

**CONTRACT DOCUMENTS
and
SPECIFICATIONS**

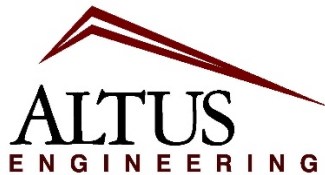
**2024 TOWN OF GREENLAND
ROADWAY IMPROVEMENTS
Request for Bid**

Greenland, New Hampshire

OWNER: Town of Greenland
11 Town Square
Greenland, NH 03840

CONTRACTOR: -
-
-
-

ENGINEER:



133 Court Street
Portsmouth, NH 03801-4413
(603) 433-2335

**Address all communications regarding this Project to
Altus Engineering, LLC. at the above address.**

**Altus Project No. P5414
March 27, 2024 – Issue Date RFP**

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2024 TOWN OF GREENLAND ROADWAY IMPROVEMENTS

GREENLAND, NH

INVITATION TO BID

All communications regarding this project shall be to Altus Engineering, LLC., Eric Weinrieb, PE, 133 Court Street, Portsmouth, NH 03801, 603-433-2335; email: eweinrieb@altus-eng.com

The completed and signed **PROPOSAL FORM** shall be in a **Scaled envelope, plainly marked, “2024 Town of Greenland Roadway Improvements”, on the outside of the sealed bid envelope.** Proposals shall be hand delivered to Altus Engineering, LLC., 133 Court Street, Portsmouth, New Hampshire, 03801, and will be accepted until **3:30 PM. on Monday, April 15, 2024**; at which time all bids will be publicly opened and read aloud.

This project consists of pavement repair, roadway reclaim, pavement overlay, and culvert installation in Greenland, NH. Specifically, the work includes hot bituminous paving, cold planing, reclaiming, structure adjustments & replacement, fine grading, culvert work, and other ancillary tasks.

1. Provide schedule of work to Engineer with roadway sequencing.
2. Installation of temporary erosion control measures.
3. Coordinate with Greenland Police Department for Police Detail for all lane closures.
4. Reclamation of existing roadways scheduled for reconstruction (10-inch depth). Add 150 lb/sy of crushed stone to base and grade roadway base to 2.5% cross slope.
5. Roadway reclamation material can be reused as shoulder construction material.
6. Sawcut and remove pavement and existing subgrade in pavement repair areas.
7. Removal and installation of culverts
8. Installation of 2.5-inch 3/4" winter binder course on reclaimed roadways.
9. Installation of 1.5-inch 1/2" top wearing course on overlay roads.
10. Construction of driveway aprons.
11. Line Striping (stop bars, center lines, and fog lines).
12. Loaming, seeding, and revegetating of disturbed areas, subsidiary.
13. Remove temporary erosion control measures after disturbed areas are stabilized.

Specifications may be obtained from the Town's web site. Addenda to this bid document, if any, including written answers to questions, will be posted on the Town's website. Addenda and updates will NOT be sent directly to bidders or vendors.

Work may begin on or after May 2, 2024, pending the weather allows for work to be within specification tolerances. Individual streets are to be completed within 14 days once work on that street has begun. All sections of the work shall be completed by November 23rd, 2024, all sections of final top wearing course pavement to be complete by October 15th, 2024.

Bidders must determine the quantities of work required and the conditions under which the work will be performed.

The Town reserves the right, after bid opening and prior to award of the contract, to modify the amount of the work in the event that bids exceed budgeted amounts. The Town of Greenland further reserves the right to reject any or all bids,

to waive technical or legal deficiencies, to re-bid, and to accept any bid that it may deem to be in the best interest of the Town.

Bidders must be pre-qualified by the New Hampshire Department of Transportation for paving work. Any Bid submitted by a Bidder not pre-qualified will be rejected as non-conforming. The Town has a right to extend the contract into 2025, with the contractor, with adjustments for inflation without rebidding.

There will be a **non-mandatory** pre-bid meeting at 9:00 AM on **April 5, 2024**, at the Greenland Town Hall.

INSTRUCTIONS TO BIDDERS

BIDDING REQUIREMENTS AND CONDITIONS

1. Special Notice to Bidders

Appended to these instructions is a complete set of bidding and general contract forms. These forms may be detached and executed for the submittal of bids. The plans, specifications, and other documents designated in the proposal form will be considered as part of the proposal, whether attached or not.

The bidders must submit a statement of bidder's qualifications, if requested, subsequent to bid opening but prior to award.

Addenda to this proposal, if any, including written answers to questions, will be posted on the Town of Greenland website. Addenda and updates will **NOT** be sent directly to firms. Contractors submitting a proposal should check the website daily for addenda and updates after the release date. Firms should print out, sign and return addenda with the proposal. Failure to do so may result in disqualification.

2. Interpretation of Quantities in Bid Schedules

The quantities appearing in the bid schedule are approximate only and are prepared for the comparison of bids. Payment to the contractor will be made only for actual work performed and accepted in accordance with the contract. Any scheduled item of work to be done and materials to be furnished may be increased, decreased or omitted as hereinafter provided, and no claim for loss, anticipated profits or costs incurred in anticipation of work not ultimately performed will be allowed due to such increase or decrease.

3. Examination of Plans, Specifications, and Site Work

The bidder is expected to carefully examine the site of the proposed work, the plans, standard specifications, supplemental specifications, special provisions and contract forms before submitting a proposal. The submission of a bid shall be considered conclusive evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the contract. It will be conclusive evidence that the bidder has also investigated and is satisfied with the sources of supply for all materials.

Plans, surveys, measurements, dimensions, calculations, estimates and statements as to the condition under which the work is to be performed are believed to be correct, but the contractors must examine for themselves, as no allowance will be made for any errors or inaccuracies that may be found therein.

4. Familiarity with Laws

The bidder is assumed to have made himself or herself familiar with all federal and state laws and all local by-laws, ordinances and regulations which in any manner affect those engaged or employed on the work or affect the materials or equipment used in the work or affect the conduct of the work, and the bidder, if awarded the contract, shall be obligated to perform the work in conformity with said laws, by-laws, ordinances and regulations notwithstanding its ignorance thereof. If the bidder shall discover any provision in the plans or specifications which is in conflict with any such law, by-law, ordinance or regulation the bidder shall forthwith report it to the engineer in writing.

5. Preparation of Proposal

a) The bidder shall submit its proposal upon the forms furnished by the Owner. The bidder shall specify a unit price in figures for each pay item for which a quantity is given and shall also show the products of the respective prices and quantities written in figures in the column provided for that purpose and the total amount of the proposal obtained by adding the amount of the several items. All words and figures shall be in ink or typed. If a unit price or a lump sum bid already entered by the bidder on the proposal form is to be altered it should be crossed out with ink, the new unit price or lump sum bid entered above or below it and initialed by the bidder, also with ink.

b) The bidder's proposal must be signed with ink by the individual, by one or more general partners of a partnership, by one or more members or officers of each firm representing a joint venture; by one or more officers of a corporation, by one or more members (if member-managed) or managers (if manager-managed) of a limited liability company, or by an agent of the contractor legally qualified and acceptable to the owner. If the proposal is made by an individual, his or her name and post office address must be shown, by a partnership the name and post office address of each general and limited partner must be shown; as a joint venture, the name and post office address of each venturer must be shown; by a corporation, the name of the corporation and its business address must be shown, together with the name of the state in which it is incorporated, and the names, titles and business addresses of the president, secretary and treasurer.

6. Nonconforming Proposals

Proposals will be considered nonconforming and may be rejected in the Owner's sole discretion for any of the following reasons:

- If the proposal is on a form other than that furnished by the Owner, or if the form is altered or any portion thereof is detached;
- If there are unauthorized additions, conditional or altered bids, or irregularities of any kind which may tend to make the proposal or any portion thereof incomplete, indefinite or ambiguous as to its meaning;
- If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award; or
- If the proposal does not contain a unit price for each pay item listed except in the case of authorized alter pay items.

7. Delivery of Proposals

The sealed proposal shall be hand delivered to Altus Engineering, LLC. 133 Court Street, Portsmouth, New Hampshire, 03801. All proposals shall be filed prior to the time and at the place specified in the invitation for bids. Proposals received after the time for opening of the bids will be returned to the bidder, unopened.

8. Withdrawal of Proposals

A bidder will be permitted to withdraw his or her proposal unopened after it has been submitted if the Owner receives a request for withdrawal in writing prior to the time specified for opening the proposals.

9. Public Opening of Proposals

Proposals will be opened and read publicly at the time and place indicated in the invitation for bids. Bidders, their authorized agents, and other interested parties are invited to be present.

10. Disqualification of Bidders

Any or all of the following reasons may be deemed by Owner in its sole discretion as being sufficient for the

disqualification of a bidder and the rejection of his proposal:

- More than one proposal for the same work from an individual, firm, or corporation under the same or different name;
- Evidence of collusion among bidders;
- Failure to submit all required information requested in the bid specifications;
- Lack of competency or of adequate machinery, plant or other equipment, as revealed by the statement of bidders qualification or otherwise;
- Uncompleted work which, in the judgment of the owner, might hinder or prevent the prompt completion of additional work if awarded;
- Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts;
- Default or unsatisfactory performance on previous contracts; or
- Such disqualification would be in the best interests of the Owner.

11. Material Guaranty and Samples

Before any contract is awarded, the bidder may be required to furnish a complete statement of the origin, composition, and manufacture of any or all materials to be used in the construction of the work, and the Owner may, in its sole discretion, reject the bid based on the contents of the statement or as a result of the failure of the bidder to submit the statement.

AWARD AND EXECUTION OF CONTRACT

1. Consideration of Proposals

a) After the proposals are opened and read, they will be compared on the basis of the total price for all sections of work to be charged to perform the work and any such additional considerations as may be identified in the bid documents. The results of such comparisons will be immediately available to the public. In case of a discrepancy between the prices written in words and those written figures, the prices written in words shall govern. In case of a discrepancy between the total shown in the proposal and that obtained by adding the products of the quantities of items and unit bid prices, the latter shall govern.

b) The Owner reserves the right to reject any or all proposals, to waive technicalities or to advertise for new proposals, if, in the sole discretion of the Owner, the best interest of the Town of Greenland will be promoted thereby.

2. Award of Contract

Within 30 calendar days after the opening of proposals, if a contract is to be awarded, the award will be made to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed. The successful bidder will be notified, in writing, mailed to the address on his or her proposal, that his or her bid has been accepted and that the bidder has been awarded the contract.

The award shall not be considered official until such time that a Purchase Order, fully executed contract or an award letter has been issued by the Finance Director. No presumption of award shall be made by the bidder until such documents are in hand. Verbal notification of award is not considered official. Any action by the bidder to assume otherwise is done so at his/her own risk and the Town will not be held liable for any expense incurred by a bidder that has not received an official award.

Determination of the lowest bidder will be based on the total price for the work described on the bid proposal form. Due to fluctuating prices and possible budget limitations, the Town reserves the right to delete portions of the work prior to contract execution.

3. Cancellation of Award

The Owner reserves the right to cancel the award of any contract at any time before the execution of such contract by all parties without any liability of the Owner.

4. Return of Proposal Guaranty

All proposal guaranties, except those of the three lowest bidders, will be returned upon request following the opening and checking of the proposals. The proposal guaranties of the three lowest bidders will be returned within ten days following the award of the contract if requested.

5. Contract Bond - not required.

6. Execution and Approval of Contract

The successful bidder is required to present all contract bonds, to provide proof of insurance, and to execute the contract within 10 days following receipt of the Town's notification of acceptance of the bid. No contract shall be considered as in effect until it has been fully executed by all parties.

7. Failure to Execute Contract

Failure to execute the contract and file an acceptable bond within 10 days after notification of acceptance of bid shall be just cause for the cancellation of the award and the forfeiture of the proposal guarantee which shall become the property of the Owner, not as a penalty, but in liquidation of damages sustained. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised as the Owner may determine in its sole discretion.

PROPOSAL FORM

2024 ROADWAY IMPROVEMENTS

To the Town of Greenland, New Hampshire, herein called the Owner.

The undersigned, as Bidder, herein referred to as singular and masculine declares as follows:

1. All interested in the Bid as Principals are named herein;
2. This bid is not made jointly, or in conjunction, cooperation or collusion with any other person, firm, corporation, or other legal entity;
3. No officer, agent or employee of the Owner is directly or indirectly interested in this Bid;
4. The bidder has carefully examined the sites of the proposed work and fully informed and satisfied himself as to the conditions there existing, the character and requirements of the proposed work, the difficulties attendant upon its execution and the accuracy of all estimated quantities stated in this Bid, and the bidder has carefully read and examined the Drawings, Agreement, Specifications and other Contract Documents therein referred to and knows and understands the terms and provisions thereof;
5. The bidder understands that the quantities of work calculated in the Bid or indicated on the Drawings or in the Specifications or other Contract Documents are approximate and are subject to increase or decrease or deletion as deemed necessary by the Town of Greenland. Any such changes will not result in or be justification for any penalty or increase in contract prices; and agrees that, if the Bid is accepted the bidder will contract with the Owner, as provided in the Contract Documents, this Bid Form being part of said Contract Documents, and that the bidder will supply or perform all labor, services, plant, machinery, apparatus, appliances, tools, supplies and all other activities required by the Contract Documents in the manner and within the time therein set forth, and that the bidder will take in full payment therefor the following item prices; and
6. It is the intention of this contract that the items listed above describe completely and thoroughly the entirety of the work as shown on the plans and as described in the specifications. All other items required to accomplish the above items are considered to be subsidiary work, unless shown as a pay item.

SEE SPREADSHEET IN NOTICE TO PROCEED FOR SPECIFIC LOCATION OF ITEMS

THIS PROJECT SHALL BE BID BY UNIT PRICES:

ITEM #	EST. QTY.	UNITS	ITEM DESCRIPTION	UNIT PRICE IN FIGURES	ITEM TOTAL IN FIGURES
202.3	75	LF	Remove Existing (4" to 24") Culvert Pipe	_____	_____
203.A	600	CY	Excavation of Excess Reclaim	_____	_____
203.B	50	CY	Excavation of Unsuitable Materials	_____	_____
206.2***	5	CY	Rock Structure Excavation	_____	_____
214	7,000	SY	Fine Grading Roads	_____	_____
304.32	350	Ton	Shoulder Gravel for leveling	_____	_____
304.4	25	CY	Crushed Gravel for Roads /Patches (Allowance)	_____	_____
306.1x	7,000	SY	Reclaim Stabilized Base	_____	_____
306.2x	600	CY	Rehandle Reclaim Stab. Base	_____	_____
306.2S	600	LF	Pavement Sawcut	_____	_____
306.36	397	Tons	1 ½" - 2" Crushed Stone for Reclaim Stab. Base Blended in via reclaimer	_____	_____
403.11W*	1,830	Ton	Machine Pave (50GYR) ½" Wearing Course	_____	_____
403.11 B*	955	Ton	Machine Pave (50GYR) ¾" Winter Binder	_____	_____
403.12*	50	Ton	Hand Method Paving (drives misc.)	_____	_____
403.13*, **	50	SY	Pavement Patching (Repair Allowance)	_____	_____
403.6	8,500	LF	Pavement Joint Adhesive (center of roads)	_____	_____
417	1,000	SY	Cold Planing with large machine	_____	_____
417B	500	SY	Cold Plane (Butt Joints, Driveways, & transitions)	_____	_____
604.008	2	EA	Eliminator Hoods	_____	_____
604.5.1P	75	LF	Install New Culvert 12" Pipe	_____	_____

604.5.1P	75	LF	Install New Culvert 15" Pipe	_____	_____
604.5.1P	30	LF	Install New Culvert 18" Pipe	_____	_____
604.5.1P	30	LF	Install New Culvert 24" Pipe	_____	_____
604.45	10	EA	Adjust Manhole Covers, Catch Basin Grates, and Gate valves	_____	_____
618.6	1	Allowance	Greenland Police (Traffic Control)	<u>\$7,500.00</u>	<u>\$7,500.00</u>
618.7	1	Allowance	Flaggers (\$40 per hour)	<u>\$10,000.00</u>	<u>\$10,000.00</u>
619	1	U	Maintenance of Traffic	_____	_____
632.3118	100	LF	18" Thermoplastic Striping (Stop Bars)	_____	_____
632.0104	300	LF	4" Line Striping (Centerline)	_____	_____
641	300	CY	6" Loam and Seed & Turf Establishment	_____	_____
641A	50	CY	Loam for planting beds	_____	_____
692	1	U	Mobilization	_____	_____
1010.2*	1	U	Asphalt Cement Adjustment	_____	_____

*CONTRACTOR RESERVES THE RIGHT TO ADJUST PAVEMENT PRICING BASED ON INDEX DETERMINED BY NHDOT FOR MATERIAL PRODUCED AS SPECIFIED IN SECTION 1010.2 OF THE STANDARD SPECIFICATIONS.

**ALL WORK PREVIOUSLY DESCRIBED SHALL BE CONSIDERED SUBSIDIARY AND REPAIR SHALL BE PAID FOR ONLY BY SQUARE YARD.

***ESTIMATED QUANTITY ITEM, QUANTITY UNKNOWN AND TO BE VERIFIED PRIOR TO PURCHASE OF MATERIAL.

TACK COAT IS A SUBSIDIARY ITEM.

TOTAL FOR PROJECT AND BASIS OF AWARD

Total in Figures \$ _____.

In Words \$ _____

By:_____

Title:_____

Business Address

City, State, Zip Code

Phone_____Email Address: _____ **All
Bids are to be submitted on this form and in a sealed envelope, plainly marked on the outside
with the Bidder's name and address and the Project name as it appears at the top of the Proposal
Form.**

City, State, Zip Code

Telephone:_____

The Bidder has received and acknowledged Addenda No. _____ through _____.

All Bids are to be submitted on this form and in a sealed envelope, plainly marked on the outside
with the Bidder's name and address and the Project name as it appears at the top of the Proposal
Form.

By:_____
Signature

STATEMENT OF BIDDER'S QUALIFICATIONS

Note: This is a required submittal, fill out completely.

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. Add separate sheets if necessary

1. Name of Bidder
2. Permanent Main Office Address
3. Form of Entity
4. When Organized
5. Where Organized
6. How many years have you been engaged in the contracting business under your present name; also state names and dates of previous firm names, if any.
7. Contracts on hand; (schedule these, showing gross amount of each contract and the approximate anticipated dates of completion).
8. General character of work performed by your company.
9. Have you ever failed to complete any work awarded to you? ____ (no) ____ (yes). If so, where and why?
10. Have you ever defaulted on a contract?
____ (no) ____ (yes). If so, where and why?
11. Have you ever failed to complete a project in the time allotment according to the Contract Documents?
____ (no) ____ (yes). If so, where and why?
12. List the most important contracts recently executed by your company, stating approximate cost for each, and the month and year completed.
13. List your major equipment available for this contract.
14. List your key personnel such as project superintendent and foremen available for this contract.

Dated at _____ this _____ day of _____, 2024.

Name of Bidder

BY _____

TITLE _____

State of _____

County of _____

_____ being duly sworn, deposes and

says that the bidder is _____ of _____
(Name of Organization)

and answers to the foregoing questions and all statements contained therein are true and correct.

Sworn to before me this ____ day of _____, 2024.

Notary of Public

My Commission expires _____

CONTRACT AGREEMENT

2024 ROADWAY IMPROVEMENTS

THIS AGREEMENT made as of the _____ in the year **2024**, by and between the Town of Greenland, New Hampshire (hereinafter call the Owner) and _____. (hereinafter called the Contractor),

WITNESSETH; that the Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE I- Work - The Contractor shall perform all work as specified or indicated in the Contract Documents for the completion of the Project. The Contractor shall provide, at his expense, all labor, materials, equipment, and incidentals as may be necessary for the expeditious and proper execution of the Project.

ARTICLE II - ENGINEER - The Consultant selected by the Town of Greenland (Altus Engineering, LLC) or their authorized representative will act as Town Engineer in connection with completion of the Project in accordance with the Contract Documents.

ARTICLE III - CONTRACT TIME - The work shall commence in accordance with the Notice to Proceed. The Contractor shall have project substantially completed by October 15, 2024.

ARTICLE IV - CONTRACT PRICE - Owner shall pay Contractor for performance of the work in accordance with the Contract Documents as shown under item prices in the Bid Proposal.

ARTICLE V - PAYMENT - Partial payments will be made in accordance with the Contract Documents. Upon final acceptance of the work and settlement of all claims, Owner shall pay the Contractor the unpaid balance of the Contract Price, subject to additions and deductions provided for in the Contract Documents.

ARTICLE VI - RETAINAGE – 10%. To be held by the town for 1 year, starting at the time of substantial completion.

ARTICLE VII – INSURANCE – The Contractor shall secure and maintain, until acceptance of the work, insurance with limits not less than those specified in the Contract.

ARTICLE VIII – CONTRACT DOCUMENTS – The Contract Documents which comprise the contract between Owner and Contractor are attached hereto and made a part hereof and consist of the following:

- 8.1 This Agreement
- 8.2 Notice of Award, Notice to Proceed
- 8.3 Instruction to Bidders
- 8.4 General Requirements, Control of Work, Temporary Facilities, Measurement and Payment, Standard Specifications
- 8.5 Insurance Requirements
- 8.6 Standard and Technical Specifications

8.7 Special Provisions

8.8 Any modifications, including change orders, duly delivered after execution of this Agreement.

ARTICLE IX – TERMINATION FOR DEFAULT – Should contractor at any time refuse, neglect, or otherwise fail to supply a sufficient number or amount of properly skilled workers, materials, or equipment, or fail in any respect to prosecute the work with promptness and diligence, or fail to perform any of its obligations set forth in the Contract, Owner may, at its election, terminate the employment of Contractor, giving notice to Contractor in writing of such election, and enter on the premises and take possession, for the purpose of completing the work included under this Agreement, of all the materials, tools and appliances belonging to Contractor, and to employ any other persons to finish the work and to provide the materials therefore at the expense of the Contractor.

ARTICLE X – INDEMNIFICATION OF OWNER – Contractor shall defend, indemnify and hold harmless Owner and its officials and employees from and against all suits, claims, judgments, awards, losses, costs or expenses (including without limitation attorneys' fees) to the extent arising out of or relating to Contractor's alleged negligence or breach of its obligations or warranties under this Contract. Contractor shall defend all such actions with counsel satisfactory to Owner at its own expense, including attorney's fees, and will satisfy any judgment rendered against Owner in such action.

ARTICLE XI – PERMITS – The Contractor shall secure at its own expense, all permits and consents required by law as necessary to perform the work and shall give all notices and pay all fees and otherwise comply with all applicable City, State, and Federal laws, ordinances, rules and regulations.

ARTICLE XII – MISCELLANEOUS –

- A. Neither Owner nor Contractor shall, without the prior written consent of the other, assign, sublet or delegate, in whole or in part, any of its rights or obligations under any of the Contract Documents; and, specifically not assign any monies due, or to become due, without the prior written consent of Owner.
- B. Owner and Contractor each binds himself, his partners, successors, assigns and legal representatives, to the other party hereto in respect to all covenants, agreements and obligations contained in the Contract Documents.
- C. The Contract Documents constitute the entire Agreement between Owner and Contractor and may only be altered amended or repealed by a duly executed written instrument.
- D. The laws of the State of New Hampshire shall govern this Contract without reference to the conflict of law principles thereof.
- E. Venue for any dispute shall be the Rockingham County Superior Court unless the parties otherwise agree.

IN WITNESS WHEREOF, the parties hereunto executed this
AGREEMENT the day and year first above written.

BIDDER:

BY:_____

TITLE:_____

NOTICE OF INTENT TO AWARD

Date:

TO:

IN AS MUCH as you were the low responsible bidder for work entitled:

2024 ROADWAY IMPROVEMENTS

You are hereby notified that the Town intends to award the aforesaid project to you.

Immediately take the necessary steps to execute the Contract and to provide required bonds and proof of insurance within fifteen (10) calendar days from the date of this Notice.

The Town of Greenland reserves the right to revoke this Notice if you fail to take the necessary steps to execute this Contract.

NOTICE TO PROCEED

DATE:

PROJECT: **2024 Roadway Improvements**

TO:

YOU ARE HEREBY NOTIFIED TO COMMENCE WORK IN ACCORDANCE

WITH THE AGREEMENT DATED,_____. THE WORK SHALL BE
SUBSTANTIALLY COMPLETED BY OCTOBER 15, 2024.

Street Name	Overlay (Top Wearing)	Roadway Reclaim	Culvert Repair
	(SY)	(SY)	(LF)
Coastal Way		3,510	
Spring Hill Road		3,490	75
Portsmouth Avenue - (Town Hall)	800		
Fairway Drive	2,520		
Meloon Road	3,190		
Sanderson Road	4,110		
Lane Avenue	2,950		
Moulton Avenue - Section Reclaimed	1,950		

TOWN OF GREENLAND, N.H.

BY: _____

TITLE: _____

ACCEPTANCE OF NOTICE

RECEIPT OF THE ABOVE NOTICE TO
PROCEED IS HEREBY ACKNOWLEDGED

This the _____ day of _____ 2024.

By: _____

Title: _____

CHANGE ORDER

Change Order # _____

Date of Issuance: _____

Owner: TOWN OF GREENLAND, NH

Contractor: _____

You are directed to make the following changes in the Contract Documents:

Description: _____

Purpose of Change Order: _____

Attachments: _____

CHANGE IN CONTRACT PRICE

CHANGE IN CONTRACT TIME

Original Contract Price:
\$ _____

Original Completion Date: _____

Contract Price prior to this
Change Order:
\$ _____

Contract Time prior to this
Change Order: _____

Net Increase of
this Change Order:
\$ _____

Net Increase or Decrease of
this Change Order: _____

Contract Price with all
approved Change Orders:
\$ _____

Contract Time with all
approved Change Orders: _____

RECOMMENDED:

by _____

by _____

Engineer

Town Official

APPROVED:

by _____
Town Official

APPROVED:

by _____
Contractor

CONTRACTOR'S AFFIDAVIT

STATE OF _____:

COUNTY OF _____:

Before me, the undersigned, a _____
(Notary Public, Justice of the Peace)

in and for said County and State personally appeared, _____
(Individual, Partner, or duly authorized representative of Corporate)

who, being duly sworn, according to law deposes and says that the cost of labor, material,
and equipment and outstanding claims and indebtedness of whatever nature arising out of
the performance of the Contract between

TOWN OF GREENLAND, NEW HAMPSHIRE

and _____
(Contractor)

of _____

Dated: _____

has been paid in full for Construction of: **2024 Roadway Improvements**

(Individual, Partner, or
duly authorized
representative of
Corporate Contractor)

Sworn to and subscribed
before me this _____ day
of _____ 2024

CONTRACTOR'S RELEASE

KNOW ALL MEN BY THESE PRESENTS that _____

(Contractor) of _____, County of _____ and State of

_____ does hereby acknowledge

that _____ (Contractor)

has on this day had, and received from the TOWN OF GREENLAND, NEW HAMPSHIRE, final and

completed payment for the Construction of:

2024 Roadway Improvements

NOW THEREFORE, the said _____ (Contractor)
for myself, my heirs, executors, and administrators) (for itself, its successors and assigns)
do/does by these presents remise, release, quit-claim and forever discharge the Town of
Greenland, New Hampshire, its successors and assigns, of and from all claims and demands
arising from or in connection with the said Contract dated _____,
and of and from all, and all manners of action and actions, cause and causes of action and
actions, suits, debts, dues, duties, sum and sums of money, accounts, reckonings, bonds, bills,
specifications, covenants, contracts, agreements, promises, variances, damages, judgments,
extents, executions, claims and demand, whatsoever in law of equity, or otherwise, against
the Town of Greenland, New Hampshire, its successors and assigns, which (I, my heirs,
executors, or administrators) (it, its successors and assigns) ever had, now have or which (I,
my heirs, executors, or administrators) (it, its successors and assigns) hereafter can shall or
may have, for, upon or by reason of any matter, cause, or thing whatsoever; from the
beginning of record time to the date of these presents.

IN WITNESS WHEREOF,

Contractor:

By: _____

print name of witness: _____

Its Duly Authorized _____

Dated: _____

GENERAL REQUIREMENTS

SCOPE OF WORK

1. INTENT OF CONTRACT

The intent of the Contract is to provide for the construction and completion in every detail of the work described. The Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the terms of the Contract. The Contractor shall be required to conform to the intent of the plans and specifications. No extra claims shall be allowed for portions of the work not specifically addressed in the plans and specifications but required to produce a whole and complete project, such work will be considered subsidiary to the bid items.

2. INCIDENTAL WORK

Incidental work items for which separate payment is not measured includes, but is not limited to, the following items:

- a. Temporary Traffic Control Signs
- b. Clean up
- c. Mobilization/Demobilization (unless otherwise paid for)
- d. Restoration of property
- e. Cooperation with other contractors, abutters and utilities.

3. ALTERATION OF PLANS OR OF CHARACTER OF WORK

The Owner reserves the right, without notice to Surety, to make such alterations of the plans or of the character of the work as may be necessary or desirable to complete fully and acceptably the proposed construction; provided that such alterations do not increase or decrease the contract cost. Within these cost limits, the alterations authorized in writing by the Owner shall not impair or affect any provisions of the Contract or bond and such increases or decreases of the quantities as a result from these alterations or deletions of certain items, shall not be the basis of claim for loss or for anticipated profits by the contractor. The contractor shall perform the work as altered at the contract unit price or prices.

4. EXTRA WORK ITEMS

Extra work shall be performed by the Contractor in accordance with the specifications and as directed, and will be paid for at a price as provided in the Contract documents or if such pay items are not applicable than at a price negotiated between the contractor and the Owner or at the unit bid price. If the Owner determines that extra work is to be performed, a change order will be issued.

5. CHANGE ORDERS

The Owner reserves the right to issue a formal change order for any increase, decrease, deletion, or addition of work or any increase in contract time or price. The contractor shall be required to sign the change order and it shall be considered as part of the Contract documents.

6. FINAL CLEANING UP

Before acceptance of the work, the contractor shall remove from the site all machinery, equipment, surplus materials, rubbish, temporary buildings, barricades, and signs. All parts of the work shall be left in a neat and presentable condition. On all areas used or occupied by the contractor, regardless of the contract limits, the bidder shall clean-up all sites and storage grounds.

The items prescribed herein will not be paid for separately but shall be paid for as part of the total contract price.

7. ERRORS AND INCONSISTENCY IN CONTRACT DOCUMENTS

Any provisions in any of the Contract Documents that may be in conflict with the paragraphs in these General Requirements shall be subject to the following order of precedence for interpretation.

1. Technical Specifications will govern General Requirements.
2. Special Provisions will govern Technical Specifications.

CONTROL OF WORK

1. AUTHORITY OF ENGINEER

(a) All work shall be done under supervision of the Town's Engineering Representative (Town Engineer) and to his satisfaction. The Town Engineer will decide all questions which may arise as to the quality and acceptability of materials furnished and work performed and as to the rate of progress of the work; all questions that may arise as to the interpretation of the plans and specifications; and all questions as to the acceptable fulfillment of the Contract by the Contractor.

(b) The Town Engineer will have the authority to suspend the work wholly or in part for such periods as he may deem necessary due to the failure of the Contractor to correct conditions unsafe for workers or the general public; for failure to carry out provisions of the Contract; for failure to carry out orders; for conditions considered unsuitable for the prosecution of the work, including unfit weather; or for any other condition or reason deemed to be in the public interest. The Contractor shall not be entitled any additional payments arising out of any such suspensions.

(c) The Owner reserves the right to demand a certificate of compliance for a material or product used on the project. When the certificate of compliance is determined to be unacceptable to the Town Engineer the Contractor may be required to provide engineering and testing services to guarantee that the material or product is suitable for use in the project, at its expense (see Sample of Certificate of Compliance).

2. BARRICADES, WARNING SIGNS AND TRAFFIC OFFICERS

(a) The Contractor shall provide, erect and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs and other traffic control devices, and shall take all necessary precautions for the protection of the work and safety of the public. Roadway closed to traffic shall be protected by effective barricades. Obstructions shall be illuminated during hours of darkness. Suitable warning signs shall be provided to control and direct traffic in a proper manner, as approved by the engineer.

(b) The Contractor will be held responsible for all damage to the work from traffic, pedestrians, animals or any other cause due to lack of adequate controlling devices.

(c) The Contractor shall provide such police officers as the Town Engineer deems necessary for the direction and control of traffic within the site of project.

The work prescribed herein will not be paid for separately but will be paid for as part of the Contract Price unless specifically appearing as a bid item.

TEMPORARY FACILITIES

1. STORAGE FACILITIES

(a) The Contractor shall not store materials or equipment in a public right-of-way beyond the needs of one working day. Equipment and materials shall be stored in an approved location.

(b) The Contractor shall protect all stored materials from damage by weather or accident and shall insure adequate drainage at and about the storage location.

(c) Prior to final acceptance of the work all temporary storage facilities and surplus stored materials shall be removed from the site.

2. SANITARY FACILITIES

(a) Temporary toilet facilities may be installed provided that the installation and maintenance conform with all State and local laws, codes, regulations, and ordinances governing such work. They shall be properly lit and ventilated and shall be kept clean at all times.

(b) Prior to final acceptance of the work all temporary toilet facilities shall be removed from the site.

INSURANCE REQUIREMENTS

Insurance shall be in such form as will protect the Contractor from all claims and liabilities for damages for bodily injury, including accidental death, and for property damage, which may arise from operations under this contract whether such operation by himself or by anyone directly or indirectly employed by him.

AMOUNT OF INSURANCE

- A) Commercial General Liability:
Bodily injury or Property Damage - \$2,000,000
Per occurrence and general aggregate
- B) Automobile and Truck Liability:
Bodily Injury or Property Damage - \$2,000,000
Per occurrence and general aggregate

TYPES OF INSURANCE

Purchase and maintain the following types of insurance:

- A) Full Workers Comprehensive Insurance coverage for all people employed by the contractor to perform work on this project. This insurance shall be in strict accordance with the requirements of the most current laws of the State of New Hampshire.
- B) Bodily Injury Insurance and Contractors Protective Property Damage Insurance.
- C) Bodily Injury and Property Damage Insurance covering the operation of all motor vehicles and equipment, whether or not owned by the Contractor, being operated in connection with the prosecution of the work under this Contract.
- D) Contractual Liability Insurance coverage in the amounts specified above under Comprehensive General Liability.
- E) Product and Completed Operations coverage to be included in the amounts specified above under Comprehensive General Liability.

ADDITIONAL INSURED

All liability policies (including any excess policies used to meet coverage requirements) shall include the Town of Greenland, New Hampshire as named Additional Insured.

- 1) The contractor's insurance shall be primary in the event of a loss.
- 2) The Additional Insured endorsement must include language specifically stating that the entity is to be covered for all activities performed by, or on behalf of, the contractor, including the Town of Greenland's general supervision of the contractor (Town Engineer).
- 3) Town of Greenland shall be listed as a Certificate Holder and Additional Insured. The Town shall be identified as follows:

Town of Greenland
11 Town Square
PO Box 100
Greenland, NH 03840

MEASUREMENT AND PAYMENT

1. MEASUREMENT OF QUANTITIES

(a) All work completed under the contract will be measured according to the United States standard measure.

(b) 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 stated all quantities measured for payment shall be computed or adjusted for "in place" conditions.

(c) Except as specified below, all materials that are measured or proportioned by weight shall be weighed on scales which the Contractor has had sealed by the State or by a repairman registered by the Commissioner of Agriculture. All weighing shall be performed in a manner prescribed under the Rules and Regulations of the Bureau of Weights and Measures of the New Hampshire Department of Agriculture.

(d) Weighing of materials on scales located outside New Hampshire will be permitted for materials produced or stored outside the state, when requested by the Contractor and approved. Out-of-state weighing in order to be approved, must be performed by a licensed public weigh master or a person of equal authority in the state concerned on scales accepted in the concerned state.

(e) The term "lump sum" when used as an item of payment will mean complete payment for the work described in the item.

(f) Material wasted without authority will not be included in the final estimate.

2. SCOPE OF PAYMENT

(a) The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials and for performing all work under the contract in a complete and acceptable manner and for all risk, loss, damage or expense of whatever character arising out of the nature of the work or the prosecution thereof.

(b) The Contractor shall be liable to the Owner for failure to repair, correct, renew or replace, at his own expense, all damage due or attributable to defects or imperfections in the construction which defects or imperfections may be discovered before or at the time of the final inspection and acceptance of the work.

(c) No monies, payable under the contract or any part thereof, except the first estimate, shall become due or payable if the Owner so elects, until the Contractor shall satisfy the Owner that the Contractor has fully settled or paid all labor performed or furnished for all equipment hired, including trucks, for all materials used, and for fuels, lubricants, power tools, hardware and supplies purchased by the Contractor and used in carrying out said contract and for labor and parts furnished upon the order of said Contractor for the repair of equipment used in carrying out said contract; and the Owner, if he so elects, may pay any and all such bills, in whole or in part, and deduct the amount of amounts so paid from any partial or final estimate, excepting the first estimate.

3. COMPENSATION FOR ALTERED QUANTITIES

(a) Except as provided for under the particular contract item, when the accepted quantities of work vary from the quantities in the bid schedule the Contractor shall accept as payment in full, so far as contract items are concerned, at the original contract unit prices for the accepted quantities of work done. No allowance will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor resulting either directly from such alterations or indirectly from unbalanced allocation

among the contract items of overhead expense on the part of the Bidder and subsequent loss of expected reimbursements therefore or from any other cause.

(b) Extra work performed will be paid for at the contract bid prices or at the price negotiated between the Owner and the Contractor if the item was not bid upon. If no agreement can be negotiated, the Contractor will accept as payment for extra work, cost plus 15% (overhead and profit). Costs shall be substantiated by invoices and certified payroll.

4. PARTIAL PAYMENTS

Partial payments of work accepted by the Town will be made on a monthly basis during the contract period minus the retainage amount. See Article VI of the Contract Agreement regarding retainage schedule.

5. FINAL ACCEPTANCE

Upon due notice from the Contractor of presumptive completion of the entire project, the Town Engineer will make an inspection. If all construction provided for and contemplated by the contract is found complete to his satisfaction, this inspection shall constitute the final inspection and the Town Engineer will make the final acceptance and notify the Contractor in writing of this 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 Town Engineer will give the Contractor the necessary instructions for correction of such work, 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 Engineer will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

6. ACCEPTANCE AND FINAL PAYMENT

(a) When the project has been accepted and upon submission by the Contractor of all required reports, completed forms and certifications, the Owner will review the final estimate of the quantities of the various classes of work performed. The Contractor may be required to certify that all bills for labor and material used under this contract have been paid.

(b) The Contractor shall file with the Owner any claim that the Contractor may have regarding the final estimate at the same time the Contractor submits the final estimate. Failure to do so shall be a waiver of all such claims and shall be considered as acceptance of the final estimate.

(c) All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

7. GENERAL GUARANTY AND WARRANTY OF TITLE

(a) Neither the final certification of payment nor any provision in the contract nor partial or entire use of the improvements embraced in this Contract by the Owner or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express or implied warranties or responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting therefrom which shall appear within a period of twelve (12) months from the date of final acceptance of the work. The Owner will give notice of defective materials and work with reasonable promptness.

(b) No material supplies or equipment to be installed or furnished under this Contract shall be purchased subject to any chattel mortgage or under a conditional sale, lease purchase or other agreement by

which an interest therein or in any part thereof is retained by the Seller or supplier. The Contractor shall warrant good title to all materials, supplies and equipment installed or incorporated in the work and upon completion of all work, shall deliver the same together with all improvements and appurtenances constructed or placed thereon by him to the Owner free from any claims, liens or charges. Neither the Contractor nor any person, firm or corporation furnishing any material or labor for any work covered by this Contract shall have the right to a lien upon any improvements or appurtenances thereon.

Nothing contained in this paragraph, however, shall defeat or impair the right of persons furnishing materials or labor to recover under any bond given by the Contractor for their protection or any rights under any law permitting such persons to look to funds due the Contractor in the hands of the Owner. The provisions of this paragraph shall be inserted in all subcontractors and material contracts and notice of its provisions shall be given to all persons furnishing materials for the work when no formal contract is entered into for such materials.

8. NO WAIVER OF LEGAL RIGHTS

(a) Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or be stopped from recovering from the Contractor or his Surety, or both, such overpayment as it may sustain by failure on the part of the Contractor to fulfill his obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

(b) The Contractor, without prejudice to the Contract shall be liable to the terms of the Contract, shall be liable to the Owner for latent defects, fraud or such gross mistakes as may amount to fraud, and as regards the Owner's right under any warranty or guaranty.

9. TERMINATION OF CONTRACTOR'S RESPONSIBILITY

Whenever the improvement provided for by the Contract shall have been completely performed on the part of the Contractor and all parts of the work have been released from further obligations except as set forth in his bond and as provided in Section 8 above.

SPECIFICATIONS

The Standard Specifications for Road and Bridge Construction of the State of New Hampshire Department of Transportation and any Addenda shall apply to all technical and measurement aspects of this project only.

<https://www.dot.nh.gov/sites/g/files/ehbemt811/files/inline-documents/2016-nhdot-spec-book-web.pdf>

However, the Standard Specifications for Road and Bridge Construction of the State of New Hampshire Department of Transportation and any Addenda shall NOT apply to General Requirements, Control of Work, Temporary Facilities, Payment, Insurance Requirements, etc.

- The Contractor shall comply: Work shall occur between the hours of 7:00 A.M. and 5:00 PM Monday through Friday. Work in the roadways to be coordinated with the Town for school buses. Any additional hours to be approved by the Town.

Article 1. CONTRACTOR

1.1 Methods of Construction:

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

- A) Provide schedule of work to Engineer with roadway sequencing;
- B) Installation of temporary erosion control measures;
- C) Coordinate with Greenland Police Department for Police Detail for all lane closures;
- D) Roadway Repair (Patch) – Allowance Work: (refer to detail)
 - a) Contractor shall review areas in field with engineer;
 - b) Contractor and engineer shall paint limits of pavement removal for limits of saw cutting and confirm area computations;
 - c) Contractor shall saw cut pavement at removal limits;
 - d) Contractor shall remove pavement and existing gravels to a depth of 18-inches below the pavement;
 - e) Contractor shall install and thoroughly compact 18-inches of crushed gravel in 6-inch lifts;
 - f) Contractor shall apply pavement joint adhesive at the face of the existing pavement;
 - g) Contractor shall install 2.5-inches (3/4") winter binder, binder course to overlap 1 foot of existing binder around saw cut;
 - h) Tack Coat to be applied between asphalt courses; Surfaces of any pavement course shall have a tack coat of emulsified asphalt applied in accordance with NHDOT Specifications. Application of emulsified asphalt shall be between 0.03 and 0.05 gal/yd²
 - i) Contractor shall provide 1.5-inch (1/2") top wearing course flush surface with existing pavement;
- E) Overlay Top Wearing Course: (refer to detail)
 - a) Contractor shall review roads in field with engineer;
 - b) Sawcut pavement at work limits and at existing paved drives.
 - c) Contractor shall shim as needed to provide 2.5% cross slope;
 - d) Binder course to be swept clean and free of oil, grease, and debris prior to tack coat;
 - e) Tack coat to be applied between asphalt courses; Surfaces of any pavement course shall have a tack coat of emulsified asphalt applied in accordance with NHDOT Specifications. Application of emulsified asphalt shall be between 0.03 and 0.05 gal/yd²

- f) Contractor shall install 1.5-inches (1/2") top wearing course flush surface with existing pavement;
- g) Install pavement joint adhesive at all construction joints, specifically between the lanes and at the joints with the public roads. Meet the requirement of NHDOT 403.6.
- h) Contractor shall backup shoulders with reclaimed material or shoulder gravel at a 12 inch minimum width
- F) Roadway Reclaim: (refer to detail)
 - a) Contractor shall review areas in field with engineer;
 - b) Sawcut pavement at work limits;
 - c) Reclamation of existing roadways scheduled for reconstruction (10 inch depth). Add 150 lb/sy of crushed stone to base and grade roadway base with 2.5% cross slope;
 - d) Installation of 2.5-inches (3/4") winter binder course;
 - e) Reclamation of existing roadway (10-inch depth) final list to be approved by Town prior to construction.
 - f) 1.5% Bitumen content to be achieved without additional asphalt.
 - g) Install pavement joint adhesive at all construction joints, specifically between the lanes and at the joints with the public roads. Meet requirement of NHDOT 403.6
 - h) Contractor shall backup shoulders with reclaimed material or shoulder gravel at a 12 inch minimum width.
- G) Culvert Repair: (refer to detail)
 - a) Contractor shall remove existing asphalt and subgrade to expose existing culvert.
 - b) Existing culvert to be removed and disposed of.
 - c) Remove existing material and install new 3/4" crushed stone bedding at minimum of 6 inches thick.
 - d) Install new culvert piece and connect to existing drop inlets. Inspect drop inlets prior to installation of new culvert.
 - e) Backfill with suitable material with 95% compaction to subgrade for road.
 - f) Install new road subgrade, compact, and pave per detail.
 - g) Install debris trap in catch basins, similar to the ELIMINATOR, or approved equal.
- H) Remove temporary erosion control measures after disturbed areas are stabilized;
- I) Loaming, seeding and revegetating of disturbed areas, subsidiary;
- J) Paved driveway aprons (subsidiary), 5ft minimum beyond roadway standard operating procedure, refer to detail;
- K) List of Roads – Overlay, Roadway Reclaim, Culvert Repair:

Street Name	Overlay (Top Wearing) (SY)	Roadway Reclaim (SY)	Culvert Repair (LF)
Coastal Way		3,510	
Spring Hill Road		3,490	75
Portsmouth Avenue - (Town Hall)	800		
Fairway Drive	2,520		
Meloon Road	3,190		
Sanderson Road	4,110		
Lane Avenue	2,950		
Moulton Avenue - Section Reclaimed	1,950		

1.2. Traffic Control:

Traffic control shall be the responsibility of the contractor. Traffic control shall comply with the Federal Highway Administration Manual on Uniform Traffic Control Devices Part VI, Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility, and Incident Management Operations. Contractor must maintain traffic flow, total street closures are not allowed (unless they are approved by the police department and fire department).

A. Method of Measurement – Traffic Control:

Any flagging work required shall be measured by the exact cost billed to the contractor based on the man-hours worked.

Description

Daily traffic control personnel will be required to facilitate traffic through the work zone quickly and safely. The use of, type of, and number of personnel will be reviewed and approved with the Engineer.

Method of Measurement

Uniformed Officers and Flaggers shall be measured by the actual hour worked in the field.

Basis of Payment

Uniformed Officers and Flaggers will be paid for by the actual hour worked. The Town will reimburse the exact cost for this item, no cost markup is allowed. The item will be paid for out of the allowance provided.

B. Basis of Payment:

The accepted quantities of roadway improvements of the type specified will be paid for at the Contract Unit Price per unit complete in place. No payment will be made for those units of roadway improvements which do not conform to the requirements of these Technical Specifications.

The Contractor shall submit an invoice monthly for the work performed during the previous 30 days. The City shall make payment within 30 days for satisfactory work.

C. Coordination with the Town

The Town will designate an employee or representative who will identify for the Contractor the roadways upon which the work will be performed and serve as a liaison between the Town and the Contractor.

Article 2. ENGINEER

The Project has been designed by Altus Engineering, LLC., who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

Article 3. CONTRACT TIMES

- 3.1 Mobilization of equipment shall commence after **May 02, 2024**, and all work shall be completed, and equipment removed from the project site by **November 15, 2024**.
- 3.2 The Work shall be substantially completed prior to **October 15th, 2024**. Substantial completion shall be the point at which the ENGINEER determines that the Work is sufficiently complete so that **ALL** Greenland Roads can be safely re-opened.

3.3 The Work will be completed and ready for final payment by **November 18, 2024**.

Article 4. CONTRACT PRICE

4.1 OWNER shall pay CONTRACTOR for completion of the Work, in accordance with the Contract Documents, an amount in current funds equal to the following prices:

A. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual quantity of that item:

Article 5. PAYMENT PROCEDURES

5.1 *Progress Payments; Retainage.* Based upon Applications for Payment submitted to the ENGINEER by the CONTRACTOR and approved by the ENGINEER, the OWNER shall make progress payments on account of the Contract Sum to the CONTRACTOR as provided in the Contract Documents. The period covered by each Application for Payment shall be one calendar month ending on the last day of the month. All such payments will be measured by the approved schedule of values (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in general requirements. Payments shall become due within thirty (30) days after approval by the ENGINEER.

5.1.1 Prior to Substantial Completion, progress payments will be made in an amount equal to Ninety (90%) Percent of Work completed (with the balance being retainage), but in each case less the aggregate of payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold in accordance with the General Conditions.

5.2 *Final Payment.* Upon final completion and acceptance of the Work in accordance with the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER.

Article 6. INTEREST

All monies not paid when due shall bear interest at the maximum rate allowed by law at the place of the Project.

Article 7. CONTRACT DOCUMENTS

The Contract Documents, which comprise the entire Agreement between OWNER and CONTRACTOR concerning the work, consist of the following:

7.1 This Agreement (items 1 to 7, inclusive).

7.2 General Conditions (items 1 to 9, inclusive).

7.3 Supplementary Conditions.

7.4 Specifications bearing the titles:

Section 01000 General Requirements
Section 01570 Maintenance of Traffic
Section 02000 Sitework
Section NHDOT 306 Reclaimed Stabilized Base & Amendment

This **AGREEMENT** entered into as of the day and year first written above.

OWNER: TOWN OF GREENLAND

By: _____
(Signature)

(Printed Name and Title)

CONTRACTOR:

By: _____
(Signature)

(Printed Name and Title)

SECTION 01000

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL RESPONSIBILITIES OF THE CONTRACTOR

- A. Regulations: The Contractor shall fully comply with all governing local, State, and Federal laws, codes, rules, regulations, and ordinances, including but not limited to The Americans with Disabilities Act, Equal Employment Opportunity and Affirmative Action provisions, and Occupational, Safety, and Health Administration provisions.
- B. Permits: The Contractor shall obtain and pay for all permits and arrange for necessary inspections and approvals from the authorities having jurisdiction. Should any changes be necessary in the Contract Documents to secure such approvals, the Contractor shall promptly notify the Engineer.
 - 1. For the Owner's records, submit copies of permits, licenses, inspection reports, certifications, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing the Work.
- C. Coordination: The Contractor shall be fully responsible for coordinating all construction activities to assure efficient and orderly installation of each part of the Work. In general coordination duties shall include but not be limited to verifying dimensions and existing field conditions, coordinating construction operations, establishing on-site lines of authority and communication, monitoring schedules and progress, monitoring quality, maintaining records and reports, and, in general, assuring the proper administration of the Work.
- D. Supervision - Construction Superintendent: The Contractor shall place and maintain a competent, experienced construction Superintendent/Foreman in charge of the Work on the job site at all times while work is in progress.
- E. On-Site Documents: The Contractor shall provide in an accessible on-site location the following:
 - 1. Complete, currently updated set of Specifications and Drawings, Change Orders, reviewed Shop Drawings, and other documents and samples.
 - 2. Permits and notifications required by laws and regulations.
 - 3. Product Materials Safety and data Sheets (MSDS).

4. List of Owner, Owner's Representative, Engineer, Engineer's Consultants, Contractor's Project Manager, Superintendent, subcontractors, DPW superintendent, building inspector, police, ambulance and fire departments; include telephone numbers and fax numbers.
- F. Safety: The Contractor shall assume full responsibility for all means, methods, procedures, sequences and techniques of construction employed and shall take all measures required to ensure the safety of construction workers, as well as the safety of the general public. The Contractor shall take into full consideration and assure himself that all necessary barricades, fencing, and shoring are provided and that they comply with applicable regulations and standards of good practice. The public shall be guarded from all construction hazards and/or attractive nuisances. The Contractor shall pay all costs necessary for temporary partitioning, barricading, fencing, shoring, walks, ramps, enclosures, flashing lights, warning signs, security and safety devices required for the maintenance of a clean and safe construction site.
- G. Layout and Field Engineering: The Contractor shall be responsible for all layout of all Work, even if such layout is done by others. The Contractor shall employ a qualified field engineer or land surveyor to determine all lines and grades and to field- verify existing job conditions and measurements indicated on the Drawings. The Contractor's responsibility includes but is not necessarily limited to levels, control points, base lines, on-site bench marks, reference points, siting of building and other improvements, locations of components, fixtures, equipment, site improvements, etc.
1. The Owner has generally identified on the existing conditions survey the existing topography, utilities, wetlands, control points, and property line corner stakes.
 2. The Contractor shall be responsible for costs of survey work including but not necessarily limited to establishing and protecting on-site bench marks, replacement or relocation of bench marks, additional base lines or levels, reference points, location of site improvements, verification of existing building dimensions, layout and floor elevations. All discrepancies shall be reported to the Engineer for clarification.
 3. The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction. Verify the location and invert elevation at point of connection of sanitary sewer, storm drainage, and water service piping, etc.
 4. The Contractor shall maintain a surveyor's log of control and other survey work. Record deviations from required lines and level, and advise the Engineer when deviations that exceed indicated or recognized tolerances are detected. On

Project Record Drawings, record deviations that are accepted and not corrected.

- H. Protection of Adjoining Property: The Contractor shall provide all shoring, fencing, and other work necessary to support, protect and keep unharmed all walls, footings, floors, roofs walks, roadways, and all other parts of any existing buildings, facilities, site improvements, land forms, trees and plant materials, etc. The Contractor shall hold the Owner and Engineer harmless from any such damage due to any operations under this Contract. Any existing work or property damaged or disrupted as a result of this Contract shall be replaced or repaired to match original existing conditions at no additional cost to the Owner.
- I. Utilities: The contractor shall send proper notices, make all necessary arrangements, and perform all other services required for the removal or the care, protection and maintenance of all utilities, including but not limited to mail boxes, fire plugs (hydrants), electric, gas, water, sewer, alarm, television, telephone, computer, and telegraph poles and wires, and all other items of this character above or below the ground, on and around the building site, assuming all responsibility and paying all costs related thereto. Related services to any existing facilities shall not be disrupted without the prior approval of the Owner, and then only to the minimum extent required. The Contractor shall comply with the " Underground Utility Damage Prevention System" by notification to DIG SAFE SYSTEM of intent to excavate near or around any underground utility installations. The Contractor shall call DIG SAFE SYSTEM at least 72 working day hours in advance of starting any such excavation.

Contractor acknowledges and understands that the plans may contain information concerning underground utilities that may be inaccurate. As the knowledgeable party in the field, the Contractor is in the best position to verify the location of existing utilities and, if possible, adjust the location of new construction to avoid any such interference. Prior to the start of site work construction, the Contractor agrees to (1) carefully study the observable evidence of underground utilities at the site (e.g. Dig-Safe markings, manhole covers, interior arrangement/elevation/direction of piping in any accessible below grade structures, etc.); (2) survey for underground interferences with pipe detection equipment; and (3) report at once any interference(s) discovered. The Contractor and Engineer shall resolve interferences(s) prior to performing the new construction. If an interference cannot be resolved without additional expense or time, the Contractor shall so inform the Owner in writing. Any such additional work performed prior to receipt of instructions from the Owner will be done at the Contractor's risk.

- J. Traffic Regulations and Parking: The Contractor shall properly regulate traffic at times when the Work interferes with the normal flow of traffic both on and off the site. One lane of roadway must remain operational at all times. The Contractor shall provide traffic control, signage, flaggers, and police officers, in accordance with regulations of the local municipality and the State. Parking for workers on the project shall be limited to areas designated by the Owner or governing officials. There shall

be no parking within the right-of-way. Roadways and driveways outside the limits of the Contract shall be kept free of debris resulting from construction related traffic.

- K. Roads and Access to the Site: Access to the site for workers and the delivery or removal of construction materials and/or equipment shall be made only from locations approved by governing authorities and acceptable to the Owner. Existing roads, lanes, and other required fire access shall remain accessible to fire vehicles at all times. Hauling permits and route approvals shall be obtained from governing authorities as applicable.
- L. Dewatering: The Contractor shall protect the Work, including but not limited to all excavations, trenches, buildings and materials from storm water, ground water, back-up of leakage of sewers, drains or other piping, and from water of any other origin and shall control, collect, and dispose of any accumulation of such water. Dewatering operations shall include but not be limited to:
 - 1. Furnishing operating, and maintaining all pumps, piping, drains, and other equipment, including spare units available for immediate use in the event of equipment breakdowns.
 - 2. Designing, engineering, constructing, maintaining, and removing cofferdams, temporary underdrains, wellpoints, and all other systems necessary for dewatering.
 - 3. Disposing of all water in a safe and proper manner, acceptable to governing authorities.

The Contractor shall pay all costs related to dewatering. All damage resulting from dewatering operations, or the failure of the Contractor to maintain the Work in a suitable dry condition, shall be promptly repaired by the Contractor at no additional cost to the Owner.

- M. Soil Testing: The Contractor shall submit samples of soil materials used in the construction per the Engineer's request. The cost of testing the soils will be borne by the Owner.
- N. Snow Removal: The Contractor shall remove all snow or ice which might result in damage or delay to the Work.
- O. Vandalism: The Contractor shall take all reasonable precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner, whether or not forming part of the Work, located within those areas of the Project to which the Contractor has access.
- P. Existing Materials and Equipment: Unless specifically indicated otherwise, all useful salvage materials resulting from demolition, where applicable, shall remain the

property of the Owner. Such materials shall be carefully removed so as to limit unnecessary damage and shall be properly stored on site at location(s) designated by the Owner. In general, these materials shall not include basic building materials such as concrete, masonry, steel, wood framing, plaster, gypsum board, etc. In general, these materials may include doors, windows, millwork, finish hardware, mechanical and electrical equipment, building specialties, etc. The determination of whether or not materials are to be considered "useful" shall be left solely to the discretion of the Owner. All materials not determined to be "useful" shall be removed from the site and properly disposed of off site at no additional cost to the Owner.

- Q. Shipping and Storage of Materials: The Contractor shall be responsible for the proper protection from damage of all materials and equipment prior to and following their incorporation into the Work. Materials and equipment shall be inspected by the Contractor and, if found to be damaged or otherwise unsuitable, shall be promptly rejected.
- R. Do not leave trenches open overnight.

1.2 MEASUREMENT AND PAYMENT

- A. Schedule of Values: Submit a preliminary sample of the Schedule of Values for review and comment regarding format and content to the Engineer at the earliest feasible date, but in no case later than fourteen (14) days prior to submittal of the first Application for Payment.
 - 1. Round amount off to the nearest whole dollar; the total shall equal the Contract Sum.
 - 2. No later than seven (7) days prior to submittal of the first Application for Payment, the Contractor shall submit to the Engineer and Owner the fully completed Schedule of Values.
- B. Payment Requisition: The Contractor shall submit to the Engineer three original copies of "Application for Payment", an itemized statement showing the original Contract Amount, the value of the Work to date, the amount previously approved, the amount presently requested, and the balance remaining. Each copy shall be fully executed and properly signed and sealed.

END OF SECTION

SECTION 01570

MAINTENANCE OF TRAFFIC

PART 1-GENERAL

Reference NHDOT Section 618 – “Uniformed Officers and Flaggers” and Section 619 – “Maintenance of Traffic”.

1.1 DESCRIPTION

- A. Work Included:
 - 1. Provide all materials, perform all work, and provide all police details and flaggers necessary to completely regulate traffic in the area of Work.
 - 2. Perform all work in such a manner as to provide safe passage at all times for the public and with a minimum of obstruction to traffic.
 - 3. Do not close roads or streets to passage of the public without the permission of the Town of Greenland.
- B. The Greenland Police Department has indicated that a uniformed officer is required for lane closures. The Contractor shall be responsible for coordinating police details and all costs associated with providing uniformed officers as required.

1.2 SCHEDULING WORK

- A. Revise the plan of work if it will create a traffic hazard or an unreasonable traffic delay.
- B. Do not start work in any new location without the permission of the Engineer.
- C. Notify all police and fire departments of all scheduled detours and lane closures at least 24-hours prior to activities and when streets are reopened.

PART 2 - PRODUCTS

2.1 WARNING SIGNS AND BARRICADES

- A. Do not perform work without providing adequate warning signs, barricades, signal lights, watchmen, and take other necessary precautions for the safety of the public.
- B. Provide and illuminate suitable warning signs to show where construction, barricades, or detours exist.
- C. Provide barricades of substantial construction and painted with a finish that increases visibility at night.

- D. Keep signal lights illuminated at all barricades and obstructions from sunset to sunrise.
- E. Maintain all necessary signs, barricades, lights, watchmen, and other safety precautions during authorized suspension of the Work, weekends, holidays, or other times when the Work is not in progress.
- F. Traffic control signs for construction work shall be located and of the size and type as outlined in Manual on Uniform Traffic Control Devices for Streets and Highways as published by the U.S. Department of Transportation.

PART 3 - EXECUTION

3.1 DETOURS

- A. Provide, identify and maintain suitable detours when the project, or any part thereof, is closed to public travel.
- B. When the closed part of the project is reopened, restore the detour area and any other disturbed areas to the original condition.

3.2 INCONVENIENCE TO RESIDENTS OF VICINITY

- A. Whenever a traveled way is closed, perform the Work in such a manner that local travel and residents in the vicinity of the Work will be inconvenienced as little as possible.
- B. Allow access to residents and abutting landowners along the project to driveways and other normal outlets from their property.

3.3 UNIFORMED POLICE OFFICERS

- A. If police officers are required, arrange police detail with the Greenland Police Department.
- B. Any police officers, whether regular, reserve, special or otherwise, shall be employed or subcontracted by the Contractor.

END OF SECTION

SECTION 02000

SITWORK

PART 1.0 - GENERAL

- 1.1 All work included shall be done in conformity with the applicable provisions of the State of New Hampshire Department of Transportation Standard Specifications for Road and Bridge Construction (SSRBC), approved and adopted, 2016, including all the latest revisions, addenda, and supplements, except as noted in Section 1.2 below. Copies of the Standard Specifications may be obtained on line from the New Hampshire Department of Transportation, Special Services Division, John O. Morton Building, Hazen Drive, Concord, New Hampshire.

<https://www.nh.gov/dot/org/projectdevelopment/highwaydesign/specifications/>

Items of work under this Contract specified in the New Hampshire Department of Transportation Standard Specifications for Road and Bridge Construction shall include, but are not limited to the following:

<u>Section</u>	
107	Legal Relations and Responsibilities to Public
201	Clearing and Grubbing
202	Removal of Structures and Obstructions
203	Excavation and Embankment
209	Granular Backfill
214	Fine Grading
304	Aggregate Base Course
306	Reclaimed Stabilized Base
401	Plant Mix Pavements - General
403	Hot Bituminous Pavement
618	Uniformed Officers and Flaggers
619	Maintenance of Traffic
624	Railroad Protection
628	Sawed Pavement
641	Loam
643	Fertilizer for Grasses
644	Grass Seed
645	Erosion Control

- 1.2 Modifications, clarifications, revisions, and additions to the SSRBC.
- A. Reference made to the " Department" or " Bureau" or "State" or " District Engineer" shall mean "Town of Greenland, their Agents or Engineer".
 - B. SSRBC, Division 100 - General Provisions of the NHDOT's Standard Specifications for Road and Bridge Construction will not apply.

PART 2.0 - PRODUCTS

Products and materials are as specified in the applicable sections of the New Hampshire Department of Transportation SSRBC.

PART 3.0 - EXECUTION

Execution and installation of all sitework shall conform to the "Construction Requirements" specified in the applicable sections of the New Hampshire Department of Transportation SSRBC.

END OF SECTION

NHDOT SECTION 306

RECLAIMED STABILIZED BASE & AMMENDMENT

Description

- 1.1** This work shall consist of scarifying, if necessary, and pulverizing the existing pavement together with a base course material. It may require removal and rehandling and the addition of other materials as shown on the plans or as ordered.

Materials

2.1 General.

- 2.1.1** The material shall consist of the existing pavement blended with the underlying gravel and/or additional stone as required. Reclaimed stabilized base shall have a minimum bitumen content of 1.5 percent and conform to the following gradation:

<u>Sieve Size</u>	<u>Percent Passing By Weight</u>
3 in (75 mm)	100
1-1/2 in (37.5 mm)	80 - 100
3/4 in (19.0 mm)	55 - 90
No. 4 (4.75 mm)	40 - 70

- 2.1.2** Additional stone as required to meet the above gradation shall meet the requirements of 304.2.1.1 with a maximum size of (1 ½ in) 37.5 mm

- 2.1.3** Additional asphalt shall meet the requirements of 702, as specified.

Construction Requirements

- 3.1** The existing pavement shall be pulverized together with the underlying base course material and/or additional stone material if required. The pulverizing operation shall blend the existing pavement and base course into a homogeneous mass, using the bitumen contained in the pavement as a stabilizer. The quantity of material mixed with the existing pavement shall be adjusted as necessary to meet the material specification of 2.1.1.

- 3.2** The reclaimed stabilized base shall be processed, using approved reclaimers. Equipment such as a milling machine or a rock crushing plant will not be permitted. Reclaiming equipment shall be equipped with a gauge to show depth of material being processed.
- 3.3** Prior to compaction water shall be applied, for the purpose of dust control and to ensure proper compaction. Water may be added during fine grading to improve workability. Additional water shall be applied prior to compaction and may require mixing to blend with reclaimed material to ensure adequate compaction.
- 3.4** Compaction shall be accomplished by successive passes of a vibratory sheep's foot or pad foot roller of at least 50,000 lb (222 kN) of dynamic force. Final rolling shall be accomplished by a smooth steel wheel vibratory roller of at least 27,000 lb (120 kN) of dynamic force. Density testing shall conform to 304.3.8. SECTION 306
- 3.5** Gradation shall be determined on the total sample prior to extraction by AASHTO T 27. Bitumen content shall be determined on that portion of the sample which passes a 3/4 in (19 mm) sieve by AASHTO T 164. The Contractor shall make provisions for an appropriate testing facility for Department personnel to perform the test, AASHTO T 164, as needed.
- 3.6** Prior to placing the processed material, the roadbed shall be shaped to the specified crown and grade. If the existing roadbed is disturbed, it shall be compacted in accordance with 304.3.6.
- 3.7** Excess material, unless specified otherwise, shall become the property of the Contractor.
- 3.8** Care shall be exercised to save all pavement for reclaiming if trenches are constructed prior to processing.
- 3.9** If the reclaimed stabilized base is not sufficient to complete the project, additional crushed gravel shall be used to make up the deficiency.
- 3.10** Reclaimed stabilized base specified to be removed and rehandled may be processed in the roadway or off site. The reclaimed stabilized base shall be returned to the highway and placed on the prepared roadbed to the depths specified.
- 3.11** Additional asphalt may be required to obtain the minimum 1.5 percent bitumen content.
- 3.11.1** The asphalt shall be applied by a liquid distributor or other approved method, at a rate specified by the Engineer. The asphalt shall be blended with the reclaimed stabilized base using approved mixing equipment.
- 3.11.2** Asphalt shall not be applied when rain is threatening, during rain storms, or when the air temperature is below 50deg F (10deg C).
- 3.11.3** Prior to the addition of asphalt, the moisture content of the reclaimed stabilized base shall be adjusted by aerating or adding water if required.
- 3.12** If additional stone is used it shall be blended with the reclaimed material using an approved reclaimer.

Method of Measurement

4.1 Reclaimed stabilized base, of the depth specified will not be measured, but shall be the square yard (square meter) final pay quantity for material within the limits coordinated with engineer.

4.2 Additional stone will be measured by the ton (metric ton) in accordance with 109.01.

4.3 Asphalt will be measured by the ton or pound (metric ton or kilogram) in accordance with 109.01.

Basis of Payment

5.1 Reclaimed stabilized base, of the depth specified is a final pay quantity item and will be paid for at the contract unit price per square yard (square meter), complete in place in accordance with 109.11.

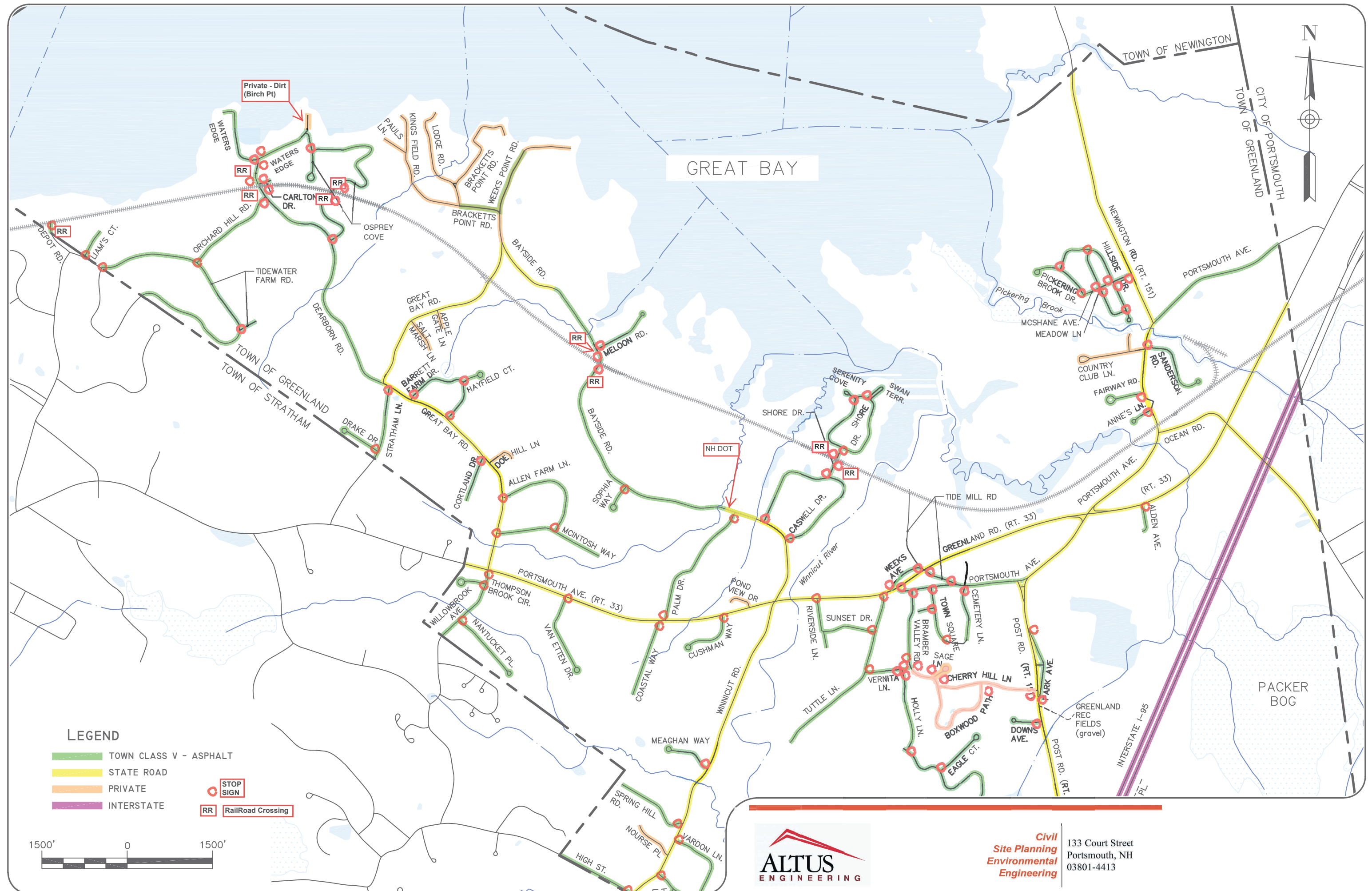
5.1.1 Removal and rehandling or removal of excess material shall be subsidiary to reclaimed stabilized base.

5.2 The accepted quantity of stone will be paid for at the contract unit price per ton (metric ton), complete in place.

5.3 The accepted quantities of asphalt will be paid for at the contract unit price per ton or pound (metric ton or kilogram), complete in place.

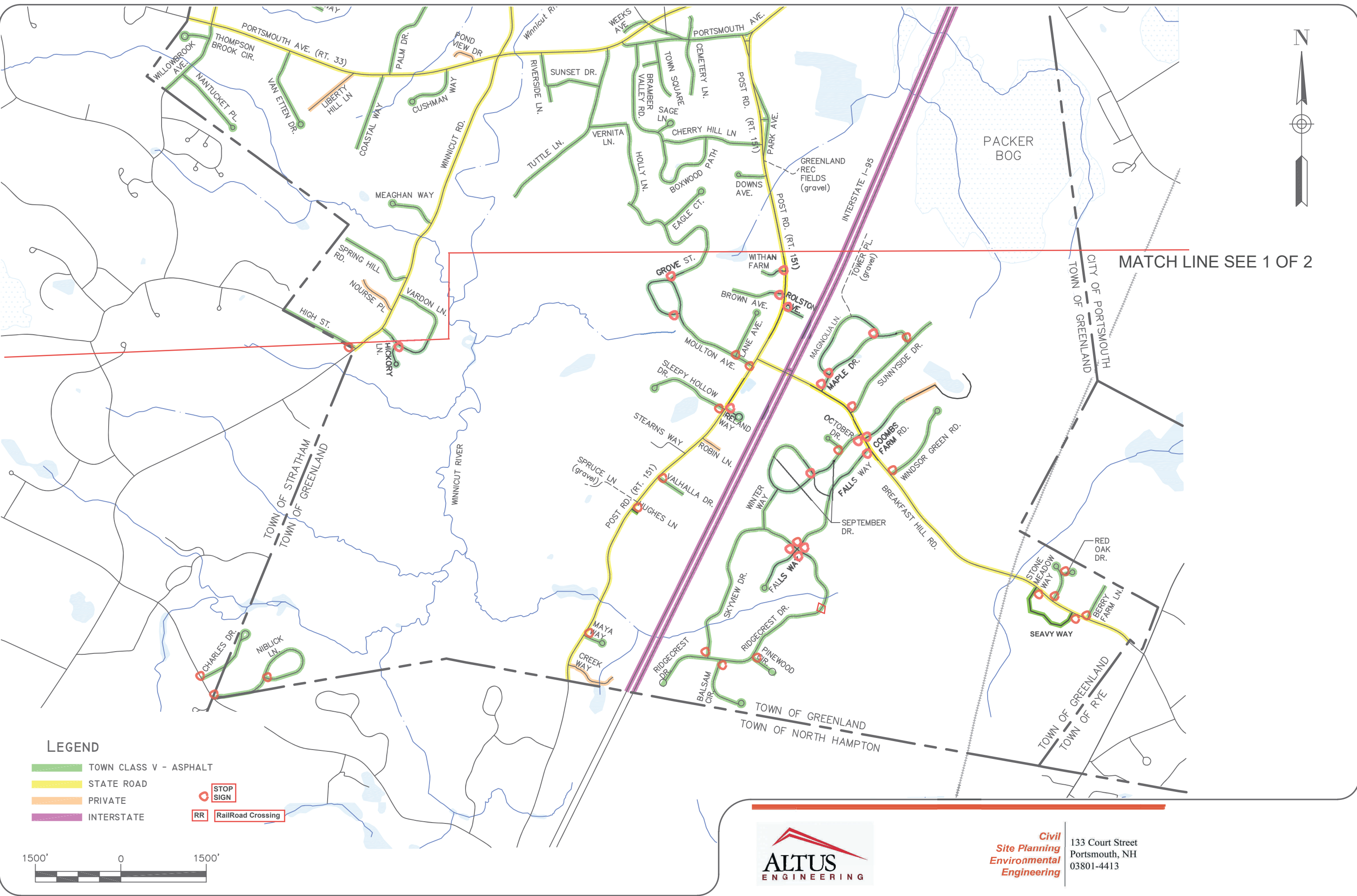
Pay items and units (English):

306.210 Reclaimed Stabilized Base Removed and Rehandled, 10 in Deep (F)	Square Yard
306.36 Stone for Reclaimed Stabilized Base	Ton



Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413



SEDIMENT AND EROSION CONTROL NOTES

PROJECT NAME AND LOCATION

2024 ROADWAY IMPROVEMENTS
GREENLAND, NEW HAMPSHIRE

OWNER:
TOWN OF GREENLAND
11 TOWN SQUARE
P.O. BOX 100
GREENLAND, NH 03840

DESCRIPTION

The project consists of the rehabilitation of roadways in the Town of Greenland NH, including but not limited to reclaiming the road base, grading, culvert work, shoulder and ditch improvements, and paving.

DISTURBED AREA

The disturbed area for each road is under 1 acre but should be verified by contractor.

PROJECT PHASING

The proposed project will be completed in one phase.

NAME OF RECEIVING WATER

Each road varies but some have potential to drain to unnamed tributary to Great Bay.

NPDES CONSTRUCTION GENERAL PERMIT

If Needed – Contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with federal storm water permit requirements. The SWPPP must be prepared in a format acceptable to the Owner and three (3) copies provided to the Town at least fourteen (14) days prior to initiating construction. Contractor is responsible for all costs associated with preparation and implementation of SWPPP including any temporary erosion control measures (whether indicated or not on these drawings) as required for the contractor's sequence of activities.

The Contractor and Owner shall each file a Notice of Intent (NOI) with the U.S.E.P.A. under the NPDES Construction General Permit. (U.S.E.P.A., 1200 Pennsylvania Avenue NW, Washington, DC 20460) All work shall be in accordance with NPDES General Permit: NHR120000, including NOI requirements, effluent limitations, standards and management for construction. The Contractor shall be responsible for obtaining a USEPA Construction Dewatering Permit, if required.

SEQUENCE OF MAJOR ACTIVITIES

1. INSTALLATION OF TEMPORARY EROSION CONTROL MEASURES;
2. COORDINATE WITH GREENLAND POLICE DEPARTMENT FOR POLICE DETAIL FOR ALL LANE CLOSURES;
3. EXCAVATION FOR DRAINAGE DITCHES IF NEEDED;
4. REMOVAL OF EXISTING 15" CMP CULVERT AND INSTALLATION OF NEW 15-INCH HDPE CULVERT WITH FLARED ENDS AND RIP RAP STONE;
5. RECLAMATION OF EXISTING ROADWAYS ADD 150 LB/SY OF CRUSHED STONE TO BASE AND GRADE ROADWAY BASE TO 2.5% CROSS SLOPE;
6. INSTALLATION OF 2.5" WINTER BINDER COURSE AS IDENTIFIED;
7. INSTALLATION OF 1.5" TOP WEARING COURSE AS IDENTIFIED;
8. CONSTRUCTION OF DRIVEWAY APRONS;
9. COMPLETION OF ROADSIDE DRAINAGE DITCHES IF NEEDED;
10. LOAMING, SEEDING AND REVEGETATING OF DISTURBED AREAS;
11. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER DISTURBED AREAS ARE STABILIZED;.

TEMPORARY EROSION & SEDIMENT CONTROL AND STABILIZATION PRACTICES

All work shall be in accordance with state and local permits. Work shall conform to the practices described in the "New Hampshire Stormwater Manual, Volumes 1 – 3", issued December 2008, as amended. As indicated in the sequence of Major Activities, the silt fences shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Once construction activity ceases permanently in an area, silt fences and any earth/dikes will be removed once permanent measures are established.

During construction, runoff will be diverted around the site with stabilized channels where possible. Sheet runoff from the site shall be filtered through hay bale barriers, stone check dams, and silt fences. All storm drain inlets shall be provided with hay bale filters or stone check dams. Stone rip rap shall be provided at the outlets of drain pipes and culverts where shown on the drawings.

Stabilize all ditches, swales, stormwater ponds, level spreaders and their contributing areas prior to directing flow to them. Hay bales shall be prohibit for use as an erosion control method on site.

Temporary and permanent vegetation and mulching is an integral component of the erosion and sedimentation control plan. All areas shall be inspected and maintained until vegetative cover is established. These control measures are essential to erosion prevention and also reduce costly rework of graded and shaped areas.

Temporary vegetation shall be maintained in these areas until permanent seeding is applied. Additionally, erosion and sediment control measures shall be maintained until permanent vegetation is established.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

A. GENERAL

These are general inspection and maintenance practices that shall be used to implement the plan:

1. The smallest practical portion of the site shall be denuded at one time, but in no case shall it exceed 5 acres at one time.
2. All control measures shall be inspected at least once each week and following any storm event of 0.25 inches or greater.
3. All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
4. Built-up sediment shall be removed from silt fence or other barriers when it has reached one-third the height of the fence or bale, or when "bulges" occur.
5. All diversion dikes shall be inspected and any breaches promptly repaired.
6. Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy growth.
7. The owner's authorized engineer shall inspect the site on a periodic basis to review compliance with the Plans.
8. All roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.
9. All cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade.
10. An area shall be considered stable if one of the following has occurred:
 - a. Base coarse gravels have been installed in areas to be paved;
 - b. A minimum of 85% vegetated growth as been established;
 - c. A minimum of 3 inches of non-erosive material such as stone of riprap has been installed;
- or –
- d. Erosion control blankets have been properly installed.
11. The length of time of exposure of area disturbed during construction shall not exceed 45 days.

B. MULCHING

Mulch shall be used on highly erodible soils, on critically eroding areas, on areas where conservation of moisture will facilitate plant establishment, and where shown on the plans.

1. Timing – In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this:
 - a. Apply mulch prior to any storm event. This is applicable when working within 100 feet of wetlands. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant storms.
 - b. Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment shall be used to evaluate the interaction of site conditions (soil erodibility, season of year, extent of disturbance, proximity to sensitive resources, etc.) and the potential impact of erosion on adjacent areas to choose an appropriate time restriction.

2. Guidelines for Winter Mulch Application –

Type	Rate per 1,000 s.f.	Use and Comments
Hay or Straw	70 to 90 lbs.	Must be dry and free from mold. May be used with plantings.

Wood Chips or Bark Mulch	460 to 920 lbs.	Used mostly with trees and shrub plantings.
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Jute and Fibrous Matting (Erosion)	As per manufacturer Specifications	Used in slope areas, water courses and other Control Blanket areas.
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Crushed Stone 1/4" to 1-1/2" dia.	Spread more than 1/2" thick	Effective in controlling wind and water erosion.
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Erosion Control Mix	2" thick (min)	<ul style="list-style-type: none">* The organic matter content is between 80 and 100% dry weight basis.* Particle size by weight is 100% passing a 6" screen and a minimum of 70 % maximum of 85% passing a 0.75" screen.* The organic portion needs to be fibrous and elongated.* Large portions of silts, clays or fine sands are not acceptable in the mix.* Soluble salts content is less than 4.0 mmhos/cm.* The pH should fall between 5.0 and 8.0.
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3. Maintenance – All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.

C. TEMPORARY GRASS COVER

1. Seedbed Preparation – Apply fertilizer at the rate of 600 pounds per acre of 10–10–10. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of three (3) tons per acre.

2. Seeding –
 - a. Utilize annual rye grass at a rate of 40 lbs/acre.
 - b. Where the soil has been compacted by construction operations, loosen soil to a depth of two (2) inches before applying fertilizer, lime and seed.
 - c. Apply seed uniformly by hand, cyclone seeder, or hydroseeder (slurry including seed and fertilizer). Hydroseedings, which include mulch, may be left on soil surface. Seeding rates must be increased 10% when hydroseeding.

3. Maintenance – Temporary seedings shall be periodically inspected. At a minimum, 95% of the soil surface should be covered by vegetation. If any evidence of erosion or sedimentation is apparent, repairs shall be made and other temporary measures used in the interim (mulch, filter barriers, check dams, etc.).

D. PERMANENT SEEDING –

Seed Mixture (recommended):

Rate:

Type	LBS. per Acre	LBS per 1,000 sf
Tall Fescue	20	0.45
Creeping Red Fescue	20	0.45
Birdsfoot Trefoil	8	0.20
Total	48	1.10

E. FILTERS

1. Silt Fence
 - a. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements:

Physical Property	Test	Requirements
Filtering Efficiency	VTM–51	75% minimum
Tensile Strength at 20% Maximum Elongation*	VTM–52	Extra Strength 50 lb/lin in (min) Standard Strength 30 lb/lin in (min)
Flow Rate	VTM–51	0.3 gal/sf/min (min)

* Requirements reduced by 50 percent after six (6) months of installation.

Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizer to provide a minimum of six (6) months of expected usable construction life at a temperature range of 0 degrees F to 120° F.

- b. Posts shall be spaced a maximum of ten (10) feet apart at the barrier location or as recommended by the manufacturer and driven securely into the ground (minimum of 16 inches).
- c. A trench shall be excavated approximately six (6) inches wide and eight (8) inches deep along the line of posts and upslope from the barrier.
- d. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least one (1) inch long, tie wires or hog rings. The wire shall extend no more than 36 inches above the original ground surfaces.
- e. The "standard strength" filter fabric shall be stapled or wired to the fence, and eight (8) inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
- f. When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of item (g) applying.
- g. The trench shall be backfilled and the soil compacted over the filter fabric.
- h. Silt fences shall be removed when they have served their useful purpose but not before the upslope areas has been permanently stabilized.

2. Sequence of Installation – Sediment barriers shall be installed prior to any soil disturbance of the contributing upslope drainage area.

3. Maintenance –
 - a. Silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them. Any required repairs shall be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water, the sediment barriers shall be replaced with a temporary stone check dam.

- b. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.

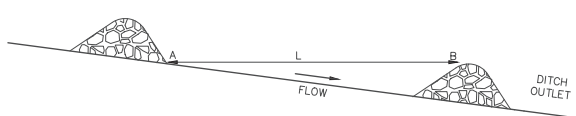
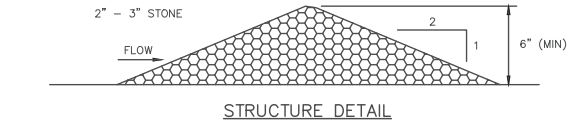
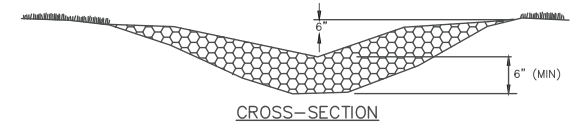
- c. Sediment deposits must be removed when deposits reach approximately one-third (1/3) the height of the barrier.

- d. Any sediment deposits remaining in place after the silt fence or other barrier is no longer required shall be removed. The area shall be prepared and seeded.

- e. Additional stone may have to be added to the construction entrance, rock barrier and riprap lined swales, etc., periodically to maintain proper function of the erosion control structure.

4. Alternative Method

Filtrexx Siltsoxx or approved equal – install per manufacturer specifications.

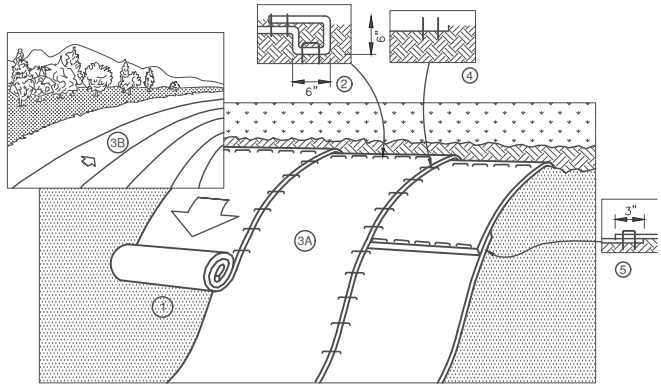


SPACING BETWEEN STRUCTURES

1. L = DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION
2. CHECK DAM SHALL BE CONSTRUCTED OF 2" TO 3" STONE WITH COMPLETE COVERAGE OF DITCH OR SWALE TO INSURE THAT THE CENTER OF THE STRUCTURE IS LOWER THAN THE EDGES.

STONE CHECK DAM

NOT TO SCALE



NOTES

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION BLANKET / JUTE MATTING

NOT TO SCALE

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ISSUED FOR:

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NO.	DESCRIPTION	BY	DATE
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APPROVED BY: EDW

DRAWING FILE: 5414.DWG

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OWNER OF RECORD/APPLICANT:

TOWN OF GREENLAND
11 TOWN SQUARE
GREENLAND, NH 03840

PROJECT:

2024 ROADWAY
IMPROVEMENTS

GREENLAND, NH

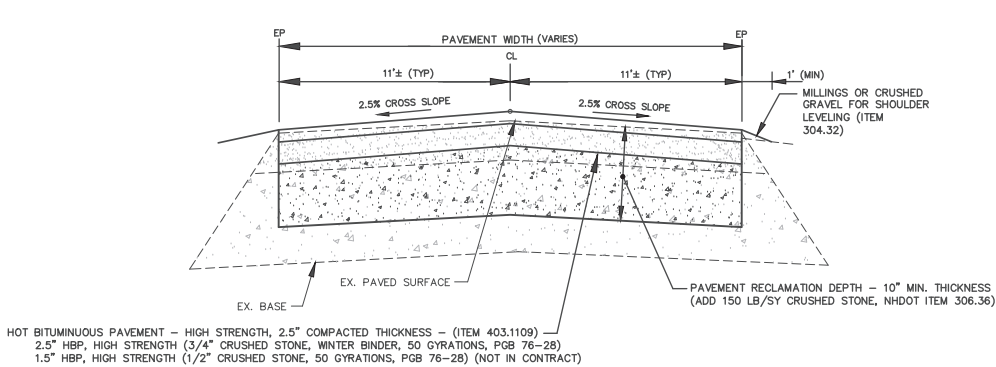
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EROSION
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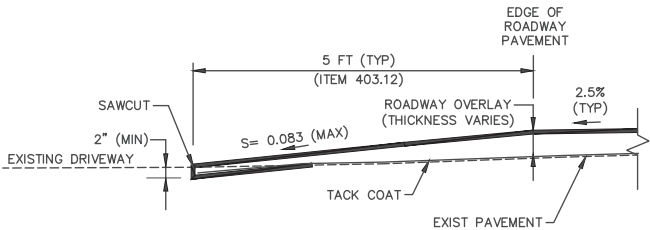
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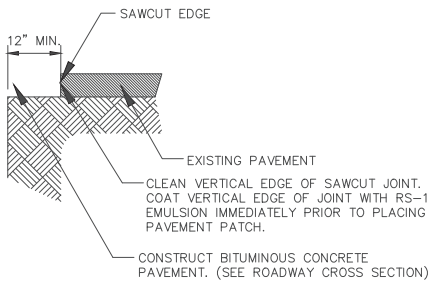


ROADWAY RECLAIM NOT TO SCALE

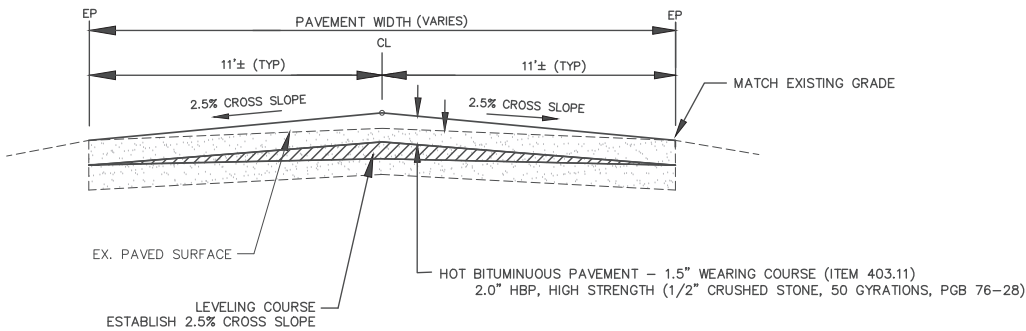


- NOTES
- CONTRACTOR SHALL SAWCUT A 1" MINIMUM SCORE LINE IN EACH DRIVEWAY AT THE CONFORM LINE.
 - THE LENGTH OF EACH DRIVEWAY CONFORM MAY VARY BASED ON THE EXISTING DRIVEWAY SLOPES AND ROADWAY OVERLAY THICKNESS AT EACH LOCATION. CONTRACTOR SHALL VERIFY LIMITS OF EACH DRIVEWAY CONFORM WITH ENGINEER PRIOR TO CONSTRUCTING.

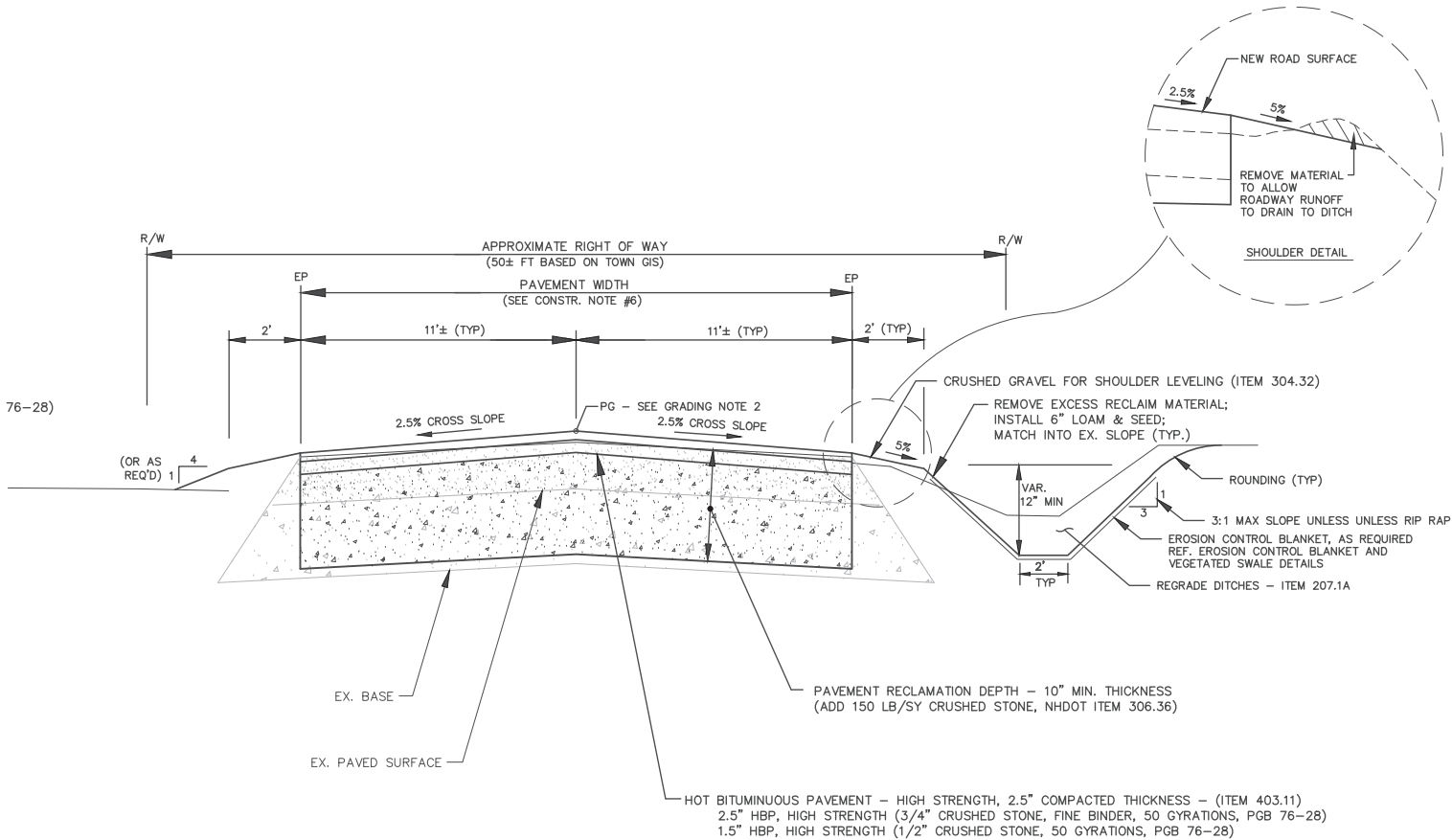
DRIVEWAY CONFORM NOT TO SCALE



PAVEMENT SAWCUT NOT TO SCALE



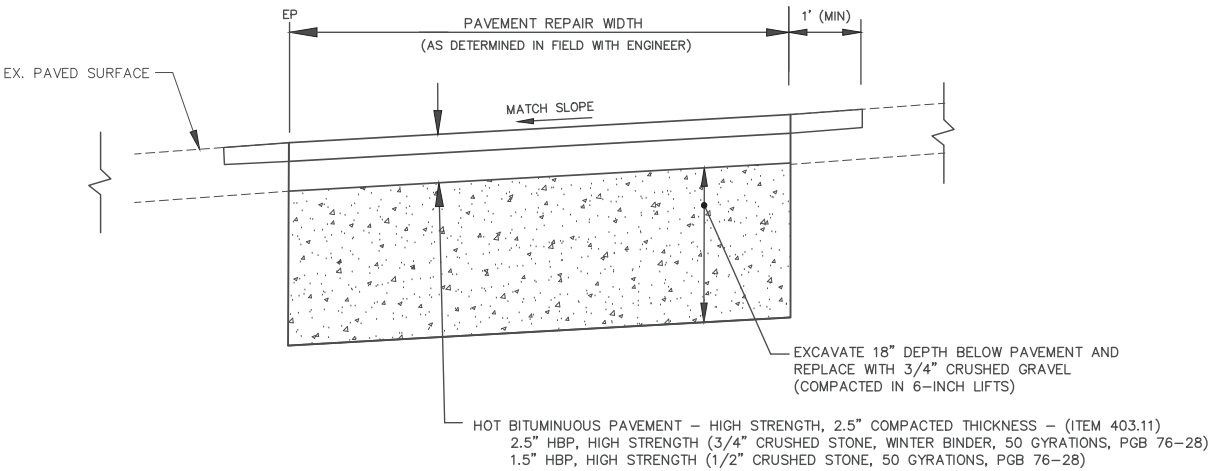
OVERLAY ROADWAY NOT TO SCALE



PAVEMENT DESIGN NOTES:

- RECLAIM EXISTING PAVEMENT AND BASE (10" DEPTH).
 - ADD CRUSHED STONE (ITEM 306.36) INTO RECLAIMED BASE AT A RATE OF 150 LB/SY.
 - REHANDLE, REMOVE AND REGRADE BASE MATERIALS TO GRADE.
 - REGRADE ROAD BASE TO 2.5" BELOW EXISTING DRIVEWAYS TO CONFORM TO EXISTING DRIVEWAYS. CROWN ROADWAY TO 2.5% CROSS SLOPE.
- OVERLAY 1.5" HOT BITUMINOUS PAVEMENT (HIGH STRENGTH).
 - 2.5" HBP FINE BINDER "WINTER" COURSE (3/4") (PREVIOUSLY COMPLETED).
 - 1.5" HBP FINAL WEARING COURSE (1/2") (TACK COAT BINDER PRIOR TO PAVING WEARING COURSE)
- NO WORK SHALL OCCUR OUTSIDE OF THE APPARENT RIGHT OF WAY WITHOUT APPROVAL FROM PROPERTY OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING PRIVATE LANDOWNER OF OPERATIONS IMPACTING THEIR PROPERTY AND/OR ACCESS AND COORDINATE WORK ACTIVITIES ACCORDINGLY.

TYPICAL ROADWAY CROSS SECTION



ROADWAY REPAIR (PATCH) NOT TO SCALE

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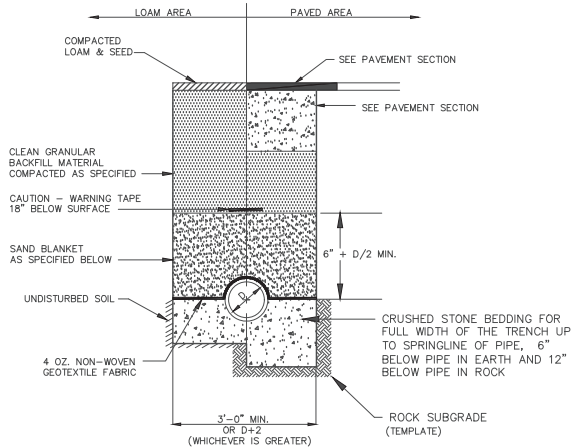
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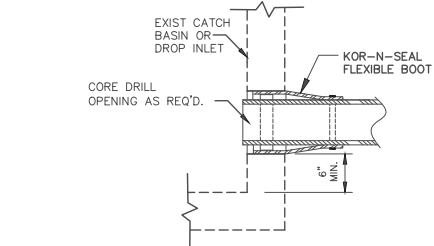


BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C. CULVERT PIPE TO HAVE 2'-0" MINIMUM TOTAL COVERAGE.

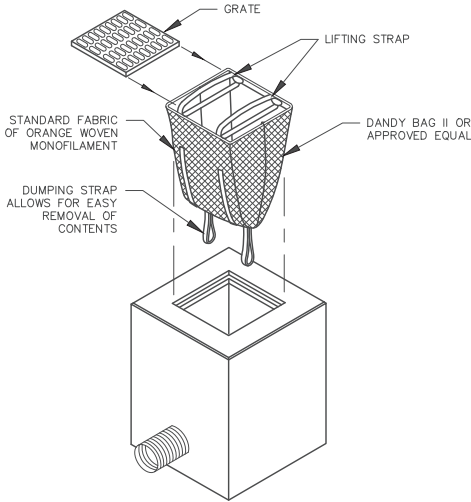
SAND BLANKET/BARRIER		CRUSHED STONE BEDDING	
SIEVE SIZE	% FINER BY WEIGHT	SIEVE SIZE	% PASSING BY WEIGHT
1/2"	90 - 100	1"	100
200	0 - 15	3/4"	90 - 100
		3/8"	20 - 55
		# 4	0 - 10
		# 8	0 - 5

* EQUIVALENT TO STANDARD STONE SIZE #67 - SECTION 703 OF NHDOT STANDARD SPECIFICATIONS

Drain Trench Section NOT TO SCALE



Pipe Connection Detail NOT TO SCALE



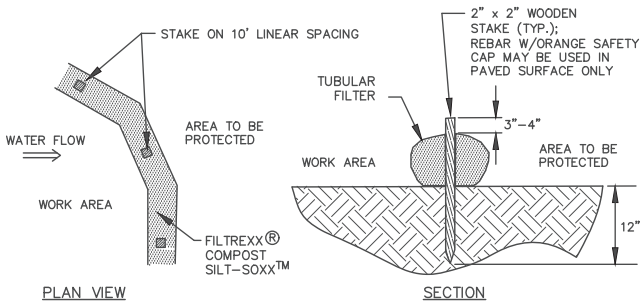
NOTE: ALL CATCH BASINS AND DRIAN INLETS WITHIN OR ADJACENT TO THE PROJECT THAT HAVE THE POTENTIAL TO RECEIVE SURFACE RUNOFF FORM EXPOSED EXCAVATED AREAS SHALL BE PROTECTED. TO BE PAID UNDER ITEM 699.

INSTALLATION AND MAINTENANCE:

INSTALLATION: REMOVE THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS; PLACE ABSORBENT PILLOW IN UNIT. STAND GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO CATCH BASIN INSERT SO THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET.

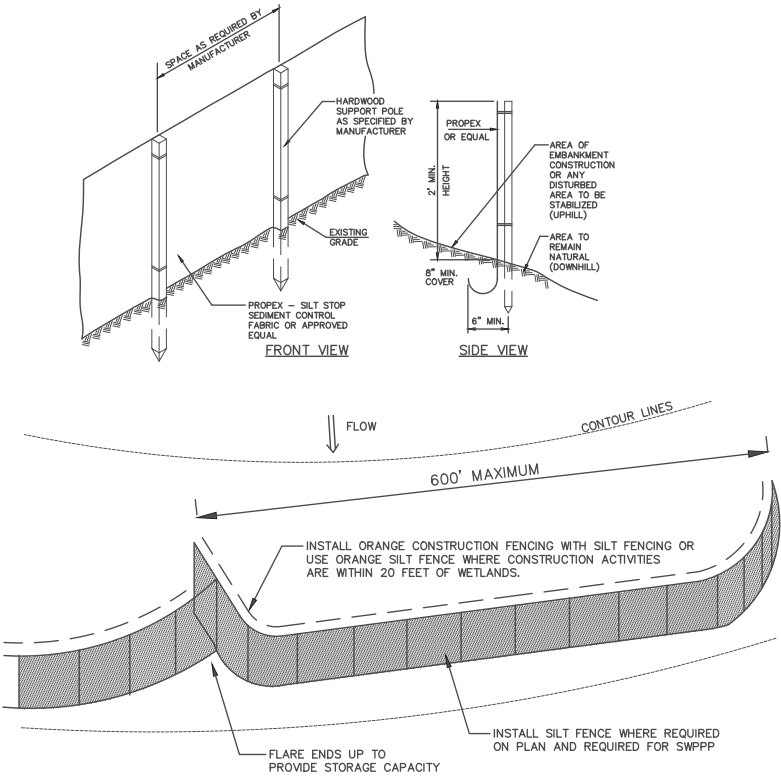
MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF THE UNIT AFTER EACH STORM EVENT. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE CATCH BASIN INSERT. IF THE CONTAINMENT AREA IS MORE THAN 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED. TO EMPTY THE UNIT, LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS AND REMOVE THE GRATE. IF USING OPTIONAL ABSORBENTS; REPLACE ABSORBENT WHEN NEAR SATURATION.

Storm Drain Inlet Protection NOT TO SCALE



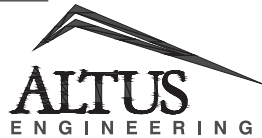
- NOTES:
- SILTSOXX OR APPROVED EQUAL SHALL BE USED FOR TUBULAR SEDIMENT BARRIERS.
 - ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.
 - COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIREMENTS OF THE SPECIFIC APPLICATION.
 - ALL SEDIMENT TRAPPED BY BARRIER SHALL BE DISPOSED OF PROPERLY.

Tubular Sediment Barrier Detail NOT TO SCALE



Silt Fence Layout Detail NOT TO SCALE

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