

Adjustments to time for alterations: Shall be governed by Section 3.4 of the Supplementary General Conditions.

Interim Directed Changes: Prior to reaching agreement with the Contractor on an adjustment to the Contract Price or Contract Time, if any, the Owner may issue a written Interim Directed Change directing the alteration to proceed pending an agreement.

1.2 MAINTENANCE OF TRAFFIC

When the Contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of Work that is otherwise provided for in the Contract Documents, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall furnish, erect, and maintain barricades, warning signs, flagmen, and other traffic control devices in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office), unless otherwise specified herein.

The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

1.3 FINAL CLEANING UP

Upon completion of the Work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. He shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of such property owner.

1.4 ACCESS TO THE WORK

The Contractor shall identify access routes with suitable signs, barricades and similar equipment.

The entire access route and construction site shall be kept free and clean of all debris at all times and maintained in good repair by the Contractor. All damage to the access route caused by the actions of the Contractor or his agents shall be immediately repaired to the satisfaction of the Owner.

Contractor' vehicles, equipment, and materials may be stored in the area designated on the Plans, or by the Owner. Upon completion of the work, the storage area shall be cleaned up and returned to its original condition to the satisfaction of the Owner. No special payment will be made for clean up and restoration of the storage area.

1.5 MAINTENANCE DURING CONSTRUCTION

The Contractor shall maintain the Work during construction and until the Work is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the Work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the total cost of the contract, and the Contractor will not be paid an additional amount for such work.

1.6 UNSUITABLES/ROCK EXCAVATION

The project location has not had geotechnical testing conducted to date. Bidder shall write a unit price in their proposal for unsuitable and rock excavation in the event discovery is made during contract and owner will be responsible for paying the unit cost.

1.7 CAPACITY, ACTIVATION, AND TAP FEES

No fees other than permit fees for water and sewer have been paid. All relevant costs associated with capacity, activation, tap fees. And/or any other relevant fees to obtain access for gas, water, and sewer shall be placed in the lump sum bid and specified in line item detail.

END OF SCOPE OF WORK

II. CONTROL OF WORK

QUALITY REQUIREMENTS

2.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

2.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

2.3 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

2.4 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.
- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

2.5 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections.
- B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

2.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

- H. **Manufacturer's Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. **Preconstruction Testing:** Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - d. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.
 2. **Testing Agency Responsibilities:** Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- J. **Mockups:** Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction. a.

Allow seven days for initial review and each re-review of each mockup.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed unless otherwise indicated.

2.7 QUALITY CONTROL

- A. Owner/Contractor Responsibilities: Perform quality-control activities required to verify that the Work complies with requirements, whether specified or not.
 - 1. Engage a qualified testing agency to perform these quality-control services.
 - 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- C. Retesting/Reinspecting: Provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.
- E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.

F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

2.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Conducted by a qualified special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

OTHER REQUIREMENTS

2.9 CONFORMITY WITH PLANS AND SPECIFICATIONS

All Work and all materials furnished shall be in within the specified tolerances of the lines, grades, grading sections, cross sections, dimensions, material requirements, and testing requirements that are specified in the contract, plans and specifications.

If the Owner finds the materials furnished, Work performed, or the finished product not within the specified tolerances of the plans and specifications but that the portion of the Work affected will, in its opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, that the affected Work be accepted and remain in place. In this event, the Owner determine an adjustment in the Contract Price for the affected portion of the Work.

If the Owner finds the materials furnished, Work performed, or the finished product are not in within the specified tolerances of the plans and specifications and have resulted in an unacceptable finished product, the affected Work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Owner's written orders.

For the purpose of this subsection, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the Work in accordance with the Contract Documents. The term shall not be construed as waiving the Owner's right to insist on strict compliance with the requirements of the Contract Documents.

2.10 COOPERATION OF CONTRACTOR

The Contractor will be supplied with two copies each of the plans and specifications. He shall have available on the Site at all times one copy each of the plans and specifications. Additional copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the Work to facilitate the progress thereof, and he shall cooperate with the Owner and his/her inspectors, the Engineer and with other contractors in every way possible. The Contractor shall have a competent superintendent on the Work at all times who is fully authorized as his/her agent on the Work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the Owner or his/her authorized representative.

2.11 COOPERATION BETWEEN CONTRACTORS

The Owner reserves the right to contract for and perform other or additional work on or near the Work covered by this contract.

When separate contracts are let within the limits of any one project, each contractor shall conduct his/her Work so as not to interfere with or hinder the progress of completion of the Work being performed by other contractors. Contractors working on the same project shall cooperate with each other as directed.

Each contractor involved shall assume all liability, financial or otherwise, in connection with his/her contract and shall protect and save harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced by him because of the presence and operations of other contractors working within the limits of the same project.

The Contractor shall arrange his/her work and shall place and dispose of the materials being used so as not to interfere with the operations of the other contractors within the limits of the same project. He shall join his/her work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

2.12 AUTHORITY AND DUTIES OF INSPECTORS

Inspectors employed by the Owner shall be authorized to inspect all work done and all material furnished. Such inspection may extend to all or any part of the Work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the contract. Inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

2.13 INSPECTION OF THE WORK

All materials and each part or detail of the Work shall be subject to inspection by the Owner or Owner's inspectors. The Owner and Owner's inspectors shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the Owner or Owner's inspector requests it, the Contractor, at any time before acceptance of the Work, shall remove or uncover such portions of the finished Work as may be directed. After examination, the Contractor shall restore said portions of the Work to the standard required by the specifications. Should the Work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as Extra Work; but should the Work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Any Work done or materials used without supervision or inspection by the Owner may be ordered removed and replaced at the Contractor's expense unless the Owner failed to inspect after having been given reasonable notice in writing that the Work was to be performed.

2.14 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK

All Work which does not conform to the requirements of the Contract Documents will be considered unacceptable, unless otherwise determined acceptable as provided in the subsection titled CONFORMITY WITH PLANS AND SPECIFICATIONS.

Unacceptable Work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the Work, shall be removed immediately and replaced in an acceptable manner at the Contractor's expense.

Upon failure on the part of the Contractor to comply forthwith with any order of the Owner made under the provisions of this subsection, the Owner will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the Owner) from any monies due or to become due the Contractor.

2.15 LOAD RESTRICTIONS

The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the Work. A special permit will not relieve the Contractor of liability for damage which may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his/her hauling equipment and shall correct such damage at its own expense.

2.16 RETEST OF WORK

When as provided for in the Contract Documents, the Owner performs sampling and tests of the Work and if the tests show a failure to meet the requirements of the Contract Documents, the expense of retesting, after reworking or substitution by the Contractor will be at the expense of the Contractor and such costs will be deducted from the payments otherwise due to the Contractor.

2.17 CHARACTER OF WORKERS, METHODS AND EQUIPMENT

The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the Work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

All equipment which is proposed to be used on the Work shall be of sufficient size and in such mechanical condition as to meet requirements of the Work and to produce a satisfactory quality of work. Equipment used on any portion of the Work shall be such that no injury to previously completed work, adjacent property, or existing airport facilities will result from its use.

When the methods and equipment to be used by the Contractor in accomplishing the Work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the Work in conformity with the requirements of the contract, plans, and specifications.

Any person employed by the Contractor or by a subcontractor who, in the opinion of the Owner does not perform its work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Owner, be removed forthwith by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the Work without the approval of the Engineer.

Should the Contractor fail to remove such person or persons or fail to furnish suitable and sufficient personnel for the proper prosecution of the Work, the Owner may suspend the Work by written notice until compliance with such orders.

The failure to provide adequate labor and equipment may be considered cause for terminating the Contract.

2.18 FIRE PREVENTION

- A. Contractor shall conform to all Federal, State, and local laws and regulations pertaining to burning, fire prevention and control within or adjacent to the project. Necessary precautions to avoid and eliminate fire hazards shall be the responsibility of the Contractor. This includes keeping the Contract Work area clear of all trash at all times.
- B. All tarpaulins used for any purpose during construction of any work shall be made of material resistant to fire, water and weather and shall bear UL labels. Lighting of any fires on premises is strictly forbidden.
- C. Contractor shall provide portable fire extinguishers compatible with the hazard of each work area and shall instruct its personnel in their location and use. Wherever welding and burning are conducted, no inflammable materials shall be allowed, and welding activities shall be shielded. The Contractor shall post a Hot Work Permit whenever an open flame shall be utilized for work.

2.19 PUMPING AND DRAINAGE

Surface or sub-surface water or other fluid shall not be permitted to accumulate in excavations or under any structure. Should such conditions develop or be encountered, the water or other fluid shall be controlled and suitably disposed of by means of temporary pumps, piping, drainage lines and ditches, dams or other methods approved by the Owner and other public agencies having jurisdiction.

2.20 DUST CONTROL

The Contractor, for the duration of the Contract, shall maintain all excavations, embankments, haul roads, access roads, plant sites, waste disposal areas, borrow areas, and all other work areas free from dust. Industry-accepted methods of dust control suitable for the area involved and approved by Owner will be permitted.

2.21 WATER POLLUTION

Contractor shall, at its expense, provide suitable facilities to prevent the introduction of any substances or materials into any stream, river, lake or other body of water, which may pollute the water or constitute substances or materials deleterious to fish and wild life.

2.22 ILLUMINATION

When any work is performed at night or where daylight is shut off or obscured, Contractor shall, at its expense, provide artificial light sufficient to permit work to be carried on efficiently, satisfactorily and safely, and to permit thorough inspection. During such time periods the access to the place of work shall also be clearly illuminated. All wiring for electric light and power shall be installed and maintained in compliance with local code, securely fastened in place at all points, and shall be kept as far as possible from telephone wires, signal wires, and wires used for firing blasts.

2.23 HAZARDOUS MATERIAL

- A. The Contractor shall immediately notify Owner of any hazardous materials subsequently found on the site and shall not remove same without the permission of Owner.
- B. If the contractor caused the hazardous material and subsequent contamination, Contractor shall remove said hazardous material and contaminated soils or materials from the site and shall dispose of same in accordance with all Federal, State or Local laws or regulations. Removal of such materials and contamination shall be monitored by a licensed hazardous materials laboratory, and said laboratory shall prepare a written report attesting to the complete removal of the contaminating material and resulting contamination, all to the satisfaction of, and at no cost to, the Owner.

2.24 REMOVAL AND DISPOSAL OF OTHER MATERIALS

Contractor shall remove and dispose of all construction debris, cleared vegetation, garbage and refuse in accordance with all Federal, State or Local laws or regulations. "Construction debris" means those materials resulting from the alteration, construction, destruction, rehabilitation, or repair of any manmade physical structure including houses, buildings, industrial or commercial facilities, and roadways.

2.25 EROSION CONTROL

Contractor shall conform to all Federal, State, and local laws and regulations pertaining to erosion control within or adjacent to the project.

2.26 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

SUBSTITUTION PROCEDURES

2.27 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

2.28 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

2.29 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Attachment 3: BIDDERS SUBSTITUTION/PRIOR APPROVAL REQUEST FORM.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section.

Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Certification indicating compliance with HUD material requirements, where applicable.
 - k. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - l. Cost information, including a proposal of change, if any, in the Contract Sum.
 - m. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - n. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

2.30 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

2.31 SUBSTITUTIONS

- A. Substitutions: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution will not adversely affect Contractor's construction schedule.
 - c. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - d. Requested substitution is compatible with other portions of the Work.
 - e. Requested substitution has been coordinated with other portions of the Work.
 - f. Requested substitution provides specified warranty.
 - g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

END OF CONTROL OF WORK

III. PROSECUTION AND PROGRESS

3.1 NOTICE TO PROCEED

The Owner shall deliver to Contractor a written Notice to Proceed stating the date on which it is expected the Contractor will begin the Work and from which date Contract Time will be charged. The Contractor shall begin the Work to be performed under the contract within ten (10) calendar days of the date set in the Notice to Proceed, but in any event, the Contractor shall notify the Owner in writing at least 24 hours in advance of the time actual construction operations will begin.

3.2 PROSECUTION AND PROGRESS

Unless otherwise specified, the Contractor shall submit his/her progress schedule for the Owner's approval within fourteen (14) work days after execution of this Agreement. The Contractor's progress schedule, when approved by the Owner, may be used to establish major construction operations and to check on the progress of the Work.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the Owner's request, submit a revised schedule for completion of the Work within the Contract Time and modify his/her operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the prosecution of the Work be discontinued for any reason, the Contractor shall notify the Owner in writing at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date set forth in the Notice to Proceed.

3.3 TEMPORARY SUSPENSION OF THE WORK

The Owner shall have the authority by written notice to the Contractor, to suspend the Work wholly, or in part, for such period or periods as the Owner may deem necessary, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or to perform any or all of the Contractor's other duties under this Contract.

- A. If the Contractor is ordered by the Owner to suspend the Work under this Section due to an unforeseen cause not otherwise provided for in the other provisions of this Contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the Work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the Owner's order to suspend the Work to the effective date of the Owner's order to resume the Work. Claims for such compensation shall be filed with the Owner within the time period stated in the Owner's order to resume work. The Contractor shall submit with its claim information substantiating the amount shown on the claim.
- B. If the Work is suspended under this Section for an indefinite period, the Contractor shall perform the following duties:
 - 1. Suitably store all materials.

2. Implement measures to protect existing work from damage or deterioration.
3. Erect such temporary structures and barricades as necessary to provide for traffic on, to or from the Project.
4. Periodically inspect and maintain the Work and temporary measures during the suspension period, and repair any damage to the Work during the suspension period.
5. Maintain all insurance and bond coverage.
6. Perform such other work as required by the Contract Documents with respect to the Project.
7. Remobilize when ordered to resume the Work by the Engineer.

The Contractor shall notify the Owner in writing fourteen (14) calendar days prior to demobilizing. At the time that the written notice is given to the Owner, the Contractor shall submit a written estimate of any costs of remobilization except in those cases in which the Contractor will bear the costs of remobilization under Paragraph C hereof. Compliance by the Contractor with such notice requirement, and with the requirement for submitting such written estimate, shall be a prerequisite to the Contractor's right to recover any costs incurred by the Contractor to comply with this Paragraph B, to the extent the Contractor would otherwise have a claim for such costs hereunder.

- C. If the Contractor requests a suspension of the Work in whole or in part, or if the Contractor is ordered by the Owner to suspend the Work under this Section due to inclement weather, due to the Contractor's failure to carry out orders given or due to the Contractor's failure to perform any of the Contractor's other duties under this Contract, then:
1. The Contractor shall not be entitled to any additional compensation for fulfilling the duties that the Contractor is required to perform by reason of such suspension, regardless of whether any additional compensation would otherwise be allowed hereunder, including, without limitation, any additional compensation for fulfilling any of the duties that are imposed upon the Contractor under Paragraph B hereof or for fulfilling the Contractor's duty to remobilize at the end of such suspension; and
 2. The Contractor shall pay the Owner all of the costs that are incurred by the Owner by reason of such suspension, including, but not limited to, the Engineer's fees and the costs of any necessary inspections or testing during the period of such suspension.

3.4 ADJUSTMENT OF CONTRACT TIME

The Contract Time may be adjusted only by change order, when requested by the Contractor in writing and approved by the Owner, for reasons outside of the Contractor's control, as follows:

- A. Natural disasters affecting the site; or

- B. Excessive rainfall during the entire calendar month, defined as total monthly rainfall in excess of the normal rainfall for that calendar month and total number of days with more than 0.10 inches of rainfall in excess of the normal number of such days for that calendar month. Normal values shall be taken as published in “Climatography of the United States No. 20 for North Carolina”; or
- C. Suspension of the Work as order by the Owner; or
- D. Delays in critical work by others that is not part of this Contract; or
- E. Significant additions to the scope of the Work.

The Contractor shall bear the burden of proof that a delay has been caused by factors outside his control, shall clearly demonstrate how the delay impacts the critical path of the Work as shown on his work schedule as last revised, and shall demonstrate that he has made reasonable and prudent efforts to overcome the impact of the delay on the critical path. With respect to item (b) above, a condition precedent to meeting its burden of proof will be the monthly submission to the owner of a statement of the number of days, if any, the Contractor was prevented from prosecuting the Work during the immediately preceding month due to excessive rainfall.

3.5 FAILURE TO COMPLETE PUNCH LIST ON TIME

The Contractor shall complete all punch list items determined by the Owner within thirty (30) calendar days. Should the Contractor fail or refuse to complete all punch list items to the satisfaction of the Owner within the said 30-day period, the Owner shall have the right to complete all said punch list items. In such event, Owner shall be entitled to recover from Contractor the Owner’s actual costs incurred in completing such punch list items, plus any and all consequential damages and costs incurred by Owner as a result of Contractor’s failure to complete such punch list items. Failure to complete all punch list items within sixty (60) calendar days, shall be considered Default of Contract and shall result in loss of any remaining retainage otherwise due to the Contractor.

3.6 DEFAULT AND TERMINATION OF CONTRACT

The Contractor shall be considered in default and such default will be considered as cause for the Owner to terminate the Contract for any of the following reasons if the Contractor:

- A. Fails to begin the Work under the Contract within ten (10) calendar days of the date of commencement specified in the “Notice to Proceed”; or
- B. Fails to perform the Work or fails to provide sufficient workers, equipment or materials to assure completion of the Work in accordance with the terms of the Contract; or
- C. Performs the Work unsuitably or neglects or refuses to remove materials or to perform anew such Work as may be rejected as unacceptable and unsuitable; or
- D. Discontinues the prosecution of the Work; or

- E. Fails to resume Work which has been suspended within a reasonable time after notice to do so; or
- F. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency; or
- G. Allows any final judgment related to the Project to stand against him unsatisfied for a period of 10 days; or
- H. Makes an assignment for the benefit of creditors; or
- I. Fails to perform any covenant of this Contract, or
- J. For any other cause whatsoever, fails to carry on the Work in an acceptable manner.

Should the Owner consider the Contractor in default of the Contract for any reason hereinbefore, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If Contractor or Surety shall fail to cure such default within 10 calendar days after such written notice from the Owner of the existence of such default or, if such default cannot with reasonable diligence be cured within a period of 10 calendar days, then upon the failure of the Contractor to commence to cure such default within said 10-day period and to proceed with due diligence to complete the remedying of said default; then the Owner will, have full power and authority, without violating the Contract, to terminate the Contract and/or to take control of the Work.

All costs and charges incurred by the Owner, together with the cost of completing the Work, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

3.7 TERMINATION FOR CONVENIENCE

At any time after the acceptance of this Contract, the Owner shall have the absolute right to terminate the entire Contract or any part thereof for any reason whatsoever.

3.8 ACTIONS UPON TERMINATION FOR OR CONVENIENCE

Upon receipt of such notice of termination, the Contractor shall:

- A. Stop the performance of the Work.
- B. Take any other action toward termination of the Work which the Owner directs, including but not limited to:
 - 1. Stabilization of the unfinished site to meet the conditions of the erosion and sediment control permit and at the direction of the Department of Environment and Natural Resources.

2. Maintain the necessary traffic control devices until all potential hazards due to unfinished construction activities have been removed and/or to the satisfaction of the Owner. Traffic control devices that are determined by the Owner to remain shall become the property of the Owner.
3. Complete any pay item as directed by the Owner that if left uncompleted may result in a safety hazard.
4. Deliver all paid stored materials stored off site and material stored on site to a location directed by the Owner.
5. Remove all temporary facilities.
6. Provide any necessary items of Work to secure the Site from public access as directed by the Engineer.

3.9 PAYMENT UPON TERMINATION

When the Contract, or any portion thereof, is terminated before completion of all pay items, payment will be made for the actual number of units or items of Work completed at the Contract price or as mutually agreed for items of Work partially completed.

Reimbursement for organization of the Work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the Work and that are not incorporated in the Work shall, at the option of the Owner, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Owner.

If the sum of all previous payment and credits made by the Owner exceeds the sum payable due to the Contractor, such excess shall be refunded by the Contractor to the Owner immediately upon the determination of such excess by the owner.

If the Contract is terminated for convenience, the Contractor shall be paid a sum as profit determined taking the amount of profit the Contractor would have received upon completing this Contract, multiplied by a fraction, the numerator of which is the value of the Work completed as of the date of receipt of the notice of termination and the denominator of which is the Contract Price.

Termination of the Contract or a portion thereof shall neither relieve the Contractor of his/her responsibilities for the completed Work nor shall it relieve his/her surety of its obligation for and concerning any just claim arising out of the Work performed.

The Owner shall be given full access to all books, cost records, correspondence and papers of the Contractor relating to the Contract in order to determine amounts to be paid the Contractor due to any termination of the Contract.

3.10 PARTIAL ACCEPTANCE

If at any time during the prosecution of the Work the Contractor substantially completes a usable unit or portion of the Work, the occupancy of which will benefit the Owner, he may request the Owner to make final inspection of that unit. If the Owner finds upon inspection that the unit has been satisfactorily completed in compliance with the Contract, he may accept it as being completed, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the Contract.

3.11 FINAL ACCEPTANCE

Upon due notice from the Contractor of presumptive completion of the entire Work, the Owner will make an inspection. If all construction provided for and contemplated by the Contract is found to be completed in accordance with the Contract Documents, such inspection shall constitute the final inspection. The Owner shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any Work, in whole or in part, as being unsatisfactory, the Owner will give the Contractor the necessary instructions for correction of same and the Contractor shall immediately comply with and execute such instructions. Upon correction of the Work, another inspection will be made which shall constitute the final inspection, provided the Work has been satisfactorily completed. In such event, the Owner will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

END OF PROSECUTION AND PROGRESS

IV. MEASUREMENT AND PAYMENT

4.1 MEASUREMENT OF QUANTITIES

All Work completed under the Contract will be measured by the Owner, or his/her authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of Work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the Engineer.

Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.

Unless otherwise specified, all pay items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

In computing volumes of excavation the average end area method or other acceptable methods will be used.

The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inches.

The term "ton" will mean the short ton consisting of 2,000 pounds avoirdupois. All materials which are measured or proportioned by weights shall be weighed on accurate, approved scales by competent, qualified personnel at locations designated by the Engineer. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material be paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Engineer directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

When requested by the Contractor and approved by the Engineer in writing, material specified to be measured by the cubic yard may be weighed, and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Bituminous materials will be measured by the gallon or ton. When measured by volume, such volumes will be measured at 60°F or will be corrected to the volume at 60°F using ASTM D 4311 for asphalts or ASTM D 633 for tars.

Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work.

When bituminous materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, may be used for computing quantities.

Cement will be measured by the ton or hundredweight.

Timber will be measured by the thousand feet board measure (M.F.B.M.) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.

The term "lump sum" when used as an item of payment will mean complete payment for the Work described in the contract.

When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered by the Engineer in connection with force account work will be measured as agreed in the change order or supplemental agreement authorizing such force account Work as provided in the subsection titled PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK of this section.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales.

Scales shall be accurate within one-half percent of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the inspector before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of 1 percent of the nominal rated capacity of the scale, but not less than 1 pound. The use of spring balances will not be permitted.

Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the inspector can safely and conveniently view them.

Scale installations shall have available ten standard 50-pound weights for testing the weighing equipment or suitable weights and devices for other approved equipment.

Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.

Scales “over weighing” (indicating more than correct weight) will not be permitted to operate, and all materials received subsequent to the last previous correct weighing-accuracy test will be reduced by the percentage of error in excess of one-half of 1 percent.

In the event inspection reveals the scales have been “under weighing” (indicating less than correct weight), they shall be adjusted, and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.

All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit Contract prices for the various items of the project.

When the estimated quantities for a specific portion of the Work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the Work will be made, unless the dimensions of said portions of the Work shown on the plans are revised by the Engineer. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

4.2 COMPENSATION FOR ACTUAL QUANTITIES

When the actual quantities of work vary from the estimated quantities, the Contractor shall accept as payment in full, so far as pay items are concerned, payment at the unit price for the quantities of work actually completed and accepted. No allowance will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly or indirectly from its unbalanced allocation of overhead and profit among the pay items, or from any other cause.

4.3 PARTIAL PAYMENT/RETAINAGE

Contractor may submit requests for payment every 30 days or at such longer intervals as the Contractor may choose. Notwithstanding, however, Contractor may not request payment when the amount due the Contractor since the last request amounts to less than five hundred dollars.

Partial payments will be made based upon estimates, prepared by the Contractor and approved by Owner, of the value of the Work performed and materials complete in place in accordance with the Contract Documents. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with the subsection titled PAYMENT FOR MATERIALS ON HAND of this section.

From the total of the amount determined to be payable on a partial payment, ten percent (10%) of such total amount will be deducted and retained by the Owner until the final payment is made. The balance (90%) of the amount payable, less all-previous payments, shall be certified for payment. [Refer to G.S. 143-134.1 re whether retainage is permitted on each particular project.]

The Owner will pay, reject or request additional support for each pay request within 30 days after receipt. Late payments shall be subject to interest charges calculated at the rate of 8% per year from and after the date due until paid.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in the subsection titled ACCEPTANCE AND FINAL PAYMENT of this section.

4.4 TAX STATEMENT SUBMITTAL

A statement of state sales/use tax statement form must always accompany each request for payment.

4.5 PAYMENT FOR MATERIALS ON HAND

Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the Contract Documents and are delivered to acceptable sites. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

- A. The material has been stored or stockpiled in a manner acceptable to the Owner at or on an approved site.
- B. The Contractor has furnished the Owner with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- C. The Contractor has furnished the Owner with satisfactory evidence that the material and transportation costs have been paid.
- D. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material so stored or stockpiled.
- E. The Contractor has furnished the owner evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at anytime prior to use in the work.
- F. The value of the delivered material is to be used in one item of work exceeds \$3,000 and is not scheduled to be incorporated into the Work within 60 days after delivery.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of his/her responsibility for furnishing and placing such materials in accordance with the requirements of the Contract Documents.

In no case will the amount of partial payments for materials on hand exceed the Contract Price for such materials or the Contract Price for the pay items in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this subsection.

4.6 ACCEPTANCE AND FINAL PAYMENT

When the Work has been accepted in accordance with the requirements of the subsection titled FINAL ACCEPTANCE, the Owner shall determine the actual quantities of the items of work actually performed. The Contractor shall approve the Owner's statement of actual quantities or advise the Owner of his/her objections which are based on disputes in measurements or computations of the final quantities. The Contractor and the Owner shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the Owner's final statement of actual quantities. If, after such 30-day period, a dispute still exists, the Contractor may approve the Owner's statement of actual quantities under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with the subsection titled CLAIMS FOR ADJUSTMENT AND DISPUTES.

After the Contractor has approved, or approved under protest, the Owner's statement of actual quantities, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

4.7 LIENS

Neither the final payment nor any part of the retained percentage shall become due until the Contractor delivers to the Owner: (a) an affidavit stating, if that be in fact, that all subcontractors and suppliers have been paid in full, or if the fact be otherwise, showing the name of each subcontractor and supplier who has not been paid in full and the amount due or to become due each for labor, service or material furnished; (b) consent of surety, if any, to final payment; and (c) if required by Owner, other data establishing payment for satisfaction of all obligations, such as receipt, releases, and waivers of lien arising out of the Contract to the extent and in such form as designated by the Owner.

4.8 CLAIMS FOR ADJUSTMENT AND DISPUTES

If for any reason the Contractor deems that additional compensation is due him for work or materials not clearly provided for in the Contract Documents or previously authorized as Extra Work, he shall notify the Owner in writing of his/her intention to claim such additional compensation before he begins the work on which he bases the claim. If such notification is not given or the Owner is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the Owner has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed,

the Contractor shall, within 10 calendar days, submit his/her written claim to the Owner and the Engineer. Failure to do so within the time specified will constitute a waiver by Contractor of the claim.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

The following documentation and information must be presented in order to properly evaluate such claim:

- A. Definition of the basis of the claim, including a detailed identification of which materials and what work is considered to represent a change to the original contract, an explanation of why the work or material is different than what was called for by the original Contract, and an identification of the contract provisions and anything else which the Contract relied upon;
- B. An explanation of how and why the work which is considered a change will result in any additional cost or performance time for the Contractor;
- C. An identification of the categories of additional costs which may be incurred, an estimate of the dollar magnitude of each, and a statement of the impact this work will have on the construction schedule, including the contract completion dates;
- D. An indication of how the additional costs which is believed that may be incurred can be, and are to be, quantified;
- E. Documentation of any actual additional costs and any actual impact to the construction schedule due to this work;
- F. Documentation of the cost of performing all similar "unchanged" work, to provide the Engineer a basis for comparison;
- G. All backup and other documentation which are believed to support or relate to the claim;
- H. Documentation quantifying the amount of work which is believed to constitute this "changed" Work, and the time period and the areas where such work was or is to be performed.

4.9 CORRECTION OF WORK AFTER FINAL PAYMENT

Neither the final certificate nor payment, nor any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship and, unless otherwise specified, he shall remedy any defect due thereto and pay for any damage to other Work resulting therefrom, which shall appear within a period of one year from date of final acceptance. Wherever the word "acceptance" occurs, it shall be understood to mean final acceptance.

The Owner shall give notice of observed defects with reasonable promptness. If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after the receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense. With respect to all warranties, expressed or implied, from subcontractors, manufacturer, or suppliers for Work performed and materials furnished under this Contract, the Contractor shall:

- A. Obtain all warranties that would be given in normal commercial practice.
- B. Require all warranties to be executed, in writing, for the benefit of the Owner.

END OF MEASUREMENT AND PAYMENT

V. MISCELLANEOUS

5.1 VENUE

This Contract has been executed by, delivered to and accepted by the Owner in North Carolina, and the provisions hereof shall be governed by the laws of North Carolina. Any disputes arising out of or related to this Contract shall be resolved in accordance with said laws.

The parties agree that any action or legal proceeding arising out of or related to this Contract shall be brought in the state courts of Union County, NC, or in the U.S. District Court for the Western District of North Carolina; and the parties hereby consent to and waive any objection to jurisdiction or venue in said courts.

5.2 INDEPENDENT CONTRACTOR

Contractor represents that it is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly licensed, equipped, organized and financed to perform such work. Contractor shall act as an independent contractor and not as the agent of Owner in performing the Contract, maintaining complete control over its employees and all of its suppliers and subcontractors. Nothing contained in this Contract or any subcontract awarded by Contractor shall create any contractual relationship between any such supplier or subcontractor and Owner.

5.3 LAWS AND REGULATIONS

Contractor and its employees and representatives shall at all times comply with all applicable laws, ordinances, statutes, rules or regulations in effect at the time Work is performed under this Contract.

5.4 INDEMNITY

Contractor agrees to defend, indemnify and hold harmless the Owner, its officers, employees and agents from any and all claims, suits, actions, damages, expenses, costs (including attorneys' fees if applicable) or fines, arising from Contractor's performance of this Contract; provided that Contractor shall not be liable for any injury, damage or loss occasioned by the sole negligence of Owner, its officers, employees or agents. Contractor shall purchase insurance, as described in this Section, which insurance shall provide coverage for this contractual liability. In any case in which Contractor provides a defense to the Owner, its officers, employees or agents, pursuant to his indemnity, the defense will be provided by attorneys reasonably acceptable to the Owner. The provisions of this Section shall survive the expiration or early termination of this Agreement.

5.5 INSURANCE

5.5.1 Commercial General Liability Insurance. Contractor shall maintain in force during the term of this Contract commercial general liability insurance, in an amount acceptable to Owner but no less than One Million Dollars (\$1,000,000) per occurrence. This insurance shall include coverage for products/completed operations, bodily injury, personal injury, property damage and the contractual liability assumed under the indemnity provision of the Contract. The policy shall be occurrence-based and name the Owner as an additional insured.

5.5.2 Vehicle Liability Insurance. Contractor shall maintain in force during the term of this Contract liability insurance covering the operations of Contractors' owned, non-owned and hired

automobiles and other ground vehicles, for limits satisfactory to Owner but not less than One Million Dollars (\$1,000,000) bodily injury and property damage each occurrence. The policy shall be occurrence-based and name the Owner as an additional insured.

- 5.5.3 Worker's Compensation and Employer's Liability Insurance. Contractor shall maintain worker's compensation and employer's liability insurance in the amounts and form required by the laws of the State of North Carolina.
- 5.5.4 A certificate evidencing all insurance coverage required of Contractor shall be filed with the Owner at the execution of this Contract, and such certificate shall provide that such insurance coverage will not be canceled or reduced without at least thirty (30) day's prior written notice to the Owner. At least ten (10) days prior to the expiration of any such policy, a certificate showing that such coverage has been renewed shall be filed with the Owner. If such insurance coverage is canceled or reduced, the Contractor shall within fifteen (15) days after receipt of written notice from the Owner of such cancellation or reduction in coverage, file with the Owner a certificate showing the required insurance has been reinstated or provided through another insurance company or companies. The company or companies furnishing insurance shall be qualified to issue insurance effective in the State of North Carolina.
- 5.5.5 Payment and Performance Bonds. Contemporaneously with Contractor's execution of the Contract Documents, Contractor shall supply the Owner with a performance bond and a payment bond, each in an amount equal to the estimated Contract Price.

5.6 CONTRACT MEETINGS

The Contractor shall, as requested by Owner, attend any and all meetings called by Owner to discuss the Work. Such meetings shall be conducted and recorded by the Contractor with minutes of each meeting distributed to Owner and Contractor.

5.7 SUCCESSORS, ASSIGNEES AND ASSIGNMENT

Contractor shall not assign, transfer, convey or otherwise dispose of the Contract or its right, title or interest in or to the same or any part thereof, without previous written consent of the Owner and concurred to by the sureties.

5.8 AUDIT RIGHTS

The Owner shall have the right to inspect, examine and make copies of any and all books, accounts, records, and other writings of contractors relating to the performance of the Work under the Contract, including change orders. Such audit rights shall be extended to any duly authorized representatives designated by the Owner. Audits shall take place at times and locations mutually agreed upon by both parties, but not later than one week following the date of a request for an audit.

END OF MISCELLANEOUS

MBE GUIDELINES and FORMS

OUTREACH PLAN AND GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES
("Guidelines") FOR PARTICIPATION IN CERTAIN VILLAGE OF MARVIN CONTRACTS

In accordance with G.S. § 143-64.31, G.S. § 143-128.2 and G.S. § 143-133, these Guidelines establish (i) goals for minority participation in building construction or repair contracts in the amount of \$300,000 or more, (ii) outreach efforts to solicit minority participation in building construction contracts in the amount of \$30,000 up to \$300,000, and (iii) outreach efforts to solicit minority participation in contracts for architectural, engineering, and Project Architect -at-risk services.

With regard to building construction and repair contracts in the amount of \$300,000 or more, the Village of Marvin ("Village") currently has a program goal of 10% percent for minority participation. The goal will be reviewed as needed or as soon as relevant data is available.

SECTION A: INTENT

It is the intent of these guidelines that the Village do all things legal, proper, and reasonable to achieve participation by minority businesses in those contracts subject to G.S. § 143-64.31, G.S. § 143-128.2 and G.S. § 143-133. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not meet the other statutory criteria for award.

SECTION B: DEFINITIONS

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
 - a. Black, that is, a person having origins in any of the black racial groups in Africa;
 - b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
 - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
 - d. American Indian, that is, a person having origins in any of the original peoples of North America; or
 - e. Female
2. Minority Business (MBE) - means a business:
 - a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
 - b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.
3. Socially and economically disadvantaged individual - means the same as defined in 15 U.S.C. 637: Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities. Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to

compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged.

4. Owner – Village of Marvin or (“Village”)

5. Designer – Any person, firm, partnership, or corporation which has contracted with the Village to perform architectural or engineering work.

6. Bidder – (i) Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract directly from the Village, or (ii) any first-tier subcontractor for Project Architect at risk projects.

7. Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment, materials, or services, including construction, and obligating the buyer to pay for them.

8. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the Village to perform building construction or repair work.

9. Subcontractor - A firm under contract with the prime contractor or Project Architect at risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

10. Eligible Contracts – A contract for the repair or construction of a building, which is expected to be for \$300,000 or more, and which is bid under any of the methods authorized under G.S. 143-128(a1).

SECTION C: MINORITY OUTREACH PLAN AND GUIDELINES

Minority Business Responsibilities

CERTIFICATION

The Village does not certify minority, disadvantaged or women-owned businesses. Any business that desires to participate as an MBE will be required to complete and submit for certification, documents required by any of the agencies listed below. Only those firms holding current certification through at least one of the following agencies will be considered eligible for inclusion in meeting the MBE participation percentage goals:

North Carolina Department of Administration Historically Underutilized Business (HUB) certification
North Carolina Department of Transportation Minority/Disadvantaged/Women-owned Business certification
Small Business Administration 8(a) certification
Other governmental agencies on a case-by-case basis

Other Responsibilities

Minority businesses that are contacted by owners or bidders must respond promptly whether or not they wish to submit a bid.

Owner Responsibilities

The Village will employ the following strategies to encourage participation from MBEs.

1. Work with minority-focused and small business groups that support MBE inclusion in the solicitation of bids for building construction and repair projects and in the solicitation for architectural, engineering, and Project Architect -at-risk services.
2. Place emphasis on the importance of soliciting certified MBE firms for subcontracting opportunities at pre-bid conferences and in the bid documents.
3. Examine specifications to identify special subcontracting opportunities and strongly encourage prime contractors to solicit bids for subcontracts from MBE firms.
4. Require all bidders to make good faith efforts to obtain minority participation on all Eligible Contracts.
5. Establish a percentage goal for minority participation in an Eligible Contract if, in the Village's reasonable belief, such a goal is achievable.
6. Provide detailed information to majority contractors concerning the bidding and good faith efforts requirements by holding meetings with the contractors.
7. Build new and strengthen existing business relationships through networking. Continue communicating with other North Carolina public agencies to find out how their MBE outreach programs are working and to share "best practices" and ideas to improve programs.
8. Participate in educational opportunities throughout the community as they become available and offer training sessions to share the Village's outreach plan with interested businesses and organizations
9. Be visible through participation in trade shows and business organizations of interest to MBE firms, majority contractors, and small businesses, and provide information to the general public about the MBE program, and continue outreach efforts to the business community.
10. Enhance the Village's web page by including the outreach plan and guidelines, listing good faith efforts, creating links to MBE resources, and creating awareness of specific subcontracting opportunities.

11. Make available to minority-focused agencies and minority businesses that have requested notices a list of contracting opportunities when they are identified, no later than 10 days prior to the bid opening. The list shall include a description of the work, important bidding information, contact information for questions, where the bid documents may be reviewed, and a list of prime bidders that subcontractors may wish to contact for subcontracting consideration.
12. Maintain or continue to maintain a database specifically for MBE firms and majority contractors to ensure those firms wishing to do business with the Village have access to up-to-date information.
13. Advertise upcoming bid opportunities in minority-focused media.
14. Work with designers to make subcontracting opportunities more noticeable and more easily understood by potential contractors and subcontractors.

Designer responsibilities

For all Eligible Projects the designer will:

1. Attend the scheduled pre-bid conference to explain minority business requirements to the prospective bidders.
2. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
3. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
4. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S.143-128.2(f) and these Guidelines (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.
5. During construction phase of the project, review documentation for contract payment to MBEs (Form 6, attached) for compliance with minority business utilization commitments. Submit this form with monthly pay applications to the Owner.

Responsibilities of Prime Contractor(s), CM at Risk, and Its First-Tier Subcontractors

On all Eligible Contracts, the Bidders will:

1. Attend the scheduled pre-bid conference.
2. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
3. During the bidding process, comply with the owner's requirements listed in the proposal for minority participation.
4. Submit with the Bid (i) the minority businesses that will be utilized on the project with corresponding total dollar value of the bid (MBE Form 1, attached) and (ii) an affidavit listing Good Faith Efforts (MBE Form 2, attached), or an affidavit of intent to self-perform (MBE Form 3). See below for full description of Good Faith Efforts.
5. Upon being named the apparent low bidder, the bidder shall provide the following: (1) an affidavit that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal (MBE Form 4, attached); and (2) if there is a contract goal and the participation percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal (MBE Form 5, attached). The documentation must include evidence of all good faith efforts that were implemented including any advertisements, solicitations, and evidence of other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.
6. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values.
7. The contractor(s) shall submit with each monthly pay request(s) and final payment(s) documentation for contract payment to MBEs (MBE Form 6, attached)
8. During the construction of a project, at any time, if it becomes necessary to replace a minority business subcontractor, immediately advise the owner in writing, of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.
9. If during the construction of a project additional subcontracting opportunities become available, the contractor shall make a good faith effort to solicit sub-bids from minority businesses.
10. Make documentation showing evidence of implementation of Prime Contractor, CM-at-Risk and First-Tier Subcontractor responsibilities available for review by the Village, upon request.

11. All written statements or affidavits made by the Bidder shall become a part of the agreement between the Contractor and the Village for performance of the contract. Failure to comply with any of these statements, affidavits, or with the minority business guidelines shall constitute a breach of the contract. A finding by the Village that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false, or incomplete shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the Village whether to terminate the contract for breach.

SECTION D: GOOD FAITH EFFORTS

In determining whether a contractor has made good faith efforts, the Village will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, diligence, and results of these efforts. At least five of the following 10 good faith efforts must be made in order to satisfy the Good Faith Efforts Requirement.

1. Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.
2. Making the construction plans, specifications, and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.
3. Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
4. Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
5. Attending any pre-bid meetings scheduled by the public owner.
6. Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.

7. Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Reasons for rejection of a minority business based on lack of qualification should be documented in writing.
8. Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
9. Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.

Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash flow demands.

Village of Marvin
“GOOD FAITH EFFORT”

COUNTY OF _____

AFFIDAVIT OF _____
(Name of Bidder)

I have a good faith effort to comply under the following areas checked:

(A minimum of 5 areas must be checked Yes in order to have achieved a “good faith effort”)

(Y/N)

- _____ (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.
- _____ (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses or providing these documents to them at least 10 days before the bid or proposals are due.
- _____ (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
- _____ (4) Working with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- _____ (5) Attending any probed meetings scheduled by the public owner.
- _____ (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.
- _____ (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of minority business based on lack of qualification should have the reasons documented writing.
- _____ (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily is required. Assisting minority businesses in obtaining the same unit pricing with the bidder’s suppliers in order to help minority businesses in establishing credit.

_____ (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.

_____ (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

In accordance with GS143-128.2(d) the undersigned will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon execution of a contract with the Owner. Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certified that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

[Seal]

Title: _____

State of North Carolina,

County of _____

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

Notary Public _____

My commission expires _____

Village of Marvin

**Intent to Perform Contract
With Own Workforce**

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the
_____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

[Seal] Title: _____

State of North Carolina

County of _____

Subscribed and sworn to before me

this _____ day of _____, 20____.

Notary Public _____

My commission expires. _____

Village of Marvin

-Portion of the Work to be Performed by Minority Firms

****(NOTE: THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL)****

If the portion of the work is to be executed by minority businesses as defined in GS 143-128.2 (g) is equal to or greater than 5% of the bidders total contract price, then the bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within 72 hours after notification of being low bidder.

Affidavit of: _____ I do hereby certify that on the
(Bidder)

(Project Name)

Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority Businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required.

Name and Phone Number	*Minority Category	Work Description	Dollar Value

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Socially and Economically Disadvantaged (D)

Pursuant to GS 143-128.2 (d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

[Seal]

Title: _____

State of North Carolina,

County of _____

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

Notary Public _____

My commission expires _____

If the contract for goal participation by minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts.

Affidavit of: _____
 (Bidder)

I do certify the attached documentation as true and accurate representation of my good faith efforts.

Minority firms contacted by Bidder
 (Attach additional sheets if required.)

Name and Phone Number	*Minority Category	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**), American Indian (**I**), Female (**F**), Socially and Economically Disadvantaged (**D**)

Documentation of the Bidder’s good faith efforts to meet the goals set forth in these provisions. Examples of documentation shall include the following evidence:

- A. Copies of solicitation for quotes to at least three (3) minority business firms from the source listed provided for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contract, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster.
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority businesses in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Date: _____ Name of Authorized Officer: _____

Signature: _____

[Seal]

Title: _____

State of North Carolina,
County of _____
Subscribed and sworn to before me this _____ day of _____, 20____.
Notary Public _____
My commission expires _____

Village of Marvin

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application#: _____ Period: _____

The following is a list of payments to be made to minority business contractors on this project for the above-mentioned period.

Firm Name	*Minority Category	Payment Amount	Owner Use Only

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**), American Indian (**I**), Female (F), Socially and Economically Disadvantaged (D)

Date: _____

Approved/Certified By: _____

Name

Title

Signature

****THIS DOCUMENT MUST BE SUMITTED WITH EACH PAY REQUEST & FINAL PAYMENT**

DISPUTE RESOLUTION REQUIREMENTS

**DISPUTE RESOLUTION REQUIREMENTS (“Requirements”)
FOR CERTAIN VILLAGE OF MARVIN CONTRACTS**

In accordance with N.C.G.S. § 143-128 (f1), these Requirements establish the dispute resolution process for all Village building construction projects that cost over \$300,000, exclusive of land acquisition and design costs (“Eligible Projects”).

This dispute resolution process will be available to all parties involved in the Village’s Eligible Projects, including the Village, the architect, the Project Architect , the contractors, and the first-tier and lower-tier subcontractors. Therefore, it is the Village’s policy that the following clauses are hereby made part of all contracts executed by the Village on Eligible Projects.

1. It is understood and agreed that NCGS 143-128(g-h) requires that disputes arising under an agreement for the erection, construction, alteration or repair of a building be subject to a dispute resolution process specified by the owner. In compliance with this statutory provision, the Village specifies this Article as the dispute resolution process to be used on this Project. It is further understood and agreed that this dispute resolution process is based on non-binding mediation and will only be effective to the extent that the Parties to any mediated dispute participate in the mediation in good faith. It is also understood and agreed that the Village is under no obligation under any circumstance to secure or enforce the participation of any other Party in the mediation of any dispute subject to this Article and GS 143-128(g-h).
2. Any dispute arising between or among the Parties listed in Section 4 of this Article that arises from an agreement to construct the Project, including without limitation a breach of such agreement, shall be subject to mediation mutually agreed upon by both parties. The mediation provided in this Article shall be used pursuant to this Agreement and GS 143-128(g-h) and is in lieu of any dispute resolution process adopted by the North Carolina State Building Commission, which process shall not apply to this Project.
3. For purposes of this Article the following definitions shall apply:

Construct or construction refers to and includes the erection, construction, alteration or repair of the Eligible Project; and

Party or Parties refers to the parties listed in Section 4 of this Article.
4. The Village and any Party contracting with the Village or with any first-tier or lower-tier subcontractor for the construction of the Eligible Project agree to participate in good faith in any mediation of a dispute subject to this Article and GS 143-128(g-h), including without limitation the following Parties (if any): architect(s), engineer(s), surveyor(s), Project Architect , Project Architect at risk, prime contractor(s), surety(ies), subcontractor(s), and supplier(s).
5. In order to facilitate compliance with GS 143-128(g-h), all Parties shall include this Article in

every agreement to which it (any of them) is a Party for the Eligible Project without variation or exception. Failure to do so will constitute a breach of contract, and the Party failing to include this Article in any agreement required by this Article shall indemnify and hold harmless the remaining Parties from and against any and all claims, including without limitation reasonable attorney fees and other costs of litigation, arising in any manner from such breach. Notwithstanding the foregoing provisions of this Section, it is expressly understood and agreed that the Parties are intended to be and shall be third-party beneficiaries of the provisions of this Article and can enforce the provisions hereof.

6. a. The following disputes are not subject to mediation:
 - i. A dispute seeking a non-monetary recovery; and
 - ii. A dispute seeking a monetary recovery of \$15,000 or less.
- b. A dispute seeking the extension of any time limit set forth in an agreement to construct the Project shall be subject to mediation pursuant to this Article and GS 143-128(g-h), but only if the damages which would be suffered by the Party seeking the extension would exceed \$15,000 if the disputed extension is denied. To the extent that liquidated damages are set forth in such agreement as the measurement of damages for failure by such Party to meet such time limit, such liquidated damages shall be the exclusive standard for determining the amount of damages associated with such dispute.
7. For purposes of this Article, a dispute is limited to the recovery of monetary damages from the same transaction or occurrence against a single Party or two or more Parties alleged to be liable jointly, severally or in the alternative. Two or more disputes may not be consolidated or otherwise combined without the consent of all Parties to such disputes.
8. In addition to such matters as are required by the Rules, a request for mediation shall include the amount of the monetary relief requested.
9. Prior to requesting mediation, a Party must form a good faith belief that it is entitled under applicable law to recover the monetary amount to be included in the request from one or more of the remaining Parties. Such belief must be based on a reasonable and prudent investigation into the dispute that is the subject of the request. The request for mediation must be based on such investigation and may not include any amount or the name of any remaining Party, unless supported by such investigation and good faith belief by the Party requesting the mediation.
10. If a Party breaches any provision of Section 9, it shall indemnify and hold harmless all other Parties from any costs, including reasonable attorney fees and other costs of litigation, and damages incurred by such other Parties that arise from such breach.
11. All expenses incurred by a Party to a dispute in preparing and presenting any claim or defense at the mediation shall be paid by the Party. Such expenses include without limitation preparation and production of witnesses and exhibits and attorney fees. All other expenses of the mediation, including filing fees and required traveling and other expenses of the mediator, shall be borne as follows: one half by the Party requesting the mediation, with the remaining parties paying equal shares of the remaining expenses and costs; provided that, if the Village is named as a party to the

mediation, the Village shall pay at least one-third of the mediation expenses and costs divided among the Parties. If more than one Party to a dispute requests a mediation, the mediation expenses and costs to be divided among the Parties shall be borne equally by the Parties to the dispute; provided that, if the Village is named as a party to the mediation, the Village shall pay at least one-third of the mediation expenses and costs divided among the Parties.

12. The mediation shall be held at a location agreeable to the mediator and all of the Parties; provided that, if no agreement can be reached, the mediation will be held at such location in Union County, as the mediator shall determine.
13. The provisions of this Article are subject to any other provision of this Agreement concerning the submission, documentation and/or proof of any claim or dispute. Such other provisions shall apply in full force and shall be satisfied as a condition precedent to mediation pursuant to this Article.
14. The Parties understand and agree that mediation in accordance with this Article shall be a condition precedent to institution of any legal or equitable proceeding seeking monetary recovery based on any dispute that is subject to mediation pursuant to this Article.

SPECIFICATIONS

Contractors shall adhere to the attached specifications.

Contractors shall follow the latest version of the North Carolina Building Code.

APPENDICES

1. AIA® Document A101TM – 2017 Standard Form of Agreement Between Owner and Contractor
2. AIA® Document A101TM – 2017 Exhibit A Insurance and Bonds
3. AIA® Document A201TM – 2017 General Conditions of the Contract for Construction
4. Construction Documents

SECTION 02 41 15 – TREE PROTECTION & TRIMMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the protection and trimming of existing trees that interfere with, or are affected by, execution of the Work, whether temporary or permanent construction.
- B. Related Sections include the following:
 - 1. Division 31 Section "Site Clearing" for removal limits of trees, shrubs, and other plantings affected by new construction.
 - 2. Division 31 Section "Earth Moving" for building and utility trench excavation, backfilling, compacting and grading requirements, and soil materials.
 - 3. Division 32 Section "Exterior Plants" for tree and shrub planting, tree support systems, and soil materials.

1.3 DEFINITIONS

- A. Tree Protection Zone: Area surrounding individual trees or groups of trees to remain during construction and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Tree Pruning Schedule: Written schedule from arborist detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.
- C. Qualification Data: For tree service firm and arborist.
- D. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- E. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.

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1.5 QUALITY ASSURANCE

- A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of tree protection and trimming.
- B. Arborist Qualifications: An arborist certified by ISA or licensed in the jurisdiction where Project is located.
- C. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices (Pruning)."
- D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
 - 1. Before tree protection and trimming operations begin, meet with representatives of authorities having jurisdiction, Owner, Architect, consultants, and other concerned entities to review tree protection and trimming procedures and responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Drainage Fill: Selected crushed stone, or crushed or uncrushed gravel, washed, ASTM D 448, Size 24, with 90 to 100 percent passing a 2-1/2-inch sieve and not more than 10 percent passing a 3/4-inch sieve.
- B. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch in diameter; and free of weeds, roots, and toxic and other non-soil materials.
 - 1. Obtain topsoil only from well-drained sites where topsoil is 4 inches deep or more; do not obtain from bogs or marshes.
- C. Filter Fabric: Manufacturer's standard, nonwoven, pervious, geotextile fabric of polypropylene, nylon, or polyester fibers.
- D. Chain-Link Fence: Metallic-coated steel chain-link fence fabric of 0.120-inch-diameter wire; a minimum of 48 inches high; with 1.9-inch-diameter line posts; 2-3/8-inch-diameter terminal and corner posts; 1-5/8-inch-diameter top rail; and 0.177-inch-diameter bottom tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.
- E. Organic Mulch: Double hammered hardwood, free of deleterious materials.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Temporary Fencing: Install temporary fencing around tree protection zones to protect remaining trees and vegetation from construction damage. Maintain temporary fence and remove when construction is complete.
 - 1. Install chain-link fence according to ASTM F 567 and manufacturer's written instructions.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Mulch areas inside tree protection zones and other areas indicated.
 - 1. Apply 3-inch average thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.
- D. Do not store construction materials, debris, or excavated material inside tree protection zones. Do not permit vehicles or foot traffic within tree protection zones; prevent soil compaction over root systems.
- E. Maintain tree protection zones free of weeds and trash.
- F. Do not allow fires within tree protection zones.

3.2 EXCAVATION

- A. Install shoring or other protective support systems to minimize sloping or benching of excavations.
- B. Do not excavate within tree protection zones, unless otherwise indicated.
- C. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots.
 - 1. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction.
 - 2. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

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- D. Where utility trenches are required within tree protection zones, tunnel under or around roots by drilling, auger boring, pipe jacking, or digging by hand.
 - 1. Root Pruning: Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots with sharp pruning instruments; do not break or chop.

3.3 REGRADING

- A. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade beyond tree protection zones. Maintain existing grades within tree protection zones.
- B. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist, unless otherwise indicated.
 - 1. Root Pruning: Prune tree roots exposed during grade lowering. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots with sharp pruning instruments; do not break or chop.
- C. Minor Fill: Where existing grade is 6 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.
- D. Moderate Fill: Where existing grade is more than 6 inches but less than 12 inches below elevation of finish grade, place drainage fill, filter fabric, and topsoil on existing grade as follows:
 - 1. Carefully place drainage fill against tree trunk approximately 2 inches above elevation of finish grade and extend not less than 18 inches from tree trunk on all sides. For balance of area within drip-line perimeter, place drainage fill up to 6 inches below elevation of grade.
 - 2. Place filter fabric with edges overlapping 6 inches minimum.
 - 3. Place fill layer of topsoil to finish grade. Do not compact drainage fill or topsoil. Hand grade to required finish elevations.

3.4 TREE PRUNING

- A. Prune trees to remain that are affected by temporary and permanent construction.
- B. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by arborist.
- C. Pruning Standards: Prune trees according to ANSI A300 (Part 1).
- D. Cut branches with sharp pruning instruments; do not break or chop.
- E. Chip removed tree branches and spread over areas identified by Architect.

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3.5 TREE REPAIR AND REPLACEMENT

- A. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
- B. Remove and replace trees indicated to remain that die or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
 - 1. Provide new trees of same size and species as those being replaced; plant and maintain as specified in Division 32 Section "Exterior Plants."
 - 2. Provide new trees of 6-inch caliper size and of a species selected by Architect when damaged trees more than 6 inches in caliper size, measured 12 inches above grade, are required to be replaced. Plant and maintain new trees as specified in Division 32 Section "Exterior Plants."
- C. Aerate surface soil, compacted during construction, 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch-diameter holes a minimum of 12 inches deep at 24 inches o.c. Backfill holes with an equal mix of augered soil and sand.

3.6 DISPOSAL OF WASTE MATERIALS

- A. Burning is not permitted.
- B. Disposal: Remove excess excavated material and displaced trees from Owner's property.

END OF SECTION 02 41 15

SECTION 31 10 00 – SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplemental General Conditions, and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. The CONTRACTOR shall be responsible for preparing the site for construction in accordance with the Contract Documents and as specified herein.

1.3 REFERENCES

- A. North Carolina Department of Environmental Quality Erosion and Sediment Control Planning and Design Manual, latest edition.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the site, store and handle them in a manner which will maintain their original manufactured or fabricated condition until ready for use.

PART 2 - (Not Used)

PART 3 - EXECUTION

3.1 TRAFFIC

- A. Conduct site clearing operations to ensure minimum interference with roads, streets, walks, businesses, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without prior permission from Owner, NCDOT, and/or authorities having jurisdiction.

3.2 PROTECTION

- A. General: Provide temporary fences, barricades, coverings, or other protection to preserve existing items indicated to remain and to prevent injury or damage to persons or property. Provide protection for adjacent properties as required.
- B. Restoration/Repair: Restore damaged items to the condition existing prior to start of WORK.

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- C. Existing Trees/Vegetation: Protect existing trees and vegetation adjacent to the actual WORK area or borrow area from physical damage. Do not store equipment or materials within tree drip line.
- D. Road and Walks: Keep roads and walks free of dirt and debris at all times.
- E. Utility Lines: Protect existing utility lines that are indicated to remain from damage. Notify ENGINEER immediately of damage to or an encounter with unknown existing utility lines. CONTRACTOR shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to CONTRACTOR prior to start of clearing and grubbing operations. When utility lines which are to be removed are encountered within the area of operations, CONTRACTOR shall notify ENGINEER and OWNER and Utility Owner within 10 days time to minimize interruption of the service.

3.3 EROSION/SEDIMENT CONTROL

- A. Provide appropriate erosion and sediment control measures for all off-site borrow areas in full compliance with the North Carolina Department of Environmental Quality Erosion and Sediment Control Planning and Design Manual and regulations of the local jurisdiction. CONTRACTOR shall be solely responsible for all borrow sites outside of the Project area.

3.4 CLEARING

- A. Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared. Cut off flush with or below the original ground surface trees, stumps, roots, brush, and other vegetation in areas to be cleared, except for trees and vegetation indicated or directed to be left standing. CONTRACTOR shall coordinate all clearing with OWNER prior to proceeding.

3.5 TREE REMOVAL

- A. Where indicated or directed by OWNER, trim designated trees or remove designated trees and stumps and grub roots.

3.6 GRUBBING

- A. Remove and dispose of roots larger than 3 inches in diameter, matted roots, and stumps from the indicated grubbing areas. Excavate this material together with logs, organic and metallic debris, brush, and refuse and remove to a depth of not less than 18 inches below the original soil surface in areas indicated to be grubbed and in areas indicated as construction areas for this Project. Fill depressions made by grubbing with suitable material and compact in accordance with the requirements of the Contract Documents to make the new surface conform with the existing adjacent surface of the ground.

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3.7 DISPOSAL OF CLEARED AND GRUBBED MATERIALS

- A. Nonsalable Materials: Disposal shall be CONTRACTOR's responsibility.

3.8 STORING MATERIALS

- A. Strip and stockpile topsoil material and other cleared materials that will be reused in the WORK.

3.9 EXISTING IMPROVEMENTS/FACILITIES

- A. Remove existing improvements, both above-grade and below-grade to extent indicated or as otherwise required to permit new construction and provide for proper disposal off-site. Existing improvements and facilities such as mailboxes, signs, ornamental or decorative items, etc. that require temporary removal to permit new construction shall be promptly replaced and/or restored to the location and condition prior to construction. Improvements and facilities that are damaged by the CONTRACTOR during the course of construction shall be promptly replaced at the CONTRACTOR's expense.

3.10 SALVABLE ITEMS

- A. No salvable items are anticipated for this project.

3.11 FUGITIVE DUST

- A. Control air pollution caused by dust and dirt; comply with governing regulations.

3.12 FILLING

- A. Fill depressions and voids resulting from site clearing operations. Comply with the requirements of Specification Section 31 20 00, "Earth Moving".

3.13 GRADING

- A. Grade ground surface to conform to required contours and to provide positive surface drainage away from the WORK or borrow area.

3.14 DISPOSAL

- A. Dispose of waste materials, including trash and debris, and excess topsoil, legally off-site.

3.15 BURNING

- A. Burning of waste materials is prohibited for this project.

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END OF SECTION 31 10 00

SECTION 31 20 00 – EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplemental General Conditions, and Division 01 Specification Sections, apply to this Section.
- B. Geotechnical report titled “Subsurface Exploration and Geotechnical Engineering Services” by Froehling & Robertson, Inc. dated September 20, 2024
- C. North Carolina Department of Transportation (NCDOT) Standard Specifications for Roads and Structures dated January 2024.

1.2 North Carolina Erosion and Sediment Control Planning and Design ManualSUMMARY

- A. Prior to beginning construction, the Geotechnical Engineer should evaluate the subgrade soils for suitability based on observations of proof rolling with a loaded dump truck or other method considered acceptable to the Geotechnical Engineer. Fill meeting the requirements herein shall then be placed to the grade shown.

1.3 DEFINITIONS

- A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.
- B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- C. Borrow: Soil material obtained off site when sufficient approved soil material is not available from excavations.
- D. Subbase Course: The layer placed between the subgrade and surface of a pavement or walk.
- E. Design Subgrade: Elevation of bearing for foundations, bottom of porous fill beneath slabs on grade (4" below bottom of slab), bottom of turn down slabs, and bottom most portion of stairs and ramps.
- F. Drainage Fill: Course of washed granular material supporting slab on grade placed to cut off upward capillary flow of pore water.
- G. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Engineer. Unauthorized excavation, as well as remedial work directed by the Engineer, shall be at the Contractor's expense.

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- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- I. Utilities include on site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.4 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Test Reports: In addition to test reports required under field quality control, submit the following:
 - 1. Laboratory analysis (including grain size and plasticity analyses) of each soil material proposed for fill and backfill from on site and borrow sources.
 - 2. One Standard Proctor compaction test (moisture density relationship) in accordance with ASTM D698 for each soil material.
- C. Submit excavation support system design and details for trench excavation.

1.5 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction. These include, but are not limited to, Village of Marvin, Union County, North Carolina Department of Environmental Quality (NCDEQ), and the State of North Carolina.
- B. Testing and Inspection Service: Owner shall employ a qualified independent geotechnical engineering testing agency to classify proposed on site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.

1.6 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Engineer and then only after acceptable temporary utility services have been provided.
 - 1. Provide a minimum 10 day notice to the Owner and receive written notice to proceed before interrupting any utility.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. If utilities cannot be removed due to existing field conditions they shall be filled with flowable fill (minimum 200psi) and noted as “Abandoned” on as-built drawings. However, in all cases the contractor shall demolish all utilities within the footprint of any proposed structure and within the area extending 5’ from the proposed footprint. Coordinate with utility companies to shutoff services if lines are active.

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- C. Excavation support system design and details for trench excavation, shall be sealed and signed by a professional engineer licensed in the State of North Carolina, copy of design shall be filed with ENGINEER.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide approved borrow soil materials from off site when sufficient approved soil materials are not available from excavations. Contractor is responsible for locating appropriate off-site borrow areas.
- B. Satisfactory Soil Materials:
 - 1. Engineered Fill: Compacted structural fill should consist of material classified as CL, ML, SC, SM, or GW, per ASTM D 2487 and shall have a maximum liquid limit (LL) of 50 and a maximum plasticity index (PI) of 30. High plasticity soils such as CH and MH should not be used as engineered fill. The maximum particle size should not exceed 4 inches. Fill should be free of debris, waste, frozen materials, vegetation, and any other deleterious matter. Off-site borrow materials should have a CBR value no less than 6 percent or as otherwise noted in the field by the Owner’s Geotechnical Engineer.
- C. Unsatisfactory Soils: Soil Classification Groups including but not limited to CH and MH according to ASTM D 2487 or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Shall be in accordance with NCDOT Standard Specifications for Roads and Structures dated January 2024.
- E. Base Course: Shall be in accordance with NCDOT Standard Specifications for Roads and Structures dated January 2024.
- F. Engineered Fill: Shall be in accordance with NCDOT Standard Specifications for Roads and Structures dated January 2024.
- G. Bedding Course: Shall be in accordance with NCDOT Standard Specifications for Roads and Structures dated January 2024.
- H. Drainage Course: Shall be in accordance with NCDOT Standard Specifications for Roads and Structures dated January 2024.
- I. Filter Material: Shall be in accordance with NCDOT Standard Specifications for Roads and Structures dated January 2024.
- J. BMP Embankment: Fill materials shall be complying with Charlotte-Mecklenburg BMP Design Manual Section 4.0.6 dated September 1, 2024, or as otherwise recommended by the Owner’s Geotechnical Engineer based on field conditions.

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- K. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand.
- L. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILE FABRIC

- A. Geotextile Fabric installed between sand and stone in sand filter shall be as follows:
 - 1. Weight: 4.0 oz/sy as per ASTM D-5261.
 - 2. Grab Tensile Strength: 120 lbs as per ASTM D-4632-86.
 - 3. Grab Tensile Elongation: 50% as per ASTM D-4632-86.
 - 4. Trapezoid Tear Strength: 50 lbs as per ASTM D-4533-85.
 - 5. CBR Puncture Strength: 310 lbs as per ASTM D-6241.
 - 6. Apparent Opening Size: 70 U.S. Std. Sieve as per ASTM D-4751-87.
 - 7. Permittivity: 1.7 sec(-1) as per ASTM D-4491-85.
 - 8. Water Flow Rate: 135 gal/min/sf as per ASTM D-4491-85.
 - 9. Ultraviolet Stability: 70% as per ASTM D-4355-84.
- B. Geotextile Fabric installed underneath riprap aprons and riprap channels shall be as follows:
 - 1. Grab Tensile Strength: 200 lbs as per ASTM D-4632-86.
 - 2. Grab Tensile Elongation: 15% as per ASTM D-4632-86.
 - 3. Trapezoid Tear Strength: 75 lbs as per ASTM D-4533-85.
 - 4. CBR Puncture Strength: 700 lbs as per ASTM D-6241.
 - 5. Apparent Opening Size: 40 U.S. Std. Sieve as per ASTM D-4751-87.
 - 6. Permittivity: 0.05 sec(-1) as per ASTM D-4491-85.
 - 7. Water Flow Rate: 4 gal/min/sf as per ASTM D-4491-85.
 - 8. Ultraviolet Stability: 70% as per ASTM D-4355-84.

PART 3 - EXECUTION

3.1 PREPARATION

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- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil bearing water runoff or airborne dust to adjacent properties and walkways.
- D. Prior to proceeding with construction, all topsoil and other deleterious, non-soil materials shall be stripped from proposed construction area. Stripping shall extend at least 5 feet horizontally beyond building limits, and stripping of unsatisfactory soils shall be as identified by the Geotechnical Engineer.
- E. Subgrades which are to support slabs, pavements, or compacted fill shall be proofrolled with a 20 to 30 ton fully loaded truck or other pneumatic-tired vehicle of similar size and weight to identify areas of localized soft soil or unsuitable soil. Any soft or unsuitable material encountered during proofrolling shall be removed and replaced with engineered fill. The Geotechnical Engineer shall observe all proofrolling operations.
 - 1. The proofrolling procedures should consist of complete passes of the exposed area, with half of the passes being in a direction perpendicular to the preceding ones.

3.2 DEWATERING

- A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- C. Dewatering disposal shall be in accordance with Erosion and Sediment Control permit.

3.3 EXCAVATION

- A. Explosives: Do not use explosives.

3.4 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.
 - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

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2. Excavation for Mechanical or Electrical Appurtenances: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot. Do not disturb the bottom of excavations intended for bearing surface.

3.5 APPROVAL OF SUBGRADE

- A. Notify Engineer when excavations have reached the required subgrade.
- B. When Engineer determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Engineer.

3.6 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill or flowable fill may be used to bring elevations to proper position.

3.7 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.

3.8 BACKFILL

- A. Backfill excavations promptly, but not before completing the following:
 1. Acceptance of construction below finish grade including, where applicable, damp-proofing, waterproofing, and perimeter insulation.
 2. Surveying locations of underground utilities for record documents.
 3. Testing, inspecting, and approval of underground utilities.
 4. Concrete form-work removal.
 5. Removal of trash and debris from excavation.
 6. Removal of temporary shoring and bracing, and sheeting.
 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.9 SUBSURFACE DRAINAGE BACKFILL

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- A. Subsurface Drain: Place a layer of filter fabric around perimeter of drainage trench or at footing, as indicated. Place a 6 inch compacted course of filtering material on filter fabric to support drainage pipe. After installing and testing, encase drainage pipe in a minimum of 6 inches of compacted filtering material and wrap in filter fabric, overlapping edges at least 6 inches.
- B. Drainage Backfill: Place and compact drainage backfill of filtering material over subsurface drain, in width indicated, to within 18 inches of final subgrade. Overlay drainage backfill with one layer of filter fabric, overlapping edges at least 6 inches.
- C. Fill: Place and compact fill material over drainage backfill to final subgrade.

3.10 FILL

- A. Preparation: Remove vegetation, topsoil, debris, wet, and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
 - 1. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.
- B. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to 8 inches, pulverize, moisture condition, or aerate soil and recompact to required density.
- C. Place fill material in layers to required elevations for each location listed below.
 - 1. Under grass, use General Site Fill.
 - 2. Under walks and pavements, use aggregate base to the required depth and, General Site Fill.
 - 3. Under steps and ramps, aggregate base.
 - 4. Under building slabs, use porous fill to the required depth, and General Site Fill.
 - 5. Under footings and foundations, use Engineered Fill, aggregate base, or flowable fill.
 - 6. Behind below-grade walls, use Engineered Fill or porous fill.

3.11 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry satisfactory soil material that is too wet to compact to specified density.
 - a. Stockpile or spread and dry removed wet satisfactory soil material.

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- b. If excavation must remain open overnight or rainfall becomes imminent while the bearing soils are exposed, place a 1 to 3 inch thick “mud mat” of lean concrete on the bearing soils before the placement of reinforcing steel.
- c. Costs associated with removing and replacing previously approved backfill due to being too wet shall be borne by the CONTRACTOR.

3.12 COMPACTION

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698.
 - 1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 98 percent.
 - 2. Under paved tennis and pickleball courts, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 100 percent.
 - 3. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 98 percent.
 - 4. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
 - 5. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.

3.13 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between existing adjacent grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.

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2. Walks: Plus or minus 0.10 foot.

C. Grading Inside Building Lines: Finish subgrade to a tolerance of ½ inch when tested with a 10 foot straightedge.

3.14 POROUS FILL

A. Under slabs on grade, place porous fill course on prepared subgrade.

1. Compact porous fill to required cross sections and thickness.

3.15 BMP EMBANKMENT

A. Subgrade Preparation: Shall be in compliance with Charlotte-Mecklenburg BMP Design Manual Section 4.0.6 dated September 1, 2024 or as otherwise recommended by the Owner's Geotechnical Engineer based on field conditions.

B. Seepage Key Placement: Shall be in compliance with Charlotte-Mecklenburg BMP Design Manual Section 4.0.6 dated September 1, 2024 or as otherwise recommended by the Owner's Geotechnical Engineer based on field conditions.

C. Embankment Fill Placement: Shall be in compliance with Charlotte-Mecklenburg BMP Design Manual Section 4.0.6 dated September 1, 2024 or as otherwise recommended by the Owner's Geotechnical Engineer based on field conditions.

D. Outlet Pipe Fill Placement: Shall be in compliance with Charlotte-Mecklenburg BMP Design Manual Section 4.0.6 dated September 1, 2024 or as otherwise recommended by the Owner's Geotechnical Engineer based on field conditions.

3.16 FIELD QUALITY CONTROL

A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.

1. Perform field in place density tests according to ASTM D 6938, (nuclear method) provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 6938.

a. When field in place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Engineer.

2. Footing Subgrade: The Geotechnical Engineer shall observe all subgrades and determine suitability to support design loads.

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3. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in place density test for every 2,500 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
 4. Foundation Wall Backfill: In each compacted backfill layer, perform at least one field in place density test for each 100 feet or less of wall length, but no fewer than two tests along a wall face.
 5. BMP Embankment: Testing shall be performed according to the Charlotte-Mecklenburg BMP Design Manual Section 4.0.6 dated September 1, 2024.
- B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.

3.17 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
 1. Scarify or remove and replace material to depth directed by the Engineer; reshape and recompact at optimum moisture content to the required density.
- C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.
- D. Costs associated with restoration or replacement of backfill which has not been protected shall be borne by the CONTRACTOR.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and topsoil and dispose of on-site at locations indicated. Waste material, including unsatisfactory soil, trash, and debris, shall be legally disposed of off the Owner's property. Contractor is responsible for all costs associated with disposal and for all erosion and sediment control measures at off-site disposal areas.

END OF SECTION 31 20 00

SECTION 31 25 00 – EROSION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplemental General Conditions, and Division 01 Specification Sections, apply to this Section.

1.2 SCOPE

- A. Compliance: This WORK shall be performed in accordance with the erosion and sediment control plan of the Construction Drawings and the details provided therein, and as described, detailed and required by the North Carolina Department of Environmental Quality in the most recent edition of the North Carolina Department of Environmental Quality Erosion and Sediment Control Planning and Design Manual; and in the latest edition of the Mecklenburg County Land Development Standard Drawings.
- B. Details: In the event a detailed plan is not shown, CONTRACTOR shall comply with the requirements of the local authority and provide a plan if required by that authority.

1.3 REFERENCES

- A. North Carolina Department of Environmental Quality Erosion and Sediment Control Planning and Design Manual, latest edition.

1.4 SUBMITTALS

- A. Temporary Seed Mixture: Provide written notification as to the temporary seed mixture to be used.
- B. Temporary Riser: Provide shop drawings for all risers shown on the approved plans, including trash racks, and anti-flotation blocks.
- C. Temporary Skimmer Device: Provide shop drawings for temporary skimmers as indicated on the approved plans.

1.5 MAINTENANCE

- A. Maintain all erosion and sediment control structures to be utilized during the life of the Project in compliance with the regulations of the Division of Soil and Water Conservation until vegetative cover is acceptable to the Division's field personnel and approval acceptance is received.

PART 2 - PRODUCTS

2.1 TEMPORARY SEEDING

- A. A suitable mixture shall be selected from those listed in North Carolina Department of Environmental Quality Erosion and Sediment Control Planning and Design Manual.

PART 3 - EXECUTION

3.1 EROSION AND SEDIMENT CONTROL MEASURES

- A. Measures: Silt fence, construction entrance, check dams, inlet protection, diversion ditches, skimmer basin, sediment basin, temporary vegetation, and all other items for erosion and sediment control shall be constructed as directed by the ENGINEER or in the locations shown or designated on the Drawings in accordance with the details provided.
- B. Schedule: CONTRACTOR shall institute the erosion and sediment control program as a part of clearing and grubbing, and prior to rough grading. The initial program shall include, however is not limited to, the installation of silt fences, diversion ditches and/or gravel weirs as shown on erosion and sediment control drawing at the limits of clearing and grubbing where silt-carrying surface water runoff may be diverted and/or filtered prior to leaving the disturbed area.
- C. Temporary Seeding: Establish temporary cover for erosion control by seeding and/or mulching graded areas which may otherwise be exposed for a period greater than 30 days. This should be accomplished as soon as rough grading WORK is done. Begin temporary seeding within 72 hours after earth disturbance.
- D. Pipe Outfalls: All pipe outfall areas disturbed by construction shall be protected with non-erodible materials conforming to the North Carolina Department of Environmental Quality Erosion and Sediment Control Planning and Design Manual.
- E. Maintenance: All siltation and erosion control devices installed during the course of construction shall be maintained in proper working order at all times, and shall not be removed until final stabilization of all disturbed areas or at the direction of the ENGINEER.

3.2 CLEANING OF ROADS AND STREETS

- A. CONTRACTOR shall maintain a vehicle wash rack or gravel bed at all vehicle egress areas. All vehicles shall be thoroughly cleaned of mud and silt before leaving the construction site to avoid tracking mud and silt onto roads, streets, and highways. In the event that tracking does occur, CONTRACTOR shall immediately clean the street or road of all debris, mud or silt and shall pay all damages resulting therefrom. A daily survey of the condition of the adjacent streets and roads shall be made and recorded in the field log along with daily cleanup of the streets of the tracking from the site onto roads, alleys, parking lots, and highways.

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3.3 PROTECTION OF STORMWATER SYSTEMS

- A. Stormwater structures which will receive runoff from the construction shall be protected from the buildup of mud or silt as outlined by the North Carolina Department of Environmental Quality Erosion and Sediment Control Planning and Design Manual or as directed by ENGINEER.

END OF SECTION 31 25 00

SECTION 32 13 13 – CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Driveways.
2. Roadways.
3. Parking lots.
4. Curbs and gutters.
5. Walks.
6. Pervious Concrete

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Other Action Submittals:
 1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified ready-mix concrete manufacturer and testing agency.
- B. Material Certificates: For the following, from manufacturer:
 1. Cementitious materials.
 2. Steel reinforcement and reinforcement accessories.
 3. Fiber reinforcement.

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4. Admixtures.
 5. Curing compounds.
 6. Applied finish materials.
 7. Bonding agent or epoxy adhesive.
 8. Joint fillers.
- C. Material Test Reports: For each of the following:
1. Aggregates.
- D. Field quality-control reports.
- 1.6 QUALITY ASSURANCE
- A. Detectable Warning Installer Qualifications: An employer of workers trained and approved by manufacturer of stamped concrete paving systems.
- B. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").
- C. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
- D. Concrete Testing Service: Owner will engage a qualified testing agency to perform material evaluation tests and to design concrete mixtures.
- E. ACI Publications: Comply with ACI 301 unless otherwise indicated.
- F. Preinstallation Conference: Conduct conference at Project site.
1. Review methods and procedures related to concrete paving, including but not limited to, the following:
 - a. Concrete mixture design.
 - b. Quality control of concrete materials and concrete paving construction practices.
 2. Require representatives of each entity directly concerned with concrete paving to attend, including the following:

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- a. Contractor's superintendent.
- b. Independent testing agency responsible for concrete design mixtures.
- c. Ready-mix concrete manufacturer.
- d. Concrete paving subcontractor.
- e. Manufacturer's representative of stamped concrete paving system used for detectable warnings.

1.7 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
- B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
 1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn-steel wire into flat sheets.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
- C. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs. Retain one of first two paragraphs below. Tie bars or hook bolts may be used for connection between new and existing paving and between paving and gutters.
- D. Tie Bars: ASTM A 615/A 615M, Grade 60, deformed.
- E. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

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2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

F. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.

G. Zinc Repair Material: ASTM A 780.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C 150, gray Portland cement Type I

- a. Fly Ash: ASTM C 618, Class F.

- b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Normal-Weight Aggregates: ASTM C 33, Class 4M, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.

1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.

2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.

2. Retarding Admixture: ASTM C 494/C 494M, Type B.

3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.

5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.

6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.4 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

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- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.

2.5 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.
- B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.
- C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

2.6 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
 - 2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that meet or exceed requirements.
- B. Proportion mixtures to provide normal-weight concrete with the following properties:
 - 1. Compressive Strength (28 Days): 3600 psi for hardscape.
 - 2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45
 - 3. Slump Limit: 4 inches, plus or minus 1 inch.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
 - 1. Air Content: 5-1/2 percent plus or minus 1.5 percent for 1-1/2-inch nominal maximum aggregate size.
- D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- E. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Fly Ash or Pozzolan: 25 percent.
 - 2. Ground Granulated Blast-Furnace Slag: 50 percent.

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3. Combined Fly Ash or Pozzolan, and Ground Granulated Blast-Furnace Slag: 50 percent, with fly ash or pozzolan not exceeding 25 percent.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.
 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
 1. For concrete batches of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
 2. For concrete batches larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
 3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.
 1. Completely proofroll subbase in one direction. Limit vehicle speed to 3 mph (5 km/h).
 2. Proofroll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing between 20 to 30 tons.
 3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Section 31 20 00 "Earth Moving."
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- E. Zinc-Coated Reinforcement: Use galvanized-steel wire ties to fasten zinc-coated reinforcement. Repair cut and damaged zinc coatings with zinc repair material.
- F. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M.
- G. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
 - 1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
 - 1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
 - 2. Provide tie bars at sides of paving strips where indicated.

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3. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
 4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
1. Locate expansion joints at intervals of 50 feet unless otherwise indicated.
 2. Extend joint fillers full width and depth of joint.
 3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch 3/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

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- G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.
- K. Slip-Form Paving: Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.
 - 1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.
- L. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
 - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.
- M. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm) and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period using cover material and waterproof tape.
 - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows:

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1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
3. Surface: Gap below 10-foot- (3-m-) long, unlevelled straightedge not to exceed 1/2 inch (13 mm).
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches (13 mm per 300 mm) of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch (25 mm).
6. Vertical Alignment of Dowels: 1/4 inch (6 mm).
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches (6 mm per 300 mm) of dowel.
8. Joint Spacing: 3 inches (75 mm).
9. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
10. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.10 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Engineer.
- B. Allow concrete paving to cure for a minimum of 28 days and be dry before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).
 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.
 2. Broadcast glass beads uniformly into wet markings at a rate of 6 lb/gal. (0.72 kg/L).

3.11 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 1. Testing Frequency: Obtain at least one composite sample for each 50 cu. yd. or fraction thereof of each concrete mixture placed each day.

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- a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.
- C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
- F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer.
- G. Concrete paving will be considered defective if it does not pass tests and inspections.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- I. Prepare test and inspection reports.

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3.12 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Engineer.
- B. Drill test cores, where directed by Engineer, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

6. PERVIOUS CONCRETE

- A. Pervious concrete shall comply to ACI 522.1-13 and the North Carolina Department of Environmental Quality's (NCDEQ) Stormwater Design Manual. The sidewalk thickness shall be 6-inch with the top ½" above grade and flat slope. Installation requires a level surface on 6 inches of washed #57 stone over a scarified, uncompacted subgrade, ensuring compliance with (NCDEQ) Stormwater Design Manual. The sidewalk construction needs to be done after the surrounding area is well stabilized to prevent runoff from landscaped and asphalt areas, particularly due to the significant fines produced by asphalt.
- B. The targeted void content of 15% to 25% is mandated for pervious concrete pavements, as per ASTM C 1688, with a tolerance of +/-5%. The mix submittal must include documentation of density in relation to void content, adhering to several ASTM standards that govern void content, density, infiltration rates, and resistance to degradation.
- C. The mix submittal must document density relative to void content to ensure compliance, and several ASTM standards, including ASTM C1688, C1701, C1754, and C1747, govern the void content, density, infiltration rates, and resistance to degradation.

END OF SECTION 32 13 13

SECTION 32 92 00 – LAWNS & GRASSES

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

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

1.2. SUMMARY

A. Section Includes:

- 1. Seeding.
- 2. Hydroseeding.
- 3. Sodding.

B. Related Sections:

- 1. Division 31 Section "Earth Moving" for topsoil stripping and stockpiling, excavation, filling and backfilling, and rough grading.
- 2. Division 32 Section "Exterior Plants" for border edgings.

1.3. DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

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- G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- I. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4. SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
 - 1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.
- C. Qualification Data: For qualified landscape Installer.
- D. Product Certificates: For soil amendments and fertilizers, from manufacturer.
- E. Material Test Reports: For existing in-place surface soil and imported or manufactured topsoil.
- F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required initial maintenance periods.

1.5. QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.
 - 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 - 2. Experience: Five years' experience in turf installation in addition to requirements in Division 1 Section "Quality Requirements."
 - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 4. Personnel Certifications: Installer's [field supervisor] shall have certification in all of the following categories from the Professional Landcare Network:

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- a. Certified Landscape Technician - Exterior, with installation, maintenance, and irrigation specialty area(s), designated CLT-Exterior.
 - b. Certified Turfgrass Professional, designated CTP.
 - c. Certified Turfgrass Professional of Cool Season Lawns, designated CTP-CSL.
5. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.
6. Pesticide Applicator: State licensed, commercial.
- B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.
1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
 2. The soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Architect. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
 3. Report suitability of tested soil for turf growth.
 - a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.
- D. Preinstallation Conference: Conduct conference at Project site.

1.6. DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.
- C. Bulk Materials:

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1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.7. PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of final acceptance.
 1. Spring Planting: March 1 thru June 1
 2. Fall Planting: September 1 thru December 1.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

1.8. MAINTENANCE SERVICE

- A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:
 1. Seeded Turf: 60 days from date of planting completion.
 - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.
 2. Sodded Turf: 60 days from date of planting completion.
- B. Continuing Maintenance Proposal: From Installer to Owner, in the form of a standard yearly (or other period) maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1. SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

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- B. Seed Species: State-certified seed of grass species as follows:
- C. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
- D. Grass Seed Mix: Fescue Rebel II or approved equal.

2.2. TURFGRASS SOD

- A. Turfgrass Sod: Certified Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.
- B. Turfgrass Species: Bermudagrass (*Cynodon dactylon*) – Variety Tiff Tuff™ for use in select areas as identified on plans. Fescue sod shall be used in all other areas – see plans for more information.
- C. Turfgrass Species: Sod of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:

2.3. INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 - 1. Provide lime in form of ground dolomitic limestone.
- B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, and with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.
- C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- D. Aluminum Sulfate: Commercial grade, unadulterated.
- E. Perlite: Horticultural perlite, soil amendment grade.
- F. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.
- G. Sand: Clean, washed, natural or manufactured, and free of toxic materials.
- H. Diatomaceous Earth: Calcined, 90 percent silica, with approximately 140 percent water absorption capacity by weight.
- I. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.

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2.4. ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 - 1. Organic Matter Content: 50 to 60 percent of dry weight.
 - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture, with a pH range of 3.4 to 4.8.
- C. Muck Peat: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent.
- D. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials.
 - 1. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with ammonium nitrate at a minimum rate of 0.15 lb/cu. ft. of loose sawdust or ground bark, or with ammonium sulfate at a minimum rate of 0.25 lb/cu. ft. of loose sawdust or ground bark.
- E. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.5. FERTILIZERS

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 10 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
 - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.
- D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

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1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.6. PLANTING SOILS

- A. Planting Soil: Existing, in-place surface soil. Verify suitability of existing surface soil to produce viable planting soil. Remove stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth. Mix surface soil with the following soil amendments and fertilizers in the following quantities to produce planting soil:
1. Supplement with imported planting soil when quantities are insufficient.
 2. Mix existing, native surface topsoil with the following soil amendments and fertilizers in the following quantities to produce planting soil:
 1. Ratio of Loose Compost to Topsoil by Volume: 1:3
 2. Ratio of Loose Wood Derivatives to Topsoil by Volume: 1:8.
 3. Weight of Lime per 1000 Sq. Ft.: Based on soil test results.
 4. Weight of Sulfur, Iron Sulfate, Aluminum Sulfate per 1000 Sq. Ft.: Based on soil test results.
 5. Weight of Agricultural Gypsum per 1000 Sq. Ft.: Based on soil test results
 6. Volume of Sand Plus 10 Percent Diatomaceous Earth per 1000 Sq. Ft.: Based on soil test results.
 7. Weight of Bonemeal per 1000 Sq. Ft.: Based on soil test results
 8. Weight of Superphosphate per 1000 Sq. Ft.: Based on soil test results
 9. Weight of Commercial Fertilizer per 1000 Sq. Ft.: Based on soil test results
 10. Weight of Slow-Release Fertilizer per 1000 Sq. Ft.: Based on soil test results

2.7. MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 2 to 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
1. Organic Matter Content: 50 to 60 percent of dry weight.
 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- C. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

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- D. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.
- E. Asphalt Emulsion: ASTM D 977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

2.8. PESTICIDES

- A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.9. EROSION-CONTROL MATERIALS

- D. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 - 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

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- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2. PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
 - 1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
 - 2. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3. TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. Apply fertilizer directly to subgrade before loosening.
 - 2. Spread planting soil to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Spread approximately 1/2 the thickness of planting soil over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil.
 - b. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
 - 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
 - 2. Loosen surface soil to a depth of at least 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.
 - a. Apply fertilizer directly to surface soil before loosening.
 - 3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
 - 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

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- D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- E. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4. PREPARATION FOR EROSION-CONTROL MATERIALS

- A. Prepare area as specified in "Turf Area Preparation" Article.
- B. For erosion-control mats, install planting soil in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.
- C. Fill cells of erosion-control mat with planting soil and compact before planting.
- D. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.
- E. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5. SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
 - 2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a total rate of 3 to 4 lb/1000 sq. ft.
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes exceeding 4:1 with erosion-control blankets installed and stapled according to manufacturer's written instructions.
- E. Protect seeded areas with erosion-control mats where shown on Drawings; install and anchor according to manufacturer's written instructions.

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- F. Protect seeded areas with slopes not exceeding 4:1 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.
 - 1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
 - 2. Bond straw mulch by spraying with asphalt emulsion at a rate of 10 to 13 gal./1000 sq. ft. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.
- G. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch and/or planting soil within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 1/2 inch and roll surface smooth.

3.6. HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
 - 1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
 - 2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

3.7. SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across angle of slopes exceeding 1:3.
 - 2. Anchor sod on slopes exceeding 1:6 with wood pegs [or steel staples] spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.
- C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.8. TURF MAINTENANCE

- A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 - 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
 - 3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
 - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 - 2. Water turf with fine spray at a minimum rate of 1 inch (25 mm) per week unless rainfall precipitation is adequate.
- C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
- D. Turf Postfertilization: Apply fertilizer after initial mowing and when grass is dry.
 - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.

3.9. SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
 - 1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 95 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
 - 2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
 - 3. Satisfactory Plugged Turf: At end of maintenance period, the required number of plugs has been established as well-rooted, viable patches of grass, and areas between plugs are free of weeds and other undesirable vegetation.
 - 4. Satisfactory Sprigged Turf: At end of maintenance period, the required number of sprigs has been established as well-rooted, viable plants, and areas between sprigs are free of weeds and other undesirable vegetation.

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- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.10. PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.11. CLEANUP AND PROTECTION

- C. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- D. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- E. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 32 92 00

SECTION 32 93 00 – EXTERIOR PLANTS

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

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

1.2. SUMMARY

B. Section Includes:

1. Plants.
2. Planting soils.
3. Tree stabilization.
4. Landscape edgings.

C. Related Sections:

1. Division 02 Section "Site Demolition" for protection of existing trees and plantings, topsoil stripping and stockpiling, and site clearing.
2. Division 02 Section "Tree Protection and Trimming" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
3. Division 31 Section "Earthwork" for excavation, filling, and rough grading and for subsurface aggregate drainage and drainage backfill materials.
4. Division 32 Section "Lawns and Grasses" for turf (lawn), and hydroseeding.

1.3. DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
- C. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required.
- D. Bare-Root Stock: Plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1 for type and size of plant required.

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- E. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- F. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- G. Fabric Bag-Grown Stock: Healthy, vigorous, well-rooted plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of plant.
- H. Finish Grade: Elevation of finished surface of planting soil.
- I. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- J. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- K. Pests: Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- L. Planting Area: Areas to be planted.
- M. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- N. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- O. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- P. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- Q. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- R. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

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- S. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4. SUBMITTALS

- A. Product Data: For each type of product indicated, including soils.
 - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
 - 2. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to the Project.
- B. Samples for Verification: For each of the following:
 - 1. Organic Compost Mulch: 1-quart (1-liter) volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
 - 2. Mineral Mulch: 2 lb (1.0 kg) of each mineral mulch required, in sealed plastic bags labeled with source of mulch. Sample shall be typical of the lot of material to be delivered and installed on the site; provide an accurate indication of color, texture, and makeup of the material.
 - 3. Weed Control Barrier: 12 by 12 inches.
 - 4. Edging Materials and Accessories: Manufacturer's standard size, to verify color selected.
- C. Qualification Data: For qualified landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- D. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
 - 1. Manufacturer's certified analysis of standard products.
 - 2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- E. Material Test Reports: For existing in-place surface soil, and imported or manufactured topsoil.
- F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of plants during a calendar year. Submit before start of required maintenance periods.
- G. Warranty: Sample of special warranty.

1.5. QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful establishment of plants.
 - 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 - 2. Experience: Five years' experience in landscape installation in addition to requirements in Division 1 Section "Quality Requirements."
 - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 4. Personnel Certifications: Installer's field supervisor shall have certification in all of the following categories from the Professional Landcare Network:
 - a. Certified Landscape Technician - Exterior, with installation, maintenance, and irrigation specialty area(s), designated CLT-Exterior.
 - 5. Pesticide Applicator: State licensed, commercial.
- B. Soil-Testing Laboratory Qualifications: An independent or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.
 - 1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
 - 2. The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be taken per instructions from Architect. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
 - 3. Report suitability of tested soil for plant growth.
 - a. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.
- D. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
 - 1. Selection of plants purchased under allowances will be made by Architect, who will tag plants at their place of growth before they are prepared for transplanting.

- E. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
 - 1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
 - 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
- F. Plant Material Observation: Architect may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Architect retains right to observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
 - 1. Notify Architect of sources of planting materials seven days in advance of delivery to site.
- G. Preinstallation Conference: Conduct conference at Project site.

1.6. DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.
- B. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk fertilizers, and soil amendments with appropriate certificates.
- C. Deliver bare-root stock plants freshly dug. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting.
- D. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- E. Handle planting stock by root ball.

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- F. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.
- G. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
 - 1. Heel-in bare-root stock. Soak roots that are in dry condition in water for two hours. Reject dried-out plants.
 - 2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 - 3. Do not remove container-grown stock from containers before time of planting.
 - 4. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.

1.7. PROJECT CONDITIONS

- A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.
- B. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:
 - 1. Notify Owner no fewer than two days in advance of proposed interruption of each service or utility.
 - 2. Do not proceed with interruption of services or utilities without Owner's written permission.
- C. Planting Restrictions: Plant during the periods required by the local municipality. In the event the local municipality does not specify a period, install plan material per one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
 - 1. Spring Planting: March 1st to June 15th.
 - 2. Fall Planting: September 1st to December 1st.
- D. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.
- E. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
 - 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.8. WARRANTY

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
 - b. Structural failures including plantings falling or blowing over.
 - c. Faulty performance of tree stabilization, and edgings
 - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Periods from Date of Final Acceptance
 - a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
 - b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
 - c. Annuals: Two months.
 - 3. Include the following remedial actions as a minimum:
 - a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
 - b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
 - c. A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.
 - d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

1.9. MAINTENANCE SERVICE

- A. Initial Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.
 - 1. Maintenance Period: 12 months from date of final acceptance
- B. Initial Maintenance Service for Ground Cover and Other Plants: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.
 - 1. Maintenance Period: Six months from date of final acceptance.
- C. Continuing Maintenance Proposal: From Installer to Owner, in the form of a standard yearly (or other period) maintenance agreement, starting on date initial maintenance service is

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concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1. PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule or Plant Legend shown on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
 - 1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots will be rejected.
 - 2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.
- C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting.
- D. Labeling: Label at least one plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant as shown on Drawings.
- E. If formal arrangements or consecutive order of plants is shown on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.
- F. Annuals and Biennials: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery.

2.2. INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 - 1. Class: O, with a minimum of 95 percent passing through No. 8 sieve and a minimum of 55 percent passing through No. 60 sieve.

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- B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent sulfur, with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.
- C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- D. Aluminum Sulfate: Commercial grade, unadulterated.
- E. Perlite: Horticultural perlite, soil amendment grade.
- F. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.
- G. Sand: Clean, washed, natural or manufactured, and free of toxic materials.
- H. Diatomaceous Earth: Calcined, 90 percent silica, with approximately 140 percent water absorption capacity by weight.
- I. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.

2.3. ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 - 1. Organic Matter Content: 50 to 60 percent of dry weight.
 - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or granular texture, with a pH range of 3.4 to 4.8.
- C. Muck Peat: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent.
- D. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials.
- E. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, debris, and material harmful to plant growth.

2.4. FERTILIZERS

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 10 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
 - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.
- D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
 - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.
- E. Planting Tablets: Tightly compressed chip type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.
 - 1. Nutrient Composition: 20 percent nitrogen, 10 percent phosphorous, and 5 percent potassium, by weight plus micronutrients.
- F. Chelated Iron: Commercial-grade FeEDDHA for dicots and woody plants, and commercial-grade FeDTPA for ornamental grasses and monocots.

2.5. PLANTING SOILS

- A. Planting Soil: Existing, in-place surface soil. Verify suitability of existing surface soil to produce viable planting soil. Remove stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth. Mix surface soil with the following soil amendments and fertilizers in the following quantities to produce planting soil:
 - 1. Ratio of Loose Compost to Topsoil by Volume: 1:3
 - 2. Ratio of Loose Wood Derivatives to Topsoil by Volume: 1:8.
 - 3. Weight of Lime per 1000 Sq. Ft.: Based on soil test results.
 - 4. Weight of Sulfur, Iron Sulfate, Aluminum Sulfate per 1000 Sq. Ft.: Based on soil test results.
 - 5. Weight of Agricultural Gypsum per 1000 Sq. Ft.: Based on soil test results

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6. Volume of Sand Plus 10 Percent Diatomaceous Earth per 1000 Sq. Ft.: Based on soil test results.
7. Weight of Bonemeal per 1000 Sq. Ft.: Based on soil test results
8. Weight of Superphosphate per 1000 Sq. Ft.: Based on soil test results
9. Weight of Commercial Fertilizer per 1000 Sq. Ft.: Based on soil test results
10. Weight of Slow-Release Fertilizer per 1000 Sq. Ft.: Based on soil test results

2.6. MULCHES

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 1. Type: Double hammered hardwood mulch.
 2. Size Range: 3 inches maximum, 1/2 inch minimum.
 3. Color: Natural.
- B. Mineral Mulch: Hard, durable stone, washed free of loam, sand, clay, and other foreign substances, of following type, size range, and color:
 1. Type: Rounded riverbed gravel or smooth-faced stone
 2. Size Range: 4" maximum.
 3. Color: Readily available natural gravel color range.

2.7. WEED-CONTROL BARRIERS

- A. Nonwoven Geotextile Filter Fabric: Polypropylene or polyester fabric, 3 oz./sq. yd. minimum, composed of fibers formed into a stable network so that fibers retain their relative position. Fabric shall be inert to biological degradation and resist naturally-encountered chemicals, alkalis, and acids.
- B. Composite Fabric: Woven, needle-punched polypropylene substrate bonded to a nonwoven polypropylene fabric, 4.8 oz./sq. yd.

2.8. PESTICIDES

- A. General: Pesticide registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.9. TREE STABILIZATION MATERIALS

A. Stakes and Guys:

1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
2. Wood Deadmen: Timbers measuring 8 inches in diameter and 48 inches long, treated with specified wood pressure-preservative treatment.
3. Flexible Ties: Wide rubber or elastic bands or straps of length required to reach stakes or turnbuckles.
4. Guys and Tie Wires: ASTM A 641/A 641M, Class 1, galvanized-steel wire, two-strand, twisted, 0.106 inch in diameter.
5. Tree-Tie Webbing: UV-resistant polypropylene or nylon webbing with brass grommets.
6. Guy Cables: Five-strand, 3/16-inch- diameter, galvanized-steel cable, with zinc-coated turnbuckles a minimum of 3 inches long, with two 3/8-inch galvanized eyebolts.
7. Flags: Standard surveyor's plastic flagging tape, white, 6 inches long.
8. Proprietary Staking-and-Guying Devices: Proprietary stake and adjustable tie systems to secure each new planting by plant stem; sized as indicated and per manufacturer's written recommendations.
 - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Arborbrace; ArborBrace Tree Guying System.
 - 2) Decorations for Generations, Inc.; Reddy Stake System.
 - 3) Other as approved by Landscape Architect

B. Root-Ball Stabilization Materials:

1. Upright Stakes and Horizontal Hold-Down: Rough-sawn, sound, new hardwood or softwood, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated; stakes pointed at one end.
2. Wood Screws: ASME B18.6.1.
3. Proprietary Root-Ball Stabilization Devices: Proprietary at- or below-grade stabilization systems to secure each new planting by root ball; sized per manufacturer's written recommendations unless otherwise indicated.

2.10. LANDSCAPE EDGINGS

A. Steel Edging: Standard commercial-steel edging, rolled edge, fabricated in sections of standard lengths, with loops stamped from or welded to face of sections to receive stakes.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Border Concepts, Inc.
 - b. Collier Metal Specialties, Inc.
 - c. Russell, J. D. Company (The).
 - d. Sure-Loc Edging Corporation.
 - e. Other as approved by Landscape Architect

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2. Edging Size: 1/8 inch wide by 6 inches deep.
3. Stakes: Tapered steel, a minimum of 12 inches long.
4. Accessories: Standard tapered ends, corners, and splicers.
5. Finish: Standard paint
6. Paint Color: Black or Brown.

2.11. MISCELLANEOUS PRODUCTS

- A. Wood Pressure-Preservative Treatment: AWWA C2, with waterborne preservative for soil and freshwater use, acceptable to authorities having jurisdiction, and containing no arsenic; including ammoniacal copper arsenate, ammoniacal copper zinc arsenate, and chromated copper arsenate.
- B. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.
- C. Burlap: Non-synthetic, biodegradable.
- D. Planter Drainage Gravel: Washed, sound crushed stone or gravel complying with ASTM D 448 for Size No. 8.
- E. Planter Filter Fabric: Nonwoven geotextile manufactured for separation applications and made of polypropylene, polyolefin, or polyester fibers or combination of them.
- F. Mycorrhizal Fungi: Dry, granular inoculant containing at least 5300 spores per lb (0.45 kg) of vesicular-arbuscular mycorrhizal fungi and 95 million spores per lb (0.45 kg) of ectomycorrhizal fungi, 33 percent hydrogel, and a maximum of 5.5 percent inert material.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance.
 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2. PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.
- D. Lay out plants at locations directed by Architect. Stake locations of individual trees and shrubs and outline areas for multiple plantings.
- E. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
 - 1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.
- F. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

3.3. PLANTING AREA ESTABLISHMENT

- A. Loosen subgrade of planting areas to a minimum depth of 12 inches Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. Apply fertilizer directly to subgrade before loosening.
 - 2. Spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. Mix lime with dry soil before mixing fertilizer.
 - 3. Spread planting soil to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

- a. Spread approximately one-half the thickness of planting soil over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil.
- B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- C. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.
- D. Application of Mycorrhizal Fungi: At time directed by Architect, broadcast dry product uniformly over prepared soil.

3.4. EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
 1. Excavate approximately three times as wide as ball diameter for balled and burlapped and container-grown stock.
 2. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
 3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 5. Maintain required angles of repose of adjacent materials as shown on the Drawings. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
 6. Maintain supervision of excavations during working hours.
 7. Keep excavations covered or otherwise protected when unattended by Installer's personnel.
 8. If drain tile is shown on Drawings or required under planting areas, excavate to top of porous backfill over tile.
- B. Subsoil and topsoil removed from excavations may be used as planting soil.
- C. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
 1. Hardpan Layer: Drill 6-inch-diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.
- D. Drainage: Notify Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

- E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.5. TREE, SHRUB, AND VINE PLANTING

- A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Set balled and burlapped stock plumb and in center of planting pit or trench with root flare 1 to 2 inches adjacent finish grades.
 - 1. Use planting soil for backfill.
 - 2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 - 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 4. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
 - 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. Set container-grown stock plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
 - 1. Use planting soil for backfill.
 - 2. Carefully remove root ball from container without damaging root ball or plant.
 - 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 4. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
 - 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- E. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.6. MECHANIZED TREE SPADE PLANTING

- A. Trees may be planted with an approved mechanized tree spade at the designated locations. Do not use tree spade to move trees larger than the maximum size allowed for a similar field-grown, balled-and-burlapped root-ball diameter according to ANSI Z60.1, or larger than the manufacturer's maximum size recommendation for the tree spade being used, whichever is smaller.
- B. When extracting the tree, center the trunk within the tree spade and move tree with a solid ball of earth.
- C. Cut exposed roots cleanly during transplanting operations.
- D. Use the same tree spade to excavate the planting hole as was used to extract and transport the tree.
- E. Plant trees as shown on Drawings, following procedures in "Tree, Shrub, and Vine Planting" Article.
- F. Where possible, orient the tree in the same direction as in its original location.

3.7. TREE, SHRUB, AND VINE PRUNING

- A. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Prune, thin, and shape trees, shrubs, and vines as directed by Architect.
- C. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.
- D. Do not apply pruning paint to wounds.

3.8. TREE STABILIZATION

- A. Install trunk stabilization as follows unless otherwise indicated:
- B. Staking and Guying: Stake and guy trees per Marvin Development Ordinance (MDO)

3.9. PLANTING IN PLANTERS

- A. Place a layer of drainage gravel at least 6 inches thick in bottom of planter. Cover bottom with filter fabric and wrap filter fabric 12 inches up on all sides. Duct tape along the entire top edge of the filter fabric, to secure the filter fabric against the sides during the soil-filling process.
- B. Fill planter with planting soil. Place soil in lightly compacted layers to an elevation of 2-inches below top of planter, allowing natural settlement.

3.10. GROUND COVER AND PLANT PLANTING

- A. Set out and space ground cover and plants other than trees, shrubs, and vines spaced as shown on the drawings and in even rows with triangular spacing.
- B. Use planting soil for backfill.
- C. Dig holes large enough to allow spreading of roots.
- D. For rooted cutting plants supplied in flats, plant each in a manner that will minimally disturb the root system but to a depth not less than two nodes.
- E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
- F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
- G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.11. PLANTING AREA MULCHING

- A. Install weed-control barriers before mulching according to manufacturer's written instructions. Completely cover area to be mulched, overlapping edges a minimum of 12 inches and secure seams with galvanized pins.
- B. Mulch backfilled surfaces of planting areas and other areas indicated.
 - 1. Trees and Tree-like Shrubs in Turf Areas: Apply organic mulch ring of 4" average thickness, with 36-inch radius around trunks or stems. Do not place mulch within 3 inches of trunks or stems.
 - 2. Organic Mulch in Planting Areas: Apply 4-inch average thickness of organic mulch over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 2 inches of trunks or stems.
 - 3. Mineral Mulch in Planting Areas: Apply 3-inch average thickness of mineral mulch over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

3.12. EDGING INSTALLATION

- A. Steel Edging: Install steel edging where indicated according to manufacturer's written instructions. Anchor with steel stakes spaced per manufacturers instructions, driven below top elevation of edging.
- B. Shovel-Cut Edging: Separate mulched areas from turf areas, curbs, and paving with a 45-degree, 4- to 6-inch-deep, shovel-cut edge.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

3.13. PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
- B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.14. PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- B. Pre-Emergent Herbicides (Selective and Non-Selective): Apply to tree, shrub, and ground-cover areas in accordance with manufacturer's written recommendations. Do not apply to seeded areas.
- C. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.15. CLEANUP AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- C. After installation and before [Substantial Completion] <Insert time>, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

3.16. DISPOSAL

- A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

END OF SECTION 32 93 00

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

LIVE STAKES

1.0 DESCRIPTION

The work covered in this special provision includes preparation, furnishing equipment, materials, and labor necessary to install and maintain live stakes on “finished” stream banks as shown on the plans and/or as directed by the Village.

Live stakes shall be installed in accordance with the various stream bank stabilization techniques described in the Contract Documents.

All planting shall be executed during the dormant season for each species (November 15 thru March 15). Exceptions to the planting season must be approved by engineer.

2.0 MATERIALS

Live stake materials shall consist of materials specified in the Contract Documents, or if not specified, then shall be made up of the species and percentages in the table below.

Live stakes shall measure one-half inches to two inches (3/4” – 1.5”) diameter, two to three feet (2’ – 3’) in length, angled on the bottom and cut flush on the top, with buds oriented upwards. Live stakes shall be living based on the presence of young buds and green cambium. All side branches shall be cleanly trimmed, so the cutting is a single stem. They shall be cut at a 45° angle on the basal end and cut flat on the other end. The basal end is intended as the end to take root and shall be the end installed in the ground. Live stakes shall not be harvested after March 15 or before November 15.

BOTANICAL NAME	COMMON NAME	PERCENTAGE
<i>Cephalanthus occidentalis</i>	Button Bush	25
<i>Ulmus rubra</i>	Slippery Elm	25
<i>Cornus amomum</i>	Silky dogwood	25
<i>Sambucus canadensis</i>	Elderberry	25

Apply the Live Stakes as shown on the Planting Plan and Details or as directed by the Engineer.

3.0 SUBMITTALS

Furnish a copy of tags used to identify cuttings after harvest and during transport or any tickets, tags, or manifests for purchased materials, as applicable based on the Contractor’s method of live stake procurement/ harvesting. Provide the following documentation:

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

- 1) The Contractor may decide to harvest live cuttings or purchase live cuttings and/or pre-made live stakes. If the Contractor decides to harvest their own material:
 - a) A list of live cutting harvest sites shall be provided ten days prior to beginning the Work.
 - b) A copy of the signed written agreement and applicable correspondence between the harvest site property owner and Contractor shall be provided ten days prior to beginning the Work. At minimum, the signed agreement shall:
 - i) Grant permission to harvest.
 - ii) Specify the requirements of access/egress.
 - iii) Specify the use of and condition in which the harvesting site is to be left.
 - iv) Acknowledge that the Contractor shall be solely responsible for activities on the harvesting site and shall hold the Owner and any other parties harmless.
 - v) Certify that the proposed cutting material is insect and disease free.
 - c) Provide a copy of any applicable permits from regulatory agencies for the harvest site.
- 2) If the Contractor decides to purchase live cuttings and/or pre-made live stakes, provide the name and location of and contact information for the supplier. Suppliers must provide all of the written information required of the Contractor.

4.0 METHODS

Live stakes shall be installed into the ground using a dead blow hammer. They shall be installed so that approximately one-fifth of the stake protrudes with at least two buds exposed from the finished ground elevation. On the sloped areas, they shall be placed at right angles to the slope face. In cases where the ground is hard, a pilot hole may be made to assist in inserting the live stake. The Contractor may use a half-inch metal rod or other means acceptable to the Engineer for this purpose. The intent of this requirement is to maintain firm soil/stake contact after the live stake is installed. The rod must be removed carefully and may not be rotated to enlarge the hole.

Species selection may be adjusted depending on availability. Substitute species must be approved by the Engineer prior to installation. All final locations and configurations shall be determined in the field by the Engineer.

The stakes shall be installed per the spacing requirements shown on the plans. Live stake applications shall follow application rates shown in details.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

No planting shall be done in soil that, in the opinion of the Village, is too wet, too dry or not properly conditioned as provided in these specifications. No planting shall be done on channel banks that have not been seeded and stabilized with erosion control matting, unless otherwise directed by the Village.

Materials shall be installed the same day as prepared or stored in a refrigerated area that has been kept moist for no longer than four (4) calendar days. Deviations from these storage requirements should be approved by the Engineer.

Protect plants at all times from sun, drying winds, and frost. Plants that cannot be planted immediately on delivery shall be kept well protected from winds and frost. Bundles of harvested live material should be kept with cut ends submerged in water to keep cut ends moist at all times. Care shall be taken to keep bundles moist during transportation from the harvest site to the planting site. Live cuttings that appear to be dried out or damaged during transportation will not be accepted. Rejected live cuttings may be marked by the Village.

5.0 WARRANTY

All live stakes installed by the Contractor shall be assessed by the Engineer or representative thereof at the end of the same planting season they were installed. One hundred percent of the live stakes must be installed correctly and still be alive at the time this assessment is completed. If dead plant material is found, the Contractor is responsible for replacing that material before the completion of that planting season (March 15). At the completion of one full growing season following planting, all live stakes installed by the Contractor shall be assessed by the Engineer. Eighty percent (80%) of the live stakes must survive after one full growing season. If the Contractor does not meet this requirement then all dead plant material shall be removed and replanted during the next planting season. The new replacement live stakes shall have the distal end marked with yellow paint and will also be under warranty and be assessed at the conclusion of the next full growing season. Replacement of live stakes under warranty is required to have 80% survival of the original planting at the end of any new warranty period. The Engineer, or representative thereof, shall have the option to do a 100% count or to substitute a method of random systematic sampling that counts survival on 25% of the planted area and have these results of this sampling method represent the actual estimate of survival for warranty purposes.

The Contractor shall be responsible for furnishing equipment, materials, labor, incidentals and water to maintain plant survival in accordance with these specifications during the construction contract and during the warranty period.

The Contractor shall be responsible for traffic control through the life of the project and warranty period.

6.0 MEASUREMENT

This item will be measured by each unit furnished, properly installed and accepted by the Engineer, including all labor, machinery, materials, maintenance, hauling, preparing, harvesting, and installing of the item to complete the work in an acceptable manner. No payment shall be made for improperly installed stakes, i.e. mushroomed or split ends. Live stakes used for construction of “Vegetated Geo-grid with Root Wads” are considered incidental and not measure for payment under this special provision.

7.0 PAYMENT

Payment will be full compensation for all work covered in this special provision, including, but not limited to installation, harvesting, preparation, hauling, staking, repair, replacements, maintenance, and for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

LIVE STAKES EA

Boulder Toe

1.0 DESCRIPTION

The work covered by this section consists of furnishing, stockpiling, placing, and maintaining approved stone, backfill, and filter fabric to be utilized to construct a boulder toe, as specified in the Contract Document or as directed by the Engineer. The boulder toe is used for bank toe protection, providing bank stability.

The quantity of structures to be constructed will be affected by site conditions during construction. The type and quantity of this structure may be increased or decreased at the direction of the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

2.0 MATERIALS

Backfill material shall consist of a well-mixed gradation of, stone aggregate and earth. Earth material shall be sourced on site from stockpiled materials resulting from bank and/or channel bed excavations from channel construction activities. Earth material from channel bed excavation is preferable for well-mixed gradation placed in the channel and bank(s).

Stone aggregate shall meet the material requirements of NCDOT section 1005 General Requirements for Aggregate and NCDOT section 1042 Rip Rap Materials.

Boulders shall consist of flat-sided, durable field or quarry stone that is sound, hard, dense, angular, and resistant to the action of air and water, and free of seams, cracks, or other structural defects. The Contractor shall use boulders with a “shape factor” greater than two (length and width more than twice the thickness). The Contractor cannot use limestone or concrete waste for boulders. Boulders shall be approved by the Engineer.

The size (length, width and depth (thickness)) of boulders shall be as specified by the Engineer in accordance with the construction documents.

Filter fabric for sealing structures shall meet the Type 2 material requirements of NCDOT Section 1056 Geosynthetics.

3.0 METHODS

Structure installation and channel grading sequences may vary based on structure function and design. Boulder Toe should be installed in conjunction with channel grading operations, so that flow vectors and channel alignment can be used to adjust the installation.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABILIZATION

Prior to construction of the structure, establish elevations at the upstream and downstream end of the proposed structure. The Contractor may install additional survey control, as needed, to complete the work in accordance with the Contract Documents.

Boulder Toe

- 1) Prepare the toe of the stream bank for the placement of boulders by excavating and shaping the slopes of the trench. Backfill material shall be placed per the detail.
- 2) Place the footer boulders using mechanical means that produce a job within the tolerances required in the Contract Documents.
- 3) Install filter fabric per the Contract Documents and in accordance with the manufacturer's specifications. Leave enough filter fabric to place around header boulder(s) prior to backfill as shown on detail. Filter fabric shall be neatly secured around any project elements, undisturbed trees/shrubs, and existing structures to prevent any loose or frayed edges. There shall be no visible, loose ends or unsecured filter fabric on the completed work.
- 4) Place the header boulders using mechanical means that produce a job within the tolerances required in the Contract Documents.
- 5) Pack down the installed boulders without breaking once in place to ensure tight fit with minimal voids. Limit handwork to the amount necessary to fill small voids or correct localized areas. If boulders are used for toe protection, backfill material and/or soil backfill may be required to complete the stream bank toe protection. Backfill material shall be placed as required in the Contract Documents.
- 6) Finish grade the adjacent streambed and channel banks to provide a smooth even grade transition between project structure components (vane arms, sills, invert, floodplain sills, etc.) and the existing and/or proposed ground surface.

Based on the size of the stream and the size (length and diameter) of the boulder, a single boulder, meeting all other material requirements, may be used in lieu of separate footer and header boulders, with the Engineer's prior approval. For single boulder installations combine steps 1) through 3) in compliance with the Contract Documents.

In locations where exposed bedrock and/or other existing feature extends to and/or within the limits of the proposed work, the boulder toe installation shall be field adjusted to incorporate the bedrock/existing feature into the finished work. The Engineer shall be contacted as soon as the presence of bedrock and/or other existing feature is field identified to determine the appropriate method of incorporation. Site conditions may require slight deviation from the plan and shall be approved by the Engineer.

4.0 MEASUREMENT

The quantity of boulder toe to be measured for payment will be the actual linear feet of toe installed and accepted by the Engineer. All measurement for boulder toe shall be made uniformly along the surface of the bank.

5.0 PAYMENT

The quantity of boulder toe, measured as provided above, will be paid for at the contract unit price per linear foot of boulder toe installed and accepted. Payment will be full compensation for all work covered in this special provision, including, but not limited to grading, installation, adjusting, excavating, placing backfill, boulder, filter fabric maintaining the feature through acceptance, and for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the work as specified in the Contract Documents, or as directed by the Engineer.

Payment will be made under:

BOULDER TOE **LF**

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

EROSION CONTROL MATTING

1.0 DESCRIPTION

The work covered in this special provision includes all elements of work covered in Section 1631, “Rolled Erosion Control Products” with the following exceptions pertaining to Materials, Installation, and Payment.

2.0 MATERIALS

All matting shall be 100% biodegradable, containing organic fibers such as cotton, jute, or coconut only. Netting that contains any plastic or nylon is not allowed. The following material specifications shall be met:

Material	Description	Tensile Strength (lbs/ft) (MD)	Duration (mos)	Unveg Velocity (ft/s)	Weight (oz/sy)
Straw	Biodegradable w/ organic netting	100 - 200	12	5.0 - 7.0	8 - 9.5
Straw/Coconut	Biodegradable w/ organic netting	190 - 210	18 - 24	7.0 - 8.0	8 - 11.5
Coconut	Biodegradable w/ organic netting	190 - 240	24 - 36	9.0 - 10.0	9.5 - 10
		Dry Tensile Strength (lbs/ft) (MD/TD)			
Coir Fiber 400g	Biodegradable w/ coir fiber	500 - 800	36	8	11.8 - 12.5
Coir Fiber 700g	Biodegradable w/ coir fiber	1250 - 1600	36	10.0 - 12.0	20.0 - 27
Coir Fiber 900g	Biodegradable w/ coir fiber	1900 - 2000	36	16	26 - 27

Anchors:

Staples Article 1060-8:

Only allowed for Straw, Straw/Coconut, and Coconut Mattings

Wooden Dead Stout Stake:

Provide hardwood stakes 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil.

Wooden Matting Stake:

Provide hardwood stakes 12" long, with a nominal 1" x 1" square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

and down into the underlying soil. The other end of the stake needs to have a 1"- 2" long head at the top with a 0.75" notch following to catch and secure the coir fiber mat.

Alternate methods of securing the coir fiber mat with the stake may be proposed by the Contractor to be approved by the Engineer prior to implementation.

3.0 INSTALLATION

Installation will be in accordance with Section 1631, "Rolled Erosion Control Products" with the exception that the staple pattern will be per the Manufacturer's recommendations or as directed by the Engineer.

Coir matting bank stabilization installation shall be per Coir Matting Bank Stabilization detail.

4.0 MEASUREMENT

Measurement will be per Section 1631, "Rolled Erosion Control Products" with the exception that there shall be no separate measurement for overlap areas.

5.0 PAYMENT

Payment will be per Section 1631, "Rolled Erosion Control Products" with the exception that no separate payment will be made for wire staples, wooden anchors, overlap areas, seedbed preparation, furnishing and applying fertilizer, limestone, and grass seed for Erosion Control Matting.

Payment will be made under:

MATTING FOR EROSION CONTROL (COIR FIBER MATTING 700)..... SY

IMPERVIOUS DIKE

1.0 Description

The Contractor shall construct an impervious dike in such a manner as approved by the Engineer, including, but not limited to furnishing materials, construction, maintenance, and removal of an impervious dike for the purpose of preventing normal stream flow and dewatering a stream segment for construction operations. The impervious dike shall not permit seepage of water into the construction site.

2.0 Submittals

Prior to construction, the Contractor shall submit a detail illustrating the component materials and dimensions of the impervious dike. The impervious dike shall impound water to a depth range as shown on the impervious dike detail and shall minimize erosion and discharge of sediment in the event of overtopping.

3.0 Methods

The impervious dike shall be constructed in locations as directed by the Engineer. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavation to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

The intake for the drain mechanism upstream of the impervious dike should be located near the top of the water column unless otherwise specified by the Village or engineer. Water removed from the pond or excavated project site shall pass through a special stilling basin to be located upstream of the receiving stream unless otherwise noted.

4.0 Measurement

Impervious dike will be measured as the actual number of linear feet of impervious dike(s) constructed, measured in place at the top of the structure from end to end along the centerline of each separate installation that has been completed and accepted.

5.0 Payment

The payment will be considered as full compensation for all work covered in this special provision, including, but not limited to furnishing all labor materials, construction, maintenance, and removal of the impervious dike.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

The costs for special stilling basins will not be measured under this section, but will be measured in accordance with the *Special Stilling Basin* Special Provision.

Payment will be made under:

IMPERVIOUS DIKE.....LF

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

Pump Around Operation

1.0 DESCRIPTION

Pump around operation includes all work necessary for the installation and maintenance of the pump around operation. This specification is required for *continuous natural stream base flow* sustained between precipitation events, which is defined as base flow herein. Work shall be performed in the dry by pumping base flow around project work area(s) for sediment and erosion control purposes as may be necessary or directed by the Engineer and to conform to the plans, specifications, details, permits, local laws, state laws, and federal laws where applicable.

The pump around operation shall provide a passageway for the base flow around the storm drainage work area(s). This pump around operation is for storm drainage work only and should not be considered for use with other construction activity such as sanitary sewer bypass pumping. Storm drainage work may include but is not limited to, removal and/or installation of pipe culvert, box culvert, bottomless pipe arch or culvert; stream channel improvement; or stream channel restoration. Contractor is responsible to maintain all active storm drainage systems and/or overland conveyance, including during rain events.

2.0 METHODS AND MATERIALS

Pump around operation methods, measures, materials, and works shall include, but are not limited to, the following:

Pump Around Operation System:

Pump Around Pump – A silent or quiet-rated (70db at 25 feet) pump(s), located *upstream* of an Impervious Dike shall be used to convey the base flow around the working area(s) during storm drainage work. The pump shall be contained inside a cased pump well, and filter stone shall surround the casing to prevent the intake of sediment fines. The intake for the drain mechanism should be located near the top of the water column unless otherwise specified by the Engineer. The pump system shall include temporary flexible hose in sufficient length to pump the water from the upstream end of the working area(s) to the downstream end at the Temporary Stabilized Outlet.

Dewatering System:

Dewatering Pump – A silent or quiet-rated (70db at 25 feet) pump(s) located *within* the limits of the working area shall be used to dewater the working area of any groundwater or infiltration in order to perform storm drainage work in the dry. The pump(s) include temporary flexible hose in sufficient length to pump and dewater from the working area to the Special Stilling Basin.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

Temporary Stabilized Outlet - Shall be used in accordance with the plans and detail to control the effluent from all pump around operation measures, unless native streambed stone material is deemed suitable by designer at discharge location.

Storm water conveyance - Contractor is responsible for safely conveying storm water runoff resulting from precipitation events at all times including when installing storm drainage work in an existing or new alignment. During periods of dormant stream work and/or storm drainage culvert activity, Contractor shall provide temporary tie-ins, diversion ditches, or other means and methods to safely convey base flow and storm water runoff from precipitation events.

Restoration – Contractor shall restore working area to existing conditions or as required by the plans and permits. This shall include but not limited to removing, disposing, hauling, and restoring area where pump around and dewatering pumps were installed, temporary stabilized outlets, temporary flexible hose, and all other incidentals impacted by the pump around operation.

3.0 SUBMITTALS

Prior to starting pump around operations, Contractor shall submit all necessary specifications of pumps and associated materials to be used for the pump around and dewatering portions of work for review and approval by the Engineer. This shall include, but not limited to, an overall plan indicating specific locations of pumps, intakes and discharges, impervious dikes, and special stilling basins; size, quantity, noise specifications of pumps - pump well casing detail, temporary stabilized outlet material, flexible hose size and material; and surface runoff from rain event plan showing locations of temporary tie-in and/or diversion ditches needed to control storm flow during rain events. Contractor will be required to continuously maintain the systems and protect the working area(s) and surrounding structures subject to flooding.

4.0 MEASUREMENT

Measurement will be made as described below:

The Pump Around Operation specified under this Section shall be measured at the contract unit price per day. No separate measurement of materials will be made under this item. The Dewatering System is incidental and will not be measured under the Pump Around Operation.

Any pumping required that totals four (4) hours or more in a single calendar day will constitute a day of pumping and will be paid for at the contract unit price. Pumping for less than four (4) hours in a single calendar day will be considered incidental to the cost of the work. No additional payment will be made.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

Impervious Dikes will not be measured under this section but will be measured in accordance with the *Impervious Dike* Special Provision.

Special Stilling Basins will not be measured under this section but will be measured in accordance with the *Special Stilling Basin* Special Provision.

5.0 PAYMENT

The payment will be made at the contract unit price per day for “Pump Around Operation.” Such payment will be full compensation for all elements of work required in accordance with the special provision including, but not limited to, furnishing all labor, materials, equipment, supplies, supervision, tools; performing all work necessary for the installation, maintenance, and removal of pump equipment in conjunction with storm drainage work, stream restoration/stabilization construction, culvert installation; furnishing project submittals; and other incidentals necessary to complete all work referenced herein. Payment shall only be made on calendar days the Contractor is actively progressing with storm drainage work which necessitates the pump around operation. Pump around operation used by the Contractor while not actively progressing with storm drainage work shall be at their own expense.

The Dewatering System is incidental to the Pump Around Operation and no separate payments will be made.

Impervious Dikes shall be paid separately in accordance with *Impervious Dike* Special Provision.

Special Stilling Basin shall be paid separately in accordance with *Special Stilling Basins* Special Provision.

Payment will be made under:

PUMP AROUND OPERATION.....DY

Rock Sill

1.0 DESCRIPTION

The work covered by this section consists of furnishing, stockpiling, placing and maintaining approved stone and filter fabric to be utilized to construct the rock sill, as specified in the Contract Document or as directed by the Engineer. Rock sills are used to provide grade control and improve aquatic habitat.

Sills extend perpendicularly across the streambed in a relatively straight line. The structure may be used alone or in combination with a constructed riffle. The structure invert shall be set slightly lower, in the center, to provide a thalweg and to match the typical section dimensions.

The quantity of structures may be adjusted during construction due to site conditions and at the direction of the Engineer. The type and quantity of this structure may be increased or decreased at the direction of the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

2.0 MATERIALS

ENGINEER TO UPDATE IF THEY FEEL THAT THIS SPECIFICATION IS INADEQUATE FOR SITE CONDITIONS.

Backfill Material shall consist of a well-mixed gradation of, stone aggregate, rip rap, earth, and wood/mulch. Earth material shall be sourced on site from stockpiled materials resulting from bank and/or channel bed excavations from channel construction activities. Earth material from channel bed excavation is preferable for well-mixed gradation placed in the channel and bank(s). Wood/mulch material shall include small logs (less than 1” in diameter), brush, and woody shrubs and shall be sourced on site from stockpiled materials resulting from other construction activities.

The type, size and gradation of the Backfill Material shall be specified by the Engineer to be mobile or non-mobile as the conditions in the channel warrant, and in accordance with the construction documents.

Stone aggregate and rip rap backfill material shall meet the material requirements of NCDOT section 1005 General Requirements for Aggregate and NCDOT section 1042 Rip Rap Materials.

Stone Backfill Material shall consist of durable field or quarry stone that is sound, hard, dense, slightly rounded, resistant to the action of air and water, and free of seams, cracks, or other structural defects. **The Contractor cannot use limestone or concrete waste for stone.**

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

Boulders shall consist of flat-sided, durable field or quarry stone that is sound, hard, dense, angular, and resistant to the action of air and water, and free of seams, cracks, or other structural defects. The Contractor shall use stone pieces with a “shape factor” greater than two (length and width more than twice the thickness). **The Contractor cannot use limestone or concrete waste for boulders.** Boulders shall be approved by the Engineer.

The size (length, width and depth (thickness)) of the boulders shall be as specified by the Engineer in accordance with the construction documents.

Filter fabric for sealing structures shall meet the Type 2 material requirements of NCDOT Section 1056 Geosyntheics.

3.0 METHODS

ENGINEER TO UPDATE IF THEY FEEL THAT THIS SPECIFICATION IS INADEQUATE FOR SITE CONDITIONS.

Structure installation and channel grading sequences may vary based on structure function and design. Grade control structures, such as rock steps/sills, shall be installed as grading operations progress downstream.

- 1) Establish elevations of the proposed structure. The Contractor may install additional survey control, as needed, to complete the work in accordance with the Contract Documents.

Footer Installation, if needed

- 2) Over-excavate/trench the stream bed to a depth equal to the total thickness of the header and footer boulders. Bedding for the placement of the footer boulders shall be approved by the Engineer prior to placement.
- 3) Place footer boulders in the trench prepared for the sill. Footer boulders shall have direct surface contact with adjacent boulders. Review, survey (measure), and adjust the alignment and/or height of the sill footer boulders, as needed. Selecting boulders with similar thickness for the footers may assist with the ease of construction. The footers shall be reviewed by the Engineer prior to proceeding with the work.
- 4) Install filter fabric per the Contract Documents. Typically, the fabric is draped over the top of footers, down the upstream face of the footer boulders and across the area of over-excavation/trenching. Fabric reaching the excavated stream bed / toe of bank soil face may be folded and/or trimmed, in accordance with the Contract Documents. There shall be no visible, loose ends or unsecured filter fabric on the completed work.

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

- 5) Place Backfill Material on top of the filter fabric, between the upstream side of the footer boulders and the excavated stream bed soil face. Backfill Material shall be level with the top surface of the footer boulders. The Backfill Material shall be reviewed by the Engineer prior to proceeding with the work.

Header Installation

- 6) Place the header boulders on top of and slightly upstream from the edge of the footer boulders (such that the header boulders rest partially on top of the Backfill material). Header boulders shall be placed so that they span the seams of the footer boulders. There shall not be a seam in the center of the stream bed (at the thalweg). Header boulders shall have direct surface contact with adjacent boulders, free of gaps. Review, survey (measure), and adjust the alignment and/or height of the vane arm header boulders, as needed. Selecting boulders with similar thickness for the headers may assist with the ease of construction. Installation of header invert boulder first, may help with construction of boulder sill.
- 7) Install filter fabric per the Contract Documents. Typically, the fabric is draped over the top of headers, down the upstream face of the header boulders and across the area of over-excavation/trenching. Fabric reaching the excavated stream bed / toe of bank soil face may be folded and/or trimmed, in accordance with the Contract Documents.
- 8) Place Backfill Material between the upstream side of the sill header boulders and the excavated /constructed streambed soil face. Backfill Material shall be level with the top surface of the header boulders and the adjacent upstream streambed. Place Backfill material downstream of the Rock Sill for scour protection as shown in the Construction documents. The Backfill Material shall be reviewed by the Engineer prior to proceeding with the work.
- 9) After installing all the sill boulders, inspect the structure and trim/cut any loose and/or visible fabric.
- 10) Finish grade the adjacent streambed and channel banks to provide a smooth even grade transition between project structure components and the existing and/or proposed ground surface.

Based on the size of the stream and the size (length and diameter) of the boulder, a single boulder meeting all other material requirements may be used in lieu of separate footer and header boulders with the Engineer's prior approval. For single boulder installations combine steps 2) through 10) in compliance with the Contract Documents.

In locations where exposed bedrock and/or other existing feature extends to and/or within the limits of the proposed work, the rock sill installation shall be field adjusted to incorporate the bedrock/existing feature into the finished work. The Engineer shall be contacted as soon as the presence of bedrock and/or other existing feature is field identified to determine the appropriate

VILLAGE OF MARVIN – MARVIN STREAMBANK STABLIZATION

method of incorporation. Site conditions may require slight deviation from the plan and shall be approved by the Engineer.

4.0 MEASUREMENT

The quantity of rock sill to be paid for shall be the actual number of linear feet of “Rock Sill” completed and accepted into the final work, as measured along the centerline surface of the sill.

No separate measurement of materials shall be made under this item for footer boulders, backfill material, fabric, and/or other incidental items.

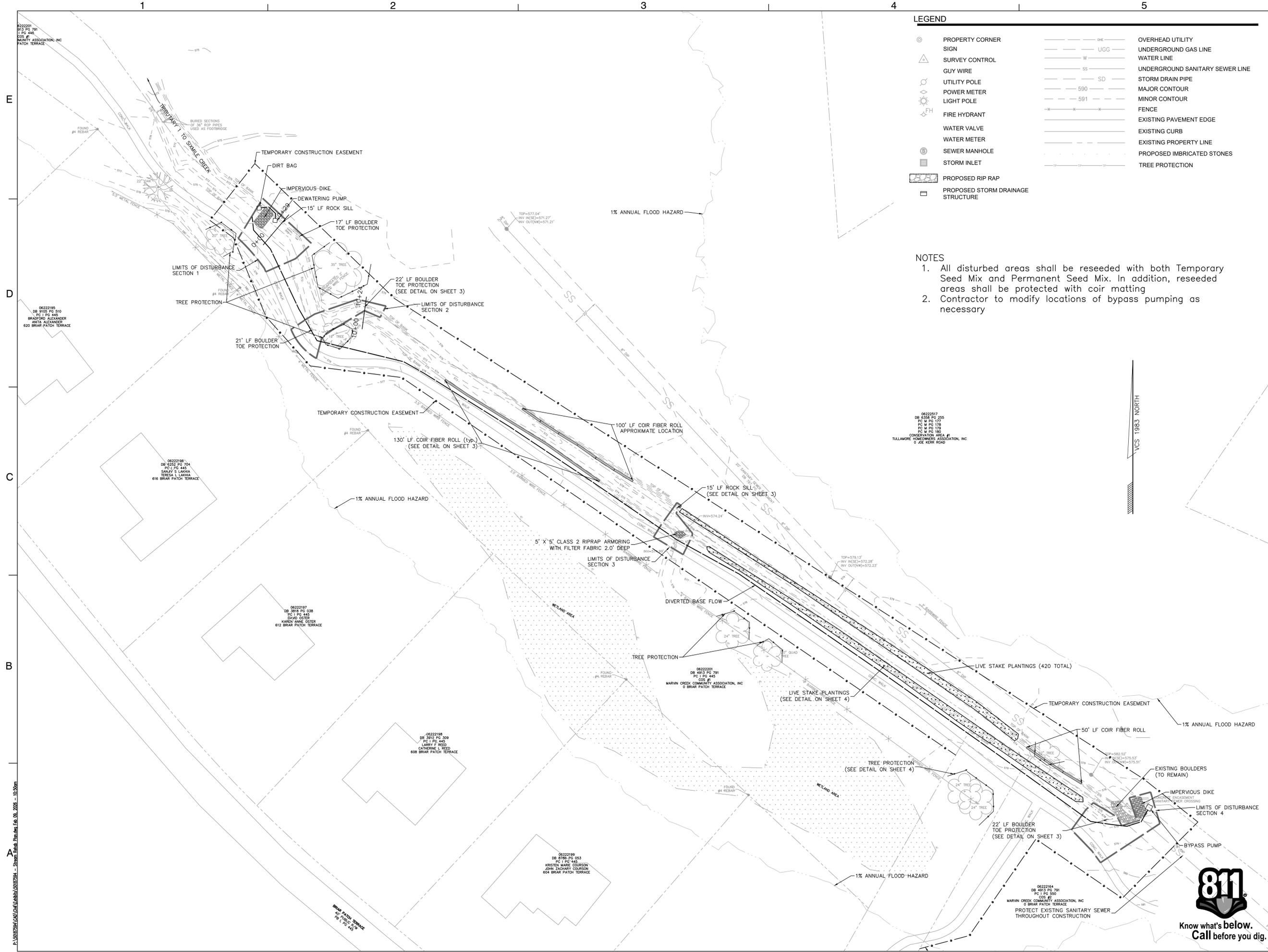
5.0 PAYMENT

The work covered by this section shall be paid for at the contract per linear foot price for “Rock Sill”. Payment will be full compensation for all work covered in this special provision, including, but not limited to grading, installation, adjusting, excavating, placing backfill, maintaining the feature through acceptance, and for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the work as specified in the Contract Documents, or as directed by the Engineer.

No separate payment shall be made for subsidiary items.

Payment shall be made under:

SILL, ROCK.....LF



LEGEND

⊙	PROPERTY CORNER SIGN	---	OHE	OVERHEAD UTILITY
△	SURVEY CONTROL	---	UGG	UNDERGROUND GAS LINE
—	GUY WIRE	---	W	WATER LINE
⊕	UTILITY POLE	---	SS	UNDERGROUND SANITARY SEWER LINE
⊙	POWER METER	---	SD	STORM DRAIN PIPE
⊙	LIGHT POLE	---	590	MAJOR CONTOUR
⊙	FIRE HYDRANT	---	591	MINOR CONTOUR
⊙	WATER VALVE	---	---	FENCE
⊙	WATER METER	---	---	EXISTING PAVEMENT EDGE
⊙	SEWER MANHOLE	---	---	EXISTING CURB
⊙	STORM INLET	---	---	EXISTING PROPERTY LINE
⊙	PROPOSED RIP RAP	---	---	PROPOSED IMBRICATED STONES
⊙	PROPOSED STORM DRAINAGE STRUCTURE	---	---	TREE PROTECTION

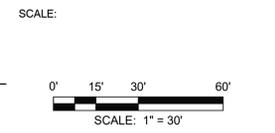
- NOTES**
- All disturbed areas shall be reseeded with both Temporary Seed Mix and Permanent Seed Mix. In addition, reseeded areas shall be protected with coir matting
 - Contractor to modify locations of bypass pumping as necessary

Dewberry
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 NCBELS #F-0829
 NCBOLA #C-478

**VILLAGE OF MARVIN
 STREAM STABILIZATION
 TRIBUTARY 1 TO SIXMILE CREEK**
 MARVIN, NORTH CAROLINA



KEY PLAN:



REVISIONS

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JA
 APPROVED BY: _____
 CHECKED BY: EU/AH
 DATE: FEBRUARY 9, 2026

**PROPOSED
 STREAM
 ENHANCEMENT**

DEI PROJECT NO: 50187594

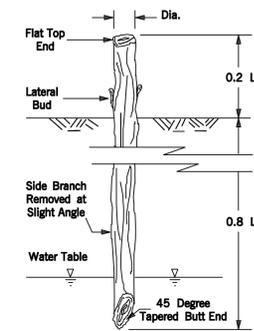
SHEET NO.



P:\010258\010258.dwg - Stream Rehab - 10.30m

DETAIL 2.4: LIVE STAKES

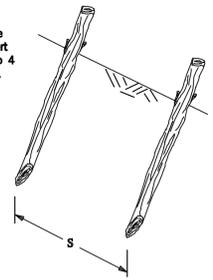
Adapted From USDA-SCS (1994)



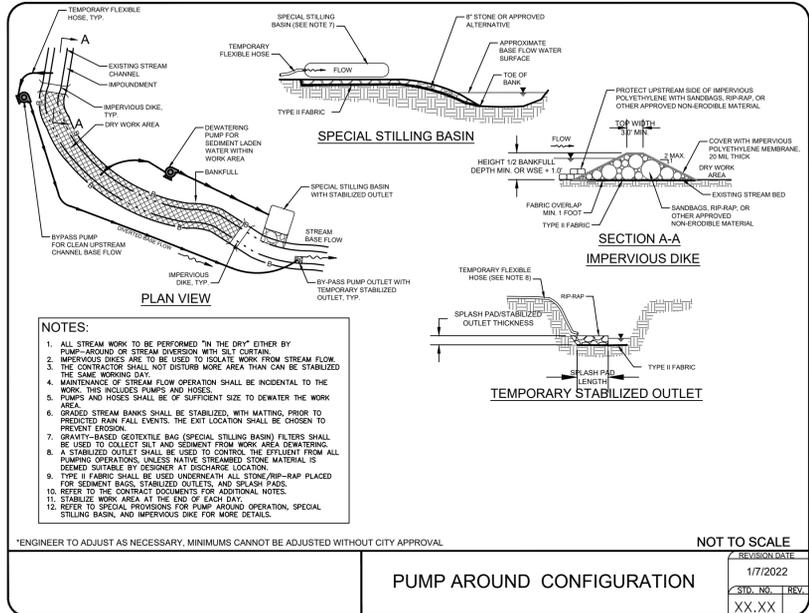
DETAIL Live stout stakes should be long enough to reach below the groundwater table. (Generally, a length of 2 to 3 feet is sufficient.) Additionally, the stakes should have a diameter in the range of 0.75 to 1.5 inches.

SECTION VIEW

Live stout stakes shall be spaced 2 to 3 feet apart to give a density of 2 to 4 cuttings per square yard.



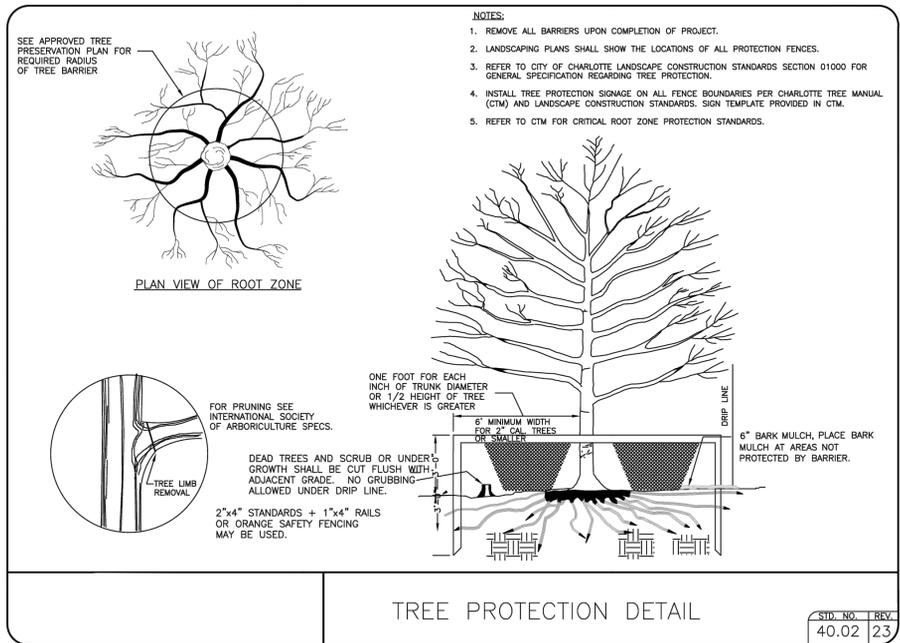
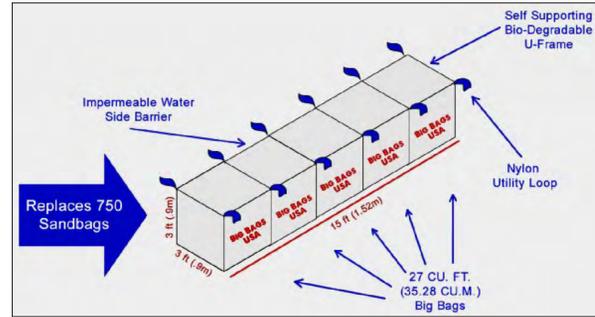
SLOPE PROTECTION AND STABILIZATION TECHNIQUES



- NOTES: 1. ALL STREAM WORK TO BE PERFORMED 'IN THE DRY' EITHER BY PUMP-AROUND OR STREAM DIVERSION WITH SILT CURTAIN. 2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW. 3. THE CONTRACTOR SHALL NOT DISTURB MORE AREA THAN CAN BE STABILIZED THE SAME WORKING DAY. 4. MAINTENANCE OF STREAM FLOW OPERATION SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES PUMPS AND HOSES. 5. PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA. 6. GRADED STREAM BANKS SHALL BE STABILIZED, WITH MATTING, PRIOR TO PREDICTED RAIN FALL EVENTS. THE EXT LOCATION SHALL BE CHOSEN TO PREVENT EROSION. 7. GRAVITY-BASED GEOTEXTILE BAG (SPECIAL STILLING BASIN) FILTERS SHALL BE USED TO COLLECT SILT AND SEDIMENT FROM WORK AREA DEWATERING. 8. A STABILIZED OUTLET SHALL BE USED TO CONTROL THE EFFLUENT FROM ALL PUMPING OPERATIONS, UNLESS NATIVE STREAMBED STONE MATERIAL IS DEEMED SUITABLE BY DESIGNER AT DISCHARGE LOCATION. 9. TYPE II FABRIC SHALL BE USED UNDERNEATH ALL STONE/RIP-RAP PLACED FOR SEDIMENT BAGS, STABILIZED OUTLETS, AND SPLASH PADS. 10. REFER TO THE CONTRACT DOCUMENTS FOR ADDITIONAL NOTES. 11. STABILIZED WORK AREA AT THE END OF EACH DAY. 12. REFER TO SPECIAL PROVISIONS FOR PUMP AROUND OPERATION, SPECIAL STILLING BASIN, AND IMPERVIOUS DIKE FOR MORE DETAILS.

PUMP AROUND CONFIGURATION

COFFERDAM/SANDBAG DETAIL SUGGESTED SUBSTITUTE FOR IMPERVIOUS DIKE



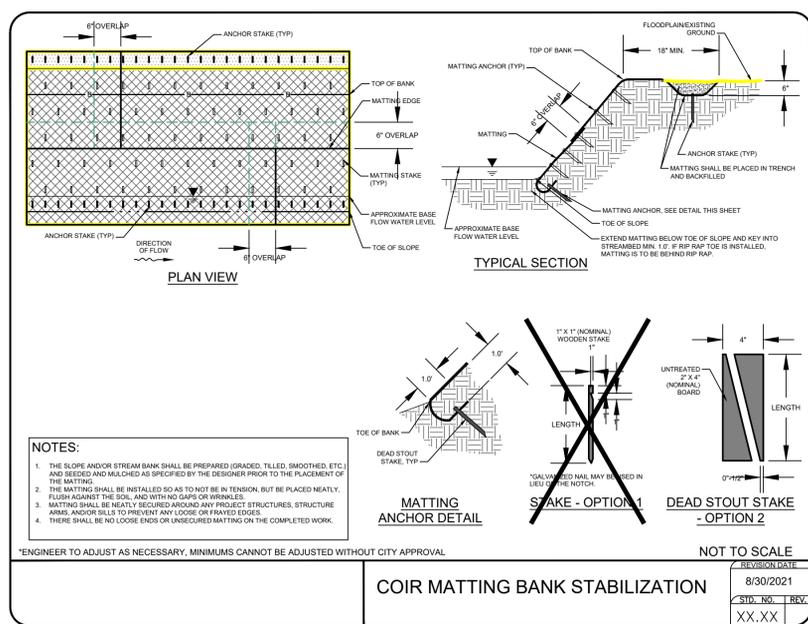
TREE PROTECTION DETAIL

TEMPORARY SEED MIX; 0.10 acres. TABLE: TEMPORARY SEEDING FOR WARM AND COOL SEASON. Columns: Seeding Mixture, Seeding Dates, Seeding Amendments. Rows: Early Summer Season, Late Fall Season.

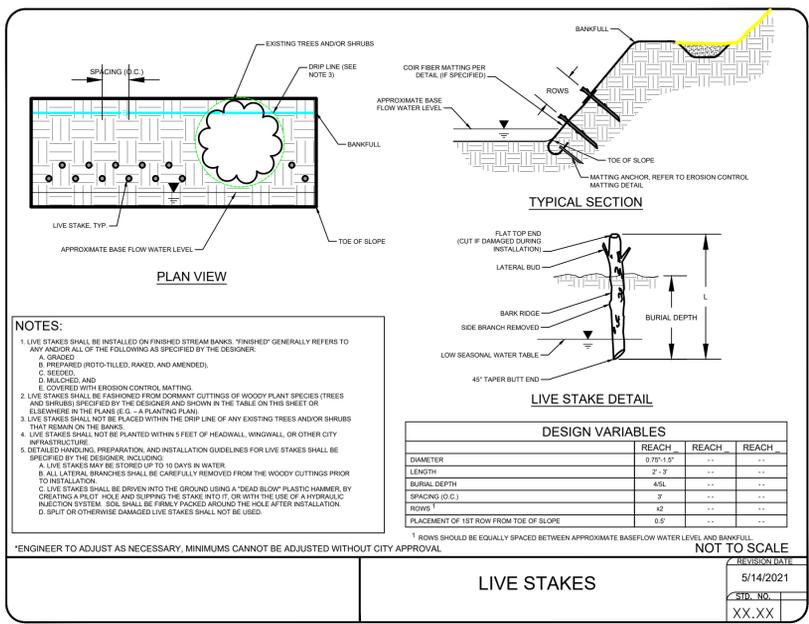
LIVE STAKES PLANTING PLAN. TABLE: STREAMBANK VEGETATION: 2,685 SF. Columns: COMMON NAME, BOTANICAL NAME, RATIO, SPACING, QUANTITY, SIZE. Rows: Button Bush, Slippery Elm, Silky dogwood, Elderberry.

NOTE: All disturbed areas shall be reseeded with both Temporary Seed Mix and Permanent Seed Mix. In addition, reseeded areas shall be protected with coir matting

PERMANENT RIPARIAN SEED MIX; 0.03 acres (15 lbs/acre). TABLE with columns: BOTANICAL NAME, COMMON NAME, % MIX. Rows: Panicum rigidulum, Schizachyrium scoparium, Coreopsis lanceolata, etc.



COIR MATTING BANK STABILIZATION



LIVE STAKES



Dewberry Engineers Inc. 9500 Harris Corners Pkwy - Suite 220 Charlotte, NC 28209 Phone: 704.509.9918 Fax: 704.509.9937 www.dewberry.com NCBELS #F-0829 NCBOLA #C-478

VILLAGE OF MARVIN STREAM STABILIZATION TRIBUTARY 1 TO SIXMILE CREEK MARVIN, NORTH CAROLINA



KEY PLAN:

SCALE:

AS NOTED

REVISIONS table with columns: NO., DATE, BY, DESCRIPTION.

DRAWN BY: JA APPROVED BY: EU/AH CHECKED BY: EU/AH DATE: FEBRUARY 9, 2026

TITLE

STREAM DETAILS CONT.

DEI PROJECT NO: 5018794

SHEET NO.





Dewberry Engineers Inc.
9300 Harris Corners Parkway
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Charlotte, NC 28269

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704.509.9937 fax
www.dewberry.com

February 20, 2025

Mr. Davy Broom
Public Works Director
Village of Marvin
10006 New Town Road
Marvin, North Carolina 28173

RE: **Village of Marvin, StRAP Project**
Marvin, North Carolina

Dear Mr. Broom:

Per the RFQ and following conversations we understand the Village of Marvin (CLIENT) desires to contract engineering, survey, environmental, grant assistance, public involvement and construction administration services for the stream stabilization of a 1,000 linear foot (lf) section of Marvin Branch as part of the Stream Flow Rehabilitation Program (StRAP). Dewberry Engineers Inc., (Dewberry) is pleased to provide the CLIENT with this proposal for the proposed stream stabilization of Marvin Branch in the Village of Marvin, North Carolina.

UNDERSTANDING OF THE PROJECT

Dewberry understands the CLIENT received a StRAP grant for Marvin Branch to conduct stream stabilization. The CLIENT anticipates performing stream stabilization on approximately 800-1,000 lf of Marvin Branch. The section of the creek to be stabilized has not been selected and will be determined following the site walk and environmental assessments associated with this proposal. The CLIENT has requested assistance with property owner coordination, environmental site assessments, site selection, survey, engineering plans and specifications, permitting, grant administration, and construction administration services. Dewberry understands that due to the grant funding the project construction must be complete by the end of 2026 to receive the reimbursement from the grant.

Based on this project understanding, we have prepared the following scope of services.

SCOPE OF SERVICES

1. Environmental Services

The following environmental Scope of Work (SOW) has been developed based upon our initial correspondence, the Request for Qualifications, project understanding, as well as all subsequent discussions to date and including all files that have been shared. Dewberry will conduct environmental field surveys within the potential project area. The assumed project impact area includes the 5,679 linear feet of Marvin Branch identified in the Request for Qualifications, plus an additional 50-foot buffer on both sides. Dewberry intends to provide initial environmental field surveys on the entire length of Marvin Creek to assist in site selection.

1A- Environmental Surveys, Natural Resources Report and Aquatic Habitat Assessment

Jurisdictional Water Delineation

- Dewberry will conduct an onsite investigation to identify approximate limits of Waters of the United States (WOTUS), including jurisdictional wetlands and streams, present within the project area.
- Prior to fieldwork, Dewberry will load and set up required files and fields for project GPS

Mr. Davy Broom
Project: Village of Marvin, StRAP Project
February 20, 2025

data collection and review relevant updated GIS data, including, but not limited to, the following: US Geological Service (USGS) topography maps, Natural Resource Conservation Service (NRCS) soil mapping, aerial photography, US Fish and Wildlife (USFWS) protected species data, North Carolina Natural Heritage Program (NCNHP) database of protected species, National Wetland Inventory, and North Carolina Division of Water Resources water resource information.

Field work- Jurisdictional Waters Delineation

- Dewberry will conduct field surveys for jurisdictional features within the study area, including wetlands and streams, as well as non-jurisdictional tributaries.
- Wetlands will be located, delineated, and flagged in accordance with the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and the Eastern Mountains and Piedmont Regional Supplement. All wetland points will be sequentially flagged and recorded with GPS, using submeter accurate technology. The appropriate regional wetland forms will be completed for each unique wetland site, including a corresponding upland form for the project. All wetlands will be further classified according to NC Wetland Assessment Method wetland type.
- Surface waters, including streams and ponds, will be located, delineated, sequentially flagged, and surveyed. Stream widths will also be recorded.
- Dewberry will conduct surveys and habitat assessments for any terrestrial species that are protected by USFWS.

Natural Resources Report

- Dewberry will prepare the Draft and Final Natural Resources Report, including:
- Creation of figures showing the project boundaries, location of all potential jurisdictional waters on USGS Topography, LiDAR, and current aerial photography.
- Compilation of wetland and stream forms.
- Habitat assessment and survey results for terrestrial species that are protected by USFWS.
- CADD files of wetlands and streams.
- QA/QC forms documenting technical review, as required by internal Dewberry processes.
- If desired by the Village of Marvin staff, Dewberry will hold virtual meetings to review and discuss the Draft Report. Dewberry will incorporate any comments and coordinate with the Village of Marvin to resolve all concerns.
- In addition to the Natural Resources Report, Dewberry will prepare a Jurisdictional Waters Delineation Package for submittal to the US Army Corps of Engineers and the NC Division of Water Resources to request a Waters of the US Jurisdictional Determination.

Carolina Heelsplitter Habitat Assessment

Dewberry proposes for our permitted aquatic biologist to conduct a habitat assessment for the Carolina Heelsplitter and produce a habitat assessment report. The Habitat Assessment will be conducted on the entire 5,679-foot stretch of Marvin Branch identified in the Request for Qualifications. The goal of the habitat assessment is to determine if there is suitable habitat for the Carolina Heelsplitter within the project area and use that information to identify areas to perform stream rehabilitation. A handheld GPS unit with sub-meter accuracy will be used to delineate the extent of different habitat types (high quality, low quality, no habitat). Biologists will use the appropriate equipment to go underwater, if necessary, and view the stream substrate and record metrics such as depth, flow, dominant substrate, subdominant substrate, compactness, stream width, beaver activity, bank stability, bank height, buffer width, land use,

and visibility for each stream section. The report will include a map showing the extent of each habitat type, accompanied by pictures of each section.

After completion of the fieldwork, Dewberry will prepare a draft and final Habitat Assessment Report to include the following:

- Carolina Heelsplitter species description, preferred habitat, threats, and current distribution
- Representative photographs of all streams and habitat types
- Photographs of the project area
- Name of and distance to nearest downstream waterway
- Description of any beaver activity
- Identification of the dominant and subdominant substrate types
- Description of the overall quality of available in-stream habitat
- Description of stream buffers present along stream reach
- A project vicinity map
- A map on aerial background identifying sections of the river identified as high quality, low quality, and not suitable habitat
- Qualifications of investigators

1B- Aquatic Surveys

Carolina Heelsplitter Aquatic Survey

Dewberry biologists and field personnel will use appropriate gear and techniques to survey the targeted portion of Marvin Branch for stream rehabilitation, assumed to be 300 meters (approximately 1,000 lf), plus an additional 400 meters downstream (approximately 1300 lf), 100 meters (approximately 330 lf) upstream of the project. A draft protected species survey report will be prepared to present the results of surveys from the project location. Following any comments from the Village of Marvin, a final report will be provided. All reports will be in electronic (pdf) format and will include the following content items:

- Road name and Secondary Route number for any roads mentioned in the report.
- Name of and distance to nearest downstream waterway.
- The river basin in which all streams are located.
- Identification of any streams classified as 303(d) waters, and an explanation for its classification.
- Identification of any nearby NPDES dischargers and their corresponding permit number.
- Distance to the nearest known record of the listed species in question, and its location relative to the project site.
- Identification of any impoundments or reservoirs that separate the project from the nearest known record.
- Description of any beaver activity.
- A listing of all substrate types and identification of the dominant and subdominant substrate types.
- Description of the overall quality of available in-stream habitat.
- Description of stream buffers present along stream reaches (type, quality, width, etc.).
- A Biological Conclusion with supporting information for each species.
- A project vicinity map.
- A map (or series of maps) on aerial background identifying surveyed stream reaches and

- proximity to any known species records, NPDES or 303(d) occurrences in the area.
- Qualifications of investigators.

NCWRC Database Entry

Dewberry is obligated to submit a record of all activities that occur to the NC Wildlife Resources Commission (NCWRC). Aquatic surveys are included as part of the reporting requirement. Therefore, Dewberry will incorporate all information gathered as part of these surveys into year-end reporting to this agency.

1C- Agency Coordination and Permitting

Section 404/Section 401 Permitting and Agency Coordination

Dewberry is prepared to submit an application for a joint federal Section 404 Clean Water Act permit and a state Section 401 Water Quality permit for submittal to the USACE and the N.C. Department of Environmental Quality (NCDEQ). Dewberry will work with partner agencies throughout the project to ensure that permits are acquired in order to meet project timelines.

- Prior to the development of the permit applications, Dewberry will request a Pre-Application meeting with the USACE and the NCDEQ to discuss the scope of the project, timeline, appropriate permit authorizations and any concerns with federal and state regulators that may hinder permit authorization.
- The permit applications will include a written description of the project impacts as well as permit drawings that meet USACE and NCDEQ requirements. Dewberry will coordinate with these agencies throughout the life of the project as needed to ensure that the permit applications are prepared to agency specifications. Dewberry will prepare and submit the permit applications to the USACE and NCDEQ on behalf of the Village of Marvin.

Deliverables

Dewberry is prepared to produce the deliverables as proposed in this SOW. We understand there will be the following deliverables at the end of the project.

- Jurisdictional delineation, and Survey data
- Draft and Final Natural Resources Report
- Habitat Assessment Report
- Preliminary Jurisdictional Determination Package
- Aquatic Survey Report (If necessary)

Assumptions

- Dewberry will have access to the site as needed to conduct all necessary field work.
- No work associated with contaminated soil or other hazardous materials is anticipated.
- The Village of Marvin will sign the appropriate agent authorization required for Jurisdictional Determinations.

2. Site Selection

Dewberry will walk the length of Marvin Branch (approximately 5,679 lf) to determine potential locations for stream stabilization. After the walk, site selection will be determined based on need for stream stabilization, environmental surveys and assessments (completed in Task 1A), and input from the CLIENT. Dewberry anticipates that one (1) client meeting and a one (1) day site visit will be necessary and have been included in this task.

3. Public Involvement

Dewberry will complete the following tasks associated with public outreach and coordination with property owners:

- Start of Study Letter- Dewberry will draft and distribute start of study letters on Village of Marvin letterhead. The letters will request comments from government permitting agencies to advise the team on what constraints or permitting requirements may be needed. The letters will also be sent to property owners requesting right of entry to conduct species surveys and wetland delineations.
- Comments- Dewberry will track all comments and questions received on the project. All comments and responses will be kept in a matrix (excel file).
- Public Website- Dewberry will prepare graphics and text to be posted on a project webpage housed on the Village's website. The project webpage will be updated quarterly to keep the public aware of the project's progress.
- Public Meeting- No meeting is expected and this is not included in the scope of work.

4. Grant Support

Dewberry will complete the following tasks associated with grant support:

- Quarterly Reports- Dewberry will work with information provided by the CLIENT to prepare quarterly reports using the StRAP grant template. Reports are due no later than the following dates: April 30, July 31, October 31, 2025 and January 31, 2026. Reports are to be submitted directly to the StRAP grants office.
- 50% Progress Report- Dewberry will work with information provided by the CLIENT to prepare a 50% Progress Report due no later than August 29, 2025. The report will be submitted directly to the StRAP grants office.
- Final Report- When all work is completed, Dewberry will prepare and submit a Final Report to the StRAP grants office.
- Request for Payment- Dewberry will complete Request for Payment forms bimonthly on behalf of the CLIENT for reimbursement of expenses allowed under the grant award.

5. Survey

5A- Topographic Survey and Boundary Network

A topographic survey shall be prepared in accordance with the standards of practice for land surveying in the North Carolina, Board Rules Title 21, Chapter 56.1601-1606, Class A for Urban Land Surveys. Horizontal and vertical control will be established on site using GPS observations yielding NAD 83 (2011) horizontal coordinates and NAVD 88 vertical elevations. One benchmark will be set on site. Survey data will be gathered on a 50' grid, along with grade breaklines, to provide 1-foot contours over the entire survey area. Dewberry will field locate all visible above ground features and obtain invert information on sanitary and storm sewer systems. Non-gravity utilities will not be marked or located by Dewberry. The topographic survey will be performed on 1000 linear feet of Marvin Branch (section to be determined by site selection outlined in Task 2) and will extend approximately 50' beyond top of bank on each side of the creek.

Dewberry will perform deed research and field investigation to establish property lines for the parcels within the survey limits. Only those property corners deemed necessary to establish

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property lines will be located. Easements and rights of way will be determined from observed site features and data obtained from the Union County Register of Deeds. Union County GIS will be utilized to show addresses, zoning, land use, PIN numbers, deed book info, etc. for the subject parcel and adjoining parcels.

Dewberry will field locate all trees 18" and larger within the survey limits. These trees will be shown on the existing final survey and denoted with diameter and species type. Wooded areas will be outlined along the tree line. All other trees will not be shown.

Wetland and stream delineation flags, marked by Dewberry in Task 1A, will be located in the field and shown on the final survey. It's anticipated there will be no more than 100 wetland/stream flags.

5B- Easement Exhibits

Dewberry will utilize property surveys from Task 5A, along with design plans prepared by Dewberry to create easement exhibits. The exhibits will be prepared per GS 47-30, paragraph M standards and NC Board of Examiners policy number BP-1709-1. Dewberry will include up to three (3) exhibits for this project.

Dewberry will create the proposed exhibits per current design drawings, submit to the CLIENT for review, address one round of comments and then submit as final. If no comments are received within said 30 days, survey will be submitted as final. Any subsequent revisions will be considered additional services and will be performed on an hourly basis.

6. Construction Plans and Floodplain Development Permit

6A – Construction Plans

Using the survey completed in Task 5A, Dewberry will develop engineering plans for the construction of the stream stabilization. The plans will include title sheet, details, grading, proposed stabilization design, and erosion control. The method of stream stabilization will be discussed and agreed upon with the CLIENT prior to the start of design. Dewberry anticipates that two (2) CLIENT meetings will be included in this task (one in person, one virtual). One (1) site visit is included with this task. Dewberry will submit preliminary plans (75%) for review by the CLIENT. Dewberry will incorporate one round of comments from the CLIENT to create the final plans (100%). Dewberry will also provide an engineering estimate of construction cost and technical specifications with the final plans and address one round of comments. If land-disturbing activity exceeds one acre, Dewberry will pursue erosion control permitting with the North Carolina Department of Environmental Quality. CLIENT will be responsible for all permitting fees.

It is not anticipated that Dewberry will be replacing or designing culvert and pipe as part of this project. Culvert, pipe design, and pipe replacement have been excluded from this contract.

6B – Floodplain Development Permit

Marvin Branch is a detailed study stream that has a 1% annual chance event floodplain (Base Flood Elevation, BFE) and FEMA floodway. Dewberry will obtain the effective FEMA HEC-RAS model from the Flood Risk Information System (FRIS) to use as a base model for the flood study. The model will be updated based on survey (completed by Dewberry in Task 5A) in conjunction

with publicly available information such as Union County LiDAR topography. Using this information, Dewberry shall prepare a flood study for the proposed improvements. It is assumed that a no-rise will be attainable, and we will pursue obtaining a floodplain development permit with the Village of Marvin. Dewberry will submit the floodplain development permit to the Village of Marvin and address up to 2 rounds of comments. It is assumed that a CLOMR/LOMR will not be needed and is excluded from this contract. Dewberry can provide assistance with obtaining a CLOMR/LOMR if it is determined that one will be required, for an additional fee. Permitting fees will be paid by the CLIENT.

7. Construction Services

Dewberry assumes a construction period of six (6) months for construction service support.

7A- Bid Support

Dewberry will provide the following items:

- Village reviewed and approved construction plans
- Technical Specifications
- Consultant's estimate of construction cost
- Design and quantity Computations
- Review and respond to contractors requests for information
- Electronic files in the latest version of AutoCAD Civil 3D (as of the date of this contract)
- Attend the pre-bid meeting, bid opening and provide bid recommendation letter

7B- Construction Administration

Dewberry's work will include the following:

- Attendance at one(1) pre-construction meeting with contractor and CLIENT. Dewberry will generate meeting minutes and distribute to the attendees.
- Dewberry will schedule and conduct six (6) onsite construction progress meetings monthly during the construction phase. Dewberry shall be responsible for preparing and distributing meeting minutes to attendees before the next meeting.
- Dewberry shall review and respond to RFIs submitted by the Contractor and make modifications to the Construction Documents as necessary.
- Dewberry shall perform onsite observations on a bi-weekly basis
- Dewberry shall review and evaluate change order requests from the Contractor
- Dewberry shall receive and review for approval from the Contractor: shop drawings, product data, samples, and other submittals.
- Dewberry shall review the amounts payable to the Contractor monthly. Dewberry will then forward applications for payment to the Owner for payments due to Contractor.
- Upon written certification from the Contractor that the work is substantially complete, Dewberry shall perform one (1) substantial completion review of the Contractor's work. As a result of this review, Dewberry shall prepare a list of incomplete or unsatisfactory items and forward the list and a Certificate of Substantial Completion to the Owner for execution.
- Upon written certification from the Contractor that his work is finally complete, Dewberry shall perform one (1) final completion review of the Contractor's work. If the work is still incomplete, those items needing correction or completion shall be identified from the Substantial Completion list. Once there are no pending issues, and the as-built drawings

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have been delivered by the contractor, Dewberry shall prepare a Certificate of Compliance prior to approval of final payment of the Contractor.

COMPENSATION

For the completion of the scope of services above, Dewberry shall be paid in accordance with the following schedule:

Task 1A: Environmental Surveys, Natural Resources Report, and Aquatic Habitat Assessment	\$21,170 HNTE
Task 1B: Aquatic Surveys	\$16,875 HNTE
Task 1C: Agency Coordination and Permitting	\$9,960 HNTE
Task 2: Site Selection.....	\$5,200 HNTE
Task 3: Public Involvement.....	\$6,880 HNTE
Task 4: Grant Support	\$20,640 HNTE
Task 5A: Topographic Survey and Boundary Network	\$25,405 HNTE
Task 5B: Easement Exhibits.....	\$3,600 HNTE
Task 6A: Construction Plans	\$29,790 HNTE
Task 6B: Floodplain Development Permit	\$8,400 HNTE
Task 7A: Bid Support.....	\$6,100 HNTE
Task 7B: Construction Administration	\$16,400 HNTE
Reimbursables (Mileage).....	\$730 Time and Materials
TOTAL.....\$171,150 HNTE

EXCLUSIONS AND CLARIFICATIONS

- Environmental site assessments (Phase I, II, and III) are excluded.
- Cultural Resource Reviews are excluded.
- Wetland and/or stream mitigation, banking, and fee payment are excluded.
- Coordination and/or permitting with NCDOT is excluded.
- Utility locations and utility coordination are excluded.
- Roadway improvements are excluded.
- CLOMR/LOMR applications and permitting are excluded.
- Culvert replacement and design is excluded.
- Legal Descriptions, Recordation, Plats, and Easement Staking are excluded.
- Construction staking is excluded.
- Revisions to the Village Master Plan are excluded.
- Constructability review is excluded.
- Traffic impact studies are excluded
- Permit fees are excluded.
- Water quality impact assessment(s) are excluded.
- Property access agreements are excluded.
- CLIENT shall provide Dewberry access to the site as needed to perform tasks in this proposal.
- All items not specifically included in the Scope of Services above, are specifically excluded from this proposal.
- ALTA, boundary, or other surveys are excluded.

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ADDITIONAL SERVICES

This proposal is based upon our current understanding of local, state and federal requirements and regulations and our understanding of the project as described herein. Any modifications to these requirements and regulations, or other requirements not provided for herein, which require additional services will be performed by Dewberry Engineers Inc. and billed in accordance with the Hourly Billing Rate Schedule, (Attachment A), which is annexed to this proposal and incorporated into it by reference.

TERMS AND CONDITIONS

Services under this agreement will be provided in accordance with the attached Terms and Conditions (Attachment B), which is annexed to this proposal and incorporated into it by reference.

RESTRICTION OF USE

This proposal includes information that shall not be disclosed outside of the CLIENT and shall not be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offer, or as a result of, or in connection with, the submission of this information, CLIENT shall have the right to duplicate, use, or disclose the information to the extent provided in the resulting contract. This restriction does not limit CLIENT's right to use information contained in this information if it is obtained from another source without restriction. The information subject to this restriction is contained on all pages of this proposal.

AUTHORIZATION

If this proposal meets with your approval, please return one (1) executed original to this office. Receipt of the executed proposal will serve as our authorization to proceed. If you have questions, please do not hesitate to contact us. Dewberry is excited about the opportunity to assist you with this project.

Sincerely,
Dewberry Engineers Inc.



Andrea Hayden, PE, LEED AP
Associate, Branch Manager

Attachments:

- Attachment A. Standard Hourly Billing Rate Schedule (6/1/2024)
- ~~Attachment B. Standard Terms and Conditions (10/29/20)~~
- Attachment C. Marvin Branch Creek Map

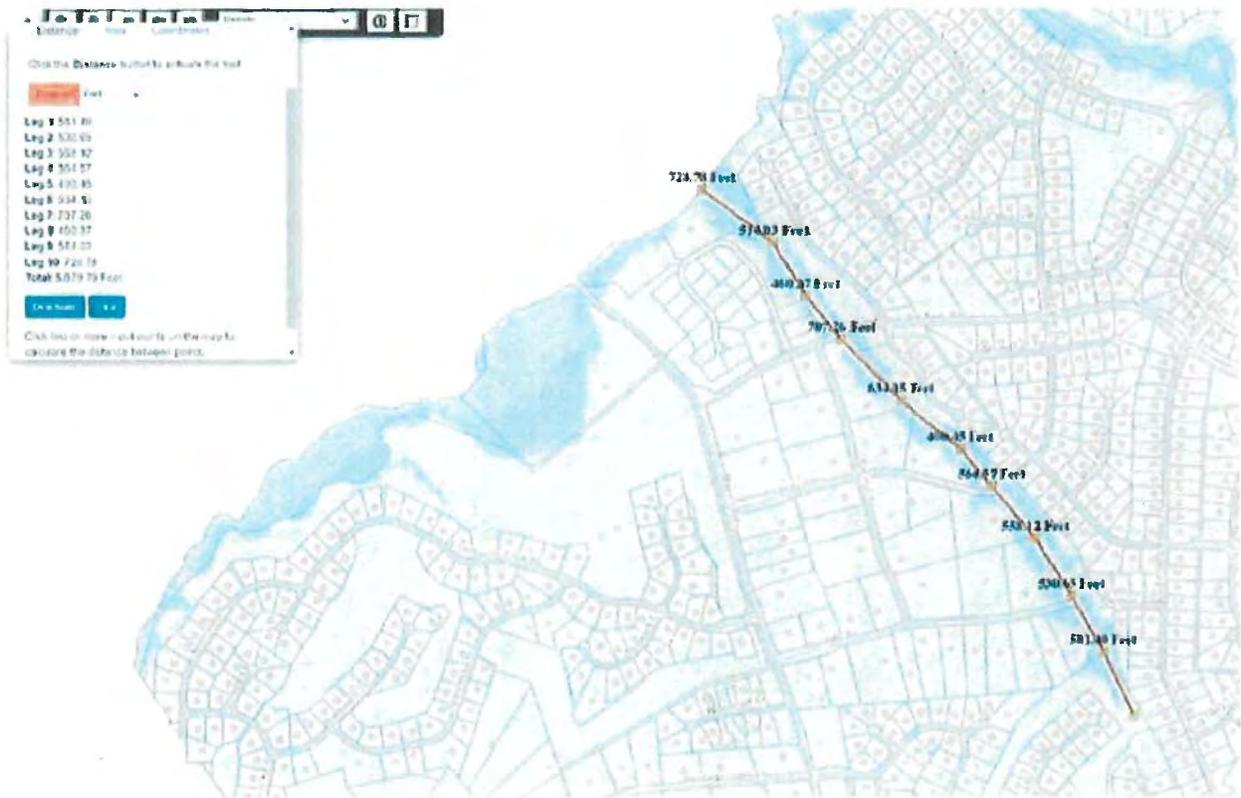


STANDARD HOURLY BILLING RATE SCHEDULE

DEWBERRY	HOURLY RATES
Professional	
Principal	\$360.00
Architect I,II,III	\$110.00, \$125.00, \$145.00
Architect IV,V,VI	\$165.00, \$185.00, \$205.00
Architect VII,VIII,IX	\$230.00, \$250.00, \$280.00
Interior Designer I,II,III,IV	\$100.00, \$120.00, \$140.00, \$165.00
Interior Designer V, VI, VII	\$180.00, \$205.00, \$240.00
Engineer I,II,III	\$115.00, \$135.00, \$155.00
Engineer IV,V,VI	\$175.00, \$200.00, \$230.00
Engineer VII,VIII,IX	\$260.00, \$290.00, \$320.00
Geographer/GIS I,II,III	\$95.00, \$105.00, \$125.00
Geographer/GIS IV,V,VI	\$145.00, \$165.00, \$195.00
Geographer/GIS VII,VIII,IX	\$225.00, \$255.00, \$290.00
Professional I,II,III	\$105.00, \$125.00, \$155.00
Professional IV,V,VI	\$175.00, \$195.00, \$215.00
Professional VII,VIII,IX	\$245.00, \$260.00, \$295.00
Technical	
Designer I,II,III	\$110.00, \$135.00, \$160.00
Designer IV,V,VI	\$180.00, \$205.00, \$230.00
CADD Technician I,II,III,IV,V	\$85.00, \$105.00, \$125.00, \$140.00, \$180.00
Surveyor I,II,III	\$68.00, \$83.00, \$100.00
Surveyor IV,V,VI	\$120.00, \$135.00, \$150.00
Surveyor VII,VIII,IX	\$165.00, \$195.00, \$235.00
Technical I,II,III	\$85.00, \$110.00, \$130.00
Technical IV,V,VI	\$145.00, \$160.00, \$180.00
Emergency Management	
Emergency Management I, II, III	\$90.00, \$120.00, \$150.00
Emergency Management IV, V, VI	\$180.00, \$225.00, \$280.00
Construction	
Construction Professional I,II,III	\$125.00, \$160.00, \$185.00
Construction Professional IV,V,VI,VII	\$220.00, \$245.00, \$290.00, \$325.00
Inspector I,II,III	\$90.00, \$110.00, \$145.00
Inspector IV,V,VI,VII	\$170.00, \$190.00, \$215.00, \$250.00
Survey Field Crews	
Fully Equipped 1, 2, 3 Person Crews	\$145.00, \$185.00, \$245.00
With Laser Scanner 1, 2 Person	\$195.00, \$235.00
Administration	
Admin Professional I,II,III,IV	\$70.00, \$100.00, \$120.00, \$150.00
Non-Labor Direct Costs	Cost + 15%



Attachment C





Village of Marvin

CONTRACT FOR SERVICES
STANDARD FORM

Date: April 7, 2025

10006 Marvin School Road
Marvin, NC 28173
Phone (704) 843-1680 * Fax (704) 843-1660
manager@marvinnc.org

CONTRACTOR Andrea Hayden
INFORMATION Dewberry Engineers Inc.
9300 Harris Corners Pky, Ste. 220
Charlotte, NC 28269

LOCATION OF Marvin Branch Creek
WORK/SERVICES Marvin, NC
TO BE
PERFORMED (If
not Village Hall)

This Contract for Services, and all attachments, (collectively this "Contract") is entered by and between the Village of Marvin, a municipal corporation of the State of North Carolina, (the "Village") and Dewberry Engineers Inc., a New York corporation (the "Contractor").

For and in consideration of the mutual promises set forth in this Contract, the parties do mutually agree as follows:

- 1. Scope of Services.** The Contractor agrees to perform for the Village the following services:

Engineering, survey, environmental, grant assistance, public involvement and construction administration services for the stream stabilization of an estimated 800 to 1,000 linear foot section of Marvin Branch Creek as part of the Stream Flow Rehabilitation Program (StRAP).
- 2. Specifications / Contract Documents.** In addition to the attached Standard Terms and Conditions, this Contract incorporates by reference the terms and conditions set forth in Village's Request for Qualifications (RFQ) dated October 23, 2024 with Addendum No. 1 dated November 4, 2024 and Contractor's proposal dated February 20, 2025 ("Proposal") which is attached hereto. all of which will govern the services to be provided by the Contractor. **The Proposal contains extensive terms and conditions all of which form a part of this Contract as if set forth verbatim. In the event of any Conflict between any terms and conditions of this Contract (including attachments) and the Proposal, this Contract shall control.**
- 3. Payment for Services.** In consideration of the above services, the Village will pay the Contractor an amount not to exceed \$171,150 in accordance with the amounts set forth for the specific tasks as set forth in Compensation section of the Proposal, payable within 30 days after receipt of undisputed invoices. Village shall not be responsible for any portions of the services that are not performed or are improperly performed. Village shall not be responsible

for any additional services or charges without the prior written approval of such services and price by the Village.

4. Insurance Requirements. The Contractor certifies that it currently has and agrees to purchase and maintain during its performance under the Contract the following insurance from one or more insurance companies acceptable to the Village and authorized to do business in the State of North Carolina:

Automobile - Contractor shall maintain bodily injury and property damage liability insurance covering all owned, non-owned and hired automobiles. The policy limits of such insurance shall not be less than \$1,000,000 combined single limit each person/each occurrence.

Commercial General Liability - Contractor shall maintain commercial general liability insurance that shall protect Contractor from claims of bodily injury or property damage which arise from performance under the Contract. This insurance shall include coverage for contractual liability. The policy limits of such insurance shall not be less than \$1,000,000 combined single limit each occurrence/annual aggregate.

Worker's Compensation and Employers' Liability Insurance - If applicable to Contractor, Contractor shall meet the statutory requirements of the State of North Carolina for worker's compensation coverage and employers' liability insurance.

Contractor shall also provide any other insurance specifically required by applicable law.

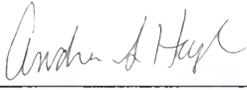
Certificates of such insurance shall be furnished by Contractor to the Village Administrator and shall contain the provision that the Village of Marvin shall be included on the commercial general liability policies as an additional insured and be given 30 days' written notice of any intent to amend or terminate such policies by either Contractor or the insuring company. Failure to furnish insurance certificates or to maintain such insurance shall be a default under the Contract and shall be grounds for immediate termination of the Contract.

5. Termination. Either party may terminate this Contract in the event the other party fails to cure a material breach of the terms hereof within ten (10) days' notice of such breach. Village may terminate this contract for any reason by giving Contractor at least fifteen (15) days written notice prior to termination date.

In witness thereof, the contracting parties, by their authorized agents, affix their signatures and seals at the Village of Marvin, North Carolina.

Contractor

Name: Dewberry Engineering Inc.
Name of Contractor (type or print)

By: 
(Signature)

Title: Branch Manager

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.


Finance Officer


Village of Marvin
Village Manager

STANDARD TERMS & CONDITIONS

1. **Acceptance.** Contractor's acknowledgment of the terms of this Contract constitutes an agreement to (i) all terms and conditions set forth or referenced herein, (ii) on any attachments hereto, (iii) any applicable solicitation documentation related to this Contract (including without limitation any request for proposals or invitation for bids or Contractor's response thereto) that deal with the same subject matter as this Contract, and (iv) any other terms and conditions of a written agreement signed by Contractor and the Village that deals with the same subject matter as this Contract (collectively, the "Contract Documents"). The terms and provisions set forth in the Contract Documents shall constitute the entire agreement between Contractor and the Village with respect to the purchase by the Village of the (i) goods ("Goods") and/or (ii) services provided or work performed ("Services") as described in the Contract Documents. The agreements set forth in the Contract Documents are sometimes referred to herein as the "Contract." In the event of any conflict between any terms and conditions of the Contract Documents, the terms and conditions most favorable to the Village shall control. No additional or supplemental provision or provisions in variance herewith that may appear in Contractor's quotation, acknowledgment, invoice or in any other communication from Contractor to the Village shall be deemed accepted by or binding on the Village. The Village hereby expressly rejects all such provisions which supplement, modify or otherwise vary from the terms of the Contract Documents, and such provisions are superseded by the terms and conditions stated in the Contract Documents, unless and until the Village's authorized representatives expressly assent, in writing, to such provisions. Stenographic and clerical errors and omissions by the Village are subject to correction.
2. **Entire Agreement.** These terms and conditions and any other specifications contained in any other documents referenced shall constitute and represent the complete and entire agreement between the Village and Contractor and supersede all previous communications, either written or verbal with respect to the subject matter of this Contract.
3. **Changes, Additions, Deletions.** No changes, additions, deletions or substitutions of scope of work, specifications, terms and conditions, quantity, unit of issue, delivery date, delivery charges or price will be permitted without the prior written approval from the Village.
4. **Relationship of the Parties.** The Contractor is an independent contractor and not an employee of the Village. The conduct and control of the work will lie solely with the Contractor. The Contract shall not be construed as establishing a joint venture, partnership or any principal-agent relationship for any purpose between the Contractor and the Village. Employees of the Contractor shall remain subject to the exclusive control and supervision of the Contractor, which is solely responsible for their compensation.
5. **Prices.** If Contractor's price or the regular market price of any of the Goods or Services covered hereunder is lower than the price stated in the Contract Documents on the date of shipment of such Goods or performance of such Services, Contractor agrees to give the Village the benefit of such lower price on any such Goods or Services. In no event shall Contractor's price be higher than the price last quoted or last charged to the Village unless otherwise agreed in writing. No charges for transportation, boxing, crating, etc. are allowable unless such charges are included in the Contract Documents.
6. **Taxes.** Any applicable taxes shall be invoiced as a separate item.
7. **Substitutions.** No substitutions or cancellations shall be permitted without prior written approval from the Village.
8. **Indemnification.** Contractor shall indemnify and hold harmless the Village, its officers, agents, employees and assigns from and against all claims, losses, costs, damages, expenses, reasonable attorneys' fees and liability that any of them may sustain (a) arising out of Contractor's failure to comply with the standard of care or (b) arising directly out of Contractor's negligent performance or lack of performance of the terms and conditions of the Contract. In the event that any Goods or Services sold and delivered or sold and performed under the Contract shall be defective in any respect whatsoever, Contractor shall indemnify and save harmless the Village, its officers, agents, employees and assigns from all loss or the payment of all sums of money by reason of all accidents, injuries or damages to persons or property that shall happen or occur in connection with the use or sale of such Goods or Services and are contributed to by said condition. In the event Contractor, its employees, agents, subcontractors and or lower-tier subcontractors enter premises occupied by or under the control of the Village in the performance of the Contract Documents, Contractor agrees that it will indemnify and hold harmless the Village, its officers, agents, employees and assigns, from any loss, costs, damage, expense or liability by reason of property damage or personal injury arising out of, as a result of, or in connection with such negligent or unlawful entry.
9. **Invoices and Payment Terms.** It is understood and agreed that orders will be shipped at the established Contract prices in effect on dates orders are placed. Invoicing at variance with this provision will subject the Contract to cancellation. Upon satisfactory delivery of the Goods or satisfactory completion of the Services, all invoices and statements shall reference the Contract number and be submitted to: Village of Marvin, Accounts Payable, 10006 Marvin School Road, Marvin, North Carolina, 28173. Payment terms are Net 30 days after receipt of correct, undisputed invoice or acceptance of Goods or Services, whichever is later.
10. **Anti-Discrimination.** During the performance of the Contract, Contractor shall not discriminate against or deny the Contract's benefits to any person on the basis of sexual orientation, national origin, race, ethnic background, color, religion, gender, age or disability.
11. **Insurance.** Whenever any work or services are provided, either in or on Village owned property, the following shall apply: The Village shall specify the insurance coverage required including, but not limited to, minimum acceptable coverage and limits, as well as a minimum acceptable insurance rating for an insurance provider. The Contractor shall provide the Village with a North Carolina Certificate of Insurance PRIOR to the commencement of any work under the Contract and agrees to maintain such insurance until the completion of the Contract. Such certificates of insurance shall be considered part of the Contract.
12. **Ethics in Public Contracting.** The provisions contained in Article 8 of Chapter 143 of the North Carolina General Statutes shall be applicable to all contracts entered into by the Village of Marvin for purchase of Services totaling over \$30,000. By submitting their prices and acceptance of this Contract, all Contractors certify that their bids are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other supplier, manufacturer or subcontractor in connection with their offer, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.
13. **Applicable Laws and Courts.** All Village Contracts for Services shall be governed in all respects by the laws of the State of North Carolina. All matters, whether sounding in contract or tort relating to the validity, construction, interpretation and enforcement of the Contract, shall be governed in all respects by the laws of the State of North Carolina and venue shall be proper only in a court of competent jurisdiction located in Union County, North Carolina. The Contractor represents and warrants that it shall comply with all applicable federal, state and local laws, regulations and orders.
14. **Strict Compliance.** The Village may at any time insist upon strict compliance with these terms and conditions notwithstanding any previous course of dealing or course of performance between the parties to the contrary.
15. **Assignment.** The Contractor shall not assign, subcontract or otherwise transfer any interest in the Contract without the prior written approval of the Village.
16. **General Provisions.** The Village's remedies as set forth herein are not exclusive. Any delay or omission by the Village in exercising any right hereunder, or any waiver by the Village of any single breach or default hereunder, shall not be deemed to be a waiver of such right or of any other right, breach, or default.
17. **Workmanship.** The Contractor warrants it shall adhere to all laws, codes, ordinances, and regulations of the United States, the State of North Carolina, the County of Union, and the Village of Marvin in the performance of the Services outlined in this Contract and any attached specifications. Contractor warrants that any finished work (for example, sidewalks) completed hereunder shall also adhere to all laws, codes,

ordinances, and regulations of the United States, the State of North Carolina, the County of Union, and the Village of Marvin. Contractor agrees that all Services will be performed in a professional and workman like manner in accordance with industry practices, and the standard of care for all design services performed under this Agreement shall be the care and skill ordinarily used by design professionals for projects of similar size, complexity, location, and difficulty around the same time.

18. **Quality and Workmanship.** All work shall be performed to the satisfaction of the Village. The work shall not be considered complete nor applicable payments rendered until the Village is satisfied with the Services provided.
19. **Default.** The Village may terminate the Contract, in whole or in part, immediately and without prior notice upon breach of the Contract by the Contractor. In addition to any other remedies available to the Village in law or equity, the Village may procure upon such terms as the Village shall deem appropriate, Services substantially similar to those so terminated, in which case the Contractor shall be liable to the Village for any excess costs for such similar supplies or services and any expenses incurred in connection therewith.
20. **Termination for Convenience.** The Village shall have the right, without assigning any reason therefore, to terminate any work under the Contract, in whole or in part, at any time at its complete discretion by providing 10 days notice in writing from the Village to Contractor. If the Contract is terminated by the Village in accordance with this paragraph, the Contractor will be paid in an amount which bears the same ratio to the total compensation as does the Services actually delivered or performed to the total originally contemplated in the Contract. The Village will not be liable to the Contractor for any costs for materials acquired or contracted for, if such costs were incurred prior to the date of this Contract.
21. **Assignment.** Contractor may not assign, pledge, or in any manner encumber Contractor's rights under this Contract, or delegate the performance of any of its obligations hereunder, without Buyer's prior, express written consent.--
22. **No Third-Party Benefits.** The Contract shall not be considered by Contractor to create any benefits on behalf of any third party. Contractor shall include in all contracts, subcontracts or other agreements relating to the Contract an acknowledgment by the contracting parties that the Contract creates no third-party benefits.
23. **Valid Contract for Services.** In order for a Contract for Services of the Village to be valid, it must be approved in accordance with the Village of Marvin Purchasing Policy and Designation of Authority for Contract Signing ("Policy") and executed by the Village Administrator or other designee authorized by the Village Council in accordance with such Policy.
24. **Buyer.** All references to Buyer or Village, throughout these terms and conditions, shall refer to the Village of Marvin, North Carolina.
25. **Contractor.** All references to Seller or Contractor throughout these terms and conditions shall refer to the contractor identified on page 1 of this Contract for Services.

**AMENDMENT TO CONTRACT FOR
StRAP SERVICES**

THIS AMENDMENT CONTRACT FOR StRAP SERVICES (“Amendment”) is executed and delivered as of the 11th day of August, 2025 (“Effective Date”), by and between the Village of Marvin, NC (“Village”) and Dewberry Engineers, Inc. (“Contractor”).

Statement of Purpose

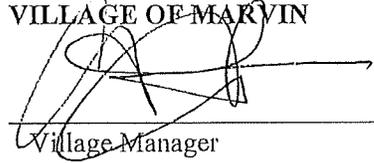
The Village and Contractor are parties to that certain Contract for Services dated April 7, 2025 whereunder Contractor agreed to provide for engineering, survey, environmental, grant assistance, public involvement and construction administration services for the stream stabilization of an estimated 800 to 1,000 linear foot section of Marvin Branch Creek as part of the Stream Flow Rehabilitation Program (StRAP) (collectively the “Services”) as described therein (“Agreement”). The Village and Contractor have agreed to amend the Agreement to change the location along the Marvin Branch Creek to perform the Services.

NOW, THEREFORE, for and in consideration of the foregoing recitals, which are incorporated herein by this reference, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Village and Contractor hereby agree as follows:

1. **Recitals; Defined Terms.** The above recitals are hereby incorporated in and made a part of this Amendment as fully as if set forth verbatim herein. Capitalized terms used but not defined in this Amendment have the meanings given in the Agreement.
2. **Location for Services.** The location for Services set forth on Attachment C of the Proposal is amended by replacing the location with the new Attachment C attached hereto.
3. **Miscellaneous.** This Amendment may be executed in multiple counterparts, each of which shall be deemed an original and which together shall constitute one instrument. Facsimile or email signatures shall be deemed originals. To the extent the terms contained in the Agreement and this Amendment are inconsistent or contrary, the terms contained in this Amendment shall control. All other terms and conditions of the Agreement not expressly modified herein are reaffirmed by the Village and Contractor and shall remain in full force and effect.

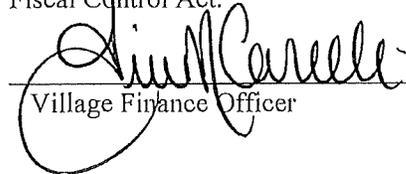
IN WITNESS WHEREOF, the Village and Contractor have caused this Amendment to be executed, delivered and sealed as of the Effective Date.

VILLAGE OF MARVIN



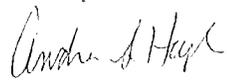
Village Manager

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.



Village Finance Officer

DEWBERRY ENGINEERS, INC.

By:  09/30/25

(Signature)

Title: Branch Manager

Attest: _____
(Secretary, if a corporation)



Dewberry Engineers Inc. | 704.509.9918
9300 Harris Corners Parkway | 704.509.9937 fax
Suite 220 | www.dewberry.com
Charlotte, NC 28289

February 20, 2025

Mr. Davy Broom
Public Works Director
Village of Marvin
10006 New Town Road
Marvin, North Carolina 28173

RE: Village of Marvin, StRAP Project
Marvin, North Carolina

Dear Mr. Broom:

Per the RFQ and following conversations we understand the Village of Marvin (CLIENT) desires to contract engineering, survey, environmental, grant assistance, public involvement and construction administration services for the stream stabilization of a 1,000 linear foot (lf) section of Marvin Branch as part of the Stream Flow Rehabilitation Program (StRAP). Dewberry Engineers Inc., (Dewberry) is pleased to provide the CLIENT with this proposal for the proposed stream stabilization of Marvin Branch in the Village of Marvin, North Carolina.

UNDERSTANDING OF THE PROJECT

Dewberry understands the CLIENT received a StRAP grant for Marvin Branch to conduct stream stabilization. The CLIENT anticipates performing stream stabilization on approximately 800-1,000 lf of Marvin Branch. The section of the creek to be stabilized has not been selected and will be determined following the site walk and environmental assessments associated with this proposal. The CLIENT has requested assistance with property owner coordination, environmental site assessments, site selection, survey, engineering plans and specifications, permitting, grant administration, and construction administration services. Dewberry understands that due to the grant funding the project construction must be complete by the end of 2026 to receive the reimbursement from the grant.

Based on this project understanding, we have prepared the following scope of services.

SCOPE OF SERVICES

1. Environmental Services

The following environmental Scope of Work (SOW) has been developed based upon our initial correspondence, the Request for Qualifications, project understanding, as well as all subsequent discussions to date and including all files that have been shared. Dewberry will conduct environmental field surveys within the potential project area. The assumed project impact area includes the 5,679 linear feet of Marvin Branch identified in the Request for Qualifications, plus an additional 50-foot buffer on both sides. Dewberry intends to provide initial environmental field surveys on the entire length of Marvin Creek to assist in site selection.

1A- Environmental Surveys, Natural Resources Report and Aquatic Habitat Assessment

Jurisdictional Water Delineation

- Dewberry will conduct an onsite investigation to identify approximate limits of Waters of the United States (WOTUS), including jurisdictional wetlands and streams, present within the project area.
- Prior to fieldwork, Dewberry will load and set up required files and fields for project GPS

Mr. Davy Broom
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data collection and review relevant updated GIS data, including, but not limited to, the following: US Geological Service (USGS) topography maps, Natural Resource Conservation Service (NRCS) soil mapping, aerial photography, US Fish and Wildlife (USFWS) protected species data, North Carolina Natural Heritage Program (NCNHP) database of protected species, National Wetland Inventory, and North Carolina Division of Water Resources water resource information.

Field work- Jurisdictional Waters Delineation

- Dewberry will conduct field surveys for jurisdictional features within the study area, including wetlands and streams, as well as non-jurisdictional tributaries.
- Wetlands will be located, delineated, and flagged in accordance with the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and the Eastern Mountains and Piedmont Regional Supplement. All wetland points will be sequentially flagged and recorded with GPS, using submeter accurate technology. The appropriate regional wetland forms will be completed for each unique wetland site, including a corresponding upland form for the project. All wetlands will be further classified according to NC Wetland Assessment Method wetland type.
- Surface waters, including streams and ponds, will be located, delineated, sequentially flagged, and surveyed. Stream widths will also be recorded.
- Dewberry will conduct surveys and habitat assessments for any terrestrial species that are protected by USFWS.

Natural Resources Report

- Dewberry will prepare the Draft and Final Natural Resources Report, including:
- Creation of figures showing the project boundaries, location of all potential jurisdictional waters on USGS Topography, LiDAR, and current aerial photography.
- Compilation of wetland and stream forms.
- Habitat assessment and survey results for terrestrial species that are protected by USFWS.
- CADD files of wetlands and streams.
- QA/QC forms documenting technical review, as required by internal Dewberry processes.
- If desired by the Village of Marvin staff, Dewberry will hold virtual meetings to review and discuss the Draft Report. Dewberry will incorporate any comments and coordinate with the Village of Marvin to resolve all concerns.
- In addition to the Natural Resources Report, Dewberry will prepare a Jurisdictional Waters Delineation Package for submittal to the US Army Corps of Engineers and the NC Division of Water Resources to request a Waters of the US Jurisdictional Determination.

Carolina Heelsplitter Habitat Assessment

Dewberry proposes for our permitted aquatic biologist to conduct a habitat assessment for the Carolina Heelsplitter and produce a habitat assessment report. The Habitat Assessment will be conducted on the entire 5,679-foot stretch of Marvin Branch identified in the Request for Qualifications. The goal of the habitat assessment is to determine if there is suitable habitat for the Carolina Heelsplitter within the project area and use that information to identify areas to perform stream rehabilitation. A handheld GPS unit with sub-meter accuracy will be used to delineate the extent of different habitat types (high quality, low quality, no habitat). Biologists will use the appropriate equipment to go underwater, if necessary, and view the stream substrate and record metrics such as depth, flow, dominant substrate, subdominant substrate, compactness, stream width, beaver activity, bank stability, bank height, buffer width, land use,

Mr. Davy Broom
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and visibility for each stream section. The report will include a map showing the extent of each habitat type, accompanied by pictures of each section.

After completion of the fieldwork, Dewberry will prepare a draft and final Habitat Assessment Report to include the following:

- Carolina Heelsplitter species description, preferred habitat, threats, and current distribution
- Representative photographs of all streams and habitat types
- Photographs of the project area
- Name of and distance to nearest downstream waterway
- Description of any beaver activity
- Identification of the dominant and subdominant substrate types
- Description of the overall quality of available in-stream habitat
- Description of stream buffers present along stream reach
- A project vicinity map
- A map on aerial background identifying sections of the river identified as high quality, low quality, and not suitable habitat
- Qualifications of investigators

1B- Aquatic Surveys

Carolina Heelsplitter Aquatic Survey

Dewberry biologists and field personnel will use appropriate gear and techniques to survey the targeted portion of Marvin Branch for stream rehabilitation, assumed to be 300 meters (approximately 1,000 ft), plus an additional 400 meters downstream (approximately 1300 ft), 100 meters (approximately 330 ft) upstream of the project. A draft protected species survey report will be prepared to present the results of surveys from the project location. Following any comments from the Village of Marvin, a final report will be provided. All reports will be in electronic (pdf) format and will include the following content items:

- Road name and Secondary Route number for any roads mentioned in the report.
- Name of and distance to nearest downstream waterway.
- The river basin in which all streams are located.
- Identification of any streams classified as 303(d) waters, and an explanation for its classification.
- Identification of any nearby NPDES dischargers and their corresponding permit number.
- Distance to the nearest known record of the listed species in question, and its location relative to the project site.
- Identification of any impoundments or reservoirs that separate the project from the nearest known record.
- Description of any beaver activity.
- A listing of all substrate types and identification of the dominant and subdominant substrate types.
- Description of the overall quality of available in-stream habitat.
- Description of stream buffers present along stream reaches (type, quality, width, etc.).
- A Biological Conclusion with supporting information for each species.
- A project vicinity map.
- A map (or series of maps) on aerial background identifying surveyed stream reaches and

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- proximity to any known species records, NPDES or 303(d) occurrences in the area.
- Qualifications of investigators.

NCWRC Database Entry

Dewberry is obligated to submit a record of all activities that occur to the NC Wildlife Resources Commission (NCWRC). Aquatic surveys are included as part of the reporting requirement. Therefore, Dewberry will incorporate all information gathered as part of these surveys into year-end reporting to this agency.

1C- Agency Coordination and Permitting

Section 404/Section 401 Permitting and Agency Coordination

Dewberry is prepared to submit an application for a joint federal Section 404 Clean Water Act permit and a state Section 401 Water Quality permit for submittal to the USACE and the N.C. Department of Environmental Quality (NCDEQ). Dewberry will work with partner agencies throughout the project to ensure that permits are acquired in order to meet project timelines.

- Prior to the development of the permit applications, Dewberry will request a Pre-Application meeting with the USACE and the NCDEQ to discuss the scope of the project, timeline, appropriate permit authorizations and any concerns with federal and state regulators that may hinder permit authorization.
- The permit applications will include a written description of the project impacts as well as permit drawings that meet USACE and NCDEQ requirements. Dewberry will coordinate with these agencies throughout the life of the project as needed to ensure that the permit applications are prepared to agency specifications. Dewberry will prepare and submit the permit applications to the USACE and NCDEQ on behalf of the Village of Marvin.

Deliverables

Dewberry is prepared to produce the deliverables as proposed in this SOW. We understand there will be the following deliverables at the end of the project.

- Jurisdictional delineation, and Survey data
- Draft and Final Natural Resources Report
- Habitat Assessment Report
- Preliminary Jurisdictional Determination Package
- Aquatic Survey Report (if necessary)

Assumptions

- Dewberry will have access to the site as needed to conduct all necessary field work.
- No work associated with contaminated soil or other hazardous materials is anticipated.
- The Village of Marvin will sign the appropriate agent authorization required for Jurisdictional Determinations.

2. Site Selection

Dewberry will walk the length of Marvin Branch (approximately 5,679 lf) to determine potential locations for stream stabilization. After the walk, site selection will be determined based on need for stream stabilization, environmental surveys and assessments (completed in Task 1A), and input from the CLIENT. Dewberry anticipates that one (1) client meeting and a one (1) day site visit will be necessary and have been included in this task.

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3. Public Involvement

Dewberry will complete the following tasks associated with public outreach and coordination with property owners:

- Start of Study Letter- Dewberry will draft and distribute start of study letters on Village of Marvin letterhead. The letters will request comments from government permitting agencies to advise the team on what constraints or permitting requirements may be needed. The letters will also be sent to property owners requesting right of entry to conduct species surveys and wetland delineations.
- Comments- Dewberry will track all comments and questions received on the project. All comments and responses will be kept in a matrix (excel file).
- Public Website- Dewberry will prepare graphics and text to be posted on a project webpage housed on the Village's website. The project webpage will be updated quarterly to keep the public aware of the project's progress.
- Public Meeting- No meeting is expected and this is not included in the scope of work.

4. Grant Support

Dewberry will complete the following tasks associated with grant support:

- Quarterly Reports- Dewberry will work with information provided by the CLIENT to prepare quarterly reports using the StRAP grant template. Reports are due no later than the following dates: April 30, July 31, October 31, 2025 and January 31, 2026. Reports are to be submitted directly to the StRAP grants office.
- 50% Progress Report- Dewberry will work with information provided by the CLIENT to prepare a 50% Progress Report due no later than August 29, 2025. The report will be submitted directly to the StRAP grants office.
- Final Report- When all work is completed, Dewberry will prepare and submit a Final Report to the StRAP grants office.
- Request for Payment- Dewberry will complete Request for Payment forms bimonthly on behalf of the CLIENT for reimbursement of expenses allowed under the grant award.

5. Survey

5A- Topographic Survey and Boundary Network

A topographic survey shall be prepared in accordance with the standards of practice for land surveying in the North Carolina, Board Rules Title 21, Chapter 56.1601-1606, Class A for Urban Land Surveys. Horizontal and vertical control will be established on site using GPS observations yielding NAD 83 (2011) horizontal coordinates and NAVD 88 vertical elevations. One benchmark will be set on site. Survey data will be gathered on a 50' grid, along with grade breaklines, to provide 1-foot contours over the entire survey area. Dewberry will field locate all visible above ground features and obtain invert information on sanitary and storm sewer systems. Non-gravity utilities will not be marked or located by Dewberry. The topographic survey will be performed on 1000 linear feet of Marvin Branch (section to be determined by site selection outlined in Task 2) and will extend approximately 50' beyond top of bank on each side of the creek.

Dewberry will perform deed research and field investigation to establish property lines for the parcels within the survey limits. Only those property corners deemed necessary to establish

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property lines will be located. Easements and rights of way will be determined from observed site features and data obtained from the Union County Register of Deeds. Union County GIS will be utilized to show addresses, zoning, land use, PIN numbers, deed book info, etc. for the subject parcel and adjoining parcels.

Dewberry will field locate all trees 18" and larger within the survey limits. These trees will be shown on the existing final survey and denoted with diameter and species type. Wooded areas will be outlined along the tree line. All other trees will not be shown.

Wetland and stream delineation flags, marked by Dewberry in Task 1A, will be located in the field and shown on the final survey. It's anticipated there will be no more than 100 wetland/stream flags.

5B- Easement Exhibits

Dewberry will utilize property surveys from Task 5A, along with design plans prepared by Dewberry to create easement exhibits. The exhibits will be prepared per GS 47-30, paragraph M standards and NC Board of Examiners policy number BP-1709-1. Dewberry will include up to three (3) exhibits for this project.

Dewberry will create the proposed exhibits per current design drawings, submit to the CLIENT for review, address one round of comments and then submit as final. If no comments are received within said 30 days, survey will be submitted as final. Any subsequent revisions will be considered additional services and will be performed on an hourly basis.

6. Construction Plans and Floodplain Development Permit

6A – Construction Plans

Using the survey completed in Task 5A, Dewberry will develop engineering plans for the construction of the stream stabilization. The plans will include title sheet, details, grading, proposed stabilization design, and erosion control. The method of stream stabilization will be discussed and agreed upon with the CLIENT prior to the start of design. Dewberry anticipates that two (2) CLIENT meetings will be included in this task (one in person, one virtual). One (1) site visit is included with this task. Dewberry will submit preliminary plans (75%) for review by the CLIENT. Dewberry will incorporate one round of comments from the CLIENT to create the final plans (100%). Dewberry will also provide an engineering estimate of construction cost and technical specifications with the final plans and address one round of comments. If land-disturbing activity exceeds one acre, Dewberry will pursue erosion control permitting with the North Carolina Department of Environmental Quality. CLIENT will be responsible for all permitting fees.

It is not anticipated that Dewberry will be replacing or designing culvert and pipe as part of this project. Culvert, pipe design, and pipe replacement have been excluded from this contract.

6B – Floodplain Development Permit

Marvin Branch is a detailed study stream that has a 1% annual chance event floodplain (Base Flood Elevation, BFE) and FEMA floodway. Dewberry will obtain the effective FEMA HEC-RAS model from the Flood Risk Information System (FRIS) to use as a base model for the flood study. The model will be updated based on survey (completed by Dewberry in Task 5A) in conjunction

Mr. Davy Broom
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with publicly available information such as Union County LIDAR topography. Using this information, Dewberry shall prepare a flood study for the proposed improvements. It is assumed that a no-rise will be attainable, and we will pursue obtaining a floodplain development permit with the Village of Marvin. Dewberry will submit the floodplain development permit to the Village of Marvin and address up to 2 rounds of comments. It is assumed that a CLOMR/LOMR will not be needed and is excluded from this contract. Dewberry can provide assistance with obtaining a CLOMR/LOMR if it is determined that one will be required, for an additional fee. Permitting fees will be paid by the CLIENT.

7. Construction Services

Dewberry assumes a construction period of six (6) months for construction service support.

7A- Bid Support

Dewberry will provide the following items:

- Village reviewed and approved construction plans
- Technical Specifications
- Consultant's estimate of construction cost
- Design and quantity Computations
- Review and respond to contractors requests for information
- Electronic files in the latest version of AutoCAD Civil 3D (as of the date of this contract)
- Attend the pre-bid meeting, bid opening and provide bid recommendation letter

7B- Construction Administration

Dewberry's work will include the following:

- Attendance at one(1) pre-construction meeting with contractor and CLIENT. Dewberry will generate meeting minutes and distribute to the attendees.
- Dewberry will schedule and conduct six (6) onsite construction progress meetings monthly during the construction phase. Dewberry shall be responsible for preparing and distributing meeting minutes to attendees before the next meeting.
- Dewberry shall review and respond to RFIs submitted by the Contractor and make modifications to the Construction Documents as necessary.
- Dewberry shall perform onsite observations on a bi-weekly basis
- Dewberry shall review and evaluate change order requests from the Contractor
- Dewberry shall receive and review for approval from the Contractor: shop drawings, product data, samples, and other submittals.
- Dewberry shall review the amounts payable to the Contractor monthly. Dewberry will then forward applications for payment to the Owner for payments due to Contractor.
- Upon written certification from the Contractor that the work is substantially complete, Dewberry shall perform one (1) substantial completion review of the Contractor's work. As a result of this review, Dewberry shall prepare a list of incomplete or unsatisfactory items and forward the list and a Certificate of Substantial Completion to the Owner for execution.
- Upon written certification from the Contractor that his work is finally complete, Dewberry shall perform one (1) final completion review of the Contractor's work. If the work is still incomplete, those items needing correction or completion shall be identified from the Substantial Completion list. Once there are no pending issues, and the as-built drawings

Mr. Davy Broom
 Project: Village of Marvin, STRAP Project
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have been delivered by the contractor, Dewberry shall prepare a Certificate of Compliance prior to approval of final payment of the Contractor.

COMPENSATION

For the completion of the scope of services above, Dewberry shall be paid in accordance with the following schedule:

Task 1A: Environmental Surveys, Natural Resources Report, and Aquatic Habitat Assessment	\$21,170 HNTe
Task 1B: Aquatic Surveys	\$16,875 HNTe
Task 1C: Agency Coordination and Permitting	\$8,960 HNTe
Task 2: Site Selection.....	\$5,200 HNTe
Task 3: Public Involvement.....	\$6,880 HNTe
Task 4: Grant Support.....	\$20,640 HNTe
Task 5A: Topographic Survey and Boundary Network	\$25,405 HNTe
Task 5B: Easement Exhibits.....	\$3,600 HNTe
Task 6A: Construction Plans	\$29,790 HNTe
Task 6B: Floodplain Development Permit	\$8,400 HNTe
Task 7A: Bld Support.....	\$6,100 HNTe
Task 7B: Construction Administration	\$16,400 HNTe
Reimbursables (Mileage).....	\$730 Time and Materials
TOTAL.....	\$171,150 HNTe

EXCLUSIONS AND CLARIFICATIONS

- Environmental site assessments (Phase I, II, and III) are excluded.
- Cultural Resource Reviews are excluded.
- Wetland and/or stream mitigation, banking, and fee payment are excluded.
- Coordination and/or permitting with NCDOT is excluded.
- Utility locations and utility coordination are excluded.
- Roadway Improvements are excluded.
- CLOMR/LOMR applications and permitting are excluded.
- Culvert replacement and design is excluded.
- Legal Descriptions, Recordation, Plats, and Easement Staking are excluded.
- Construction staking is excluded.
- Revisions to the Village Master Plan are excluded.
- Constructability review is excluded.
- Traffic Impact studies are excluded
- Permit fees are excluded.
- Water quality impact assessment(s) are excluded.
- Property access agreements are excluded.
- CLIENT shall provide Dewberry access to the site as needed to perform tasks in this proposal.
- All items not specifically included in the Scope of Services above, are specifically excluded from this proposal.
- ALTA, boundary, or other surveys are excluded.

Mr. Davy Broom
Project: Village of Marvin, STRAP Project
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ADDITIONAL SERVICES

This proposal is based upon our current understanding of local, state and federal requirements and regulations and our understanding of the project as described herein. Any modifications to these requirements and regulations, or other requirements not provided for herein, which require additional services will be performed by Dewberry Engineers Inc. and billed in accordance with the Hourly Billing Rate Schedule, (Attachment A), which is annexed to this proposal and incorporated into it by reference.

TERMS AND CONDITIONS

Services under this agreement will be provided in accordance with the attached Terms and Conditions (Attachment B), which is annexed to this proposal and incorporated into it by reference.

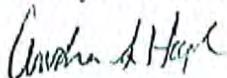
RESTRICTION OF USE

This proposal includes information that shall not be disclosed outside of the CLIENT and shall not be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offer, or as a result of, or in connection with, the submission of this information, CLIENT shall have the right to duplicate, use, or disclose the information to the extent provided in the resulting contract. This restriction does not limit CLIENT's right to use information contained in this information if it is obtained from another source without restriction. The information subject to this restriction is contained on all pages of this proposal.

AUTHORIZATION

If this proposal meets with your approval, please return one (1) executed original to this office. Receipt of the executed proposal will serve as our authorization to proceed. If you have questions, please do not hesitate to contact us. Dewberry is excited about the opportunity to assist you with this project.

Sincerely,
Dewberry Engineers Inc.



Andrea Hayden, PE, LEED AP
Associate, Branch Manager

Attachments:

- Attachment A. Standard Hourly Billing Rate Schedule (6/1/2024)
- Attachment B. Standard Terms and Conditions (10/2020)
- Attachment C. Marvin Branch Creek Map

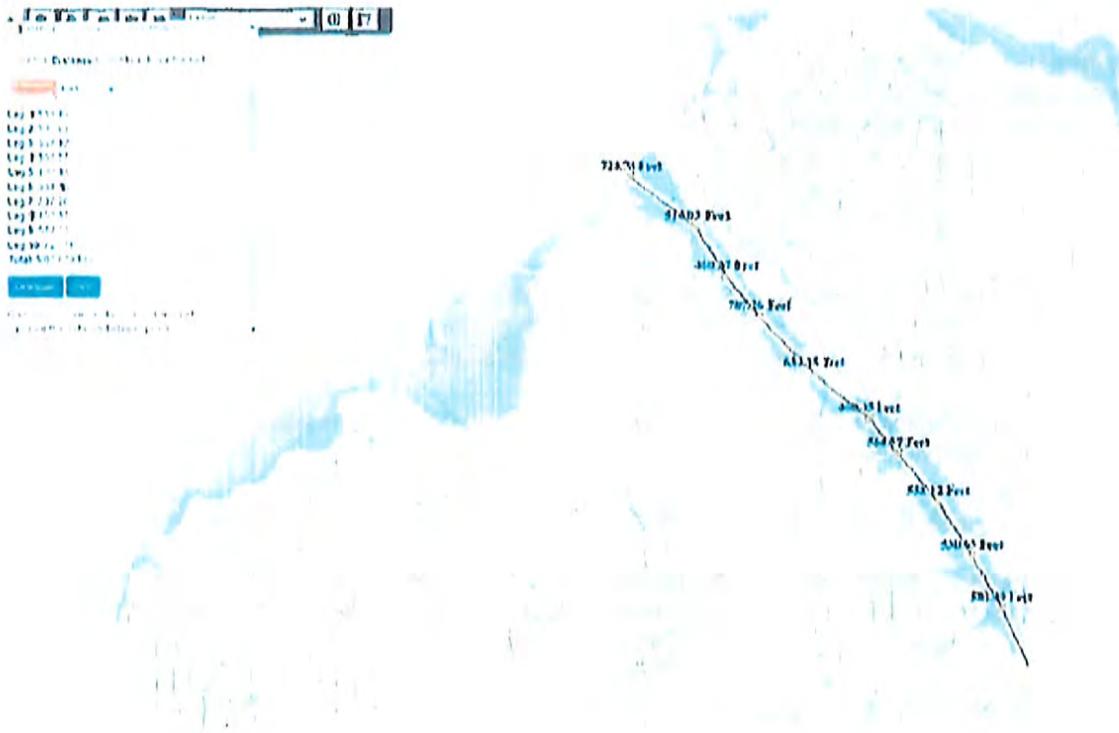


STANDARD HOURLY BILLING RATE SCHEDULE

DEWBERRY	HOURLY RATES
Professional	
Principal	\$360.00
Architect I,II,III	\$110.00, \$125.00, \$145.00
Architect IV,V,VI	\$165.00, \$185.00, \$205.00
Architect VII,VIII,IX	\$230.00, \$250.00, \$280.00
Interior Designer I,II,III,IV	\$100.00, \$120.00, \$140.00, \$165.00
Interior Designer V, VI, VII	\$180.00, \$205.00, \$240.00
Engineer I,II,III	\$115.00, \$135.00, \$155.00
Engineer IV,V,VI	\$175.00, \$200.00, \$230.00
Engineer VII,VIII,IX	\$280.00, \$290.00, \$320.00
Geographer/GIS I,II,III	\$95.00, \$105.00, \$125.00
Geographer/GIS IV,V,VI	\$145.00, \$165.00, \$195.00
Geographer/GIS VII,VIII,IX	\$225.00, \$255.00, \$280.00
Professional I,II,III	\$105.00, \$125.00, \$155.00
Professional IV,V,VI	\$175.00, \$195.00, \$215.00
Professional VII,VIII,IX	\$245.00, \$260.00, \$295.00
Technical	
Designer I,II,III	\$110.00, \$135.00, \$160.00
Designer IV,V,VI	\$180.00, \$205.00, \$230.00
CADD Technician I,II,III,IV,V	\$85.00, \$105.00, \$125.00, \$140.00, \$180.00
Surveyor I,II,III	\$80.00, \$93.00, \$100.00
Surveyor IV,V,VI	\$120.00, \$135.00, \$150.00
Surveyor VII,VIII,IX	\$185.00, \$195.00, \$235.00
Technical I,II,III	\$85.00, \$110.00, \$130.00
Technical IV,V,VI	\$145.00, \$160.00, \$180.00
Emergency Management	
Emergency Management I, II, III	\$90.00, \$120.00, \$150.00
Emergency Management IV, V, VI	\$180.00, \$225.00, \$280.00
Construction	
Construction Professional I,II,III	\$125.00, \$160.00, \$185.00
Construction Professional IV,V,VI,VII	\$220.00, \$245.00, \$290.00, \$325.00
Inspector I,II,III	\$90.00, \$110.00, \$145.00
Inspector IV,V,VI,VII	\$170.00, \$190.00, \$215.00, \$250.00
Survey Field Crews	
Fully Equipped 1, 2, 3 Person Crews	\$145.00, \$185.00, \$245.00
With Laser Scanner 1, 2 Person	\$195.00, \$235.00
Administration	
Admin Professional I,II,III,IV	\$70.00, \$100.00, \$120.00, \$150.00
Non-Labor Direct Costs	Cost + 15%



Attachment C





Village of Marvin

CONTRACT FOR SERVICES
STANDARD FORM

Date: April 7, 2025

10006 Marvin School Road
Marvin, NC 28173
Phone (704) 843-1680 * Fax (704) 843-1660
manager@marvinncc.org

CONTRACTOR Andrea Hayden
INFORMATION Dewberry Engineers Inc.
9300 Harris Corners Pky, Ste. 220
Charlotte, NC 28269

LOCATION OF Marvin Branch Creek
WORK/SERVICES Marvin, NC
TO BE
PERFORMED (if
not Village Hall)

This Contract for Services, and all attachments, (collectively this "Contract") is entered by and between the Village of Marvin, a municipal corporation of the State of North Carolina, (the "Village") and Dewberry Engineers Inc., a New York corporation (the "Contractor").

For and in consideration of the mutual promises set forth in this Contract, the parties do mutually agree as follows:

- 1. Scope of Services.** The Contractor agrees to perform for the Village the following services:

Engineering, survey, environmental, grant assistance, public involvement and construction administration services for the stream stabilization of an estimated 800 to 1,000 linear foot section of Marvin Branch Creek as part of the Stream Flow Rehabilitation Program (StRAP).
- 2. Specifications / Contract Documents.** In addition to the attached Standard Terms and Conditions, this Contract incorporates by reference the terms and conditions set forth in Village's Request for Qualifications (RFQ) dated October 23, 2024 with Addendum No. 1 dated November 4, 2024 and Contractor's proposal dated February 20, 2025 ("Proposal") which is attached hereto. all of which will govern the services to be provided by the Contractor. **The Proposal contains extensive terms and conditions all of which form a part of this Contract as if set forth verbatim. In the event of any Conflict between any terms and conditions of this Contract (including attachments) and the Proposal, this Contract shall control.**
- 3. Payment for Services.** In consideration of the above services, the Village will pay the Contractor an amount not to exceed \$171,150 in accordance with the amounts set forth for the specific tasks as set forth in Compensation section of the Proposal, payable within 30 days after receipt of undisputed invoices. Village shall not be responsible for any portions of the services that are not performed or are Improperly performed. Village shall not be responsible

for any additional services or charges without the prior written approval of such services and price by the Village.

4. Insurance Requirements. The Contractor certifies that it currently has and agrees to purchase and maintain during its performance under the Contract the following insurance from one or more insurance companies acceptable to the Village and authorized to do business in the State of North Carolina:

Automobile - Contractor shall maintain bodily injury and property damage liability insurance covering all owned, non-owned and hired automobiles. The policy limits of such insurance shall not be less than \$1,000,000 combined single limit each person/each occurrence.

Commercial General Liability - Contractor shall maintain commercial general liability insurance that shall protect Contractor from claims of bodily injury or property damage which arise from performance under the Contract. This insurance shall include coverage for contractual liability. The policy limits of such insurance shall not be less than \$1,000,000 combined single limit each occurrence/annual aggregate.

Worker's Compensation and Employers' Liability Insurance - If applicable to Contractor, Contractor shall meet the statutory requirements of the State of North Carolina for worker's compensation coverage and employers' liability insurance.

Contractor shall also provide any other insurance specifically required by applicable law.

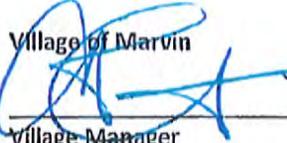
Certificates of such insurance shall be furnished by Contractor to the Village Administrator and shall contain the provision that the Village of Marvin shall be included on the commercial general liability policies as an additional insured and be given 30 days' written notice of any intent to amend or terminate such policies by either Contractor or the insuring company. Failure to furnish insurance certificates or to maintain such insurance shall be a default under the Contract and shall be grounds for immediate termination of the Contract.

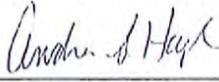
5. Termination. Either party may terminate this Contract in the event the other party fails to cure a material breach of the terms hereof within ten (10) days' notice of such breach. Village may terminate this contract for any reason by giving Contractor at least fifteen (15) days written notice prior to termination date.

In witness thereof, the contracting parties, by their authorized agents, affix their signatures and seals at the Village of Marvin, North Carolina.

Contractor

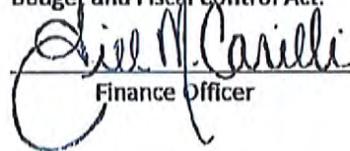
Name: Dewberry Engineering Inc.
Name of Contractor (type or print)

Village of Marvin

Village Manager

By: 
(Signature)

Title: Branch Manager

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.


Finance Officer

STANDARD TERMS & CONDITIONS

1. Acceptance. Contractor's acknowledgment of the terms of this Contract constitutes an agreement to (i) all terms and conditions set forth or referenced herein, (ii) on any attachments hereto, (iii) any applicable solicitation documentation related to this Contract (including without limitation any request for proposals or invitation for bids or Contractor's response thereto) that deal with the same subject matter as this Contract, and (iv) any other terms and conditions of a written agreement signed by Contractor and the Village that deals with the same subject matter as this Contract (collectively, the "Contract Documents"). The terms and provisions set forth in the Contract Documents shall constitute the entire agreement between Contractor and the Village with respect to the purchase by the Village of the (i) goods ("Goods") and/or (ii) services provided or work performed ("Services") as described in the Contract Documents. The agreements set forth in the Contract Documents are sometimes referred to herein as the "Contract." In the event of any conflict between any terms and conditions of the Contract Documents, the terms and conditions most favorable to the Village shall control. No additional or supplemental provision or provisions in variance herewith that may appear in Contractor's quotation, acknowledgment, invoice or in any other communication from Contractor to the Village shall be deemed accepted by or binding on the Village. The Village hereby expressly rejects all such provisions which supplement, modify or otherwise vary from the terms of the Contract Documents, and such provisions are superseded by the terms and conditions stated in the Contract Documents, unless and until the Village's authorized representatives expressly assent, in writing, to such provisions. Stenographic and clerical errors and omissions by the Village are subject to correction.
2. Entire Agreement. These terms and conditions and any other specifications contained in any other documents referenced shall constitute and represent the complete and entire agreement between the Village and Contractor and supersede all previous communications, either written or verbal with respect to the subject matter of this Contract.
3. Changes, Additions, Deletions. No changes, additions, deletions or substitutions of scope of work, specifications, terms and conditions, quantity, unit of issue, delivery date, delivery charges or price will be permitted without the prior written approval from the Village.
4. Relationship of the Parties. The Contractor is an independent contractor and not an employee of the Village. The conduct and control of the work will lie solely with the Contractor. The Contract shall not be construed as establishing a joint venture, partnership or any principal-agent relationship for any purpose between the Contractor and the Village. Employees of the Contractor shall remain subject to the exclusive control and supervision of the Contractor, which is solely responsible for their compensation.
5. Prices. If Contractor's price or the regular market price of any of the Goods or Services covered hereunder is lower than the price stated in the Contract Documents on the date of shipment of such Goods or performance of such Services, Contractor agrees to give the Village the benefit of such lower price on any such Goods or Services. In no event shall Contractor's price be higher than the price last quoted or last charged to the Village unless otherwise agreed in writing. No charges for transportation, boxing, crating, etc. are allowable unless such charges are included in the Contract Documents.
6. Taxes. Any applicable taxes shall be invoiced as a separate item.
7. Substitutions. No substitutions or cancellations shall be permitted without prior written approval from the Village.
8. Indemnification. Contractor shall indemnify and hold harmless the Village, its officers, agents, employees and assigns from and against all claims, losses, costs, damages, expenses, reasonable attorneys' fees and liability that any of them may sustain (a) arising out of Contractor's failure to comply with the standard of care or (b) arising directly out of Contractor's negligent performance or lack of performance of the terms and conditions of the Contract. In the event that any Goods or Services sold and delivered or sold and performed under the Contract shall be defective in any respect whatsoever, Contractor shall indemnify and save harmless the Village, its officers, agents, employees and assigns from all loss or the payment of all sums of money by reason of all accidents, injuries or damages to persons or property that shall happen or occur in connection with the use or sale of such Goods or Services and are contributed to by said condition. In the event Contractor, its employees, agents, subcontractors and/or lower-tier subcontractors enter premises occupied by or under the control of the Village in the performance of the Contract Documents, Contractor agrees that it will indemnify and hold harmless the Village, its officers, agents, employees and assigns, from any loss, costs, damage, expense or liability by reason of property damage or personal injury arising out of, as a result of, or in connection with such negligent or unlawful entry.
9. Invoices and Payment Terms. It is understood and agreed that orders will be shipped at the established Contract prices in effect on dates orders are placed. Invoicing at variance with this provision will subject the Contract to cancellation. Upon satisfactory delivery of the Goods or satisfactory completion of the Services, all invoices and statements shall reference the Contract number and be submitted to: Village of Marvin, Accounts Payable, 10006 Marvin School Road, Marvin, North Carolina, 28173. Payment terms are Net 30 days after receipt of correct, undisputed invoice or acceptance of Goods or Services, whichever is later.
10. Anti-Discrimination. During the performance of the Contract, Contractor shall not discriminate against or deny the Contract's benefits to any person on the basis of sexual orientation, national origin, race, ethnic background, color, religion, gender, age or disability.
11. Insurance. Whenever any work or services are provided, either in or on Village owned property, the following shall apply: The Village shall specify the insurance coverage required including, but not limited to, minimum acceptable coverage and limits, as well as a minimum acceptable insurance rating for an insurance provider. The Contractor shall provide the Village with a North Carolina Certificate of Insurance PRIOR to the commencement of any work under the Contract and agrees to maintain such insurance until the completion of the Contract. Such certificates of insurance shall be considered part of the Contract.
12. Ethics in Public Contracting. The provisions contained in Article 8 of Chapter 143 of the North Carolina General Statutes shall be applicable to all contracts entered into by the Village of Marvin for purchase of Services totaling over \$30,000. By submitting their prices and acceptance of this Contract, all Contractors certify that their bids are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other supplier, manufacturer or subcontractor in connection with their offer, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.
13. Applicable Laws and Courts. All Village Contracts for Services shall be governed in all respects by the laws of the State of North Carolina. All matters, whether sounding in contract or tort relating to the validity, construction, interpretation and enforcement of the Contract, shall be governed in all respects by the laws of the State of North Carolina and venue shall be proper only in a court of competent jurisdiction located in Union County, North Carolina. The Contractor represents and warrants that it shall comply with all applicable federal, state and local laws, regulations and orders.
14. Strict Compliance. The Village may at any time insist upon strict compliance with these terms and conditions notwithstanding any previous course of dealing or course of performance between the parties to the contrary.
15. Assignment. The Contractor shall not assign, subcontract or otherwise transfer any interest in the Contract without the prior written approval of the Village.
16. General Provisions. The Village's remedies as set forth herein are not exclusive. Any delay or omission by the Village in exercising any right hereunder, or any waiver by the Village of any single breach or default hereunder, shall not be deemed to be a waiver of such right or of any other right, breach, or default.
17. Workmanship. The Contractor warrants it shall adhere to all laws, codes, ordinances, and regulations of the United States, the State of North Carolina, the County of Union, and the Village of Marvin in the performance of the Services outlined in this Contract and any attached specifications. Contractor warrants that any finished work (for example, sidewalks) completed hereunder shall also adhere to all laws, codes,

ordinances, and regulations of the United States, the State of North Carolina, the County of Union, and the Village of Marvin. Contractor agrees that all Services will be performed in a professional and workman like manner in accordance with industry practices, and the standard of care for all design services performed under this Agreement shall be the care and skill ordinarily used by design professionals for projects of similar size, complexity, location, and difficulty around the same time.

18. **Quality and Workmanship.** All work shall be performed to the satisfaction of the Village. The work shall not be considered complete nor applicable payments rendered until the Village is satisfied with the Services provided.
19. **Default.** The Village may terminate the Contract, in whole or in part, immediately and without prior notice upon breach of the Contract by the Contractor. In addition to any other remedies available to the Village in law or equity, the Village may procure upon such terms as the Village shall deem appropriate, Services substantially similar to those so terminated, in which case the Contractor shall be liable to the Village for any excess costs for such similar supplies or services and any expenses incurred in connection therewith.
20. **Termination for Convenience.** The Village shall have the right, without assigning any reason therefore, to terminate any work under the Contract, in whole or in part, at any time at its complete discretion by providing 10 days notice in writing from the Village to Contractor. If the Contract is terminated by the Village in accordance with this paragraph, the Contractor will be paid in an amount which bears the same ratio to the total compensation as does the Services actually delivered or performed to the total originally contemplated in the Contract. The Village will not be liable to the Contractor for any costs for materials acquired or contracted for, if such costs were incurred prior to the date of this Contract.
21. **Assignment.** Contractor may not assign, pledge, or in any manner encumber Contractor's rights under this Contract, or delegate the performance of any of its obligations hereunder, without Buyer's prior, express written consent.--
22. **No Third-Party Benefits.** The Contract shall not be considered by Contractor to create any benefits on behalf of any third party. Contractor shall include in all contracts, subcontracts or other agreements relating to the Contract an acknowledgment by the contracting parties that the Contract creates no third-party benefits.
23. **Valid Contract for Services.** In order for a Contract for Services of the Village to be valid, it must be approved in accordance with the Village of Marvin Purchasing Policy and Designation of Authority for Contract Signing ("Policy") and executed by the Village Administrator or other designee authorized by the Village Council in accordance with such Policy.
24. **Buyer.** All references to Buyer or Village, throughout these terms and conditions, shall refer to the Village of Marvin, North Carolina.
25. **Contractor.** All references to Seller or Contractor throughout these terms and conditions shall refer to the contractor identified on page 1 of this Contract for Services.



Village of Marvin

Contract Routing & Execution Checklist

Instructions: This checklist **MUST** accompany all contracts submitted for filing. The Clerk's Office does not accept contracts without a fully completed checklist. The staff member originating the contract **MUST** complete this checklist and attach it to the final executed document packet.

1. Contract Information

Staff Member: Christine Amos

Contract Name: Shoup

Vendor: Durbeny

Contract Purpose: Stream rehab

2. Review & Approval

Legal Review Complete

Council Approval Meeting Date: _____

3. Signatures

Finance Director has Pre-Audited Signature Date: _____

Village Manager has Signed Signature Date: _____

Clerk has Attested (If Applicable) Signature Date: _____ N/A

Vendor has Signed Final Version Signature Date: _____

4. Filing & Recordkeeping with the Clerk's Office

Recorded with Register of Deeds (if applicable) Record Date: _____

Physical Copy Sent To Clerk's Office For Permanent Record Delivery Date: _____

PDF Copy Sent To Clerk's Office For Permanent Record Delivery Date: _____

5. Notes / Special Terms / Renewal Triggers

What is the term of the contract (if broader than a single project or scope of work)? Does it auto-renew? If so, for how long and on what date? Please include any other helpful or important information regarding this contract.

StRAP Work Authorization v2
Grantee Organization: Village of Marvin
Contract Number: 25-008-4074
Work Authorization Number: 25-008-4074-2
Effective Start Date: July 1, 2024
Effective End Date: December 31, 2026
The Grantee is hereby authorized to conduct stream debris removal activities on the stream segments described below. All requirements and conditions in the contract and Scope of Work (Attachment B) and all subsequent amendments apply to the additional work authorized by this Task Agreement. The funding amounts and match requirements in the original contract and subsequent amendments remain unchanged as a result of this Task Authorization.

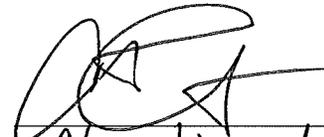
UPDATED SCOPE OF WORK

	Stream/Drainage Channel Name	Project Type	Linear Feet of Channel Proposed for Repair	Description of Change (list feet of stream added/ removed)	Description of Damage	Planned Repair and Removal from Floodplain	Number of Known Beaver Dams	Estimated Cost to Repair
A	Six Mile Tributary	Streambank stabilization	950'	950' added to project	Several blockages have been identified on this stream. Vegetative build up, logjam,s and downed trees seem to be the root cause for blockage in this segment of stream. Some artificial structures/impairments such as the collapsed culvert. These pipes are clogged and no longer allow the strem to property flow. Certain portions of repair would need streambank tabilization. Such repair could include minor bank shaping and natural bank stabilization protection. Start: 35.017438, -80.816306 Stop: 35.015830, -80.813683	Streambank stabilization will be conducted where necessary and/or where equipment and debris removal may cause such repair. All work will be encouraged to be conducted by hand; however, we understand that is not always possible and use of equipment shall be limited. All material and equipment shall be kept out of the stream channel and placed far enough back where erosion/damage to stream bank does not occur. Debris removed will be carefully managed to prevent backwash into the stream.	0	\$300,000
B	Marvin Branch Segment 1			350' removed from project				
C	Marvin Branch Segment 2			200' removed from project				
D	Marvin Branch Segment 3			300' removed from project				
TOTALS:			950				0	\$300,000

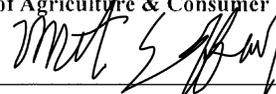
Signatures

Intending to be legally bound hereby, the parties have caused this Work Authorization, to become effective as of the last date of signature by the Division of Soil & Water Conservation.

Grantee

Signature: 
 Name and Title: Christina Amos, manager
 Date: 9/16/25

North Carolina Department of Agriculture & Consumer Services – Division of Soil & Water Conservation

Signature: 
 Name and Title: Matt Safford, StRAP Manager
 Date: 9/16/2025



Steve Troxler
Commissioner

North Carolina Department of Agriculture
and Consumer Services

N. David Smith
Chief Deputy Commissioner

August 26, 2024

Christina Amos
Village of Marvin
10006 Marvin Weddington Road
Marvin, NC 28173

NOTIFICATION OF FUNDING OFFER

Dear Christina Amos,

On behalf of Commissioner Steve Troxler and the North Carolina Department of Agriculture and Consumer Services – Division of Soil & Water Conservation, I am pleased to inform you that \$300,000.00 for your project, StreamFlow Rehabilitation Assistance Program (StRAP), was approved.

The original contract packet must be completed and returned to the NCDA&CS, making sure that the contracts and certain forms have been signed, dated, and witnessed. Since this is a witness contract, there are two (2) options to complete the contract. It is acceptable to have everyone sign the contract electronically or submit two (2) original signed contracts. Depending on the method you choose, please return as shown below:

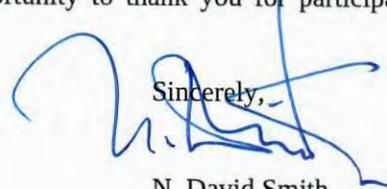
Electronic Signed Contract:
Matt Safford
StRAP Manager
matt.safford@ncagr.gov

Original signatures mail:
Matt Safford, StRAP Manager
N.C. Department of Agriculture & Consumer Services, Division Name
1614 Mail Service Center
Raleigh, NC 27699-1614

By completing these documents, you are agreeing to the specific stipulations, the general terms and conditions and specific reporting requirements. All authorized representative signatures must be in **blue or black** ink. Please use the Contract Check Off List to ensure all attachments are included and are in the correct order for each contract packet. **Failure to complete and return the contract packets within 60 days of this letter or the deadline of any written extension provided will result in funding cancellation for the project.**

One fully-executed, an original contract will be returned to you for your records. If you have any questions about your contract or any of the forms contained in your offer packet, please call Matt Safford at 919-707-3784, or feel free to send an email to matt.safford@ncagr.gov.

I would like to take this opportunity to thank you for participating in the StreamFlow Rehabilitation Program (StRAP).



Sincerely,

N. David Smith
Chief Deputy Commissioner



NORTH CAROLINA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

Steven W. Troxler, Commissioner

Contract Check Off List for Grantee (Government State Funds)

INSTRUCTIONS: Check the "Yes" boxes in the left column for the document titles that are being returned with the two signed, dated and witnessed copies of the contract, with signatures in blue ink. Be sure to include all the other documents specified in your contract package. If "No" has been checked off for you, that document is not required for this grant program or project.

GRANTEE ORGANIZATION NAME: Village of Marvin

PROJECT TITLE/NAME: Streamflow Rehab Assistance Program

CONTRACT #: 25-008-4074

<i>GO Entities Only Check One Box</i>	<i>Document Title</i>	<i>Department Use – Documents Attached or On File</i>		<i>Grants and Contracts- Documents Attached or On File</i>		
Yes	No	Contractual "Check Off List for Grantee	Yes	No	Yes	No
Yes	No	Contract Cover (To be signed, dated & witnessed)	Yes	No	Yes	No
Yes	No	Attachment A – General Terms and Conditions – Government/University	Yes	No	Yes	No
Yes	No	Attachment B – Scope of Work (includes Timeline and Line Item Budget)	Yes	No	Yes	No
Yes	No	Attachment C – Certifications and Assurances Section	Yes	No	Yes	No
Yes	No	Attachment D – NC OpenBook Supplemental Information	Yes	No	Yes	No
Yes	No	Attachment E – Signature Card	Yes	No	Yes	No
Yes	No	Attachment F – StreamFlow Assistance 50% Progress Report***	Yes	No	Yes	No
Yes	No	Attachment G – Streamflow Rehabilitation Assistance Program (SIRAP) Quarterly Progress Report***	Yes	No	Yes	No
Yes	No	Attachment H- Request for Payment form***	Yes	No	Yes	No
Yes	No	Attachment I – Request of payment Summary***	Yes	No	Yes	No
Yes	No	Attachment J- Equipment Log***	Yes	No	Yes	No
Yes	No	Attachment K – Time Log***	Yes	No	Yes	No

*** NC Substitute W-9 and VEP forms are already on file and won't be required to be collected with contract.

**STATE OF NORTH CAROLINA
COUNTY OF WAKE**



Department Use Only
FUNDING CODE:
1000-203788-56400067-1004802
AMOUNT: \$300,000
TIME PERIOD: July 1, 2024 to December
31, 2026

**North Carolina Department of Agriculture and Consumer Services
Division of Soil & Water Conservation**

Streamflow Rehabilitation Assistance Program – Government

Contract Number: 25-008-4074

This Contract is hereby entered into by and between the North Carolina Department of Agriculture and Consumer Services, **Division of Soil & Water Conservation** (the "Agency") and Village of Marvin, ("Grantee"), and referred to collectively as the "Parties." The Grantee's federal tax identification number is 56-1998217 and is physically located in Union and is further located at 10006 Marvin Weddington Road Marvin, NC 28173.

The purpose of this Contract is to assist in protecting and restoring the integrity of drainage infrastructure through routine maintenance to existing streams and drainage ways. The Grantee's project title is Streamflow Rehabilitation Assistance Program. This Contract is funded by State appropriations provided through Session Law 2023-134, House Bill 259 Section -5.6(d). Funds awarded under this Contract must be used for the purposes for which they are intended and provided in Session Law 2023-134, House Bill 259 Section -5.6(d).

The Grantee's fiscal year ends June 30.

Contract Documents:

This Contract consists of the Grant Contract and its attachments, all of which are identified by name as follows:

1. This Contract
2. General Terms and Conditions (Attachment A)
3. Scope of Work providing details on the stream debris removal and watershed structure projects and timelines (Attachment C)
4. NC Openbook Supplemental Information (Attachment D)
5. Signature Card (Attachment E)
6. Streamflow Rehabilitation Assistance Program (StRAP) Quarterly Progress Report (Attachment F)
7. Streamflow Assistance 50% Progress Report (Attachment G)

8. Request for payment form (Attachment H)
9. Equipment log

These documents constitute the entire agreement between the Parties and supersede all prior oral or written statements or agreements.

I. Precedence Among Contract Documents:

In the event of a conflict between or among the terms of the Contract Documents, the terms in the Contract Document with the highest relative precedence shall prevail. The order of precedence shall be the order of documents as listed in Paragraph 1, above, with the first-listed document having the highest precedence and the last-listed document having the lowest precedence. If there are multiple Contract Amendments, the most recent amendment shall have the highest precedence and the oldest amendment shall have the lowest precedence.

II. Effective Period:

This Contract shall be effective on July 1, 2024, and shall terminate on December 31, 2026, with the option to extend, if mutually agreed upon, through a written amendment as provided for in the General Terms and Conditions as described in Attachment A.

III. Grantee's Duties:

1. The Grantee will attend a virtual Pre-award meeting within 45 days for receiving the contract offer.
2. The Grantee has 60 days to return the original contract from the offer letter. If more than 60 days is needed, a written explanation providing a detailed explanation for the extension need is required. The letter will also need to include a date that the contract will be signed and returned. The letter will be subject to approval. Failure to return the contract within 60 days or a written explanation will result in funding cancellation for the project.
3. The Grantee shall provide the planned repairs to the named stream/drainage channels and watershed projects listed in Attachment B, Scope of Work. The Grantee shall be responsible for obtaining the necessary landowner authorization for site access and all permits needed to complete the planned work.
4. The Grantee will need to have Fifty percent (50%) of award funds committed (i.e., encumbered) with vendors by August 28, 2025. If by August 28, 2025, this condition hasn't been met, the grantee's remaining unencumbered funds are subject to reversion and reallocation by the Commission.

IV. Agency's Duties:

The Agency shall pay the Grantee in the manner and in the amounts specified in the Contract Documents. The total amount paid by the Agency to the Grantee under this Contract shall not exceed \$300,000.00. The funds are provided from State appropriations allocated through Session Law 2023-134, House Bill 259 Section -5.6(d). By August 28, 2025, fifty percent (50%) of the award amount should be encumbered by contracts.

There are no matching requirements from the Grantee.

V. Conflict of Interest Policy:

The Agency has determined that the Grantee is a government agency and is not subject to N.C.G.S. § 143C-6-23(b). Therefore, the Grantee is not required to file a Conflict-of-Interest Policy with the Agency prior to disbursement of funds.

VI. Statement of No Overdue Tax Debts:

The Agency has determined that Grantee is a government agency and is not subject to N.C.G.S. § 143C-6-23(c). Therefore, the Grantee is not required to file a Statement of No Overdue Tax Debts with the Agency prior to disbursement of funds.

VII. Reversion of Unexpended Funds:

Any unexpended grant funds shall revert to the Agency upon termination of this Contract.

VIII. Reporting Requirements:

State Reporting Requirements [N.C.G.S. 143C-6-23]:

1. The Agency has determined that the Grantee is a governmental entity and is not subject to the State reporting requirements mandated by N.C.G.S. § 143C-6-23. Therefore, the Grantee does not have to file annual electronic reports with the NC Office of State Budget & Management.

Agency Reporting Requirements:

1. The Grantee shall submit quarterly progress reports, with each report due on or before the last day of January, April, July, and October, continuing until the project is complete and final project report is approved.
2. First report will be due on or before the last day of October 30, 2024.
3. The quarterly report will be submitted using the form shown as Attachment FJ- Streamflow Rehabilitation Assistance Program (StRAP) Progress Report. This report will be used for the quarterly and final report. Each report shall include a narrative summary of the work accomplished that quarter and for the project to date, as well as progress toward completing the Project Scope of Work, and a separate budget report that is a summary of cash and in-kind expenditures for the quarter and total project.
4. The quarterly progress report and budget report is required even if no activity has occurred for the quarter and no reimbursement is requested for the quarter.

5. Grantee shall submit a Streamflow Assistance 50% Progress Report by end of business hours on August 28, 2025. The report will provide detailed information on the contracts that have been approved and executed for the project. This report requires the grantee to show 50% of contract funds being encumbered by contracts. The report is also subject to the review and approval of the Soil & Water Commission.
6. Grantee shall submit a Final Financial report and Final Invoice no later than 60 days after the expiration or termination of this Contract.
7. Failure to submit timely and accurate reports will delay action on submitted invoices. Repeated reporting issues can also result in further discussion with the Soil & Water Commission to determine continued participation in the program.
8. All reports, including 50% Progress Report needs to be submitted to StRAP.Report@ncagr.gov.

IX. Payment Provisions:

All Request for Payment forms should be received no more than monthly. Payment requests will be submitted using **Attachment H- StreamFlow Rehabilitation Assistance Program Project Invoice Form**, along with an appropriate certified invoice showing expenditures and matching funds, if applicable, for the current period and cumulatively for the entire project. Upon approval by the Agency payment shall be made within 60 days. All payments are subject to the availability of funds and verification that the Grantee is current on all reporting requirements.

A portion of the funds awarded to the Grantee may be used to reimburse actual documented technical assistance, and administrative expenses for the project reimbursement of technical assistance, and administrative expenses shall be limited to 15% of total reimbursed expenditures.

The Grantee shall expend funds in accordance with G.S. 143C-6-23 (f1)(f2)(j). The Grantee shall account for any income earned, which may result from any funds awarded under this Contract, on the Agency "Program Project Invoice" form. Eligible uses of income earned are:

1. Expanding the project or program.
2. Continuing the project or program after grant ends; or
3. Supporting other projects or programs that further the broad objectives of the grant program.

This contract can be terminated prior to the original end date once the Grantee completes a virtual close out meeting and submit a final report. If this Contract is terminated prior to the original end date, the Grantee may submit a final Request for Payment form within 60 days of the date of the final report. All unexpended funds shall remain with the Agency. The Agency shall have no obligation to honor requests for payment based on expenditure reports submitted later than 60 days after termination or expiration of the Contract period.

Reimbursement requests shall be completed on a "Request for Reimbursement" form furnished to the Grantee by the Agency. All reimbursement forms must include support documentation, including but not limited to copies of invoices, individual time sheets and travel logs that have been signed by the employee and supervisor, salary registers or payrolls that include fringe benefits, hourly rates of pay, and signature of the Grantee's responsible financial person, canceled checks and lease agreements.

Eligible expenditures for payment must be within the effective period noted in the Contract. Reimbursement may not be considered prior to the submission and final execution of the Contract.

All travel reimbursement shall be made in accordance with the current State rates, at the time of the expenditure, and shall be made in accordance with the "State Budget Manual" <https://www.osbm.nc.gov/budget/budget-manual>

All matching funds, including in-kind and cash, must be spent concurrently with funds provided by the Contract. Both types of matching funds expended shall be accounted for on the monthly certified invoices.

All request for payments shall be emailed to StRAP.Reimbursement@ncagr.gov

Indirect costs are not allowable expenditures under this Contract

X. Fraud, Waste and Abuse:

The grantee, including its employees, contractors, agents, interns, or any subrecipients, shall report suspected fraud, waste and abuse activities related to any state employee, vendor or sub recipient of state funds or state resources.

There are three methods for reporting suspected fraud, waste or abuse (FWA). Grantee can report suspected FWA directly to the Agency's Audit Services Division, to any member of the Agency's management team or through the FWA reporting website below.

N.C.G.S. 143-748 permits Audit Services to treat all information as confidential. However, if an individual wishes to remain anonymous, reports can be submitted through the FWA reporting website: <https://www.ncagr.gov/internalaudit/ReportForm.htm>

Under no circumstances should an individual attempt to personally conduct investigations or interviews /interrogations related to any suspected FWA act.

Investigation results will not be disclosed or discussed with anyone other than those who have a legitimate need to know. This is important to avoid damaging the reputations of persons suspected but subsequently found innocent of wrongful conduct.

It is the Agency's policy that employees/contractors/sub recipients/interns will not suffer retaliation or harassment for reporting in good faith any FWA concerns. The Agency encourages openness and will support anyone who raises genuine concerns in good faith under this policy, even if they turn out to be unsubstantiated.

XI. Contract Administrators:

All notices permitted or required to be given by one Party to the other and all questions about the Contract from one Party to the other shall be addressed and delivered to the other Party's Contract Administrator. The name, post office address, street address, telephone number, fax number, and email address of the Parties' respective initial Contract Administrator are set out below. Either Party may change the name, post office address, street address, telephone number, fax number, or email address of its Contract Administrator by giving timely written notice to the other Party.

For the Agency:

IF DELIVERED BY US POSTAL SERVICE	IF DELIVERED BY ANY OTHER MEANS
Matt Safford 1614 Mail Service Center Raleigh, NC 27699-1614 Telephone: 919-707-3784 Email: matt.safford@ncagr.gov Grants & Contracts General Email: agr.grants@ncagr.gov	Matt Safford Division of Soil & Water Conservation 216 West Jones Street Raleigh, NC 27603

For the Grantee:

Grantee Contract Administrator- Mailing Address	Grantee Principal Investigator or Key Personnel
Village of Marvin 10006 Marvin Weddington Road Marvin, NC 28173	Same

XII. Supplementation of Expenditure of Public Funds:

The Grantee assures that funds received pursuant to this Contract shall be used only to supplement, not to supplant, the total amount of federal, State and local public funds that the Grantee otherwise expends for activities involved with specialty services and related programs. Funds received under this Contract shall be used to provide additional public funding for such services. The funds shall not be used to reduce the Grantee's total expenditure of other public funds for such services.

XIII. Disbursements:

As a condition of this Contract, the Grantee acknowledges and agrees to make disbursements in accordance with the following requirements:

1. Will implement or already have implemented adequate internal controls over disbursements.
2. Pre-audit all invoices presented for payment to determine:
3. Validity and accuracy of payment
4. Payment due date
5. Adequacy of documentation supporting payment
6. Legality of disbursement

7. Assure adequate control of signature stamps/plates.
8. Assure adequate control of negotiable instruments; and
9. Have procedures in place to ensure that account balance is solvent and to reconcile the account monthly.

XIV. Outsourcing:

The Grantee certifies that it has identified to the Agency all jobs related to the Contract that have been outsourced to other countries, if any. Grantee further agrees that it will not outsource any such jobs during the term of this Contract without providing prior notice to the Agency.

XV. N.C.G.S. § 133-32 and Executive Order 24:

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State employee of any gift from anyone with a Contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement or Contract, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employee of your organization.

Signature Warranty:

The undersigned represent and warrant that they are authorized to bind their principals to the terms of this Contract.

IN WITNESS WHEREOF, the Grantee and the Agency execute this Contract in **two (2)** originals, one (1) of which is retained by the Grantee and one (1) which is retained by the Agency. **OR** the Grantee and the Agency execute this Contract as an electronic original, each party will be provided a fully executed copy via electronic mail. It is required that each party retain a fully executed copy of this contract.

GRANTEE:

Signature of Authorized Representative	Date
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Printed Name	Title
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WITNESS:

Signature	Date
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Printed Name	Title
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North Carolina Department of Agriculture and Consumer Services

Signature of Authorized Representative	Date
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N. David Smith, Chief Deputy Commissioner

PUBLIC SECTOR CONTRACTS (Including Local Governments)**General Terms and Conditions****DEFINITIONS**

Unless indicated otherwise from the context, the following terms shall have the following meanings in this Contract. All definitions are from 9 NCAC 3M.0102 unless otherwise noted. If the rule or statute that is the source of the definition is changed by the adopting authority, the change shall be incorporated herein:

- (1) "Agency" (as used in the context of the definitions below) shall mean and include every public office, public officer or official (State or local, elected or appointed), institution, board, commission, bureau, council, department, authority or other unit of government of the State or of any county, unit, special district or other political subagency of government. For other purposes in this Contract, "Agency" shall mean the entity identified as one of the parties hereto.
- (2) "Audit" means an examination of records or financial accounts to verify their accuracy.
- (3) "Certification of Compliance" means a report provided by the Agency to the Office of the State Auditor that states that the Grantee has met the reporting requirements established by this Subchapter and included a statement of certification by the Agency and copies of the submitted grantee reporting package.
- (4) "Compliance Supplement" refers to the North Carolina State Compliance Supplement, maintained by the State and Local Government Finance Agency within the North Carolina Department of State Treasurer that has been developed in cooperation with agencies to assist the local auditor in identifying program compliance requirements and audit procedures for testing those requirements.
- (5) "Contract" means a legal instrument that is used to reflect a relationship between the agency, grantee, and subgrantee.
- (6) "Fiscal Year" means the annual operating year of the non-State entity.
- (7) "Financial Assistance" means assistance that non-State entities receive or administer in the form of grants, loans, loan guarantees, property (including donated surplus property), cooperative agreements, interest subsidies, insurance, food commodities, direct appropriations, and other assistance. Financial assistance does not include amounts received as reimbursement for services rendered to individuals for Medicare and Medicaid patient services.
- (8) "Financial Statement" means a report providing financial statistics relative to a given part of an organization's operations or status.
- (9) "Grant" means financial assistance provided by an agency, grantee, or subgrantee to carry out activities whereby the grantor anticipates no programmatic involvement with the grantee or subgrantee during the performance of the grant.
- (10) "Grantee" has the meaning in G.S. 143C-6-23(a)(2): a non-State entity that receives a grant of State funds from a State agency, department, or institution but does not include any non-State entity subject to the audit and other reporting requirements of the Local Government Commission. For other purposes in this Contract, "Grantee" shall mean the entity identified as one of the parties hereto.
- (11) "Grantor" means an entity that provides resources, generally financial, to another entity in order to achieve a specified goal or objective.
- (12) "Non-State Entity" has the meaning in N.C.G.S. 143C-1-1(d)(18): Any of the following that is not a State agency: an individual, a firm, a partnership, an association, a county, a corporation, or any other organization acting as a unit. The term includes a unit of local government and public authority.
- (13) "Public Authority" has the meaning in N.C.G.S. 143C-1-1(d)(22): A municipal corporation that is not a unit of local government or a local governmental authority, board, commission, council, or agency that (i) is not a municipal corporation and (ii) operates on an area, regional, or multiunit basis, and the budgeting and accounting systems of which are not fully a part of the budgeting and accounting systems of a unit of local government.
- (14) "Single Audit" means an audit that includes an examination of an organization's financial statements, internal controls, and compliance with the requirements of federal or State awards.
- (15) "Special Appropriation" means a legislative act authorizing the expenditure of a designated amount of public funds for a specific purpose.
- (16) "State Funds" means any funds appropriated by the North Carolina General Assembly or collected by the State of North Carolina. State funds include federal

financial assistance received by the State and transferred or disbursed to non-State entities. Both federal and State funds maintain their identity as they are subgranted to other organizations. Pursuant to N.C.G.S. 143C-6-23(a)(1), the terms "State grant funds" and "State grants" do not include any payment made by the Medicaid program, the Teachers' and State Employees' Comprehensive Major Medical Plan, or other similar medical programs.

(17) "Subgrantee" has the meaning in G.S. 143C-6-23(a)(3): a non-State entity that receives a grant of State funds from a grantee or from another subgrantee but does not include any non-State entity subject to the audit and other reporting requirements of the Local Government Commission.

(18) "Unit of Local Government" has the meaning in G.S. 143C-1-1(d)(29): A municipal corporation that has the power to levy taxes, including a consolidated city-county as defined by G.S. 160B-2(1), and all boards, agencies, commissions, authorities, and institutions thereof that are not municipal corporations.

Relationships of the Parties

Independent Contractor: The Grantee is and shall be deemed to be an independent Contractor in the performance of this Contract and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. The Grantee represents that it has, or shall secure at its own expense, all personnel required in performing the services under this agreement. Such employees shall not be employees of, or have any individual contractual relationship with, the Agency.

Subcontracting: The Grantee shall not subcontract any of the work contemplated under this Contract without prior written approval from the Agency. Any approved subcontract shall be subject to all conditions of this Contract. Only the subcontractors or subgrantees specified in the Contract documents are to be considered approved upon award of the Contract. The Agency shall not be obligated to pay for any work performed by any unapproved subcontractor or subgrantee. The Grantee shall be responsible for the performance of all of its subgrantees and shall not be relieved of any of the duties and responsibilities of this Contract.

Subgrantees: The Grantee has the responsibility to ensure that all subgrantees, if any, provide all information necessary to permit the Grantee to comply with the standards set forth in this Contract.

Assignment: No assignment of the Grantee's obligations or the Grantee's right to receive payment hereunder shall be permitted. However, upon written request approved by the issuing purchasing authority, the State may:

- (a) Forward the Grantee's payment check(s) directly to any person or entity designated by the Grantee, or
- (b) Include any person or entity designated by Grantee as a joint payee on the Grantee's payment check(s).

In no event shall such approval and action obligate the State to anyone other than the Grantee and the Grantee shall remain responsible for fulfillment of all Contract obligations.

Beneficiaries: Except as herein specifically provided otherwise, this Contract shall inure to the benefit of and be binding upon the parties hereto and their respective successors. It is expressly understood and agreed that the enforcement of the terms and conditions of this Contract, and all rights of action relating to such enforcement, shall be strictly reserved to the Agency and the named Grantee. Nothing contained in this document shall give or allow any claim or right of action whatsoever by any other third person. It is the express intention of the Agency and Grantee that any such person or entity, other than the Agency or the Grantee, receiving services or benefits under this Contract shall be deemed an incidental beneficiary only.

Indemnity

Indemnification: The Grantee agrees to indemnify and hold harmless the Agency, including any of its Divisions, and any of its officers, agents and employees, from liability of any kind, and from any claims of third parties arising out of any act or omission of the Contractor in connection with the performance of this Contract to the extent permitted by law.

Default and Termination

Termination by Mutual Consent: The Parties may terminate this Contract by mutual consent with 60 days notice to the other party, or as otherwise provided by law.

Termination for Cause: If, through any cause, the Grantee shall fail to fulfill its obligations under this Contract in a timely and proper manner, the Agency shall have the right to terminate this Contract by giving written notice to the Grantee and specifying the effective date thereof.

In that event, all finished or unfinished deliverable items prepared by the Grantee under this Contract

shall, at the option of the Agency, become its property and the Grantee shall be entitled to receive just and equitable compensation for any satisfactory work completed on such materials, minus any payment or compensation previously made.

Notwithstanding the foregoing provision, the Grantee shall not be relieved of liability to the Agency for damages sustained by the Agency by virtue of the Grantee's breach of this agreement, and the Agency may withhold any payment due the Grantee for the purpose of setoff until such time as the exact amount of damages due the Agency from such breach can be determined. The filing of a petition for bankruptcy by the Grantee shall be an act of default under this Contract.

Waiver of Default: Waiver by the Agency of any default or breach in compliance with the terms of this Contract by the Grantee shall not be deemed a waiver of any subsequent default or breach and shall not be construed to be modification of the terms of this Contract unless stated to be such in writing, signed by an authorized representative of the Agency and the Grantee and attached to the Contract.

Availability of Funds: The parties to this Contract agree and understand that the payment of the sums specified in this Contract is dependent and contingent upon and subject to the appropriation, allocation, and availability of funds for this purpose to the Agency.

Force Majeure: Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by any act of war, hostile foreign action, nuclear explosion, riot, strikes, civil insurrection, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.

Survival of Promises: All promises, requirements, terms, conditions, provisions, representations, guarantees, and warranties contained herein shall survive the Contract expiration or termination date unless specifically provided otherwise herein, or unless superseded by applicable federal or State statutes of limitation.

Intellectual Property Rights

Copyrights and Ownership of Deliverables: All deliverable items produced pursuant to this Contract are the exclusive property of the Agency. The Grantee shall not assert a claim of copyright or other property interest in such deliverables.

Compliance with Applicable Laws

Compliance with Laws: The Grantee shall comply with all laws, ordinances, codes, rules, regulations,

and licensing requirements that are applicable to the conduct of its business, including those of federal, State, and local agencies having jurisdiction and/or authority.

Equal Employment Opportunity: The Grantee shall take affirmative action in complying with all federal and State statutes and all applicable requirements concerning fair employment of people with disabilities, and concerning the treatment of all employees without regard to discrimination by reason of race, color, religion, sex, national origin or disability. For additional information see Title VI of the Civil Rights Act of 1964 (42 U.S.C., 2000d, 2000e-16), Title XI of the Education amendments of 1972, as amended (20 U.S.C. 1681-1683 and 1685-1686), and section 504 of the Rehabilitation Act of 1973 as amended (29 U.S.C. 794).

Executive Order 24: In accordance with Executive Order 24, issued by Governor Perdue, and N.C.G.S. § 133-32, a vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, vendor, or grantee), is prohibited from making gifts or giving favors to any employee of the Agency of Agriculture and Consumer Services. This prohibition covers those vendors, contractors, and/or grantees who:

- (a) have a Contract with a governmental Agency; or
- (b) have performed under such a Contract within the past year; or
- (c) anticipate bidding on such a Contract in the future.

For additional information regarding the specific requirements and exemptions, vendors, contractors, and/or grantees are encouraged to review Executive Order 24 and N.C.G.S. § 133-32.

Confidentiality

Confidentiality: Any information, data, instruments, documents, studies or reports given to or prepared or assembled by the Grantee under this agreement shall be kept as confidential and not divulged or made available to any individual or organization without the prior written approval of the Agency. The Grantee acknowledges that in receiving, storing, processing or otherwise dealing with any confidential information it will safeguard and not further disclose the information except as otherwise provided in this Contract.

Oversight

Access to Persons and Records: The State Auditor and the using agency's internal auditors shall have

access to persons and records as a result of all Contracts or grants entered into by State agencies or political subdivisions in accordance with General Statute 147-64.7 and Session Law 2010-194, Section 21 (i.e., the State Auditors and internal auditors may audit the records of the contractor during the term of the Contract to verify accounts and data affecting fees or performance).

Record Retention: Records shall not be destroyed, purged or disposed of without the express written consent of the Agency. State basic records retention policy requires all grant records to be retained for a minimum of five years or until all audit exceptions have been resolved, whichever is longer. If the Contract is subject to federal policy and regulations, record retention may be longer than five years since records must be retained for a period of three years following submission of the final Federal Financial Status Report, if applicable, or three years following the submission of a revised final Federal Financial Status Report. Also, if any litigation, claim, negotiation, audit, disallowance action, or other action involving this Contract has been started before expiration of the five-year retention period described above, the records must be retained until completion of the action and resolution of all issues which arise from it, or until the end of the regular five-year period described above, whichever is later.

Miscellaneous

Choice of Law: The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, are governed by the laws of North Carolina. The Grantee, by signing this Contract, agrees and submits, solely for matters concerning this Contract, to the exclusive jurisdiction of the courts of North Carolina and agrees, solely for such purpose, that the exclusive venue for any legal proceedings shall be Wake County, North Carolina. The place of this Contract and all transactions and agreements relating to it, and their situs and forum, shall be Wake County, North Carolina, where all matters whether sounding in Contract or tort, relating to the validity, construction, interpretation, and enforcement shall be determined.

Headings: The Section and Paragraph headings in these General Terms and Conditions are not material parts of the agreement and should not be used to construe the meaning thereof.

Time of the Essence: Time is of the essence in the performance of this Contract.

Care of Property: The Grantee agrees that it shall be responsible for the proper custody and care of any property furnished to it for use in connection with the performance of this Contract and will reimburse the

Agency for loss of, or damage to, such property. At the termination of this Contract, the Grantee shall contact the Agency for instructions as to the disposition of such property and shall comply with these instructions.

Amendment: This Contract may not be amended orally or by performance. Any amendment must be made in written form and executed by duly authorized representatives of the Agency and the Grantee.

Severability: In the event that a court of competent jurisdiction holds that a provision or requirement of this Contract violates any applicable law, each such provision or requirement shall continue to be enforced to the extent it is not in violation of law or is not otherwise unenforceable and all other provisions and requirements of this Contract shall remain in full force and effect.

Travel Expenses: Reimbursement to the Grantee for travel mileage, meals, lodging and other travel expenses incurred in the performance of this Contract shall be reasonable and supported by documentation. State rates shall be used. International travel shall not be reimbursed under this Contract.

Sales/Use Tax Refunds: If eligible, the Grantee and all subgrantees shall: (a) ask the North Carolina Department of Revenue for a refund of all sales and use taxes paid by them in the performance of this Contract, pursuant to G.S. 105-164.14; and (b) exclude all refundable sales and use taxes from all reportable expenditures before the expenses are entered in their reimbursement reports.

Advertising: The Grantee shall not use the award of this Contract as a part of any news release or commercial advertising.

Indirect Costs Policy: The Agency has adopted a "Zero" policy that indirect costs are unallowable expenditures in all State funded grant applications and/or grant guidance, informational or directional documents.

Allowable Uses of State Funds: Expenditures of State funds by any grantee shall be in accordance with the Cost Principles outlined in the Office of Management and Budget (OMB) CFR Title 2, Part 200 Uniform Administrative Requirements, as applicable. If the grant funding includes federal sources, the grantee shall ensure adherence to the cost principles established by the Federal Office of Management and Budget. [09 NCAC 03M.020]

StRAP Revised Scope of Work

Applicant Name:

Village of Marvin

SCOPE OF WORK

Stream/Drainage Channel Name	Project Type	Linear Feet of Channel Proposed for Repair	Description of Damage	Planned Repair and Removal from Floodplain	Number of Known Beaver Dams	Estimated Cost to Repair
Marvin Branch Segment 1	Streambank Stabilization	350	<p>Vegative build up, logjams, and downed trees seem to be the root cause for blockage in this segment of stream; however, live beaver dams have been located along this site. The areas adjacent and downstream from this stream are constantly flooding during a minor storm event. During major storms, public infrastructure, personal property, and public safety have become a growing concern as roads are constantly flooding leaving closures and safety exposures.</p> <p>Start: 35.006, -80.817 Stop: 35.007, -80.818</p>	<p>Necessary repairs include vegetative debris removal. Certain portions of repair would also need streambank stabilization. Such repair could include minor bank shaping and natural bank stabilization protection</p>	0	\$100,000

B	Marvin Branch Segment 2	Streambank Stabilization	200	<p>Vegative build up, logjams, and downed trees seem to be the root cause for blockage in this segment of stream; however, live beaver dams have been located along this site. The areas adjacent and downstream from this stream are constantly flooding during a minor storm event. During major storms, public infrastructure, personal property, and public safety have become a growing concern as roads are constantly flooding leaving closures and safety exposures. Start: 35.010, -80.821 Stop: 35.010, -80.822</p>	<p>Necessary repairs include vegetative debris removal. Certain portions of repair would also need streambank stabilization. Such repair could include minor bank shaping and natural bank stabilization protection</p>	0	\$100,000
C	Marvin Branch Segment 3	Ste	300	<p>Vegative build up, logjams, and downed trees seem to be the root cause for blockage in this segment of stream; however, live beaver dams have been located along this site. The areas adjacent and downstream from this stream are constantly flooding during a minor storm event. During major storms, public infrastructure, personal property, and public safety have become a growing concern as roads are constantly flooding leaving closures and safety exposures. Start: 35.012, -80.823 Stop: 35.012, -80.824</p>	<p>Necessary repairs include vegetative debris removal. Certain portions of repair would also need streambank stabilization. Such repair could include minor bank shaping and natural bank stabilization protection</p>	0	\$100,000
TOTALS:			850			0	\$300,000

**CERTIFICATIONS REGARDING LOBBYING, NONPROCUREMENT, DEBARMENT,
SUSPENSION AND DRUG-FREE WORKPLACE**

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Signature of this form provides for compliance with certification requirements under 2 CFR, Subtitle B, Chapter IV, Part 417, "Nonprocurement Debarment and Suspension," Part 418, "New Restrictions on Lobbying," and Part 421, "Requirements for Drug-Free Workplace (Financial Assistance)," and 2 CFR Part 180. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Agriculture & Consumer Services determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

As required by authority: 31 U.S.C. 1352 and U.S.C. 301 and implemented at 2 CFR Part 180, for persons entering into a grant or cooperative agreement over \$100,000, as defined at 2 CFR Section 418.110, the applicant certifies that to the best of their knowledge and belief, that:

- 1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal contract, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form -LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.
- 3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

2. NONPROCUREMENT DEBARMENT AND SUSPENSION

As required by Executive Order 12549, Debarment and Suspension, and implemented at 2 CFR Part 180 and 2CFR Part 417, for prospective participants in primary covered transactions, as defined at 2 CFR 180.435 and Subpart C, 417.332, the applicant certifies that it and its principals:

- a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b) Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

- c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph 2. (a) (b) of this certification.
- d) Have not within a three-year period preceding this application had one or more public transaction (Federal, State, or local) terminated for cause or default.
- e) Agree to include a term or condition in lower tier covered transactions requiring lower tier participants to comply with subpart C of the OMB guidance in 2 CFR part 180, as supplemented by subpart C of Part 417.

Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this certification.

3. DRUG-FREE WORKPLACE (GRANTEES OTHER THAN INDIVIDUALS)

As required by the Drug-Free Workplace Act of 1988, and implemented at 2 CFR Part 182, Subparts B, and C, for grantees:

The applicant certifies that it will:

- a) Make a good faith effort, on a continuing basis, to maintain a drug-free workplace. You must agree to do so as a condition for receiving any award covered by this part.
- b) Publish a drug-free workplace statement and establish a drug-free awareness program for your employees (see Sections 182.205 through 182.220); and
- c) Take actions concerning employees who are convicted of violating drug statutes in the workplace (see Section 182.225), including notification to any Federal agency on whose award the convicted employee was working and within 30 days take appropriate personnel action against the employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973 (29 U.S.C. 794), as amended; or require the employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for these purposes by a Federal, State or local health, law enforcement, or other appropriate agency.
- d) You must identify all known workplaces under your Federal awards (see Section 182.230).

The grantee must provide the location site(s) for the performance of work done in connection with the specific grant.

Place(s) of Performance (Street address, city, county, state, zip code)

_____	_____
_____	_____
_____	_____

DRUG-FREE WORKPLACE (GRANTEES WHO ARE INDIVIDUALS)

As required by the Drug-Free Workplace Act of 1988, and implemented at 2 CFR Part 182:

- A. As a condition of the grant, I certify that I will comply with drug-free workplace requirements in Subpart B (or Subpart C, if the recipient is an individual) of part 421, which adopts the Government-wide implementation (2 CFR part 182) of sec. 5152-5158 of the Drug Free Workplace Act of 1988 (Pub.L100-690, Title V, Subtitle D; 41 U.S.C. 701-707).

B. I agree to notify the agency as required by 2 CFR 182.300(b) of any conviction for a criminal drug offense within ten days.

Notice shall include the identification number(s) of each affected grant.

As the duly authorized representative of the Grantee, I hereby certify and state to the best of my knowledge and belief, that the Grantee will comply with the above certifications.

Grantee Organization Name

Signature of Authorized Representative

Date

Printed Name of Authorized Representative

Title

NC OpenBook Supplemental Information

Instructions: Complete the information below and return it to the Contract Administrator identified in your original contract. This information must be submitted as part of your contract. If you have questions, please contact the Contract Administrator or the Alternate Contact as reflected in your contract.

GRANTEE INFORMATION:

Grantee Name:

County of Residence:

District Number *(MUST BE FILLED IN):*

Tax Id Number:

UEI Number**:

I have started the UEI process but not received a UEI number.

**Due to the SAM.gov migration from DU& Bradstreet, obtaining a UEI number has created unforeseen issues with the SAM.gov website search engines and portals. Due to the massive backlog in validation ticket issues, we are not requiring the UEI numbers at this time; however, if you have started the process, please let us know OR if you UEI number please provide it.*

Fiscal Year End:

Grantee's Website:

(MM/DD) Format

PROJECT INFORMATION:

Brief Description and Background/History of your Organization: Be sure to include the number of years in existence, number of employees, mission and goals of your organization. MAX CHARACTERS: 250

Current project timeline: Begin date

End Date

Expected outcomes and specific deliverables: Expected outcome is intended result of your grant program. The specific deliverables are the accomplishments that will be achieved with the grant. *EXAMPLE: Funding for the Farmers Produce Box program will allow an additional 150 boxes to be created this year. This will allow approximately 37 additional families to receive these the boxes 4 times a week to help resolve their food insecurity. MAX CHARACTERS: 300*

Project Location Benefit Information: *(Location(s) in which funding will be spent and/or food commodities will be received.)*

Single County

Regional**

**If your answer is Regional, list all Counties that are receiving benefit:

Mountains

Piedmont

Inner Coastal Plain

Tidewater

Statewide



CONTRACT & FINANCIAL DOCUMENTS

INSTRUCTIONS: Please read and fill in the required information to the right of each field where applicable. Signatures must match the Contract signatures. In the event the affixed signature(s) are no longer valid, a revised form must be submitted prior to processing any contractual documents or submitting "Request for Payments" or any other financial documents. If more than two people will sign for the organization, this form may be duplicated.

SECTION I.

Date:	
Legal Applicant Organization/Agency Name:	
Federal Tax Identification Number:	

SECTION II.

Certification:

By affixing my signature below, I certify that person(s) identified are designated having legal authorization to sign on behalf of the organization named in Section I., above, for purposes of executing contractual documents and preparing, approving and executing all financial documents; including "Requests for Payments." I understand the legal implications of any and all misrepresentation, which include but are not limited to defrauding the State of North Carolina, and certify that the person signing below has full authority to execute this Agreement on behalf of the named organization.

NON-GOVERNMENTAL ORGANIZATIONS ONLY (Must match Contract signature)

Board Chair, Executive Director, etc.	Financial Representative, Treasurer, etc.
Print Name & Title:	Print Name & Title:
Signature:	Signature:

GOVERNMENTAL ENTITIES (Must match Contract signature)

Authorized Governmental Official	Chief Fiscal Officer
Print Name & Title:	Print Name & Title:
Signature:	Signature:



50% Progress Report

This report should be completed and submitted to document each grantee’s progress towards having 50% of awarded funds encumbered by the deadline of **August 29, 2025**. Encumbered funds includes all funds reimbursed to date or allocated to a contract with a contractor, engineering firm, or other entity hired to assist in completing the StRAP project (even if no payments have been made to the contractor yet).

Submit completed report to: strap.report@ncagr.gov

Due NO LATER than August 29, 2025

Grantee	
Contract Number	
Date of Report	
Form Completed by (Name & Title)	
Email Address	

SECTION 1: FINANCIAL REPORTING

Amount of StRAP Contract: <i>(Between grantee and NC Division of Soil & Water Conservation)</i>			
Amount of funds encumbered: <i>(under contract with contractors, engineering firms, etc.)</i>			
Does this amount equal at least 50% of StRAP Contract	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		

- If you answered **YES**, complete section 2 and 3 of this report.
- If you answered **NO**, completed section 2 and 4 of this report.

SECTION 2: CONTRACT INFORMATION

For **each** contract provide the following information (Attach additional pages as necessary):

- Name and address of contractor
- Amount of contract
- Their involvement in the StRAP project (what stream sections they will complete, what engineering designs they will complete, etc.)
- Date contract was signed
- When is work expected to begin

SECTION 3: PROGRESS REPORT
(If 50% goal has been met)

Provide a detailed update on all work that has been completed since the contract with NC Division of Soil & Water Conservation was signed. This should be a detailed report that provides an update on both on-the-ground work, as well as all other tasks completed on the project (contacting landowners, bidding projects, drafting engineering designs, etc.). Attach additional pages as necessary.

By signing the report below, I certify that to the best of my knowledge and belief the report is true, complete and all expenditures reported are for appropriate purposes.

Printed Name and Title

Date

Signature

**SECTION 4: Progressing toward 50% goal
(If 50% goal has NOT been met)**

If you do not have 50% of project funds under contract, please provide a detailed explanation of why this has occurred and what is being done to move the project forward. Provide details on the next steps and information on when you expect to have 50% of the award under contract. Attach additional pages as necessary

Work Completed on Project to Date:

Reasons 50% Goal was not reached:

Details of project timeline moving forward:

By signing the report below, I certify that to the best of my knowledge and belief the report is true, complete and all expenditures reported are for appropriate purposes.

Printed Name and Title

Date

Signature



Quarterly Report Form

Completed reports are due by the following dates: April 30 (Quarter 1 covering January-March), July 31 (Quarter 2 covering April-June), October 31 (Quarter 3 covering July-September), January 31 (Quarter 4 covering October-December). When all work is completed, submit a Final Report.

Submit completed report AND accompanying budget report to: strap.report@ncagr.gov

Quarterly

Final

Grantee	
Contract Number:	
Date of Report:	
Reporting Period: <i>(EX: Quarter 3, 2024)</i>	
Form Completed by (Name & Title):	
Email Address:	
Effective Date of Contract:	
End Data of contract:	

State Expenditures

Total State Contract Amount <i>(amount listed in StRAP contract and/or amendments)</i>	
Total Reimbursed by State this Reporting Period:	
Total Reimbursements from State:	
Balance of State Funds:	

Recipient Share (Match)- if applicable

Match is not required for StRAP projects. However, if you have matching funds used in addition to the State StRAP funding, you can list them below:

Source of Recipient Share (Match):	
Total Planned Recipient Share (Match) Amount:	
Recipient Share (Match) Expended to Date:	

Encumbered Amount

Encumbered amount is any portion of funds already paid out or under contract to complete work. Include any amount covered by all contracts you have made associated with StRAP project (EX: hiring contractors, engineering firms, or other entities contracted to work on StRAP project, even if payments to these entities have not been made yet).

Amount of Contract Encumbered:	
Amount of Contract Unencumbered:	

Encumbered plus unencumbered amounts should match total state contract amount.

Performance Report

Provide a description of work done this quarter. If no work was done this quarter, please explain.

On-the-Ground Work (stream debris removal, bank stabilization, etc.):

Planning Work (evaluating sites, contacting landowners, bidding projects, drafting engineering designs, etc.)

Scope of Work

Please list all segments on Scope of Work. Include: who the segment is contracted with, contractor's address, how much contract is for (linear feet and dollar amount), date work began/ended. If segment is not contracted with anyone yet, please explain why.

Please include all sites on your SOW, include those where work has already been completed

Timeline

Please provide a current timeline for the work that will be completed each quarter of your project. Please note any changes in this timeline since the last quarterly report was submitted. Mark any changes in **red ink** or **highlighter**

Time Period	Planned Work
Q3 (July-Sept) 2024	
Q4 (Oct-Dec) 2024	
Q1 (Jan-Mar) 2025	
Q2 (Apr-Jun) 2025	
Q3 (July-Sept) 2025	
Q4 (Oct-Dec) 2025	
Q1 (Jan-Mar) 2026	
Q2 (Apr-Jun) 2026	
Q3 (July-Sept) 2026	
Q4 (Oct-Dec) 2026	

If any delays or problems, please explain:

Project cost Status (If there are cost changes, please explain):

Signature

Authorized Signer _____

Date _____

Attach additional pages as necessary.



Request for Payment Summary

Submit with RFP to:
strap.reimbursement@ncagr.gov

Checklist

Request for Payment Form

Signed by Inspector

Signed by Grantee staff submitting form

Cover Sheet

Invoice from Contractor: The following needs to be included on each invoice submitted:

Stream Segment(s)- segment name on invoice should match name on Scope of Work

How many linear feet of work were completed

Contractor name and contact information

Date

Organization being billed by Contractor

Receipts/invoices/or other documents for administrative costs

Please list all attached documents below

Construction/Engineering Invoices

Invoice Number	Contractor Name	Linear Feet	Invoice Total
Total Construction Cost			

Administrative Expenses Receipts/Invoices/Documents

Date	Document Name	Taxes	Amount
Total Administrative Reimbursement			
Total Reimbursement Request			

