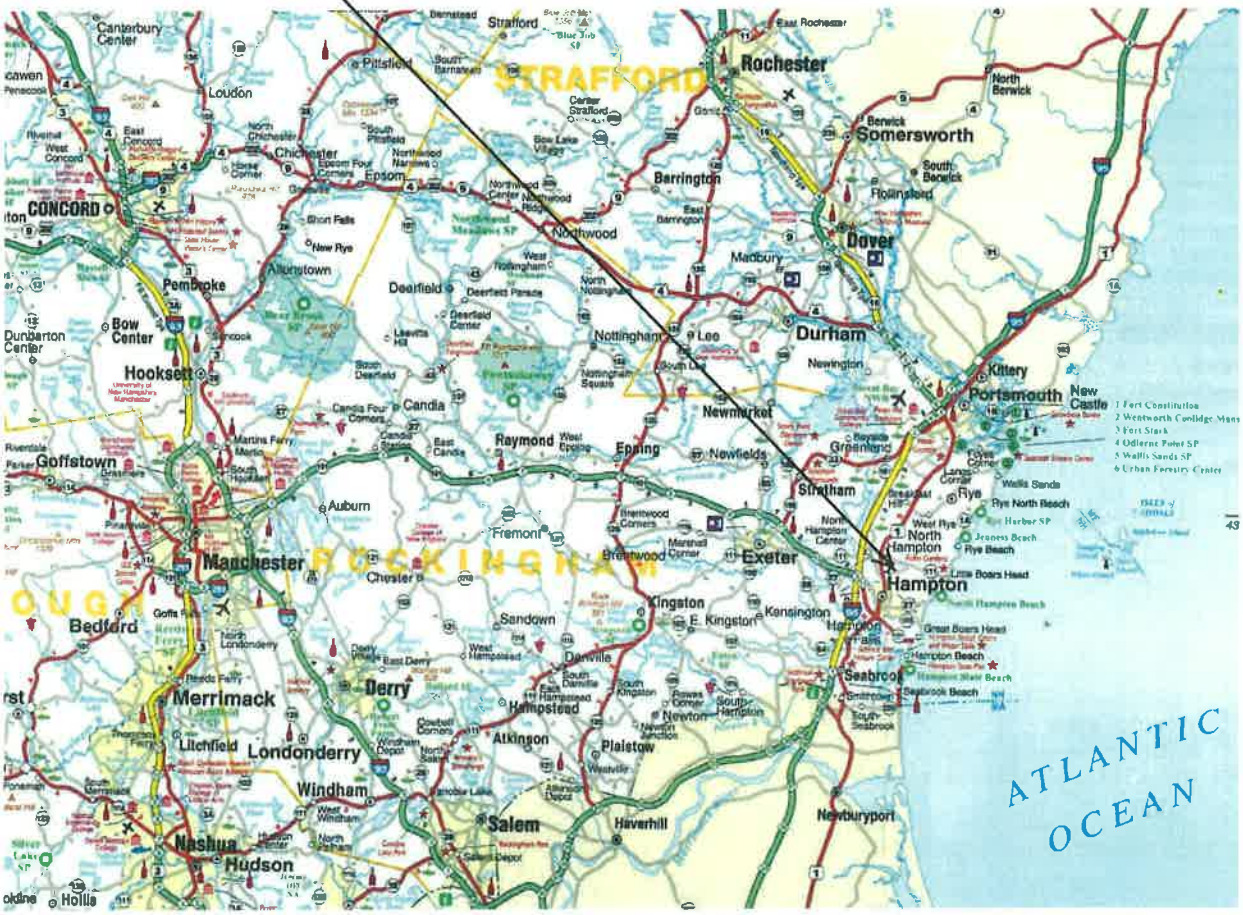
South Beach
Parking lot Improvements

Hampton Beach State Park
Hampton, New Hampshire

SPECIFICATIONS

PROJECT #1434

HAMPTON BEACH STATE PARK



STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DESIGN, DEVELOPMENT, AND MAINTENANCE SECTION

Feb/2016

STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION
PLANNING AND DEVELOPMENT
172 Pembroke Road
Concord, NH 03301
Tel. (603) 271-2606 Fax (603) 271-2629

SPECIFICATIONS

SOUTH BEACH PARKING LOT IMPROVEMENTS
HAMPTON BEACH STATE PARK
HAMPTON, NH

PROJECT # 1434

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STATE OF NEW HAMPSHIRE
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172 Pembroke Road
Concord, N.H. 03301
TEL. 603-271-2606 FAX 603-271-2629

NOTICE TO BIDDERS

Project: #1434 SOUTH BEACH PARKING LOT IMPROVEMENTS
HAMPTON BEACH STATE PARK
HAMPTON, NH

Sealed bid proposals for the above project will be accepted until 2:00 P.M., prevailing time, on Tuesday March 8, 2016. Proposals should be mailed to: Attn: Seth Prescott Public Works Project Manager III Department of Resources and Economic Development 172 Pembroke Road, Concord, NH 03301.

Specifications will be available to interested contractors at the Planning and Development Office on February 18, 2016. They may also be viewed at the following locations:

1.) Construction Summary of New Hampshire Inc. 734 Chestnut Street, Manchester, NH 03104 Tel. (603) 627-8856.
2.) Infinite Imaging 933 Islington Street, Portsmouth, NH 03801 Tel. 1-800-581-2712
3.) McGraw-Hill Construction Plan Room 34 Crosby Drive Suite 201 Bedford, MA 03170 Tel. (781) 430-2006
4.) Signature Press & Blueprinting, 45 Londonderry Turnpike, Hooksett, NH 03106 Tel. (603) 624-4025
5.) Works in Progress, 20 Farrell Street, Suite 103, South Burlington, VT 05403 Tel. 1-800-669-7048
6.) New Hampshire Department of Administrative Services Bureau of Purchase and Property Website http://admis.state.nh.us/purchasing/vendorresources.asp
7.) New Hampshire State Parks Website http://www.nhstateparks.org under the News & Events tab improvement projects sub tab.

All companies, corporations, and tradenames bidding must be registered and have a certificate of existence from the Secretary of State, Corporate Division (telephone 603-271-3246) in order to do business with the State of New Hampshire.

All bidders will be required to attend the pre-bid conference at the South Beach at Hampton Beach State Park, Maintenance Garage in Hampton, NH at 10:00 a.m. on Thursday March 3, 2016

At the time of the bid opening, a bid bond accompanying the bid proposal will be required in the amount of 5% of the total amount of the lump sum price. Bid proposals should be made out only on the form attached to the specifications. These forms are also available from the Planning & Development office. Bid Proposals are to be submitted in a sealed envelope marked: Bid Proposal: Beach Cleaning Hampton Beach State Park Hampton, NH Project No. 1434.

Seth Prescott
Public Works Project Manager III

STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION
PLANNING AND DEVELOPMENT
172 Pembroke Road
Concord, N.H. 03301
TEL. 603-271-2606 FAX 603-271-2629

BID PROPOSAL FORM

PROJECT:	#1434	SOUTH BEACH PARKING LOT IMPROVEMENTS HAMPTON BEACH STATE PARK HAMPTON, NH
MANDATORY PRE BID CONFERENCE:		March 3, 2016 at 10:00 a.m. Sharp
DATE BID OPENING:		March 8, 2016 at 2:00 p.m.
START DATE:		April 20, 2016 after notice of G&C Approval
COMPLETION DATE:		May 19, 2016

Sealed bid proposals for the above project will be accepted until 2:00 p.m., prevailing time, on March 8, 2016.

Bids should be MAILED TO: Attn: Seth Prescott Public Works Project Manager III Department of Resources and Economic Development, 172 Pembroke Road, Concord, NH 03301 Please note on the outside of the envelope "Bid Proposal" South Beach Parking Lot Improvements Project No. 1434.

DATE:_____

PROPOSAL OF:_____

GRAND TOTAL / LUMP SUM BASE BID:_____

STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION
PLANNING AND DEVELOPMENT

PROPOSAL

Proposal of...

_____

(name)

_____

(address)

To furnish and deliver all materials except as noted and to perform all work in accordance with the Contract of the State of New Hampshire, Department of Resources and Economic Development for the construction of...

Project #1434 South Beach Parking Lot Improvements at Hampton Beach State Park Hampton, NH

Commissioner
Department of Resources and Economic Development
172 Pembroke Road, P.O. Box 1856
Concord, N.H. 03302-1856

Commissioner:

In accordance with the advertisement of the Department of Resources and Economic Development inviting proposals for the project herein before named and in conformity with the Plans and Specifications on file in the office of the Department of Resources and Economic Development, _____(firm name) hereby certifies that _____ is/are the only person, or persons, interested in this proposal as principals; that this proposal is made without collusion with any person, firm, or corporation; that an examination has been made of the Plans, of the Standard Specifications, and Special Attentions, Supplemental Specifications, and Special Provisions, all of which are attached hereto, and also of the site of the work; and I, or we, propose to furnish all necessary machinery, equipment, tools, labor, and other means of construction, and to furnish all materials specified in the manner and at the time prescribed; and understand that the quantities of work as shown herein are approximate only and are subject to increase or decrease, and further understand that all quantities of work are to be performed at the quoted prices.

To execute the form of contract and begin work within 15 (fifteen) days after the notice to proceed has been received or otherwise delivered to the contractor and to prosecute said work until its completion.

It is further proposed:

To furnish a contract bond in the amount of one hundred percent (100%) of the contract award, if the contract award is thirty-five thousand dollars ($35,000) or more, as security for the completion of the contract in accordance with the plans and specifications and contract documents. The form of bond shall be that provided for by the Department, and the surety shall be acceptable to the Commissioner. No contract bond shall be required on contract awards of less than thirty-five thousand dollars ($35,000).

To guarantee all of the work performed under this contract to be done in accordance with the plans and specifications and contract documents.

Enclosed, herewith, find certified check or bid bond in the amount of 5% of the total amount of the Lump Sum Price made payable to the "Treasurer, State of New Hampshire" as a proposal guarantee which is understood, will be forfeited in the event the form of contract is not executed, if awarded to the undersigned.

The undersigned acknowledges receipt of the following addenda, issued during the bidding time, and states that these have been incorporated in the proposal:

Addendum #1 dated_____

Addendum #2 dated_____

Addendum #3 dated_____

Dated_____

SCHEDULE OF VALUES PROJECT # 1434

INDICATE DOLLAR AMOUNT OF CONTRACT SUM ALLOCATED TO EACH CATEGORY OF WORK AS DESIGNATED BELOW:

Item No.	Description	Units	Unit Cost	Quantity	Total Cost
	Earthwork				
203.1	Common Excavation (Remove old Pavement)	CY		100	
214	Fine Grading (Crushed Gravel)	SY		5910	
	Rough Grading (Subase Sand)	SY		5910	
	Base Courses				
304.2	Gravel (12" Striped, Stockpiled & Rehandled)	CY		1975	
304.3	Crushed Gravel	CY		990	
	Pavement				
4013.11	Hot bituminous pavement machine method (2" thick)	TON		660	
	Incidental Construction				
603.82212	Storm Drain 12" HDPE	LF		245	
604.124	Catch Basin 4' Diameter	EA		6	
604.124	Dry Well Catch Basin 6' Diameter 4' High (includes stone)	EA		11	
606.5107	Wood Guardrail	LF		20	
608.34	Concrete Slab 4" Thick (Motorcycle Parking)	SY		25	
609.811	Bituminous Curb 4" reveal	LF		90	
615.02	Traffic Sign	SF		62	
615.033	Remove Sign	EA		16	
628.2	Sawcut Bituminous Pavement	LF		35	
632.-1-4	Paint Line 4"	LF		6,626	
632.02	Paint Symbols	SF		120	
646.51	Turf Establishment with Mulch, Tackifiers and Loam	SY		875	
699	Miscellaneous Temporary Erosion and Sediment Control	EA		1	
	Precast Concrete Parking Bumpers	EA		22	
	Remove Store Replace Ticket Booth	EA		1	
	Mobilization	EA		1	
				Base Construction Cost	

Add Alternate #1 – 1" Asphalt Wearing Course

Item #	Description	Unit	Unit Cost	Quantity	Total Cost
	Pavement				
403.11	Hot bituminous pavement machine method (1" thick)	TON		330	
				Add Alternate #1 Subtotal	

Add Alternate #2 - Replace Wood Guardrail within Project Area

Item #	Description	Unit	Unit Cost	Quantity	Total Cost
	Earthwork				
202.7	Removal of Guardrail	LF		725	
	Incidental Construction				
606.5107	Wood Guardrail	LF		725	
				Add Alternate #2 Subtotal	

ALLOWANCES

ALLOWANCE #1: Unanticipated Modification and/or Additions to Contract Items:
Include in the Contract, a stipulated sum/price of **$10,000** for use upon the Project Managers instruction. This Allowance will make money available for modifications and/or additions to contract items due to owner-initiated changes, or for unknown, latent or differing existing conditions, or for the removal of hazardous materials that are encountered by construction.

a. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Allowance. The cost of the bond for the amount of Allowance shall be included as part of the lump sum base bid.

b. Funds will be drawn from an Allowance only by Change Order. Contractor can proceed with Change Order Work against Allowance with direction from the Project Manager. The Contractor shall not proceed with any work that will exceed the amount of Allowance remaining.

c. Credits can only be added to an Allowance by Alteration Order. The Contractor may not use a credit until an Alteration Order is fully executed.

d. Not withstanding the Contractors objection, the Project Manager may at any time reduce the funds remaining in the Allowance by Alteration Order.

e. At Final Payment of the Contract, funds remaining in the Allowance will be credited to the State.

ALLOWANCE #2: Testing Include in the Contract, a stipulated sum/price of **$2,000** for use upon the Project Managers direction. This Allowance will make money available for testing at an independent lab.

Total Lump Sum of Contract (Including Allowances).....
Base Construction Cost + Allowance #1 & #2

NOTE: The Schedule of values must be completely filled out in order for bid proposal to be considered responsive.

SIGNATURE PAGE

Company Name _____

Address _____

Phone _____

E-mail Address _____

Signature of Authorized Bidder
Print
Title

Address of Bidder _____
(if different than company)

Names and Addresses of Members of the Firm/Corporation

Name _____ address _____

Name _____ address _____

Name _____ address _____

Notice: This agreement and all of its attachments shall become public upon submission to Governor and Executive Council for approval. Any information that is private, confidential or proprietary must be clearly identified to the agency and agreed to in writing prior to signing the contract.

AGREEMENT

The State of New Hampshire and the Contractor hereby mutually agree as follows:

GENERAL PROVISIONS

1. IDENTIFICATION.

1.1 State Agency Name		1.2 State Agency Address	
1.3 Contractor Name		1.4 Contractor Address	
1.5 Contractor Phone Number	1.6 Account Number	1.7 Completion Date	1.8 Price Limitation
1.9 Contracting Officer for State Agency		1.10 State Agency Telephone Number	
1.11 Contractor Signature		1.12 Name and Title of Contractor Signatory	

1.13 Acknowledgement: State of , County of

On , before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.

1.13.1 Signature of Notary Public or Justice of the Peace

[Seal]

1.13.2 Name and Title of Notary or Justice of the Peace

1.14 State Agency Signature Date:	1.15 Name and Title of State Agency Signatory

1.16 Approval by the N.H. Department of Administration, Division of Personnel *(if applicable)*

By: Director, On:

1.17 Approval by the Attorney General (Form, Substance and Execution) *(if applicable)*

By: On:

1.18 Approval by the Governor and Executive Council *(if applicable)*

By: On:

2. EMPLOYMENT OF CONTRACTOR/SERVICES TO BE PERFORMED. The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT A which is incorporated herein by reference ("Services").

3. EFFECTIVE DATE/COMPLETION OF SERVICES.
3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, if applicable, this Agreement, and all obligations of the parties hereunder, shall become effective on the date the Governor and Executive Council approve this Agreement as indicated in block 1.18, unless no such approval is required, in which case the Agreement shall become effective on the date the Agreement is signed by the State Agency as shown in block 1.14 ("Effective Date").
3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any costs incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

4. CONDITIONAL NATURE OF AGREEMENT.
Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds, and in no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to terminate this Agreement immediately upon giving the Contractor notice of such termination. The State shall not be required to transfer funds from any other account to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

5. CONTRACT PRICE/PRICE LIMITATION/ PAYMENT.
5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT B which is incorporated herein by reference.
5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.
5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.
5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.
6.1 In connection with the performance of the Services, the Contractor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws. This may include the requirement to utilize auxiliary aids and services to ensure that persons with communication disabilities, including vision, hearing and speech, can communicate with, receive information from, and convey information to the Contractor. In addition, the Contractor shall comply with all applicable copyright laws.
6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.
6.3 If this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 ("Equal Employment Opportunity"), as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. The Contractor further agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

7. PERSONNEL.
7.1 The Contractor shall at its own expense provide all personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.
7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this

Contractor Initials _____
Date_____

Agreement. This provision shall survive termination of this Agreement.
7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

8. EVENT OF DEFAULT/REMEDIES.
8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):
8.1.1 failure to perform the Services satisfactorily or on schedule;
8.1.2 failure to submit any report required hereunder; and/or
8.1.3 failure to perform any other covenant, term or condition of this Agreement.
8.2 Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:
8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this Agreement, effective two (2) days after giving the Contractor notice of termination;
8.2.2 give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;
8.2.3 set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or
8.2.4 treat the Agreement as breached and pursue any of its remedies at law or in equity, or both.

9. DATA/ACCESS/CONFIDENTIALITY/ PRESERVATION.
9.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.
9.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.
9.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

10. TERMINATION. In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject matter, content, and number of copies of the Termination Report shall be identical to those of any Final Report described in the attached EXHIBIT A.

11. CONTRACTOR'S RELATION TO THE STATE. In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

12. ASSIGNMENT/DELEGATION/SUBCONTRACTS.
The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written notice and consent of the State. None of the Services shall be subcontracted by the Contractor without the prior written notice and consent of the State.

13. INDEMNIFICATION. The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

14. INSURANCE.
14.1 The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:
14.1.1 comprehensive general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than $1,000,000per occurrence and $2,000,000 aggregate ; and
14.1.2 special cause of loss coverage form covering all property subject to subparagraph 9.2 herein, in an amount not less than 80% of the whole replacement value of the property.
14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.

Contractor Initials _____
Date_____

14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than thirty (30) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to provide the Contracting Officer identified in block 1.9, or his or her successor, no less than thirty (30) days prior written notice of cancellation or modification of the policy.

15. WORKERS' COMPENSATION.

15.1 By signing this agreement, the Contractor agrees, certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A *("Workers' Compensation").*

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference. The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

16. WAIVER OF BREACH. No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

17. NOTICE. Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

18. AMENDMENT. This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire unless no such approval is required under the circumstances pursuant to State law, rule or policy.

19. CONSTRUCTION OF AGREEMENT AND TERMS. This Agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual intent, and no rule of construction shall be applied against or in favor of any party.

20. THIRD PARTIES. The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

21. HEADINGS. The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

22. SPECIAL PROVISIONS. Additional provisions set forth in the attached EXHIBIT C are incorporated herein by reference.

23. SEVERABILITY. In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

24. ENTIRE AGREEMENT. This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.

Contractor Initials _____

Date _____

GENERAL CONDITIONS

GENERAL

This contract is to be governed by all the applicable provisions of these specifications.

This project consists of Performing Parking Lot Improvements at the South Beach at Hampton Beach State Park Hampton, NH as indicated on the attached plans and these specifications..

BIDDING REQUIREMENTS

Bids shall only be accepted on the official Bid Proposal Forms, attached to these specifications. **Any bids submitted that are not on the official bid proposal forms will not be accepted.**

CONDITIONS AT SITE OR BUILDING

Bidders shall visit the site and be responsible for having ascertained pertinent local conditions such as: location, accessibility, general character of the site or building, the character and extent of existing work within or adjacent to the site, and any other work being performed thereon at the time of the submission of this bid.

PERFORMANCE AND PAYMENT BOND

In the event the bid is $35,000 or more, the contractor shall furnish security by bond or otherwise in an amount equal to 100% of the contract guaranteeing performance and payment. The payment security shall meet the requirements of RSA 447:16.

The performance and payment bond must be returned with the signed contract within 15 days after the contract has been mailed or otherwise delivered to the bidder.

PROPOSAL GUARANTEE

The Contractor shall furnish a certified check or bid bond in the amount of 5% of the total amount of the Lump Sum Price made payable to the "Treasurer, State of New Hampshire" as a proposal guarantee, at the time of the bid opening. This proposal guarantee will be forfeited in the event that the contract is not executed.

RIGHT TO WORK IN N.H.

All bidders must be registered and have a certificate of existence from the Secretary of State, Corporate Division (telephone 603-271-3246) in order to do business with the State of New Hampshire.

PROPOSAL SELECTION

In most cases the proposal submitted by the qualified bidder with the lowest base bid price shall be selected. However, the Department of Resources and Economic Development reserves the right to reject any or all proposals, or advertise for new proposals as it judges to be in the best interest of the state.

CONTRACTORS QUALIFICATIONS

The successful bidder shall provide evidence upon request that they have been in the Parking Lot & site Drainage Construction business successfully performing this type, scale and quality of work for a minimum of five years. A comprehensive list of all projects worked on involving Parking Lot Construction & Site Drainage in the past two years by the contractor shall be submitted with references.

EXECUTION OF CONTRACT

The Contractor's attention is called to the following:

EXECUTION AND APPROVAL OF CONTRACT. The contract shall be signed by the successful Bidder and returned, together with the contract bond, if applicable, within 15 days after the contract has been mailed or otherwise delivered to the Bidder. No contract shall be considered as in effect until it has been fully executed by all the parties thereto and, when the contract amount is more than $5,000, the award has been concurred in by the Governor and Council.

FAILURE TO EXECUTE CONTRACT. Failure to execute the contract within 15 days after the contract has been mailed or otherwise delivered to the successful Bidder shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of the Department, not as a penalty, but in liquidation of damages sustained. Award may then be made to the next lowest Bidder, or the work may be re-advertised as the Commissioner may decide.

STARTING DATE

The Contractor shall start work after notice to proceed is received. The notice to proceed shall be issued immediately upon contract approval by the Governor and Council, and shall establish the actual construction start date. Failure to start work within 15 calendar days after the start date shall be considered a default of the contract. If the actual start date is later than the advertised start date, the completion date shall be extended by an equivalent number of working days.

WORKSITE ACCOUNTABILITY

Per RSA 21-I:81-b At the onset of work on any state construction project, the general contractor or designated project construction manager, if any, shall provide to the Department Project Manager a current list of all subcontractors and independent contractors that the general contractor has agreed to use on the job site, with a record of the entity to whom that subcontractor is insured for worker's compensation purposes. This list shall be posted on the jobsite and updated as needed to reflect any new subcontractors or independent contractors.

If it is determined that a subcontractor or independent contractor is present on a state construction site without the contractor's name and direct contracting relationship being posted in a visible location at the worksite, the general contractor or designated project manager shall require the subcontractor or independent contractor to provide the information within 36 hours and to post the information in a visible location at the worksite. If the information is not provided within 36 hours of its request, the general contractor shall suspend the contractor until the information is provided and posted.

PROTECTION OF EXISTING PROPERTY

It shall be the responsibility of the contractor to protect existing property from damage. Any damage caused by the contractor in the performance of the work shall be repaired or replaced at his expense to the satisfaction of the Department Project Manager.

WORKMANSHIP

All work shall be performed in a neat workmanlike manner by skilled workmen who have been actively engaged in performing the type of work specified under this contract.

CLEAN-UP

All debris from the project shall be cleaned up daily and removed from the site on a daily basis.

DEFAULT AND TERMINATION OF CONTRACT

If the Contractor...

(a) Fails to begin the work under the contract within the time specified in the contract, or

(b) Fails to perform the work with sufficient workmen and equipment or with sufficient equipment to assure the prompt completion of said work, or

(c) Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or

(d) Discontinues the prosecution of work, or

(e) Fails to resume work which has been discontinued, within reasonable time after notice to do so, or

(f) Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or

(g) Makes an assignment for the benefit of creditors, or

(h) For any other cause whatsoever, fails to carry on the work in an acceptable manner...

The Commissioner will give notice in writing to the Contractor of such delay, neglect, or default.

If the Contractor or Surety does not proceed in accordance with the Notice, then the Commissioner will, upon written notification from the Project Manager of the fact of such delay, neglect or default, and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the prosecution of the work out of the hands of the Contractor. The Commissioner may enter into an agreement for the completion of said contract according to the terms and conditions thereof, or use such other methods as in his opinion will be required for the completion of said contract in an acceptable manner.

All extra costs and charges incurred by the Department as a result of such delay, neglect or default, together with the cost of completion of the work under the contract will be deducted from any monies due or which may become due to said Contractor. If such expenses exceed the sum which would have been payable under the contract, then the Contractor and the Surety shall be liable and shall pay to the Department, the amount of such excess.

FAILURE TO COMPLETE THE WORK ON TIME

If the Contractor fails to complete all of the work or sections of the Project, within the time specified in the Contract, the sum given in the schedule that follows will be deducted from any money due the Contractor. This deduction will be made, not as a penalty, but as fixed, agreed liquidation damages for inconvenience to the State and for reimbursing the Department the cost of the Administration of the Contract, including engineering and inspection. Should the amount of money otherwise due the Contractor be less than the amount of such liquidated damages, the Contractor and his Surety shall be liable to the State for such deficiency.

Permitting the Contractor to continue and finish the work after the time fixed for its completion, shall in no way obligate the State to waive any of its rights under the Contract.

When the final acceptance has been duly made by the Project Manager, any liquidated damage charges shall end.

The fixed, agreed, liquidated damages shall be assessed in accordance with the following schedule.

ORIGINAL CONTRACT AMOUNT		AMOUNT OF LIQUIDATED DAMAGES PER WORKING DAY
From more than:	to and including:	
0.	25,000.	$ 200.00
25,000.	50,000.	$ 300.00
50,000.	100,000.	$ 400.00
100,000.	500,000.	$ 500.00

SUBSTANTIAL COMPLETION & FINAL INSPECTION

When the work is substantially complete, the Contractor shall submit to the Project Manager, a list of items of work to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents. On the basis of an inspection by the Project Manager which determines that the work is substantially complete, a Certificate of Substantial Completion shall establish the date of substantial completion and state the responsibilities for any damage to the work and insurance, and fix the time limit within which the Contractor shall complete the items listed herein. Warranties required by the Contract documents shall commence on the date of Substantial Completion unless otherwise provided in the Certificate of Substantial Completion.

If the Contractor fails to proceed to complete the items on the "punch list", then in addition to the corrective measures listed in the Certificate of Substantial Completion, the Commissioner may use the monies still due the Contractor to have such items completed and the Contractor shall lose any claim to the monies used.

Upon written notice that the Work is ready for final inspection and acceptance, the Project manager shall promptly make such inspection, and when he finds the Work acceptable under the Contract documents and the Contract fully performed, a Certificate of Final Payment will be issued.

Final inspection will be made by the Project Manager. Incomplete items necessary to complete the project, shall be completed prior to final payment. The completion date for this project is May 19, 2016.

GUARANTEE OF WORK

a) Except as otherwise specified, all work shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment or workmanship for two years from the date of substantial completion of the work.

b) If, within any guarantee period, repairs or changes are required in connection with guaranteed work, which in the opinion of the Project Manager, is rendered necessary as a result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall, promptly upon receipt of notice from the Commissioner, and at his own expense:

   1) Place in satisfactory condition in every particular, all of such guaranteed work, correct all defects therein, and...

   2) Make good all damage to the building or site, or equipment or contents thereof, which in the opinion of the Project Manager, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, and...

   3) Make good any work or material, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.

c) In any case, wherein fulfilling the requirements of the Contract or of any guarantee, embraced in or required thereby, the Contractor disturbs any work guaranteed under another contract, he shall restore such disturbed work to a condition satisfactory to the Project Manager and guarantee such restored work to the same extent as it was guaranteed under such other contracts.

d) If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the Commissioner may have the defects corrected and the Contractor and his Surety shall be liable for all expense incurred.

e) All special guarantees applicable to definite parts of the work that may be stipulated in the specifications or other papers forming a part of the Contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

PROSECUTION OF WORK

Upon starting the work within the 15 days set forth by this contract, the Contractor shall prosecute the work a minimum of 8 hours daily per working day until completion, excluding breakdowns or inclement weather. If the Contractor finds it impossible to start the work as stated above, he may make a written request to the Project Manager for an extension of time. Any such request shall be made prior to expiration of the allowable 15 days, and shall contain reasons which the Contractor believes will justify the granting of his request. In his request, the Contractor shall submit his proposed starting date.

CHANGES IN THE WORK

The Project Manager may at any time, by a written order, and without notice to the Sureties, make changes in the Drawings and Specifications and completion date of this contract and within the general scope thereof.

In making any change, the additional cost or credit for the change shall be determined as follows:

- The order shall stipulate the mutually agreed upon lump sum price which shall be added to or deducted from the contract price. The contractor shall furnish an itemized breakdown of the prices used in computing the value of any change that might be ordered.

- If the price change is an addition to the contract price and the work is performed by the general contractor and not a subcontractor, it shall include the contractor's indirect costs as follows: Workmen's Compensation and Employee Liability, Unemployment and Social Security Taxes.

- In addition to the above indirect costs, the general contractor shall be allowed a markup not to exceed ten percent (10%). Said ten percent (10%) shall be all inclusive for overhead, supervision, and profit. In addition to this, an allowance shall be made for performance and payment bond additional premium.

- If the price change is an addition to the contract price and involves the work of the general contractor and subcontractor, the general contractor would be allowed ten percent (10%) on that part of the work performed by him and five percent (5%) on that part of the work performed by the subcontractor. The same percentages shall apply to subcontractors.

- On any change which involves a net credit to the Owner, no allowance for overhead and profit shall be figured.

INSURANCE REQUIREMENTS

No operations under this contract shall commence unless and until certification of insurance attesting to the below listed requirements have been filed with the Commissioner, approved by the Attorney General, and the Contract approved by the Governor and Council and a Notice to Proceed is issued.

Insurance requirements by paragraphs 1-4 below shall be the responsibility of the Prime Contractor. The Prime Contractor, at his discretion, may make similar requests of any subcontractor.

Following is the summary of minimum insurance requirements:

1. Workmen's Compensation Insurance (In accordance with RSA 281-A.)
   a. Employers' Liability
      1.) $100,000 each accident
      2.) $500,000 Disease-policy limit
      3.) $100,000 Disease-each employee

2. Commercial General Liability Insurance: Occurrence Form Policy: Include full Contractual Liability (see Indemnification Clause 9)., Explosion, Collapse, and Underground coverage's:
   a. Limits of Liability:
      1.) $1,000,000 Each Occurrence Bodily injury & Property Damage.
      2.) $2,000,000 General Aggregate-Include per Project Aggregate Endorsement.
      3) $2,000,000 Products/Completed Operations Aggregate.
      4) State shall be named as an additional named insured.

3. Owner's Protective Liability coverage for the benefit of the State of New Hampshire Department of Resources and Economic Development.
   a. Limits of Liability:
      1.) $2,000,000 Each Occurrence
      2.) $3,000,000 Aggregate

4. Commercial Automobile Liability covering all motor vehicles including owned, hired, borrowed, and non-owned vehicles.
   a. Limits of Liability:
      1.) $1,000,000 Combined Single Limit for Bodily injury & Property Damage

5. Commercial Umbrella Liability
   a. Limits of Liability:
      1.) $1,000,000 Each Occurrence
      2.) 1,000,000 Aggregate

6. General Insurance Conditions

   a. Each policy shall contain a clause prohibiting cancellation or modifications of the policy earlier than thirty (30) days or ten (10) in cases of non-payment of premium after written notice thereof has been received by the State.

7. Indemnification:

   a. The Contractor shall indemnify, defend, and hold harmless the State of New Hampshire, its Agencies, and its agents and employees from and against any and all claims, liabilities, suits or penalties arising out of (or which may be claimed to arise out of) acts of omissions of the Contractor or subcontractors in the performance of work covered by the Contract. This covenant shall survive the termination of the Contract. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved by the State.

NOTE:

In articles 1 - 14 of the General Conditions references to "the Project Manager" shall be understood to mean the Department Project Manager designated by the Planning and Development office of the New Hampshire Department of Resources and Economic Development.

CERTIFICATE OF AUTHORITY

(Sole Proprietor)

I, _____, as a Sole Owner of my Business,_____,

certify that I am authorized to enter into a contract with the State of New Hampshire, Department of Resources and Economic Development, on behalf of myself.

IN WITNESS WHEREOF, I have set my hand as the Sole Owner of the Business this _____ day of _____, 20 ___.

_____
(Sole Owner Signature)

STATE OF _____

COUNTY OF _____

On this the _____ day of _____, 20 ___, before me,_____,

the undersigned Officer, personally appeared _____, who acknowledge her/himself to be the Sole Owner, of _____, a Business, and that she/he, as such Sole Owner being authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of the Business by her/himself as

_____.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

_____
(Notary Public/Justice of the Peace)

My Commission expires:_____

CERTIFICATE OF VOTE

(Corporation with Seal)

I, _____, _____ of the
(Corporation Representative Name) (Corporation Representative Title)
_____, do hereby certify that:
(Corporation Name)

(1) I am the duly elected and acting _____ of the
(Corporation Representative Title)
_____, a _____ corporation (the "Corporation");
(Corporation Name) (State of Incorporation)

(2) I maintain and have custody of and am familiar with the Seal and minute books of the Corporation;

(3) I am duly authorized to issue certificates;

(4) the following are true, accurate and complete copies of the resolutions adopted by the Board of Directors of the Corporation at a meeting of the said Board of Directors held on the

___ day of _____, 20___, which meeting was duly held in accordance with

_____ law and the by-laws of the Corporation:
(State of Incorporation)

RESOLVED: That this Corporation enter into a contract with the State of New Hampshire, acting by and through the Department of Resources and Economic Development, providing for the performance by the Corporation of certain _____ services, and that the President (any Vice President) (and the Treasurer) (or any of them acting singly) be and hereby (is) (are) authorized and directed for and on behalf of this Corporation to enter into the said contract with the State and to take any and all such actions and to execute, seal, acknowledge and deliver for and on behalf of this Corporation any and all documents, agreements and other instruments (and any amendments, revisions or modifications thereto) as (she) (he) (any of them) may deem necessary, desirable or appropriate to accomplish the same;

RESOLVED: That the signature of any officer of this Corporation affixed to any instrument or document described in or contemplated by these resolutions shall be conclusive evidence of the authority of said officer to bind this Corporation thereby;
The forgoing resolutions have not been revoked, annulled or amended in any manner whatsoever, and remain in full force and effect as of the date hereof; and the following person(s) (has) (have) been duly elected and now occupy the office(s) indicated below

_____ President Name

_____ Vice President Name

_____ Treasurer Name

IN WITNESS WHEREOF, I have hereunto set my hand as the _____
(Title)
of the Corporation and have affixed its corporate seal this ____ day of _____, 20___ .

_____
(Title)

(Seal)

STATE OF _____

COUNTY OF _____

On this the ____ day of _____, 20___, before me, _____, the undersigned officer, personally appeared _____, who acknowledge her/himself to be the

_____, of _____, a corporation, and that she/he, as

(Title) (Name of Corporation)
such _____ being authorized to do so, executed the foregoing instrument for the
(Title)

purposes therein contained, by signing the name of the corporation by her/himself as _____.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

_____
Notary Public/Justice of the Peace

My Commission expires: _____

CERTIFICATE OF AUTHORITY/VOTE
(Limited Liability Company)

I, _____, hereby certify that:
(Name of Sole Member/Manager of Limited Liability Company, Contract Signatory – Print Name)

1. I am the Sole Member/Manager of the Company of _____.
(Name of Limited Liability Company)

2. I hereby further certify and acknowledge that the State of New Hampshire will rely on this certification as evidence that I have full authority to bind _____
(Name of Limited Liability Company)
and that no corporate resolution, shareholder vote, or other document or action is necessary to grant me such authority.

_____
(Contract Signatory - Signature)

_____
(Date)

STATE OF _____

COUNTY OF _____

On this the _____ day of _____ 20 ____, before me _____,
(Day) (Month) (Yr) (Name of Notary Public / Justice of the Peace)
the undersigned officer, personally appeared _____, known to me (or
(Contract Signatory – Print Name)
satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained. In witness whereof, I hereunto set my hand and official seal.

(NOTARY SEAL)

_____
(Notary Public / Justice of the Peace -Signature)

Commission Expires: _____

State of New Hampshire
VENDOR APPLICATION

VENDOR # _____
(Assigned by Purchase & Property)

BUSINESS NAME/ADDRESS LOCATION

Legal Business Name: _____

Doing Business As Name: _____

Payment Address: _____

City/Town: _____ STATE: _____ ZIP: _____

Business Address: _____

City/Town: _____ STATE: _____ ZIP: _____

Telephone #: _____ Cell Phone #: _____ FAX #: _____

Website: _____ E-Mail (Main Office): _____

Electronic Payment Option: Please contact Treasury at treasury@treasury.state.nh.us or visit their website at www.nh.gov/treasury for further information on this option.

TYPE OF BUSINESS

(Note: Registration with the NH Secretary of State MUST be done prior to the awarding of any contracts) www.nh.gov/sos/corporate (603) 271-3244

Registered with NH Secretary of State? _____ State Incorporated In: _____

Service Provider ☐ Product/Merchandise Provider ☐ Other Provider ☐

List the principal type of service, product or other that is provided: _____

Minority Institutions	☐	Minority Owned Large Business	☐	Minority Owned Small Business	☐
Disabled Veteran Business	☐	Svs Disabled Veteran Owned	☐	Veteran Owned Small Business	☐
Physically Challenged Bus	☐	SBA Cert Fin Disadvantaged Bus	☐	SBA Cert Hist Underutilized Bus	☐
Historically Black Colleges	☐	Women Owned Sm Bus	☐	Women Owned Large Businesses	☐
Small Business	☐	SBA Cert Sm Disadvantaged Bus	☐		

SIGNATURE BLOCK

I certify the above information to be correct and grant authorization to the State of New Hampshire to investigate any and all facts contained therein, including facility visitation.

Name and Title (print or type): _____

Signature: _____ Date: _____

RETURN ADDRESS

www.admin.state.nh.us/purchasing

(Phone) 603-271-2201
(Fax) 603-271-2700
(Email) PRCHWEB@NH.GOV

DIVISION OF PLANT & PROPERTY MANAGEMENT
BUREAU OF PURCHASE AND PROPERTY
STATE HOUSE ANNEX, ROOM 102
25 CAPITOL STREET
CONCORD NH 03301-6398

STATE OF NEW HAMPSHIRE
ALTERNATE W-9 FORM

PLEASE USE THIS FORM TO PROVIDE THE REQUESTED INFORMATION

VENDOR # _____
(Assigned by Purchase & Property)

Pursuant to IRS Regulations, you must furnish your Taxpayer Identification Number (TIN) to the State whether or not you are required to file tax returns. If this number is not provided, you may be subject to a 28% withholding on each payment made to you. To avoid this 28% withholding & to ensure that accurate tax information is reported to the IRS, A RESPONSE IS REQUIRED.

If a service provider is a part of a GROUP PRACTICE, it is the group name & TIN which is required on this Alternate W-9.
If the service provider is a SOLE PROPRIETOR, it is the individual name & TIN which is required on this Alternate W-9.

BUSINESS NAME: _____

Doing Business As Name: _____

PAYMENT ADDRESS: _____

CITY/TOWN: _____ **STATE:** _____ **ZIP:** _____

BUSINESS ADDRESS: _____

CITY/TOWN: _____ **STATE:** _____ **ZIP:** _____

TAXPAYER IDENTIFICATION NUMBER (TIN) as used on IRS tax return

Social Security # (SSN): _____ **Fed ID # (EIN/FIN):** _____

PRINCIPAL ACTIVITY

☐ Service Provider ☐ Product/Merchandise Provider ☐ Other Provider

List the principal type of service, product or other that is provided: _____

DESIGNATION (select ONLY THOSE which apply to you/your organization as provided to the IRS)

☐ Individual/Sole-Proprietor	☐ Corporation (S)	☐ Government
☐ LLC (C Corporation)	☐ Corporation (C)	☐ Medical or Health Care Services
☐ LLC (S Corporation)	☐ Partnership	☐ Legal Services
☐ LLC (P Partnership)	☐ Estate or Trust	☐ Non-Profit

EXEMPTIONS: _____ Exemption from FATCA reporting: _____

Under penalty of perjury, I declare that the information provided is true, correct & complete, to the best of my knowledge & belief.

NAME & TITLE (print or type): _____

TELEPHONE #: _____ **CELL PHONE #:** _____ **FAX #:** _____

SIGNATURE: _____ **DATE:** _____

Website: _____ **E-Mail (Main Office):** _____

PLEASE RETURN WHEN COMPLETED TO:

(Email) PRCHWEB@NH.GOV
(Phone) 603-271-2201
(FAX) 603-271-2700
www.admin.state.nh.us/purchasing

DIVISION OF PLANT & PROPERTY MGMT
BUREAU OF PURCHASE & PROPERTY
STATE HOUSE ANNEX – ROOM 102
25 CAPITOL ST
CONCORD NH 03301

APPLICATION AND CERTIFICATE FOR PAYMENT

AIA DOCUMENT G702

TO (OWNER):

PROJECT:

APPLICATION NO:

Distribution to:
OWNER
ARCHITECT
CONTRACTOR

Period to:

FROM:

VIA (ARCHITECT):

ARCHITECT'S
PROJECT NO:
CONTRACT DATE:

CONTRACT FOR:

CONTRACTOR'S APPLICATION FOR PAYMENT

CHANGE ORDER SUMMARY			
Change Orders approved in previous months by Owner		ADDITIONS	DEDUCTIONS
TOTAL		-	
Approved this Month			
Number	Date Approved		
TOTALS		-	-
Net change by Change Orders			$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: Date:

Application is made for Payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM	
2. Net change by Change Orders	
3. CONTRACT SUM TO DATE	
4. TOTAL COMPLETED & STORED TO DATE	
5. RETAINAGE:	
a. 10% of Completed Work	
b. 10% of Stored Material	
Total Retainage	
6. TOTAL EARNED LESS RETAINAGE	
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT	
8. CURRENT PAYMENT DUE	
9. BALANCE TO FINISH, PLUS RETAINAGE	

State of: County of:

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

Notary Public:

My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED . . . . . **$**

(Attach explanation if amount certified differs from the amount applied for.)

ARCHITECT:

By: Date:

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract

CONTINUATION SHEET

AIA DOCUMENT G703

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NUMBER:
APPLICATION DATE:
PERIOD TO:
ARCHITECTS PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G÷C)	BALANCE TO FINISH (C - G)	RETAINAGE
			FROM PREVIOUS APPLICATION (D+E)	THIS PERIOD					
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

SUBMITTAL SCHEDULE

South Beach Parking Lot Improvements - Hampton Beach State Park PROJECT: #1434

ITEM No.	SPEC. SECTION	ITEM	SUBMITTAL REQUIRED	REJECTED RE-SUBMIT	REVISE & RE-SUBMIT	APPROVED AS NOTED	APPROVED
1	31 05 13	Topsoil & Sub soil materials	Material source & name of material				
2	31 05 16	Aggregates	Sample, source, manufacturer cert				
3	31 10 00	Herbicide	Product data				
4	31 22 13	Rough grading	Record documents, util, dimensions,inverts				
5	31 23 16	Excavation	Excavation protection plan				
6	31 23 17	Trenching	Excavation plan & product data, geo tex ect				
7	31-23-18	Rock removal	Shop drawing & survey report				
8	31 23 23	Fill	Product data, samples, material source				
9	32 11 23	aggregate base courses	Samples, material source, mfr certificate				
10	32 12 16	Asphalt Paving	Product data info & mix design w/ lab tests				
11	32 17 23	Pavement markings	Paint data, Mfr. Cert, test & instructions				
12	32 92 19	Seeding	Seed, Fert, Mulch data & Mfr. Cert				
13	33 05 13	Manholes & Structures	Shop drawings & product data				
14	33 41 00	Storm utility drainage piping	Product data, instructions & Mfr. Cert				
15	34 71 13	Vehicle barriers	Shop drawings, product data				

HAMPTON BEACH STATE PARK – PARKING LOT IMPROVEMENTS NH
Project # 1434

CIVIL CONSTRUCTION DOCUMENT SPECIFICATIONS

Prepared for
STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION

February 3, 2015

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	312316	EXCAVATION
	312317	TRENCHING
	312318	ROCK REMOVAL
	312319	DEWATERING
	312323	FILL
	312500	EROSION AND SEDIMENTATION CONTROLS

DIVISION 32 – EXTERIOR IMPROVEMENTS

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SECTION	347113	VEHICLE BARRIERS

APPENDIX A – TEST PIT LOGS

SECTION 31 05 13
SOILS FOR EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Subsoil materials.
   2. Topsoil materials.

B. Related Sections:
   1. Section 31 05 16 - Aggregates for Earthwork.
   2. Section 31 22 13 - Rough Grading.
   3. Section 31 23 17 - Trenching.
   4. Section 31 23 23 - Fill.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials:
   1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:
   1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
   2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
   3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 SUBMITTALS

A. Materials Source: Submit name of imported materials source.

1.04 QUALITY ASSURANCE

A. Furnish each subsoil & topsoil material from single source throughout the work.

PART 2 PRODUCTS

2.01 SUBSOIL MATERIALS

A. Subsoil Type S1 Common Fill:
   1. Select or local borrow.
   2. Graded.
   3. Free of lumps larger than 3 inches, rocks larger than 3 inches, and debris.
   4. Free of clay, peat, organic matter, or deleterious materials.

2.02 TOPSOIL MATERIALS

A. Topsoil Type S2 Loam: SSRBC, Section 641, Item 641.

2.03 SOURCE QUALITY CONTROL

A. Testing and Analysis of Subsoil & Topsoil Material: Perform in accordance with ASTM D1557.

B. When tests indicate materials do not meet specified requirements, change material and retest.

C. Furnish materials of each type from same source throughout the work.

PART 3 EXECUTION

3.01 EXCAVATION

A. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.

B. Stockpile excavated material meeting requirements for topsoil materials.

C. Remove excess excavated materials not intended for reuse, from site.

D. Remove excavated materials not meeting requirements for subsoil materials and topsoil materials from site.

3.02 STOCKPILING

A. Stockpile materials on site at locations designated by owner.

B. Stockpile in sufficient quantities to meet project schedule and requirements.

C. Separate differing materials with dividers or stockpile apart to prevent mixing.

D. Prevent intermixing of soil types or contamination.

E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.03 STOCKPILE CLEANUP

A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 31 05 16
AGGREGATES FOR EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Coarse aggregate materials.
   2. Fine aggregate materials.

B. Related Sections:
   1. Section 31 05 13 - Soils for Earthwork: Fill and grading materials.
   2. Section 31 22 13 - Rough Grading.
   3. Section 31 23 17 - Trenching.
   4. Section 31 23 23 - Fill.
   5. Section 32 11 23 - Aggregate Base Courses.
   6. Section 33 41 00 - Storm Utility Drainage Piping.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials:
   1. AASHTO M147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses.
   2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:
   1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
   2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
   3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
   4. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).
   5. ASTM D4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 SUBMITTALS

A. Samples: Submit, in air-tight containers, 5 lb sample of each type of fill to testing laboratory.

B. Materials Source: Submit name of imported materials suppliers.

C. Manufacturer's Certificate: Certify materials meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

A. Furnish each aggregate material from single source throughout the Work.

PART 2 PRODUCTS

2.01 COARSE AGGREGATE MATERIALS

A. Coarse Aggregate Type A1 Gravel: SSRBC, Section 304, Item 304.2.

B. Coarse Aggregate Type A2 Crushed Gravel: SSRBC, Section 304, Item 304.3.

C. Coarse Aggregate Type A3 Crushed Stone: SSRBC, Section 304, Item 304.4.

D. Coarse Aggregate Type A4 Clean Crushed Stone: SSRBC, Section 703, Table 1E, Standard Stone #4.

2.02 FINE AGGREGATE MATERIALS

A. Fine Aggregate Type A5 Sand: SSRBC, Section 304, Item 304.1.

2.03 SOURCE QUALITY CONTROL

A. Coarse Aggregate Material - Testing and Analysis: Perform in accordance with ASTM D1557.

B. Fine Aggregate Material - Testing and Analysis: Perform in accordance with ASTM D1557.

C. When tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.01 STOCKPILING

A. Stockpile materials on site at locations designated by Owner.

B. Stockpile in sufficient quantities to meet Project schedule and requirements.

C. Separate different aggregate materials with dividers or stockpile individually to prevent mixing.

D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.02 STOCKPILE CLEANUP

A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 31 10 00
SITE CLEARING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Removing surface debris.
2. Removing designated paving, curbs, and signs.
3. Removing designated trees, shrubs, and other plant life.
4. Removing abandoned utilities.
5. Excavating topsoil.

B. Related Sections:

1. Section 31 22 13 - Rough Grading.

1.02 SUBMITTALS

A. Product Data: Submit data for herbicide. Indicate compliance with applicable codes for environmental protection.

1.03 QUALITY ASSURANCE

A. Conform to applicable codes for disposal of debris and use of herbicide.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing plant life designated to remain is tagged or identified.

B. Identify salvage area for placing removed materials.

3.02 PREPARATION

A. Call Local Utility Line Information service at Dig-Safe not less than three working days before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.

3.03 PROTECTION

A. Locate, identify, and protect utilities indicated to remain, from damage.

B. Protect trees, plant growth, and features designated to remain, as final landscaping.

C. Protect bench marks, survey control points, and existing structures from damage or displacement.

3.04 CLEARING

A. Clear areas required for access to site and execution of Work.

B. Remove trees and shrubs within marked areas. Remove stumps and root system to depth of 24 inches.

C. Clear undergrowth and deadwood, without disturbing subsoil.

D. Apply herbicide to remaining stumps to inhibit growth.

3.05 REMOVAL

A. Remove debris, rock, and extracted plant life from site.

B. Remove paving, curbs, and signs as indicated on Drawings. Neatly saw cut edges at right angle to surface.

C. Remove abandoned utilities. Indicated removal termination point for underground utilities on Record Documents.

D. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.

E. Do not burn or bury materials on site. Leave site in clean condition.

3.06 TOPSOIL EXCAVATION

A. Excavate topsoil from limits of work without mixing with foreign materials for use in finish grading.

B. Do not excavate wet topsoil.

C. Stockpile in area designated on site and protect from erosion.

D. Remove excess topsoil not intended for reuse, from site.

END OF SECTION

SECTION 31 22 13
ROUGH GRADING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Excavating topsoil.
2. Excavating subsoil.
3. Cutting, grading, filling, rough contouring, and compacting site for site structures and improvements.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork.
2. Section 31 05 16 - Aggregates for Earthwork.
3. Section 31 10 00 - Site Clearing.
4. Section 31 23 16 - Excavation.
5. Section 31 23 17 - Trenching.
6. Section 31 23 18 - Rock Removal.
7. Section 31 23 23 - Fill.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
3. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
5. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
6. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
7. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head).
8. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
9. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 CLOSEOUT SUBMITTALS

A. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with SSRBC.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify survey bench mark and intended elevations for the Work are as indicated on Drawings.

3.02 PREPARATION

A. Call Local Utility Line Information service at Dig-Safe not less than three working days before performing Work.
   1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Identify required lines, levels, contours, and datum.

3.03 SUBSOIL EXCAVATION

A. Excavate subsoil from areas to be further excavated, relandscaped, or regraded.

B. Do not excavate wet subsoil.

C. When excavating through roots, perform Work by hand and cut roots with sharp axe.

D. Remove excess subsoil not intended for reuse, from site.

E. Benching Slopes: Horizontally bench existing slopes greater than 1: 4 to key placed fill material to slope to provide firm bearing.

F. Stability: Replace damaged or displaced subsoil as specified for fill.

3.04 FILLING

A. Fill areas to contours and elevations with unfrozen materials.

B. Place material in continuous layers as follows:
   1. Subsoil Fill: Maximum 8 inches compacted depth.
   2. Structural Fill: Maximum 6 inches compacted depth.
   3. Granular Fill: Maximum 8 inches compacted depth.

C. Maintain optimum moisture content of fill materials to attain required compaction density.

D. Slope grade away from building minimum 2 percent slope for minimum distance of 10 ft, unless noted otherwise.

E. Make grade changes gradual. Blend slope into level areas.

F. Repair or replace items indicated to remain damaged by excavation or filling.

3.05 TOLERANCES

A. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation.

3.06 FIELD QUALITY CONTROL

A. Perform laboratory material tests in accordance with AASHTO T180.

B. Perform in place compaction tests in accordance with the following:
   1. Density Tests: ASTM D2922.
   2. Moisture Tests: ASTM D3017.

C. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

END OF SECTION

SECTION 31 23 16
EXCAVATION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Excavating for paving, roads, and parking areas.
   2. Excavating for site structures.
   3. Excavating for landscaping.

B. Related Sections:
   1. Section 31 05 13 - Soils for Earthwork.
   2. Section 31 05 16 - Aggregates for Earthwork.
   3. Section 31 22 13 - Rough Grading.
   4. Section 31 23 17 - Trenching.
   5. Section 31 23 18 - Rock Removal.
   6. Section 31 23 23 - Fill.

1.02 REFERENCES

A. Local utility standards when working within 24 inches of utility lines.

B. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 SUBMITTALS

A. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with SSRBC, Section 203.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 PREPARATION

A. Call Local Utility Line Information service at Dig-Safe not less than three working days before performing Work.
   1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Identify required lines, levels, contours, and datum.

C. Notify utility company to remove and relocate utilities, if necessary.

D. Protect utilities indicated to remain from damage.

E. Protect plant life, lawns, and other features remaining as portion of final landscaping.

F. Protect bench marks, survey control point, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.02 EXCAVATION

A. Underpin adjacent structures which may be damaged by excavation work.

B. Excavate subsoil to accommodate paving, site structures and construction operations.

C. Slope banks with machine to angle of repose or less until shored.

D. Do not interfere with 45 degree bearing splay of foundations.

E. Grade top perimeter of excavation to prevent surface water from draining into excavation.

F. Trim excavation. Remove loose matter.

G. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume. Remove larger material as specified in Section 31 23 23.

H. Notify Owner/Engineer of unexpected subsurface conditions.

I. Correct areas over excavated as directed by Owner/Engineer.

J. Remove excess and unsuitable material from site.

K. Repair or replace items indicated to remain damaged by excavation.

3.03 FIELD QUALITY CONTROL

A. Request inspection of excavation and controlled fill operations in accordance with applicable code.

B. Request visual inspection of bearing surfaces by Owner/Engineer before installing subsequent work.

3.04 PROTECTION

A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.

B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

C. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION

SECTION 31 23 17
TRENCHING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Compacted fill from top of utility bedding to subgrade elevations.
2. Backfilling and compaction.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork.
2. Section 31 05 16 - Aggregates for Earthwork.
3. Section 31 22 13 - Rough Grading.
4. Section 31 23 16 - Excavation.
5. Section 31 23 18 - Rock Removal.
6. Section 31 23 23 - Fil.
7. Section 33 41 00 - Storm Utility Drainage Piping.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
6. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 DEFINITIONS

A. Utility: Any buried pipe, duct, conduit, or cable.

1.04 SUBMITTALS

A. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.

B. Product Data: Submit data for geotextile fabric indicating fabric and construction.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with SSRBC Specifications.

1.06 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

1.07 COORDINATION

A. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 PRODUCTS

2.01 FILL MATERIALS

A. Subsoil Fill: Type S1 as specified in Section 31 05 13.

B. Structural Fill: Type A3 as specified in Section 31 05 16.

C. Granular Fill: Type A5 as specified in Section 31 05 16.

2.02 ACCESSORIES

A. Geotextile Fabric:

1. Conforming to SSRBC, Section 593, Item 593.222

PART 3 EXECUTION

3.01 LINES AND GRADES

A. Lay pipes to lines and grades indicated on Drawings.

1. Owner reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.

B. Use laser-beam instrument with qualified operator to establish lines and grades.

3.02 PREPARATION

A. Call Local Utility Line Information service at Dig-Safe not less than three working days before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Identify required lines, levels, contours, and datum locations.

C. Protect plant life, lawns, and other features remaining as portion of final landscaping.

D. Protect bench marks, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

E. Maintain and protect above and below grade utilities indicated to remain.

F. Establish temporary traffic control and detours when trenching is performed in public right-of-way. Relocate controls and reroute traffic as required during progress of Work.

3.03 TRENCHING

A. Excavate subsoil required for utilities to connection point.

B. Remove lumped subsoil, boulders, and rock up to 1 cubic yard measured by volume. Remove larger material as specified in Section 31 23 18.

C. Perform excavation within 24 inches of existing utility service in accordance with utility's requirements.

D. Do not advance open trench more than 200 feet ahead of installed pipe.

E. Cut trenches sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.

F. Excavate bottom of trenches maximum 2 feet wider than outside diameter of pipe.

G. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and utilities.

H. Do not interfere with 45 degree bearing splay of foundations.

I. When Project conditions permit, slope side walls of excavation starting 2 feet above top of pipe. When side walls can not be sloped, provide sheeting and shoring to protect excavation as specified in this section.

J. When subsurface materials at bottom of trench are loose or soft, notify Owner/Engineer, and request instructions.

K. Cut out soft areas of subgrade not capable of compaction in place. Backfill with Fill Type A5 and compact to density equal to or greater than requirements for subsequent backfill material.

L. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.

M. Correct areas over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as directed by Owner/Engineer.

N. Remove excess subsoil not intended for reuse, from site.

3.04 SHEETING AND SHORING

A. Sheet, shore, and brace excavations to prevent danger to persons, structures and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.

B. Support trenches more than 5 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.

C. Design sheeting and shoring to be removed at completion of excavation work.

D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.

E. Repair damage to new and existing work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

3.05 BACKFILLING

A. Backfill trenches to contours and elevations with unfrozen fill materials.

B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

C. Place material in continuous layers as follows:

1. Subsoil Fill: Maximum 8 inches compacted depth.
2. Structural Fill: Maximum 6 inches compacted depth.
3. Granular Fill: Maximum 8 inches compacted depth.

D. Employ placement method that does not disturb or damage utilities in trench.

E. Maintain optimum moisture content of fill materials to attain required compaction density.

F. Do not leave more than 50 feet of trench open at end of working day.

G. Protect open trench to prevent danger to Owner and the public.

3.06 TOLERANCES

A. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.

B. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.07 FIELD QUALITY CONTROL

A. Perform laboratory material tests in accordance with ASTM D1557.

B. Perform in place compaction tests in accordance with the following:

1. Density Tests: ASTM D1556.
2. Moisture Tests: ASTM D3017.

C. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

D. Frequency of Tests: Per NHDOT Specifications.

3.08 PROTECTION OF FINISHED WORK

A. Reshape and re-compact fills subjected to vehicular traffic during construction.

3.09 SCHEDULE

A. Beneath Bedding Material:

1. Replace over excavated earth and unsuitable soils with Fill Type S1, placed in 12 inch lifts and compacted uniformly to minimum 95 percent of maximum density

B. Bedding and Blanket Material:

1. Storm Piping: Fill Type A3 placed in 6 inch lifts to springline of pipe and compacted uniformly to minimum 95 percent of maximum density. Fill Type A5 from springline of pipe to 6 inches above pipe compacted uniformly to minimum 95 percent of maximum density.

C. Backfill above Blanket Material:

1. Storm Piping: Fill Type S1 to the limits shown on the Drawings placed in 12 inch lifts and compacted uniformly to minimum 95 percent of maximum density.

END OF SECTION

SECTION 31 23 18
ROCK REMOVAL

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Removing identified and discovered rock during excavation.
2. Expansive tools and Explosives to assist rock removal.

B. Related Sections:

1. Section 31 22 13 - Rough Grading.
2. Section 31 23 16 - Excavation.
3. Section 31 23 17 - Trenching.
4. Section 31 23 23 - Fill.

1.02 REFERENCES

A. National Fire Protection Association:

1. NFPA 495 - Explosive Materials Code.

1.03 DEFINITIONS

A. Site Rock: Solid mineral material with volume in excess of 1 cu yd or solid material that cannot be removed with 3/4 cu yd capacity excavator without drilling or blasting.

1.04 SUBMITTALS

A. Shop Drawings: Indicate proposed method of blasting, delay pattern, explosive types, type of blasting mat or cover, and intended rock removal method.

B. Survey Report: Submit survey report on conditions of buildings near locations of rock removal.

1.05 QUALITY ASSURANCE

A. Seismic Survey Firm: Licensed company specializing in seismic surveys with five years documented experience.

B. Explosives Firm: Company specializing in explosives for disintegration of rock, with five years documented experience.

1.06 PROJECT CONDITIONS

A. Conduct survey and document conditions of buildings near locations of rock removal, prior to blasting, and photograph existing conditions identifying existing irregularities.

B. Advise owners of adjacent buildings or structures in writing, prior to executing seismographic survey. Explain planned blasting and seismic operations.

C. Obtain seismic survey prior to rock excavation to determine maximum charges that can be used at different locations in area of excavation without damaging adjacent properties or other work.

1.07 SCHEDULING

A. Schedule Work to avoid disruption to occupied buildings nearby.

B. Conduct blasting operations between hours of 8 am and 4 pm only.

PART 2 PRODUCTS

2.01 MATERIALS

A. Explosives: Type recommended by explosive firm following seismic survey and required by authorities having jurisdiction.

B. Delay Device: Type recommended by explosives firm.

C. Blast Mat Materials: Type recommended by explosives firm.

D. Mechanical Disintegration Compound: Grout mix of materials that expand on curing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify site conditions and note subsurface irregularities affecting Work of this section.

3.02 PREPARATION

A. Identify required lines, levels, contours, and datum.

3.03 ROCK REMOVAL BY MECHANICAL METHOD

A. Excavate and remove rock by mechanical method.

1. Drill holes and use expansive tools or wedges or mechanical disintegration compound to fracture rock.

B. Cut away rock at bottom of excavation to form level bearing.

C. Remove shaled layers to provide sound and unshattered base for footings.

D. In utility trenches, excavate to 6 inches below invert elevation of pipe and 24 inches wider than pipe diameter.

E. Remove excavated materials from site.

F. Correct unauthorized rock removal in accordance with backfilling and compacting requirements of Section 31 23 23.

3.04 ROCK REMOVAL BY EXPLOSIVE METHODS

A. When rock is uncovered requiring explosives method for rock disintegration, notify Owner. Execute as follows.

B. Provide seismographic monitoring during progress of blasting operations.

C. Disintegrate rock and remove from excavation.

D. Remove rock at excavation bottom to form level bearing.

E. Remove shaled layers to provide sound and unshattered base for footings.

F. In utility trenches, excavate to 6 inches below invert elevation of pipe and 24 inches wider than pipe diameter.

G. Remove excavated material from site.

H. Correct unauthorized rock removal in accordance with backfilling and compacting requirements of Section 31 23 23.

3.05 FIELD QUALITY CONTROL

A. Request visual inspection of foundation bearing surfaces by Architect/Engineer before installing subsequent work.

END OF SECTION

SECTION 31 23 19
DEWATERING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Dewatering system.
2. Surface water control system.
3. System operation and maintenance.
4. Water disposal.

B. Related Sections:

1. Section 31 23 16 - Excavation.
2. Section 31 23 17 - Trenching.

1.02 REFERENCES

A. ASTM International:

1. ASTM C33 - Standard Specification for Concrete Aggregates.

1.03 DEFINITIONS

A. Dewatering includes the following:

1. Lowering of ground water table and intercepting horizontal water seepage to prevent ground water from entering excavations.
2. Reducing piezometric pressure within strata to prevent failure or heaving of excavations.
3. Disposing of removed water.

B. Surface Water Control: Removal of surface water within open excavations.

1.04 PERFORMANCE REQUIREMENTS

A. Design dewatering systems to:

1. Lower water table within areas of excavation to permit Work to be completed on dry and stable subgrade.
2. Relieve hydrostatic pressures in confined water bearing strata below excavation to eliminate risk of uplift or other instability of excavation.
3. Prevent damage to adjacent properties, buildings, structures, utilities, and facilities from construction operations.
4. Prevent loss of fines, quick condition, or softening of foundation subgrade.
5. Maintain stability of sides and bottoms of excavations and trenches.

B. Design surface water control systems to:

1. Collect and remove surface water and seepage entering excavation.

1.05 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations and depths of capped wells and piping abandoned in place.

1.06 QUALITY ASSURANCE

A. Comply with authorities having jurisdiction for the following:

1. Drilling and abandoning of wells used for dewatering systems, if required.
2. Water discharge and disposal from pumping operations.

1.07 COORDINATION

A. Coordinate work to permit the following construction operations to be completed on dry stable substrate.

1. Excavation for structures specified in Section 31 23 16.
2. Trenching for utilities specified in Section 31 23 17.

PART 2 PRODUCTS

2.01 DEWATERING EQUIPMENT

A. Select dewatering equipment to meet specified performance requirements.

PART 3 EXECUTION

3.01 PREPARATION

A. Protect existing adjacent buildings, structures, and improvements from damage caused by dewatering operations.

3.02 SURFACE WATER CONTROL SYSTEM

A. Provide ditches, berms, and other devices to divert and drain surface water from excavation area as specified in Section 31 25 00.

B. Divert surface water and seepage water within excavation areas into sumps and pump water into settling basins in accordance with requirements of agencies having jurisdiction.

C. Control and remove unanticipated water seepage into excavation.

3.03 SYSTEM OPERATION AND MAINTENANCE

A. Operate dewatering system continuously until backfilling is complete.

B. Provide 24-hour supervision of dewatering system by personnel skilled in operation, maintenance, and replacement of system components.

C. Conduct daily observation of dewatering system and monitoring system. Make required repairs and perform scheduled maintenance.

D. Fill fuel tanks before tanks reach 25 percent capacity.

E. Start emergency generators at least twice each week to check operating condition.

F. When dewatering system cannot control water within excavation, notify Owner/Engineer and stop excavation work.

1. Supplement or modify dewatering system and provide other remedial measures to control water within excavation.
2. Demonstrate dewatering system operation complies with performance requirements before resuming excavation operations.

G. Modify dewatering and surface water control systems when operation causes or threatens to cause damage to new construction, existing site improvements, adjacent property, or adjacent water wells.

H. Correct unanticipated pressure conditions affecting dewatering system performance.

I. Do not discontinue dewatering operations without Owner/Engineer's approval.

3.04 WATER DISPOSAL

A. Discharge water into settling basins.

3.05 SYSTEM REMOVAL

A. Remove dewatering and surface water control systems after dewatering operations are discontinued.

END OF SECTION

SECTION 31 23 23
FILL

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Backfilling site structures to subgrade elevations.
2. Fill under paving.
3. Fill for over-excavation.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork.
2. Section 31 05 16 - Aggregates for Earthwork.
3. Section 31 22 13 - Rough Grading.
4. Section 31 23 16 - Excavation.
5. Section 31 23 17 - Trenching.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
6. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 SUBMITTALS

A. Product Data: Submit data for geotextile fabric indicating fabric and construction.

B. Samples: Submit, in air-tight containers, 10 sample of each type of fill to testing laboratory.

C. Materials Source: Submit name of imported fill materials suppliers.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with SSRBC, Section 203.

PART 2 PRODUCTS

2.01 FILL MATERIALS

A. Subsoil Fill: Type A1 as specified in Section 31 05 16.

B. Structural Fill: Type A3 as specified in Section 31 05 16.

C. Granular Fill: Type A5 as specified in Section 31 05 16.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.

B. Verify underground tanks are anchored to their own foundations to avoid flotation after backfilling.

C. Verify structural ability of unsupported walls to support loads imposed by fill.

3.02 PREPARATION

A. Compact subgrade to density requirements for subsequent backfill materials.

B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with structural fill and compact to density equal to or greater than requirements for subsequent fill material.

C. Proof roll to identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.

3.03 BACKFILLING

A. Backfill areas to contours and elevations with unfrozen materials.

B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.

C. Place material in continuous layers as follows:

1. Subsoil Fill: Maximum 8 inches compacted depth.
2. Structural Fill: Maximum 6 inches compacted depth.
3. Granular Fill: Maximum 8 inches compacted depth.

D. Employ placement method that does not disturb or damage other work.

E. Maintain optimum moisture content of backfill materials to attain required compaction density.

F. Backfill against supported foundation walls. Do not backfill against unsupported foundation walls.

G. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.

H. Slope grade away from building minimum 2 percent slope for minimum distance of 10 ft, unless noted otherwise.

I. Make gradual grade changes. Blend slope into level areas.

J. Remove surplus backfill materials from site.

K. Leave fill material stockpile areas free of excess fill materials.

3.04 TOLERANCES

A. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.

B. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.05 FIELD QUALITY CONTROL

A. Perform laboratory material tests in accordance with AASHTO T180.

B. Perform in place compaction tests in accordance with the following:

1. Density Tests: ASTM D2922.
2. Moisture Tests: ASTM D3017.

C. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

D. Frequency of Tests: As required by SSRBC, Section 203.

E. Proof roll compacted fill surfaces under slabs-on-grade and paving.

3.06 PROTECTION OF FINISHED WORK

A. Reshape and re-compact fills subjected to vehicular traffic.

3.07 SCHEDULE

A. Fill Under Grass Areas:

1. Fill Type S1, to 6 inches below finish grade, compact uniformly to 90 percent of maximum density.

B. Fill Under Asphalt Paving:

1. Compact subsoil to 95 percent of its maximum dry density.
2. Fill Type A5, to subbase elevation below finish paving elevation, compact uniformly to 95 percent of maximum density.

C. Fill to Correct Over-excavation:

1. Fill Type A5, flush to required elevation, compact uniformly to 95 percent of maximum density.

END OF SECTION

SECTION 31 25 00
EROSION AND SEDIMENTATION CONTROLS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Diversion Channels.
   2. Sediment Traps.

B. Related Sections:
   1. Section 31 05 13 - Soils for Earthwork.
   2. Section 31 05 16 - Aggregates for Earthwork.
   3. Section 31 10 00 - Site Clearing.
   4. Section 31 23 16 - Excavation.
   5. Section 31 23 23 - Fill.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials:
   1. AASHTO T88 - Standard Specification for Particle Size Analysis of Soils.
   2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.

C. ASTM International:
   1. ASTM C127 - Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate.
   2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
   3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
   4. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
   5. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

D. Precast/Prestressed Concrete Institute:
   1. PCI MNL-116S - Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products.

E. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 QUALITY ASSURANCE

A. Perform Work in accordance with Best Management Practices as identified by New Hampshire Department of Environmental Standards.

PART 2 PRODUCTS

2.01 ROCK AND GEOTEXTILE MATERIALS

A. Rock: Conforming to SSRBC, Section 585, Item 585.3.

B. Geotextile Fabric: Conforming to SSRBC, Section 593, Item 593.2.2.2.

2.02 PLANTING MATERIALS

A. Seeding and Soil Supplements: As specified in Section 32 92 19.

B. Mulch: As specified in Section 32 92 19.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify compacted subgrade is acceptable and ready to support devices and imposed loads.

B. Verify gradients and elevations of base or foundation for other work are correct.

3.02 DIVERSION CHANNELS

A. Windrow excavated material on low side of channel.

B. Compact to 95 percent maximum density.

C. On entire channel area, apply soil supplements and sow seed as specified in Section 32 92 19.

D. Mulch seeded areas with hay as specified in Section 32 92 19.

3.03 SEDIMENT TRAPS

A. Clear site, as specified in Section 31 10 00.

B. Construct trap by excavating and forming embankments as specified in Section 31 23 16 and Section 31 23 23.

C. Place coarse aggregate or rock at outlet as indicated on Drawings.

D. When required, obtain borrow excavation for formation of embankment, as specified in Section 31 23 16.

E. On entire sediment trap area, apply soil supplements and sow seed as specified in Section 32 92 19.

F. Mulch seeded areas with hay as specified in Section 32 92 19.

3.04 SITE STABILIZATION

A. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.

B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.

C. Stockpile and waste pile heights shall not exceed 20 feet. Slope stockpile sides at 2:1 or flatter.

D. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 20 days.

1. During non-germinating periods, apply mulch at recommended rates.
2. Stabilize disturbed areas which are not at finished grade and which will be disturbed within one year in accordance with Section 32 92 19.
3. Stabilize disturbed areas which are either at finished grade or will not be disturbed within one year in accordance with Section 32 92 19 permanent seeding specifications.

E. Stabilize diversion channels, sediment traps, and stockpiles immediately.

3.05 FIELD QUALITY CONTROL

A. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.

3.06 CLEANING

A. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.

B. Do not damage structure or device during cleaning operations.
C. Do not permit sediment to erode into construction or site areas or natural waterways.
D. Clean channels when depth of sediment reaches approximately one half channel depth.

END OF SECTION

SECTION 32 11 23
AGGREGATE BASE COURSES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Aggregate subbase.
2. Aggregate base course.

B. Related Sections:

1. Section 31 22 13 - Rough Grading.
2. Section 31 23 17 - Trenching.
3. Section 31 23 23 - Fill.
4. Section 32 12 16 - Asphalt Paving.
5. Section 33 05 13 - Manholes and Structures.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.

B. ASTM International:

1. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
2. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
3. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
4. ASTM D2940 - Standard Specification for Graded Aggregate Material For Bases or Subbases for Highways or Airports.
5. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 SUBMITTALS

A. Samples: Submit, in air-tight containers, 5 lb sample of each type of aggregate fill to testing laboratory.

B. Materials Source: Submit name of aggregate materials suppliers.

C. Manufacturer's Certificate: Certify materials meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

A. Furnish each aggregate material from single source throughout the Work.

B. Perform Work in accordance with NHDOT standards.

PART 2 PRODUCTS

2.01 AGGREGATE MATERIALS

A. Subbase Aggregate: Fill Type A1 as specified in Section 31 05 16.

B. Base Aggregate: Fill Type A2 as specified in Section 31 05 16.

2.02 ACCESSORIES

A. Geotextile Fabric: Conforming to SSRBC, Section 593, Item 593.222.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify compacted substrate is dry and ready to support paving and imposed loads.

1. Proof roll substrate with minimum two perpendicular passes to identify soft spots.
2. Remove soft substrate and replace with compacted fill as specified in Section 31 23 23.

B. Verify substrate has been inspected, gradients and elevations are correct.

3.02 PREPARATION

A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.

B. Do not place fill on soft, muddy, or frozen surfaces.

3.03 AGGREGATE PLACEMENT

A. Spread aggregate over prepared substrate to total compacted thickness indicated on Drawings.

B. Roller compact aggregate to 95 percent maximum density.

C. Level and contour surfaces to elevations, profiles, and gradients indicated.

D. Maintain optimum moisture content of fill materials to attain specified compaction density.

E. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.04 TOLERANCES

A. Maximum Variation From Flat Surface: 1/4 inch measured with 10 foot straight edge.

B. Maximum Variation From Thickness: 1/4 inch.

C. Maximum Variation From Elevation: 1/2 inch.

3.05 FIELD QUALITY CONTROL

A. Compaction testing will be performed in accordance with ASTM D2922.

B. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

END OF SECTION

SECTION 32 12 16
ASPHALT PAVING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Asphalt materials.
2. Aggregate materials.
3. Aggregate subbase.
4. Asphalt paving base course, binder course, and wearing course.

B. Related Requirement:

1. Section 31 22 13 - Rough Grading.
2. Section 31 23 23 - Fill.
3. Section 32 11 23 - Aggregate Base Courses.
4. Section 33 05 13 - Manholes and Structures.

1.02 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:

1. AASHTO M17 - Standard Specification for Mineral Filler for Bituminous Paving Mixtures.
2. AASHTO M29 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
3. AASHTO M140 - Standard Specification for Emulsified Asphalt.
4. AASHTO M208 - Standard Specification for Cationic Emulsified Asphalt.
5. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
6. AASHTO M320 - Standard Specification for Performance-Graded Asphalt Binder.
7. AASHTO M324 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
8. AASHTO MP1a - Standard Specification for Performance-Graded Asphalt Binder.

B. Asphalt Institute:

1. AI MS-2 - Mix Design Methods for Asphalt Concrete and Other Hot- Mix Types.
2. AI MS-19 - Basic Asphalt Emulsion Manual.
3. AI SP-2 - Superpave Mix Design.

C. ASTM International:

1. ASTM C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
2. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
3. ASTM D242 - Standard Specification for Mineral Filler For Bituminous Paving Mixtures.
4. ASTM D692 - Standard Specification for Coarse Aggregate for Bituminous Paving Mixtures.
5. ASTM D946 - Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction.

6. ASTM D977 - Standard Specification for Emulsified Asphalt.
7. ASTM D1073 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
8. ASTM D1188 - Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
9. ASTM D2027 - Standard Specification for Cutback Asphalt (Medium-Curing Type).
10. ASTM D2397 - Standard Specification for Cationic Emulsified Asphalt.
11. ASTM D2726 - Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures.
12. ASTM D2950 - Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods.
13. ASTM D3381 - Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction.
14. ASTM D3515 - Standard Specification for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
15. ASTM D3549 - Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens.
16. ASTM D3910 - Standard Practices for Design, Testing, and Construction of Slurry Seal.
17. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
18. ASTM E408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
19. ASTM E903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
20. ASTM E1918 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
21. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

D. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 SUBMITTALS

A. Product Data:
   1. Submit product information for asphalt and aggregate materials.
   2. Submit mix design with laboratory test results supporting design.

1.04 QUALITY ASSURANCE

A. Mixing Plant: Conform to SSRBC, Section 401.

B. Obtain materials from same source throughout.

C. Perform Work in accordance with SSRBC, Section 403.

1.05 AMBIENT CONDITIONS

A. Do not place asphalt mixture when ambient air or base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 PRODUCTS

2.01 ASPHALT PAVING

A. Asphalt Materials:

1. Asphalt Binder: In accordance with SSRBC, Section 401.
2. Primer: In accordance with SSRBC, Section 401.
3. Tack Coat: In accordance with SSRBC, Section 401.
4. Reclaimed Asphalt Pavement (RAP): Processed material obtained by milling or full depth removal of existing asphalt paving.

B. Aggregate Materials:

1. Coarse Aggregate: In accordance with SSRBC, Section 401.
2. Fine Aggregate: In accordance with SSRBC, Section 401.
3. Mineral Filler: In accordance with SSRBC, Section 401.

C. Aggregate Subbase: Specified in Section 32 11 23.

2.02 MIXES

A. Use dry material to avoid foaming. Mix uniformly.

B. Asphalt Paving Mixtures: Designed in accordance with SSRBC, Section 401.

2.03 ACCESSORIES

A. Geotextile Fabric: Conforming to SSRBC, Section 593, Item 593.222.

2.04 SOURCE QUALITY CONTROL

A. Submit proposed mix design of each class of mix for review prior to beginning of Work.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify utilities indicated under paving are installed with excavations and trenches backfilled and compacted.

B. Verify compacted subbase is dry and ready to support paving and imposed loads.

1. Proof roll subbase with minimum two perpendicular passes to identify soft spots.
2. Remove soft subbase and replace with compacted fill as specified in Section 31 23 23.

C. Verify gradients and elevations of base are correct.

D. Verify manhole frames are installed in correct position and elevation.

3.02 PREPARATION

A. Prepare subbase in accordance with SSRBC, Section 401.

3.03 DEMOLITION

A. Saw cut and notch existing paving as indicted on Drawings.

B. Clean existing paving to remove foreign material, excess joint sealant and crack filler from paving surface.

C. Repair surface defects in existing paving to provide uniform surface to receive new paving.

3.04 INSTALLATION

A. Subbase:

1. Prepare subbase in accordance with SSRBC, Section 401.

B. Tack Coat:

1. Apply tack coat in accordance with SSRBC, Section 410.

C. Double Course Asphalt Paving:

1. Place asphalt binder course within 4 hours of applying primer or tack coat.
2. Place binder course to thickness indicated on Drawings.

3. Place wearing course within 24 hours of placing and compacting binder course. When binder course is placed more than 24 hours before placing wearing course, clean surface and apply tack coat before placing wearing course.
4. Place wearing course to thickness indicated on Drawings.
5. Compact each course by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
6. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.05 TOLERANCES

A. Flatness: Maximum variation of 1/4 inch measured with 10-foot straight edge.

B. Scheduled Compacted Thickness: Within 1/4 inch.

C. Variation from Indicated Elevation: Within 1/2 inch.

3.06 FIELD QUALITY CONTROL

A. Take samples and perform tests in accordance with NHDOT standards.

B. Asphalt Paving Mix Temperature: Measure temperature at time of placement.

3.07 PROTECTION

A. Immediately after placement, protect paving from mechanical injury for 24 hours or until surface temperature is less than 140 degrees F.

END OF SECTION

SECTION 32 17 13

PARKING BUMPERS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Precast concrete parking bumpers.

B. Related Requirements:

1. Section 32 12 16 - Asphalt Paving.

1.2 REFERENCE STANDARDS

A. ASTM International:

1. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
2. ASTM C33 - Standard Specification for Concrete Aggregates.
3. ASTM C150 - Standard Specification for Portland Cement.
4. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
5. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.

1.3 COORDINATION

A. Coordinate the Work with pavement placement and parking striping.

1.4 SUBMITTALS

A. Product Data: Submit unit configuration, dimensions.

PART 2 PRODUCTS

2.1 CONCRETE BUMPERS

A. Precast Reinforced Concrete Mix: Minimum 5000 psi, 28 day strength, air entrained to 5 to 7 percent.

B. Use rigid molds, constructed to maintain precast units uniform in shape, size and finish. Maintain consistent quality during manufacture.

C. Embed reinforcing steel, and drill or sleeve for two dowels.

D. Cure units to develop concrete quality, and to minimize appearance blemishes including non-uniformity, staining, or surface cracking.

2.2 CONFIGURATION

A. Nominal Size: 6 inches high, 8 inches wide, 6 feet long.

B. Profile: Manufacturer's standard cross section with sloped vertical faces, square ends and drainage slots.

2.3 ACCESSORIES

A. Dowels: Steel, unfinished; 1/2 inch diameter, 24 inches long.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install units without damage to shape or finish. Replace or repair damaged units.

B. Install units in alignment with adjacent work.

C. Fasten units in place with 2 dowels for each bumper.

END OF SECTION

SECTION 32 17 23
PAVEMENT MARKINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Traffic lines and markings.
2. Legends.
3. Paint.
4. Glass beads.

B. Related Requirements:

1. Section 32 12 16 - Asphalt Paving.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO M247 - Standard Specification for Glass Beads Used in Traffic Paint.

B. ASTM International:

1. ASTM D34 - Standard Guide for Chemical Analysis of White Pigments.
2. ASTM D126 - Standard Test Methods for Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate and Chromium Oxide Green.
3. ASTM D562 - Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.
4. ASTM D711 - Standard Test Method for No-Pick-Up Time of Traffic Paint.
5. ASTM D713 - Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials.
6. ASTM D969 - Standard Test Method for Laboratory Determination of Degree of Bleeding of Traffic Paint.
7. ASTM D1301 - Standard Test Methods for Chemical Analysis of White Lead Pigments.
8. ASTM D1394 - Standard Test Methods for Chemical Analysis of White Titanium Pigments.
9. ASTM D1475 - Standard test Method for Density of Liquid Coatings, Inks, and Related Products.
10. ASTM D1640 - Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature.
11. ASTM D2202 - Standard Test Method for Slump of Sealants.
12. ASTM D2371 - Standard Test Method for Pigment Content of Solvent-Reducible Paints.
13. ASTM D2621 - Standard Test Method for Infrared Identification of Vehicle Solids From Solvent-Reducible Paints.
14. ASTM D2743 - Standard Practices for Uniformity of Traffic Paint Vehicle Solids by Spectroscopy and Gas Chromatography.

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.3 SUBMITTALS

A. Product Data: Submit paint formulation for each type of paint.

B. Manufacturer's Certificate: Certify Products meet or exceed SSRBC, Section 632.

C. Test and Evaluation Reports: Submit source and acceptance test results in accordance with AASHTO M247.

D. Manufacturer's Instructions: Submit instructions for application temperatures, eradication requirements, application rate, line thickness, type of glass beads, bead embedment and bead application rate, and any other data on proper installation.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with SSRBC, Section 632.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Applicator: Company specializing in performing work of this section with minimum three years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Invert containers several days prior to use when paint has been stored more than 2 months. Minimize exposure to air when transferring paint. Seal drums and tanks when not in use.

B. Glass Beads. Store glass beads in cool, dry place. Protect from contamination by foreign substances.

1.7 AMBIENT CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.

B. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.

C. Do not apply paint when temperatures are expected to fall below 50 degrees F for 24 hours after application.

D. Volatile Organic Content (VOC). Do not exceed State or Environmental Protection Agency maximum VOC on traffic paint.

PART 2 PRODUCTS

2.1 PAINTED PAVEMENT MARKINGS

A. Furnish materials in accordance with SSRBC, Section 632.

B. Performance / Design Criteria:

1. Paint Adhesion: Adhere to road surface forming smooth continuous film one minute after application.

2. Paint Drying: Tack free by touch so as not to require coning or other traffic control devices to prevent transfer by vehicle tires within two minutes after application.

C. Glass Beads: AASHTO M247, Type 1, coated to enhance embedment and adherence with paint.

2.2 EQUIPMENT

A. Continuous Longitudinal Line Application Machine: Use application equipment with following capabilities.

1. Dual nozzle paint gun to simultaneously apply parallel lines of indicated width in solid or broken patterns or various combinations of those patterns.
2. Pressurized bead-gun to automatically dispense glass beads onto painted surface, at required application rate.
3. Measuring device to automatically and continuously measure length of each line placed, to nearest foot.
4. Device to heat paint to 110 degrees F for fast dry applications.

B. Other Equipment:

1. For application of crosswalks, intersections, stop lines, legends and other miscellaneous items by walk behind stripers, hand spray or stencil trucks, apply with equipment meeting requirements of this section. Do not use hand brushes or rollers. Optionally apply glass beads by hand.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not apply paint to concrete surfaces until concrete has cured for 28 days.

3.2 PREPARATION

A. Maintenance and Protection of Traffic:

1. Prevent interference with marking operations and to prevent traffic on newly applied markings before markings dry.
2. Maintain access to existing facilities and other areas requiring access.

B. Surface Preparation.

1. Clean and dry paved surface prior to painting.
2. Blow or sweep surface free of dirt, debris, oil, grease or gasoline.
3. Spot location of final pavement markings as specified and as indicated on Drawings.
4. Notify Owner/Engineer after placing pavement spots a minimum 1 day prior to applying markings.

3.3 APPLICATION

A. Install Work in accordance with SSRBC, Section 632.

3.4 TOLERANCES

A. Maximum Variation from Wet Film Thickness: 1 mil.

B. Maximum Variation from Wet Paint Line Width: Plus or minus 1/8 inch.

3.5 FIELD QUALITY CONTROL

A. Inspect for incorrect location, insufficient thickness, line width, coverage, retention, uncured or discolored material, and insufficient bonding.

B. Repair lines and markings, which after application and curing do not meet following criteria:

1. Incorrect Location: Remove and replace incorrectly placed patterns.

2. Insufficient Thickness, Line Width, Paint Coverage, Glass Bead Coverage or Retention: Prepare defective material by acceptably grinding or blast cleaning to remove substantial amount of beads and to roughen marking surface. Remove loose particles and debris. Apply new markings on cleaned surface in accordance with this Section.
3. Uncured or Discolored Material, Insufficient Bonding: Remove defective markings in accordance with this Section and clean pavement surface one foot beyond affected area. Apply new markings on cleaned surface in accordance with this Section.

C. When eradication of existing paint lines is necessary, eradicate by shot blast or water blast method. Do not gouge or groove pavement more than 1/16 inch during removal. Limit area of removal to area of marking plus 1 inch on all sides. Prevent damage to transverse and longitudinal joint sealers, and repair any damage according to requirements in Section 32 13 13 or Section 32 12 16.

D. Maintain daily log showing work completed, results of above inspections or tests, pavement and air temperatures, relative humidity, presence of any moisture on pavement, and any material or equipment problems. Make legible entries in log in ink, sign and submit by end of each work day. Enter environmental data into log prior to starting work each day and at two additional times during day.

3.6 PROTECTION

A. Protect painted pavement markings from vehicular and pedestrian traffic until paint is dry and track free. Follow manufacturer's recommendations or use minimum of 30 minutes. Consider barrier cones as satisfactory protection for materials requiring more than 2 minutes dry time.

END OF SECTION

SECTION 32 92 19
SEEDING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Fertilizing.
   2. Seeding.
   3. Hydroseeding.
   4. Mulching.
   5. Maintenance.

B. Related Sections:
   1. Section 31 22 13 - Rough Grading.
   2. Section 31 23 17 - Trenching.

1.02 REFERENCES

A. ASTM International:
   1. ASTM C602 - Standard Specification for Agricultural Liming Materials.

B. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 DEFINITIONS

A. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.04 SUBMITTALS

A. Product Data: Submit data for seed mix, fertilizer, mulch and other accessories.

B. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with SSRBC, Section 646.

1.06 QUALIFICATIONS

A. Seed Supplier: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing work of this section with minimum 3 years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.

B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

PART 2 PRODUCTS

2.01 SEED MIXTURE

A. Furnish materials in accordance with SSRBC, Section 644.

2.02 ACCESSORIES

A. Mulching Material: Conforming to SSRBC, Section 645.

B. Fertilizer: Conforming to SSRBC, Section 643.

C. Lime: Conforming to SSRBC, Section 642.

D. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.

E. Erosion Fabric: Jute matting, open weave.

F. Stakes: Softwood lumber, chisel pointed.

G. String: Inorganic fiber.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify prepared soil base is ready to receive the Work of this section.

3.02 FERTILIZING

A. Apply in accordance with SSRBC, Section 642.

3.03 SEEDING

A. Apply in accordance with SSRBC, Section 644.

3.04 HYDROSEEDING

A. Apply in accordance with SSRBC, Section 644.

3.05 SEED PROTECTION

A. Protect seeded areas in accordance with SSRBC, Section 644.

END OF SECTION

SECTION 33 05 13
MANHOLES AND STRUCTURES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Modular precast concrete manholes with frame, covers, and accessories.
2. Bedding and cover materials.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork.
2. Section 31 05 16 - Aggregates for Earthwork.
3. Section 31 23 16 - Excavation.
4. Section 31 23 23 - Fill.

1.02 REFERENCES

A. American Concrete Institute:

1. ACI 318 - Building Code Requirements for Structural Concrete.
2. ACI 530/530.1 - Building Code Requirements for Masonry Structures and Specifications for Masonry Structures.

B. ASTM International:

1. ASTM A48/A48M - Standard Specification for Gray Iron Castings.
2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3. ASTM C55 - Standard Specification for Concrete Brick.
4. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale).
5. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
6. ASTM C497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
7. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures.
8. ASTM C923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals.
9. ASTM D3753 - Standard Specification for Glass-Fiber-Reinforced Polyester Manholes and Wetwells.

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 SUBMITTALS

A. Shop Drawings: Indicate manhole locations, elevations, piping, sizes and elevations of penetrations.

B. Product Data: Submit cover and frame construction, features, configuration, dimensions.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with SSRBC, Section 604.

1.05 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.06 DELIVERY, STORAGE AND HANDLING

A. Comply with precast concrete manufacturer's instructions for unloading, storing and moving precast manholes and structures.

B. Store precast concrete manholes and structures to prevent damage to Owner's property or other public or private property. Repair property damaged from materials storage.

C. Mark each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Maintain materials and surrounding air temperature to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.01 MANHOLES

A. Manhole Sections: Reinforced precast concrete in accordance with SSRBC, Section 604.

2.02 FRAMES AND COVERS

A. Product Description: Castings shall conform to SSRBC, Section 604.

2.03 CONFIGURATION

A. Shape: Cylindrical.

B. Clear Inside Dimensions: As indicated on Drawings.

C. Design Depth: As indicated on Drawings.

D. Clear Cover Opening: As indicated on Drawings.

E. Pipe Entry: Furnish openings as indicated on Drawings.

F. Steps or rungs shall not be installed in the manholes.

2.04 BEDDING AND COVER MATERIALS

A. Bedding: Fill Type A2 as specified in Section 31 05 16.

B. Cover: Fill Type A2, as specified in Section 31 05 16.

C. Soil Backfill from Above Pipe to Finish Grade: Soil Type S1, as specified in Section 31 05 13.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify items provided by other sections of Work are properly sized and located.

B. Verify built-in items are in proper location, and ready for roughing into Work.

C. Verify correct size of manhole and structure excavation.

3.02 PREPARATION

A. Coordinate placement of inlet and outlet pipe or duct sleeves required by other sections.

B. Do not install structures where site conditions induce loads exceeding structural capacity of structures.

C. Inspect precast concrete structures immediately prior to placement in excavation to verify structures are internally clean and free from damage. Remove and replace damaged units.

3.03 PRECAST CONCRETE MANHOLE AND STRUCTURE INSTALLATION

A. Lift precast components at lifting points designated by manufacturer.

B. When lowering manholes and structures into excavations and joining pipe to units, take precautions to ensure interior of pipeline and structure remains clean.

C. Set precast structures bearing firmly and fully on crushed stone bedding, compacted in accordance with provisions of Section 31 23 16 or on other support system shown on Drawings.

D. Assemble multi-section structures by lowering each section into excavation. Lower, set level, and firmly position base section before placing additional sections.

E. Remove foreign materials from joint surfaces and verify sealing materials are placed properly. Maintain alignment between sections by using guide devices affixed to lower section.

F. Joint sealing materials may be installed on site or at manufacturer's plant.

G. Verify manholes and structures installed satisfy required alignment and grade.

H. Remove knockouts or cut structure to receive piping without creating openings larger than required to receive pipe. Fill annular space with mortar.

I. Cut pipe to finish flush with interior of structure.

3.04 FRAME AND COVER INSTALLATION

A. Set frame and cover 2 inches above finished grade for manholes and structures with covers located within unpaved areas to allow area to be graded away from cover beginning 1 inch below top surface of frame.

3.05 FIELD QUALITY CONTROL

A. Test concrete manhole and structure sections in accordance with SSRBC, Section 604.

B. Vertical Adjustment of Existing Manholes and Structures:

1. Where required, adjust top elevation of existing manholes and structures to finished grades shown on Drawings.
2. Reset existing frames, grates and covers, carefully removed, cleaned of mortar fragments, to required elevation in accordance with requirements specified for installation of castings.
3. Remove concrete without damaging existing vertical reinforcing bars when removal of existing concrete wall is required. Clean vertical bars of concrete and bend into new concrete top slab or splice to required vertical reinforcement, as indicated Drawings.
4. Clean and apply sand-cement bonding compound on existing concrete surfaces to receive cast-in-place concrete in accordance with Section 03 30 00.

END OF SECTION

SECTION 33 41 00
STORM UTILITY DRAINAGE PIPING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Storm drainage piping.
2. Accessories.
3. Underground pipe markers.
4. Bedding and cover materials.

B. Related Sections:

1. Section 31 05 13 - Soils for Earthwork.
2. Section 31 05 16 - Aggregates for Earthwork.
3. Section 31 23 16 - Excavation.
4. Section 31 23 17 - Trenching.
5. Section 31 23 23 - Fill.
6. Section 33 05 13 - Manholes and Structures.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
2. ASTM C14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
3. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
4. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
5. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
6. ASTM C924 - Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method.
7. ASTM C969 - Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
8. ASTM C1103 - Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
9. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
10. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
11. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
12. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.

13. ASTM D2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
14. ASTM D2729 - Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
15. ASTM D2751 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
16. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
17. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
18. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
19. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
20. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

C. NHDOT Standard Specifications for Road and Bridge Construction (SSRBC), latest edition.

1.03 SUBMITTALS

A. Product Data: Submit data indicating pipe and accessories.

B. Manufacturer's Installation Instructions: Submit special procedures required to install Products specified.

C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.04 CLOSEOUT SUBMITTALS

A. Project Record Documents:

1. Accurately record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.
2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with SSRBC, Section 603.

1.06 COORDINATION

A. Coordinate the Work with termination of storm sewer connection outside building, trenching, and connection to foundation drainage system.

PART 2 PRODUCTS

2.01 STORM DRAINAGE PIPING

A. Corrugated High Density Polyethylene Pipe (HDPE) conforming to AASHTO M 294, Type S.
   1. Fittings: AASHTO M 294
   2. Joints: AASHTO M 294, soil tight with ASTM F477 elastomeric gaskets.

2.02 ACCESSORIES

A. Filter Fabric: Non-biodegradable, non-woven.

B. Grout: Specified in Section 03 30 00.

2.03 UNDERGROUND PIPE MARKERS

A. Plastic Ribbon Tape: Bright colored, continuously printed, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

2.04 BEDDING AND COVER MATERIALS

A. Bedding: Fill Type A3 as specified in Section 31 05 16.

B. Cover: Fill Type A5 as specified in Section 31 05 16.

C. Soil Backfill from Above Pipe to Finish Grade: Soil Type S1 as specified in Section 31 05 13.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

3.02 PREPARATION

A. Hand trim excavations to required elevations. Correct over excavation with coarse aggregate.

B. Remove large stones or other hard matter which could damage piping or impede consistent backfilling or compaction.

3.03 BEDDING

A. Excavate pipe trench in accordance with Section 31 23 17 for work of this Section. Hand trim excavation for accurate placement of pipe to elevations indicated.

B. Place bedding material at trench bottom, level materials in continuous layer not exceeding 6 inches compacted depth.

C. Maintain optimum moisture content of bedding material to attain required compaction density.

3.04 INSTALLATION - PIPE

A. Install Work in accordance with SSRBC, Section 603.

3.05 FIELD QUALITY CONTROL

A. Request inspection prior to placing aggregate cover over pipe.

B. Test in accordance with SSRBC, Section 603.

C. When tests indicate work does not meet specified requirements, remove work, replace and retest.

3.06 PROTECTION OF FINISHED WORK

A. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

1. Take care not to damage or displace installed pipe and joints during construction of pipe supports, backfilling, testing, and other operations.
2. Repair or replace pipe that is damaged or displaced from construction operations.

END OF SECTION

SECTION 34 71 13
VEHICLE BARRIERS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood rail and posts.
2. Excavating for post bases.

B. Related Sections:

1. Section 31 23 23 - Fill.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO M180 - Standard Specification for Corrugated Sheet Steel Beams for Highway Guardrail.

B. ASTM International:

1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
4. ASTM A428/A428M - Standard Test Method for Weight of Coating on Aluminum-Coated Iron or Steel Articles.
5. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
6. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
7. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

C. American Wood-Preservers' Association:

1. AWPA C14 - Wood for Highway Construction - Preservative Treatment by Pressure Processes.

D. Forest Stewardship Council:

1. FSC Guidelines - Forest Stewardship Council Guidelines.

1.3 SYSTEM DESCRIPTION

A. Guide Rail Height: Single rail 6 inch x 8 inch wood rail, top of rail 27 inches above finish grade.

B. Post Spacing: At intervals not exceeding 8 feet.

C. Post Foundation Depth: 56 inches below finish grade.

D. Post Foundation Size: 6 inch x 8 inch.

1.4 SUBMITTALS

A. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, anchorage, and schedule of components.

B. Product Data: Submit data on rail, posts, accessories, and hardware.

C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

PART 2 PRODUCTS

2.1 MATERIALS

A. Wood Rail Beam: Softwood timber, pressure preservative treated to AWPA C14 using water borne preservatives 6 inch x 8 inch nominal size. Wood rail beam to be spliced using half lap splice centered on wood posts.

B. Wood Posts: Softwood timber, pressure preservative treated to AWPA C14 using water borne preservatives 6 inch x 8 inch nominal size.

2.2 ACCESSORIES

A. Hardware: Steel, bolts, nuts and washers to suit rail profile.

2.3 FINISHES

A. Galvanizing: ASTM A123/A123M; hot dip galvanize after fabrication.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify location of underground utilities and adjust location of posts to avoid damaging utilities.

3.2 INSTALLATION

A. Drive posts plumb to correct elevations, properly spaced and to line and grade as indicated on Drawings.

B. Attach rails securely to posts with anchoring hardware.

3.3 ERECTION TOLERANCES

A. Posts - Maximum Variation From Plumb: 1/2 inch.

B. Rail - Maximum Offset From Indicated Position: 1/2 inch.

C. Rail - Maximum Variation From Indicated Height: 1/2 inch.

END OF SECTION

APPENDIX A

Test Pit Logs

Test Pit Logs
Hampton – South Beach Parking Lot Drainage and Improvements
Hampton, NH

June 4, 2014

Performed by
Jay J. Poulin, PE
HEB Engineers, Inc.

Test Pit Log #1

0"-12"	Bank Run Gravel Surface
12"-96"	Fill, 2.5Y 7/2, sand, 0% cobbles, 0% gravels, granular, loose
ESHWT:	None
Restrictive Layer:	None
OWT:	None
Infiltration Rate:	39.2 in/hr

Test Pit Log #2

0"-12"	Bank Run Gravel Surface
12"-96"	Fill, 2.5Y 7/2, sand, 0% cobbles, 0% gravels, granular, loose
ESHWT:	None
Restrictive Layer:	None
OWT:	None
Infiltration Rate:	29.4 in/hr

Test Pit Log #3

0"-20"	Bank Run Gravel Surface - (2) lifts
20"-36"	Fill, 2.5Y 7/1, sand, 0% cobbles, 0% gravels, granular, loose
36"-96"	Fill, 2.5Y 6/2, sand, 0% cobbles, 0% gravels, granular, loose
ESHWT:	36"
Restrictive Layer:	None
OWT:	None
Infiltration Rate:	41.6 in/hr
Notes:	Signs of redoximorphic features at ±36" but appeared to be perched. No redoximorphic features below and not logical based on adjacent grades.

Test Pit Log #4

0"-12"	Bank Run Gravel Surface
12"-32"	Fill, 2.5Y 7/2, sand, 0% cobbles, 0% gravels, granular, loose
32"-92"	Fill, 2.5Y 7/1, sand, 0% cobbles, 0% gravels, granular, loose
ESHWT:	None
Restrictive Layer:	None
OWT:	None
Infiltration Rate:	34.3 in/hr
Notes:	Layer of round stone at 32"; likely from previous fill.

Test Pit Log #5

0"-12"	Bank Run Gravel Surface
12"-36"	Fill, 2.5Y 6/2, sand, 0% cobbles, 0% gravels, granular, loose
36"-92"	Fill, 2.5Y 7/1, sand, 0% cobbles, 0% gravels, granular, loose
ESHWT:	None
Restrictive Layer:	None
OWT:	None
Infiltration Rate:	42.4 in/hr

Test Pit Log #6

0"-12"	Bank Run Gravel Surface
12"-84"	Fill, 2.5Y 7/2, sand, 0% cobbles, 0% gravels, granular, loose
ESHWT:	None
Restrictive Layer:	None
OWT:	None
Infiltration Rate:	39.2 in/hr
Notes:	Faint signs of redoximorphic features at ±30" but appeared to be perched. No redoximorphic features below.

Test Pit Log #7

0"-12"	Bank Run Gravel Surface
12"-36"	Fill, 2.5Y 7/2, sand, 0% cobbles, 0% gravels, granular, loose
36"-92"	Fill, 2.5Y 7/1, sand, 0% cobbles, 0% gravels, granular, loose
ESHWT:	None
Restrictive Layer:	None
OWT:	None
Infiltration Rate:	38.7 in/hr

Test Pit Log #8

0"-12"	Bank Run Gravel Surface
12"-36"	Fill, 2.5Y 7/2, sand, 0% cobbles, 0% gravels, granular, loose
36"-44"	Fill, 2.5Y 6/3, sand, 0% cobbles, 0% gravels, granular, loose
44"-84"	Fill, 2.5Y 7/1, sand, 0% cobbles, 0% gravels, granular, loose
ESHWT:	None
Restrictive Layer:	None
OWT:	None
Infiltration Rate:	50.0 in/hr
Notes:	36" – 44" Coarse sand