

# T. Buck Construction, Inc.

249 Merrow Road, Auburn, Maine 04210  
(207) 783-6223 \* (FAX) 783-3970

## UNANIMOUS WRITTEN CONSENT OF THE BOARD OF DIRECTORS

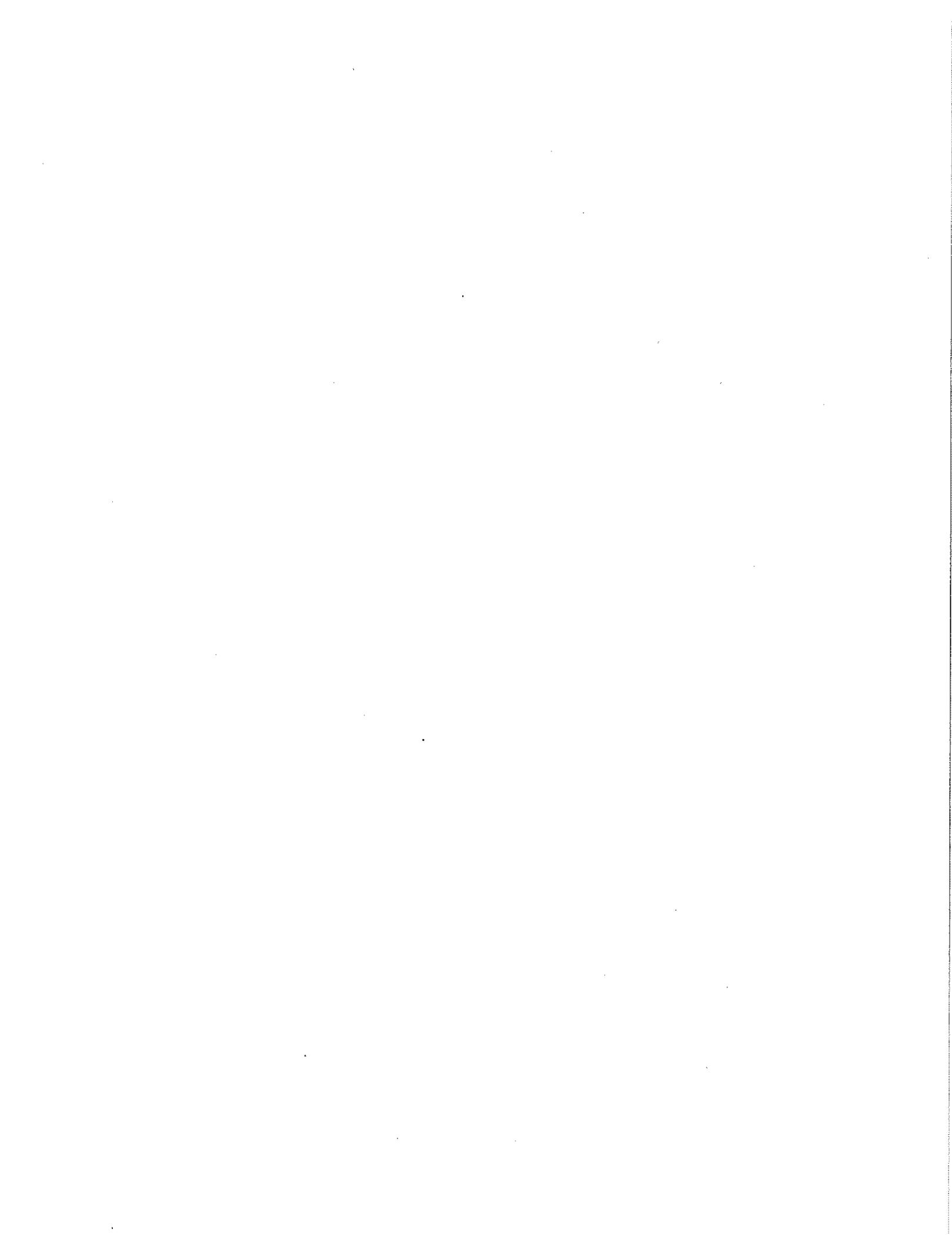
The undersigned, being a member of the board of directors of T. Buck Construction, Inc., do hereby consent to the adoption of the following resolutions without a meeting pursuant to RSA 292-A: 44:

RESOLVED: That Mark McPheters, Vice President, of the Corporation be and hereby is authorized and directed to execute for and behalf of the corporation, a bid with VAOT for Jamaica EB BRFOS-111 and as Vice President, to execute any other documents as may be deemed necessary in connection therewith.

Dated: As of: 1-2-2013

Terry Buck Director





STATE OF VERMONT  
CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS, That we

T. Buck Construction, Incorporated  
249 Merrow Road  
Auburn ME 04210

as Principal, and

as Surety, are held and firmly bound unto the State of Vermont, as Oblige, in the penal sum of Two Million Three Hundred Seventy One Thousand One Hundred Thirty Dollars and No Cents (\$2,371,130.00), good and lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a certain written contract with the above named Oblige, the State of Vermont dated the 7<sup>th</sup> day of JANUARY A.D. 2013 for the construction of a certain project in the State of Vermont known as Jamalca ER BRF 013-1 (16) which contract is hereby referred to and made a part hereof as fully and to the same extent as if set forth at length herein:

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that, if the above bounden Principal and his subcontractors and his or their agents and servants shall well and truly keep, do and perform, each and every, all and singular the matters and things in said contract set forth and specified to be by the said Principal kept, done and performed at the time and in the manner in said contract specified and shall pay over, make good and reimburse the State of Vermont all loss or losses and damage or damages which the above named Oblige, the State of Vermont, may sustain by reason of failure or default on the part of the Principal or his subcontractors, or his or their agents and servants, to lully carry out the terms of said contract, then this obligation shall be void; otherwise, to be and remain in full force and effect.

In Witness Whereof we hereunto set our hands and seals this 2<sup>nd</sup> day of January A.D. 2013.

In Presence of (TWO WITNESSES REQUIRED)

Uma Storr  
Maria L. Martello  
as to Principal

T. BUCK CONSTRUCTION  
Name of Corporation, Co-partnership or Individual

[Signature] L.S.  
Authorized Signature

VP

Title

(TWO WITNESSES REQUIRED)  
[Signature]  
[Signature]

as to Surety.

TRAVELERS CASUALTY & SURETY COMPANY OF AMERICA  
Bonding Company

[Signature] L.S.  
Authorized Signature

S.J.M. PLACE, ATTORNEY-IN-FACT  
Title

Compliance Bond

CONTRACT BOND

T. Buck Construction, Incorporated

249 Merrow Road  
Auburn ME 04210

Principal

TRAVELERS CASUALTY & SURETY COMPANY OF AMERICA

207 LARRABEE RD  
WESTBROOK, ME 04098

Surety.

and

STATE OF VERMONT

Obligee.

Date 1/7 2013

Amount, \$2,371,130.00

Approved 1/7 2013

  
Secretary of Transportation  
or Duly Authorized Agent

STATE OF VERMONT  
CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS, That we

T. Buck Construction, Incorporated  
249 Merrow Road  
Auburn ME 04210

as Principal, and

As Surety, are held and firmly bounden, unto the Secretary of Transportation for the State of Vermont, and his successors in office, as Obligees, in the penal sum of Two Million Three Hundred Seventy One Thousand One Hundred Thirty Dollars and No Cents (\$2,371,130.00), good and lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a certain written contract with the State of Vermont, dated the 7<sup>th</sup> day of January A.D. 2013 for the construction of a certain project in the State of Vermont known Jamaica ER BR F 013-1 (16) which contract is hereby referred to and made a part hereof as fully and to the same extent as if set forth at length herein:

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that, if the above bounden, Principal shall pay, settle, liquidate and discharge the claims of all creditors for material, merchandise, labor, rent, hire of vehicles, power shovels, rollers, concrete mixers, tools and other appliances, professional services, premiums and other services used or employed in carrying out the terms of said contract between said Principal and the State of Vermont, and shall pay all taxes, both State and municipal, and contributions to the Vermont Commissioner of Employment and Training, accruing during the term of performance of said contract, this agreement to make such payment being in compliance with the requirements of 19 Vermont Statutes Annotated, Section 10(9), as amended, to furnish security there under, and being in fact such security, then this obligation shall be void; otherwise, to be and remain in full force and effect.

In Witness Whereof we hereunto set our hands and seals this 2<sup>nd</sup> day of January A.D. 2013.

In Presence of (TWO WITNESSES REQUIRED)

[Signature]  
[Signature]  
as to Principal

T. BUCK CONSTRUCTION INC.  
Name of Corporation, Co-partnership or Individual  
[Signature] L.S.  
Authorized Signature  
VP  
Title

(TWO WITNESSES REQUIRED)

[Signature]  
[Signature]  
as to Surety.

TRAVELERS CASUALTY & SURETY COMPANY OF AMERICA  
Bonding Company  
[Signature] L.S.  
Authorized Signature  
S.J.M. PLACE, ATTORNEY-IN-FACT  
Title

Labor & Materials Bond

• CONTRACT BOND

T. Buck Construction, Incorporated

249 Merrow Road  
Auburn ME 04210  
Principal

TRAVELERS CASUALTY & SURETY COMPANY OF AMERICA  
207 LARRABEE RD  
WESTBROOK, ME 04098

Surety.

and

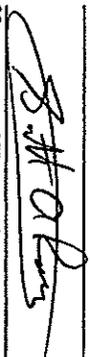
STATE OF VERMONT

Obligee.

Date 1/7 2013

Amount, \$2,371,130.00

Approved 1/7 2013

  
\*Secretary of Transportation  
or Duly Authorized Agent

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 11/17/01 BY SP-10/ML/STP

SCHEDULE OF INSURANCE RATES ON EXTRA WORK

APPLICABLE TO THE Jamaica ER BRF 013-1 (16) PROJECT

To the Secretary of Transportation, Montpelier, Vermont

In connection with the contract for the above project, I/we submit herewith the following classification of work and the rates of insurance applicable to extra work performed and accepted on said project:

WORKER'S COMPENSATION

Classification No. 5222 Concrete Bridge Rate 9.01

Classification No. 5059 Iron or Steel Erection Rate 27.99

Classification No. 5606 Executive Supervisor Rate 1.54

Classification No. 6217 Excavation Rate 7.08

GENERAL LIABILITY

Classification No. 91560 Concrete Construction Rate 45.966

Classification No. 97651 Metal Erection Rate 67.821

Classification No. 91580 Executive Supervisor Rate 97.638

Classification No. 94007 Excavation Rate 59.037

AUTOMOBILE LIABILITY

Classification No. \_\_\_\_\_ Rate \_\_\_\_\_

\*Federal Social Security Act Rate 6.20 %

\*Federal Unemployment Insurance Rate .8 % (Net)

\*Vermont Unemployment Compensation Act Rate 8.00 %

All items of insurance as above on extra work performed and accepted shall be allowed on the final estimate as per the Vermont Standard Specifications For Construction.

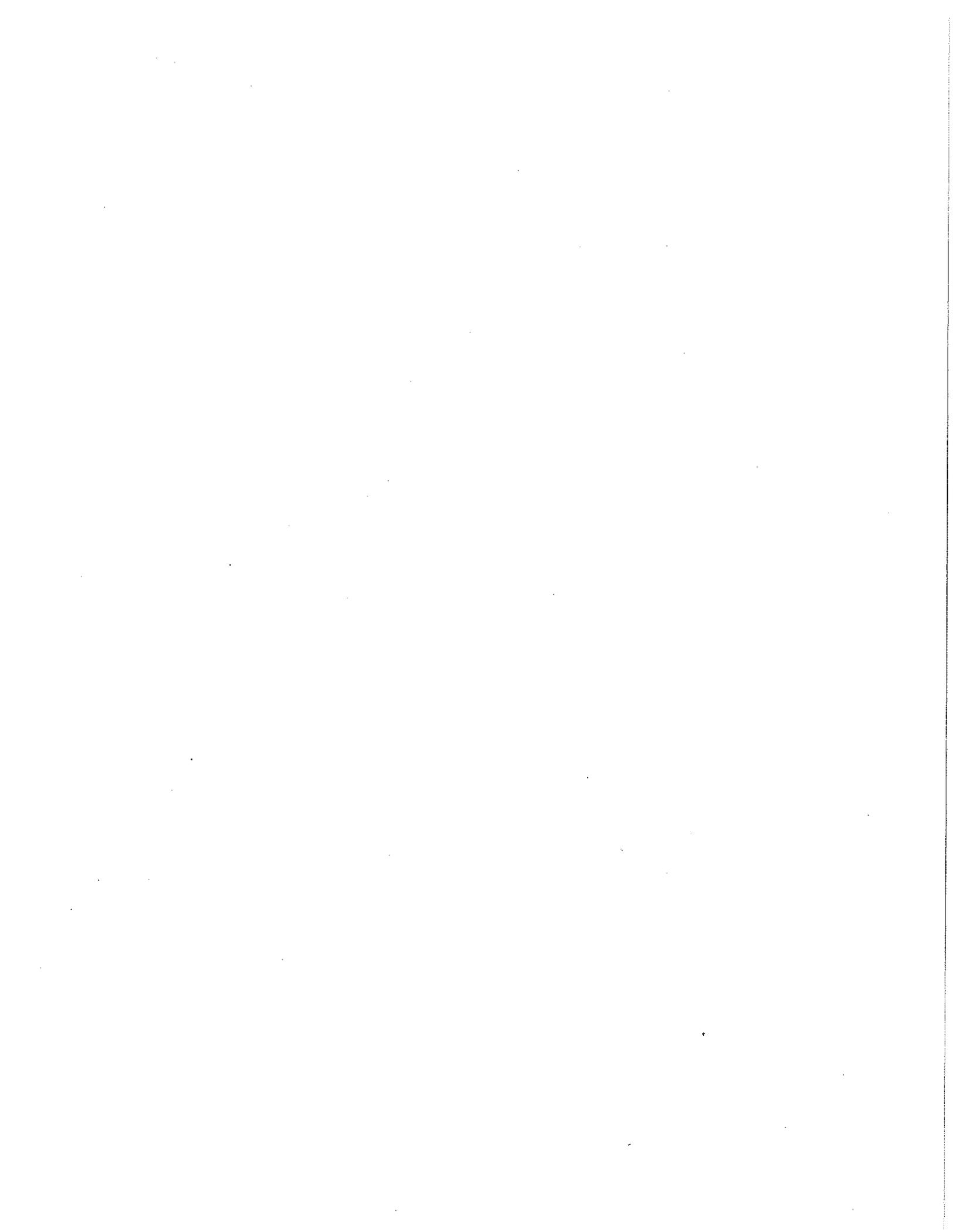
Jan 2 2013  
Date

TRUCK CONSTRUCTION INC  
Name of Corporation, Co-Partnership or Individual

[Signature]  
Name and Title of Individual Signing the Contract

Auburn Maine  
Town or City, State

\*MUST BE FILLED IN





**State of Vermont**  
**Agency of Transportation**  
**Contract Administration**  
 One National Life Drive  
 Montpelier, VT 05633-5001  
[www.aot.state.vt.us/conadmin](http://www.aot.state.vt.us/conadmin)

[phone] 802-828-2641  
 [fax] 802-828-5545  
 [ttd] 800-253-0191

CA-95

TO: CONTRACT ADMINISTRATION  
 MONTPELIER, VERMONT

RE: Jamaica ER BRF 013-1 (16)

I hereby certify that I have received and have in my possession a copy of the STANDARD SPECIFICATIONS FOR CONSTRUCTION, dated 2011.

Respectfully,

ITBuck construction inc  
 Name of Corporation, Co-Partnership or Individual

MARK McPHERTERS  
 Name of Individual Signing the Contract

[Signature]  
 Signature of Individual Signing the Contract

V.P.  
 Title of Individual Signing the Contract

(Street) 249 ROSLOW RD

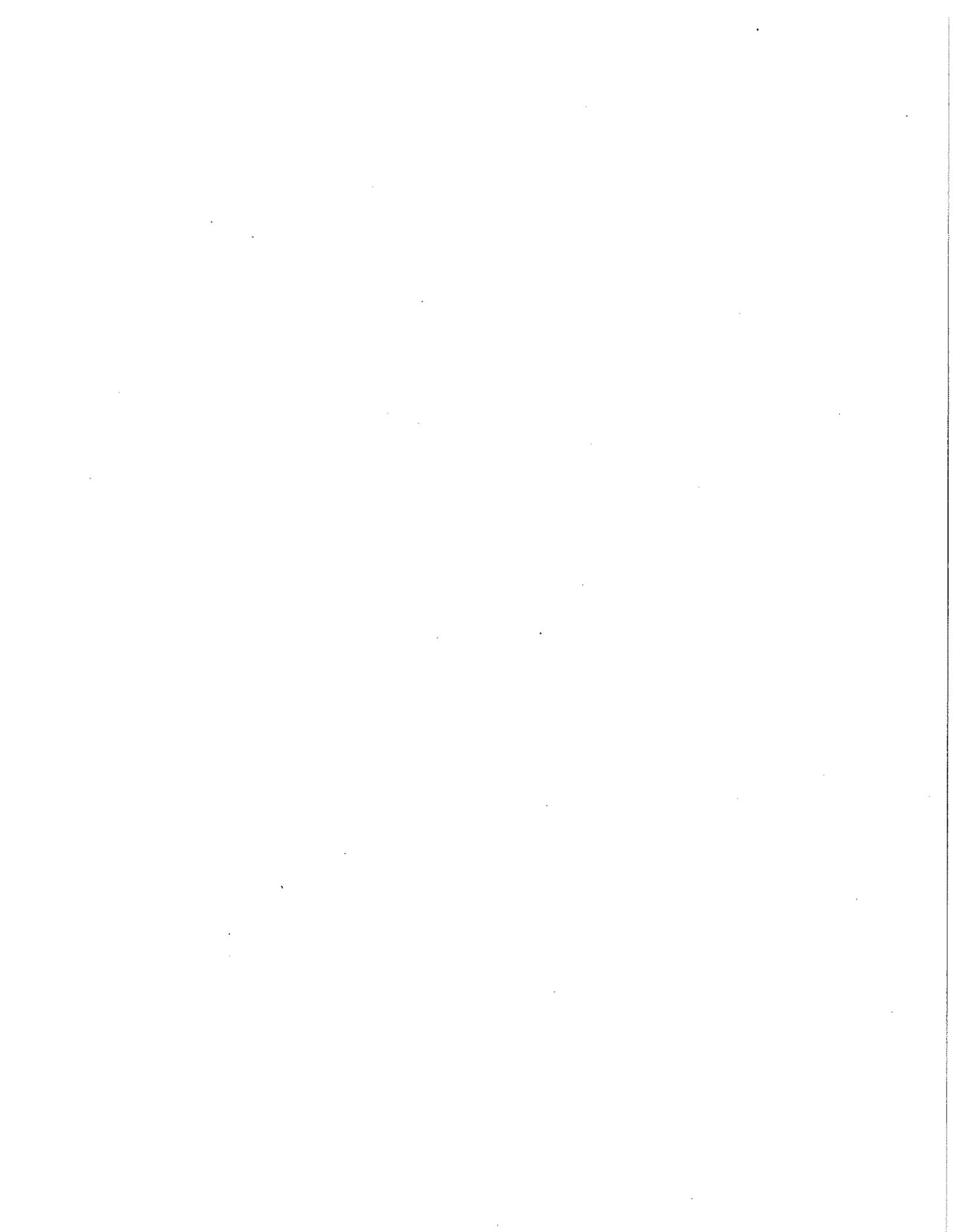
(Town or City) ASTORIA

(State) MAINE

(Date) 12.26.2012

To be filled  
 in completely  
 by Contractor

To be filled  
 in completely  
 by Contractor





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
12/20/2012

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> <b>Infantine Insurance</b> <b>P. O. Box 5125</b>  <b>Manchester NH 03108</b>	<b>CONTACT NAME:</b> Yvette Panaras <b>PHONE (A/C No. Ext):</b> (603) 669-0704 <b>E-MAIL ADDRESS:</b> yvette@infantine.com	<b>FAX (A/C No.):</b> 603-669-6831
	<b>INSURER(S) AFFORDING COVERAGE</b>	
<b>INSURED</b>  <b>T. Buck Construction, Inc.</b> <b>249 Merrow Road</b> <b>Auburn ME 04210</b>	<b>INSURER A:</b> Travelers Insurance Co.	
	<b>INSURER B:</b> Peerless Insurance 24198	
	<b>INSURER C:</b> C. V. Starr & Company	
	<b>INSURER D:</b> Charter Oak Fire Insurance 25615	
	<b>INSURER E:</b> <b>INSURER F:</b>	

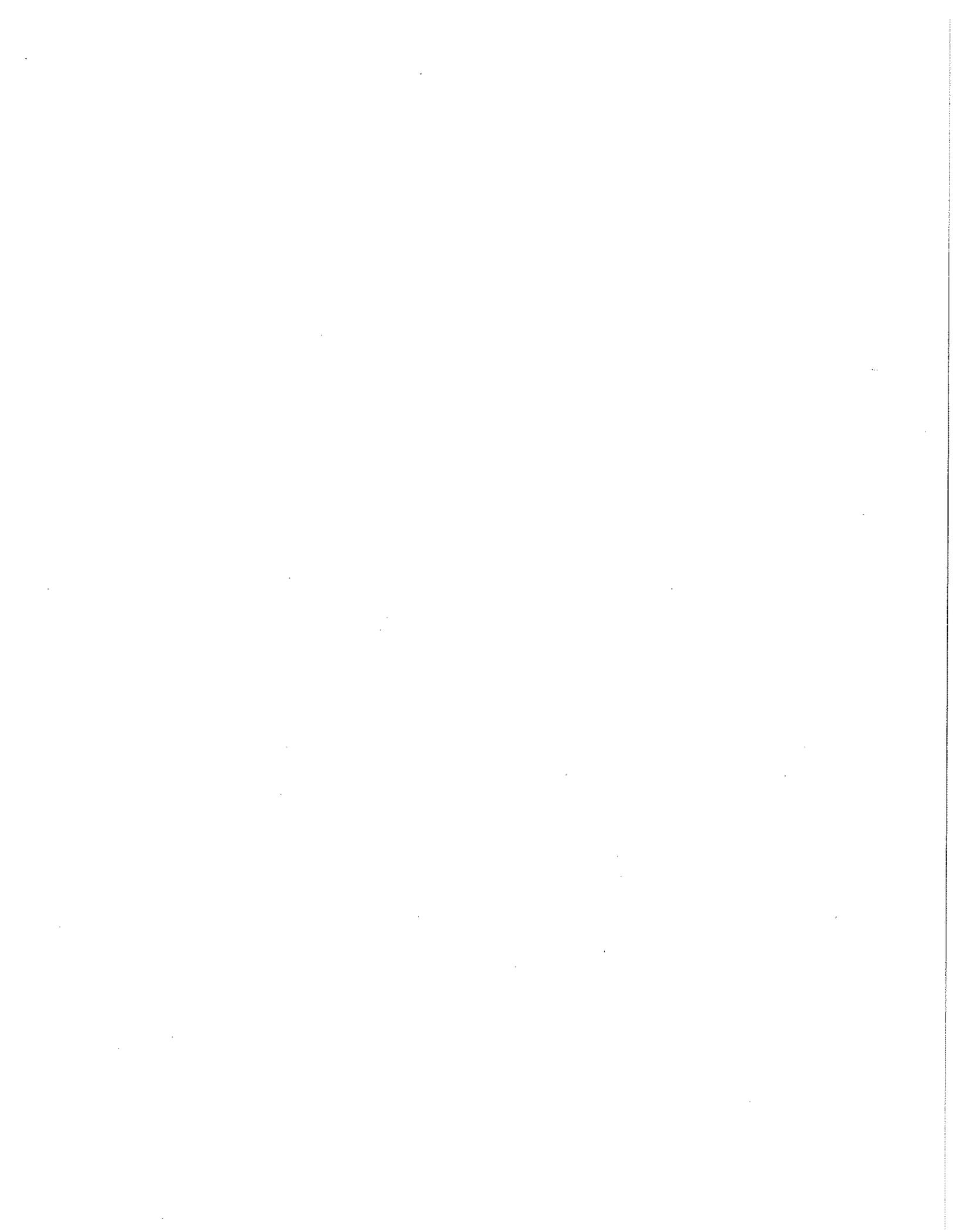
**COVERAGES**      **CERTIFICATE NUMBER:** 2012/2013 Master      **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY			DTC0848X5195	4/1/2012	4/1/2013	EACH OCCURRENCE \$ 1,000,000	
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY	X					DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000	
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						MED EXP (Any one person) \$ 5,000	
							PERSONAL & ADV INJURY \$ 1,000,000	
	GENERAL AGGREGATE \$ 2,000,000							
GENL AGGREGATE LIMIT APPLIES PER:							PRODUCTS - COMP/OP AGG \$ 2,000,000	
<input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJ <input checked="" type="checkbox"/> LOC							\$	
B	AUTOMOBILE LIABILITY			BA1045715	4/1/2012	4/1/2013	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000	
	<input checked="" type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$	
	<input type="checkbox"/> ALL OWNED AUTOS						<input type="checkbox"/> SCHEDULED AUTOS	BODILY INJURY (Per accident) \$
	<input checked="" type="checkbox"/> HIRED AUTOS						<input checked="" type="checkbox"/> NON-OWNED AUTOS	PROPERTY DAMAGE (Per accident) \$
				\$				
C	<input checked="" type="checkbox"/> UMBRELLA LIAB			SISCL01776912	4/1/2012	4/1/2013	EACH OCCURRENCE \$ 10,000,000	
	<input type="checkbox"/> EXCESS LIAB						<input checked="" type="checkbox"/> OCCUR	AGGREGATE \$ 10,000,000
	<input type="checkbox"/> CLAIMS-MADE						<input type="checkbox"/> RETENTIONS	\$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			DTNOUB848X5195	4/1/2012	4/1/2013	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input checked="" type="checkbox"/> OTHER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N	N/A				E.L. EACH ACCIDENT \$ 500,000	
	If yes, describe under DESCRIPTION OF OPERATIONS below	N					E.L. DISEASE - EA EMPLOYEE \$ 500,000	
							E.L. DISEASE - POLICY LIMIT \$ 500,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)  
 Job: Replace Existing Bridge with related roadway approach & channel work, Jamaica VT.  
 It is agreed and understood Vermont Agency of Transportation is named as additional insured with respects to General Liability and Umbrella when required by written contract.

<b>CERTIFICATE HOLDER</b>  <b>Vermont Agency of Transportation</b> <b>1 National Life Dr, Draw 33</b> <b>Montpelier, VT 05633</b>	<b>CANCELLATION</b>  SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	<b>AUTHORIZED REPRESENTATIVE</b>  Jim Harrison/BYM 





POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company

Attorney-In Fact No. 225212

Certificate No. 005262301

KNOW ALL MEN BY THESE PRESENTS: That Farmington Casualty Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company are corporations duly organized under the laws of the State of Connecticut, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

J. Harrison, C.H. Hamlin, P.L. Sullivan, E.A. Morrissette, J.J. Schroeder, and S.J.M. Place

of the City of Bedford, State of New Hampshire, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 8th day of November, 2012.

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company



State of Connecticut
City of Hartford ss.

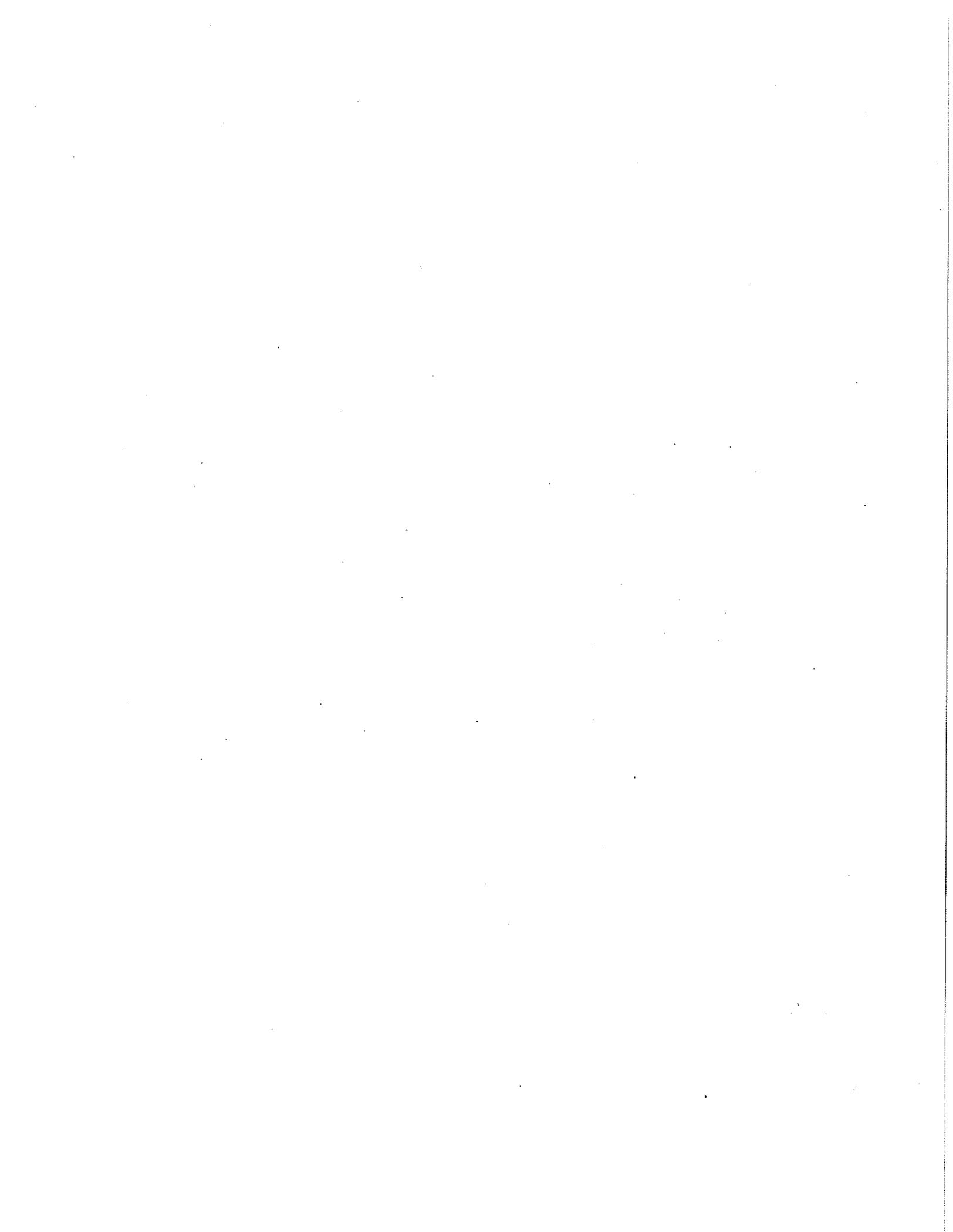
By: [Signature]
Robert L. Raney, Senior Vice President

On this the 8th day of November, 2012, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal. My Commission expires the 30th day of June, 2016.



[Signature]
Marie C. Tetreault, Notary Public



VERMONT

CA-111-A

Project  
Jamaica ER BRF 013-1 (16)

VERMONT  
AGENCY OF TRANSPORTATION  
2011 Standard Specifications for Construction

CONTRACT AGREEMENT

T. Buck Construction, Incorporated  
249 Merrow Road  
Auburn ME 04210

Required Contract Provisions for Federal-Aid Construction  
Standard Federal EEO Specifications  
Vermont Agency of Transportation Contractor Workforce Reporting Requirements  
Workers' Compensation; State Contracts Compliance Requirement  
General Special Provisions dated February 7, 2012  
Bulletin 3.5 Attachment C: Standard State Provisions for Contracts and Grants  
Special Provisions  
Vermont Minimum Labor & Truck Rates  
Disadvantaged Business Enterprise (DBE) Policy Contract Requirements  
US Department of Labor Davis – Bacon Wage Rates  
Asphalt Price Adjustment Provisions dated April 6, 2010  
Stream Alteration Consultation (e-mail) dated June 19, 2012  
Construction General Permit 3-9020 (Amended 2008) Authorization of Notice of Intent #6813-9020 dated May 8, 2012  
Army Corp of Engineers Permit #NAE-2012-1218 dated July 17, 2012  
Certification for Federal-Aid Contracts  
Contractor's EEO Certification  
Contract CA-111-B Form  
Schedule of Items  
Contractor's Signature Page

**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

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- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

**ATTACHMENTS**

Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

**I. GENERAL**

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.
4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

## II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
  - a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.
  - b. The contractor will accept as its operating policy the following statement:
 

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."
2. **EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
  - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
  - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

- c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.
  - d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
  - e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.
- a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.
  - b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
  - c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.
5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:
- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
  - b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
  - c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
  - d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.
6. **Training and Promotion:**
- a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

- b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).
  - c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
  - d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.
7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:
- a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.
  - b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
  - c. The contractor is to obtain information as to the referral practices and policies of the labor union, except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.
  - d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.
8. **Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.
9. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.
- a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
  - b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.
10. **Assurance Required by 49 CFR 26.13(b):**
- a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

- b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

- a. The records kept by the contractor shall document the following:
  - (1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;
  - (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
  - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;
- b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

## 1. Minimum wages

- a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
  - (ii) The classification is utilized in the area by the construction industry; and
  - (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

- c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

## 2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

## 3. Payrolls and basic records

- a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

- (2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
  - (ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
  - (iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.
- (4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and trainees

##### a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job-site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. **Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. **Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
8. **Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
10. **Certification of eligibility.**
  - a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
  - b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
  - c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.
3. **Withholding for unpaid wages and liquidated damages.** The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.
4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

## VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).
  - a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:
    - (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
    - (2) the prime contractor remains responsible for the quality of the work of the leased employees;
    - (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
    - (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.
  - B "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.
4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.
5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

## VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).
3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

#### VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

#### IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

## X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

### 1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).
- f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

- J. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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2. **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

- a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:
- (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;
  - (2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - (3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and
  - (4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

- 1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.
- 2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

- 1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
  - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

- b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:
  - a. To the extent that qualified persons regularly residing in the area are not available.
  - b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.
  - c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.
2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.
3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.
4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.
5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.
6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY**  
**CONSTRUCTION CONTRACT SPECIFICATIONS**  
**(EXECUTIVE ORDER 11246)**

1. As used in these specifications:
  - a. "Covered Area" means the geographical area described in the solicitation from which this contract resulted.
  - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.
  - c. "Employer Identification Number" means the Federal Social Security Number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

A Minority Group Member is:

...American Indian or Alaskan Native

consisting of all persons having origins in any of the original people of North American and who maintain cultural identification through tribal affiliations or community recognition.

...Black

consisting of all persons having origins in any of the Black racial groups of Africa.

...Asian or Pacific Islander

consisting of all persons having origins in any of the original people of the Far East, Southeast Asia, the Indian Sub-Continent or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippines and Samoa.

...Hispanic

consisting of all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin.

...Cape Verde an

consisting of all persons having origins in the Cape Verde Islands.

...Portuguese

consisting of all persons of Portuguese, Brazilian or other Portuguese culture or origin.

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000.00 the provisions of these specifications and the notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in the Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontract participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or subcontractor's failure to make good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in Paragraphs 7a through p of these specifications. The goals set for the Contractor in the solicitation from which this contract resulted are expressed as percentages in the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minority or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:
  - a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment with specific attention to minority or female individuals working at such sites or in such facilities.
  - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available and maintain a record of the organizations' responses.

- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notifications to the Regional Director when the union or unions, with which the Contractor has a collective bargaining agreement, have not referred to the Contractor a minority person or woman sent by the Contractor or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under Paragraph 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, Supervisors etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, and providing written notification to, and discussing the Contractor's EEO policy with, other Contractors and subcontractors with whom the Contractor anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notifications to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
  - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
  - l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
  - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the EEO policy and Contractor's obligations under these specifications are being carried out.
  - n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
  - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
  - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (Paragraph 7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under Paragraph 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's non-compliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is under-utilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.
11. The Contractor shall not enter into any subcontract with any person for firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, terminations and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in Paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application or requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

**NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL  
EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

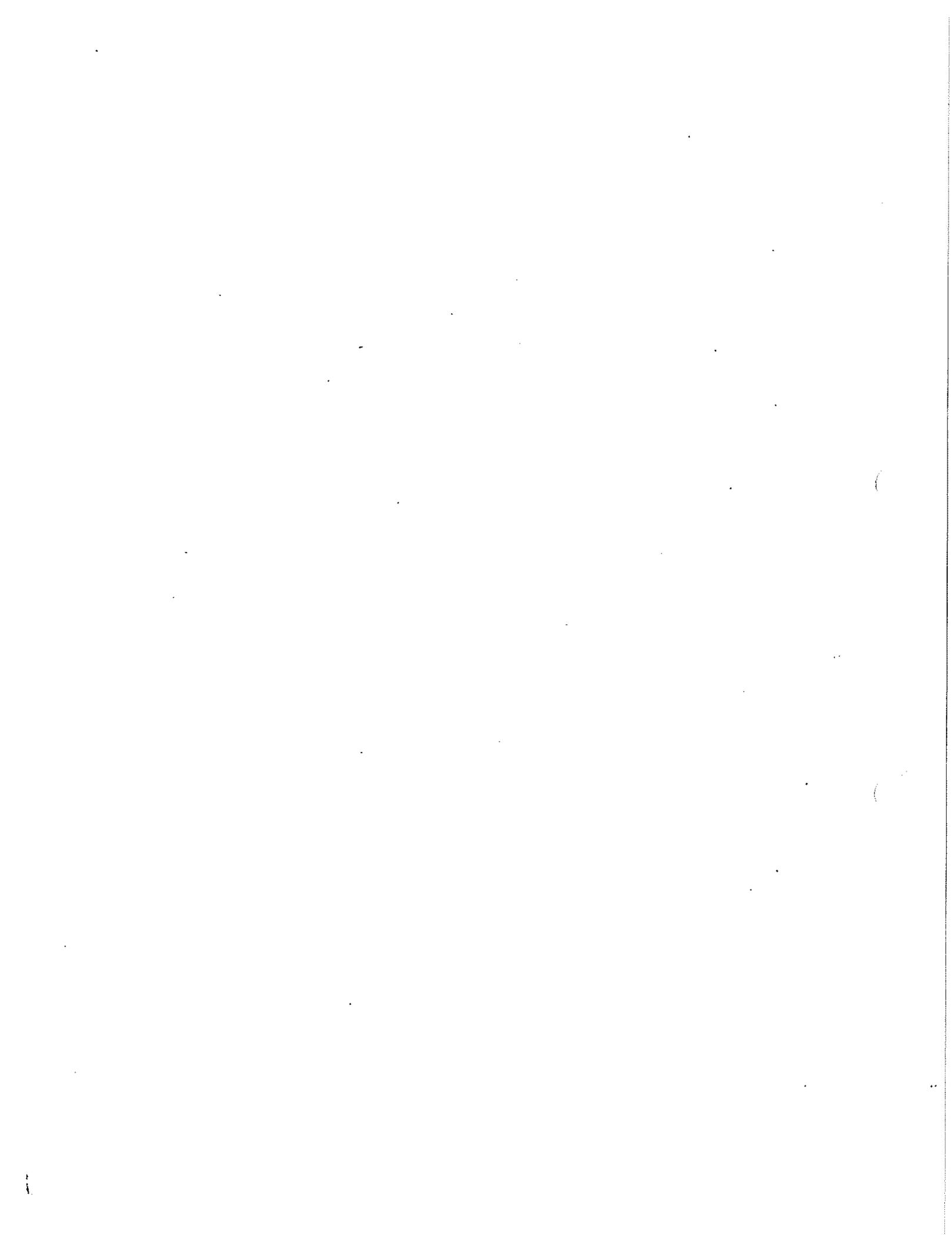
1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Economic Areas	Timetables	Goals for Minority participation for each trade (%)	Goals for Female Participation in each trade (%)
Entire State of Vermont:			
<u>Vermont</u> 003 Burlington, VT Non-SMSA Counties NH Coos; NH Grafton; NH Sullivan; VT Addison; VT Caledonia; VT Chittenden; VT Essex; VT Franklin; VT Grand Isle; VT Lamoille; VT Orange; VT Orleans; VT Rutland; VT Washington; VT Windsor	Indefinite	0.8	6.9
<u>Connecticut (Mass)</u> 006 Hartford - New Haven Springfield, CT-MA Non-SMSA Counties CT Litchfield; CT Windham; MA Franklin; NH Cheshire; VT Windham	Indefinite	5.9	
<u>New York</u> 007 Albany - Schenectady - Troy, NY Non-SMSA Counties NY Clinton; NY Columbia; NY Essex; NY Fulton; NY Greene; NY Hamilton; NY Schoharie; NY Warren; NY Washington; VT Bennington	Indefinite	2.6	

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulation in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

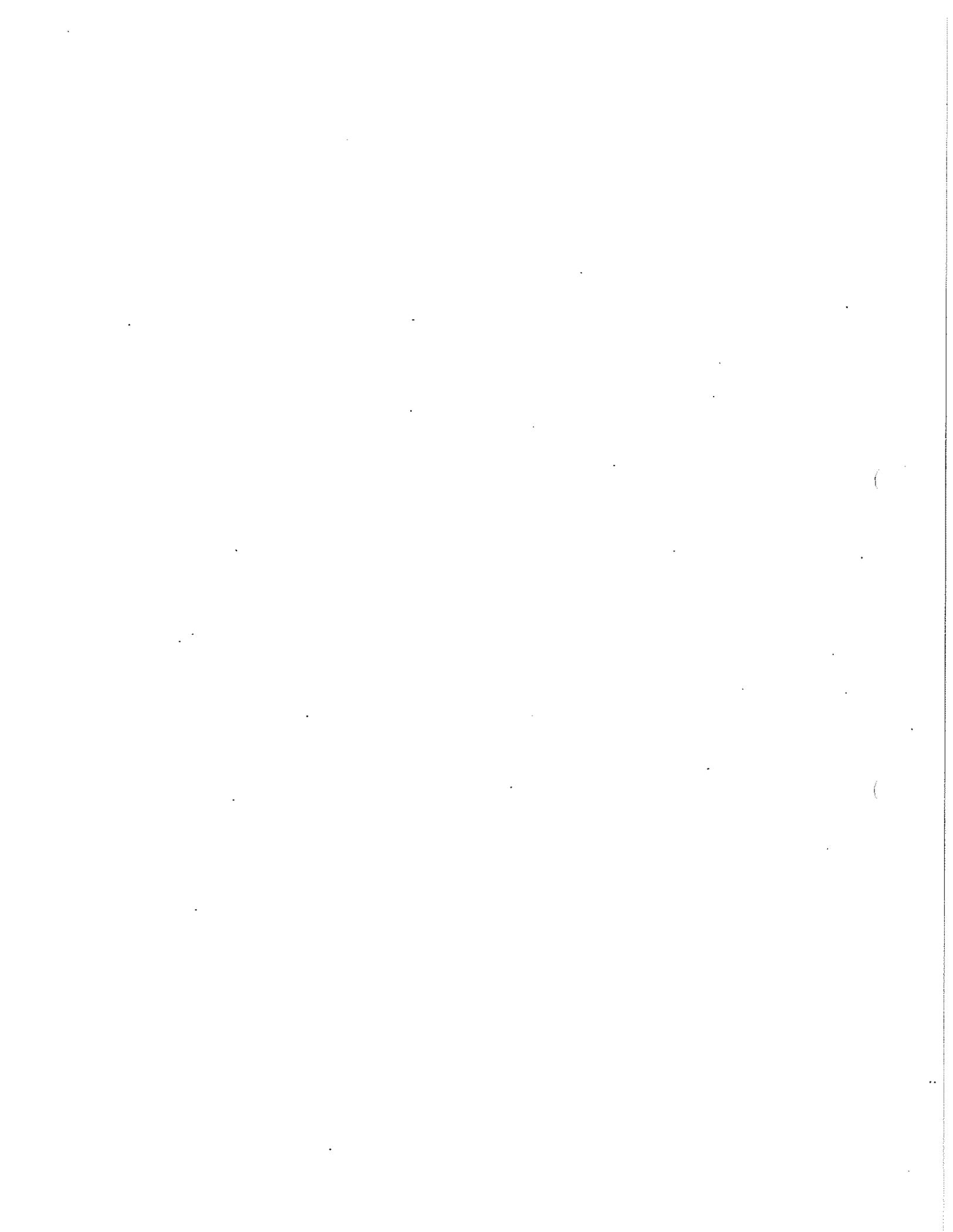
3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notifications shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; and the geographical area in which the subcontract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any)



**VERMONT AGENCY OF TRANSPORTATION  
CONTRACTOR WORKFORCE REPORTING REQUIREMENTS**

The Contractor/Subcontractor shall submit to the State Resident Engineer assigned to this project, monthly and cumulative workforce information, on reporting forms provided herein. The monthly and cumulative workforce information shall be listed by construction trade category with the percentage of minority and female project hours in each category indicated. Failure to provide this information to the Resident Engineer on a monthly basis will result in suspension of bi-weekly progress payments, or part thereof due under the contract, until such time as the Contractor or Subcontractor demonstrates compliance with these contract terms.

**Note:** In lieu of using the reporting forms provided herein, the Contractor may use U.S. Department of Labor form CC-257, "Monthly Employment Utilization Report".





**CONTRACTOR MONTHLY EMPLOYMENT UTILIZATION REPORT**  
 Vermont Agency of Transportation  
 Office of Civil Rights and Labor Compliance

**PROJECT NAME AND NUMBER:** \_\_\_\_\_

<b>CURRENT GOALS</b>	<b>REPORTING PERIOD</b>
MINORITY: _____	FROM: _____
FEMALE: 6.9%	TO: _____

**CONTRACTOR'S NAME AND ADDRESS:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

CONSTRUCTION TRADE CLASSIFICATION	TOTAL NUMBER - ALL WORK HOURS OF EMPLOYEES BY TRADE	BLACK (NOT OF HISPANIC ORIGIN)				HISPANIC		ASIAN OR PACIFIC ISLANDERS		AMERICAN INDIAN OR ALASKAN NATIVE		WHITE (NOT OF HISPANIC ORIGIN)		PERCENTAGE OF TOTAL WORK HOURS BY MINORITY & FEMALE		NUMBER OF EMPLOYEES		
		M	F	M	F	M	F	M	F	M	F	MINORITY	FEMALE	M	F	M	F	
TOTALS															%	%		
COMPANY OFFICIAL'S SIGNATURE AND TITLE																		
TELEPHONE NUMBER												DATE SIGNED			PAGE _____ OF _____			

INSTRUCTIONS FOR FILING  
MONTHLY EMPLOYMENT UTILIZATION REPORT

1. **PROJECT NAME AND NUMBER**  
Complete project name and number as assigned by the Vermont Agency of Transportation.
2. **CONTRACTOR'S NAME AND ADDRESS**  
Indicate the name and address of the *PRIME CONTRACTOR* with a construction contract funded in whole or in part with Federal funds.
3. **CURRENT GOALS**  
See section of contract regarding requirement for Affirmative Action (Executive Order 11246).
4. **REPORTING PERIOD**  
Monthly, beginning with the effective date of the contract.
5. **CONSTRUCTION TRADE CLASSIFICATION**  
Indicate only those classifications used on this contract.
6. **TOTAL NUMBER – ALL WORK HOURS OF EMPLOYEES BY TRADE**  
Indicate the total number of hours (male and female *combined*) worked by employees in each trade classification.
7. **BLACK,/HISPANIC/ASIAN/AMERICAN INDIAN/WHITE CATEGORIES**  
Indicate the total number of hours (male and female *separated*) worked by each specified ethnic group of employees in each classification.
8. **PERCENTAGE OF TOTAL WORK HOURS - MINORITY**  
Indicate the PERCENTAGE of total minority work hours (male and female *MINORITIES combined*) of all work hours (the sum of the BLACK, HISPANIC, ASIAN, and AMERICAN INDIAN columns divided by the sum of TOTAL NUMBER OF ALL WORK HOURS - just one figure for each construction trade.)
9. **PERCENTAGE OF TOTAL WORK HOURS - FEMALE**  
Divide the TOTAL NUMBER – ALL WORK HOURS OF EMPLOYEES BY TRADE for each classification by the total number of females reported in BLACK, HISPANIC, ASIAN, AMERICAN INDIAN and **WHITE** for each classification.
10. **TOTAL NUMBER OF EMPLOYEES**  
Indicate the total number of male employees and the total number of female employees working in each classification in the contractor's work force during the reporting period.
11. **TOTAL NUMBER OF MINORITY EMPLOYEES**  
Indicate the total number of male *MINORITY* employees and the total number of female *MINORITY (non-white)* employees working in each classification in the contractor's work force during the reporting period.
12. **COMPLETE THE FORM: SIGNATURE, TITLE, PHONE NUMBER, DATE, PAGE \_\_\_\_ OF \_\_\_\_.**
13. **AT THE END OF EACH MONTH, SUBMIT** the completed Monthly Employment Utilization Report Form to the State Resident Engineer on the project site. One of these forms should be completed for each month of the contract.

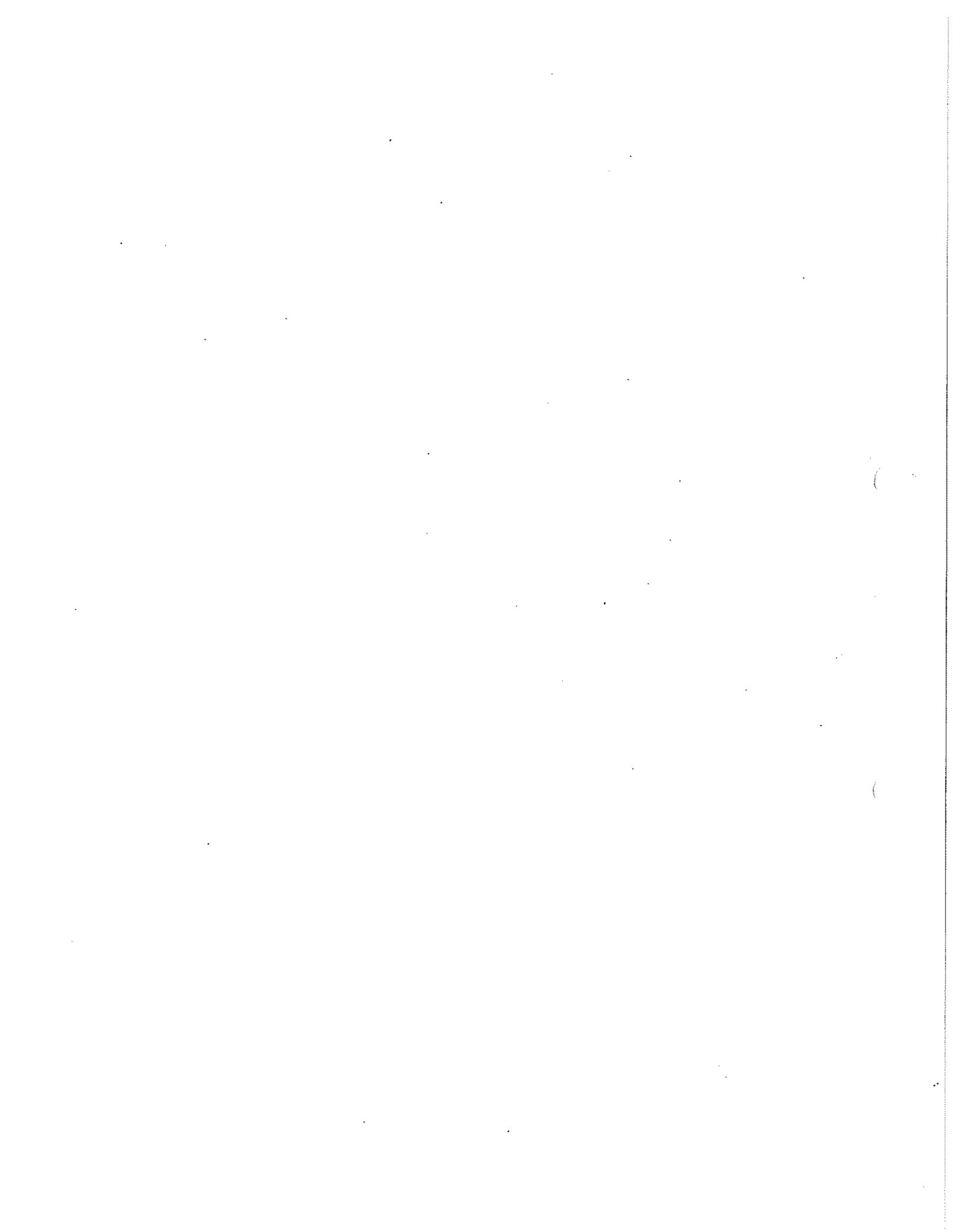


INSTRUCTIONS FOR FILING  
CUMULATIVE MONTHLY EMPLOYMENT UTILIZATION REPORT

*[Using the Monthly Employment Utilization Reports collected from the subcontractors on the job, COMBINE all the information to complete the CUMULATIVE Monthly Employment Utilization Report Form and submit to the State Resident Engineer on the project each month.]*

1. **PROJECT NAME AND NUMBER**  
Complete project name and number as assigned by the Vermont Agency of Transportation.
2. **CONTRACTOR'S NAME AND ADDRESS**  
Indicate the name and address of the *PRIME CONTRACTOR* with a construction contract funded in whole or in part with Federal funds.
3. **CURRENT GOALS**  
See section of contract regarding requirement for Affirmative Action (Executive Order 11246).
4. **REPORTING PERIOD**  
Monthly, beginning with the effective date of the contract.
5. **CONSTRUCTION TRADE CLASSIFICATION**  
Indicate only those classifications used on this contract.
6. **TOTAL NUMBER – ALL WORK HOURS OF EMPLOYEES BY TRADE**  
Indicate the total number of hours (male and female *combined*) worked by employees in each trade classification.
7. **BLACK,/HISPANIC/ASIAN/AMERICAN INDIAN/WHITE CATEGORIES**  
Indicate the total number of hours (male and female *separated*) worked by each specified ethnic group of employees in each classification.
8. **PERCENTAGE OF TOTAL WORK HOURS - MINORITY**  
Indicate the PERCENTAGE of total minority work hours (male and female *MINORITIES combined*) of all work hours (the sum of the BLACK, HISPANIC, ASIAN, and AMERICAN INDIAN columns divided by the sum of TOTAL NUMBER OF ALL WORK HOURS - just one figure for each construction trade.)
9. **PERCENTAGE OF TOTAL WORK HOURS - FEMALE**  
Divide the TOTAL NUMBER – ALL WORK HOURS OF EMPLOYEES BY TRADE for each classification by the total number of females reported in BLACK, HISPANIC, ASIAN, AMERICAN INDIAN and WHITE for each classification.
10. **TOTAL NUMBER OF EMPLOYEES**  
Indicate the total number of male employees and the total number of female employees working in each classification in the contractor's work force during the reporting period.
11. **TOTAL NUMBER OF MINORITY EMPLOYEES**  
Indicate the total number of male *MINORITY* employees and the total number of female *MINORITY (non-white)* employees working in each classification in the contractor's work force during the reporting period.
12. **COMPLETE THE FORM: SIGNATURE, TITLE, PHONE NUMBER, DATE, PAGE \_\_\_\_ OF \_\_\_\_.**
13. **AT THE END OF EACH MONTH, SUBMIT** the completed CUMULATIVE Monthly Employment Utilization Report Form to the State Resident Engineer on the project site. One of these forms should be completed for each month of the contract.





GENERAL SPECIAL PROVISIONS FOR ALL PROJECTS  
2011 STANDARD SPECIFICATIONS

SECTION 105 - CONTROL OF THE WORK

1. 105.03 PLANS AND WORKING DRAWINGS, part (b) Working Drawings, subpart (4) List of Working Drawings, is hereby modified by deleting the phrase "Roadway, Traffic, and Safety Engineer" and replacing it with the phrase "Construction Engineer" in the twenty-third row (beginning "641").
2. 105.14 SUNDAY AND HOLIDAY WORK, part (b) Holidays, is hereby corrected by deleting punctuation "," at the end of the paragraph and replacing it with punctuation ".".
3. 105.26 OPENING WASTE, BORROW, AND STAGING AREAS, part (f), is hereby corrected by deleting punctuation "." at the end of the paragraph.

SECTION 109 - MEASUREMENT AND PAYMENT

4. SECTION 109 - MEASUREMENT AND PAYMENT, is hereby corrected by deleting pages 1-141 and 1-142 in their entirety.

SECTION 203 - EXCAVATION AND EMBANKMENTS

5. 203.01 DESCRIPTION, is hereby modified by adding the phrase "performing test borings for the purpose of determining areas of roadway and embankment subsurface voids;" after the phrase "trimming and shaping of slopes;" in the first sentence of the first paragraph.
6. 203.01 DESCRIPTION, is hereby further modified by adding the following new part (1):
  - (1) Test Borings. Test Borings shall consist of an investigative and planned approach to determining areas of roadway and embankment subsurface voids and repairing bored areas.
7. 203.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

PVC Plastic Pipe.....710.06

8. 203.02 MATERIALS, is hereby further modified by adding the following paragraphs:

Concrete for backfilling subsurface voids shall meet the requirements of Controlled Density (Flowable) Fill of Section 541.

Bituminous concrete pavement shall conform to the requirements of Section 406 or 490, as applicable for the Contract, with the exception that the mix design submittal and plant inspection requirements set forth in Section 406 or 490 will not apply.

9. 203.03 GENERAL CONSTRUCTION REQUIREMENTS, is hereby modified by adding the following as the eighth paragraph:

Prior to the construction of Test Borings and the placement of Controlled Density (Flowable) Fill, the Contractor shall submit to the Engineer site-specific plans, detailing the schedule of work (for these two items), type and location of drilling, sleeve installation, pumping system, confirmatory boring operation, method of filling bore hole (with or without voids being encountered), and repair of the roadway section (sand, gravel, and pavement).

10. 203.11 EMBANKMENTS, is hereby modified by adding the following new part (e):

- (e) Test Borings. Test borings shall be performed at the approximate locations indicated in the Plans and/or as directed by the Engineer.

When used adjacent to culverts, test borings shall extend to a depth equal to the bottom of the culvert using casing advanced drilling methods. Alternate drilling equipment that provides a suitably clean, open hole may be submitted to the Engineer for approval.

If void(s) are encountered, Controlled Density (Flowable) Fill shall be placed to completely fill the void(s). Confirmatory borings shall be performed in these locations as directed by the Engineer.

The roadway surface at boring hole locations shall be backfilled and then patched using Bituminous Concrete Pavement.

11. 203.13 METHOD OF MEASUREMENT, is hereby modified by adding the following new part (e):

- (e) Test Borings. The quantity of Test Borings to be measured for payment will be the number of meters (linear feet) of test boring performed in the complete and accepted work.

12. 203.14 BASIS OF PAYMENT, is hereby modified by adding the phrase "and Test Borings" after the phrase "Shoulder Berm Removal" in the first sentence of the first paragraph.

13. 203.14 BASIS OF PAYMENT, is hereby further modified by adding the phrase "submitting site-specific plans as required, performing test borings, installing sleeves, backfilling, patching with bituminous concrete pavement," after the phrase "work specified," in the second sentence of the first paragraph.

14. 203.14 BASIS OF PAYMENT, is hereby corrected by adding a period at the end of the sixth paragraph.

15. 203.14 BASIS OF PAYMENT, is hereby still further modified by adding the following paragraph and pay item:

Filling of subsurface voids encountered in performing Test Borings will be paid for under Contract item 541.45.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
203.45 Test Borings	Meter (Linear Foot)

SECTION 406 - MARSHALL BITUMINOUS CONCRETE PAVEMENT

16. 406.03 COMPOSITION OF MIXTURE, part (f) Boxed Samples, is hereby corrected by adding the word "Engineer" to the end of the second (last) sentence.

SECTION 507 - REINFORCING STEEL

17. 507.01 DESCRIPTION, is hereby modified by adding the phrase "of the level specified" after the phrase "bar reinforcement".
18. 507.01 DESCRIPTION, is hereby further modified by adding the following paragraphs:

Levels and associated types of reinforcing steel are specified as follows:

- (a) Level I (Limited Corrosion Resistance). Level I reinforcing includes plain, low alloy, and epoxy coated reinforcing steel.
- (b) Level II (Improved Corrosion Resistance). Level II reinforcing includes stainless clad and dual-coated reinforcing steel.
- (c) Level III (Exceptional Corrosion Resistance). Level III reinforcing includes solid stainless reinforcing steel.

The location, level, and when specified, type of reinforcing shall be as indicated in the Plans. Reinforcing supplied shall meet the requirements of the level specified or any higher level. Only one type of reinforcing steel shall be used for each level for the Contract work, unless permitted in writing by the Engineer.

19. 507.02 MATERIALS, is hereby modified by deleting the sixth (final) entry in the Subsection listing.
20. 507.03 FABRICATION AND SHIPMENT, part (a) General, is hereby modified by adding the phrase "deformed bar" after the phrase "shall be" in the first paragraph.
21. 507.03 FABRICATION AND SHIPMENT, part (a) General, is hereby corrected by deleting punctuation ".." and replacing it with punctuation "." at the end of the first paragraph.

22. 507.04 PROTECTION OF MATERIAL, is hereby modified by adding the following as the second sentence in the first paragraph:

When multiple levels of reinforcing steel are used on a project, they shall be stored separately, including during transport in order that there is no direct contact between the bars.

23. 507.04 PROTECTION OF MATERIAL, is hereby further modified by deleting the phrase "The epoxy coating" and replacing it with the word "Coatings" in the third sentence of the third paragraph.

24. 507.04 PROTECTION OF MATERIAL, is hereby still further modified by deleting the phrase "as required for damaged areas" and replacing it with the phrase "per the coating manufacturer's recommendations and to the satisfaction of the Engineer" in the third sentence of the fifth (last) paragraph.

25. 507.04 PROTECTION OF MATERIAL, is hereby still further modified by adding the following paragraph:

All ends of Level II reinforcement where the mild steel core is exposed shall be capped in accordance with one of the following:

- (a) Heat-shrink cap applied in accordance with the cap manufacturer's instructions.
- (b) Neoprene cap adhered with silicone or epoxy sealant.
- (c) Stainless steel cap epoxied in place.
- (d) Stainless steel seal weld.

26. 507.05 PLACING AND FASTENING REINFORCING STEEL, is hereby modified by deleting the sixth paragraph in its entirety and replacing it with the following:

Tie wires and supports used for installation of reinforcement shall be composed of the same material as any steel being contacted or shall be nonmetallic or coated with a dielectric (electrically insulated) material to prevent reactions between dissimilar metals. When forms are to be removed in their entirety, uncoated steel chairs equipped with snug-fitting, high-density, polyethylene tips which provide 3 mm (1/4 inch) clearance between the metal and any exposed surface may be used.

27. 507.10 METHOD OF MEASUREMENT, is hereby modified by deleting the phrase ", Epoxy Coated Reinforcing Steel, and Galvanized Reinforcing Steel" and replacing it with the phrase "of the type and size specified" in the first paragraph.

28. 507.10 METHOD OF MEASUREMENT, is hereby further modified by adding the phrase "of the type specified" at the end of the second paragraph (beginning "The quantity of Drilling and Grouting Dowels...").

29. 507.11 BASIS OF PAYMENT, is hereby modified by deleting the following pay items:

<u>Pay Item</u>	<u>Pay Unit</u>
507.15 Reinforcing Steel	Kilogram (Pound)
507.17 Epoxy Coated Reinforcing Steel	Kilogram (Pound)
507.18 Galvanized Reinforcing Steel	Kilogram (Pound)

30. 507.11 BASIS OF PAYMENT, is hereby further modified by adding the following pay items:

<u>Pay Item</u>	<u>Pay Unit</u>
507.11 Reinforcing Steel, Level I	Kilogram (Pound)
507.12 Reinforcing Steel, Level II	Kilogram (Pound)
507.13 Reinforcing Steel, Level III	Kilogram (Pound)

SECTION 516 - EXPANSION DEVICES

31. 516.01 DESCRIPTION, is hereby modified by adding the phrase ", or partially removing and modifying," after the word "installing".

32. 516.05A PARTIAL REMOVAL AND MODIFICATION, is hereby made a new Subsection of the Standard Specifications as follows:

516.05A PARTIAL REMOVAL AND MODIFICATION. The Contractor shall partially remove and modify the existing bridge joint at the locations indicated in the Plans and as directed by the Engineer.

Steel for new joint plates shall meet the requirements of Subsection 714.02.

The Contractor shall remove and dispose of existing joint plates, drain troughs, and associated hardware.

The Contractor shall grind existing steel plates and/or shoulder concrete to the configuration shown on the Plans. The final surface shall be to the satisfaction of the Engineer.

33. 516.06 METHOD OF MEASUREMENT, is hereby modified by adding the following paragraph:

The quantity of Partial Removal and Modification of Bridge Joint to be measured for payment will be the number of meters (linear feet) of bridge joint removed and modified in the complete and accepted work, measured along its centerline.

34. 516.07 BASIS OF PAYMENT, is hereby modified by adding the following paragraph and pay item:

The accepted quantity of Partial Removal and Modification of Bridge Joint will be paid for at the Contract unit price per meter (linear foot). Payment will be full compensation for partially removing and modifying the existing joint as specified and as detailed in the Plans, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
516.20 Partial Removal and Modification of Bridge Joint	Meter (Linear Foot)

SECTION 525 - BRIDGE RAILINGS

35. 525.02 MATERIALS, is hereby modified by adding the following as the third entry in the Subsection listing:

Structural Steel.....714.02

36. 525.06 INSTALLATION, part (a) General, is hereby modified by adding the following as the sixth (last) paragraph:

Concrete railing shall receive an aesthetic finish in accordance with Subsection 501.16. Cracks in concrete railing shall be repaired by a method approved by the Engineer. Cracks in concrete greater than 0.25 mm (0.01 inch) may be cause for rejection.

37. 525.08 BASIS OF PAYMENT, is hereby modified by adding the phrase "for furnishing all forms, joint filler, admixtures, trial batches, and connection plates for approach railing terminal connectors; for satisfactory completion of any necessary repairs, surface finishing, and curing;" after the phrase "for all work necessary for verifying and adjusting post height and/or bolt spacing of existing posts;" in the second (last) sentence of the third paragraph.

38. 525.08 BASIS OF PAYMENT, is hereby further modified by adding the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
525.45 Bridge Railing, Galvanized Steel Tubing/ Concrete Combination	Meter (Linear Foot)

SECTION 531 - BRIDGE BEARING DEVICES

39. 531.04 FABRICATION, part (b) Surface Protection, is hereby corrected by deleting punctuation ",:" at the end of the paragraph and replacing it with punctuation ".".

SECTION 540 - PRECAST CONCRETE

40. 540.02 MATERIALS, is hereby modified by deleting the fourteenth entry (beginning "Coated Bar Reinforcement...") in the Subsection listing.

41. 540.02 MATERIALS, is hereby further modified by adding the following as the twenty-eighth entry in the Subsection listing:

Sheet Membrane Waterproofing, Preformed Sheet.....726.11

42. 540.07 FABRICATION, part (e) Placing Concrete, is hereby modified by deleting the phrase "done with care" and replacing it with the phrase "performed in accordance with Subsection 501.10(f)" in the third (last) sentence.

43. 540.10 INSTALLATION, is hereby modified by adding the following new part (c):

(c) Sheet Membrane Waterproofing. A reinforced asphalt, synthetic resin, or coal-tar based preformed sheet membrane shall be placed over the joints of precast concrete units in accordance with the Contract Documents. All work performed shall be in accordance with the manufacturer's recommendations.

Material for membrane shall meet the requirements of Subsection 726.11.

Waterproofing shall not be performed in wet weather or when the temperature is below 5°C (40°F), without the authorization of the Engineer.

The concrete surfaces that are to be waterproofed shall be reasonably smooth and free from projections or holes and shall be cleaned of dust and loose material. The surfaces shall be visibly dry prior to and during application of the membrane system.

44. 540.14 BASIS OF PAYMENT, is hereby modified by adding the following paragraph:

Furnishing and placing preformed sheet membrane waterproofing, including primer, mastic, polyurethane membrane sealant, and surface preparation, is considered incidental to the work for Precast Concrete Structure.

SECTION 541 - STRUCTURAL CONCRETE

45. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (Metric) is hereby modified by adding the following as the eighth (bottom) row with the included footnote:

Controlled Density (Flowable) Fill	To be designed***	0.85	125 min.	15 ± 5	704.01 (Fine Aggregate)	90 max.	---
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\*\*\* A mineral admixture is required to replace a portion of the cement.

46. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (English) is hereby modified by adding the following as the eighth (bottom) row:

Controlled Density (Flowable) Fill	To be designed** *	0.85	6 min.	15 ± 5	704.01 (Fine Aggregate)	125 max.	---
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\*\*\* A mineral admixture is required to replace a portion of the cement.

47. 541.10 PLACING CONCRETE, part (c) Placement Limitations, is hereby modified by adding the following as the twelfth (last) paragraph:

Flowable fill shall be applied to voids and other locations as specified in the Contract Documents and as directed by the Engineer. Flowable fill shall be able to completely fill the existing voids.

- 48. 541.19 METHOD OF MEASUREMENT, is hereby modified by deleting the phrase "or LW" and replacing it with the phrase "LW, or Flowable Fill" in the first sentence of the first paragraph.
- 49. 541.20 BASIS OF PAYMENT, is hereby modified by adding the following pay item:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
541.45 Controlled Density (Flowable) Fill	Cubic Meter (Cubic Yard)

SECTION 580 - STRUCTURAL CONCRETE REPAIR

- 50. 580.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

Polymer Concrete Repair Material.....780.05

- 51. 580.03 PROPORTIONING AND MIXING, is hereby modified by deleting the last sentence of the first paragraph in its entirety and replacing it with the following:

The product shall not be extended with sand or gravel, except for Rapid Setting Concrete Repair Material with Coarse Aggregate and Polymer Concrete Repair Material when mixed with approved aggregates in conformance with the manufacturer's recommendations.

- 52. 580.04 SURFACE PREPARATION FOR REPAIRS, OVERLAYS AND MEMBRANES, is hereby modified by adding the word "abrasive" after the phrase "shall be" and before the phrase "blast cleaned" in the first sentence of the third paragraph.

- 53. 580.04 SURFACE PREPARATION FOR REPAIRS, OVERLAYS AND MEMBRANES, is hereby further modified by adding the phrase ", or Polymer Concrete Repair Material," after the word "Aggregate" in the sixth paragraph.

- 54. 580.08 METHOD OF MEASUREMENT, is hereby modified by deleting the phrase "and not for new patches, which will be the responsibility of the Contractor" and replacing it with the phrase ", with no deductions made for areas of new patches" in the second sentence of the ninth paragraph.

- 55. 580.08 METHOD OF MEASUREMENT, is hereby further modified by adding the phrase ", and Polymer Concrete Repair Material" after the word "Aggregate" in the first sentence of the tenth paragraph.

- 56. 580.09 BASIS OF PAYMENT, is hereby modified by adding the phrase ", and Polymer Concrete Repair Material" after the word "Aggregate" in the seventh paragraph.

- 57. 580.09 BASIS OF PAYMENT, is hereby further modified by adding the following pay item:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
580.21 Polymer Concrete Repair Material	Cubic Meter (Cubic Yard)

SECTION 608 - EQUIPMENT RENTAL

58. 608.02 GENERAL REQUIREMENTS, is hereby modified by adding the following new part (i):

(i) Truck-Mounted Attenuator, Advanced Warning Vehicle/Protection Vehicle (AWV/PV). Truck-Mounted Attenuator, AWV/PV shall consist of a Truck-Mounted Attenuator meeting the requirements of Subsection 608.02(h) and be equipped with a Changeable Message Sign in accordance with the MUTCD. The Changeable Message Sign shall be mounted so as to be clearly visible to the traveling public and shall be capable of being controlled from inside the cab of the vehicle, with capable controls including but not limited to turning the sign on and off, changing between preset messages, and inserting new messages when approved by the Engineer. Phases of signing shall have the ability to change automatically when required.

59. 608.04 BASIS OF PAYMENT, is hereby modified by changing the word "item" to "items" and by adding the phrase "and Truck-Mounted Attenuator, AWV/PV" after the phrase "Truck-Mounted Attenuator" in the second (last) paragraph.

60. 608.04 BASIS OF PAYMENT, is hereby further modified by adding the following pay item:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
608.50 Truck-Mounted Attenuator, AWV/PV	Hour

SECTION 613 - STONE FILL, RIPRAP, AND SLOPE PAVING

61. 613.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

Rock Fill for Gabions.....	706.06
Gabion Baskets.....	712.04

62. 613.04 PLACING, is hereby modified by adding the following new part (d):

(d) Rock Fill for Gabions. The furnishing and installing of gabion baskets shall be performed in accordance with the manufacturer's recommendations.

The Contractor should expect to perform some manual stone placement to minimize voids and to create a neat, flat vertical surface of gabions.

63. 613.05 METHOD OF MEASUREMENT, is hereby modified by adding the following paragraph:

The quantity of Gabion Wall to be measured for payment will be the number of cubic meters (cubic yards) of Rock Fill for Gabions placed in the complete and accepted work.

- 64. 613.06 BASIS OF PAYMENT, is hereby modified by adding the phrase "and Gabion Wall" after the word "specified" in the first sentence of the first paragraph.
- 65. 613.06 BASIS OF PAYMENT, is hereby modified by adding the phrase ", including gabion baskets," after the word "material" in the third (last) sentence of the first paragraph.
- 66. 613.06 BASIS OF PAYMENT, is hereby still further modified by adding the phrase "or rock" after the word "stone" in the first sentence of the second paragraph.
- 67. 613.06 BASIS OF PAYMENT, is hereby still further modified by adding the following paragraph:

Geotextile fabric and bedding material for Gabion Wall will be paid for under the appropriate Contract items.

- 68. 613.06 BASIS OF PAYMENT, is hereby still further modified by adding the following pay item:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
613.25 Gabion Wall	Cubic Meter (Cubic Yard)

SECTION 616 - CURBS AND GUTTERS

- 69. 616.05 REPOINTING GRANITE BRIDGE CURB, is hereby made a new Subsection of the Standard Specifications as follows:

616.05 REPOINTING GRANITE BRIDGE CURB. The existing mortar bed and vertical curb joints shall be repointed as shown on the Plans. Mortar shall meet the requirements of Subsection 707.01.

- 70. 616.14 METHOD OF MEASUREMENT, is hereby modified by adding the following as the second paragraph:

The quantity of Repointing Granite Bridge Curb to be measured for payment will be the number of liters (gallons) of mortar applied in the completed and accepted work, measured to the nearest liter (gallon).

- 71. 616.14 METHOD OF MEASUREMENT, is hereby corrected by changing the word "portland" to "Portland" in the fifth (last) paragraph.

- 72. 616.15 BASIS OF PAYMENT, is hereby modified by adding the following as the second paragraph:

The accepted quantity of Repointing Granite Bridge Curb will be paid for at the Contract unit price per liter (gallon). Payment will be full compensation for furnishing, transporting, handling, and placing the material specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

- 73. 616.15 BASIS OF PAYMENT, is hereby corrected by changing the word "portland" to "Portland" in the fourth paragraph.

74. 616.15 BASIS OF PAYMENT, is hereby further modified by adding the following pay item:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
616.225 Repointing Granite Bridge Curb	Liter (Gallon)

SECTION 621 - TRAFFIC BARRIERS

75. 621.01 DESCRIPTION, is hereby modified by adding the phrase "repairing," after the phrase "removing,".

76. 621.02 MATERIALS, is hereby modified by adding the following as the fifth entry in the Subsection listing:

Wire Rope or Cable.....713.03

77. 621.13 REPLACEMENT, ADJUSTMENT, REMOVAL, AND DISPOSAL OF GURADRAIL OR GUIDE POSTS, is hereby modified by deleting the phrase "post assemblies and panel units" and replacing it with the phrase "guardrail components" in the second sentence of the first paragraph.

78. 621.13 REPLACEMENT, ADJUSTMENT, REMOVAL, AND DISPOSAL OF GUARDRAIL OR GUIDE POSTS, is hereby further modified by deleting the phrase "post assembly replacement or guardrail beam replacement occur" and replacing it with the phrase "guardrail component replacement occurs" in the fourth paragraph.

79. 621.13 REPLACEMENT, ADJUSTMENT, REMOVAL, AND DISPOSAL OF GURADRAIL OR GUIDE POSTS, is hereby still further modified by adding the following as the sixth and seventh paragraphs:

Offset blocks designated for replacement shall be replaced in-kind. Materials shall be in conformance with the applicable requirements of Subsection 728.01 for either wood, steel, or alternative blockouts.

Cable guardrail repair shall be performed in accordance with VTrans Standard Drawing G-6 and as directed by the Engineer.

80. 621.14 METHOD OF MEASUREMENT, is hereby modified by adding the following as the fourth and fifth paragraphs of the Subsection text:

The quantities of Cable Guardrail J-Bolt, Galvanized and Cable Guardrail Splice Unit to be measured for payment will be the number of units installed in the complete and accepted work.

The quantity of Replacement of Guardrail Cable to be measured for payment will be the number of meters (linear feet) installed in the complete and accepted work.

81. 621.14 METHOD OF MEASUREMENT, is hereby further modified by adding the following as the eighth paragraph of the Subsection text:

The quantities of Steel Beam Guardrail Delineator and Steel Beam Guardrail Offset Block to be measured for payment will be the number of each component replaced in the complete and accepted work.

82. 621.15 BASIS OF PAYMENT, is hereby modified by adding the following as the second, third, and fourth paragraphs of the Subsection text:

The accepted quantities of Cable Guardrail J-Bolt, Galvanized and Cable Guardrail Splice Unit will be paid for at the Contract unit price for each.

The accepted quantity of Replacement of Cable Guardrail will be paid for at the Contract unit price per meter (linear foot).

The accepted quantities of Steel Beam Guardrail Delineator and Steel Beam Guardrail Offset Block will be paid for at the Contract unit price for each.

83. 621.15 BASIS OF PAYMENT, is hereby further modified by adding the phrase "removing and disposing of damaged guardrail component(s)," after the phrase "specified," in the first sentence of the tenth paragraph.

84. 621.15 BASIS OF PAYMENT, is hereby still further modified by adding the following pay items:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
621.173 Cable Guardrail J-Bolt, Galvanized	Each
621.174 Cable Guardrail Splice Unit	Each
621.175 Replacement of Guardrail Cable	Meter (Linear Foot)
621.218 Steel Beam Guardrail Delineator	Each
621.219 Steel Beam Guardrail Offset Block	Each
621.70 Guardrail Approach Section, Galvanized Type I	Each
621.71 Guardrail Approach Section, Galvanized Type II	Each
621.726 Guardrail Approach Section, Galvanized 3 Rail Box Beam w/Curb	Each
621.735 Guardrail Approach Section, Steel Beam	Each
621.736 Guardrail Approach Section, Steel Beam w/2.4 m (8 feet) Posts	Each
621.737 Guardrail Approach Section, Galvanized HD Steel Beam	Each
621.738 Guardrail Approach Section, Galvanized HD Steel Beam w/2.4 m (8 feet) Posts	Each
621.748 Guardrail Approach Section to Concrete Combination Bridge Railing, TL-3	Each

SECTION 677 - OVERHEAD TRAFFIC SIGN SUPPORTS

85. 677.01 DESCRIPTION, is hereby modified by adding the phrase "and removing and disposing of existing overhead traffic sign supports," after the phrase "supports,".

86. 677.03 GENERAL, is hereby modified by adding the following paragraph:

Where existing overhead traffic sign supports are to be removed, the Contractor shall remove and dispose of the entire sign assembly, including concrete footings, to a depth of 450 mm (18 inches) below existing grade. Areas of ground disturbance shall be restored to the satisfaction of the Engineer.

87. 677.05 METHOD OF MEASUREMENT, is hereby modified by adding the following paragraph:

The quantity of Remove Existing Overhead Sign Assembly of the type specified to be measured for payment will be the number of each assembly removed in the complete and accepted work.

88. 677.06 BASIS OF PAYMENT, is hereby modified by adding the following paragraphs and pay items:

The accepted quantity of Remove Existing Overhead Sign Assembly of the type specified will be paid for at the Contract unit price per each. Payment will be full compensation for removing and disposing of assembly components, including concrete footings; for performing any excavation necessary; for restoring areas of ground disturbance; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Costs associated with providing traffic control and/or flaggers for performing the work will be paid under the appropriate Contract item(s).

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
677.30 Remove Existing Overhead Sign Assembly, Cantilever	Each
677.35 Remove Existing Overhead Sign Assembly, Multi-Support	Each

SECTION 678 - TRAFFIC CONTROL SIGNALS

89. 678.01 DESCRIPTION, is hereby modified by adding the phrase ", and removing existing traffic control systems" after the word "system" in the first paragraph.

90. 678.02 MATERIALS, is hereby corrected by deleting "covers" and replacing it with the word "covers" in the second sentence of the last paragraph of the Subsection text.

91. 678.11 INSTALLATION, sixteenth paragraph, part (a), is hereby modified by adding the following as the third sentence:

The Contractor shall remove any equipment to be salvaged or reused in such a manner that the equipment is not damaged.

92. 678.13 METHOD OF MEASUREMENT, is hereby modified by adding the following paragraph:

The quantity of Removal of Existing Traffic Control Signal System to be measured for payment will be for each traffic control signal system removed in the complete and accepted work.

93. 678.14 BASIS OF PAYMENT, is hereby modified by adding the phrase "all removal, disposal, and salvage and/or reuse of existing system equipment and components," after the phrase "Electrical Wiring," in the second sentence of the first paragraph.

94. 678.14 BASIS OF PAYMENT, is hereby further modified by adding the following paragraph and pay item:

The accepted quantity of Removal of Existing Traffic Control Signal System will be paid for at the Contract unit price per each. Payment will be full compensation for removing and handling the existing traffic control signal system components as specified in the Contract Documents and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
678.45 Removal of Existing Traffic Control Signal System	Each

SECTION 700 GENERAL

95. 700.01 GENERAL STATEMENT, is hereby corrected by deleting punctuation ".,." at the end of the first sentence of the fourth paragraph and replacing it with punctuation ".".

SECTION 713 - REINFORCING STEEL, WELDED WIRE REINFORCEMENT, AND REINFORCING STRAND

96. 713.01 BAR REINFORCEMENT, is hereby modified by deleting the phrase "conforming to AASHTO M 31M/M 31, including supplementary requirements" and replacing it with the phrase ", unless otherwise specified in the Contract Documents" in the first paragraph.
97. 713.01 BAR REINFORCEMENT, is hereby further modified by adding the following new parts (a)-(f) and associated paragraphs:
- (a) Plain Reinforcing Steel. Plain reinforcing steel shall conform to AASHTO M 31M/M 31, including supplementary requirements.
  - (b) Low Alloy Reinforcing Steel. Low alloy reinforcing steel shall conform to ASTM A 706/A 706M.
  - (c) Epoxy Coated Reinforcing Steel. Epoxy coated reinforcing steel shall have an electrostatically applied organic epoxy protective coating, which has been prequalified, fabricated, tested, and installed in accordance with AASHTO M 284M/M 284 or ASTM A 884.
  - (d) Stainless Clad Reinforcing Steel. Stainless clad reinforcing steel shall meet the requirements of AASHTO M 329M/M 329.
  - (e) Dual-Coated Reinforcing Steel. Dual-coated reinforcing steel shall meet the requirements of ASTM A 1055/A 1055M.
  - (f) Solid Stainless Reinforcing Steel. Solid stainless reinforcing steel shall meet the requirements of ASTM A 955/A 955M with one of the following UNS designations: S24100, S30400, S31603, S31653, S32101, S32201, S32205, or S32304. Different designations shall not be mixed within the same project.

Where no core steel requirements are specified in the above specifications, the steel core of the bar reinforcement shall meet the requirements of plain reinforcing steel.

Certification. A Type D Certification shall be furnished in accordance with Subsection 700.02. Certification for Epoxy Coated Reinforcing Steel shall include the coating and coating process.

98. 713.07 COATED BAR REINFORCEMENT, is hereby modified by being deleted in its entirety.

SECTION 714 - STRUCTURAL STEEL

99. 714.08 ANCHOR BOLTS, BEARING DEVICES, is hereby corrected by deleting ".F" and replacing it with "F" in the first sentence of the first paragraph.
100. 714.08 ANCHOR BOLTS, BEARING DEVICES, is hereby further corrected by deleting punctuation ".,," and replacing it with punctuation "." at the end of the second sentence of the first paragraph.

SECTION 726 - PROTECTIVE COATINGS AND WATERPROOFING MATERIALS

101. 726.10 CONCRETE STAINING AND SEALING SYSTEMS, is hereby made a new Subsection of the Standard Specifications as follows:

726.10 CONCRETE STAINING AND SEALING SYSTEMS. Approved Concrete Staining and Sealing Systems shall be one of the Concrete Staining and Sealing Systems on the Approved Products List on file with the Agency's Materials and Research Section.

102. 726.11 SHEET MEMBRANE WATERPROOFING, PREFORMED SHEET, is hereby made a new Subsection of the Standard Specifications as follows:

726.11 SHEET MEMBRANE WATERPROOFING, PREFORMED SHEET. Approved Preformed Sheet Membrane Waterproofing Systems shall be one of the Preformed Sheet Membrane Waterproofing Systems on the Approved Products List on file with the Agency's Materials and Research Section.

SECTION 731 - BEARING PADS FOR STRUCTURES

103. 731.03 ELASTOMERIC MATERIAL, is hereby modified by deleting the second and third paragraphs in their entirety and replacing them with the following:

Unless noted otherwise, elastomer shall have a design hardness of 50 points and a design shear modulus of 0.8 MPa (110 psi).

Testing of elastomeric material shall be waived for bearings that will be encased in concrete in the final work. All other bearings shall be tested in accordance with the following table:

TABLE 731.03A - REQUIRED TESTS

Material Property	Test Method	Required Result
Hardness	ASTM D 2240	design hardness +/- 5 points
	or	
Shear Modulus	ASTM D 412 with AASTHO M 251 Section 8.8.4	design shear modulus +/- 15%
Low Temperature Brittleness	ASTM D 746 Procedure B	Pass Grade 4 test
Shear Bond Strength	AASHTO M 251 Annex A2 or Appendix X2	Pass
Min Tensile Strength	ASTM D 412	15.6 MPa (2250 psi)
Min Ultimate Elongation	ASTM D 412	(650 - 5 X design hardness)%

SECTION 780 - CONCRETE REPAIR MATERIALS

104. 780.05 POLYMER CONCRETE REPAIR MATERIAL, is hereby made a new Subsection of the Standard Specifications as follows:

780.05 POLYMER CONCRETE REPAIR MATERIAL. Approved Polymer Concrete Repair Materials shall be one of the Polymer Concrete Repair Materials on the Approved Products List on file with the Agency's Materials and Research Section.

## ATTACHMENT C: STANDARD STATE PROVISIONS FOR CONTRACTS AND GRANTS

1. **Entire Agreement:** This Agreement, whether in the form of a Contract, State Funded Grant, or Federally Funded Grant, represents the entire agreement between the parties on the subject matter. All prior agreements, representations, statements, negotiations, and understandings shall have no effect.
2. **Applicable Law:** This Agreement will be governed by the laws of the State of Vermont.
3. **Definitions:** For purposes of this Attachment, "Party" shall mean the Contractor, Grantee or Subrecipient, with whom the State of Vermont is executing this Agreement and consistent with the form of the Agreement.
4. **Appropriations:** If this Agreement extends into more than one fiscal year of the State (July 1 to June 30), and if appropriations are insufficient to support this Agreement, the State may cancel at the end of the fiscal year, or otherwise upon the expiration of existing appropriation authority. In the case that this Agreement is a Grant that is funded in whole or in part by federal funds, and in the event federal funds become unavailable or reduced, the State may suspend or cancel this Grant immediately, and the State shall have no obligation to pay Subrecipient from State revenues.
5. **No Employee Benefits For Party:** The Party understands that the State will not provide any individual retirement benefits, group life insurance, group health and dental insurance, vacation or sick leave, workers compensation or other benefits or services available to State employees, nor will the state withhold any state or federal taxes except as required under applicable tax laws, which shall be determined in advance of execution of the Agreement. The Party understands that all tax returns required by the Internal Revenue Code and the State of Vermont, including but not limited to income, withholding, sales and use, and rooms and meals, must be filed by the Party, and information as to Agreement income will be provided by the State of Vermont to the Internal Revenue Service and the Vermont Department of Taxes.
6. **Independence, Liability:** The Party will act in an independent capacity and not as officers or employees of the State.

The Party shall defend the State and its officers and employees against all claims or suits arising in whole or in part from any act or omission of the Party or of any agent of the Party. The State shall notify the Party in the event of any such claim or suit, and the Party shall immediately retain counsel and otherwise provide a complete defense against the entire claim or suit.

After a final judgment or settlement the Party may request recoupment of specific defense costs and may file suit in Washington Superior Court requesting recoupment. The Party shall be entitled to recoup costs only upon a showing that such costs were entirely unrelated to the defense of any claim arising from an act or omission of the Party.

The Party shall indemnify the State and its officers and employees in the event that the State, its officers or employees become legally obligated to pay any damages or losses arising from any act or omission of the Party.

7. **Insurance:** Before commencing work on this Agreement the Party must provide certificates of insurance to show that the following minimum coverages are in effect. It is the responsibility of the Party to maintain current certificates of insurance on file with the state through the term of the Agreement. No warranty is made that the coverages and limits listed

herein are adequate to cover and protect the interests of the Party for the Party's operations. These are solely minimums that have been established to protect the interests of the State.

Workers Compensation: With respect to all operations performed, the Party shall carry workers' compensation insurance in accordance with the laws of the State of Vermont.

General Liability and Property Damage: With respect to all operations performed under the contract, the Party shall carry general liability insurance having all major divisions of coverage including, but not limited to:

Premises - Operations  
Products and Completed Operations  
Personal Injury Liability  
Contractual Liability

The policy shall be on an occurrence form and limits shall not be less than:

\$1,000,000 Per Occurrence  
\$1,000,000 General Aggregate  
\$1,000,000 Products/Completed Operations Aggregate  
\$ 50,000 Fire/ Legal/Liability

Party shall name the State of Vermont and its officers and employees as additional insureds for liability arising out of this Agreement.

Automotive Liability: The Party shall carry automotive liability insurance covering all motor vehicles, including hired and non-owned coverage, used in connection with the Agreement. Limits of coverage shall not be less than: \$1,000,000 combined single limit.

Party shall name the State of Vermont and its officers and employees as additional insureds for liability arising out of this Agreement.

8. **Reliance by the State on Representations:** All payments by the State under this Agreement will be made in reliance upon the accuracy of all prior representations by the Party, including but not limited to bills, invoices, progress reports and other proofs of work.
9. **Requirement to Have a Single Audit:** In the case that this Agreement is a Grant that is funded in whole or in part by federal funds, and if this Subrecipient expends \$500,000 or more in federal assistance during its fiscal year, the Subrecipient is required to have a single audit conducted in accordance with the Single Audit Act, except when it elects to have a program specific audit.

The Subrecipient may elect to have a program specific audit if it expends funds under only one federal program and the federal program's laws, regulating or grant agreements do not require a financial statement audit of the Party.

A Subrecipient is exempt if the Party expends less than \$500,000 in total federal assistance in one year.

The Subrecipient will complete the Certification of Audit Requirement annually within 45 days after its fiscal year end. If a single audit is required, the sub-recipient will submit a copy of the audit report to the primary pass-through Party and any other pass-through Party that requests it within 9 months. If a single audit is not required, the Subrecipient will submit the Schedule of Federal Expenditures within 45 days. These forms will be mailed to the Subrecipient by the Department of Finance and Management near the end of its fiscal

year. These forms are also available on the Finance & Management Web page at:  
<http://finance.vermont.gov/forms>

**10. Records Available for Audit:** The Party will maintain all books, documents, payroll papers, accounting records and other evidence pertaining to costs incurred under this agreement and make them available at reasonable times during the period of the Agreement and for three years thereafter for inspection by any authorized representatives of the State or Federal Government. If any litigation, claim, or audit is started before the expiration of the three year period, the records shall be retained until all litigation, claims or audit findings involving the records have been resolved. The State, by any authorized representative, shall have the right at all reasonable times to inspect or otherwise evaluate the work performed or being performed under this Agreement.

**11. Fair Employment Practices and Americans with Disabilities Act:** Party agrees to comply with the requirement of Title 21V.S.A. Chapter 5, Subchapter 6, relating to fair employment practices, to the full extent applicable. Party shall also ensure, to the full extent required by the Americans with Disabilities Act of 1990, as amended, that qualified individuals with disabilities receive equitable access to the services, programs, and activities provided by the Party under this Agreement. Party further agrees to include this provision in all subcontracts.

**12. Set Off:** The State may set off any sums which the Party owes the State against any sums due the Party under this Agreement; provided, however, that any set off of amounts due the State of Vermont as taxes shall be in accordance with the procedures more specifically provided hereinafter.

**13. Taxes Due to the State:**

- a. Party understands and acknowledges responsibility, if applicable, for compliance with State tax laws, including income tax withholding for employees performing services within the State, payment of use tax on property used within the State, corporate and/or personal income tax on income earned within the State.
- b. Party certifies under the pains and penalties of perjury that, as of the date the Agreement is signed, the Party is in good standing with respect to, or in full compliance with, a plan to pay any and all taxes due the State of Vermont.
- c. Party understands that final payment under this Agreement may be withheld if the Commissioner of Taxes determines that the Party is not in good standing with respect to or in full compliance with a plan to pay any and all taxes due to the State of Vermont.
- d. Party also understands the State may set off taxes (and related penalties, interest and fees) due to the State of Vermont, but only if the Party has failed to make an appeal within the time allowed by law, or an appeal has been taken and finally determined and the Party has no further legal recourse to contest the amounts due.

**14. Child Support:** (Applicable if the Party is a natural person, not a corporation or partnership.) Party states that, as of the date the Agreement is signed, he/she:

- a. is not under any obligation to pay child support; or
- b. is under such an obligation and is in good standing with respect to that obligation; or

- c. has agreed to a payment plan with the Vermont Office of Child Support Services and is in full compliance with that plan.

Party makes this statement with regard to support owed to any and all children residing in Vermont. In addition, if the Party is a resident of Vermont, Party makes this statement with regard to support owed to any and all children residing in any other state or territory of the United States.

- 15. Sub-Agreements:** Party shall not assign, subcontract or subgrant the performance of his Agreement or any portion thereof to any other Party without the prior written approval of the State. Party also agrees to include in all subcontract or subgrant agreements a tax certification in accordance with paragraph 13 above.
- 16. No Gifts or Gratuities:** Party shall not give title or possession of any thing of substantial value (including property, currency, travel and/or education programs) to any officer or employee of the State during the term of this Agreement.
- 17. Copies:** All written reports prepared under this Agreement will be printed using both sides of the paper.
- 18. Certification Regarding Debarment:** Party certifies under pains and penalties of perjury that, as of the date that this Agreement is signed, neither Party nor Party's principals (officers, directors, owners, or partners) are presently debarred, suspended, proposed for debarment, declared ineligible or excluded from participation in federal programs or programs supported in whole or in part by federal funds.
- 19. Certification Regarding Use of State Funds:** In the case that Party is an employer and this Agreement is a State Funded Grant in excess of \$1,001, Party certifies that none of these State funds will be used to interfere with or restrain the exercise of Party's employee's rights with respect to unionization.

(End of Standard Provisions)

Special Provisions for: Jamaica ER BRF 013-1(16)

1. LABOR SUPPLY. Available workers for this Contract may be obtained from Manager, Employment & Training, Brattleboro, VT. The latest edition of the DBE Registry can be obtained from the Office of Civil Rights and Labor's Webpage at the following address: [www.aot.state.vt.us/CivilRights/default.htm](http://www.aot.state.vt.us/CivilRights/default.htm). Contractors that do not have access to the internet may obtain a copy from the Office of Contract Administration upon request.
2. CONTRACT COMPLETION DATE. This Contract shall be completed on or before October 18, 2013.
3. NOTICE TO BIDDERS. U.S. Department of Labor Davis-Bacon wage rates are applicable to this Contract. Copies of the applicable rates are included in this proposal.
4. CONTACT WITH THE AGENCY. From the time of advertising until the actual bid opening for this Contract, all prospective Contractors, subcontractors, and suppliers shall direct all inquiries related to this project solely to the Agency's Office of Contract Administration at (802) 828-2641. This number may also be accessed via the Agency's TTY/TDD Telecommunications Relay Service at 1-800-253-0191.

*The deadline for submitting inquiries related to this project to the Office of Contract Administration is 4:30 p.m. Eastern Standard Time on November 23, 2012. No exceptions will be made to this requirement.*

5. NOTICE TO BIDDERS. The Contractor is hereby notified that in the absence of the Engineer, the Agency's Safety Officer and the Agency's Hazardous Materials and Waste Coordinator shall each have the authority to suspend work when they determine that a serious safety or environmental violation exists on the job site. The period of time work is suspended due to a serious safety or environmental violation will not be justification for an extension of time.
6. STANDARD SPECIFICATIONS. The provisions of the 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, as modified herein, shall apply to this Contract.

7. SUPPLEMENTAL SPECIFICATIONS AND CONTRACT REQUIREMENTS. The Contractor's attention is directed to the following specifications and contract requirements included in the Proposal form and effective for this Contract:

Required Contract Provisions for Federal-Aid Construction  
 Standard Federal EEO Specifications  
 VT Agency of Transportation Contractor Workforce Reporting Requirements  
 Workers' Compensation; State Contracts Compliance Requirement  
 General Special Provisions dated September 4, 2012  
 Bulletin 3.5 Attachment C: Standard State Provisions for Contracts and Grants  
 Vermont Minimum Labor & Truck Rates  
 Disadvantaged Business Enterprise (DBE) Policy Contract Requirements  
 U.S. Department of Labor Davis-Bacon Wage Rates  
 Asphalt Price Adjustment Provisions dated April 6, 2010  
 Stream Alteration Consultation (e-mail) dated June 19, 2012  
 Construction General Permit 3-9020 (Amended 2008) Authorization of Notice of Intent #6813-9020 Dated May 8, 2012  
 Army Corp of Engineers Permit #NAE-2012-1218 dated July 17, 2012  
 Certification for Federal-Aid Contracts  
 Contractor's EEO Certification Form  
 Debarment & Non-Collusion Affidavit

8. NOTICE TO BIDDERS - ADDITIONAL CONTRACT REQUIREMENT. For construction and transportation projects over \$250,000.00, a payroll process by which during every pay period the Contractor collects from the subcontractors or independent contractors a list of all workers who were on the jobsite during the pay period, the work performed by those workers on the jobsite, and a daily census of the jobsite. This information, including confirmation that Contractors, subcontractors, and independent contractors have the appropriate workers' compensation coverage for all workers at the jobsite, and similar information for the subcontractors regarding their subcontractors shall also be provided to the Department of Labor and to the Department of Banking, Insurance, Securities, and Health Care Administration, upon request, and shall be available to the public.

9. NOTICE TO BIDDERS. All temporary construction signs shall meet the following requirements:

- A. Where sign installations are not protected by guardrail or other approved traffic barriers, all sign stands and post installations shall meet National Cooperative Highway Research Program (NCHRP) Report 350 or the AASHTO Manual for Assessing Safety Hardware (MASH). The appropriate resource shall be determined as described in the MASH publication. No sign posts shall extend over the top of the sign installed on said post(s). When anchors are installed, stub shall not be greater than 100 mm (4 inches) above existing ground.
- B. As a minimum, roll up sign material shall have ASTM D 4956 Type VI fluorescent orange retroreflective sheeting.
- C. All post-mounted signs and solid substrate portable signs shall have ASTM D 4956 Type VII, Type VIII, or Type IX fluorescent orange retroreflective sheeting.
- D. All retroreflective sheeting on traffic cones, barricades, and drums shall be at a minimum ASTM D 4956 Type III sheeting.

- E. All stationary signs shall be mounted on two 4.5 kg/m (3 lb/ft) flanged channel posts or 51 mm (2 inch) square steel inserted in 57 mm (2 1/4") galvanized square steel anchors. No sign posts shall extend over the top edge of sign installed on said posts.
- F. Prior to placing temporary work zone signs on the project, the Contractor must furnish for the Engineer's approval a detail for temporary work zone signs on steel posts showing stubs projecting a maximum of 100 mm (4 inches) above ground level and bolts for sign post.
- G. Construction signs shall be installed so as to not interfere with nor obstruct the view of existing traffic control devices, stopping sight distance, and corner sight distance from drives and town highways.
- H. Speed zones, if used, should be a maximum of 16 kph (10 mph) below existing posted speeds. Temporary speed limit certificates must be approved by the Director of Program Development.
10. NOTICE TO BIDDERS. All retroreflective sheeting on permanent signs (signs to remain after the project is completed) shall be at a minimum ASTM D 4956 Type III sheeting, unless otherwise shown on the Plans.
11. UTILITIES. Existing aerial facilities owned by Central Vermont Public Service Corporation, FairPoint, Sovernet, and Southern Vermont Cable will not require adjustment. The Contractor is cautioned to protect these facilities from damage. Contacts for these utilities are:

Central Vermont Public Service Corp.:	Bill Jakubowski - (802)747-5866
FairPoint:	Andy Rice - (802)747-1074
Sovernet:	Izzy Flores - (802)460-9137
Southern Vermont Cable:	Ernie Scialabba - (802)297-2175

Employees or agents of the above listed companies are to be allowed free and full access within the project limits with the tools, materials, and equipment necessary to install, operate, maintain, place, replace, relocate, and remove their facilities.

There will be no extra compensation paid to the Contractor for any inconvenience caused by working around and with the companies or their facilities.

Act No. 86 of 1987 (30 VSA Chapter 86) ("Dig Safe") requires that notice be given prior to making an excavation. It is suggested that the Permit Holder or his/her contractor telephone 1-888-344-7233 at least 48 hours before, and not more than 30 days before, beginning any excavation at any location.

Should the Contractor desire additional adjustment of the utility facilities for his/her convenience, proper arrangements shall be made in conformance with Subsection 105.07 of the Standard Specification for Construction.

12. RIGHT-OF-WAY SPECIAL AGREEMENTS.

Parcel #2: Bemis, Martin and Carol  
Sta. 21+43 Lt. (113.6 ft.) Monitor Well.

The Grantor agrees to allow the State of Vermont or its representative to enter upon Grantor's land for the purpose of testing and monitoring Grantor's well for quality and quantity prior to, during, and after project construction, said testing to continue for one year after the completion of the project. This shall include testing for sodium, chloride, and bacteria. If it is determined as a result of these tests that the well is damaged or destroyed by the construction of the project, the State of Vermont agrees to replace the well or pay damages for said well.

13. NOTICE TO BIDDERS - SALVAGED MATERIALS. The Contractor is hereby notified that the existing temporary bridge and appurtenances removed under this project is the property of Mabey Bridge & Shore, Inc.

The Contractor is hereby further notified that the existing guardrail removed under this project, and deemed re-usable by the Agency, shall remain the property of the State.

The Contractor shall remove these materials in such a manner that salvageable components are not damaged. Component materials not designated to be retained by the State shall be disposed of by the Contractor to the satisfaction of the Engineer.

All salvageable guardrail shall be disassembled to its basic component (rail, post, offset block, and end terminal) parts.

The existing guardrail shall be delivered to the VTrans Maintenance Facility located at 232 VT Route 30 in East Jamaica, VT. The Contractor shall contact District Transportation Administrator Tammy Ellis [Tel.: (802)254-5011] a minimum of two (2) weeks prior to beginning delivery to the designated location. All deliveries shall be made during normal Agency workdays between the hours of 7:00 a.m. and 3:30 p.m., and shall only be made if a District #2 representative is present at the maintenance facility. District personnel will offload the existing guardrail materials.

When the existing temporary bridge is no longer needed to maintain traffic on the project, as determined by the Engineer, the existing temporary bridge and appurtenances will be dismantled and delivered by the Contractor to the Mabey Bridge & Shore, Inc. facility located at 6770 Dorsey Road in Elkridge, MD. Mabey Bridge & Shore, Inc. personnel will offload the temporary bridge and appurtenant materials. The Contractor shall contact Kevin Traynor of Mabey Bridge & Shore, Inc. [Tel.: (410)365-0101] to coordinate the de-launching, disassembly, and delivery of the temporary bridge.

All temporary bridge parts shall be completely disassembled, pressure washed, and inspected prior to their delivery to the designated location. The inspection shall be performed by the Agency's Engineer and the Mabey Bridge & Shore, Inc. representative. The Engineer and Contractor shall clearly mark any damaged components with fluorescent paint for later inspection by State personnel. Major components shall be stacked together in accordance with the following requirements:

- (a) Panel - STD (MC200) - stacks of 6 with ends alternating.
- (b) Panel - High Shear (MC201) - same as above.

- (c) Deck Panels (MC360) - stacks of 8.
- (d) Transom - MC454 - HS20 - Special - stack so can be removed from truck or trailer one at a time.
- (e) Notwithstanding the above, no individual bundle or stack of components shall weigh more than 5000 pounds.

The bundles or stacks of components shall be supported and separated with 4 inch x 4 inch hardwood blocking to allow offloading with a front-end loader equipped with forks. All temporary bridge parts shall be transported on flatbed trucks or trailers to facilitate offloading. Small parts (including pins, clips, nuts, and bolts) shall be completely disassembled, cleaned, sorted by size and/or length, and placed in separate containers (buckets, boxes, bags, etc.).

All costs for loading and delivering these salvaged materials will be paid for under Contract item 900.645 Special Provision (Removal of Temporary Bridge and Approaches).

If delivery of the temporary bridge by the Contractor to the designated Mabey Bridge & Shore, Inc. facility is not completed before November 1, 2013, the Contractor shall be responsible for paying any additional rental fees for the temporary bridge.

Final payment for Contract item 900.645 Special Provision (Removal of Temporary Bridge and Approaches) will not be made until all parts of the temporary bridge, and appurtenances, have been properly returned and approaches have been removed and restored to the satisfaction of the Engineer.

14. HIGHWAY PARKING RESTRICTIONS. Only such trucks and equipment as are necessary for the construction of this project will be permitted to stop or park on the shoulders or right-of-way of the highway or intersecting highways. All trucks or equipment so stopped or parked shall be at least 1.2 m (4 feet) from the edge of the thru traffic lanes. Parking or stopping on the traveled portion of the roadway will not be permitted unless authorized by the Engineer to meet field conditions.

Private automobiles of workers will not be permitted to stop or park on the shoulders or right-of-way of the highway or intersecting highways.

Each of the Contractor's trucks or equipment used for the construction of this project and permitted to park or stop as provided above shall be equipped with flashing light signals on the front and rear and the signals shall be operating at all times when parked or stopped on the highway unless otherwise authorized by the Engineer.

The flashing light signals shall be visibly distinct from and physically separate from the hazard warning system required by Federal and State motor vehicle laws and regulations. At least one of these flashing light signals shall be visible to traffic approaching from any angle at all times.

Qualified traffic control personnel shall be employed whenever the Contractor's vehicles or equipment (including that which belongs to the individual workers) enter or leave the traffic flow. All movement, in or out of the traffic flow, shall be with the flow of traffic.

15. SPECIAL CONSTRUCTION REQUIREMENTS.

- A. Unless otherwise permitted in writing by the Engineer, the Contractor shall not work during the holiday periods for Memorial Day, July Fourth, and Labor Day. The Engineer shall give a written order designating the time of observance of these holidays and of any additional holidays required by the season, anticipated traffic, and local custom. As specified in Subsection 105.14, construction operations shall not be performed on any Sunday without the specific authorization of the Engineer.

Designated holiday periods shall begin at 12:00 noon on the day before the weekend or holiday, whichever applies, and shall end at 7:00 a.m. on the day after the holiday or the weekend, as appropriate.

- B. The Contractor shall maintain a safe access to all drives and intersecting side roads at all times during the construction of this project.
- C. Two-way radios shall be provided by the Contractor when requested by the Engineer for use by traffic control personnel. All costs for furnishing and using two-way radios will not be paid for directly, but will be considered incidental to Contract item 900.645 Special Provision (Traffic Control, All-Inclusive).
- D. The Contractor shall have available on the project the current editions of the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Highway Signs and Markings (SHSM) Book. Information for obtaining these publications may be found at: <http://mutcd.fhwa.dot.gov/index.htm>.

ASPHALT PRICE ADJUSTMENT

16. SUPPLEMENTAL SPECIFICATION - ASPHALT PRICE ADJUSTMENT, dated April 6, 2010, is hereby made a new Subsection of the Specifications, superseding all previous editions and their modifications.
17. SUPPLEMENTAL SPECIFICATION - ASPHALT PRICE ADJUSTMENT, dated April 6, 2010, GENERAL REQUIREMENTS AND CONDITIONS, part (b) text, is hereby modified by being deleted in its entirety and replaced with text "NOT USED".

The index price for asphalt cement is \$577.00 per ton.

In addition to materials produced under Contract pay item(s) as allowed in GENERAL REQUIREMENTS AND CONDITIONS, part (a) of the Supplemental Specification, asphalt cement produced under Contract item 900.680 Special Provision (Bituminous Concrete Pavement, Small Quantity) will be included for adjustment.

If an emulsified asphaltic liquid is used in the Contract work under any Contract item subject to the Asphalt Price Adjustment provisions and that liquid is not included in the table under subpart (5) of PRICE ADJUSTMENT PROCEDURES of the Supplemental Specification, the ACEA as defined in subpart (5) for that liquid will be that as determined by averaging Contractor certified test results for the project.

SECTION 501 - HPC STRUCTURAL CONCRETE

18. 501.02 MATERIALS, is hereby modified by adding the following:

Where a shrinkage admixture will be used in placing concrete as allowed by the Contract Documents, the following requirements shall be met:

A shrinkage compensating admixture shall be added during the initial concrete mixing phase or as recommended by the chemical manufacturer product representative. The shrinkage compensating admixture shall be one of the products listed below. The final dosage rate will be determined by the product representative and the concrete producer. The dosage rate volume is computed into the final water/cementitious ratio.

Manufacturer: Sika Construction Product Division

Product name: - Sika Control 40

Tel.: 1-800-933-7452

Website: <http://www.sikaconstruction.com/tds-cpd-SikaControl40-us.pdf>

Manufacturer: The Euclid Chemical Company

Product name: Eucon SRA

Tel.: 1-800-321-7628

Website: <http://www.euclidchemical.com/fileshare/ProductFiles/techdata/euconsra.pdf>

Manufacturer: BASF (Master Builders)

Product name: Tetraguard AS20

Tel.: 1-800-628-9900

Website: <http://www.basf-admixtures.com/NR/rdonlyres/84C7EC12-F527-44FD-A8B9-3A007609FF76/0/TETRAGUARD AS20 DS307.pdf>

Manufacturer: Grace Construction Products

Product name: Eclipse Plus

Tel.: 1-877-423-6491

Website: [http://www.na.graceconstruction.com/concrete/download/EC-13B\\_2.pdf](http://www.na.graceconstruction.com/concrete/download/EC-13B_2.pdf)

19. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (Metric), is hereby modified by deleting the fourth column (with header "Max. Slump (mm)") in its entirety and replacing it with the following:

Max. <sup>7</sup> Slump (mm)
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N/A
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20. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (Metric), is hereby further modified by adding the following footnote:

<sup>7</sup> The mix shall not exhibit segregation at the slump/spread used at placement. If the Engineer suspects there is segregation, the Engineer will require a slump/spread test be performed by the Contractor to visually observe the characteristics of the mix. If in the opinion of the Engineer the mix does exhibit segregation, the load will be rejected and subsequent load(s) shall be tested, at a minimum of 3 loads or until the problem is corrected.

If the Contractor needs a concrete with a slump greater than 200 mm, the Contractor shall propose to the Engineer to use an SCC mix, which shall be submitted to the Engineer for review and acceptance.

21. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (English), is hereby modified by deleting the fourth column (with header "Max. Slump (in)") in its entirety and replacing it with the following:

Max. <sup>7</sup> Slump (mm)
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N/A
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22. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (English), is hereby further modified by adding the following footnote:

<sup>7</sup> The mix shall not exhibit segregation at the slump/spread used at placement. If the Engineer suspects there is segregation, the Engineer will require a slump/spread test be performed by the Contractor to visually observe the characteristics of the mix. If in the opinion of the Engineer the mix does exhibit segregation, the load will be rejected and subsequent load(s) shall be tested, at a minimum of 3 loads or until the problem is corrected.

If the Contractor needs a concrete with a slump greater than 8 inches, the Contractor shall propose to the Engineer to use an SCC mix, which shall be submitted to the Engineer for review and acceptance.

SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN

23. SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN, is hereby made a new Section of the Specifications as follows:
24. 652.01 DESCRIPTION. This work shall consist of designing, furnishing, and submitting for acceptance modifications to the Contract Erosion Prevention & Sediment Control Plan (hereinto known as the EPSC Plan), becoming a co-permittee with the Agency of Transportation, State of Vermont on associated permits, monitoring the EPSC Plan using an On-Site Plan Coordinator, and maintaining the erosion prevention and sediment control measures to ensure the effectiveness of the EPSC Plan.
25. 652.02 MATERIALS. Materials required for the field work maintenance of the EPSC Plan shall meet all requirements of the appropriate Section of the VAOT Standard Specifications for Construction.

Materials including manuals, checklists, forms, and other supporting documentation necessary to meet the requirements of these provisions and maintain compliance with associated permits shall be made available to the Engineer by the Contractor and maintained on site by the Contractor. Supporting documents associated with the requirements of General Permit 3-9020 are available upon request to ANR or from the ANR Stormwater web page. The *VTrans Erosion Prevention and Sediment Control Plan Contractor Checklist* and *Low Risk Site Inspection Form* are available from the VTrans Construction Environmental Engineer.

26. 652.03 QUALIFICATIONS. Modifications to the EPSC Plan shall be prepared and signed by a Licensed Professional Civil Engineer registered in the State of Vermont or a qualified professional in erosion prevention and sediment control, certified by CPESC, Inc. or equivalent, hereinafter called the "Preparer."
27. 652.04 EROSION PREVENTION & SEDIMENT CONTROL PLAN. The EPSC Plan, developed using a combination of structural, non-structural, and vegetative practices to adequately prevent erosion and control sedimentation, and meeting the requirements of the VTrans Erosion Prevention & Sediment Control Plan Designer Checklist (Non-Jurisdictional and Low Risk) or the Vermont Standards & Specifications for Erosion Prevention & Sediment Control based on area of disturbance and risk, has been included in the Contract Documents.

The Contractor shall use the EPSC Plan included in the Contract and, at the onset of construction as well as throughout the duration of the project, modify it to describe changing conditions and illustrate how the criteria of the determined risk will be upheld. For Non-Jurisdictional and Low Risk projects, the Contractor shall use the *VTrans Erosion Prevention and Sediment Control Plan Contractor Checklist*. For Moderate Risk projects, the Contractor shall modify the Contract EPSC Plan in accordance with the General Permit 3-9020 Parts 4 through 6. If a modification to the EPSC Plan at a Low or Moderate Risk project alters any criteria of the determined risk, an updated Risk Evaluation shall be prepared.

The Contractor may use the Agency's EPSC Plan sheet(s) as a basis for necessary modifications; however, if necessary to convey the sequential nature and phases of construction activities and associated erosion prevention and sediment control measures, several plan sheets showing successive site conditions are recommended.

All work shown in the EPSC Plan shall be included in the Contractor's CPM Progress Schedule, as required by Subsection 108.03.

28. 652.05 SUBMITTALS. Three sets of the modified EPSC Plan as well as the updated Risk Evaluation, stamped and signed by the Preparer, shall be submitted to the Construction Engineer as Construction Drawings in accordance with Section 105. Submittals shall occur after award of the Contract but not later than the Pre-Construction Conference to allow time for review by the Agency. An Acceptance Memo or comments will be provided to the Contractor within 10 working days.

The Contractor shall respond to comments as soon as possible, but not more than 10 days after the date of VTrans initial correspondence. Agency review time for response to comments will be completed within an additional 10 working days. Modifications or additions to the EPSC Plan will not be considered as an acceptable delay of the work under Subsection 108.11.

All subsequent modifications to the EPSC Plan and updates to the Risk Evaluation will be reviewed and forwarded to the ANR by the Agency as appropriate.

Construction activities for EPSC Plan modifications that do not require authorization from the ANR shall commence only after the EPSC Plan has been accepted by the Agency. Construction activities for EPSC Plan modifications that do require authorization from the ANR shall commence only after that authorization has been granted.

29. 652.06 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN. The Contractor shall designate a person (On-Site Plan Coordinator) who is directly responsible for the on-site implementation of the EPSC Plan. This person shall generally be on-site on a daily basis during active construction and have the authority to halt construction activities if necessary. The On-Site Plan Coordinator shall have demonstrated experience in construction practices as they relate to erosion prevention and sediment control as well as a general understanding of State and Federal environmental regulations and permits pertaining to the National Pollutant Discharge Elimination System Construction Program. The On-Site Plan Coordinator shall be proficient at reading and interpreting engineering and EPSC plans. Preference will be given to a Licensed Professional Civil Engineer registered in the State of Vermont or a qualified professional in erosion prevention and sediment control, certified by CPESC, Inc. or equivalent. The qualifications of the On-Site Plan Coordinator shall be included in the EPSC Plan. The Engineer, if not satisfied with the performance of this individual, may at any time request a replacement.

During active construction and periods of inactivity, the On-Site Plan Coordinator shall be responsible for inspections and reporting.

- (a) Active Construction. Inspections shall occur once every seven calendar days and within 24 hours of the end of a storm event that results in a discharge of stormwater from the site. During the winter construction season (October 15<sup>th</sup> to April 15<sup>th</sup>, inclusive), inspections at all sites shall occur daily.

For Non-Jurisdictional and Low Risk projects, inspections shall be conducted using the Agency's EPSC Plan Inspection Report (Non-Jurisdictional and Low Risk Projects).

For Moderate Risk projects, inspections shall be conducted using the General Permit 3-9020 Inspection Report for Moderate Risk Projects referenced in the Permit and available upon award of the Contract.

Immediate action shall be taken to correct the discharges of sediment, including halting or reducing construction activities as necessary, until the discharge and/or the condition is fully corrected. Corrective actions shall be recorded on the monitoring reports and shown on the EPSC Plan. Each report shall be signed by the On-Site Plan Coordinator.

- (b) Inactive Construction. Periods such as shutdown during the winter season shall require inspection and reporting of erosion prevention and sediment control measures. The Contractor shall contact the Engineer prior to conducting any inspections. The inspections shall be conducted at least once every 30 days and within 24 hours of any storm or significant snow melt event that may cause stormwater runoff to leave the construction site. The Contractor shall provide, within 24 hours, the necessary personnel, equipment, and materials to repair or correct any deficiencies identified during inspection. All deficiencies and corrective measures taken shall be documented on the reports.

Copies of all reports shall be submitted to the Engineer within 24 hours of inspection or when corrective measures were taken. Copies of all reports shall be kept on site in the Contractor's project files.

30. 652.07 MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN. This work shall consist of providing all labor and equipment necessary for field maintenance of erosion prevention and sediment control items in the Contract, and providing materials and labor necessary for installing, monitoring, maintaining and, where necessary, removing additional measures needed to correct deficiencies that develop during construction that lessen the performance of the EPSC Plan. Erosion prevention and sediment control measures shall be maintained by the Contractor and removed when authorized by the Engineer. The Contractor shall establish vegetation in all areas disturbed during removal of the erosion prevention and sediment control measures.

Any maintenance required due to the failure of the Contractor to follow the EPSC Plan in its accepted form shall be performed at no additional cost to the Agency.

31. 652.08 METHOD OF MEASUREMENT. The quantity of EPSC Plan to be measured for payment will be on a lump sum basis in the complete and accepted work.

The quantity of Monitoring EPSC Plan will be measured to the nearest 1/4 hour for the actual number of authorized hours spent monitoring, reviewing, and reporting on the construction site(s), including waste, borrow and staging areas or other support activities, as it relates to the EPSC Plan. Travel time and other time not spent at the construction site(s) or time not authorized will not be measured for payment (i.e. travel expenses, clerical staff time, copying, miscellaneous expenses, overhead, etc.).

The quantity of Maintenance of EPSC Plan will be on a lump unit basis for all such field maintenance provided for in the Contract, excluding waste, borrow and staging areas or other support activities.

32. 652.09 BASIS OF PAYMENT. The accepted quantity of EPSC Plan will be paid for at the Contract lump sum price. Payment will be full compensation for the initial preparation of modifications, submittals, and all incidentals necessary to complete the work. Subsequent modifications to the EPSC Plan during Construction will be considered incidental to Contract item 652.10.

Partial payments will be made as follows:

- (a) The first payment of 50 percent of the lump sum price for the EPSC Plan will be paid for upon acceptance of the EPSC Plan for the entire project.
- (b) The second payment of 35 percent of the lump sum price for the EPSC Plan will be made on the first estimate following the completion of 50 percent of the project.
- (c) The third payment of 15 percent of the lump sum price for the EPSC Plan will be made when the project is substantially complete.

The accepted quantity of Monitoring EPSC Plan will be paid for at the Contract unit price per hour. Payment will be full compensation for performing the work specified. Payment will not be made unless a report for the monitoring is submitted to and accepted by the Engineer.

The accepted quantity of Maintenance of EPSC Plan will be paid for as specified for force account work in Subsection 109.06. Payments will be drawn against the Contract Lump Unit amount. To provide a common proposal for all bidders, the Agency has entered an amount in the proposal to become part of the Contractor's total bid. Maintenance related to material supply and disposal areas shall be performed in accordance with Subsection 105.29.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
652.10 EPSC Plan	Lump Sum
652.20 Monitoring EPSC Plan	Hour
652.30 Maintenance of EPSC Plan (N.A.B.I.)	Lump Unit

SECTION 690 - FUEL PRICE ADJUSTMENT

33. SECTION 690 - FUEL PRICE ADJUSTMENT, is hereby made a new Section of the Specifications as follows:

34. 690.01 GENERAL REQUIREMENTS AND CONDITIONS

- (a) This specification contains price adjustment provisions for fuel used on Vermont Agency of Transportation (Agency) construction projects. This price adjustment clause is being inserted in this Contract to provide for either additional compensation to the Contractor or a payment to the Agency, depending upon an increase or decrease in the average price of diesel fuel or gasoline during the construction of this project.
- (b) These provisions apply to this Contract only as specified herein through the fuel usage factors set forth in Table 1. No further fuel price adjustments will be allowed under this Contract.
- (c) It is understood by the Contractor that a price adjustment increase may cause the Agency to decrease the quantities of the Contract pay items subject to adjustment under these provisions. Provisions providing for decreased quantities and item cancellation in this paragraph are separate and take precedence, notwithstanding any other provisions of this Contract.
- (d) No price adjustment will be paid for work performed after the Contract Completion Date, as modified by Change Order, if applicable.
- (e) Price Adjustment, Fuel will be determined for a pay item if each of the following criteria is met:
  - (1) the pay item is included in the original awarded Contract;
  - (2) the original awarded Contract bid quantity for the pay item equals or exceeds the quantity threshold indicated in Table 1.
- (f) Any increase in the total Contract amount due to fuel price adjustment will not be justification for an extension of time under Subsection 108.11.

35. 690.02 PRICE ADJUSTMENT PROCEDURES

- (a) Prior to advertising for bids, Index Prices for both a gallon of diesel fuel and a gallon of gasoline will be established by the Agency using retail prices reported by the Energy Information Administration (EIA) for the New England Region. The Index Prices will be set monthly using the first EIA posting falling either on or after the 1<sup>st</sup> calendar day of that month. The Contract Index Prices will be the most recent Index Prices set by the Agency at the time of advertising for bids. These prices are included below and will be the base from which price adjustments are computed.

The index price (retail) for gasoline is \$3.96 per gallon. The index price (retail) for diesel fuel is \$4.20 per gallon.

- (b) For the duration of the Contract, Posted Prices for both a gallon of diesel fuel and a gallon of gasoline will be established monthly by the Agency. The Posted Prices will be established in the same manner as the Index Prices.
- (c) A Price Adjustment will be paid or credited for diesel fuel and/or gasoline only when the Posted Price of diesel fuel and/or gasoline increases or decreases 5 percent or more over its respective Index Price.
- (d) Payment for Price Adjustment, Fuel will be based upon the quantity of fuel incorporated in the work as determined by the fuel usage factors in Table 1 of this specification for both diesel fuel and gasoline, multiplied by the algebraic difference between the Posted Price and the Index Price for either diesel fuel or gasoline, respectively.
- (e) Payment for Price Adjustment, Fuel shall be computed as follows:

PA = Price Adjustment (LU in \$)  
 IPD = Index Price, Diesel Fuel (\$/gallon)  
 IPG = Index Price, Gasoline (\$/gallon)  
 PPD = Posted Price, Diesel Fuel (\$/gallon)  
 PPG = Posted Price, Gasoline (\$/gallon)  
 FUFD = Fuel Usage Factor, Diesel Fuel (gallon/unit)  
 FUFG = Fuel Usage Factor, Gasoline (gallon/unit)

For  $PPD/IPD \leq 0.95$  or  $\geq 1.05$  and  $PPG/IPG > 0.95$  and  $< 1.05$ :  
 $PA = FUFD \times \text{Pay Item Quantity} \times (PPD - IPD)$

For  $PPD/IPD > 0.95$  and  $< 1.05$  and  $PPG/IPG \leq 0.95$  or  $\geq 1.05$ :  
 $PA = FUFG \times \text{Pay Item Quantity} \times (PPG - IPG)$

For  $PPD/IPD$  and  $PPG/IPG \leq 0.95$  or  $\geq 1.05$ :  
 $PA = [FUFD \times (PPD - IPD) + FUFG \times (PPG - IPG)] \times \text{Pay Item Quantity}$

- (f) The Contract bid prices for the applicable pay items will be paid under the Contract. The price adjustment, when such adjustment is required as specified in part (c) of this Subsection, will be made subsequent to the month in which the applicable Contract work was performed and will be entered on the next bi-weekly estimate.
- (g) Payment for Price Adjustment, Fuel shall be debited or credited against the Contract price (Lump Unit) bid for Price Adjustment, Fuel.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
690.50 Price Adjustment, Fuel (N.A.B.I.)	Lump Unit

Table 1  
Pay Item Fuel Usage Factors and Quantity Thresholds

Work Category	Pay Item No.	Usage Factor Units		Diesel Fuel (FUSD)		Gasoline (FUG)		Quantity Threshold	
		Metric	English	Metric	English	Metric	English	Metric	English
Excavation	203.15	GAL/CM	GAL/CY	0.38	0.29	0.2	0.15	2,500	3,000
	203.16	GAL/CM	GAL/CY	0.51	0.39	0.24	0.18	2,000	2,500
	204.25	GAL/CM	GAL/CY	0.46	0.35	0.21	0.16	2,000	2,500
	208.30	GAL/CM	GAL/CY	0.46	0.35	0.21	0.16	1,500	2,000
	208.35	GAL/CM	GAL/CY	0.51	0.39	0.24	0.18	1,500	2,000
Borrow	203.30	GAL/CM	GAL/CY	0.38	0.29	0.20	0.15	2,500	3,000
	203.31	GAL/CM	GAL/CY	0.38	0.29	0.20	0.15	2,500	3,000
	203.32	GAL/CM	GAL/CY	0.38	0.29	0.20	0.15	2,500	3,000
Granular Backfill For Structures	204.30	GAL/CM	GAL/CY	1.31	1.00	0.21	0.16	1,200	1,500
Cold Planing, Bituminous Pavement	210.10	GAL/SM	GAL/SY	0.16	0.12	0	0	11,000	15,000
Subbase	301.25	GAL/CM	GAL/CY	1.11	0.85	0.73	0.56	750	1,000
	301.35	GAL/CM	GAL/CY	1.11	0.85	0.73	0.56	750	1,000
Reclaimed Stabilized Base	310.20	GAL/SM	GAL/SY	0.05	0.04	0	0	30,000	35,000
Pavement	406.25	GAL/T	GAL/TON	3.37	3.06	0.95	0.86	450	500
	406.27	GAL/T	GAL/TON	3.37	3.06	0.95	0.86	450	500
	490.30	GAL/T	GAL/TON	3.37	3.06	0.95	0.86	450	500
Concrete	501.32	GAL/CM	GAL/CY	0.98	0.75	0.33	0.25	750	1,000
	501.33	GAL/CM	GAL/CY	0.98	0.75	0.33	0.25	750	1,000
	501.34	GAL/CM	GAL/CY	0.98	0.75	0.33	0.25	750	1,000
Stone Fill	613.10	GAL/CM	GAL/CY	0.51	0.39	0.24	0.18	1,500	2,000
	613.11	GAL/CM	GAL/CY	0.51	0.39	0.24	0.18	1,500	2,000
	613.12	GAL/CM	GAL/CY	0.51	0.39	0.24	0.18	1,500	2,000
	613.13	GAL/CM	GAL/CY	0.51	0.39	0.24	0.18	1,500	2,000
Guardrail	621.20	GAL/M	GAL/LF	0.59	0.18	0.16	0.05	1,500	5,000
	621.205	GAL/M	GAL/LF	0.59	0.18	0.16	0.05	1,500	5,000
	621.21	GAL/M	GAL/LF	0.59	0.18	0.16	0.05	1,500	5,000
	621.215	GAL/M	GAL/LF	0.59	0.18	0.16	0.05	1,500	5,000

SECTION 900 - SPECIAL PROVISION ITEMSHIGH PERFORMANCE CONCRETE, CLASS A HIGH STRENGTH

36. DESCRIPTION. This work shall consist of furnishing and placing high performance Portland cement concrete at the locations indicated in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 501 of the Standard Specifications.

37. CLASSIFICATION AND PROPORTIONING. Classification and proportioning shall meet the requirements of Subsection 501.03 for HP Class A, with the exception that the 28 Day Compressive Strength shall be 45 MPa (6000 psi).

38. METHOD OF MEASUREMENT. The quantity of Special Provision (High Performance Concrete, Class A High Strength) to be measured for payment will be the number of cubic meters (cubic yards) of concrete placed in the complete and accepted work, as determined by the prismatic method using dimensions shown on the Plans or as directed by the Engineer, including the volume of precast concrete stay-in-place forms, but excluding the volume of steel or other stay-in-place forms and form filling materials. No deductions will be made for the volume of concrete displaced by steel reinforcement, structural steel, expansion joint material, scuppers, weep holes, conduits, tops of piles, scoring, chamfers or corners, inset panels of 38 mm (1½ inches) or less in depth, or any pipe less than 200 mm (8 inches) in diameter.

39. BASIS OF PAYMENT. The accepted quantity of Special Provision (High Performance Concrete, Class A High Strength) will be paid for at the Contract unit price per cubic meter (cubic yard). Payment will be full compensation for performing the work specified, including designing the mix, satisfactory finishing and curing, and for furnishing all forms, materials, including joint filler and bond breaker, labor, tools, admixtures, equipment, including automatic temperature recording units, trial batches, and incidentals necessary to complete the work.

The cost of heating materials and protecting the concrete against cold weather, and any additional cost for cement, will not be paid for separately but will be considered incidental to Special Provision (High Performance Concrete, Class A High Strength).

The cost of furnishing testing facilities and supplies at the batch plant and the setting of inserts, bench marks, and bridge plaques furnished by the Agency will not be paid for separately but will be considered incidental to Special Provision (High Performance Concrete, Class A High Strength).

Costs for all materials, labor, and incidentals for steel or other stay-in-place forms and form filling materials will not be paid for separately, but will be considered incidental to Special Provision (High Performance Concrete, Class A High Strength).

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.608 Special Provision (High Performance Concrete, Class A High Strength)	Cubic Yard

OBSTRUCTION REMOVAL FOR DRIVING PILES

40. DESCRIPTION. This work shall consist of removing foundation materials that prohibit the driving of piles by augering, pre-boring, or some other means of excavation.

41. CONSTRUCTION REQUIREMENTS.

(a) Augering and Pre-boring. After the obstruction is removed, the hole shall be backfilled with soil meeting the classification requirements of AASHTO A-1, A-2, or A-3. Backfill material shall have a maximum top size of 2.5" and be approved by the Engineer. Backfill material may require testing to verify its classification.

The backfill material shall be placed prior to re-driving of the pile.

(b) Other Means of Excavation. After the obstruction is removed, backfill shall be placed in accordance with Section 203. Backfill material shall meet the requirements of Subsection 703.02.

The backfill material shall be placed prior to re-driving of the pile.

42. METHOD OF MEASUREMENT. The quantity of Special Provision (Obstruction Removal for Driving Piles) to be measured for payment will be the total number of linear feet (meters) of obstruction removal measured to the nearest linear foot (meter) from the elevation where the obstruction removal starts to the elevation where the obstruction removal ends.

43. BASIS OF PAYMENT. The accepted quantity of Special Provision (Obstruction Removal for Driving Piles) will be paid for at the Contract unit price per linear foot (meter). Payment will be full compensation for all excavation, backfilling, and materials testing; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Unless otherwise specified in the Contract, no payment will be made for Special Provision (Obstruction Removal for Driving Piles) unless at least one pile has been driven per substructure unit and the Engineer has pile load tests that confirm that the minimum pile length and nominal pile resistance cannot be achieved without damaging or overstressing the pile.

If an obstruction is encountered during pile driving, no additional compensation will be made for removing nor re-driving the pile.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.640 Special Provision (Obstruction Removal for Driving Piles)	Linear Foot

POST-TENSIONING

44. DESCRIPTION. This work shall consist of furnishing, installing, stressing, and grouting prestressing steel for precast and cast-in-place concrete elements. It shall also include the furnishing and installing of any appurtenant items necessary for the particular prestressing system used, including but not limited to anchorage assemblies, additional reinforcing bars required to resist stresses caused by anchorage assemblies, ducts, vents, inlets, outlets, and grout used for pressure grouting ducts.
45. GENERAL REQUIREMENTS. Use of a post-tensioning system is subject to approval by the Agency. Only post-tensioning systems of the proper type and size for the tendons shown on the Plans shall be used. Substitution of components from different post-tensioning systems shall not be allowed. Post-tensioning systems shall utilize tendons fully encapsulated in anchorages and ducts. Systems that transfer prestress force by bonding the prestress steel directly to concrete shall not be used. Tendon couplers are not permitted, except as noted on the Plans. All post-tensioning material shall be stored in a weatherproof building, shed, or container until the time of use.

The supplier is the firm or organization responsible for supplying the proprietary post-tensioning hardware and equipment for incorporation in the structure. All components of a post-tensioning system, including steel pipes, shall come from a single supplier. Prestressing steel can be obtained from any supplier.

46. POST-TENSIONING SYSTEMS DEFINITIONS.

ACTUAL ULTIMATE TENSILE STRENGTH (AUTS) - The actual breaking strength obtained in tests of a single representative strand or bar, breaking outside the anchorage. For multi-strand or bar tendons, AUTS equals the AUTS of a single tendon element (strand, bar) times the number of such elements in the tendon. Representative samples must be from the same coil of strands or the same bar from which strands or bars are cut and used in connection efficiency tests. (Reference PTI "Acceptance Standards for Post-Tensioning Systems". See also "GUTS" and "MUTS".)

ANCHOR NUT - The threaded device that screws onto a threaded bar and transfers the force in the bar to the bearing plate.

ANCHOR PLATE - That part of the anchorage hardware that bears directly on the concrete and by which the tendon force is transmitted to the structure.

ANCHORAGE ASSEMBLY - An assembly of various hardware components that secure a tendon at its ends after it has been stressed and imparts the tendon force into the concrete.

ANCHORAGE ZONE - The general expression for combined general and local zones; see "GENERAL ZONE", "LOCAL ZONE".

ANTICIPATED SET - The wedge set assumed to occur in the design calculation of the post-tensioning forces at the time of load transfer; see "SET".

BAR - High strength steel bars, normally available from 5/8 to 1-3/4 inch diameter and usually threaded with a very coarse thread.

BASIC BEARING PLATE - Flat plate bearing directly against concrete meeting the analytical design requirements. Covered by this definition are square, rectangular, or round plates, sheared or torch cut from readily available steel plate, normally ASTM A 36.

BEARING PLATE - Any steel hardware that transfers the tendon force into a structure.

CONFINEMENT REINFORCEMENT - Non-prestressed reinforcement in the local zone. Confinement reinforcement in the concrete ahead of tendon anchorages is limited to the local zone. Confinement reinforcement consists of spirals, orthogonal reinforcing bars, or a combination of both. For basic bearing plates, confinement reinforcement is required in that volume of concrete in which compressive stresses exceed acceptable limits for unreinforced concrete as determined by rational analysis. For special bearing plates, confinement reinforcement is system dependent as determined by tests on individual anchorages. Test block reinforcement, in the portion surrounding the special bearing plate and immediately ahead of it, must represent the confinement reinforcement required in the local zone for that particular system.

COUPLER - A device used to transfer the prestressing force from one partial-length prestressing tendon to another. (Strand couplers are not permitted.)

DUCT - Material forming a conduit to accommodate post-tensioned tendon installation and provide an annular space for the grout which protects the prestressing steel.

FAMILY OF SYSTEMS - Group of post-tensioning tendon assemblies of various sizes which use common anchorage devices and design. All components within the family of systems are furnished by a single supplier and have a common design with varying sizes.

GENERAL ZONE - The region in which the concentrated prestressing force spreads out to a more linear stress distribution over the cross-section of the structural member (Saint Venant Region). It includes the local zone. The general zone extends from the anchorage along the axis of the member for a distance equal to the overall depth of the member. The height of the general zone is equal to the overall depth of the member.

GUARANTEED ULTIMATE TENSILE STRENGTH (GUTS) - The tensile strength of the material that can be assured by the Manufacturer. GUTS should not be confused with " $f_{pu}$ " the specified ultimate tensile strength (AASHTO LRFD). (The term "GUTS" has been replaced by two definitions, "MUTS" and "AUTS" by the Post-Tensioning Institute.)

LOCAL ZONE - The local anchorage zone is the volume of concrete surrounding and immediately ahead of the anchorage device where concrete compressive stresses exceed acceptable values for unconfined concrete (concrete without confinement reinforcement). The local zone is defined as a rectangular prism of concrete surrounding the bearing plate and any integral confinement reinforcement. The transverse dimensions of the prism are equal to those of the bearing plate, including any integral confinement reinforcement, plus the supplier's specified minimum edge covers. The length of the local zone extends over the confinement reinforcement. For anchorage devices with multiple bearing surfaces, the local zone extends over the distance from the loaded concrete surface to the bottom of each bearing surface of the anchorage device plus the maximum dimension of that bearing surface.

MINIMUM ULTIMATE TENSILE STRENGTH (MUTS) - When measured as a force, for a single strand or bar breaking outside of the anchorage or the multiple of those single strand or bar forces for multi-strand or bar tendons; MUTS is the force equal to the nominal cross-sectional area of strand, or bar, times their nominal ultimate tensile stress. (Reference PTI "Acceptance Standards for Post-Tensioning Systems". See also "AUTS" and "GUTS".)

POST-TENSIONING - A method of prestressing where tensioning of the tendons occurs after the concrete has reached a specified strength.

POST-TENSIONING SCHEME OR LAYOUT - The pattern, size, and locations of post-tensioning tendons shown by the Engineer of Record on the Design Plans.

POST-TENSIONING SYSTEM - An assembly of specific models of hardware, including but not limited to anchorage assembly, local zone reinforcement, wedge plate, wedges, inlet, outlet, couplers, duct, duct connections, and grout cap, used to construct a tendon of a particular size and type. The entire assembly must meet the system pressure testing requirement. Internal and external systems are considered independent of one another.

PRESTRESSING STEEL - The steel element of a post-tensioning tendon, which is elongated and anchored to provide the necessary permanent prestressing force.

SET - The total movement of a point on the strand just behind the anchoring wedges during load transfer from the jack to the permanent anchorages. Set movement is the sum of slippage of the wedges with respect to the anchorage head and the elastic deformation of the anchor components. For bars, set is the total movement of a point on the bar just behind the anchor nut at transfer and is the sum of slippage of the bar and the elastic deformation of the anchorage components.

SHEATHING - General term for the duct material surrounding the prestressing element to provide corrosion protection or conduit for installation.

SPECIAL BEARING PLATE - Any hardware that transfers tendon anchor forces into the concrete but does not meet the analytical design requirements. Covered by this definition are devices having single or multiple plane bearing surfaces, and devices combining bearing and wedge plate in one piece. They normally require confinement reinforcement.

STRAND - An assembly of several high strength steel wires wound together. Strands usually have six outer wires wound in long-pitch helix around a single straight wire of a similar diameter.

TENDON - A single or group of prestressing elements and their anchorage assemblies, which impart a compressive force to a structural member. Also included are ducts, grouting attachments, grout, and corrosion protection filler materials or coatings. The main prestressing element is usually a high strength steel member made up of a number of strands, wires, or bars.

TENDON SIZE - The number of individual strands of a certain strand diameter or the diameter of a bar.

TENDON TYPE - The relative location of the tendon to the concrete shape, internal or external.

WEDGE - A conically shaped device that anchors the strand in the wedge plate.

WEDGE PLATE - The hardware that holds the wedges of a multi-strand tendon and transfers the tendon force to the anchorage assembly (commonly referred to as anchor head).

WIRE - A single, small diameter, high strength steel wire, typically the basic component of strand.

47. POST-TENSIONING GROUT RELATED DEFINITIONS.

ADMIXTURE - A material, usually a liquid or powder that is used as an ingredient of the cementitious grout and is added immediately before or during mixing.

BLEED - The autogenous flow of mixing water within or its emergence from, newly placed grout, caused by the settlement of the solid materials within the mass.

CONTAMINATION - Any foreign material found in a tendon at any point in time.

CAVITATION - Air trapped during the grouting process through an irregular flow of grout through the duct. Cavitation can occur when grouts are injected from high points in the tendon profile or by a poor combination of grouting rate and viscosity, in which the grout traps air as it moves to the low point and does not completely fill the duct.

FINAL SET - A degree of stiffening of the grout mixture greater than the initial set, indicating the time required for the grout to stiffen sufficiently to resist, to an established degree, the penetration of a weighted test needle.

FLUIDITY - A measure of time, expressed in seconds necessary for a stated quantity of grout to pass through the orifice of a flow cone.

GROUT - A mixture of cementitious materials and water with or without mineral additives or admixtures, proportioned to produce a consistency that may be pumped without segregation of the constituents when injected into the duct to fill the space around the prestressing steel.

GROUT CAP - A device which contains the grout and forms a protective cover sealing the post-tensioning steel at the anchorage.

GROUT PIPE - A small diameter pipe usually of plastic attached at a grout vent (inlet or outlet).

GROUT VENT - See "VENT".

INITIAL SET - A degree of stiffening of the grout mixture less than the final set, indicating the time required for the grout to stiffen sufficiently to resist, to an established degree, the penetration of a weighted test needle.

INLET - Tubing or duct used for injection of the grout into the duct (see also "VENT").

OUTLET - Tubing or duct to allow the escape of air, water, grout, and bleed water from the duct (see also "VENT").

PERMEABILITY TO CHLORIDE - A measure of the grout's ability to resist chloride ion penetration.

PORT OR GROUT PORT - See "VENT".

POTABLE WATER - Water as defined by EPA (Environmental Protection Agency) drinking water standards.

PRESSURE RATING - The estimated maximum pressure that water in a duct or in a duct component can exert continuously with a high degree of certainty that failure of the duct or duct component will not occur (commonly referred to as working pressure).

RECHARGE - The ability of water, outside of the post-tensioning tendon, to migrate through some path and enter the tendon, usually through the anchorage or at a breach in the duct.

SET TIME - The lapsed time for the addition of mixing water to a cementitious mixture until the mixture reaches a specified degree of rigidity as measured by a specific procedure.

SETTING - The process, due to the chemical reactions, occurring after the addition of mixing water, which results in a gradual development of rigidity of a cementitious mixture.

THIXOTROPIC - The property of a material that enables it to stiffen in a short time while at rest, but to acquire a lower viscosity when mechanically agitated.

VOLUME CHANGE - The change in volume produced by continued hydration of cement, exclusive of effects of the applied load and change in thermal or moisture content.

VENT OR GROUT VENT - An attachment to a duct through which grout is injected (inlet) or released (outlet) - also, a special hole in the anchorage or bearing plate which serves the same purpose. Vents may also be used for inspection of grout by inserting a probe or endoscope.

WATER-REDUCING ADMIXTURE - An admixture that either increases the slump of freshly mixed grout without increasing the water content or that maintains the slump with reduced amount of water due to factors other than air entrainment.

48. QUALIFICATIONS AND INSPECTIONS. Provide a crew foreman as follows:

Perform all post-tensioning field operations under the direct on-site supervision (crew foreman) of a qualified post-tensioning and grouting technician. The crew foreman for post-tensioning tendons installation and stressing shall have a current PTI Certification, Level 2 Bonded Post-Tensioning - Field Installation/Field Specialist and three years verifiable job-site experience in bridge related post-tensioning operations. The crew foreman for grouting operations shall be an ASBI Certified Grouting Technician with a continuous minimum verifiable experience of five years. All stressing and grouting operations shall be conducted in the presence of the Agency.

49. FABRICATION DRAWINGS. Fabrication Drawings are required for the integration of the post-tensioning system, reinforcement, and other embedded items, including those for the Contractor's means and methods of construction for cast-in-place components. The Contractor/Supplier shall submit detailed Fabrication Drawings in accordance with Section 105 that address the requirements of the Plans and Specifications as follows:

- (a) A complete description of, and details covering, each of the prestressing systems to be used for permanent and temporary tendons, including, but not necessarily limited to:
- (1) Designation of the specific prestressing steel, dimensions, details, and materials for all manufactured components such as anchorage devices, wedges, nuts, bar couplers, ducts, materials, and accessories according to the post-tensioning system to be used.
  - (2) Tendon profile and clearances, duct supports, connections of ducts, connections at temporary bulkheads and the like, complying with the Plans and the limitations of the selected post-tensioning system.
  - (3) Location and details of grout inlets and outlets, at anchorages, low-points, high-points, and other required inspection points and the direction of grouting.
  - (4) Size, type, connections, and sealing details for permanent grout caps.
  - (5) Protection system materials and application limits.
  - (6) Details covering assembly and installation of each type of prestressing tendon.
  - (7) Equipment, dimensions, and clearances to be used in the prestressing operations.
  - (8) Procedure and sequence of operations for prestressing and securing tendons.
  - (9) Procedure for releasing temporary or permanent prestressing steel elements.
  - (10) Parameters to be used to calculate the typical tendon force such as; expected friction coefficients, anchor set, and prestress steel relaxation curves.

- (b) A table detailing the prestressing jacking sequence, jacking forces, and initial elongations of each tendon at each stage of erection for all prestressing.
  - (c) Complete details of the anchorage system for prestressing including certified copies of the reports covering tests performed on prestress anchorage devices as required herein, and details for any reinforcing steel needed due to stresses imposed in the concrete by anchorage plates.
  - (d) For the operation of grouting prestressing tendons; the materials and proportions for grout, details of equipment for mixing and placing grout, and methods of mixing and placing grout (also, locations and details of inlets and outlets for grouting and the direction of grouting).
  - (e) Calculations to substantiate the prestressing system and procedures to be used including stress-strain curves typical of the prestressing steel to be furnished, required jacking forces, elongation of tendons during tensioning, seating losses, short-term prestress losses, long term prestress losses, temporary overstress, and stresses in prestress anchorages including distribution plates and reinforcing steel needed in the concrete to resist stresses imposed by prestress anchorages. These calculations shall show a typical tendon force and anticipated losses from friction, wobble, anchor set, and anticipated adjustment for thermal affects.
  - (f) Details of the apparatus and method to be used by the Contractor for the testing of prestressing tendons by the Contractor.
  - (g) Calculations for post-tensioning shall be signed and sealed by a Professional Engineer registered in the State of Vermont.
50. FUTURE TENDONS. Not used.
51. CERTIFICATION OF POST-TENSIONING SYSTEMS. Only post-tensioning systems that are approved by the Agency shall be used. Suppliers seeking evaluation of their post-tensioning systems shall submit test results to the Agency and include certified test reports from an independent laboratory audited by AASHTO Materials Reference Laboratory (AMRL) which shows the post-tensioning system meets all the requirements specified herein.

Plastic components shall be tested in a certified independent laboratory accredited through the laboratory accreditation program of the Geosynthetic Accreditation Institute (GAI) or the American Association for Laboratory Accreditation (A2LA). Certification of test reports may be performed by an independent laboratory located outside the U.S., if the independent laboratory is approved by the Agency. If any component of the post-tensioning system is modified or replaced, the appropriate component test and entire system test, if needed, shall be retested in accordance with the requirements herein and an updated application made to the Agency containing the test reports and revised system drawings. Before attempting to change post-tensioning system components contact the Agency for direction.

Certification test for the plastic shall be performed on a sample formed or cut from the finished product. The Agency shall be provided with certification that the plastic from the duct sample complies with all requirements of the specified cell class, stress crack rating, and the specified amount of antioxidant. The supplier shall certify to the Agency that the post-tensioning system being furnished is in compliance with all requirements stated herein.

All components of a system shall be stamped with the suppliers name, trademark model number, and size corresponding to catalog designation. Post-tensioning systems consist of an assembly of components for various sizes of strand or bars assembled and pressure tested. Post-tensioning systems will have to be developed and tested for both internal (corrugated duct) and external (smooth duct) applications for those shown on the Plans.

Prior to installing any post-tensioning hardware, the Contractor shall furnish the Agency with a certification from the supplier that the post-tensioning system chosen for the project meets the requirements of this provision and is an Agency-approved post-tensioning system. Upon completion of post-tensioning installation, the Contractor shall provide a certification that the post-tensioning system supplied was installed without modification and met the requirements of the Contract Documents.

The supplier may submit to the Agency for consideration post-tensioning system certifications by other U.S. agencies.

The following are approved post-tensioning systems for use on this project:

DSI 1-3/8" Threadbar PT Bar System 100	DYWIDAG Systems International Post Tensioning/Reinforcing Unit 320 Marmon Drive Bolingbrook, IL 60440 (630) 739-6155
Williams Form Engineering Corp R7P	Williams Form Engineering Corp. 280 Ann Street N.W. Grand Rapids, MI 49504 (616) 365-9220
VStructural LLC (VSL) 1-3/8" PT Bar System	VSL 7455 New Ridge Road Hanover, MD 21076 (888) 489-2687

52. PRESTRESSING STEEL.

- (a) Thread-Bar. Unless otherwise noted on the Plans, prestress bars shall be uncoated, Grade 150, high strength deformed thread bars, Type II, conforming to the requirements of ASTM A 722, "Standard Specification for Uncoated High Strength Steel Bar for Prestressing Concrete".

53. THREAD-BAR COUPLERS. Thread-bar couplers shall meet the requirements of ASTM A 722. Bar couplers shall be used only at locations specifically shown on the Plans or approved by the Agency. A bar coupler shall develop at least 95 percent of the required ultimate strength of the bar with a minimum elongation of two percent when tested in the unbonded condition measured in 10 foot gauge lengths, without failure of the coupler or the thread-bar.

Testing of couplers shall be performed using samples of the prestressing bar to be used on the project. The test specimen shall be assembled in an unbonded state and during testing the anticipated set shall not be exceeded.

Only threaded type couplers shall be used with post-tensioning thread bars. Post-tensioning thread-bars shall be threaded into  $1/2$  the length of the coupler  $\pm 1/4$  inch so that when two bars are mated in a coupler, the length of each bar positively engaged in the coupler shall be half the coupler's length within the acceptable tolerances. No coupling or splicing will be permitted with strands.

54. POST-TENSIONING ANCHORAGES. All prestressing steel shall be secured at the ends by means of permanent type anchoring devices. Prestress anchorages shall develop at least 95 percent of the actual ultimate tensile strength of the prestressing steel, when tested in an unbonded state, without exceeding the anticipated set.

(Paragraph deleted)

The anchorage system shall be so arranged that the prestressing force in the tendon may be verified prior to the removal of the stressing equipment.

For tendon anchorages, the design and furnishing of any reinforcement (in addition to the reinforcement shown on the Plans) which is needed to resist bursting and splitting stresses imposed on the concrete by the proposed anchorage system shall be the responsibility of the Contractor.

Prestress anchorage devices shall effectively distribute prestressing loads to the concrete and shall conform to the following requirements:

- (a) Anchorages shall be designed so that the average concrete bearing stress is in compliance with the "AASHTO LRFD Bridge Design Specifications".
- (b) Bending stresses in the plates or assemblies induced by the pull of the prestressing steel shall not exceed the yield point of the material in the anchorage plate when 95 percent of the ultimate strength of the tendon is applied. Nor shall it cause visual distortion of the anchor plate.

The body of the anchorage shall be galvanized in accordance with ASTM A 123. Other components of the anchorage including nuts and local zone reinforcement are not required to be galvanized. The bearing surface and nuts shall be made from ferrous metal. All permanent anchorages shall be equipped with a permanent grout cap that is vented and bolted to the anchorage.

Permanent anchorages shall have a grout vent suitable for inspection from either the top or front of the anchorage. The vent shall facilitate the dual purpose of grouting or post-grouting inspection by drilling, if necessary, using a straight bit, and by insertion of a probe or endoscope. The geometry of the grout outlets must facilitate being drilled using a 3/8 inch diameter straight bit to facilitate both inspection directly behind the anchor plate.

Trumpets associated with anchorages shall be made from either ferrous metal or polypropylene plastic material conforming to the material requirements of corrugated plastic duct. The thickness of the trumpet at the transition location (choke point) shall not be less than the thickness of the duct. Alternately, the trumpet material may be a polyethylene or polyolefin containing antioxidant(s) with a minimum Oxidation Induction Time (OIT) according to ASTM D 3895 of not less than 20 minutes. Test the remolded finished polyolefin material for stress crack resistance using ASTM F 2136 at an applied stress of 348 psi resulting in a minimum failure time of 3 hours.

55. PERMANENT GROUT CAPS. Anchorages shall be fitted with a permanent grout cap made from polymer or ASTM A 240 Type 316L stainless steel. The resins used in the polymer shall be either nylon Acrylonitrile-Butadiene-Styrene or polyester. For products made from nylon, the cell class of the nylon according to ASTM D 5989 shall be S-PA0141 (weather resistant), S-PA0231, or S-PA0401 (ultimate strength no less than 10,000 psi with UV stabilizer added). The cap shall have an "O" ring or precision fitted flat gasket seal against the bearing plate. The grout cap shall have a grout vent oriented to the top of the cap. Grout caps shall be rated for a minimum pressure of 150 psi. Use ASTM A 240 Type 316L stainless steel bolts to attach the grout cap to the anchorage. Certified test reports of the chemical analysis of stainless steel caps is required for verification.
56. GROUT VENTS (INLETS AND OUTLETS), VALVES, AND PLUGS. All inlets and outlets shall be equipped with pressure rated mechanical shut-off valves or plugs. Grout vents at inlets and outlets, valves, vent plugs, or caps shall be rated for a minimum pressure rating of 150 psi. Grout vents (inlets and outlets) shall have a minimum inside diameter of 3/4 inch for strand and 3/8 inch for single bar tendons and four-strand duct. Dual mechanical shutoff valves shall be provided when performing vertical grouting.

All permanent attachments to anchorages and ducts for grout vents (inlets and outlets) and threaded vent plugs or caps shall be made of ASTM A 240 Type 316 stainless steel, nylon, or polyolefin materials. For products made from nylon, the cell class of the nylon according to ASTM D 5989 shall be S-PA0141 (weather resistant), S-PA0231, or S-PA0401 (ultimate strength no less than 10,000 psi with UV stabilizer added). Products made from polyolefin shall contain antioxidant(s) with a minimum Oxidation Induction Time (OIT) according to ASTM D 3895 of not less than 20 minutes. The finished polyolefin material shall be tested to satisfy stress crack resistance using ASTM F 2136 at an applied stress of 348 psi with a minimum failure time of 3 hours.

Temporary items, not part of the permanent structure, may be made of any suitable material.

Grout vents (inlets and outlets) shall be provided at locations designated on the approved Fabrication Drawings.

57. DUCTS AND PIPES. Only plastic duct, steel pipe, or a combination of plastic duct and steel pipe shall be used for ducts. All connectors, connections, and components of post-tensioning system hardware shall be air and water tight. Corrugated plastic duct shall be used for all internal post-tensioning systems except where steel pipe is required.

All duct material shall be sufficiently rigid to withstand loads imposed during placing of concrete and internal pressure during grouting while maintaining its shape, remaining in proper alignment, and remaining watertight.

The duct system, including splices and joints, shall effectively prevent entrance of cement paste or water into the system and shall effectively contain pressurized grout during grouting of the tendon.

The interior diameter of ducts for single bars shall be at least 1/2 inch greater than the nominal diameter of the bar measured across the upstanding deformations. For prestressing bars with couplers, the entire length of duct shall be 1/2 inch larger than the diameter of the coupler.

Steel pipe and plastic duct may be connected directly to each other when the outside diameters do not vary more than 0.08 inch. Use a reducer when the outside diameters of the steel pipe and plastic duct are outside of this tolerance.

Steel pipe which is embedded in a deviation block, beam, or diaphragm shall be bent to a uniform radius along a curve extending between tangent points located three inches inward from the face of the deviation block, beam, or diaphragm.

58. SPECIFIC MATERIAL PROPERTIES OF DUCTS, PIPES, AND ATTACHMENTS.

(a) Galvanized Rigid Steel Pipe. Steel pipe shall be galvanized steel pipe conforming to the requirements of ASTM A 53, Type E, Grade B. The nominal wall thickness of the pipe shall not be less than that of Schedule 40 unless otherwise specified. The pipe shall be bent so as to accurately conform to the alignment of the tendon, taking into consideration the minimum bending radius shown in the Plans or Fabrication Drawings.

(b) Corrugated Plastic Duct (HDPP).

(1) Material for Corrugated Plastic Duct (HDPP). Plastic ducts shall not be made from recycled material. Only seamless fabrication methods shall be used to manufacture ducts. Corrugated duct shall be manufactured from non-colored, unfilled polypropylene meeting the requirements of ASTM D 4101 "Standard Specification for Polypropylene Plastic Injection and Extrusion Materials" with a cell classification range of PP0340B14541 to PP0340B67884. The duct shall be white in color containing antioxidant(s) with a minimum Oxidation Induction Time (OIT) according to ASTM D 3895 of 20 minutes and contain a non-yellow light stabilizer. Duct shall have a minimum thickness as defined in the following table:

Duct Shape	Duct Diameter	Duct Thickness
Flat	any size	0.08 inches
Round	0.9 inches	0.08 inches
Round	2.375 inches	0.08 inches
Round	3.0 inches	0.10 inches
Round	3.35 inches	0.10 inches
Round	4.0 inches	0.12 inches
Round	4.5 inches	0.14 inches
Round	5.125 inches	0.16 inches
Round	5.71 inches	0.16 inches

(2) Minimum Bending Radius for Corrugated Plastic (HDPP). In addition to the component testing stated herein, the manufacturer shall establish, through testing, the minimum bending radius for the duct. The test shall consist of a modified duct wear test as described in Chapter 4, Article 4.1.7 of FIB Technical Report, Bulletin 7, titled "Corrugated Plastic Duct for Internal Bonded Post-Tensioning". The test apparatus shall be identical to the wear test apparatus with the same clamping force as a function of the number of strands in the duct; however, modify the procedure as follows: do not move the sample along the strand to simulate wear; the test duration will be 7 days. Upon completion of the test duration, remove the duct and the minimum wall thickness along the strand path must not be less than 0.06 inch for duct up to 3.35 inches in diameter and not less than 0.08 inch for duct greater than 3.35 inches in diameter.

- (3) Testing Requirements for Corrugated Plastic. The duct system components and accessories shall meet the requirements of Chapter 4, Articles 4.1 through 4.1.8 of FIB Technical Report, Bulletin 7, entitled "Corrugated Plastic Duct for Internal Bonded Post-Tensioning" as modified herein. (Copies of the technical report are available from the International Federation of Structural Concrete (FIB) at fib@epfl.ch .)

The requirements in FIB Technical Report, Bulletin 7, are modified as follows: the lateral load resistance test (FIB 4.1.4), shall be conducted without the use of a duct stiffener plate and using a load of 150 pounds for all sizes; wear resistance of duct (FIB 4.1.7) must not be less than 0.06 inch for duct up to 3.35 inches in diameter and not less than 0.08 inch for duct greater than 3.35 inches in diameter; bond behavior of duct (FIB 4.1.8) must achieve 40% GUTS in a maximum length of 16 duct diameters.

To satisfy the intent of these tests, the results for static pull-out tests from previous projects utilizing identical duct and prestressing steel with similar concrete and grout material may be submitted to the Agency in lieu of executing new pull-out tests. However, if the previous results are unacceptable or if there is a significant difference in the materials used, then the Contractor shall provide results from new tests for this project.

- (4) Corrugated Duct Connections and Fittings. All splices, joints, couplings, and connections between ducts and to anchorages shall be made using devices or methods (i.e. mechanical couplers) producing a smooth interior alignment with no lips or kinks. All connections and fittings shall be airtight. Duct tape is not permitted to join or repair duct connections. Connections and fittings shall be made from polyolefin materials containing antioxidant stabilizer(s).

59. SHIPPING AND STORAGE OF DUCTS. Duct shall be furnished with end caps to seal the duct interior from contamination. Ducts shall be shipped in bundles which are capped and covered during shipping and storage. Ducts shall be protected against ultraviolet degradation, crushing, excessive bending, dirt contamination, and corrosive elements during transportation, storage, and handling. End caps supplied with the duct shall not be removed until the duct is incorporated into the bridge component. Duct shall be stored in a location that is dry and protected from the sun. Storage must be on a raised platform and completely covered to prevent contamination; if necessary, duct shall be washed before use to remove any contamination.

60. MECHANICAL COUPLERS AND HEAT SHRINK SLEEVE REQUIREMENTS. Mechanical couplers shall be made from stainless steel, plastic, or a combination of these materials. Plastic resins for couplers shall meet the requirements for plastic ducts. ASTM A 240 Type 316 stainless steel shall be used for metallic components.

Heat shrink sleeves shall have uni-directional circumferential recovery and be manufactured specifically for the size of the duct being coupled, consisting of an irradiated and cross linked high density polyethylene backing for external applications. Furnish adhesive having the same bond value to steel and polyolefin plastic materials. The heat shrink sleeves shall have an adhesive layer that will withstand 150°F operating temperature, meeting the requirements of the following table:

Property	Test Method	Minimum Requirements	
		Internal Application	External Application
Minimum Fully Recovered Thickness		92 mils	111 mils
Peel Strength	ASTM D 1000	29 pli	46 pli
Softening Point	ASTM E 28	162°F	216°F
Lap Shear	DIN 30 672M	87 psi	58 psi
Tensile Strength	ASTM D 638	2,900 psi	3,480 psi
Hardness	ASTM D 2240	46 Shore D	52 Shore D
Water Absorption	ASTM D 570	Less than 0.05%	Less than 0.05%
Color		Yellow	Black
Minimum Recovery	Heat Recovery Test	33%	23%

61. SYSTEM PRESSURE TEST REQUIREMENTS.

- (a) General. For each family of post-tensioning systems, a pressure test shall be performed on an assembled system as defined herein. For each family of post-tensioning systems two assemblies shall be tested (largest and smallest) from the family. The post-tensioning assembly shall include at least one of each component required to make a tendon from grout cap to grout cap. If applicable, plastic duct to steel pipe connections and segment duct couplers shall be included.
- (b) Grouting Component Assembly Pressure Test. The anchorage and grout cap shall be assembled with all required grouting attachments (grout tube, valves, plugs, etc.). The opening in the anchorage where the duct connects shall be sealed. Condition the assembly by maintaining a pressure of 150 psi in the system for 3 hours. After conditioning, the assembly must sustain a 150 psi internal pressure for 5 minutes with no more than 15 psi reduction in pressure. For systems using the same anchorages, grout caps, and grouting attachments as a previously approved system, the Grouting Component Assembly Pressure Test may include documentation from a previous submittal with written certification that the same components are being utilized in both anchorages.

- (c) Internal Duct Systems. The assembly shall be tested for compliance with the requirements of Chapter 4, Article 4.2, Stage 1 and Stage 2 Testing contained in FIB Technical Report, Bulletin 7, titled "Corrugated Plastic Duct for Internal Bonded Post-tensioning". For bar systems modify the system test length to 15 feet.
- (d) Acceptability from Previous Tests. To satisfy the intent of the above tests, results from previous projects utilizing identical ducts and similar concrete may be submitted to the Agency in lieu of executing new tests. However, if the previous results are unacceptable or if there is a significant difference in the materials used, then the Contractor shall provide results from new tests for this project.

62. SAMPLING AND TESTING OF PRESTRESSING ELEMENTS. All testing shall be done in accordance with ASTM Specifications.

The following samples of materials, devices, and test certifications as designated by the Agency shall be furnished at no cost to the Agency.

- (a) Three randomly selected samples, each five feet long, of post-tensioning bar, per manufacturer, per size of bar, per heat of steel, with a minimum of one sample per shipment.
- (b) If bar couplers are to be used, three samples with two specimens each consisting of four foot lengths of the specific prestressing bar coupled with a bar coupler from the materials to be used on the project.
- (c) For each type of duct material intended for the project, one sample, four feet long, from each production lot or per 10,000 linear feet, whichever is greater.

With each sample of prestressing steel strand or bar furnished for testing, a certification shall be submitted to the Contractor stating the manufacturer's minimum guaranteed ultimate tensile strength for that sample.

The Agency reserves the right to reject any material or device which is determined to be defective or was damaged subsequent to testing.

63. LOTS AND IDENTIFICATION (CONTRACTOR'S QUALITY CONTROL). A "Lot" is that parcel of components as described herein. The manufacturer of prestressing steel and bar couplers shall assign an individual number to each Lot of strand, wire, bar, or devices at the time of manufacture. All bars of each size and mill heat of steel shipped to the project shall be identified by tag or other acceptable means as to Manufacturer's Lot number. The Contractor shall be responsible for establishing and maintaining a procedure by which all prestressing materials and devices can be continuously identified with the manufacturer's Lot number. Items which at any time cannot be positively identified as to Lot number shall not be incorporated into the work.

The Contractor shall furnish manufacturer's certified reports covering the tests required by this Special Provision. A certified test report stating the guaranteed minimum ultimate tensile, yield strength, elongation, and composition shall be furnished for each lot of prestressing steel. When requested, typical stress-strain curves for prestressing steel shall be furnished. A certified test report stating strength when tested using the type prestressing steel to be used in the work shall be furnished for each Lot of prestress anchorage devices.

64. TESTING OF PRESTRESSING TENDONS BY THE CONTRACTOR.

- (a) General. The Contractor shall perform certain testing of prestressing tendons as specified herein. Re-evaluate the theoretical elongations shown on the Fabrication Drawings using the results of the tests as appropriate and correct as necessary. Submit revisions to the theoretical elongations to the Agency for approval.
- (b) Tendon Modulus of Elasticity Test. One tendon modulus of elasticity test shall be performed in accordance with the following procedure.

For the purpose of accurately determining the tendon elongations while stressing, two samples of each size of tendon shall be bench tested to determine the modulus of elasticity prior to stressing the initial tendon.

For the purpose of this test, the bench length between anchorages must be at least 40 feet and the tendon duct at least 2 inches clear of the tendon all around. The test procedure must consist of stressing the tendon at an anchor assembly with a load cell at the dead end. The test specimen shall be tensioned to 80% of ultimate in ten increments and then de-tensioned from 80% of ultimate to zero in ten decrements. For each increment and decrement, the gauge pressure, elongations, and load cell force shall be recorded. Elongations shall be noted at both ends and the central 30 feet, measured to an accuracy of  $\pm 1/32$  inch. Elongations shall be corrected for wedge set at the dead end.

The modulus is calculated as follows:

$$E = \frac{P \times L}{A \times d_L}$$

Where;

P = force in tendon;

L = distance between pulling wedges and dead end wedges or exact length in center 30 feet of the tendon;

A = cross sectional area of the tendon based nominal area;

$d_L$  = strand elongation for load P.

If the bench test result varies from the modulus of elasticity used for the Fabrication or Working Drawings by more than 1%, adjustments shall be made to theoretical elongations.

If the source of prestressing steel changes during the project, additional test series or substantiation from previous projects, not to exceed one per source, will be required.

The apparatus and methods used to perform the test must be submitted to the Agency for approval. Tests must be conducted in the Agency's presence.

A test report entitled "Tendon Modulus of Elasticity Test" shall be prepared prior to installing the tendons.

To satisfy the intent of this test, results for modulus of elasticity from a previous project utilizing prestressing steel of the same grade, size, and from the same source may be used in lieu of new testing. If the previous results demonstrate a significant difference in the strands used, submit results from new tests for this project. If observed elongations of the tendons in the erected structure fall outside of the acceptable tolerances, tendon modulus of elasticity tests shall be performed as directed by the Agency.

65. GROUT MATERIALS AND PROPERTIES.

- (a) General. Grout for tendons shall consist of Portland cement and mineral admixtures for partial cement replacement, other specified or approved admixtures which impart low water content, flow, fluidity, minimum bleeding, non-shrink and, when necessary, set retarding properties to the grout. Grout shall have enhanced corrosion-resisting properties, such as increased resistance to chloride penetration. There shall be no deliberate addition of materials containing chlorides. Grout shall be mixed using potable water.

Only commercial, pre-packaged, cement-based, enhanced grout mixtures, meeting the requirements of this Special Provision, shall be used subject to approval by the Agency. Grout shall be stored in a location that is both dry and convenient to the work. Storage in the open must be on a raised platform and with adequate waterproof covering to protect the material. On-site storage of grout is limited to a maximum period of one month.

Post-tensioning grout shall be formulated for proper use in either horizontal, vertical, or repair applications. Grout fluidity shall be strictly maintained by production grouting flow-cone testing.

The following products are approved for grouting of vertical and horizontal tendons:

Euco Cable Grout PTX

Euclid Chemical  
19218 Redwood Road  
Cleveland, OH 44110  
(800) 321-7628

Masterflow 1341

BASF C C Building Systems  
889 Valley Park Drive  
Shakopee, MN 55379  
(813) 240-6400

Sikagrout 300 PT

Sika Corporation  
12414 Lobelia Terrace  
Bradenton, FL 34202  
(941) 713-1376

(b) Characteristics of Prepackaged Grouts.

(1) Cement. Portland cement shall conform to requirements of AASHTO C 150 Type I or Type II. The cement shall be fresh and not contain lumps or other indication of hydration or "pack set". The Contractor shall furnish, for each shipment of cement, a manufacturer's report stating results of tests made on samples of the material taken during production or transfer and certifying compliance with the applicable requirements of AASHTO C 150.

(2) Cement Replacement in Prepackaged Grouts. The following cementitious materials may be used for cement replacement in order to enhance the corrosion resisting and durability characteristics of grout used for aggressive environments:

Silica Fume: 0 to 15% replacement by weight of Portland cement.

Fly-Ash (Class C): 0 to 30% replacement by weight of Portland cement.

Slag: 0 to 55% replacement by weight of Portland cement.

The water content shall be calculated for the total weight of cementitious material (cement plus replacement material) and expressed as water/cementitious ratio.

- (3) Water. Water shall be potable, clean, and free of injurious quantities or substances (chlorides, sulfides, sulfates and nitrates) known to be harmful to Portland cement or prestressing steel. Water shall have chloride, sulfide, sulfate, and nitrate contents not greater than 500, 100, 650, and 13 ppm respectively.

Water used for grouting tendons shall be tested for the chemicals noted above at regular intervals not to exceed 120 days. Water shall be tested at the location where the water is placed into containers for the project. If the water is stored in containers which might contaminate it (e.g. unlined metal tanks), then the Agency can request that tests be performed on water coming from the storage tanks. The Contractor shall provide the Agency with copies of test reports for the stored water.

- (4) Admixtures. Admixtures shall consist of chemicals that impart the following properties when incorporated into the grout mixture. These properties are low water content, good flow, fluidity, minimum bleeding (sedimentation of cement), expansion or non-shrink and, when necessary, increase in setting time. Any admixture containing chlorides, sulphites, fluorides, or nitrates shall not be used in the grout. The date of manufacture and shelf life shall be clearly stamped on each container. No admixture shall be used for which the shelf life recommended by the manufacturer has expired.
- (5) Non-Shrink Properties and Expansion Agents. Grout shall have non-shrink properties. However, gas evolving expansion agents and/or additives containing free aluminum or other components which produce hydrogen, carbon dioxide, or oxygen gas shall not be used.
- (6) Corrosion Inhibitors. Corrosion inhibiting chemical admixtures shall not be used.
- (7) Chloride Ion Content. All constituent materials shall be such that the acid-soluble chloride ion content of the grout shall not exceed 0.08% by weight of Portland cement as measured by ASTM C 1152 "Standard Test Method for Acid-Soluble Chloride in Mortar and Concrete."

- (c) Required Physical Properties of Grout. Prepackaged grout shall meet or exceed the physical properties listed in Table 1 when mixed, prepared, and tested at a normal temperature of 65°F to 78°F in a laboratory approved by the Agency.

Prepackaged grout shall be tested in accordance with the requirements of Table 1. Prior to beginning grouting operations, the Contractor shall furnish the Agency with a report detailing the results of all laboratory testing, including the types and number of tests performed, test procedures, results, and comparison of results with specified values.

To satisfy the intent of the tests outlined in this Section, results from previous projects utilizing identical grouts may be submitted in lieu of executing new tests; or the prepackaged grout that has previously met the requirements of this Specification as independently certified by a laboratory approved by the Agency. However, if the previous results are unacceptable or if there is a significant difference in the materials used, then results from new tests for this project shall be submitted.

Table 1 - Physical Property Requirements for Prepackaged Grout

Physical Property	Requirement	Test Method
Water-Cementitious Material Ratio	Maximum 0.45	n/a
Grout Cube Strength	Min. 3,000 psi at 7 days Min. 5,000 psi at 28 days	ASTM C 942
Total Chloride Ions	Maximum 0.08% by weight of cementitious material	ASTM C 1152
Fine Aggregate (if utilized)	99% passing the No. 50 Sieve (300 micron)	ASTM C 136*
Volume Change @ 24 hours 28 days	0.0% to + 0.1% 0.0% to + 0.2%	ASTM C 1090**
Expansion	≤ 2.0% for up to 3 hours	ASTM C 940
Wet Density - Laboratory	Report maximum and minimum obtained test value lb/ft <sup>3</sup>	ASTM C 185
Wet Density - Field	Report maximum and minimum obtained test value lb/ft <sup>3</sup>	ASTM C 138
Compressive Strength 28 day (Average of 3 cubes)	≥7,000 psi	ASTM C 942
Initial Set of Grout	Minimum 3 hours Maximum 12 hours	ASTM C 953
Fluidity Test*** Efflux Time from Flow Cone:  Immediately after mixing	Minimum 20 Seconds Maximum 30 Seconds Or Minimum 9 Seconds Maximum 20 Seconds	ASTM C 939  ASTM C 939****
Fluidity Test*** Efflux Time from Flow Cone:  30 minutes after mixing with remixing for 30 sec	Maximum 30 Seconds Or Maximum 30 Seconds	ASTM C 939  ASTM C 939****
Bleed @ 3 hours	Maximum 0.0 percent	ASTM C 940*****
Permeability @ 28 days	Maximum 2500 coulombs at 30 V for 6 hours	ASTM C 1202*****

\*ASTM C 117 procedure shall be modified to use a #50 sieve. The percent passing the #50 sieve after washing the sieve shall be determined.

\*\*ASTM C 1090 shall be modified to include verification at both 24 hours and 28 days.

\*\*\*Adjustments to flow rates shall be achieved by strict compliance with the manufacturer's recommendations. The time of efflux is the time to fill a one liter container placed directly under the flow cone.

\*\*\*\*Grout fluidity shall meet either the standard ASTM C 939 flow cone test or the modified test, as follows. The ASTM C 939 flow cone test shall be modified by filling the cone to the top instead of to the standard level. The efflux time shall be the time to fill a one liter container placed directly under the flow cone.

\*\*\*\*\*ASTM C 940 shall be modified to conform with the wick induced bleed test as follows:

- (1) The wick shall be a 20 inch length of ASTM A 416 seven wire 0.5 inch diameter strand. The strand shall be degreased with acetone or hexane solvent and a wire brush to remove any surface rust on the strand before temperature conditioning. The strand shall be wrapped with 2 inch wide duct or electrical tape at each end prior to cutting to avoid splaying of the wires when it is cut.
- (2) All the dry ingredients, mixing water, prestressing strand, and test apparatus shall be conditioned overnight at 65 to 75°F.
- (3) The conditioned dry ingredients shall be mixed with conditioned mixing water and 800 ml of the resulting grout placed into a 1,000 ml graduate cylinder. The level of the top of the grout shall be recorded.
- (4) The strand shall be inserted into the graduated cylinder, centered, and fastened so it remains essentially parallel to the vertical axis of the cylinder. The level of the top of the grout shall be recorded.
- (5) The mixed specimen shall be stored at the temperature range specified in part (b) above.
- (6) The level of the bleed water shall be measured every 15 minutes for the first hour and hourly for two successive readings thereafter.
- (7) The amount of bleed water, if any, shall be calculated at the end of the three hour test period and the resulting expansion per the procedures outlined in ASTM C 940, with the quantity of bleed water expressed as a percent of the initial grout volume. Note if the bleed water remains above or below the top of the original grout height. Note if any bleed water is absorbed into the specimen during the test.

\*\*\*\*\*When evaluating grouts, the ASTM C 1202 procedure shall be modified to perform the test at 30 volts rather than 60 volts. Testing shall be performed on grout samples at 28 days of age. For grouts containing pozzolanic mineral admixtures, testing may be performed on grout samples at 90 days of age.

- (d) Accelerated Corrosion Test Method (ACTM). An accelerated corrosion test shall be performed as outlined in Appendix B of the "Specification for Grouting of Post-Tensioning Structures" published by the Post-Tensioning Institute. The time to corrosion for both the grout being tested and the control sample using a 0.45 water-cement ratio neat grout shall be reported. A grout that shows a longer average time to corrosion in the ACTM than the control sample and the time to corrosion exceed 1,000 hours is considered satisfactory.
- (e) Schupack Pressure Bleed Test. The Schupack pressure bleed test shall be performed as per ASTM C 1741. Acceptable bleed values are shown in Table 4.1(b) of the "Specification for Grouting of Post-Tensioning Structures" published by the Post-Tensioning Institute.
- (f) Repair Applications. Repair applications are used to augment grouting operations which did not completely fill the duct or anchorage. Repairs may be made with the same grout approved for use in the tendons as long as the volume of the void is less than 0.5 gal. In all other cases, a non-sanded grout meeting the requirements of the Required Physical Properties of Grout Section with a modified maximum permeability of 2,800 coulombs (ASTM C 1202 at 30 volts) shall be used. Non-sanded grouts shall have 95% passing on the #100 sieve and 90% passing the #170 sieve as determined by ASTM C 33. Each sieve may be washed and dried before weighing in accordance with the procedure in ASTM C 117 modified for sieve size.
- (g) Acceptance by Previous Tests. To satisfy the intent of the tests outlined in the Grout Materials and Properties Section, results from previous projects utilizing identical grouts may be submitted to the Agency in lieu of executing new tests. However, if the previous results are unacceptable or if there is a significant difference in the materials used, then the Contractor shall provide results from new tests for this project. Also, for pre-packaged grouts, the Agency may waive the requirements for these particular tests based upon satisfactory prior performance of the proposed grout material, mixing, and installation methods.
66. GROUT SUPPLY QUALITY CONTROL. The Contractor shall provide to the Agency a copy of grout quality control data sheets from the Manufacturer for each lot number and shipment of grout material supplied to the site. Material with a total time from manufacture in excess of six months must be retested and certified by the supplier before use or be removed from the project and be replaced by approved materials. A lot is that parcel of material making up a particular shipment.

67. EPOXY GROUT FOR ANCHORAGE POUR-BACKS. Pour-backs protecting post-tensioning anchorages shall be as specified herein.

The following products are approved for grouting anchorage pour-backs:

E3HP Epoxy Grout	Euclid Chemical 19218 Redwood Road Cleveland, OH 44110 (800) 321-7628
Sikadur 42 Grout Pak PT	Sika Corporation 12414 Lobelia Terrace Bradenton, FL 34202 (941) 713-1376
Masterflow 648 CP Plus (for use with standard aggregate load ration only)	BASF C C Building Systems 889 Valley Park Drive Shakopee, MN 55379 (813) 240-6400
Magmaflow Grout-Pak	Pilgrim Permacoat Inc 402 S. 22 <sup>nd</sup> Street Tampa, FL 33605 (800) 637-3328
E-Bond 420 Grout System	E-Bond Epoxies Inc. 501 N E 33 <sup>rd</sup> Street Fort Lauderdale, FL 33307 (954) 566-6555

- (a) The material shall produce a low exothermic reaction and have flow and fill characteristics suitable for machine base plate applications. The material will be extended with the aggregate supplied by the manufacturer. Mix with the full aggregate loading unless the use of less aggregate is approved by the Agency.
- (b) The material shall be factory pre-proportioned including factory supplied aggregate. Deliver products in original containers with manufacturer's name, date of manufacture, product identification label, and batch numbers. Materials shall be within the manufacturer's recommended shelf life. Store and condition the product in full compliance with manufacturer's recommendations.

- (c) The epoxy grout plus aggregate mix shall meet or exceed the specified physical properties stated herein as determined by the following standard ASTM test methods.

Property	Test Value	Test Method
Compressive Strength, Cubes (7 day cure at 77°F)	> 10,000 psi	ASTM C 579B
Tensile Strength at 7 days	> 2,100 psi	ASTM C 307
Flexural Strength (7 day cure at 77°F)	> 3,600 psi	ASTM C 580
Modulus of Elasticity (7day cure at 77°F)	< 2,100,000 psi	ASTM C 580
Coefficient of Thermal Expansion at 74 to 210° F	< 20 x 10 <sup>-6</sup> in/in/°F	ASTM C 531
Peak Exotherm, Specimen, 12 x 12 x 3 in.	< 150°F	ASTM D 2471
Slant Shear at 7 days (Bond Strength to Concrete)	> 3,000 psi	ASTM C 882
Thermal Compatibility	5 Cycles Passed	ASTM C 884
Linear Shrinkage at 7 days	0.025%	ASTM C 531
Flowability and Bearing Area	90% Contact area	ASTM C 1339
Gel Time, Specimen 12 x 12 x 3 in.	< 4:00 (hr.)	ASTM D 2471

68. ELASTOMERIC COATING SYSTEM. Not used.

69. PROTECTION OF PRESTRESSING STEEL.

- (a) Before Installation of Tendons in Ducts. All prestressing steel shall be protected against physical damage at all times from manufacture to grouting or encasing in concrete. Prestressing steel that has sustained physical damage at any time shall be rejected. Any reel that is found to contain broken wires shall be rejected and the reel replaced. The wire must be bright and uniformly colored, having no foreign matter or pitting on its surface.

Prestressing steel shall be packaged in containers for protection of the steel against physical damage and corrosion during shipping and storage. A corrosion inhibitor, which prevents rust or other results of corrosion, shall be placed in the package or form, or shall be incorporated in a corrosion inhibitor carrier type packaging material. The corrosion inhibitor shall have no deleterious effect on the steel or concrete or bond strength of steel to concrete. Inhibitor carrier type packaging material shall conform to the provisions of Federal Specifications MIL-P-3420. Packaging or forms damaged from any cause shall be immediately replaced or restored to original condition.

The prestressing steel shall be stored in a manner which will at all times prevent the packing material from becoming saturated with water and allow a free flow of air around the packages. If the useful life of the corrosion inhibitor in the package expires, it shall immediately be rejuvenated or replaced.

At the time the prestressing steel is installed in the work, it shall be free from loose rust, loose mill scale, dirt, paint, oil, grease, or other deleterious material. Removal of tightly adhering rust or mill scale will not be required. Prestressing steel that has experienced rusting to the extent it exhibits pits visible to the naked eye shall not be used in the work.

The shipping package shall be clearly marked with the heat number and with a statement that the package contains high-strength prestressing steel and care is to be used in handling, and the type, kind, and amount of corrosion inhibitor used, including the date when placed, safety orders, and instructions for use shall also be marked on the package or form. Specifically designate low relaxation (stabilized) strands per requirements of ASTM A 416. Strands not so designated will be rejected.

- (b) After Installation of Tendons in Ducts. After installation in the ducts, prestressing steel shall be protected from corrosion and the duct system shall be sealed to prevent moisture intrusion from the time of tendon installation to the time of grouting. In addition, all grout vents shall be closed or plugged at all times during the period prior to grouting, except that low-point drainage vents shall remain open and point downward.

Grouting shall proceed as soon as possible after installation and stressing of the tendons. To minimize the adverse effects, the time from installing the tendons in an unstressed condition to grouting after stressing shall not exceed the following periods without approval of the Agency:

Very damp atmosphere (RH > 70%) or over salt water - 7  
calendar days

Moderate to dry atmosphere (40% < RH < 70%) -20 calendar  
days

Very dry atmosphere (RH < 40%) - 40 calendar days

In this context, the "RH" is the average annual relative humidity for the site. For this project, the maximum time shall be 20 calendar days.

Any light surface discoloration or corrosion forming during this period shall not be cause for rejection of the prestressing steel.

Flushing of grout is not permitted and vacuum grouting is required to repair all voids and blockages. Flushing of ducts is only permitted if a lubricant is required to reduce the friction. When flushing is permitted by the Agency, use flush water containing slack lime (calcium hydroxide) or quicklime (calcium oxide) in the amount of 0.17 lb/gal.

Except when waived by the Agency in writing, failure to grout tendons within the time limit specified above will result in stoppage of the affected work as directed by the Agency.

- (c) Tendon Protection Between Installation and Stressing. Measures shall be taken to protect the prestressing steel when there is a period of more than 24 hours between installation of the tendons in ducts and stressing. Bare strand projecting out of an anchorage shall be wrapped in continuous plastic sheeting and sealed using waterproof tape extending from the tendon anchorage, and the anchorage opening shall be sealed with plastic and waterproof tape in a sufficient manner to prevent moisture intrusion. All grout vents shall be closed or plugged, all duct connections shall be sealed, and drainage vents shall be open, pointing downward.
- (d) Use of Temporary Corrosion Inhibitors. The use of temporary corrosion inhibitors will not be permitted for this project.

70. INSTALLATION OF DUCTS, GROUT INJECTION PORTS, AND OUTLET VENTS.

- (a) General. All post-tensioning anchorages, ducts, inlet and outlet pipes, miscellaneous hardware, reinforcing bars, and other embedded items shall be accurately and securely fastened, at locations shown on the Plans or on the approved Fabrication Drawings, or as otherwise approved by the Agency. Ducts for tendons shall be made using the minimum number of duct splices possible.
- (b) Tolerances. In their final position post-tensioning ducts shall be within the following tolerances:

Table of Duct Position Tolerances		
Tolerances	Vertical Position (Inches)	Lateral Position (Inches)
Horizontal tendons in slabs or in slab regions of larger members	±1/4	± 1/2
Longitudinal draped super-structure tendons in webs: Tendon over supports or in middle third of span	±1/4	±1/4
Tendon in middle half of web depth	±1/2	±1/4
Longitudinal, generally horizontal, superstructure tendons usually in top or bottom of member	±1/4	±1/4
Horizontal tendons in substructures and foundations	± 1/2	± 1/2
Vertical tendons in webs	Longitudinal position ±1	Transverse position ±1/4
Vertical tendons in pier shafts	±1/2	±1/4

In all other cases, tendons shall not be out of position by more than  $\pm 1/4$  inch in any direction.

Entrance and exit angles of tendon paths at anchorages and/or at faces of concrete shall be within  $\pm 3$  degrees [ $\pm 5\%$ ] of desired angle measured in any direction and any deviations in the alignment shall be accomplished with smooth transitions without any kinks.

Angle changes at duct joints must not be greater than  $\pm 3$  degrees [ $\pm 5\%$ ] in any direction and must be accomplished with smooth transitions without any kinks.

Anchorage shall be located within  $\pm 1/4$  inch of desired position laterally and  $\pm 1$  inch along the tendon except that minimum cover requirements must be maintained.

Anchorage confinement reinforcement in the form of spirals, multiple U shaped bars, or links shall be properly centered around the duct and start within  $1/2$  inch of the back of the main anchor plate.

If conflicts exist between the reinforcement and post-tensioning duct, the position of the post-tensioning duct shall prevail and the reinforcement shall be adjusted locally with the Agency's approval.

- (c) Ducts. Ducts shall be accurately aligned and located as shown on the Plans or according to the approved Fabrication Drawings and as required herein. All internal ducts shall be secured in position at regular intervals not exceeding 30 inches for steel pipes, 24 inches for round plastic duct, and 12 inches for flat ducts to prevent movement, displacement, or damage from concrete placement and consolidation operations. Any additional mild reinforcing or other devices required to support post-tensioning ducts shall be supplied by the Contractor at no additional expense to the Agency.

For external tendons, ducts shall be straight between connections to internal pipes at anchorages, diaphragms, and deviation saddles and shall be supported at intermediate locations, as required, according to the Plans or approved Fabrication Drawings.

All duct alignments, including curves and straight portions, shall be smooth and continuous with no lips, kinks, or dents. This also applies to curves in pre-bent steel pipe.

All ducts shall be carefully checked and repaired as necessary before placing any concrete.

After installation of ducts, until grouting is complete, all ends of ducts, connections to anchorages, splices, and vents (inlets and outlets) shall remain sealed at all times. An absolute seal shall be provided of anchorage and duct termination locations by using plumber's plugs or equal. Grout vents (inlets and outlets) shall be installed with plugs or valves in the closed position. Low point drainage outlets shall be left open. The use of duct tape shall not be permitted. Ducts shall be carefully inspected and repaired before placing of the concrete is started. Care shall be exercised during placement of the concrete to avoid displacing or damaging the ducts.

All splices, joints, couplings, vent connections (inlets and outlets), and valves shall be part of the approved post-tensioning system. Approved shrink-sleeve material may be used to repair duct. The use of duct tape to repair or seal duct shall not be permitted.

- (d) Grout Vents (Inlets and Outlets) and Drains. Grout pipes shall be installed on each duct to serve as injection or evacuation vents during grouting and to allow the escape of air, water, grout, and bleed water. Drainage vents, point downward, shall be provided at low points of tendon profile to allow any accumulated moisture to be drained prior to installing tendons.

The length of an inlet or outlet shall be sufficient to extend out of the concrete to allow for proper closing. At all high points the outlet shall connect at the uppermost part of the duct profile.

Inlets and outlets shall be placed at locations shown on the Plans, on the approved Fabrication Drawings, and/or the approved Grouting Operation Plan (below). Locations shall be as follows:

- (1) At the top of each tendon anchorage.
- (2) At top of each grout cap.
- (3) At each high point of the duct profile when the vertical distance between the highest and lowest point is more than 20 inches.
- (4) At all low points. The vent (outlet) shall be free draining.
- (5) At major changes in the cross-section of the duct.
- (6) At each side of post-tensioning bar-couplers.
- (7) At a distance of approximately 3 ft. from each high point in the direction of grout flow.
- (8) For external tendons, provide vents as close to the inside face of the diaphragm as practical, located on the top of the duct.
- (9) At other locations required by the Agency.

Grout pipes shall extend a sufficient distance out of the concrete member to allow for proper closing of valves.

- (e) Care and Protection of Ducts, Vents, Anchorages, and Blockouts. Care shall be taken to ensure that all ducts, anchorages, blockouts, openings, and vents are kept clean and free of debris, fuel, oils, other contaminants, and site trash at all times prior to and after installing the tendons. Temporary plugs, seals, and covers shall be used. Minor damage to ducts may be repaired by removing the local damage and splicing duct or couplers onto the intact section (prior to the placing of concrete). Repair of major duct damage requires the removal and replacement of the entire duct section.

Connections from grout hose to inlet and ejection ports and to vents shall be kept free from dirt and be airtight.

- (f) Placing Concrete. Methods used to place and consolidate concrete shall not displace or damage any of the post-tensioning ducts, anchorage assemblies, splices and connections, reinforcement, or other embedded items. Duct splices shall be made so as to prevent duct kinks during concrete placement. Suitable mandrels shall be used as needed to maintain duct alignment and shape.
- (g) Proving of Post-Tensioning Ducts after Placing Concrete. Upon completion of concrete placement, longitudinal post-tensioning ducts shall be proven to be free and clear of any obstructions or damage and able to accept the intended post-tensioning tendons by passing a torpedo through the ducts. The torpedo shall have the same cross-sectional shape as the duct and be 1/4 inch smaller all around than the clear, nominal inside dimensions of the duct. No deductions shall be made to the torpedo section dimensions for tolerances allowed in the manufacture or fixing of the ducts. For straight ducts, the torpedo shall be at least 2 feet long. For curved ducts, the torpedo length shall be determined so that when both ends touch the outermost wall of the duct, the torpedo is 1/4 inch clear of the innermost wall. If the torpedo will not travel completely through the duct, the Agency may reject the member, unless a workable repair is made to clear the duct. The torpedo must pass through the duct easily, by hand, without resorting to excessive effort or mechanical assistance.
- (h) Problems and Remedies. The Agency will reject ducts or any part of the work found to be deficient. No remedial or repair work shall be performed without the Agency's approval.
- (i) Installing Tendons. If a tendon duct has been contaminated with chlorides, it shall be thoroughly flushed using lime treated potable water before placing the prestressing strands. The last two gallons of flushing water shall be tested for presence of chlorides and oils. Chlorides in the water must be less than 600 ppm. If chloride levels exceed 600 ppm, flushing shall continue until the chloride level is below 250 ppm. Oil-free compressed air shall then be blown through the duct to remove any excess water.

All bars shall be cut using an abrasive saw or an approved plasma cutter. Flame cutting is not allowed.

Permanent tendons shall not be installed before the completion of testing as required by this Special Provision or the Plans.

71. POST-TENSIONING OPERATIONS.(a) General.

- (1) Concrete Strength. Post-tensioning shall only be applied when the concrete has attained the required compressive strength, as noted on the Plans, and as determined from test cylinders cured under the same conditions as the structural concrete.
- (2) Stressing Tendons. All post-tensioning steel shall be tensioned with hydraulic jacks so that the post-tensioning force is not less than that required by the Plans or approved Fabrication Drawings, or as otherwise approved by the Agency. Monostrand jacks shall not be used to stress tendons with five or more strands.
- (3) Maximum Stress at Jacking. The maximum temporary stress (jacking stress) in post-tensioning steel shall not exceed 80% of the specific minimum ultimate tensile strength. Tendons shall not be overstressed to achieve elongation.
- (4) Initial and Permanent Stress. The post-tensioning steel must be anchored at initial stresses that will result in the long term retention of permanent stresses or forces of no less than those shown on the Plans or the approved Fabrication Drawings. Unless otherwise approved by the Agency, the initial stress after anchor set must not exceed 70% of the specified ultimate tensile strength of the post-tensioning steel.

Permanent stress and permanent force are the stress and force remaining in the post-tensioning steel after all losses, including long term creep and shrinkage of concrete, elastic shortening of concrete, relaxation of steel, losses in the post-tensioning steel from the sequence of stressing, friction and unintentional wobble of the ducts, anchor set, friction in the anchorages, and all other losses peculiar to the post-tensioning system.

- (5) Stressing Sequence. Except as noted on the Plans, approved Fabrication Drawings, or Erection or Post-Tensioning Manual, the permanent post-tensioning tendons shall be stressed from one end.

For construction in stages where some tendons are required to be stressed before others, install and stress tendons in accordance with the Plans or approved Fabrication Drawings or as otherwise approved by the Agency.

- (b) Stressing Jacks. When stressing tendons, only use equipment furnished by the supplier of the post-tensioning system (tendons, hardware, anchorages, etc.)
- (1) Stressing Equipment. Each jack shall be equipped with a pressure gauge having an accurate reading dial at least six inches in diameter for determining the jack pressure.
  - (2) Calibration. Prior to use for stressing on the project, each jack and its gauge shall be calibrated as a unit. Initial jack calibration shall be done, using a proven load cell, by the post-tensioning supplier or by an independent testing laboratory, approved by the Agency. The calibration shall consist of three test cycles with the cylinder extension of the jack in various positions (i.e. 2 inch, 4 inch, 8 inch stroke). At each pressure increment, the forces from each test cycle shall be averaged to obtain an average force. Calibration shall be done with the cylinder extension approximately in the position that it will be when applying the final jacking force and with the jacking assembly (jack, pump, hoses, etc.) set up in an identical configuration to that which will be used at the job site (i.e. same length hydraulic lines). Load cells used for calibration shall have been calibrated within the last 12 months. Certified calibration calculations and a calibration chart, both in English units of measure, shall be furnished to the Agency for each jack and gauge unit. Documentation denoting the load cell(s) calibration date and tractability to NIST (National Institute of Standards and Technology) along with the jack/gauge calibration shall be provided.

Recalibration of each jack shall be done at six month intervals and at other times when requested by the Agency. At the option of the Contractor, calibrations subsequent to the initial laboratory calibration may be accomplished by the use of a master gauge. The master gauge shall be calibrated at the same time as the initial calibration of the jacks, and shall be part of the unit for each jack. The data recorded during the initial calibrations shall be furnished to the Agency for use in the field. The master gauge shall be supplied by the Contractor in a protective waterproof container capable of protecting the calibration of the master gauge during shipment. The Contractor shall provide a quick-attach coupler next to the permanent gauge in the hydraulic lines which enables the quick and easy installation of the master gauge to verify the permanent gauge readings. The master gauge shall remain in the possession of the Agency for the duration of the project.

If a jack is repaired or modified, including replacing the seals or changing the length of the hydraulic lines, the jack shall be recalibrated by the approved testing laboratory. No extra compensation will be allowed for the initial or subsequent jack calibrations or for the use and required calibration of a master gauge.

- (c) Stressing of Tendons. The tensioning process shall be so conducted that tension being applied and the elongation of the post-tensioning steel may be measured at all times. A permanent record shall be kept of gauge pressures and elongations at all times and shall be submitted to the Agency. The post-tensioning force may be verified as deemed necessary by the Agency.

Do not overstress the tendons to achieve the theoretical elongation. Elongations shall be measured to the nearest 1/16 inch.

The anchor force for all permanent post-tensioning bars shall be verified with a lift-off after initial stressing operations. The resulting lift-off shall be within  $\pm 7\%$  of the expected final anchor force as specified in the Plans.

- (d) Friction. The Plans were prepared based on the assumed friction and wobble coefficients and anchor set noted on the Plans. Calculations shall be submitted to show a typical tendon force diagram, after friction, wobble and anchor set losses, on the Fabrication Drawings based upon the expected actual coefficients and values for the post-tensioning system used. These coefficients and values shall be shown on the Fabrication Drawings.

If, in the opinion of the Agency, the actual friction significantly varies from the expected friction, revise post-tensioning operations so the final tendon force is in agreement with the Plans.

- (e) Cutting of Post-Tensioning Steel. Post-tensioning steel shall be cut by an abrasive saw or an approved plasma-cutter within 3/4 to 1-1/2 inches away from the anchoring device. Flame cutting of prestressing steel is not allowed.
- (f) Record of Stressing Operations. The Contractor shall keep a record of the following post-tensioning operations for each tendon installed:

- (1) Project name, Project ID.
- (2) Contractor and/or subcontractor.
- (3) Tendon location, size and type.
- (4) Date tendon was first installed in ducts.
- (5) Reel number for strands and heat number for bars.
- (6) Tendon cross-sectional area.
- (7) Modulus of elasticity.
- (8) Date stressed.
- (9) Jack and Gauge numbers per end of tendon.
- (10) Required jacking force.
- (11) Gauge pressures.

- (12) Elongations (theoretical and actual).
- (13) Anchor sets (anticipated and actual).
- (14) Lift-Off Values.
- (15) Stressing sequence (i.e. tendons to be stressed before and after).
- (16) Stressing mode (one end/two ends/simultaneous).
- (17) Witnesses to stressing operation (Contractor and Agency).
- (18) Date grouted.

Any other relevant information shall be recorded. A complete copy of all stressing and grouting operations shall be provided to the Agency.

- (g) Cleaning and Flushing Tendons. Tendons shall not be flushed with water except as directed by the Agency.

If flushing is to be performed as directed by the Agency, the inside of the duct system shall be flushed with water (under pressure) to remove all traces of the contaminants. Following the flushing operation, water shall be totally drained from within the duct system and it shall be blown out with compressed oil-free air to the extent necessary to dry the prestressing steel and inside surfaces of the ducts. The waste fluid flushed from the duct system shall be captured and disposed of properly.

- (h) Tendon Protection. Within four hours after stressing, install grout caps and seal all other tendon openings. If acceptance of the tendon is delayed, all tendon openings and open ends of the anchorages shall be temporarily sealed. If tendon contamination occurs, the tendon shall be removed and replaced.
- (i) Re-Use of Temporary Post-Tensioning Bars. Post-tensioning bars used to apply temporary post-tensioning may be reused as temporary bars if they are undamaged and in accordance with the supplier's recommendations.

72. GROUTING.

- (a) General. After post-tensioning and anchoring of a tendon has been completed and accepted, the annular space between the prestressing steel and the duct shall be grouted in accordance with this Special Provision. Also grout all empty ducts. The interval between post-tensioning and grouting shall be limited as specified above. Immediately after post-tensioning, all grout vents, anchorages, and duct connections of each tendon shall be temporarily sealed to prevent entrance of air and water until just prior to tendon grouting.

At least six weeks before grouting commences, the Contractor shall submit to the Agency for review and approval a "Grouting Operation Plan". Written approval of the plan by the Agency is required before grouting proceeds. Any adjustments to the plan as a result of trials or mock-ups shall be incorporated. Grouting operations shall be under the supervision of a qualified and experienced person, acceptable to the Agency.

At a minimum the Grouting Operation Plan shall address the following:

- (1) Names and proof of training for the grouting crew and the crew supervisor in conformance with this specification.
- (2) Type, quantity, and brand of materials used in grouting including all certifications required.
- (3) Type of equipment furnished, including capacity in relation to demand and working condition, as well as back-up equipment and spare parts.
- (4) General grouting procedure.
- (5) Duct pressure test and repair procedures.
- (6) Method to be used to control the rate of flow within ducts.
- (7) Theoretical grout volume calculations.
- (8) Mixing and pumping procedures.
- (9) Direction of grouting.
- (10) Sequence of use of the inlets and outlet pipes.
- (11) Procedures for handling blockages.
- (12) Procedures for possible post grouting repair.
- (13) Contractor's QC forms that are to be signed daily by Grout Supervisor.

Before grouting operations commence, a joint meeting shall be held with the Contractor, Grouting Crew, and Agency to discuss and understand the grouting operation plan, required testing, and corrective procedures.

- (b) Supplies. Before grouting operations start, an adequate supply of water and compressed air for clearing and testing the ducts, mixing, and pumping the grout shall be provided. Where water is not supplied through the public water supply system, a water storage tank of sufficient capacity must be provided.

A sufficient supply of grout material shall be available to complete the planned grouting operation.

- (c) Equipment.

- (1) General. Grouting equipment shall consist of measuring devices for water, a high-speed shear colloidal mixer, a storage hopper (holding reservoir), and a pump with all the necessary connecting hoses, valves, and pressure gauge. Pumping equipment shall have sufficient capacity to ensure that the post-tensioning ducts to be grouted can be filled and vented without interruption at the required rate of injection in not more than 30 minutes.

An air compressor and hoses with sufficient output to perform the required functions shall be provided.

- (2) Mixer, Storage Hopper. A high speed shear colloidal mixer shall be provided capable of continuous mechanical mixing to produce a homogeneous and stable grout free of lumps and un-dispersed cement. The colloidal grout machinery will have a charging tank for blending and a holding tank. The blending tank must be equipped with a high shear colloidal mixer. The holding tank must be kept agitated and at least partially full at all times during the pumping operation to prevent air from being drawn into the post-tensioning duct.

Water shall be added during the initial mixing by use of a flow meter or calibrated water reservoir with a measuring accuracy equal to one percent of the total water volume.

- (3) Grout Pumping Equipment. Grout pumping equipment capable of continuous operation shall be provided which will include a system for circulating the grout when actual grouting is not in progress.

The equipment will be capable of maintaining pressure on completely grouted ducts and will be fitted with a valve that can be closed off without loss of pressure in the duct.

Grout pumps will be positive displacement type and will provide a continuous flow of grout and will be able to maintain a discharge pressure of at least 145 psi.

Pumps will have seals adequate to prevent oil, air, or other foreign substances entering the grout and to prevent loss of grout or water. The capacity will be such that an optimal rate of grouting can be achieved.

A pressure gauge having a full scale reading of no more than 300 psi will be placed at the duct inlet. If long hoses (in excess of 100 feet) are used, two gauges shall be provided, one at the pump and one at the inlet.

The diameter and rated pressure capacity of the grout hoses must be compatible with the pump output.

- (4) Vacuum Grouting Equipment. Vacuum grouting equipment and experienced operators shall be provided at the job site within 48 hours notice and shall consist of the following:

- a. Volumeter for the measurement of void volume.
- b. Vacuum pump with a minimum capacity of 10 cfm and equipped with a flow-meter capable of measuring amount of grout being injected.
- c. Manual colloidal mixers and/or dissolvers (manual high speed shear mixers), for voids less than 20 liters in volume.
- d. Standard colloidal mixers, for voids 20 liters and greater in volume.

Test shall be performed to confirm the accuracy of the volume-measuring component of the vacuum grouting equipment each day before using the vacuum grouting equipment. Either water or grout shall be used for testing standard testing devices with volumes of 0.5 gal and 6.5 gal and an accuracy of equal to or less than 4 oz. One test shall be performed with each device. The results must verify the accuracy of the void volume-measuring component of the vacuum grouting equipment within 1% of the test device volume and must verify the accuracy of the grout volume component of the vacuum grouting equipment within 5% of the test device volume. The Agency shall be present when any tests are performed.

- (5) Availability of Testing Equipment. Equipment for field-testing shall be available at the job site.
- (6) Stand-by Equipment. During grouting operations, a stand-by grout mixer and pump shall be provided.

- (d) Field Trial and Mockup Tests.

- (1) General. The Contractor shall perform field trial tests and field mockup tests at the same time using the same materials, personnel, and equipment used in production grouting. The Contractor shall submit to the Agency, at least 4 weeks before scheduled start of the field mockup tests, a detailed written plan covering test setup, materials, ducts, inlets, outlets, anchorages, prestressing element, grouting, and dissection procedures. The Agency shall be present when any tests are performed.

- (2) Field Trial Tests. The following tests shall be performed on the grout as described in Table 1 of this Specification:
- a. Strength test (ASTM C 942).
  - b. Volume change test (ASTM C 1090).
  - c. Pumpability and fluidity test (ASTM C 939 Modified).
  - d. Schupack pressure bleed test (ASTM C 1741).
- (3) Field Mockup Tests. The field mockup should follow the inclined tube test setup per EN 445, "Grout for Prestressing Tendons - Test Methods", American National Standards Institute. Not less than 3 days after grouting, the Contractor shall dissect the test specimen for a thorough examination of grout, prestressing steel, and the duct. Special attention shall be given to the examination of the tendon high points for bleed pockets, soft grout, segregation, or corrosion. A report describing the trial test (including any variations from the test plan) and its findings shall be submitted to the Agency for approval a maximum of 2 weeks after dissection. The report shall document all voids in the grout with respect to size, location, and any presence of free moisture or corrosion.
- (4) Test Acceptance. The Agency shall determine whether the results of the mockup test satisfy the acceptance requirements. Additional tests may be required by the Agency.
- (e) Grouting Operations.
- (1) General. Tendons shall be grouted in accordance with the procedures set forth in the approved grouting operation plan. All empty ducts shall also be grouted.
  - (2) Temperature Considerations. The maximum grout temperature must not exceed 90°F at the grout inlet. Chilled water and/or pre-cooling of the bagged material to maintain mixed grout temperature below the maximum allowed temperature shall be used. Grouting operations shall be prohibited when the temperature of the grout is below 45°F. Grouting operations shall be prohibited when the ambient temperature is below 40°F or is 40°F and falling. Grouting operations shall be prohibited if freezing temperatures are forecasted within the next two days and it is expected the concrete temperature surrounding the duct will fall below 40°F. When it is anticipated that the ambient temperature will fall below 32°F, ducts shall be kept free of water so as to avoid freeze damage to ducts.
  - (3) Mixing and Pumping. The grout shall be mixed with a metered amount of water to produce a uniformly blended, homogeneous grout. The mix shall be continuously agitated until grouting is complete.

- (4) Injecting Grout. All grout outlets shall be opened before starting the grouting operation. Tendons shall be grouted in accordance with the Grouting Operations Plan.

Unless approved otherwise by the Agency, grout shall be pumped at a rate of 16 feet to 50 feet of duct per minute. Normal grouting operations shall be conducted at a pressure range of 10 psi to 50 psi measured at the grout inlet; the maximum pumping pressure of 145 psi at the grout inlet for round ducts and 75 psi for flat ducts in deck slabs shall not be exceeded.

Grout pumping methods shall ensure complete filling of the ducts and complete encasement of the steel. Grout must flow from the first and subsequent outlets until any residual water or entrapped air has been removed prior to closing the outlet.

Grout shall be pumped through the duct and continuously discharged at the anchorage and grout cap outlets until all free water and air has been discharged and the consistency of the grout is equivalent to that of the grout being pumped into the inlet. The anchorage outlet shall be closed and a minimum of 2 gallons of grout shall be discharged from the grout cap into a clean receptacle. The grout cap outlet shall then be closed.

After all outlets have been bled and sealed, the grout pressure shall be raised to not less than 50 psi and not more than 75 psi and the inlet valve sealed. Wait two minutes to determine if any leaks exist. If leaks are present, they shall be fixed using methods approved by the Agency. The above process shall be repeated until no leaks are present. If no leaks are present, the pressure shall be reduced to  $50 \pm 10$  psi and a minimum of five minutes shall elapse for any entrapped air to flow to the high points. After the minimum five-minute period has expired, the pressure shall be raised as needed to discharge grout at each high point outlet to eliminate any entrapped air or water. The process shall be completed by locking-off at a pressure of 30 psi.

If the actual grouting pressure exceeds the maximum allowed, the inlet will be closed and the grout will be pumped at the next outlet, which has just been, or is ready to be, closed as long as a one-way flow is maintained. Grout will not be pumped into a succeeding outlet from which grout has not yet flowed. If this procedure is used, the outlet/inlet which is to be used for pumping will be fitted with a positive shut-off and pressure gage.

When complete grouting of the tendon cannot be achieved by the steps stated herein, the grouting operation shall stop. After waiting 48 hours, the tendon shall be filled with grout in accordance with the Post-Grouting Sealing of Grout Vents section.

All waste grout and liquids shall be captured and disposed of properly.

- (f) Grout Testing During Grouting Operations. Acceptance testing for grout physical properties shall be performed during grouting operations.

The following minimum number of production tests shall be carried out in the field in accordance with Table 1 in the Required Physical Properties of Grout Section:

- (1) One pressure bleeding test per day (ASTM C 940). The sample shall be taken at the mixer.
- (2) Two wet density tests per day or when there is a visual or apparent change in the characteristics of the grout at the mixer and one at the duct outlet (ASTM C 138).
- (3) One strength test per day (ASTM C 942).
- (4) Two fluidity test (flow cone) - one at the mixer and one at the duct outlet (ASTM C 939 Modified), repeat testing every 2 hours of grouting operations. The efflux time shall be within 5 seconds of the values established during laboratory testing.

Grout materials shall be conditioned as required to limit the grout temperature at the inlet end of the grout hose to 90°F. Prior to performing repair grouting operations, grout materials shall be conditioned as required to limit the grout temperature at the inlet end of the grout hose to 85°F. The temperature of the grout at the inlet end of the grout hose shall be checked hourly.

- (g) Construction Traffic and Operations Causing Vibrations. During grouting and for a period of 4 hours upon completion of grouting, eliminate vibrations from all sources such as moving vehicles, jackhammers, compressors, generators, pile driving operations, soil compaction, etc., that are operating within 300 feet down-station and 300 feet up-station of the ends of the span in which grouting is taking place.
- (h) Post-Grouting Inspection. Unless grout caps are determined to have voids by sounding, caps shall not be drilled. Drilling equipment shall automatically shut-off when steel is encountered. Inspection shall be performed in the presence of the Agency. Within 48 hours of completion of the inspections, all voids shall be filled using the vacuum injection grouting process.

If tendon grouting operations were prematurely terminated prior to completely filling the tendon, then the duct shall be drilled into and voided areas explored with an endoscope. Probing shall not be allowed. The location and extent of all voided areas shall be determined. Grout inlets shall be installed as needed and the voids filled using volumetric measuring vacuum grouting equipment.

- (i) Post-Grouting Sealing of Grout Vents. Shut off valves shall not be opened at injection or evacuation vent pipes, nor shall pipes or caps be removed until the grout has set and inspection of vents has been accepted.

Intermediate grout vent pipes (inlets and outlets) along an internal tendon (including rigid steel pipes in diaphragms) shall be installed straight to facilitate possible drilling and inspection for complete grout filling using, if necessary, an endoscope. Place threaded plastic caps in all inlet/outlet locations required in the Plans. The inlet/outlet locations shall be repaired as shown on the Plans using the same approved epoxy grout as used for the anchorage pour-backs. The surface to receive the epoxy material shall be prepared in strict compliance with the manufacturer's recommendations.

- (j) Record of Grouting Operations. The Contractor shall keep a record of all grouting operations for each tendon installed, stressed, and grouted. This shall include, but shall not necessarily be limited to, the following:

- (1) Tendon or group of tendons grouted in one continuous operation.
- (2) Date grouted.
- (3) Number of days from stressing to grouting, per tendon.
- (4) Type of grout mix and additives.
- (5) Fluidity of grout (flow-cone) per batch for both newly mixed and 30 minute, rested grout.
- (6) Density of grout per batch of fresh mix.
- (7) Location of injection vent and direction of grout flow (note - injection vent may not necessarily be at an end anchorage).
- (8) Applied grouting pressure during normal pumping and maximum pressure sustained for two minutes after closing all vents grouting.
- (9) Theoretical volume of grout anticipated in order to fill the duct or ducts.
- (10) Actual quantity of grout in place in the duct(s) after grouting (for one grout mixing and injection operation, this is the quantity mixed less the quantity wasted at the vents, less the quantity remaining in the mixer and injection equipment).
- (11) Summarize any difficulties encountered and corrective action taken.
- (12) Witnesses to grouting operation (Contractor and Agency).

Within 72 hours, the Contractor shall provide the Agency with a complete copy of all tendon stressing and grouting operations.

73. PROTECTION OF POST-TENSIONING ANCHORAGES. After acceptance of grouting, all miscellaneous material (tie wire, tape, plastic, etc.) used for temporary protection or sealing shall be removed prior to carrying out further work to protect anchorages.

Details for anchor protection shall be shown on the Fabrication Drawings in accordance with the Plans and the following requirements.

- (a) Installation of Anchor Protection. Anchorage protection shall be installed within seven days from the satisfactory completion of the grouting. The application of the elastomeric coating may be delayed for up to 90 days after grouting. Use plastic or stainless steel threaded caps to plug all grout inlets/outlets.

- (1) Pour-Backs. An approved epoxy grout compound meeting the requirements of the Epoxy Grout for Anchorage Pour-Backs Section shall be used to construct pour-backs at anchorages.

All laitance, grease, curing compounds, surface treatments, coatings, and oils shall be removed by grit blasting or water blasting the substrate surface using a minimum 10,000 psi nozzle pressure. Surfaces shall be flushed with potable water and blown dry. Surfaces must be clean, sound and without any standing water. In case of dispute, ACI 503 shall be used for substrate testing and a minimum of 175 psi tension (pull-off value) shall be attained.

The epoxy shall be mixed and placed per manufacturer's current standard technical guidelines. All pour-backs shall be constructed with leak proof forms to create neat lines. The epoxy compound may require pumping for proper installation. Forms shall be constructed so as to maintain a liquid head to insure intimate contact with the concrete surface. Vents shall be provided as needed to allow for the escape of air to insure complete filling of the forms. Pour-backs shall provide a minimum cover over the grout cap of 1-1/2 inches for anchors in the superstructure and 3 inches for anchors in the substructure.

- (b) Anchors at Surfaces Exposed to Weather Action. The following applies to anchors in expansion joint diaphragms, at ends of girders under expansion joint devices or strip seals, substructures, or other similar surfaces directly exposed to weather or potential run-off or leakage. The protection of the anchors at these locations shall be as follows:

- (1) Permanent grout cap.  
(2) Encapsulating epoxy grout pour-back.

Concrete details under the expansion joint shall incorporate a drip flange (not a v-groove) to provide a positive, protective edge for the top of the elastomeric seal coat.

74. METHOD OF MEASUREMENT. The quantity of Special Provision (Post-Tensioning) to be measured for payment will be on a lump sum basis for each component specified in the complete and accepted work.

75. BASIS OF PAYMENT. The accepted quantity of Special Provision (Post-Tensioning) will be paid for at the Contract lump sum price. Payment will be full compensation for making required Working Drawing submittals; furnishing, installing, stressing, and grouting all permanent post-tensioning tendons; anchorage assemblies and associated supplemental reinforcing steel required by the supplier; post-tensioning system hardware which is not embedded in concrete; ducts; flushing lubricants or contaminants from the ducts (if required); grout and grouting; all testing; protection of post-tensioning anchorages, vents, inlets, and outlets; and all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Anchorage components, ducts, and similar items of post-tensioning system hardware embedded within precast or cast-in-place concrete will be deemed to be included in the cost of the precast components or cast-in-place concrete.

If the Contractor constructs the structure with an accepted alternate not detailed on the Plans, payment will be at the Contract lump sum price bid.

Permanent post-tensioning strand or bar tendons which are an integral part of individual precast concrete units will be paid for under this item and will not be considered incidental to the cost of the precast concrete units.

When all Fabrication Drawings have been submitted and approved, a payment of 15 percent of the Contract lump sum price will be allowed. Further payments totaling 70 percent of the Contract lump sum price will be paid on a pro-rated basis for the duration of the work. The remaining 15 percent of the Contract lump sum price will be paid following successful placement, stressing, grouting, inspection, protection, approval, and acceptance by the Engineer.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Post-Tensioning, Pier Cap)	Lump Sum
900.645 Special Provision (Post-Tensioning, Pier Sub-Cap)	Lump Sum

REMOVAL OF TEMPORARY BRIDGE AND APPROACHES

76. DESCRIPTION. This work shall consist of removing an existing temporary bridge, including abutments and roadway approaches, and associated items including but not limited to approach fill, stone fill, geotextile, sheet piling, guardrail, pavement, and line striping, within the limits indicated in the Plans and as directed by the Engineer.
77. REMOVAL OF EXISTING MABEY BRIDGE. Removal shall be performed in accordance with Subsection 529.04. Dismantling and salvaging of the temporary bridge components shall be performed in accordance with the Contract Documents.
78. METHOD OF MEASUREMENT. The quantity of Special Provision (Removal of Temporary Bridge and Approaches) to be measured for payment will be on a lump sum basis in the complete and accepted work.

79. BASIS OF PAYMENT. The accepted quantity of Special Provision (Removal of Temporary Bridge and Approaches) will be paid for at the Contract lump sum price. Payment will be full compensation for removing the temporary bridge and its approaches, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Removal of Temporary Bridge and Approaches)	Lump Sum

TRAFFIC CONTROL

80. DESCRIPTION. This work shall consist of establishing and maintaining traffic control measures to protect the traveling public and construction operations as indicated in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 641 of the Standard Specifications.

81. SUBMITTALS. The Contractor shall submit to the Engineer for approval a site-specific traffic control plan in accordance with Subsection 105.03. The traffic control plan shall conform to the requirements of the MUTCD and all applicable Agency Standard Drawings. Where conflicts exist, the MUTCD will govern. Each phase of construction shall be included in the submitted traffic control plan. The Contractor shall allow the Agency 7 calendar days to review and approve the proposed traffic control plan before it is to be implemented.

82. TRAFFIC CONTROL DEVICES. Temporary traffic barrier shall meet the requirements of Section 621. Traffic control devices shall meet the requirements of Section 641. Temporary pavement markings and removal of existing pavement markings shall meet the requirements of Section 646. Temporary traffic signal systems shall meet the requirements of Section 678.

83. METHOD OF MEASUREMENT. The quantity of Special Provision (Traffic Control, All-Inclusive) to be measured for payment will be on a lump sum basis for providing traffic control in the complete and accepted work.

The quantity for Flaggers will be measured separately in accordance with Section 630.

84. BASIS OF PAYMENT. The accepted quantity of Special Provision Traffic Control, All-Inclusive) will be paid for at the Contract lump sum price.

Partial payments will be made as follows:

- (a) The first 15% of the Contract lump sum price will be paid upon approval of the Contractor's traffic control plan.
- (b) The remaining 85% of the Contract lump sum price will be paid on a prorated basis for the estimated duration of the Contract work remaining.

Payment will be full compensation for preparing, implementing, inspecting, maintaining, and removing the applicable traffic control plan and required traffic control devices, including but not limited to temporary traffic barrier, temporary pavement markings, signing and message boards, and temporary traffic signal systems; and for furnishing all labor, tools, materials, equipment, and incidentals necessary to complete the work.

Flaggers will be paid for separately under Contract item 630.15.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Traffic Control, All-Inclusive)	Lump Sum

BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY

85. DESCRIPTION. This work shall consist of constructing one or more courses of bituminous mixture on a prepared foundation in accordance with these specifications and the specific requirements of the type of surface being placed, and in reasonably close conformity with the lines, grades, thicknesses, and typical cross sections shown on the Plans or established by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and the appropriate provisions of Section 406 or Section 490 of the Standard Specifications.

86. APPLICABILITY. This specification applies to Contracts where the total quantity of bituminous concrete pavement to be paid for under this item is less than or equal to 2000 metric tons (tons) or the total roadway length, including approaches, is 0.80 kilometers (0.50 miles) or less.

87. MATERIALS. Materials shall meet the requirements of the following Subsections:

- Performance-Graded Asphalt Binder.....702.02
- Emulsified Asphalt, RS-1.....702.04
- Aggregate for Marshall Bituminous Concrete Pavement...704.10(a)
- Aggregate for Superpave Bituminous Concrete Pavement..704.10(b)

Aggregate shall meet requirements relating to Section 490 or 406, where so specified.

The grade of PG asphalt binder used to produce bituminous concrete pavement shall be 58-28. Substitutions will be accepted based on availability where the upper end temperature value is greater than 58°C (136°F) and/or the lower end is less than -28°C (-18°F).

88. DESIGN MIX TYPES. Design mix types may be substituted based on mix availability. Allowable mix type substitutions will be accepted on a one to one thickness relationship, except as listed in Tables A and B below:

TABLE A - ALLOWABLE 40 MM (1½") MIX TYPE IVS SUBSTITUTIONS<sup>(1)</sup>

Design ESALs (millions)	Design	Allowable Substitution	
	490.30 Superpave Bituminous Concrete Pavement	406.25 Bituminous Concrete Pavement*	406.27 Med. Duty Bituminous Concrete Pavement*
< 0.3	TYPE IVS	TYPE III	TYPE III
0.3 to < 10	TYPE IVS	TYPE III	-
> 10	TYPE IVS	-	-

<sup>(1)</sup>These table substitutions do not apply to bridge deck paving.

\*Per Section 406.

TABLE B - ALLOWABLE 90 MM (3½") MIX TYPE IIS SUBSTITUTIONS

Design ESALs (millions)	Design	Allowable Substitution	
	490.30 Superpave Bituminous Concrete Pavement	406.25 Bituminous Concrete Pavement*	406.27 Med. Duty Bituminous Concrete Pavement*
< 0.3	TYPE IIS	TYPE I	TYPE I
0.3 to < 10	TYPE IIS	TYPE I	-
> 10	TYPE IIS	-	-

\*Per Section 406

89. COMPOSITION OF MIXTURE.

- (a) Gradation. Gradation shall meet the requirements of Section 406 or 490, as appropriate.
- (b) Design Criteria. Design Criteria shall meet the requirements of Section 406 or 490, as appropriate.
- (c) Mix Design. Standard mix design will be in accordance with Subsection 490.03 with an n value of 65 gyrations. Allowable substitutions based on pre-existing approved mix designs and/or n values for intended Contract suppliers are listed in Table C below. A request for substitutions must be submitted in writing to the Engineer a minimum of 10 working days prior to production. Any substitutions from the standard mix design or mix types as detailed in the Plans shall not result in any increase in cost to the Agency.

TABLE C - ALLOWABLE SPECIFICATION SUBSTITUTIONS

Design ESALs (millions)	Acceptable Specification Substitution		
	Superpave Bituminous Concrete Pavement (Gyrations)	Bituminous Concrete Pavement* (75 Blow)	Med. Duty Bituminous Concrete Pavement* (50 Blow)
< 0.3	50	✓	✓
0.3 to < 10	65 <sup>(1)</sup>	✓	-
10 to < 30	80	-	-
> 30	125	-	-

<sup>(1)</sup>Standard mix design specification.

\*Per Section 406

(d) Control of Mixtures.

The plant shall be operated so that no intentional deviations are made from the job-mix formula. The gradation of the actual mixture shall not vary from the job-mix formula by more than the following tolerances:

TABLE D - PRODUCTION TESTING TOLERANCES AND SPECIFICATION LIMITS

PRODUCTION TESTING TOLERANCES			SPECIFICATION LIMITS
Aggregate larger than 2.36 mm (No. 8) sieve	±	6.0 %	9.0 %
Aggregate passing the 2.36 mm (No. 8) sieve and larger than the 75 µm (No. 200) sieve	±	4.0 %	6.0 %
Aggregate passing 75 µm (No. 200) sieve	±	1.0 %	1.5 %
Temperature of Mixture <sup>(3)</sup>	±	11°C (20°F)	15°C (30°F)
Air Voids	=	4.0 ± 1.0%	4.0 ± 1.5%
VMA	=	JMF <sup>(1)</sup> ± 1.0%	JMF <sup>(1)</sup> ± 1.5%
VFA <sup>(4)</sup>	=	JMF <sup>(1)</sup> ± 5.0% <sup>(2)</sup>	JMF <sup>(1)</sup> ± 7.0% <sup>(2)</sup>

(1) JMF stands for the most current Job-Mix Formula value as approved by the Engineer or the Engineer's designee.

(2) The VFA value shall not be allowed to exceed 80.0% at any time.

(3) Mix temperatures shall not exceed 180°C (355°F).

(4) The VFA requirements only apply to Superpave Bituminous Concrete Pavement.

(e) Quality Acceptance.

(1) General. Acceptance sampling and testing will be conducted in accordance with the Agency's Quality Assurance Program as approved by FHWA. Bituminous concrete mixtures designated under these specifications will be sampled a minimum of once per day of production or 500 metric tons (tons) and evaluated by the Agency for each mix type (each mix design) in accordance with the following acceptance guidelines.

(2) Acceptance Guidelines. Temperature of the bituminous mixture shall be tested using the Verified Thermometer test method and PG Asphalt Binder content determined from the batch slip. Gradation shall be tested in accordance with AASHTO T 30. Mixture volumetric properties (air voids, VMA, and VFA) shall be calculated in accordance with Subsections 406.03(b) or 490.03(b), as appropriate.

(3) Non-Compliant Material.

- a. Rejection by Contractor. The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material at no expense to the Agency. Any such new material will be sampled, tested, and evaluated for acceptance.
- b. For any non-compliant material outside the production testing tolerances but within the specification limits as identified in Table D, payment shall be assessed a mixture pay factor, PF(mix), of (-0.10).
- c. For any non-compliant material outside the specification limits as identified in Table D, payment shall be assessed a mixture pay factor, PF(mix), of (-0.50), or can be removed and replaced at no cost to the Agency.
- (f) Boxed Samples. If Agency plant inspectors are not available for daily testing and inspection functions, then box samples will be taken by the Engineer at the project site to afford verification of mixture volumetrics/properties. Boxed samples will be processed and results reported to the Engineer within ten working days of being received at the Agency Central Laboratory in Berlin, Vermont. Gradation shall be tested in accordance with AASHTO T 30. Maximum Specific Gravity shall be tested in accordance with AASHTO T 209.

90. COMPACTION. Special Provision (Bituminous Concrete Pavement, Small Quantity) will be analyzed for density according to the procedure specified below.

The density of the compacted pavement shall be at least 92.0%, but not more than 97.0%, of the corresponding daily average maximum specific gravity for each mix type (each mix design) of bituminous mix placed during each day. For material that falls outside of this range, payment will be made by adjusting the daily production totals in accordance with Table E:

TABLE E - DENSITY PAY FACTORS

AVERAGE DENSITY	DENSITY PAY FACTOR, PF(d)
90.5% - 91.9%	- 0.100
92.0% - 97.0%	0.000
97.1% - 98.5%	- 0.100

When the Contract allows for a pay adjustment for mat density and the Agency elects to not take cores of any pavement course, the Density Pay Factor (PF(d)) will be considered equal to 0.000.

Bridges with a length equal to or greater than 6 meters (20 feet) will be cored for analyzing density of the bridge deck pavement. The minimum number of cores taken shall be 2, or as directed by the Engineer. Bridges with a length less than 6 meters (20 feet) will not be cored.

Bridge deck core areas shall be repaired to the satisfaction of the Engineer at no additional cost to the Agency.

The cores taken for acceptance testing will be the final cores taken for determination of densities.

When the Contract does not allow for a pay adjustment for mat density the Contractor shall, prior to performing any construction operations, submit to the Engineer for approval the proposed rolling pattern and compaction equipment to be used on the project. Random investigative cores will be taken by Agency personnel on the first day's production of any pavement course, with the exception of leveling course, to verify effectiveness of the proposed rolling pattern and equipment.

Pending results of the investigative cores, necessary adjustments to the proposed rolling pattern and/or equipment shall be made by the Contractor to achieve densities as directed by the Engineer.

91. METHOD OF MEASUREMENT. The quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) to be measured for payment will be the number of metric tons (tons) for a lot of mixture (each type) complete in place in the accepted work (Q) as determined from the weigh tickets.

The quantities of all applicable Pay Adjustments calculated for the project will be determined as specified below.

When applicable, and when the mixture pay factor, PF(mix), for a lot of Special Provision (Bituminous Concrete Pavement, Small Quantity) is less than 0.000, the measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) placed will be multiplied by such pay factor to determine a Mixture Pay Adjustment, (PA(mix)), to the accepted tonnage placed (Q) for that lot based on the Contract bid price (B), as follows:

$$PA(mix) = PF(mix) \times Q \times B$$

When boxed samples are taken to determine mix properties, test results will determine PF(mix) as outlined in COMPOSITION OF MIXTURE, Quality Acceptance, Non-Compliant Material of this Section.

When applicable, and when the density pay factor, PF(d), for a lot of Special Provision (Bituminous Concrete Pavement, Small Quantity) is less than 0.000, the measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) placed that day will be multiplied by such pay factor to determine a Mat Density Pay Adjustment, (PA(d)), to the accepted tonnage placed (Q) for that lot based on the Contract bid price (B), as follows:

$$PA(d) = PF(d) \times Q \times B$$

92. BASIS OF PAYMENT. The measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) will be paid for at the Contract unit price per metric ton (ton). Payment shall be full compensation for furnishing, mixing, hauling, and placing the material specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment for Pay Adjustments shall be debited against the Contract prices (Lump Units) bid for the Pay Adjustment items.

The cost of repairing bridge deck core areas will not be paid for separately, but will be considered incidental to Special Provision (Bituminous Concrete Pavement, Small Quantity).

The costs of furnishing testing facilities and supplies at the plant will be considered included in the Contract unit price of Special Provision (Bituminous Concrete Pavement, Small Quantity).

The costs of obtaining, furnishing, transporting, and providing the straightedges required by Subsection 406.16 or Subsection 490.16, as appropriate, will be paid for under the appropriate Section 631 pay item included in the Contract.

The costs associated with obtaining samples for acceptance testing will be incidental to the cost of Special Provision (Bituminous Concrete Pavement, Small Quantity).

When not specified as items in the Contract, the costs of cleaning and filling joints and cracks, sweeping and cleaning existing paved surfaces, the emulsified asphalt applied to tack existing and new paved surfaces, and tacking of manholes, curbing, gutters, and other contact surfaces will not be paid for directly, but will be incidental to Special Provision (Bituminous Concrete Pavement, Small Quantity).

Special Provision (Bituminous Concrete Pavement, Small Quantity) mixture approved by the Engineer for use in correcting deficiencies in the base course constructed as part of the Contract will not be paid for as Special Provision (Bituminous Concrete Pavement, Small Quantity), but will be incidental to the Contract item for the specified type of base course.

Special Provision (Bituminous Concrete Pavement, Small Quantity) mixture used to correct deficiencies in an existing pavement or to adjust the grade of a bituminous concrete surface completed under the Contract will be paid for at the Contract unit price for Special Provision (Bituminous Concrete Pavement, Small Quantity).

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.650 Special Provision (Mat Density Pay Adjustment, Small Quantity)(N.A.B.I.)	Lump Unit
900.650 Special Provision (Mixture Pay Adjustment) (N.A.B.I.)	Lump Unit
900.680 Special Provision (Bituminous Concrete Pavement, Small Quantity)	Ton

RETAINING WALL

93. DESCRIPTION. This work shall consist of designing, detailing, fabricating, furnishing, and erecting a retaining wall at the location(s) specified and in conformance with the lines and grades shown on the Plans or as directed by the Engineer.

94. DESIGN REQUIREMENTS. The design shall be performed in accordance with the AASHTO LRFD Bridge Design Specifications and the design criteria specified in the Plans.

Acceptable earth retaining systems are those included in the "VAOT Earth Retaining System Selection Chart", available on the Agency's website at the following address:

[http://www.aot.state.vt.us/matres/Documents/ACROBAT.pdf/VAOT%20APPROVED%20Retaining%20Walls%202-2010 Final.pdf](http://www.aot.state.vt.us/matres/Documents/ACROBAT.pdf/VAOT%20APPROVED%20Retaining%20Walls%202-2010%20Final.pdf)

Prefabricated earth retaining systems shall employ concrete facing.

All wall components shall have a minimum design life of 75 years.

95. MATERIALS. Materials shall meet the following requirements:

(a) Precast Concrete. Precast Concrete shall meet the requirements of Section 540.

(b) Cast-in-Place Concrete. Cast-in-place concrete shall meet the requirements of Section 501 for Concrete, High Performance Class B, unless otherwise specified in the Contract Documents.

(c) Reinforcing Steel. Reinforcing Steel shall meet the requirements of Section 507.

(d) Backfill. Backfill shall meet the following requirements:

(1) Gradation Limits. Select granular backfill material used in walls shall be reasonably free from organic and otherwise deleterious materials, and shall conform to the following gradation limits as determined in accordance with AASHTO T 27:

<u>SIEVE SIZE</u>	<u>PERCENT PASSING</u>
101.6 mm (4 inch)	100
75 mm (3 inch)	75 - 100
0.425 mm (40)	0-60
75 $\mu$ m (200)	0 - 12

(2) Plasticity Index. The Plasticity Index (P.I.), as determined in accordance with AASHTO T 90, shall not exceed six.

- (3) Soundness. The material shall be substantially free of shale or other soft particles with poor durability characteristics. The material shall have a sodium sulfate soundness loss of less than 8 percent after five (5) cycles, as determined in accordance with AASHTO T104.

Select granular backfill shall have a minimum uniformity coefficient,  $C_u$ , of 2.

In addition to these requirements, backfill for walls using metallic soil reinforcing shall meet the following:

<u>PROPERTY</u>	<u>REQUIREMENT</u>	<u>TEST METHOD</u>
Resistivity at 100% saturation	Minimum 3000 ohm-cm	AASHTO T 288
pH	Acceptable Range 5 - 10	AASHTO T 289
Sulfates	Maximum 200 ppm	AASHTO T 290
Chlorides	Maximum 100 ppm	AASHTO T 291
Organic Content	< 1%	AASHTO T 267

Backfill not conforming to this specification shall not be used unless approved in writing by the Engineer and wall supplier.

Backfill material shall be compacted in accordance with the manufacturer's recommendations and Contract specifications.

- (e) Geotextile. Geotextile shall be a non-woven fabric meeting the requirements of Section 649 for Geotextile for Roadbed Separator, unless otherwise specified by the wall supplier.
- (f) Soil Reinforcing and Attachment Devices for MSE wall systems. All reinforcing and attachment devices shall be carefully inspected to ensure they are true size and free from defects that may impair their strength and durability.
- (1) Reinforcing Mesh Elements. Reinforcing mesh elements shall be shop fabricated from cold drawn steel rod conforming to the minimum requirements of AASHTO M 32M/M 32 and shall be welded at the junctions between longitudinal and transverse wires in accordance with AASHTO M 55M/M 55. Galvanization shall be applied after mesh fabrication and shall conform to the minimum requirements of AASHTO M 111M/M 111. The galvanizing thickness shall be determined and specified based on the design life requirements of the structure.
- (2) Loop Embeds. Loop embeds shall be fabricated from cold drawn steel rod conforming to AASHTO M 32M/M 32. Loop embeds shall be welded in accordance with AASHTO M 55M/M 55. Loop embeds shall be galvanized in accordance with AASHTO M 232M/M 232.
- (3) Reinforcing Strips. Reinforcing strips shall be hot rolled from bars to the required shape and dimensions. Their physical and mechanical properties shall conform to AASHTO M 223 or equal. Galvanization shall conform to the minimum requirements of AASHTO M 111M/M 111. The galvanizing thickness shall be determined and specified based on the design life requirements of the structure.

- (4) Tie Strips. The tie strips shall be shop fabricated of hot rolled steel conforming to the minimum requirements of ASTM A 570, Grade 50 or equivalent. Galvanization shall conform to AASHTO M 111M/M 111 or AASHTO M 232M/M 232. The minimum coating thickness shall be 0.610 kg/m<sup>2</sup>.
  - (5) Fasteners. Fasteners shall consist of galvanized hexagonal cap screw bolts and nuts conforming to the requirements of AASHTO M 164 or equivalent. Fasteners shall be galvanized in accordance with AASHTO M 232M/M 232.
  - (6) Joint Material. Joint material shall meet the requirements of Subsection(s) 707.06, 707.07, 707.08, or 707.09, unless otherwise specified in the Contract Documents or as part of an approved retaining wall system.
  - (7) Bearing Pads. Bearing pads shall be preformed EDPM rubber pads conforming to ASTM D 2000 M2AA 807, having durometer hardness equal to 80±5.
  - (8) Joint Cover. Horizontal and vertical joints between panels shall be covered by a geotextile. The geotextile may be either a non-woven needle punched polyester geotextile or a woven monofilament polypropylene geotextile meeting the requirements of Section 720 for Geotextile Under Stone Fill. The wall supplier shall approve adhesive used to hold the geotextile filter fiber material to the rear of the facing panels prior to backfill placement.
96. SUBMITTALS. Working Drawings shall be submitted to the Structures Engineer in accordance with Section 105. The submittal shall include all detailed design computations and details, dimensions, quantities and cross sections necessary to construct the wall. In addition, the submittal shall include, but not be limited to, all of the following that apply to the particular wall system being constructed:
- (a) Complete design calculations substantiating that the proposed design satisfies the design parameters in the Contract Documents. The wall design calculations shall be signed, stamped, and dated by a Professional Engineer. The Contractor shall not start work on any earth retaining system for which Working Drawings are required until the Engineer has approved such drawings.
  - (b) A plan view of the wall showing the limit of the widest module, tiebacks, nails, mesh, or strip and the centerline of any drainage pipe which is behind or passes under or through the wall.
  - (c) An elevation view of the wall which shall include the elevation at the top of the wall at all horizontal and vertical break points and at least every 15 m (50 ft) along the face of the wall, all steps in the leveling pads, the designation as to the type of panel, the length of soil reinforcing elements, the distance along the face of the wall to where changes in length of the soil reinforcing elements occur, and an indication of the final ground line and maximum calculated bearing pressures.
  - (d) A typical cross section or cross sections showing the elevation relationship between ground conditions and proposed grades.

- (e) All details for foundations and leveling pads, including details for steps in the footings or leveling pads, as well as design maximum and minimum bearing pressures.
- (f) Details of the drainage systems or other facilities required to accommodate the system.
- (g) The details for connection between the wall and the soil reinforcements.
- (h) The details for diverting soil reinforcements around obstructions such as piles, catch basins, and other utilities.
- (i) All reinforcing details, including reinforcing bar bending details.
- (j) Any general notes required for the construction of the wall.
- (k) A listing of the summary of quantities on the elevation sheet for each wall.

Any construction drawings required for elements meeting the requirements of Section 540 shall be submitted and shall meet the requirements of Subsection 540.04.

All design and construction details will be checked by the Agency's Structures and Materials and Research Sections. Approval of the detailed design and plans, and notification to begin the work, will be made by the Structures Section. The Contractor shall allow the Agency 30 calendar days to review and approve the Working Drawings.

Approval of the Contractor's Working Drawings shall not relieve the Contractor of any responsibility under the Contract for the successful completion of the work.

97. PRECAST CONCRETE INSPECTION. Precast concrete inspection will be in accordance with Subsection 540.06.

The Fabricator shall provide a tentative casting schedule to the Engineer and Structural Concrete Engineer for the following casting week a minimum of 3 calendar days prior (a casting week will be Sunday to Saturday). The Fabricator shall maintain a Quality Control file that shall contain at a minimum the piece identification, date and time cast, concrete test results, quantity of concrete used per element, batch quantity printout, cylinder results, and aggregate gradation and moisture.

98. METHOD OF MEASUREMENT. The quantity of Special Provision (Retaining Wall) to be measured for payment will be the number of exposed square meters (square feet) of wall surface area complete and in place in the accepted work. The height of exposed face shall be the difference between the top of the wall and the top of the finish ground along the front face of the retaining wall.

99. BASIS OF PAYMENT. The accepted quantity of Special Provision (Retaining Wall) will be paid for at the Contract unit price per square meter (square foot). Payment will be full compensation for designing, detailing, fabricating, and installing the materials specified, including but not limited to the geotextile fabric, backfill material, concrete, bar reinforcement and welded steel wire fabric, drainage pipe, drainage aggregate, precast concrete facing panels, soil reinforcements, attachment devices, fasteners, bearing blocks, shims, geomembrane, geotextile, and expansion material; any excavation, sheeting, bracing, dewatering, and siltation control; preparing and submitting Working Drawings; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Any grouting work, such as fairing out unevenness between adjacent concrete pieces and filling leveling screw holes, shear keys, transverse anchor recesses, and dowel holes, is considered incidental to the work for Special Provision (Retaining Wall).

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.670 Special Provision (Retaining Wall)	Square Foot

ADDITIONAL SPECIAL PROVISION

100. NOTICE TO BIDDERS - PLAN SHEET MODIFICATIONS. The Contractor is hereby notified of the following Plan Sheet modifications:

(a) Sheet 3 - GENERAL NOTES.

- (1) CONCRETE, Note 23, is revised by being deleted in its entirety and replaced with the following:

THE CONCRETE IN THE DECK AND IN THE ABUTMENTS ABOVE THE BRIDGE SEATS WILL BE PAID UNDER CONTRACT ITEM 501.33. THE CONCRETE IN THE BRIDGE RAILING SHALL MEET THE REQUIREMENTS OF SECTION 501 FOR HIGH PERFORMANCE CONCRETE, CLASS A AND WILL BE PAID UNDER CONTRACT ITEM 525.70.

- (2) CONCRETE, Note 35, is revised by being deleted in its entirety and replaced with the following:

REINFORCING STEEL IN THE DECK, ABUTMENTS ABOVE THE BRIDGE SEATS, AND PIER CAP WILL BE PAID UNDER CONTRACT ITEM 507.12. REINFORCING STEEL IN THE BRIDGE RAILING AND PIER SUB-CAP SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR REINFORCING STEEL, LEVEL II AND WILL BE PAID UNDER CONTRACT ITEMS 525.70 AND 540.10, RESPECTIVELY.

Minimum Labor and Truck Rates  
Under Title 19, Vermont Statutes  
Annotated Section 18, as amended

July 1990  
Sheet 1 of 1

**STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MONTPELIER**

FOR OTHER THAN FEDERAL-AID. In accordance with the provisions of Title 19, VSA, Section 18, the following minimum rate for labor shall apply to this project:

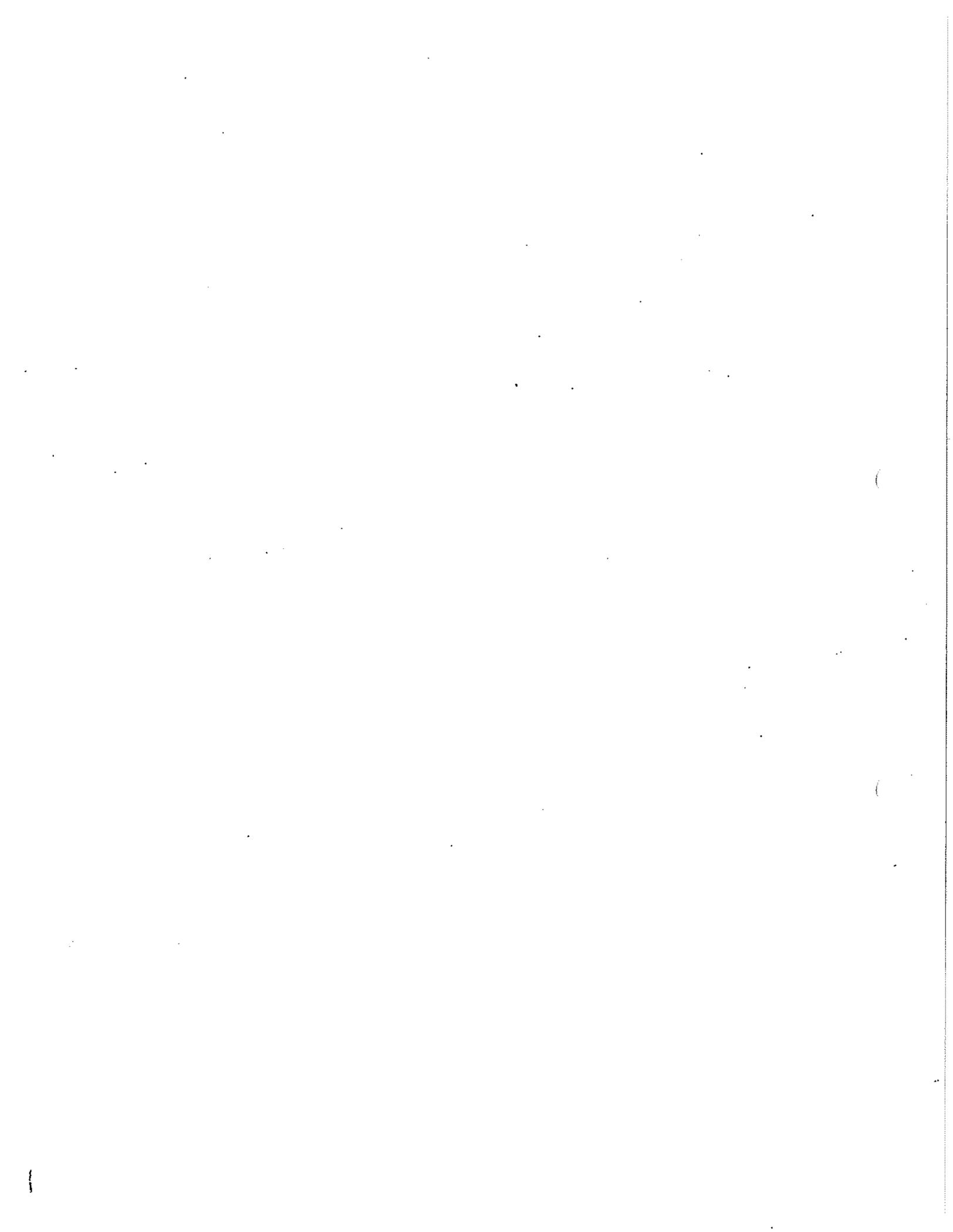
The minimum wage for common labor will not be less than the State or Federal minimum wage, whichever is higher.

ON FEDERAL-AID PROJECTS ONLY.

The minimum rates for labor for Federal-Aid Projects shall be those set in the Wage Determination Decision of the U.S. Secretary of Labor for each project in accordance with the Federal-Aid Highway Act of 1956. When such wage rates are required they shall be included in the proposal. In the event these rates are lower than the Vermont rates, the Vermont rates shall prevail.

TRUCK RATES. In accordance with the provisions of Title 19, VSA, Section 18, the following minimum rates for trucks shall apply to this project:

<u>Trucks, not Including Driver Water Level Body Capacity</u>	<u>Minimum Rates Per YD per Hr.</u>
Trucks, Equipment Loaded	\$1.25



State of Vermont  
Agency of Transportation

March 2011  
CA-110

## DISADVANTAGED BUSINESS ENTERPRISE (DBE) POLICY CONTRACT REQUIREMENTS

**Disadvantaged Business Enterprise (DBE) Policy.** It shall be the policy of the Vermont Agency of Transportation (VTrans) to ensure nondiscriminatory opportunity for Disadvantaged Business Enterprises (DBEs) to participate in the performance of all contracts and subcontracts financed with Federal funds as specified by the regulations of the United States Department of Transportation (USDOT), Federal Highway Administration and as set forth below.

1. **Policy.** It is the policy of USDOT that DBEs as defined in 49 Code of Federal Regulation (CFR) Part 26 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. Consequently, the DBE requirements of 49 CFR Part 26 and 23 CFR, Chapter 1, Part 230, Subpart b apply to this contract.
2. **DBE Obligation.** The State and its Contractors agree to ensure that DBEs as defined in 49 CFR Part 26, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. **Each subcontract the prime contractor signs with a subcontractor must include this assurance:** *The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as VTrans deems appropriate.*
3. **Sanctions for Noncompliance.** The Contractor is hereby advised that failure of the Contractor, or any Subcontractor performing work under this contract, to carry out the requirements set forth in paragraphs 1 and 2 above shall constitute a breach of contract and after the notification of the Vermont Agency of Transportation, Secretary of Transportation, may result in termination of this contract by the State or such remedy as the State deems necessary.
4. **Inclusion in Subcontracts.** The Contractor shall insert in each of its subcontracts this Disadvantaged Business Enterprise (DBE) Policy and also a clause requiring its subcontractors to include this same Policy in any lower tier subcontracts which they may enter into, together with a clause requiring the inclusion of the Policy in any further subcontract that may in turn be made. This Policy shall not be incorporated by reference.

**Disadvantaged Business Enterprise (DBE) Program Goals.** The Vermont Agency of Transportation (VTrans) is required to set an overall DBE goal for participation in all transportation related Federal-aid projects. The goal is determined following guidelines set forth in 49 CFR 26.45, and based on the availability of ready, willing and able DBEs who submitted bids and quotes for transportation related projects, compared as a percentage of all available contractors who submitted bids and quotes for transportation related projects during the same time period. The DBE goal may be adjusted to take into account other factors impacting DBE utilization, in an effort to narrowly tailor the overall DBE goal. The detailed goal setting methodology and current overall DBE goal may be viewed on the VTrans website at: <http://www.aot.state.vt.us/CivilRights/DBEGoals.htm> .

VTrans currently utilizes a race/gender neutral policy to fulfill its overall DBE goals, and relies on the voluntary participation of contractors to utilize certified DBEs on every project sufficient to obtain the Agency's overall DBE goal. In order for this practice to continue, contractors must be proactive and solicit bids and quotes from certified DBEs for use when submitting their own bids, and employ certified DBEs when participating on transportation related projects. Otherwise, VTrans may have to implement specified contract goals on projects to ensure the overall DBE goals are met. VTrans may include specific DBE contract goals in certain cases to ensure DBE participation, if failure to obtain the project DBE goal would negatively impact the Agency's overall DBE goal because of the size of the contract.

**Disadvantaged Business Enterprise (DBE) Definition.** A DBE is defined as a business that is owned and controlled by one or more socially and economically disadvantaged person(s). For the purposes of this definition:

- (1) "Socially and economically disadvantaged person" means an individual who is a citizen or lawful permanent resident of the United States and who is a Woman, Black, Hispanic, Portuguese, Native American, Asian American, or a member of another group, or an individual found to be disadvantaged by the Small Business Administration pursuant to Section 3 of the Small Business Act.
- (2) "Owned and controlled" means a business which is:
  - a. A sole proprietorship legitimately owned and controlled by an individual who is a disadvantaged person.
  - b. A partnership, joint venture or limited liability company in which at least 51% of the beneficial ownership interests legitimately is held by a disadvantaged person(s).
  - c. A corporation or other entity in which at least 51% of the voting interest and 51% of the beneficial ownership interests legitimately are held by a disadvantaged person(s).

The disadvantaged group owner(s) or stockholder(s) must possess control over management, interest in capital, and interest in earnings commensurate with percentage of ownership. Disadvantaged participation in a joint venture must also be based on the sharing of real earnings, as above. If the disadvantaged group ownership interests are real, substantial and continuing and not created solely to meet the requirements of the program, a firm is considered a bona fide DBE.

**Certified DBE Directory.** The current Vermont Unified Disadvantaged Business Enterprise (DBE) Directory is available online at: <http://www.aot.state.vt.us/CivilRights/DBEDirectory.htm>. This directory contains all currently certified DBEs available for work in Vermont, and is updated continuously. Only firms listed in this directory are eligible for DBE credit on Vermont Federal-aid projects. If you have questions about DBE certification, or do not have access to the Internet, please call the DBE Program Manager at (802) 828-5858 for assistance.

**Counting DBE Participation Towards Project Goals.** In order for payments made to DBE contractors to be counted toward DBE goals, the DBE contractors must perform a commercially useful function (CUF). The DBE must be responsible for execution of the work of the contract and must carry out its responsibilities by actually performing, managing, and supervising the work involved, consistent with standard industry practices.

This means that:

- The DBE must also be responsible for ordering its own materials and supplies, determining quantity and quality, negotiating price, installing (where applicable) and paying for the material itself;
- The DBE must perform work commensurate with the amount of its contract;
- The DBE's contribution cannot be that of an extra participant or a conduit through which funds are passed in order to obtain the appearance of DBE participation;
- The DBE must exercise responsibility for at least fifty percent of the total cost of its contract with its own workforce;
- None of the DBE's work can be subcontracted back to the prime contractor, nor can the DBE employ the prime's or other subcontractor's supervisors currently working on the project;
- The DBE's labor force must be separate and apart from that of the prime contractor or other subcontractors on the project. Transferring crews between primes, subcontractors, and DBE contractors is not acceptable;
- The DBE owner must hold necessary professional or craft license(s) or certification(s) for the type of work he/she performs on the project;
- The DBE may rent or lease, at competitive rates, equipment needed on the project from customary leasing sources or from other subcontractors on the project.

**Allowable credit for payments made to DBEs for work performed.** A contractor may take credit for payments made to a certified DBE that satisfies CUF requirements at the following rate:

- A DBE Prime Contractor: Count 100% of the value of the work performed by own forces, equipment and materials towards the DBE goals.
- An approved DBE subcontractor: Count 100% of the value of work performed by the DBE's own forces, equipment and materials, excluding the following:
  - The cost of materials/supplies purchased from a non-DBE Prime Contractor.
  - The value of work provided by non-DBE lower tier subcontractors, including non-DBE trucking to deliver asphalt to a DBE contractor.
- A DBE owner-operator of construction equipment: Count 100% of expenditures committed.
- A DBE manufacturer: Count 100% of expenditures committed. The manufacturer must be a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.
- A regular DBE dealer/supplier: Count 60% of expenditures committed. A regular dealer/supplier is defined as a firm that owns, operates, or maintains a store, warehouse or other establishment, in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. A person may be a dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business, if the person both owns and operates distribution equipment for the products, by the means of a long term agreement, and not by a contract by contract basis.
- A DBE broker: Count for DBE credit only the fees or commissions charged for assistance in the procurement, and, fees and transportation charges for the delivery of materials or supplies required at the job site, but not the cost of materials procured. A broker is defined as any person(s) or firm who arranges or expedites transactions for materials or supplies, and does not take physical possession of the materials or supplies at their place of business for resale.
- A DBE renter of construction equipment to a contractor: Count 20% of expenditures committed, with or without operator.

- A bona fide DBE service provider: Count 100% of reasonable fees or commissions. Eligible services include professional, technical, consultant, or managerial, services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for the performance of the contract. Eligible services also include agencies providing bonding and insurance specifically required for the performance of the contract.
- A trucking, hauling or delivery operation: Count 100% of expenditures committed when trucks are owned, operated, licensed and insured by the DBE and used on the contract and, if applicable, includes the cost of the materials and supplies. 100% of expenditures committed when the DBE leases trucks from another DBE firm including an owner-operator. 100% of reasonable fees, or commissions, the DBE receives as a result of a lease arrangement for trucks from a non-DBE, including an owner-operator.
- Any combination of the above.

**Removal of Approved DBE From Transportation Related Project.** Contractors may not terminate for convenience, any approved DBE subcontractor and perform the work with their own forces, without prior written consent from the VTrans DBE Program Manager or VTrans Chief of Civil Rights.

**Federal-aid projects which specify a DBE contract goal.** The provisions of the Vermont Agency of Transportation Supplemental Specification – Disadvantaged Business Enterprise (DBE) Utilization (CA 160) shall apply to all VTrans Federal-aid projects which specify a DBE contract goal.

**Compliance With Prompt Payment Statute.** In accordance with Vermont's Prompt Payment Act and VTrans Standard Specifications for Construction, Section 107.01(g), the Contractor shall fully comply with the provisions of 9 V.S.A. Chapter 102, also referred to as Act No. 74 of 1991 or the Prompt Payment Act, as amended.

**Subcontractor Payments.** In accordance with VTrans Standard Specifications for Construction, Section 107.01(h), on all federal-aid and state funded contracts, the Contractor, during the life of the Contract and on a monthly basis, shall submit electronically, a listing of payments to subcontractors on the form specified by the State and made available at: <http://apps.vtrans.vermont.gov/db/>. Electronic reports shall be filed with the Agency Office of Civil Rights by an authorized representative and received in the Agency Office of Civil Rights on or before the tenth working day after month end. Contractors without access to the internet shall obtain and submit manual reports to the Agency Office of Civil Rights. Manual reports shall be signed by an authorized representative, sent to the Agency Office of Civil Rights, and postmarked on or before the tenth working day after month end. There shall be no direct compensation allowed the Contractor for this work, but the cost thereof shall be included in the general cost of the work. In accordance with 9 V.S.A. Section 4003, notwithstanding any contrary agreement, payments made to subcontractors after seven days from receipt of a corresponding progress payment by the State to the Contractor, or seven days after receipt of a subcontractor's invoice, whichever is later, violate this agreement. Violations shall be reported to the Agency Office of Civil Rights for review. Failure to resolve disputes in a timely manner may result in a complaint made to the Agency Pre-qualification Committee. In this Committee's judgment, appropriate penalties may be involved for failure to comply with this specification. Penalties may include suspension, reduction or revocation of the Contractor's pre-qualification rating. This clause shall be included in the prime Contractor's Contract made with all if its subcontractors.

General Decision Number: VT120043 04/13/2012 VT43

Superseded General Decision Number: VT20100071

State: Vermont

Construction Type: Highway

County: Windham County in Vermont.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels; building structures in rest areas; railroad construction; bascule, suspension & spandrel arch bridges; bridges designed for commercial navigation; bridges involving marine construction; and other major bridges)

Modification Number	Publication Date
0	01/06/2012
1	04/13/2012

\* SUVT2011-028 09/14/2011

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 16.54	2.38
CEMENT MASON/CONCRETE FINISHER....	\$ 25.34	0.00
ELECTRICIAN, Includes Installation of Traffic Signals.....	\$ 23.32	0.00
GUARDRAIL INSTALLER.....	\$ 12.93	0.00
IRONWORKER, REINFORCING.....	\$ 17.50	4.92
IRONWORKER, STRUCTURAL.....	\$ 21.15	15.54
LABORER: Common or General Includes Asphalt Raker and Concrete Work.....	\$ 14.40	2.31
LABORER: Flagger.....	\$ 13.89	3.35
LABORER: Landscape.....	\$ 12.31	1.03
LABORER: Screedman.....	\$ 16.30	4.23
LABORER: Sign Erector/Installer.....	\$ 14.31	4.70
OPERATOR: Asphalt Roller.....	\$ 18.27	5.16
OPERATOR: Backhoe.....	\$ 16.89	1.33
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 18.03	0.00
OPERATOR: Broom.....	\$ 16.88	3.72

OPERATOR: Bulldozer.....	\$ 19.10	2.29
OPERATOR: Cold Planer/Milling Machine.....	\$ 18.66	0.00
OPERATOR: Crane.....	\$ 18.50	3.09
OPERATOR: Excavator.....	\$ 19.87	4.20
OPERATOR: Grader/Blade.....	\$ 18.44	3.50
OPERATOR: Loader.....	\$ 20.47	5.21
OPERATOR: Mechanic.....	\$ 21.00	0.00
OPERATOR: Paver.....	\$ 22.48	9.90
OPERATOR: Pounder.....	\$ 18.11	0.00
OPERATOR: Roller excluding Asphalt.....	\$ 18.89	9.90
OPERATOR: Screed.....	\$ 17.52	3.99
OPERATOR: Sweeper.....	\$ 24.44	12.24
PAINTER (Parking Lot and Highway Striping Only).....	\$ 16.39	3.56
TRUCK DRIVER, Includes 10 Yard Haul Away, A-Frame, Dump, Water Truck.....	\$ 15.83	1.14
TRUCK DRIVER, Includes all axles including Dump Trucks.....	\$ 17.13	4.72
TRUCK DRIVER: Distributor Truck.....	\$ 18.10	3.71
TRUCK DRIVER: Semi/Trailer Truck.....	\$ 17.58	4.74

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WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.

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Unlisted classifications needed for work not included within  
the scope of the classifications listed may be added after  
award only as provided in the labor standards contract clauses  
(29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification

and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

#### Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

#### Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

SUPPLEMENTAL SPECIFICATION  
ASPHALT PRICE ADJUSTMENT

GENERAL REQUIREMENTS AND CONDITIONS

- (a) This specification contains price adjustment provisions for asphalt cement and emulsified asphalt used on Vermont Agency of Transportation (Agency) construction projects and produced under Sections 303, 404, 406, 415, and 490 of the Standard Specifications, or as otherwise designated in the Contract Documents. This price adjustment clause is being inserted in this Contract to provide for either additional compensation to the Contractor or a payment to the Agency, depending upon an increase or decrease in the average price of asphalt cement during the construction of this project.
- (b) Emulsified asphalt shall be subjected to a correction factor of 0.45, applied to the quantity of material supplied. This corrected quantity shall be used for Asphalt Price Adjustment as specified and computed herein.
- (c) These provisions apply to this Contract only as specified in the procedures provided herein. No further asphalt cement and/or emulsified asphalt price adjustments will be allowed under this Contract.
- (d) It is understood by the Contractor that a price adjustment increase may cause the Agency to decrease the quantities of the Contract pay items subject to adjustment under these provisions. Provisions providing for decreased quantities and item cancellation in this paragraph are separate and take precedence, notwithstanding any other provisions of this Contract.
- (e) No price adjustment will be allowed beyond the Contract Completion Date or any applicable interim completion dates.
- (f) Any increase in the total Contract amount due to price adjustment under these provisions will not be justification for an extension of time under Subsection 108.11.
- (g) The Contractor hereby agrees that its bid prices for this Contract include no allowances for any contingencies to cover increased costs for which adjustment is provided herein.

PRICE ADJUSTMENT PROCEDURES

- (1) Prior to advertising for bids, an Index Price for asphalt cement will be established by the Agency upon consideration of the New York State DOT average monthly price for asphalt cement, or other monthly index deemed appropriate by the Director of Finance and Administration. The Index Price will be set monthly on or about the last day of the month. The Contract Index Price will be the most recent Index Price set by the Agency at the time of advertising for bids. This price will be as specified in the Special Provisions and will be the base from which price adjustments are computed.
- (2) For the duration of the Contract, Posted Prices for a metric ton (ton) of asphalt cement will be established monthly by the Agency. The Posted Prices will be established in the same manner as the Index Price.

- (3) A Price Adjustment will be paid or credited for asphalt cement only when the Posted Price of asphalt cement increases or decreases over its respective Index Price.
- (4) The Price Adjustment will be based upon the quantity of asphalt cement (QAC) and quantity of emulsified asphalt (QEA) incorporated in the work, determined as follows:
  - a. Batch Plants. QAC is determined using the cumulative actual binder content for each applicable item as reported on the batch ticket, excluding any percent of asphalt cement from Recycled Asphalt Pavement (RAP).
  - b. Drum-Mix Plants. QAC is determined based upon the metric tons (tons) of mix placed, multiplied by the actual binder content reported on the demand tickets, as verified by Agency personnel. In the event of multiple binder contents, the accepted quantity of mix at each binder content shall be determined, and the total QAC used shall be calculated accordingly. The accumulated asphalt cement total on the plant automation may be checked and verified by Agency personnel for each mix.
  - c. Emulsified Asphalt. QEA is as determined in accordance with Subsection 404.11.

(5) The Price Adjustment to be paid shall be computed as follows:

$$PA = [(QAC + (ACEA \times 0.001 \times QEA)) \times (PP - IP)] \text{ [Metric]}$$

$$PA = [(QAC + (ACEA \times 0.05 \times QEA)) \times (PP - IP)] \text{ [English]}$$

where:

- PA = Price Adjustment (LU in \$)
- IP = Index Price (\$/metric ton) or (\$/ton)
- PP = Posted Price on date of work (\$/metric ton) or (\$/ton)
- QAC = Quantity of Asphalt Cement (metric tons) or (tons)
- QEA = Quantity of Emulsified Asphalt (kilograms) or (CWT)
- ACEA = Asphalt Content of Emulsified Asphalt as follows:

Emulsified Asphalt Type	ACEA
CSS-1h	0.57
MS-1	0.55
RS-1	0.55
CRS-1p	0.63
CSS-1h Fog	0.28

- (6) The Contract bid prices for the applicable pay items will be paid separately under the Contract. The price adjustment will be calculated and paid in the same bi-weekly estimate as the applicable Contract work.
- (7) Payments for Price Adjustment, Asphalt Cement shall be debited or credited against the Contract price (Lump Unit) bid for Price Adjustment, Asphalt Cement.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
406.50 Price Adjustment, Asphalt Cement (N.A.B.I.)	Lump Unit

## Ramsey, Jeff

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**From:** Cahoon, Barry  
**Sent:** Tuesday, June 19, 2012 12:07 PM  
**To:** Ramsey, Jeff  
**Cc:** Menees, Todd  
**Subject:** RE: Jamaica ER BRF 013-1 (16) SAP

Consider this to constitute ANR concurrence with this project as shown on the design plans provided pursuant to Title 19. Thanks, B.

**From:** Ramsey, Jeff  
**Sent:** Tuesday, June 19, 2012 11:22 AM  
**To:** Cahoon, Barry  
**Cc:** Higgins, Kristin; Symonds, Wayne  
**Subject:** Jamaica ER BRF 013-1 (16) SAP

Hi Barry,

Per our conversation yesterday, please find a plan set for Jamaica ER BRF 013-1 (16) Bridge 78 project.

Comments from Nick Wark:

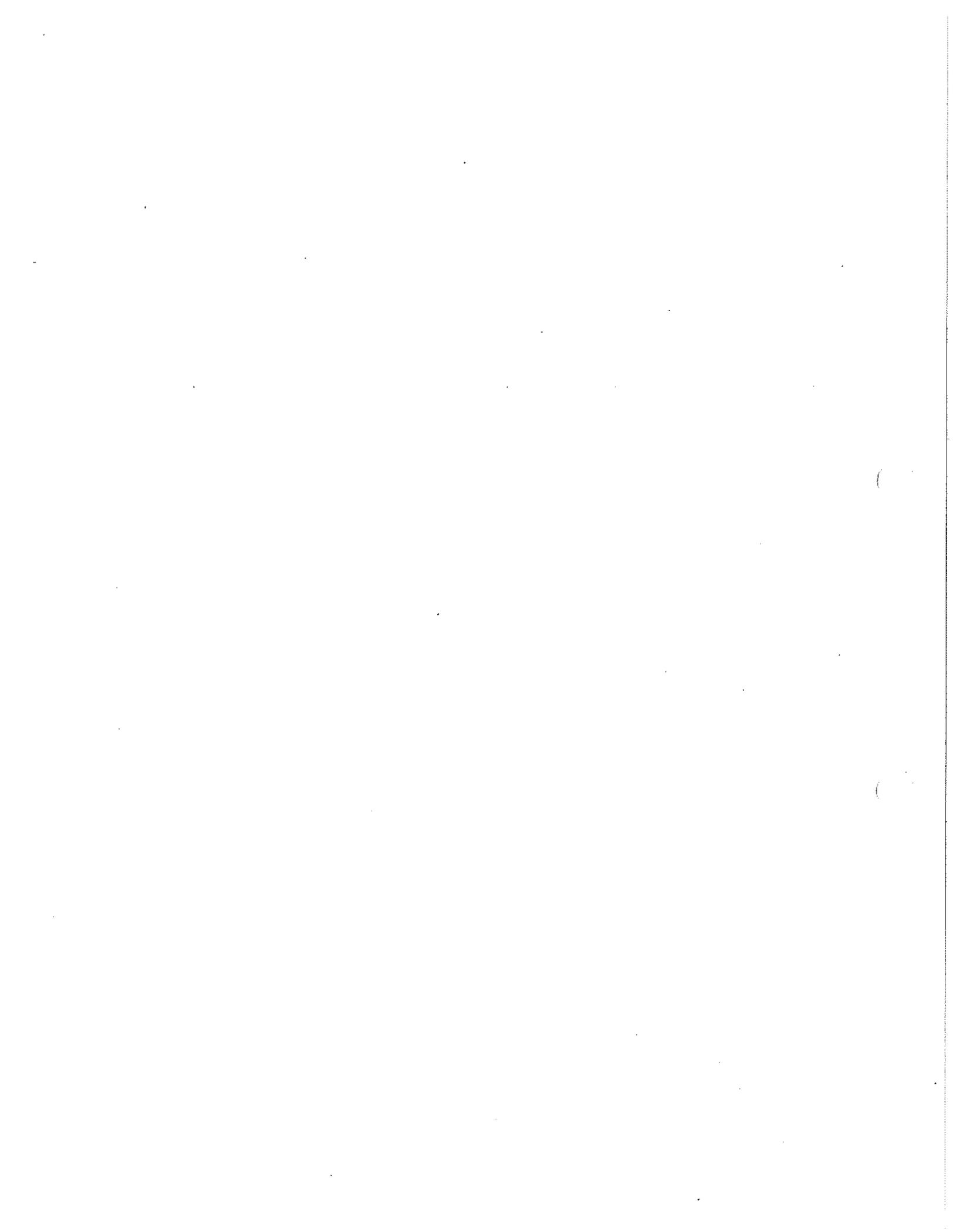
Sheet 11 shows the profile. Note the bench on the right. The size will vary as the bridge is skewed, but the channel section is not "over widened"

Sheet 34 shows the proposed contours. The point of interest here is the northeast corner of the abutment. With the proposed alignment we are able to place stone fill in front of the abutment without constricting the channel.

I will discuss with our group ways to include the River Management Engineers earlier in our review process. Please let me know if you have any questions or need additional information.

Thanks,  
Jeff.

Jeff Ramsey  
Environmental Specialist - North Region  
Vermont Agency of Transportation  
Program Development Division  
Environmental Section  
1 National Life Drive  
Montpelier, VT 05633  
tel. 802-828-1278  
[jeff.ramsey@state.vt.us](mailto:jeff.ramsey@state.vt.us)





Vermont Department of Environmental Conservation  
Watershed Management Division  
103 South Main Street, Building 10 North  
Waterbury, VT 05671-0408

*Agency of Natural Resources*

[phone] 802-338-4846  
[fax] 802-338-4890

May 8, 2012

Vermont Agency of Transportation  
Richard Tetreault  
One National Life Drive  
Montpelier, VT 05633

**Re: Construction General Permit 3-9020 (Amended 2008)  
Authorization of Notice of Intent # 6813-9020**

Dear Mr. Tetreault,

Notice of Intent # 6813-9020 for the discharge of stormwater from the construction activities associated with the replacement of existing bridge with related roadway approach and channel work described in the Notice of Intent you submitted has been authorized. Enclosed are four documents that you will need to maintain compliance with this authorization.

**1. Authorized Notice of Intent (NOI)**

The authorized NOI for Low Risk Projects is valid for two years from the date of the authorization. If the project will proceed past the automatic termination date, you must reapply for coverage under this or another construction stormwater permit before that time.

**2. Notice of Authorization for Posting**

The notice of Authorization, which details the authorization and conditions you selected in completion of Appendix A to the CGP, must be posted in a location visible to the public in accordance with Subpart 4.5.C of the CGP. In accordance with subpart 5.1 of the CGP, the project risk score must be re-evaluated prior to any major changes to the construction plan.

**3. Low Risk Site Handbook for Erosion Prevention and Sediment Control**

Please provide the Principal Operator with the low risk site handbook. This handbook details the practices that must be implemented throughout the construction project to prevent erosion and the discharge of sediment from the construction site. Some practices must be in place before construction begins, so please review the entire handbook before starting the project.

**4. Notice of Addition of Co-Permittee**

This form must be submitted for every new landowner or principal operator who joins the project, in accordance with Subpart 7.2 of the CGP.

The CGP, copies of blank forms, and an electronic version of the Low Risk Handbook are available on the stormwater website:

[http://www.vtwaterquality.org/stormwater/htm/sw\\_cgp.htm](http://www.vtwaterquality.org/stormwater/htm/sw_cgp.htm).

If you have any questions related to this permit authorization, please contact the Stormwater Section at 802-241-4320 or email [stormwater@state.vt.us](mailto:stormwater@state.vt.us).

Sincerely,

A handwritten signature in cursive script that reads "Ashley Carver".

Ashley Carver  
Stormwater Program

For Department Use:  
NOI Number: 6813-9020

## Notice of Intent (NOI)

for Stormwater Discharges Associated with  
Construction Activity on **Low Risk Sites**  
Under Vermont Construction General Permit 3-9020



Submission of this completed Notice of Intent (NOI) constitutes notice that the entity in Section A intends to be authorized to discharge pollutants to waters of the State, from the project identified in Section B, under Vermont's Stormwater Construction General Permit (CGP). Submission of the NOI also constitutes notice that the party identified in Section A of this form has read, understands, and meets the eligibility conditions of the CGP and has determined that the project qualifies for coverage as a Low Risk project in conformance with Appendix A of the CGP; agrees to comply with all applicable terms and conditions of the CGP; understands that continued authorization under the CGP is contingent on maintaining eligibility for coverage, and that the applicable practices in the Low Risk Site Handbook for Erosion Prevention and Sediment Control must be implemented and maintained for the duration of the construction activities. In order to be granted coverage, all information required on this form must be provided.

### A. Landowner Information

1. Name: Vermont Agency of Transportation, Richard Tetreault, Project Development  
2. Mailing Address:  
a. Street/PO Box: One National Life Drive, Drawer 33  
b. City/Town: Montpelier c. State: Vermont d. Zip: 05633  
3. Contact Information  
a. Phone: 828-2883 b. Fax: 828-2437 c. Email: richard.tetreault@state.vt.us

### B. Principal Operator Information (if known)

1. Name: Not Known at this time.  
2. Mailing Address:  
a. Street/PO Box: \_\_\_\_\_  
b. City/Town: \_\_\_\_\_ c. State: \_\_\_\_\_ d. Zip: \_\_\_\_\_  
3. Contact Information  
a. Phone: \_\_\_\_\_ b. Fax: \_\_\_\_\_ c. Email: \_\_\_\_\_

### C. Project Information

1. Project Name: Jamaica, ER BRF 013-1 (16) 2. Part of Common Plan of Development?:  Yes  No  
3. If Yes, Name of Development: \_\_\_\_\_  
4. Location Address  
a. Street: Vermont Route 100 b. City/ Town: Jamaica  
c. Latitude: 43 ° 3 ' 58 " d. Longitude 72 ° 45 ' 13 " (at or near center of the project)  
5. Project Type:  Residential  Commercial  Industrial Public  Other: Public  
6. Description of construction activities to be permitted:  
Replacement of existing bridge with related roadway approach and channel work.  
7. Total Area of Disturbance: 1.42 acres  
8. Proposed Start Date: 11/26/12 Proposed End Date: 6/3/13  
9. Has a Topographic Map showing the project boundary been included?  Yes  No  
10. Name(s) of receiving waters: Wardsboro Brook

**D. Certification Relating to the Accuracy of the Information Submitted**

I hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I also certify that the applicable practices in the Low Risk Site Handbook for Erosion Prevention and Sediment Control will be implemented for the duration of the project for which this NOI is submitted.

Landowner Name: Richard Tetreault Title: Vtcons PDD Director  
Signature: [Signature] Date: 3/12/12

**E. Public Notice Requirement**

You must provide a copy of this completed NOI form to the municipal clerk for posting in the municipality in which the discharge is to be located. If the project and the related discharge(s) are located in different municipalities, then the completed NOI shall be filed with the municipal clerk in each municipality.

**For Department Use Only:**

**VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION AUTHORIZATION TO DISCHARGE** A determination has been made that the proposed construction activities qualify for coverage under General Permit 3-9020 (amended 2008) as a Low Risk project. Subject to the conditions of General Permit No. 3-9020 (amended 2008), the applicant is hereby authorized to discharge stormwater runoff from a construction site as described in this Notice of Intent Number 6813 -9020.

Dated at Waterbury, Vermont this 8th day of May, 20 12.

Justin G. Johnson, Commissioner Department of Environmental Conservation

By Padraic Monks  
Padraic Monks  
Program Manager, Stormwater Section

### PUBLIC COMMENT

Public comments concerning this Notice of Intent to discharge under General Permit No 3-9020 are invited and must be submitted within 10 days of receipt of this Notice by the Municipal Clerk. Comments should address how the application complies or does not comply with the terms and conditions of General Permit No. 3-9020. A letter of interest should be filed by those persons who elect not to file comments but who wish to be notified if the comment period is extended or reopened for any reason. All written comments received within the time frame described above will be considered by the Department of Environmental Conservation in its final ruling to grant or deny authorization to discharge under General Permit No. 3-9020.

Send written comments to: VT Department of Environmental Conservation  
Water Quality Division, Stormwater Section  
103 South Main Street, Building 10 North  
Waterbury, VT 05671-0408  
Please cite the NOI number in any correspondence.

### APPEALS

Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Court within 30 days of the date of the decision. The appellant must attach to the Notice of Appeal the entry fee of \$250.00, payable to the state of Vermont.

The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Court; and must be signed by the appellant or their attorney. In addition, the appeal must give the address or location and description of the property, project or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal.

The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings.

For further information, see the Vermont Rules for Environmental Court Proceedings, available on line at [www.vermontjudiciary.org](http://www.vermontjudiciary.org). The address for the Environmental Court is 2418 Airport Road, Suite 1, Barre, VT 05641 (Tel. # 802-828-1660)

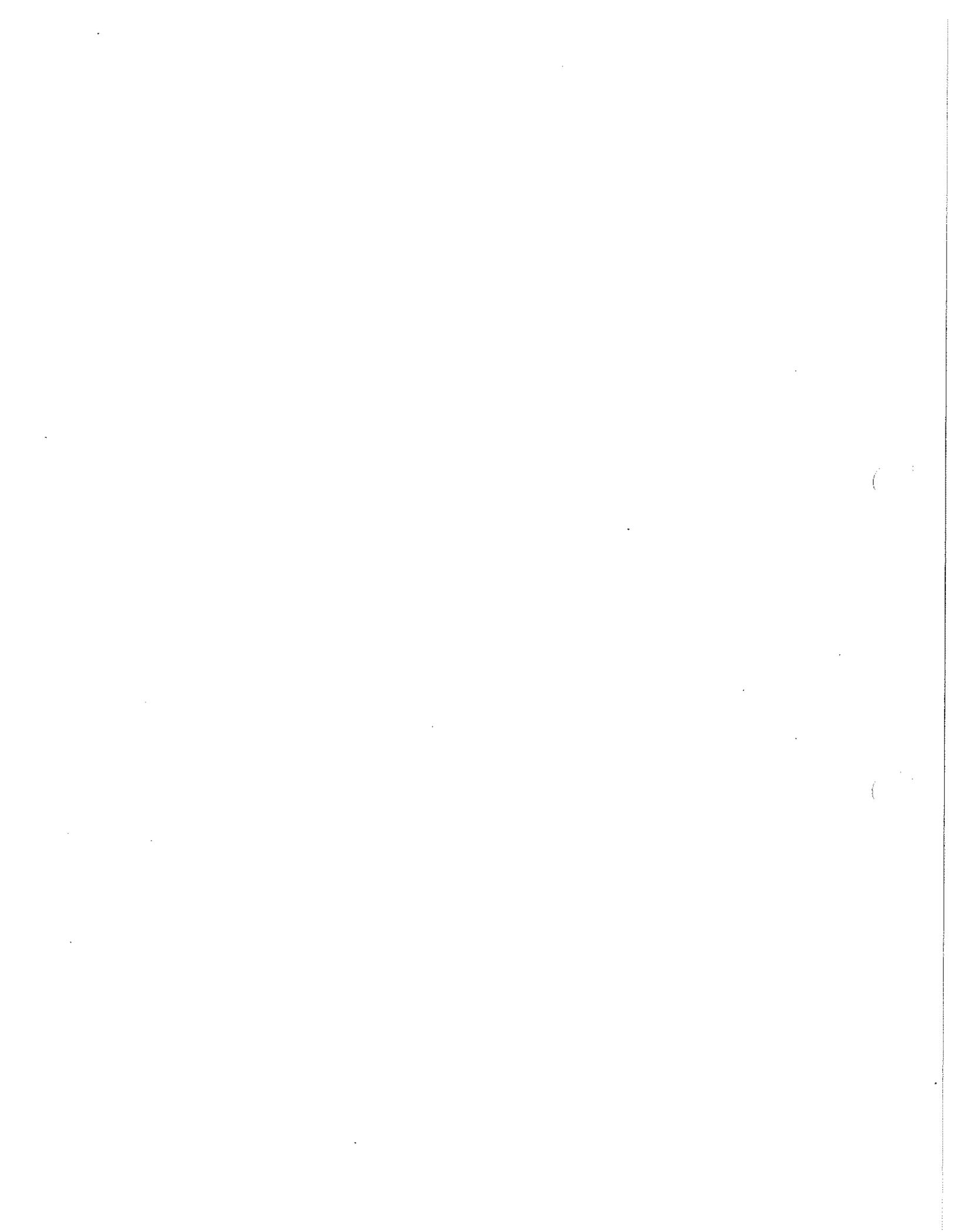
A copy of General Permit No. 3-9020 may be obtained by calling (802) 241-3770; by visiting the Department at the above address between the hours of 7:45 am and 4:30 pm; or by downloading from the Water Quality Division's Web site at [www.vtwaterquality.org](http://www.vtwaterquality.org).

**INFORMATION FOR MUNICIPAL CLERK:** Title 10 Chapter 47 §1263(b) provides for the public notice of an applicant's intent to discharge stormwater runoff associated with construction activity. Please post this notice and instruction sheet in a conspicuous place for 10 days from the date received. If you have any questions, contact the Water Quality Division of the Department of Environmental Conservation at (802) 241-3771. Please date this below as to when it was posted. Thank you for your assistance.

DATE OF POSTING: \_\_\_\_\_

*(sent to town clerk 03/12/12)*

Submit Original Form to:  
VT DEC, Water Quality Division  
103 South Main Street, Bldg 10 North  
Waterbury, VT, 05671



## Notice of Authorization

Under Vermont Construction General Permit 3-9020  
For Low Risk Projects



<b>Project Name:</b> Jamaica, ER BRF 013-1 (16)	<b>Notice of Intent Number:</b> 6813-9020
<b>Permittee Name:</b> Vermont Agency of Transportation	<b>Date of Authorization:</b> 5/8/2012
	<b>Date of Expiration:</b> 5/8/2014

The project listed above has received authorization under General Permit 3-9020 to discharge stormwater from the following construction activities: Replacement of existing bridge with related roadway approach and channel work.

**This authorization includes the following requirements:**

1. Implementation of erosion prevention and sediment control practices required by the Low Risk Site Handbook for Erosion Prevention and Sediment Control.
2. All areas of disturbance must have temporary or final stabilization within 7 days of the initial disturbance. After this time, all disturbed soil must be stabilized at the end of each work day. Between October 15 and April 15 all disturbed soil must be at the end of each work day. The following exceptions apply:
  - a. Stabilization is not required if work is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.
  - b. Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).
3. No more than 2 acres of land may be disturbed at any one time.
4. No disturbance shall occur within 50 ft upslope of any stream or river, or 100 ft of any lake or pond (except disturbance for the installation of Stormwater treatment facilities or road Stream crossing with no reasonable alternative location)
5. Inspections shall be conducted at least once every (7) calendar days and within twenty-four (24) hours of the end of a storm event resulting in discharge of Stormwater from construction site.
6. If there is a discharge of visibly discolored Stormwater from the construction site or from the Construction site to waters of the State, the permittee shall take immediate corrective action.
7. If, after completing corrective action, there continues to be a discharge of sediment from the construction site to waters of the State, the permittee shall notify DEC by submitting a report within 72 hours of the discharge.

To request information on this authorization, or to report compliance concerns, please contact the Water Quality Division at (802) 241-3777 or write to:

VT DEC, Watershed Management Division  
103 South Main Street, Bldg 10 North  
Waterbury, VT, 05671-0408

See next page for posting requirements

**Permittee Directions for Posting:**

This notice shall be placed near the construction entrance at a location visible to the public. If displaying near the main entrance is infeasible, the notice shall be posted in a local public building such as the town hall or public library. For linear projects, the notice shall be posted at a publicly accessible location near the active part of the construction project (e.g., where a pipeline project crosses a public road).



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

July 17, 2012

Regulatory Division  
CENAE-R-PEC-61  
Permit Number: NAE-2012-1218

Mr. John Lepore  
Transportation Biologist  
Vermont Agency of Transportation  
One National Life Drive  
Montpelier, Vermont 05633-5001

Dear Mr. Lepore:

We have reviewed your application to place fill in a total of about 3630 sq. ft. (0.08 acre) of Wardsboro Brook in conjunction with the replacement, on existing alignment, of Bridge No. 78 on VT Route 100 in Jamaica, Vermont. The work is shown on the attached plans, on six sheets, entitled "JAMAICA ER-BRF 013-1(16), and dated "07-JUN-2012".

Based on the information you have provided, we have determined that the proposed activity, which includes a discharge of dredged or fill material into waters or wetlands, will have only minimal individual or cumulative environmental impacts on waters of the United States, including wetlands. Therefore, this work is authorized as a Category 2 activity under the attached Federal permit known as the Vermont General Permit (GP). This work must be performed in accordance with the terms and conditions of the GP.

You are responsible for complying with all of the GP's requirements. Please review the attached GP carefully, in particular the GP conditions beginning on Page 8, to familiarize yourself with its contents. You should ensure that whoever does the work fully understands the requirements and that a copy of the permit document AND THIS AUTHORIZATION LETTER ARE at the project site throughout the time the work is underway.

This authorization expires on December 5, 2012, unless the GP is modified, suspended, or revoked. You must commence or have under contract to commence the work authorized herein by December 5, 2012 and complete the work by December 5, 2013. If you do not, you must contact this office to determine the need for further authorization before beginning or continuing the activity. We recommend you contact us *before* this permit expires to discuss a time extension or permit reissuance.

If you change the plans or construction methods for work in our jurisdiction, please contact us immediately to discuss modification of this authorization. This office must approve any changes before you undertake them.

This authorization requires you to 1) notify us before beginning work so we may inspect the project, and 2) submit a Compliance Certification Form. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation (but not mitigation monitoring, which requires separate submittals).

This authorization presumes that the work as described above and as shown on your plans noted above is in waters of the U.S. Should you desire to appeal our jurisdiction, please submit a request for an approved jurisdictional determination in writing to this office.

This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law, as listed on Page 2 of the GP. Performing work not specifically authorized by this determination or failing to comply with any special condition(s) provided above or all the terms and conditions of the GP may subject you to the enforcement provisions of our regulations.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at <http://per2.nwp.usace.army.mil/survey.html>.

Please contact Marty Abair of my staff at (802) 872-2893 if you have any questions.

Sincerely,

  
Frank J. DelGiudice  
Chief, Permits & Enforcement Branch  
Regulatory Division

Attachments

Copy furnished:  
Mr. Todd Menees  
[todd.menees@state.vt.us](mailto:todd.menees@state.vt.us)



**US Army Corps  
of Engineers**  
New England District

**WORK START NOTIFICATION FORM**

\*\*\*\*\*  
 \* MAIL TO: U.S. Army Corps of Engineers, New England District \*  
 \* Vermont Project Office \*  
 \* 8 Carmichael Street, Suite 205 \*  
 \* Essex Junction, Vermont 05452 \*  
 \*\*\*\*\*

Corps of Engineers Permit No. NAE-2012-1218 was issued to The Vermont Agency of Transportation. The permit authorized the permittee to place fill in a total of about 3630 sq. ft. (0.08 acre) of Wardsboro Brook in conjunction with the replacement, on existing alignment, of Bridge No. 78 on VT Route 100 in Jamaica, Vermont.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

**PLEASE PRINT OR TYPE**

Name of Person/Firm: \_\_\_\_\_

Business Address: \_\_\_\_\_

Telephone Numbers: ( ) \_\_\_\_\_ ( ) \_\_\_\_\_

Proposed Work Dates: Start \_\_\_\_\_, Finish \_\_\_\_\_

Permittee's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

\*\*\*\*\*

**FOR USE BY THE CORPS OF ENGINEERS**

PM: Marty Abair Submittals Required: No

Inspection Recommendation: \_\_\_\_\_

\_\_\_\_\_



**US Army Corps  
of Engineers**®  
New England District

(Minimum Notice: Permittee must sign and return notification  
within one month of the completion of work.)

**COMPLIANCE CERTIFICATION FORM**

USACE Project Number: NAE-2012-1218

Name of Permittee: Vermont Agency of Transportation

Permit Issuance Date: July 17, 2012

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

\*\*\*\*\*  
 \* MAIL TO U.S. Army Corps of Engineers, New England District \*  
 \* Vermont Project Office \*  
 \* 8 Carmichael Street, Suite 205 \*  
 \* Essex Junction, Vermont 05452 \*  
 \*\*\*\*\*

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

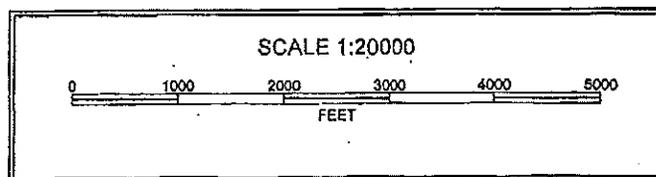
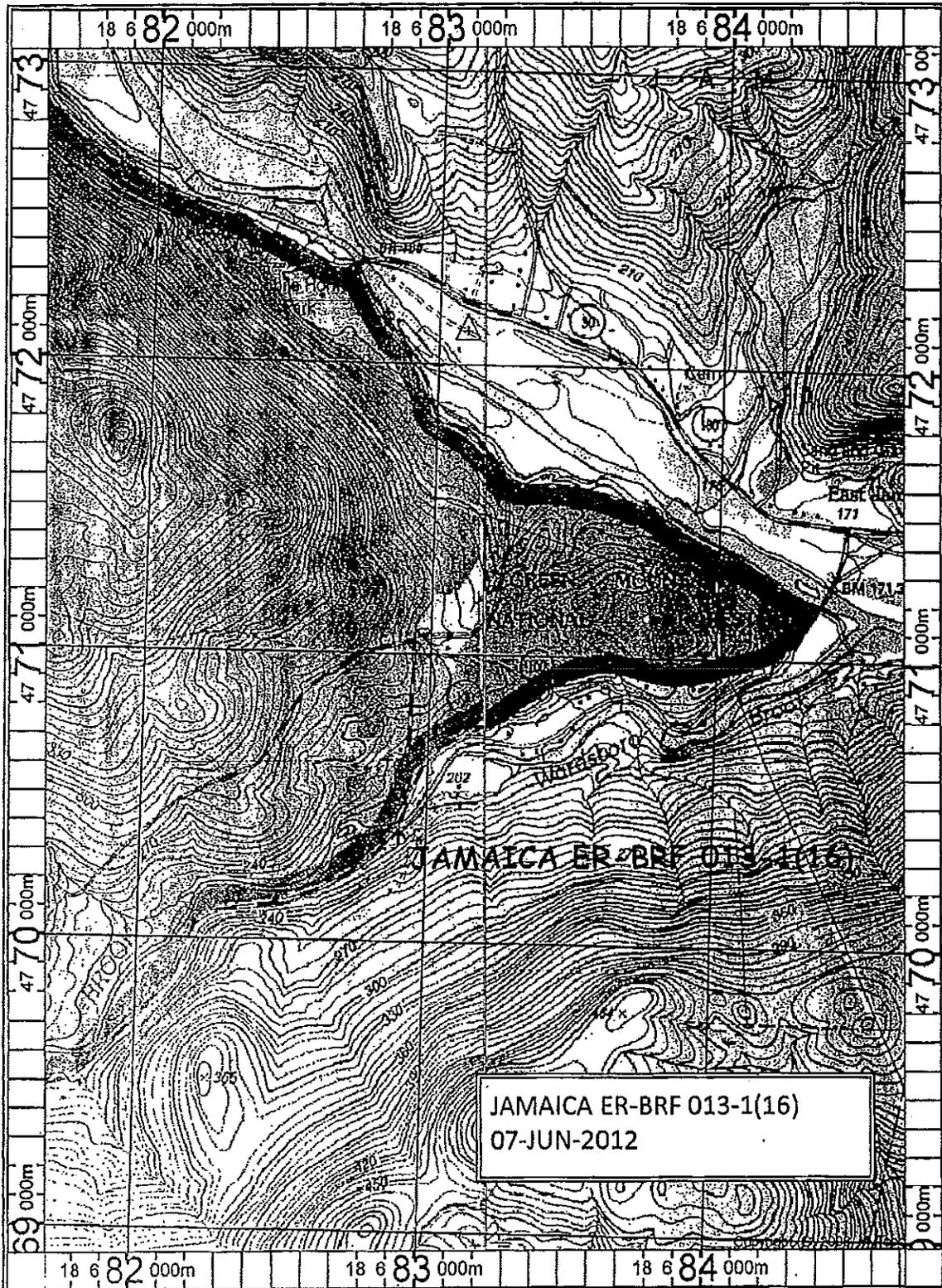
\_\_\_\_\_  
Signature of Permittee

\_\_\_\_\_  
Date

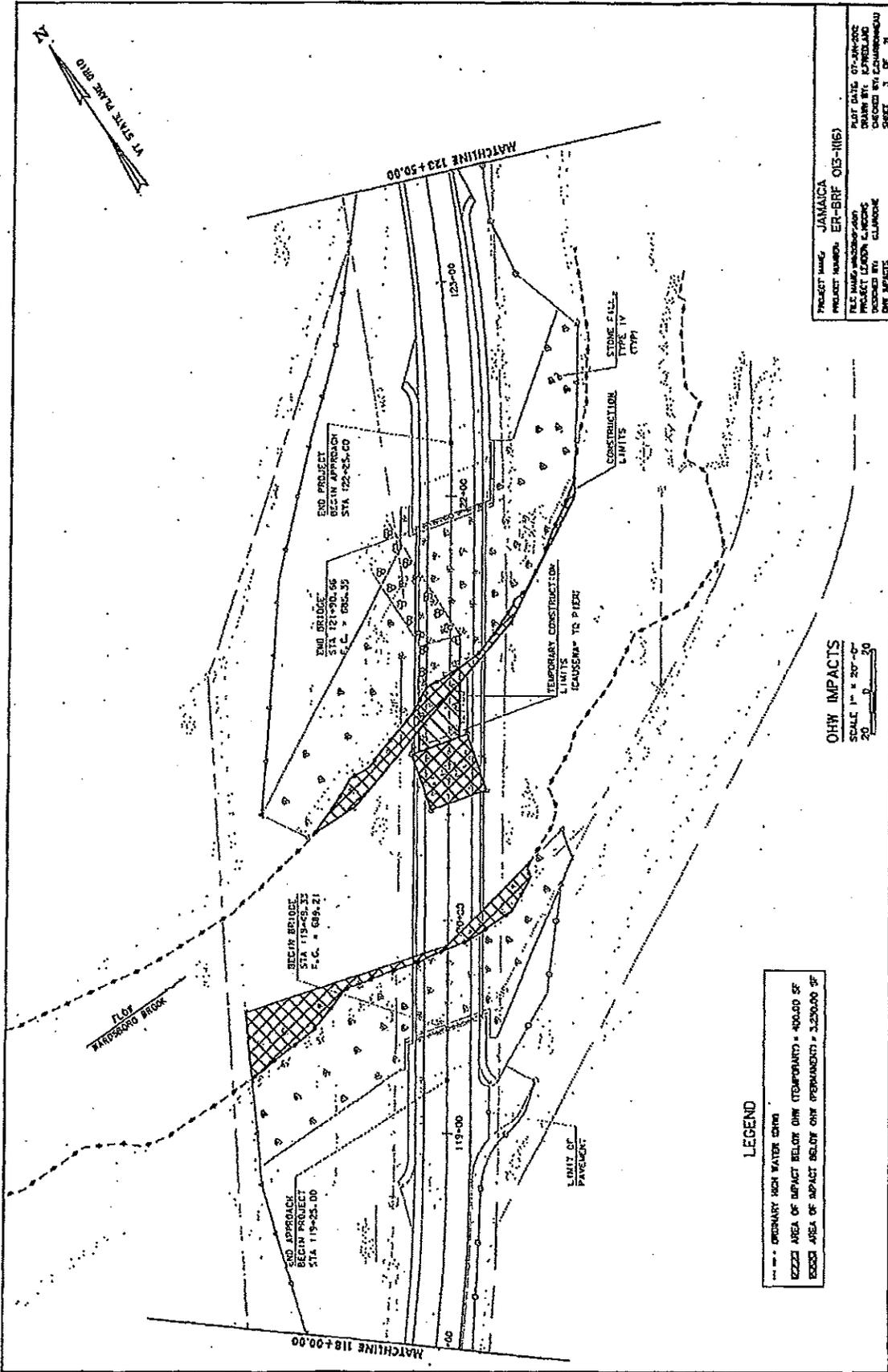
\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date of Work Completion

( ) \_\_\_\_\_  
Telephone Number







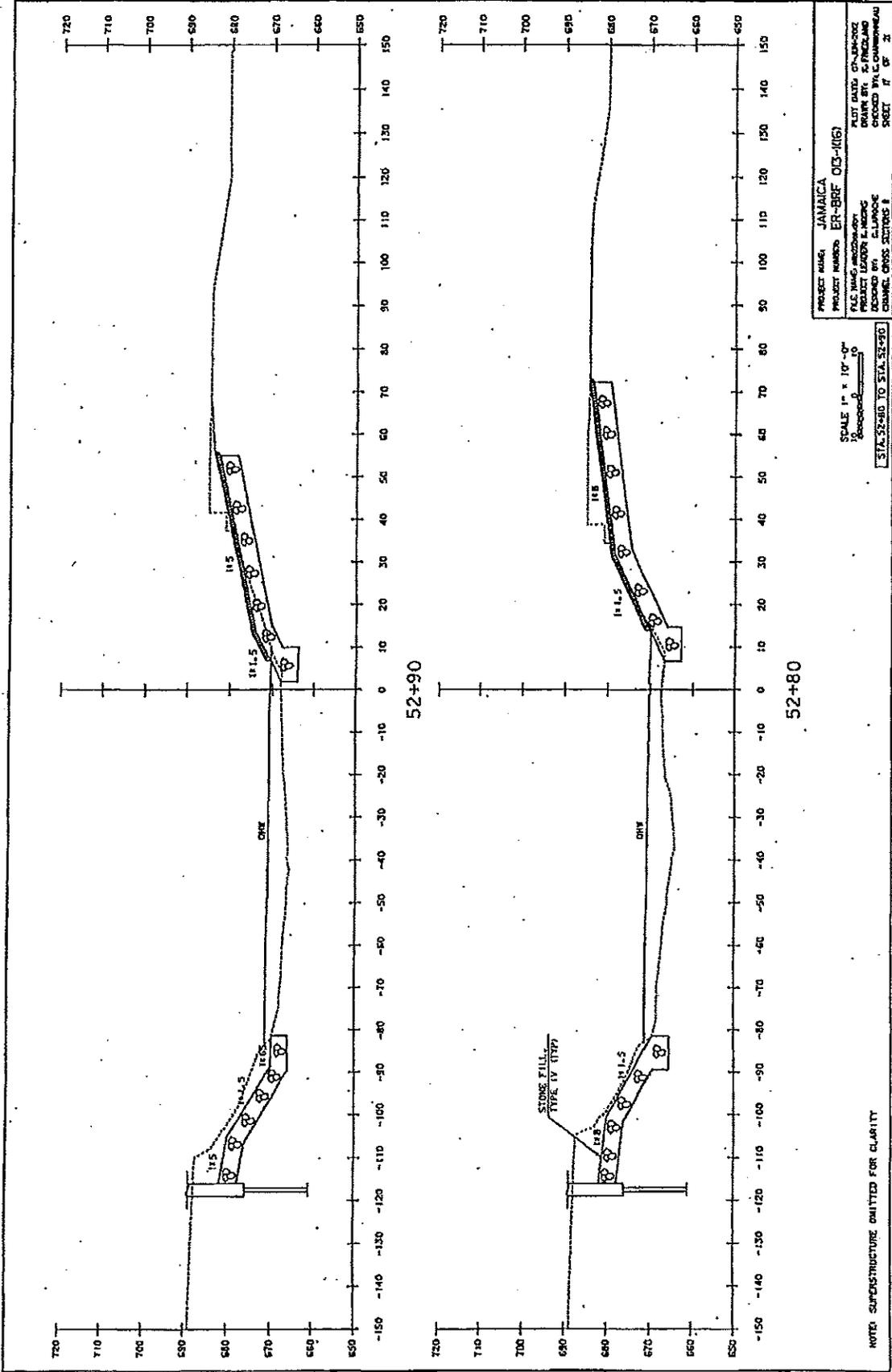
PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER-BRF 015-1161  
 FILE NAME: W030307-01  
 PROJECT DESIGN NUMBER: DRAWN BY: J.FREDLAND  
 CHECKED BY: CLAUDIO  
 DATE: 3/07/03

**OHV IMPACTS**  
 SCALE 1" = 20'-0"  
 20 0 20

**LEGEND**  
 --- --- ORDINARY HIGH WATER CURVE  
 [Hatched Area] AREA OF IMPACT BELOW OHV (TEMPORARY) = 400.00 SF  
 [Dotted Area] AREA OF IMPACT BELOW OHV (PERMANENT) = 3,250.00 SF







PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER-BRF-03-1163  
 FILE NAME: 03-1163  
 PROJECT LEADER: E. LINDGREN  
 CHECKED BY: L. CLARKE  
 CHANNEL CROSS SECTION #  
 SHEET # OF #

SCALE: 1" = 10'-0"  
 1/8" = 1'-0"  
 STA. 52+80 TO STA. 52+90

NOTE: SUPERSTRUCTURE OMITTED FOR CLARITY

## DEPARTMENT OF THE ARMY GENERAL PERMIT STATE OF VERMONT

The New England Division of the U.S. Army Corps of Engineers (Corps) hereby issues this General Permit (GP) that expedites review of minimal environmental impact work associated with the aquatic environment of navigable and inland waters and wetlands within the State of Vermont. This general permit for Vermont is known as the Vermont General Permit.

### I. GENERAL CRITERIA:

Activities with **minimal impacts**, as specified by this GP's terms (Pages 1-7), general conditions (Pages 8-16) and Appendix A - Definition of Categories, qualify for authorization under the GP in either Category 1 or Category 2.

Proponents should first review Appendix A - Definition of Categories to see if a project meets either:

- Category 1: Non-reporting.  
Projects meeting Category 1 criteria and which are in full compliance with the general conditions may be authorized under this GP without notifying the Corps.
- Category 2: Reporting.  
An application to and written authorization from the Corps is required for these projects.

If you determine that your project is eligible for Category 1 as defined in Appendix A, you must then ensure that your project is in full compliance with this GP's terms and general conditions. If any of these terms and conditions are not met, your project must be reviewed in the Category 2 or the Individual Permit category. The Individual Permit thresholds are defined in Appendix A and the Individual Permit procedures are briefly described on Page 7. This GP does not affect the Corps Individual Permit review process or activities exempt from Corps regulation.

### II. ACTIVITIES COVERED:

- Work and structures that are located in or over any navigable water of the United States<sup>1</sup>, the excavating from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters (regulated by the Corps under Section 10 of the Rivers and Harbors Act of 1899); and
- The discharge of dredged or fill material into waters of the U.S.<sup>1</sup> [regulated by the Corps under Section 404 of the Clean Water Act (CWA)]. This GP also covers secondary impacts, which are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. The Corps does not regulate secondary impacts unless there is an actual placement of dredged or fill material. See GC 3 on Page 8 and Appendix A, Endnote 4 for more information on secondary impacts.

<sup>1</sup> Waters of the U.S., inland waters and wetlands, and navigable waters of the U.S. are defined at Appendix A, Endnotes/Definitions.

### III. PROCEDURES:

#### A. State Approvals

Applicants are responsible for applying for and obtaining any of the required State approvals (see General Condition 1). Federal and State jurisdictions may differ in some instances. State permits may be required for specific projects regardless of the general permit category.

i. In order for authorizations under this GP to be valid, when any of the following state approvals or statutorily-required reviews is also required, the approvals must be obtained prior to the commencement of work in Corps jurisdiction.

(1) Vermont Agency of Natural Resources (VT ANR) approval of a Conditional Use Determination under the Vermont Wetland Rules;

(2) VT ANR approval of a Stream Alteration Permit under Title 10, Chapter 41, Subchapter 2;

(3) VT ANR approval of a Lake Encroachment Permit under Title 29, Chapter 11, Management of Lakes and Ponds;

(4) VT ANR approval of a Dam Construction Permit under Title 10, Chapter 43, Dams;

(5) Vermont Department of Fish and Wildlife (VT F&W) approval of a Stream Obstruction Permit under Title 10, Chapter 111, Section 4607.

(6) VT ANR, Water Quality Division, issuance of a Water Quality Certification (WQC) under Section 401 of the CWA (33 USC 1341). Section 401(a)(1) of the CWA requires applicants to obtain a WQC or waiver from the state water pollution control agency (VT ANR) to discharge dredged or fill materials into waters of the U.S. The VT ANR has granted WQC for GP Category 1 activities provided that the applicant obtains the required approvals listed above and the project fully complies with all terms and conditions of this GP. The VT ANR reserves the authority to enforce any violation of the Vermont Water Quality Standards that results from any Category 1 activity. Therefore, a separate 401 WQC application is not required for activities involving fill in waters of the U.S. authorized under Category 1 of this GP. However, all stream crossings at locations with drainage areas of one square mile or greater that would otherwise qualify for Category 1 of the VT GP are granted a WQC subject to the following:

- The crossing is a temporary installation consistent with "Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont," or
- The crossing has received written approval from the VT ANR, or
- More than 21 calendar days elapse without a response from the date of receipt by the VT ANR of complete information describing the crossing location and design.

The VT ANR conditionally granted WQC for GP Category 2 activities listed in Appendix A of this GP provided (1) the applicant obtains the required approvals listed above and (2) the Corps notifies the VT ANR and the VT ANR finds that the activity is reasonably likely to have minimal or no impact on water quality. The VT ANR retains the right to require an Individual WQC for any Category 2 activity. The VT ANR will respond within the same response times required of the Federal resource agencies.

ii. The State of Vermont also requires project proponents to obtain the following authorizations from the State when applicable:

(7) VT ANR approval of a 1272 Order under Title 10, Chapter 47;

(8) VT National Flood Insurance Program (NFIP) confirmation that the proposed project is in compliance with the minimum NFIP regulations consistent with 24 VSA 4424.

(9) VT ANR approval of a threatened and endangered species permit, 10 VSA Chapter 123, administered by VT F&W.

## **B. Corps Authorizations**

General permit authorizations consist of both Category 1 and 2 activities (see Appendix A). The thresholds outlined in this document are intended to ensure that the GP results in no more than a minimal impact to the aquatic environment. The Corps will coordinate review of all Category 2 activities with Federal resource agencies and the State of Vermont and may require project modifications or mitigation to minimize impacts.

### **Category 1 (Non-reporting)**

**Eligibility** - Activities in Vermont that are:

- Subject to Corps jurisdiction;
- Meet the definition of Category 1 in Appendix A - Definition of Categories; and
- Meet the general conditions of this GP (Pages 8-16)

may proceed without application or notification to the Corps provided the required Federal, State, and local authorizations are obtained (See page 2).

Although Category 1 projects are non-reporting, the Corps reserves the right to require either an Individual Permit (see GC 4) or Category 2 review if there are concerns for the aquatic environment or any other factor of the public interest. Secondary impacts must be accounted for (see GC 3).

Project proponents seeking Category 1 authorizations are not relieved of the obligation to comply with this GP's general conditions (Pages 8-16) and other Federal laws such as the National Historic Preservation Act, the Endangered Species Act and the Wild and Scenic Rivers Act. Therefore, consultation with the Corps and/or agencies such as the Vermont Division for Historic Preservation (VT DHP) (see Page 17) is required when there is a high likelihood of the presence of resources of concern. Secondary impacts must be included when determining if a project qualified for Category 1 (see GC 3). Fill area includes all temporary and permanent fill.

**Enforcement cases.** This GP does not apply to any existing or proposed activity in Corps jurisdiction associated with an on-going Corps or EPA enforcement action until such time as the enforcement action is resolved or the Corps determines that the activity may proceed independently without compromising the enforcement action. The Corps may choose not to accept applications or issue permits to any applicant with outstanding violations.

### **Category 2 (Reporting/Screening)**

#### **Eligibility**

Activities in Vermont that are:

- Subject to Corps jurisdiction;
- Meet the definition of Category 2 in Appendix A; and
- Meet the general conditions of this GP (Pages 8-16)

require written approval from the Corps. These projects will be reviewed through interagency screening to determine whether such activities may be authorized under this GP. To be eligible and subsequently authorized, an activity must result in no more than a minimal impact to the aquatic environment as determined by the Corps in coordination with the interagency review team (Page 5), in addition to meeting the criteria listed above. Mitigation may be required to compensate for unavoidable impacts to ensure net effects of a project are minimal.

To ensure compliance with this GP's general conditions, consultation with the Corps, other Federal or State resource agencies, or independent consultants, may be necessary. This includes consultation with the VT DHP (Page 17) to ensure compliance with GC 7 and the VT ANR to comply with applicable general conditions. Also, note the review thresholds under Category 2 apply to single and complete projects only (see GC 5).

### **Application Procedures**

Applicants must apply directly to the Corps at the Vermont Project Office (VPO), and are encouraged to simultaneously apply to the VT ANR for any related permits. Upon receipt of an application for a Category 2 activity, the Corps will determine if it:

- (1) Requires additional information;
- (2) Is appropriate for screening with the Federal resource agencies and State agencies (see Screening Procedures);
- (3) Is ineligible under the terms and/or conditions of this general permit;
- (4) Requires project modification, mitigation or other special conditions to minimize impacts and protect the aquatic environment to be eligible for this GP; or
- (5) Requires Individual Permit review regardless of whether the terms and conditions of this GP are met, based on concerns for the aquatic environment or any other factor of the public interest (see GC 4 on Discretionary Authority).

### **Information Typically Required**

In order to consider an application complete and review it with the interagency review team, the applicant must submit complete information. Please see [www.nae.usace.army.mil](http://www.nae.usace.army.mil) for a more comprehensive checklist. Select "Regulatory/Permitting," "Forms" and then "Application and Plan Guideline Checklist." This information includes, but is not limited to:

- Plans that illustrate the proposed work in reference to the limits of Corps jurisdiction as applicable. Plans should be on 8.5" x 11" paper and contain all other appropriate information.
- A description of the proposed work, project purpose and location, including a locus map and photographs, if applicable.
- Data sheets to support wetland delineations. See GC 2.
- A narrative description of the habitat(s) including dominant plant community(ies) present, soil type and relevant existing and adjacent land uses.
- A demonstration that there will be no more than minimal direct and indirect impacts to the aquatic resource(s) resulting from the project. Consideration should be given to impacts associated with expected hydrologic changes, effects on riparian habitat, forest fragmentation, impacts to headwater and ephemeral streams (Endnote 17), stormwater discharges and other potential water quality and wetland habitat impacts. See GC 3.
- Information on Federal endangered and threatened species and critical habitat, and State endangered and threatened species that occur or may occur in the project area. See GC 9. VT ANR, Department of Fish & Wildlife, Nongame and Natural Heritage program contact info is provided on Page 17. Refer to Additional References on Page 18 for additional information.
- Identification and description of potential impacts to essential fish habitat. See GC 10.
- Identification of potential discharges of pollutants to waters, including potential impacts to impaired waters, in the project area. See GC 22. Refer to Additional References on Page 18.
- Identification, quantification, and description of potential impacts to aquatic resources, including delineation of wetlands, special aquatic sites, special wetlands and vernal pools. See GC 27.

### Federal/State Screening Procedures

The Corps, Federal resource agencies [U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (EPA), and National Marine Fisheries Service (NMFS)] and VT ANR will comprise the interagency review team. The Corps will also coordinate with VT DHP as to potential impacts of a project on historic properties.

Screening of Category 2 projects will be either through email, fax, mail or at interagency screening meetings at the Corps VPO. Projects are coordinated on a regular basis or as necessary to facilitate prompt decision making. The Corps and the Federal resource agencies, at the branch chief or equivalent level, may agree on certain activities that do not need to be coordinated at these meetings. The Corps, VT ANR and VT DHP will review/screen complete applications for Category 2 activities with impacts between 3,000 square feet (SF) and 5,000 SF. The Corps will review/screen all complete applications for Category 2 projects with impacts greater than 5,000 SF with the interagency review team and VTDHP.

The Corps may determine on its own or in consultation with the interagency review team, if applications for Category 2 work:

- Are eligible under the GP as proposed;
- Are ineligible under the terms and/or conditions of this GP;
- Require additional information;
- Will require project modification, mitigation or other special conditions to avoid or minimize adverse environmental impacts and protect the aquatic environment to be eligible for authorization under this GP; or
- Require Individual Permit review irrespective of whether the terms and general conditions of this GP are met, based on concerns for the aquatic environment or any other factor of the public interest (see GC 4).

The Federal resource agencies, the VT ANR, and VT DHP must provide verbal comments to the appropriate Corps project manager in the VPO within 10 business days of receiving the Determination of Eligibility (DOE) from the Corps. These verbal comments may consist of a request for additional information, recommendations for modification, mitigation, or special conditions to avoid or minimize adverse environmental impacts associated with the aquatic environment, and to ensure the terms and general conditions of the GP are met, a request for a site visit; or a "kickout" to Individual Permit review.

Federal resource agency additional information requests shall be within their area of expertise, commensurate to the level of impact, and agreed upon by the Corps. If additional information is requested, the agencies are allowed an additional 10 business days after receipt of this information to provide modifications, mitigation or special conditions, or provide a written Individual Permit request to the Corps.

Unless additional information is requested, the verbal notice must be confirmed with a written response to the appropriate Corps project manager at the VPO within an additional 10 working days from the date of the verbal comment. The Corps will begin its Individual Permit review procedures at the written request of the Federal resource agencies if an agency within 10 business days of either the screening date or receiving additional information expresses a concern within their area of expertise, states the resource or species that could be impacted by the project, and describes the impacts that, either individually or cumulatively, will be more than minimal. This must be directed to the appropriate Corps project manager at the VPO. Written responses must be signed by the Federal resource agency field supervisor or branch chief, as appropriate, and must identify the affected resource within their area of expertise.

The Corps may contact the applicant either by phone or in writing if there are concerns. If the applicant is unable to resolve the concerns or modify the project, the Corps may determine that a project is ineligible under this GP, "kickout" the project to the Individual Permit review category, and begin its Individual Permit review procedures. The Corps will send a "Kickout Letter" to the applicant and copy the VT ANR and the commenting Federal resource agency on any written correspondence to the applicant. The Corps may reinstate a project's eligibility under the GP provided the Federal agencies' concerns are satisfied.

The VT ANR within 10 business days of the date the project information is received from the Corps may require an Individual 401 WQC review for any Category 2 project. This 10-day notice may be verbal and is not required to be fully documented, but must be directed to the appropriate Corps Project Manager at the VPO. It must be confirmed with a written response to the appropriate Corps project manager within an additional 10 working days from the date of the verbal comment. If the VT ANR does not notify the Corps as outlined herein, WQC is conditionally granted for the project. In order for the Corps GP authorization to be valid, the WQC must be obtained or waived prior to the commencement of work.

If the Corps and Federal resource agencies determine that the activity is eligible for the GP, the Corps will send an authorization letter directly to the applicant. The Corps will generally issue an eligibility determination within 60 days from the date of a complete application. If the Corps determines that the activity is not eligible under the GP or that additional information is required, the Corps will notify the applicant in writing and will send a copy of this notification to VT ANR.

### **Emergency Situations**

Emergency situations are limited to sudden, unexpected occurrences that could potentially result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. If an emergency situation requires action in less than 30 days after the occurrence, it qualifies for the amended notification procedures described below.

Notification Procedures for Emergency Situations: The Federal resource agencies, VT ANR and the VT DHP will each designate an alternate to be contacted in the event the regular contact is unavailable. The VT ANR, VT Emergency Management (VTEM) or FEMA will notify the Corps within 24 hours of the occurrence of a disaster and advise the Corps of the nature of the occurrence and any known remedial and/or protective measures. The Corps will notify agency representatives that a disaster has occurred within one working day of being notified by the VT ANR, VTEM or FEMA.

When an application for Category 2 work is received that the Corps Vermont Project Office (VPO) determines is an "emergency" as defined above, the Corps will fax a copy of the plans and Determination of Eligibility (DOE) to the agency representatives and their alternates. The resource agencies would then have sixteen working hours to notify the Corps if they have any comments on authorization of the project under the GP. Objections to the Corps determination of an "emergency" situation will not be accepted. If no response is received at the VPO within 16 working hours, the Corps will proceed with a decision on the application. If the resource agencies have comments on the proposal, they will have 16 working hours to put their comments in writing. If written comments from the Federal agencies are not received at the VPO within 16 working hours, the Corps will proceed with a decision on the application.

If a Federal agency requests that an Individual Permit be required for a project or requests modifications to the project based on concerns within their area(s) of expertise, the Corps will notify the applicant within 8 working hours of receipt of that request that the project as proposed does not qualify for authorization under the GP and that an Individual Permit will be required. In any event, the Corps will notify the applicant within 48 working hours of commencement of the screening process as to whether the project may proceed under the GP.

#### **IV. INDIVIDUAL PERMIT**

Work that is in the Individual Permit category as listed in Appendix A, or that does not meet the terms and conditions of this GP, will require an application for an individual permit from the Corps of Engineers (see 33 CFR 325.1). The applicant should submit the appropriate application materials (including the Corps application form) at the earliest possible date to expedite the permit review process. General information and application forms can be obtained at our web site or by calling us (see Page 17). An Individual 401 WQC will be required from the appropriate VT resource agency(ies). Filing an Individual Permit application does not relieve the applicant from their obligation to obtain all necessary State approvals from the appropriate Vermont resource agency(ies) or any applicable local approvals.

## **V. GENERAL CONDITIONS (and supporting general information):**

The following conditions apply to activities authorized under this GP, including all Category 1 (non-reporting) and Category 2 (reporting/ screening) activities:

### **General Requirements:**

1. **Other Permits.** Authorization under this general permit does not obviate (i.e., to make unnecessary) the need to obtain other Federal, state, or local authorizations required by law.
2. **Federal Jurisdictional Boundaries.** Applicability of this GP shall be evaluated with reference to Federal jurisdictional boundaries. Applicants are responsible for ensuring that the boundaries used satisfy the Federal criteria defined at 33 CFR 328-329. These sections prescribe the policy, practice and procedures to be used in determining the extent of jurisdiction of the Corps concerning "waters of the U.S." and "navigable waters of the U.S." Wetland boundaries shall be performed in accordance with the January 1987 Corps of Engineers Wetlands Delineation Manual located at [www.nae.usace.army.mil/reg/1987 Wetland Delineation Manual.pdf](http://www.nae.usace.army.mil/reg/1987%20Wetland%20Delineation%20Manual.pdf) and applicable regional supplements. Refer to Additional References on Page 18.
3. **Minimal Effects, Secondary (Indirect) and Cumulative Impacts.** (a) Projects authorized by this GP shall have no more than minimal individual and cumulative environmental impacts as determined by the Corps. Applicants must demonstrate that there will be no more than minimal direct and indirect impacts to the aquatic resource(s) resulting from the project. See Information Typically Required, Page 4. Mitigation may be required to offset unavoidable impacts. (b) Secondary impacts to waterway and/or wetland areas, (e.g., areas drained, flooded, cleared, excavated or fragmented) shall be added to the total fill area when determining the project review category (Category 1, 2 or Individual Permit review). Secondary and cumulative impacts are defined at Appendix A, Endnote 4.
4. **Discretionary Authority.** Notwithstanding compliance with the terms and general conditions of this GP, the Corps retains discretionary authority to require either a Category 2 or an Individual Permit review based on concerns for the aquatic environment or for any other factor of the public interest (33 CFR 320.4(a)). This authority is invoked on a case-by-case basis whenever the Corps determines that the potential impacts of the proposal warrant either a Category 2 or an Individual Permit review based on the concerns stated above. This authority may be invoked for projects with cumulative environmental impacts that are more than minimal or if there is a special resource or concern associated with a particular project that is not already covered by the remaining conditions of the GP and that warrants greater review. Whenever the Corps notifies an applicant that either a Category 2 or Individual Permit review is required, authorization under this GP is void and no work may be conducted until the Corps issues the required authorization or until the Corps notifies the applicant that further review has demonstrated that the work may proceed under this GP.
5. **Single and Complete Projects.** This GP shall not be used for piecemeal work and shall be applied to single and complete projects. All components of a single project and/or all planned phases of a multi-phased project shall be treated together as constituting one single and complete project, unless the Corps determines that a component has independent utility. For linear projects, such as power lines or pipelines with multiple crossings, the "single and complete project" (i.e., single and complete crossing) will apply to each crossing of a separate water of the U.S. (i.e., single waterbody) at that location; except that for linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project, and may be reviewed for Category 1 eligibility. (However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland

or lake, etc., are not separate waterbodies.) If any crossing requires a Category 2 activity, then the entire linear project shall be reviewed as one project under Category 2 provided that the impact thresholds in Appendix A are met. Also, this GP shall not be used for any activity that is part of an overall project for which an Individual Permit is required, unless the Corps determines the activity has independent utility. Note that modifications to State permits do not constitute a separate project. Modifications which involve Corps jurisdiction will be screened at the regular screening in order to ascertain compliance with the GP. Keep in mind that a linear project normally qualifying as a non-reporting Category 1 project will trigger a Corps review if the impacts exceed this GP's general conditions.

**6. Permit On-Site.** For Category 2 projects, the permittee shall ensure that a copy of this GP and the accompanying authorization letter are at the work site (and the project office) authorized by this GP whenever work is being performed, and that all personnel with operation control of the site ensure that all appropriate personnel performing work are fully aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and sub-contracts for work that affects areas of Corps jurisdiction at the site of the work authorized by this GP. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means this GP and the authorization letter (including its drawings, plans, appendices and other attachments) and also includes permit modifications. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or sub-contract as a change order. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire GP authorization, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps jurisdiction.

#### **General Conditions Related to National Concerns:**

**7. Historic Properties.** Any activity authorized by this GP shall comply with Section 106 of the National Historic Preservation Act. Information on the location and existence of historic resources can be obtained from the VT DHP (See page 17) and the National Register of Historic Places. Project proponents shall apply to the Corps for all projects that would otherwise qualify for Category 1 if there is the potential for an effect on a historic property within the permit area or any known historic property that may occur outside the permit area. Historic properties include those that are eligible for inclusion, but not necessarily listed on the National Register. If the permittee, during construction of work authorized herein, encounters a previously unidentified archaeological or other cultural resource within the area subject to Corps jurisdiction that might be eligible for listing in the National Register of Historic Places, he/she shall stop work and immediately notify the Corps and the VT DHP.

**8. National and Corps Lands.** Activities authorized by this GP shall not impinge upon the value of any National Wildlife Refuge, National Forest, National Park or any other area administered by the U.S. FWS, U.S. Forest Service, or National Park Service. No Category 1 work is allowed on Corps properties and Corps-controlled easements (see Appendix A, Endnote 8).

#### **9. Federal and State Endangered Species.**

- a. No activity may be authorized under this GP which:
- May affect a threatened or endangered species, a proposed species, designated critical habitat, or proposed critical habitat as identified under the Federal Endangered Species Act (ESA),
  - Would result in a "take" of any Federally listed threatened or endangered species of fish or wildlife, or

- Would result in any other violation of Section 9 of the ESA protecting threatened or endangered species of plants.
- b. Proponents for Category 1 and 2 projects shall ensure there are no impacts to Federally-listed threatened or endangered species or critical habitat and should ensure that there are no impacts to State threatened or endangered species.
- c. Proponents for Category 1 and 2 projects shall notify the Corps if any of the actions in 9a may occur and if any Federally listed threatened or endangered species or critical habitat, or proposed species or critical habitat, is in the project area or may be impacted by the project. For Category 1 projects, the Corps may then notify the proponent that the project will be reviewed under the Category 2 or Individual Permit procedures and if so the proponents shall not begin work until the Corps issues a written authorization.
- d. Applicants should also provide information on state threatened and endangered species. The Information Typically Required section on Page 4 provides guidance. Contact information for the VT ANR, Department of Fish & Wildlife, Nongame and Natural Heritage program is provided on Page 17, and more information is provided at Additional References, Page 18.

**10. Essential Fish Habitat (EFH).** As part of the GP screening process, the Corps will coordinate with the NMFS in accordance with the 1996 amendments to the Magnuson-Stevens Fishery, Conservation and Management Act (MSFCMA) to protect and conserve the habitat of marine, estuarine and anadromous finfish, mollusks, and crustaceans. This habitat is termed EFH and is broadly defined to include “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” Any work in the following streams in the Connecticut River watershed that are stocked with Atlantic salmon shall not be authorized under Category 1 of this GP and must be screened for potential impacts to EFH. For additional EFH information and/or locations, see 50 CFR 600 ([www.nmfs.noaa.gov](http://www.nmfs.noaa.gov)), [www.nero.nmfs.gov/RO/DOC/appguide1.html](http://www.nero.nmfs.gov/RO/DOC/appguide1.html) or contact NMFS (see Page 17).

- |   |                       |                  |
|---|-----------------------|------------------|
| • Black River (from its mouth in Springfield to its headwaters) | • Ompompanoosuc River | • Stevens River  |
| • Connecticut River   | • Ottauquechee River  | • Wells River    |
| • Deerfield River   | • Passumpsic River    | • West River     |
| • Nulhegan River  | • Paul Stream         | • White River    |
|   | • Saxtons River       | • Williams River |

**11. Wild and Scenic Rivers.** Currently there are no designated Wild and Scenic Rivers or rivers designated as Study Rivers in the State of Vermont.

**12. Federal Navigation Project.** Any structure or work that extends closer to the horizontal limits of any Corps navigation project than a distance of three times the project's authorized depth shall be subject to removal at the owner's expense prior to any future Corps dredging or the performance of periodic hydrographic surveys.

**13. Navigation.** (a) There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein. (b) The permittee understands and agrees that if future operations by the U.S. require the removal, relocation or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

**14. Federal Liability.** In issuing this GP, the Federal Government does not assume any liability for the following: (a) damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; (b) damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest; (c) damages to persons, property or to other permitted or unpermitted activities or structures caused by the activity authorized by the GP; (d) design or construction deficiencies associated with the permitted work; (e) damage claims associated with any future modification, suspension or revocation of this permit.

### **Minimization of Environmental Impacts:**

**15. Avoidance, Minimization and Mitigation.** Discharges of dredged or fill material into waters of the U.S. and any secondary impacts shall be avoided and minimized to the maximum extent practicable. Mitigation of unavoidable direct and indirect impacts may be required on a case-by-case basis.

**16. Heavy Equipment in Wetlands.** Heavy equipment other than fixed equipment (drill rigs, fixed cranes, etc.) working in wetlands shall not be stored, maintained or repaired in wetlands, unless it is less environmentally damaging otherwise, and as much as possible shall not be operated there. Where construction requires heavy equipment operation in wetlands, the equipment shall either have low ground pressure (typically <3 psi), or shall not be located directly on wetland soils and vegetation; it shall be placed on swamp/construction mats or corduroy roads (defined at Appendix A, Endnote 16) that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation. Swamp mats are to be placed in the wetland from the upland or from equipment positioned on swamp mats if working within a wetland. Dragging swamp mats into position is prohibited. Other support structures that are less impacting and are capable of safely supporting equipment may be used with written Corps authorization. Similarly, not using mats during frozen, dry or other conditions may be allowed with written Corps authorization. (See GC 17 below.) An adequate supply of spill containment equipment shall be maintained on site. Corduroy roads and swamp/construction mats are considered as fill whether they're installed temporarily or permanently.

**17. Temporary Fill.** No temporary fill shall be placed in waters of the U.S., including wetlands, unless a) it is specifically authorized in writing by the Corps, or b) the project qualifies for the non-reporting Category 1 (the combined temporary and permanent fill totals less than 3,000 SF, it meets the Appendix A Category 1 definition, and it's in compliance with this GP's terms and general conditions).

- All temporary fill shall be stabilized to prevent its eroding into portions of waters of the U.S. where it is not authorized.
- Waters of the U.S. where temporary fill was discharged shall be restored (see GC 18).
- Unconfined temporary fill authorized for discharge into waters of the U.S. shall consist of material that minimizes impacts to water quality (e.g. sandbags or clean, gravel and/or stone).
- Temporary fill authorized for discharge into wetlands shall be placed on geotextile fabric laid on the pre-construction wetland grade. (Swamp and timber mats are excluded from this requirement.)
- Temporary fill shall be removed as soon as it is no longer needed, and it shall be disposed of at an upland site and suitably contained to prevent its subsequent erosion into waters of the U.S.
- Swamp/construction mats and corduroy roads (see GC 16 above) are considered as temporary fill when they are removed immediately upon work completion. The areas must be restored in accordance with GC 18.
- If temporary fill is staged and then returned to its original location, e.g., sewer projects through wetlands, the original location shall be restored.

## **18. Work Site Restoration.**

- Upon completion of construction, all disturbed wetland areas (the disturbance of these areas must be authorized) shall be properly stabilized. Any seed mix shall contain only plant species native to New England and shall not contain any of the plant species listed in the "Mitigation Guidance for New England District Mitigation Plan Checklist," provided at [www.nae.usace.army.mil/reg/Mitigation%20Plan%20Checklist%20Guidance.pdf](http://www.nae.usace.army.mil/reg/Mitigation%20Plan%20Checklist%20Guidance.pdf) and referenced in the Planting Plan section. This list may be updated periodically.
- The introduction of non-native invasive and noxious species in disturbed areas is prohibited and any spread of such invasive plant species shall be controlled. See Additional References on Page 18. The Corps lists these species in the above mentioned checklist in the Invasive and Noxious Species section.
- In areas of authorized temporary disturbance, if trees are cut they shall be cut at ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.
- Wetland areas where permanent disturbance is not authorized shall be restored to their original condition and elevation, which under no circumstances shall be higher than the pre-construction elevation. Original condition means careful protection and/or removal of existing soil and vegetation, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized.

**19. Bank Stabilization.** Projects involving construction or reconstruction/maintenance of bank stabilization structures within Corps jurisdiction should be designed to minimize environmental effects, effects to neighboring properties, scour, etc. to the maximum extent practicable. Applicants must use the least intrusive method to stabilize the bank, following this sequential minimization process: avoidance, diversion of overland flow, vegetative stabilization, stone-sloped surfaces, and walls. Vertical walls/bulkheads must only be used in situations where reflected wave energy can be tolerated. This generally eliminates bodies of water where the reflected wave energy may interfere with or impact on harbors, marinas, or other developed shore areas. Refer to Additional References on Page 18.

**20. Sedimentation and Erosion Control.** Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, vegetated filter strips, geotextile silt fences or other devices, shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. Such measures shall be capable of preventing erosion, of collecting sediment, suspended and floating materials, and of filtering fine sediment. The temporary devices shall be removed upon completion of work and the disturbed areas shall be stabilized. The sediment collected by these devices shall be removed and placed at an upland location, in a manner that will prevent its later erosion into a waterway or wetland. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date.

## **21. Waterway/Wetland Work and Crossings**

- (a) All temporary and permanent crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed to withstand and to prevent the restriction of high flows, to maintain existing low flows, and to not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
- (b) No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water.
- (c) To meet the objective of aquatic organism passage in (a) and (b) above, all temporary and permanent crossings of rivers, streams, brooks, etc. (hereon referred to as "streams") shall meet the following performance standards in order to qualify for Category 1 (refer to Additional References on Page 18):

- i. Design the structure to maintain a streambed composition and form throughout the culvert similar to and continuous with the adjacent reaches. To do this:
    - o Design and install streambed material and bedforms if not adequately supplied and developed naturally,
    - o Design profile and alignment through structure similar to those of adjacent stream reaches,
    - o Design culvert elevation to remain embedded for the life of the structure and in consideration of future channel conditions.
  - ii. Maintain velocities, turbulence and depths within the structure similar to those found in adjacent stream reaches across a range of desired flows.
- (d) The requirements to comply with the performance standards in (c) above in order to proceed as a Category 1 project do not apply to the following:
- i. Temporary crossings in place for less than 90 days (the requirements in (a) do apply). Temporary culverts must be embedded unless they're installed during low flow (Jul. 15 – Oct. 1) and it's placed on geotextile fabric laid on the stream bed to ensure restoration to the original grade;
  - ii. Constructed drainage systems designed primarily for the conveyance of storm water or irrigation. Also, non-tidal drainage and irrigation ditches excavated on dry land are not Federally-regulated.
- (e) Applicants proposing new crossings, or maintenance or replacement of serviceable crossings should refer to the Guidelines for the Design of Stream/Road Crossings for Passage of Aquatic Organisms in Vermont when the State finalizes these guidelines. Refer to Additional References on Page 18.
- (f) Applicants shall use the least intrusive and environmentally damaging method to construct the stream crossing, following this sequential minimization process: bridge spans, open bottom arches or embedded culverts. Refer to Additional References, Page 18.
- (g) Culverts at waterbody crossings shall be installed in such a manner as to preserve hydraulic connectivity, at its present level, between the wetlands on either side of the road. The permittee shall take necessary measures to correct wetland damage due to lack of hydraulic connectivity.
- (h) Projects using retrofit methods increasing flow velocity or slip lining (retrofitting an existing culvert by inserting a smaller diameter pipe) are not allowed in Category 1, either as new or maintenance activities.
- (i) No projects involving open trench excavation in flowing waters, except riprap installation, are allowed under Category 1. Open trench excavation projects may qualify for Category 1 provided (1) the work doesn't occur in flowing waters (requires using management techniques such as temporary flume pipes, culverts, cofferdams, etc.) and (2) normal flows are maintained within the stream boundary's confines (see Appendix A, Endnote 5). Projects utilizing these management techniques must meet the other Category 1 requirements (see Appendix A, Page 1) and all of this GP's terms and general conditions.
- (j) For projects that otherwise meet the terms of Category 1, in-stream (e.g., rivers, streams, brooks, etc.) construction work shall be conducted only during the low flow period of July 15 to October 1 in any year. Projects that are conducted outside that time period are ineligible for Category 1 and shall be reviewed under Category 2, regardless of the waterway and wetland fill and/or impact area.
- (k) Work impacting upstream or downstream flood profiles must be reviewed under Category 2.

**General Information for GC 21:**

For stream crossing projects, see Page 2, III(A)(i)(6) for VT ANR WQC Category 1 qualifications.

**22. Discharge of Pollutants.**

- (a) All activities involving a discharge into waters of the U.S. authorized under this GP shall be consistent with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the CWA (33 USC 1251) and applicable State and local laws. If applicable water quality standards, limitations, etc., are revised or modified during the term of this GP, the authorized work shall be modified to conform to these standards within six months of the effective date of such revision or modification, or within a longer period of time deemed reasonable by the Corps in consultation with the EPA.
- (b) All projects authorized by this GP shall be designed, constructed and operated to minimize or

eliminate the discharge of pollutants. Category 2 projects will be reviewed to determine if a project may result in a discharge of relevant pollutants to an impaired water. See the Additional Information Required section on Page 4.

(c) Unless otherwise notified by the VT ANR, applicants may presume that the Section 401 WQC for this GP constitutes the Section 401 WQC for their Section 404 activity, provided the terms and conditions of this GP are met.

### **23. Floodplain Work.**

(a) In order to qualify for authorization under Category 1 of this GP, projects shall result in no more than a minimal decrease in natural valley storage, and shall not result in an increase in the base flood elevation (where hydraulic information necessary to make this determination is available).

(b) There shall be no Category 1 projects located within a FEMA designated Special Flood Hazard Area as shown on the most current flood insurance studies and maps published by FEMA and adopted by the municipality within which the proposed project is located.

(c) Any project located within a FEMA designated Special Flood Hazard Area shall comply with minimum NFIP regulations, or local Flood Hazard Area regulations if more restrictive.

Note: Refer to Page 2, III(A)(i)(8) and Additional References, Page 18.

**24. Spawning and Breeding Areas.** Discharges of dredged or fill material, and/or suspended sediment producing activities in fish and shellfish spawning or nursery areas, or amphibian and migratory bird breeding areas, during spawning or breeding seasons shall be avoided. Impacts on these areas shall be minimized to the maximum extent practicable during all times of year.

**25. Storage of Seasonal Structures.** Seasonal or recreational structures such as pier sections, floats, etc., that are removed from the waterway for a portion of the year shall be stored in an upland location, located above ordinary high water and not in a wetland.

**26. Environmental Functions and Values.** (a) The permittee shall make every reasonable effort to carry out the construction or operation of the work authorized herein in a manner that minimizes adverse impacts on fish, wildlife and natural environmental values. (b) The introduction of invasive plant species identified by any Federal agency in disturbed areas is prohibited and any spread of such invasive plant species shall be controlled. Refer to GC 18 and Additional References on Page 18.

### **27. Protection of Special Aquatic Sites and Special Wetlands, including Vernal Pools.**

Special Aquatic Sites (SAS): Projects with any temporary or permanent fill in SAS (Endnote 7), or that could adversely affect SAS, whether directly or indirectly, do not qualify for the non-reporting Category 1. This does not apply to "inland wetlands," but does apply to the other SAS types listed at Endnote 7.

Special Wetlands: When jurisdiction is triggered (see Activities Covered, Page 1), projects in or that could adversely affect Special Wetlands (Endnote 8), whether directly or indirectly, do not qualify for the non-reporting Category 1. Special wetlands are vernal pools, bogs, fens, and wetlands which provide habitat for threatened or endangered species as designated by the State of Vermont Natural Heritage Program. See Additional References on Page 18 for additional references.

Vernal Pools (VP): These are a type of special wetland (Endnote 8). Category 1 excludes projects in or within 200' of a VP on the property when jurisdiction is triggered. The applicant must minimize surrounding upland impacts to the greatest extent practicable, with the effort to minimize impacts being commensurate with the value of the pool. Impact minimization should be in accordance with *Best Development Practices: Conserving pool-breeding amphibians in residential and commercial development in the northeastern U.S.*, Calhoun and Klemens, 2002; and *Science and Conservation of Vernal Pools in Northeastern North America*, Calhoun and deMaynadier, 2008, specifically Chapter 12, Conservation Recommendations section, Page 241. (See Additional References, Page 18). For example,

site clearing, grading and construction activities should be limited to <25% of the VP terrestrial habitat, and roads and driveways should be excluded from the VP envelope. For Category 2 projects, the applicant shall delineate all VPs on the property (see GC 2). The Corps may waive this requirement on a case-by-case basis.

**28. Fluvial Geomorphic Processes.** (a) Wherever practicable, projects should be designed to accommodate the natural tendencies of the fluvial system. This should greatly enhance the likelihood of long-term success of the project and minimize the chance of exacerbating an otherwise undesirable physical adjustment process. Recognition of these processes requires assessment of physical parameters and characteristics of the watershed, the water and sediment regimes, the channel and floodplain, the anthropogenic influences and constraints on the reach concerned and to what extent sediment transport continuity in the reach can be attained. (b) Applicants should consult with the VT River Management Program Stream Alteration Engineer for assistance in compliance with this condition.

Note: Refer to Additional References on Page 19 for additional information.

### **Procedural Conditions:**

**29. Inspections.** The permittee shall allow the Corps to make periodic inspections at any time deemed necessary in order to ensure that the work is being or has been performed in accordance with the terms and conditions of this permit. The Corps may also require post-construction engineering drawings for completed work, and post-dredging survey drawings for any dredging work.

**30. Maintenance.** (a) The permittee shall maintain the work authorized herein in good condition and in conformance with the terms and general conditions of this permit. Permittees must contact the Corps if maintenance will not take place or if they want to modify the existing project design. (b) The requirement to maintain the authorized work does not include maintenance of dredging projects. Maintenance dredging is subject to the review thresholds in Appendix A and/or any special conditions included in a written Corps authorization. Note: Refer to Additional References on Page 19 for information on maintaining stream restoration projects.

**31. Property Rights.** This GP does not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations.

**32. Modification, Suspension, and Revocation.** This GP may be either modified, suspended, or revoked in whole or in part pursuant to the policies and procedures of 33 CFR 325.7. Any such action shall not be the basis for any claim for damages against the U.S.

**33. Restoration.** The permittee, upon receipt of a notice of revocation of authorization under this GP, shall restore the wetland or waterway to its former conditions without expense to the U.S., and as directed by the Secretary of the Army or his authorized representative. If the permittee fails to comply with such a directive, the Secretary or his designee may restore the wetland or waterway to its former condition, by contract or otherwise, and recover the cost from the permittee.

**34. Special Conditions.** The Corps may impose other special conditions on a project authorized pursuant to this GP that are determined necessary to minimize adverse navigational and/or environmental effects or based on any other factor of the public interest. Failure to comply with all conditions of the authorization, including special conditions, constitutes a permit violation and may subject the permittee to criminal, civil or administrative penalties and/or restoration.

**35. False or Incomplete Information.** If the Corps makes a determination regarding the eligibility of a project under this GP, and subsequently discovers that it has relied on false, incomplete, or inaccurate information provided by the permittee, the GP authorization shall not be valid and the U.S. Government may institute legal proceedings.

**36. Abandonment.** If the permittee decides to abandon the activity authorized under this GP, unless such abandonment is merely the transfer of property to a third party, he/she may be required to restore the area to the satisfaction of the Corps.

**37. Transfer of GP Verifications.** If the permittee sells the property associated with a GP verification, the permittee may transfer the GP verification to the new owner by submitting a letter to the Corps (see Page 17 for address) to validate the transfer. A copy of the GP verification must be attached to the letter and the letter must contain the following statement and signature: "When the structures or work authorized by this GP are still in existence at the time the property is transferred, the terms and conditions of this GP, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this GP and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

**38. Enforcement cases.** This GP does not apply to any existing or proposed activity in Corps jurisdiction associated with a Corps or EPA enforcement action, until such time as the enforcement action is resolved or the Corps or EPA as appropriate determines that the activity may proceed independently without compromising the enforcement action.

### **Duration of Authorization/Grandfathering:**

**39. Duration of Authorization.** Activities authorized under this GP that have commenced (i.e., are under construction) or are under contract to commence before this GP's expiration date have:

- For Category 1 projects, 12 months after this GP's expiration date to complete the work in Corps jurisdiction.
- For Category 2 projects, until the project-specific date that the Corps provides to the permittee in the GP authorization letter to complete the work in Corps jurisdiction.

Activities authorized and completed under Category 1 or 2 of this GP will continue to remain authorized after this GP's expiration date. The permittee must be able to document that the project was under construction or contract by the appropriate date.

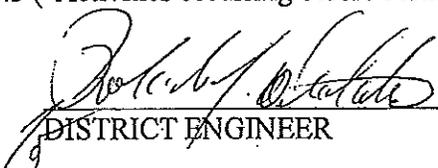
GP activities will remain authorized as specified above unless:

- The GP is either modified or is revoked, or
- Discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization in accordance with 33 CFR 325.2(e)(2).

### **40. Previously Authorized Activities.**

(a) Projects that received written authorization from the Corps and that were completed under the previous GP's, nationwide permits, regional general permits or letters of permission, shall remain authorized as specified in each authorization letter.

(b) Activities authorized pursuant to 33 CFR 330.3 ("Activities occurring before certain dates") are not affected by this GP.

  
DISTRICT ENGINEER  
12/5/07  
DATE

## VI. CONTACTS FOR VERMONT GENERAL PERMIT:

**U.S. Army Corps of Engineers**  
New England District, Regulatory Division  
Vermont Project Office  
8 Carmichael Street, Suite 205  
Essex Junction, Vermont 05452  
(802) 872-2893, (802) 879-7638 fax  
[www.nae.usace.army.mil/reg/index.htm](http://www.nae.usace.army.mil/reg/index.htm)

**U.S. Environmental Protection Agency**  
New England Region  
Wetland Protection Program Unit – OEP/CWP  
JFK Federal Building 1 Congress Street, Suite 1100  
Boston, MA 02114-2023  
(617) 918-1399

**Federal Endangered Species:**  
U.S. Fish and Wildlife Service  
Federal Activities/Endangered Species  
70 Commercial Street, Suite 300  
Concord, New Hampshire 03301-5087  
(603) 223-2541  
[www.fws.gov/northeast/newenglandfieldoffice.htm](http://www.fws.gov/northeast/newenglandfieldoffice.htm)

**Essential Fish Habitat:**  
National Marine Fisheries Service  
Habitat Conservation Division (HCD)  
One Blackburn Drive  
Gloucester, Massachusetts 01930  
(978) 281-9300

**National Park Service**  
National Park Service  
North Atlantic Region  
15 State Street  
Boston, Massachusetts 02109  
(617) 223-5191

Historic Resources  
**Division for Historic Preservation**  
National Life Building  
Drawer 20  
Montpelier, Vermont 05620-0501  
(802) 828-3211

### **Vermont Agency of Natural Resources**

**Department of Environmental Conservation**  
Water Quality Division – Wetlands Section  
103 South Main Street  
Waterbury, Vermont 05671-0408  
(802) 241-3770

**Department of Environmental Conservation**  
Water Quality Division - River Management Section  
103 South Main Street  
Waterbury, Vermont 05671-0408  
(802) 241-3770

**Department of Environmental Conservation**  
Water Quality Division – Lakes and Ponds  
103 South Main Street  
Waterbury, Vermont 05671-0408  
(802) 241-3777

**Department of Environmental Conservation**  
Facilities Engineering Division - Dam Safety Program  
103 South Main Street  
Waterbury, Vermont 05671-0407  
(802) 241-3737

**Vermont Department of Fish and Wildlife**  
103 South Main Street  
Waterbury, Vermont 05671-0501  
(802) 241-3700

State endangered species  
**Vermont Department of Fish and Wildlife**  
Nongame and Natural Heritage Program  
103 South Main Street  
Waterbury, Vermont 05671-0501  
[www.vtfishandwildlife.com/wildlife\\_nongame.cfm](http://www.vtfishandwildlife.com/wildlife_nongame.cfm).

## VII. ADDITIONAL REFERENCES:

**Page 4: Application.** Refer to [www.nae.usace.army.mil](http://www.nae.usace.army.mil) for a more comprehensive checklist. Select "Regulatory/Permitting," "Forms" and then "Application and Plan Guideline Checklist."

### **Page 4 & GC 9: Threatened and Endangered Species.**

The VT F&W provides information on Federal and State species:

[www.vtfishandwildlife.com/wildlife\\_nongame.cfm](http://www.vtfishandwildlife.com/wildlife_nongame.cfm).

The VT ANR Environmental Interest Locator provides an interactive web based GIS map with documented locations:

[http://maps.vermont.gov/imf/sites/ANR\\_NATRESViewer/jsp/launch.jsp](http://maps.vermont.gov/imf/sites/ANR_NATRESViewer/jsp/launch.jsp).

The U.S. Fish and Wildlife Service (U.S. FWS) provides information on Federal endangered species:

[www.fws.gov/northeast/newenglandfieldoffice/EndangeredSpec-Consultation\\_Project\\_Review.htm](http://www.fws.gov/northeast/newenglandfieldoffice/EndangeredSpec-Consultation_Project_Review.htm).

### **Page 4 and GC 22: Discharge of Pollutants - Impaired Waters and Stormwater Impaired Waters:**

The VT ANR lists and shows impaired waters and stormwater impaired waters at:

[www.vtwaterquality.org/planning.htm](http://www.vtwaterquality.org/planning.htm).

### **GC 2: Federal Jurisdictional Boundaries.**

Corps Wetlands Delineation Manual:

[www.nae.usace.army.mil/reg/1987 Wetland Delineation Manual.pdf](http://www.nae.usace.army.mil/reg/1987%20Wetland%20Delineation%20Manual.pdf).

U.S. FWS 1988 National List of Plant Species that Occur in Wetlands: [www.nwi.fws.gov](http://www.nwi.fws.gov).

The Natural Resources Conservation Service (NRCS) hydric soil definition, criteria and lists:

<http://soils.usda.gov/use/hydric/>.

Field Indicators for Identifying Hydric Soils in N.E.:

[www.neiwpc.org/hydricsoils.asp](http://www.neiwpc.org/hydricsoils.asp).

**GCs 18 and 26: Invasive Species.** See the Invasive Species section on the Corps website for control methods: [www.nae.usace.army.mil/reg/index.htm](http://www.nae.usace.army.mil/reg/index.htm).

### **GC 19: Bank Stabilization.**

Corps Coastal Engineering Manual: Select "Products/Services" and then "Publications." Part 5, Chapter 7-8, a(2)c is particularly relevant. <http://chl.erdc.usace.army.mil>.

### **GC 21: Waterway/Wetland Work and Crossings**

21(c): Performance standards in GC 21 are taken from Section 8 - Alternative Designs, in the document "Guidelines for the Design of Stream/Road Crossings for Passage of Aquatic Organisms in Vermont." These Guidelines are located at [www.vtfishandwildlife.com/library.cfm](http://www.vtfishandwildlife.com/library.cfm), "Reports and Documents." This document should be referenced when designing and constructing stream crossing projects to help ensure compliance with GC 21 (a) - (c).

21(f): In general, bridges have greater longevity and overall success, and are easier to design for and more effective at aquatic life passage [see GC 21(a) and (b)].

**GC 23: Flood Hazard Management.** [www.anr.state.vt.us/dec/waterq/rivers/htm/rv\\_floodhazard.htm](http://www.anr.state.vt.us/dec/waterq/rivers/htm/rv_floodhazard.htm).

### **GC 27: Special Wetlands.**

Refer to the VT ANR Environmental Interest Locator, which provides an interactive web based GIS map with locations of significant (wetland) natural communities. At the Locator select map layers, fish and wildlife, and then significant natural communities:

[http://maps.vermont.gov/imf/sites/ANR\\_NATRESViewer/jsp/launch.jsp](http://maps.vermont.gov/imf/sites/ANR_NATRESViewer/jsp/launch.jsp). Some wetlands are more valuable and sensitive to fragmentation, non-point source runoff, and other secondary impacts. Upland buffers are especially essential to protect their functions.

The document *Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Development in the Northeastern U.S.*, Calhoun and Klemens, 2002, is available for purchase at [www.maineaudubon.org/resource/index.shtml](http://www.maineaudubon.org/resource/index.shtml).

The document *Science and Conservation of Vernal Pools in Northeastern North America*, Calhoun and deMaynadier, 2008, is available for purchase via the internet. Chapter 12 is available at [www.nae.usace.army.mil/reg/index.htm](http://www.nae.usace.army.mil/reg/index.htm) under Useful Links and Documents.

**GC 28: Fluvial Geomorphic Processes.** Consult with the VT River Management Program Stream Alteration Engineer for assistance in compliance with GC 28. Refer to information provided at: [www.anr.state.vt.us/dec/waterq/rivers/htm/rv\\_management.htm](http://www.anr.state.vt.us/dec/waterq/rivers/htm/rv_management.htm).

**GC 30: Maintenance.** River restoration projects that are designed to accommodate the natural dynamic tendencies of the fluvial system are maintained in accordance with the project's design objectives (Category 1) or the Corps authorization letter (Category 2). These projects are generally designed to support and implement channel assessment and management practices that recognize a stream's natural dynamic tendencies.

## APPENDIX A: DEFINITION OF CATEGORIES

<p><b>I. WATERS OF THE U.S. (INCLUDES WETLANDS) (other than Lake Champlain, Lake Memphremagog, Wallace Pond)</b></p>	<p>Waters of the U.S.<sup>1</sup> are comprised of Inland Waters of the U.S.<sup>2</sup> &amp; Navigable Waters of the U.S.<sup>3</sup>. Navigable waters in Vermont are those designated as navigable by Congress (33 CFR 329). This section excludes the following navigable waters: Lake Champlain, Lake Memphremagog, Wallace Pond &amp; wetlands adjacent to these waterbodies (See II. Navigable Waters below).</p> <p>Projects not meeting Category 1 must apply/report to the Corps as either a Category 2 or Individual Permit project.</p> <p>All Category 1 and 2 projects must comply with all of this GP's applicable terms (Pages 1 – 7) and general conditions (Pages 8 – 16).</p>		
<p><b>(a) NEW FILL/ EXCAVATION DISCHARGES</b></p>	<p><b>CATEGORY 1</b></p> <p>&lt;3,000 SF of waterway and/or wetland fill and secondary impacts<sup>4</sup>, (e.g., areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill, and certain excavation discharges (except for incidental fallback<sup>5</sup>). Swamp/construction mats and corduroy roads are considered as fill [see General Condition (GC) 16].</p> <p><u>Provided:</u></p> <ul style="list-style-type: none"> <li>• In-stream (e.g., rivers, streams, brooks, etc.) work limited to Jul 15-Oct 1 (see GC 21).</li> </ul> <p><u>This category excludes:</u></p> <ul style="list-style-type: none"> <li>• Fills in Athens, Brookline, Chester, Dummerston, Grafton, Newfane, Putney, Rockingham, Springfield, Townshend, or Westminster, VT.</li> <li>• Fills below OHW in EFH waters (see GC 10).</li> <li>• Activities excluded in GC 21, i.e., dams, dikes, or activities involving water diversions<sup>6</sup> (other than dry hydrants used exclusively for firefighting activities with no stream impoundments); and sliplining.</li> <li>• Work in special aquatic sites (SAS)<sup>7</sup> other than wetlands.</li> <li>• Work in special wetlands<sup>8</sup> including work in vernal pools (VP) or within 200' of the VP's edge when jurisdiction is triggered.</li> <li>• Work on Corps properties &amp; Corps-controlled easements<sup>9</sup></li> </ul>	<p><b>CATEGORY 2</b></p> <p>3,000 SF to 1 acre waterway and/or wetland fill and secondary<sup>4</sup> impacts, (e.g., areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill &amp; certain excavation discharges (except for incidental fallback<sup>5</sup>). Swamp/ construction mats and corduroy roads are considered as fill (see GC 16).</p> <p>Swamp mats filling <math>\geq 3,000</math> SF (see GCs 16 &amp; 17).</p> <p>Projects sponsored by a Federal or State agency with proactive restoration<sup>10</sup> as a primary purpose and impacts of any size <math>\geq 3,000</math> SF. Net impacts must not be greater than minimal.</p> <p>Restoration and/or enhancement approved for use by a Corps-approved In-Lieu Fee program or Corps-approved mitigation bank, with impacts of any size <math>\geq 3,000</math> SF</p> <p>Specific activities with impacts <math>\geq 3,000</math> SF required to affect the containment, stabilization, or removal of hazardous or toxic waste materials performed, ordered or sponsored by a government agency with established legal or regulatory authority. Wetlands must be restored in place.</p> <p>Work in special wetlands<sup>8</sup>, including work in VPs or within 200' of the VP's edge when jurisdiction is triggered on the property.</p> <p>The applicant shall delineate all special wetlands<sup>8</sup> including VPs on the property using Federal delineation methods (see GC 2). The Corps may</p>	<p><b>INDIVIDUAL PERMIT</b></p> <p><math>\geq 1</math> acre waterway and/or wetland fill &amp; secondary impacts<sup>4</sup> (e.g., area drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill and certain excavation discharges (except for incidental fallback<sup>5</sup>). Swamp/ construction mats and corduroy roads are considered as fill (see GC 16).</p>

		waive these delineation requirements on a case-by-case basis. Wetland fill and/or secondary impacts (e.g., site clearing, grading and construction activities) should be limited to <25% of the VP habitat. Where practicable, roads & driveways should be excluded from the VP envelope <sup>6</sup> .	
<b>(b) BANK STABILIZATION PROJECTS</b>	<p>Inland bank stabilization &lt;100 linear FT and an average of &lt;1 CY of fill per linear FT below ordinary high water (OHW)</p> <ul style="list-style-type: none"> <li>• In-stream work limited to Jul 15-Oct 1.</li> <li>• No work in VPs<sup>8</sup> or within 200' of the VP's edge.</li> <li>• No work in SAS<sup>7</sup></li> <li>• No work in EFH waters (see GC 10).</li> <li>• No work in Rivers of Concern<sup>11</sup>.</li> <li>• No work on Corps properties and Corps-controlled easements<sup>9</sup>.</li> </ul>	Inland bank stabilization ≥100 linear FT, and/or an average of ≥1 CY of fill per linear foot below OHW.	
<b>(c) RIVER/STREAM/BROOK WORK &amp; CROSSINGS and WATERWAY/WETLAND CROSSINGS</b>	<p>1. In-stream (e.g., rivers, streams, brooks, etc.) work limited to Jul 15 - Oct 1 (see GC 21).</p> <p>2. All stream crossings conform with the performance standards in GC 21. Note: Page 2, III(A)(6) for VT ANR WQC Category 1 qualifications.</p> <p>3. Bridge spans, open bottom arches or embedded culverts are required.</p> <p>4. Culverts at waterbody crossings shall preserve hydraulic connectivity, at its present level, between any wetlands on either side of the road.</p> <p><u>Work in this category excludes:</u></p> <ul style="list-style-type: none"> <li>• Projects using retrofit methods increasing flow velocity or slip lining (only for 1 - 3 above).</li> <li>• Work in SAS<sup>7</sup>.</li> <li>• Open trench excavation in flowing waters except for riprap projects. (See GC 21.)</li> </ul>	Projects with proactive restoration <sup>10</sup> as a primary purpose with impacts of any area exceeding Category 1. Net impacts must not be greater than minimal.	

<p>(d) REPAIR, REPLACEMENT IN KIND &amp; MAINTENANCE OF AUTHORIZED FILLS</p>	<p>Repair/maintenance/replacement in kind of currently serviceable, authorized fills with no expansion or change in use.</p> <ul style="list-style-type: none"> <li>• Conditions of the original authorization apply.</li> <li>• Minor deviations in fill design allowed<sup>11</sup>, except for stream crossings or dams.</li> <li>• No fills in special wetlands.</li> <li>• No fills in SAS<sup>6</sup> &amp; EFH waters (see GC 10).</li> </ul>	<p>Repair/maintenance/replacement in kind of existing, currently serviceable, authorized fills with expansion or a change in use &lt;1 acre.</p> <p>Replacement of non-serviceable authorized fills, including expansion or a change in use, totaling &lt;1 acre.</p>	<p>Repair/maintenance of existing, currently serviceable, authorized fills with expansion or a change in use &gt;1 acre.</p> <p>Replacement of non-serviceable authorized fills, including expansion or a change in use, totaling ≥ 1 acre.</p>
<p>(e) MISC.</p>	<p>Oil spill clean-up discharges. Fish and wildlife harvesting such as duck blinds. Temporary scientific measurement devices and survey activities, e.g., exploratory drilling, surveying, and sampling. Monitoring wells. Recreational gold mining. Does not include oil/gas exploration and fills for roads or construction pads</p>	<p>Zebra Mussel Control Projects. Fishery habitat enhancement structures. Utility line crossings, water intakes and outfalls, and sea lamprey control projects.</p>	<p>Project where an EIS is required by the Corps</p>
<p>(f) MISC. (applies only to NAVIGABLE WATERS other than Lake Champlain, Lake Memphremagog, Wallace Pond<sup>2</sup>)</p>		<p>New and maintenance dredging up to 5,000 CY with upland disposal or beach nourishment. No impacts to SAS. Aerial transmission lines. Floating or post supported docks or decks. Private, non-commercial, single-boat moorings. Utility lines installed by directional bores.</p>	<p>Maintenance dredging of any amount affecting a special aquatic site. New and maintenance dredging greater than 5,000 CY or in or affecting a special aquatic site. Dredging with open water disposal</p>

Navigable Waters of the U.S. <sup>3</sup> : These waters were designated as navigable by Congress (33 CFR 329).			
Projects not meeting Category 1 must apply/report to the Corps as either a Category 2 or Individual Permit project. All Category 1 and 2 projects must comply with all of this GP's applicable terms (Pages 1 – 6) and general conditions (Pages 7 – 15).			
	CATEGORY 1	CATEGORY 2	INDIVIDUAL PERMIT (IP)
<b>II. NAVIGABLE WATERS OF THE U.S.<sup>3</sup> – LAKE CHAMPLAIN, LAKE MEMPHREMAGOG, WALLACE POND</b>  (a) FILL	No provisions for new or previously unauthorized fills in Category 1	<5,000 SF waterway/wetland fill and secondary impacts (e.g. areas drained, flooded, fragmented, mechanically cleared or excavated). Includes boat ramps & bridge fills.  Projects sponsored by a Federal or State agency with proactive restoration <sup>10</sup> as a primary purpose and impacts of any size. Net impacts must not be greater than minimal.	≥5,000 SF waterway/wetland fill and secondary impacts (e.g. areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent waterway fills.  EIS required by the Corps.
(b) REPAIR, REPLACEMENT IN KIND AND MAINTENANCE WORK	Repair, replacement in kind or maintenance of existing, currently serviceable, authorized structures and fills.  <u>Provided:</u> <ul style="list-style-type: none"> <li>• No expansion or change in use.</li> <li>• Must be rebuilt in same footprint, however minor deviations in structure design allowed.<sup>12</sup></li> </ul>	Repair/replacement in kind/maintenance of currently serviceable authorized fills with expansion or a change in use <5000 SF.  Replacement of non-serviceable authorized fills, including expansion or a change in use, totaling <5000 SF.	Repair/maintenance/replacement in kind of currently serviceable authorized fills with expansion or a change in use >5000 SF.
(c) DREDGING	No provisions for dredging in Category 1	New and maintenance dredging <sup>13</sup> up to 5,000 CY with upland disposal or beach nourishment.  <u>Provided:</u> <ul style="list-style-type: none"> <li>• No impacts to SAS<sup>7</sup></li> <li>• Specific activities with impacts of any area or cubic yardage required to affect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority may be reviewed as a Cat. 2 project. Wetlands must be restored in place.</li> </ul>	New or maintenance dredging <sup>13</sup> ≥5,000 CY.  Dredging affecting an SAS <sup>7</sup> .  All dredging with open water disposal.

<p>(d) MOORINGS</p>	<p>Private, non-commercial, non-rental, single-boat moorings.  <u>Provided:</u></p> <ul style="list-style-type: none"> <li>• Chains or other connections may not rest on the bottom in SAS<sup>7</sup> (eco-friendly mooring technology is required).</li> <li>• Not associated with a boating facility<sup>14</sup>.</li> <li>• No interference with navigation.</li> <li>• Moorings in Federal Anchorage<sup>15</sup> not associated with a boating facility<sup>14</sup>.</li> <li>• Not located within the buffer zone of the horizontal limits of a Federal Channel<sup>15</sup>.</li> </ul>	<p>Moorings that do not meet the terms of Category 1.</p> <p>Moorings located such that they, and/or vessels docked or moored at them, are within the buffer zone of the horizontal limits of a Federal Channel<sup>15</sup>.</p>	<p>Moorings and/or their moored vessels within the horizontal limits of a Federal Channel<sup>15</sup>.</p>
<p>(e) PILE-SUPPORTED STRUCTURES AND FLOATS</p>	<ol style="list-style-type: none"> <li>1. Reconfiguration of existing authorized docks with no additional slips and no expansion.</li> <li>2. Seasonal private, residential pile-supported structures for navigational access extending no further waterward than 50 FT MHW, not &gt;4 FT wide, &amp; a dock deck area &lt;500 SF.</li> <li>3. Private, bottom-anchored floats and seasonal swim floats ≤400 SF.</li> <li>4. Private boat &amp; float lifts to authorized residential docks.</li> </ol> <p>Provided for 1 - 4 above:</p> <ul style="list-style-type: none"> <li>• No structure extends across &gt;25% of the waterway width at MLW.</li> <li>• Not located over SAS<sup>7</sup>.</li> <li>• Not located within the buffer zone of the horizontal limits of an FNP<sup>15</sup>.</li> </ul>	<p>Private structures and floats for navigational access to the waterway that do not meet the terms of Category 1.</p> <p>Piers, docks, decks, floats, and similar structures that provide public recreational uses such as fishing, swimming, access, etc.</p> <p>Non-fill structures to provide recreational access to the waterbody (e.g. stairways, etc.).</p> <p>Minor modifications to existing, permitted boating facilities.</p> <p>Structures or floats and/or vessels docked or moored at them within the buffer zone of the horizontal limits of a FNP<sup>15</sup>.</p>	<p>Structures or floats and/or vessels docked or moored at them within the horizontal limits of a FNP<sup>15</sup>.</p> <p>Structures or floats associated with a new or previously unauthorized boating facility.<sup>14</sup></p>
<p>(f) BANK STABILIZATION PROJECTS</p>		<p>Bank stabilization &lt;500 linear feet and an average of 1 CY per linear ft. of fill below OHW or less provided no wetland fill.</p>	<p>Bank stabilization ≥500 linear ft. and/or involving more than an average of 1 CY per linear FT of fill below OHW.</p>

<p>(g) MISCELLANEOUS</p>	<p>Temporary buoys, markers, floats, etc. for recreational use during specific events, provided they are in place for no more than 30 days and are removed within 15 days after use is discontinued.</p> <p>The placement of aids to navigation and regulatory markers which are approved by and installed in accordance with the requirements of the U.S. Coast Guard. (See 33 CFR 66, Chapter I, subchapter C).</p> <p>Temporary oil spill clean up structures and fill.</p> <p>Scientific measurement devices &amp; survey activities such as exploratory drilling, surveying and sampling, provided that such structures do not restrict movement of aquatic organisms. Does not include oil and gas exploration or seismic testing, or fills for roads or construction pads.</p> <p>Fish and wildlife harvesting devices and activities such as pound nets, duck blinds, and small fish attraction devices such as open-water fish concentrators (sea kites, etc.). Provided: no hazard to navigation; activity is not in wetlands (except Sea Lamprey control projects) or sites that support submerged vegetation (including sites where submerged aquatic vegetation is determined to exist, but may not be present in a given year).</p>	<p>Structures/work in or affecting navigable waters that are not defined under any previous headings. Includes but is not limited to utility lines, aerial transmission lines, pipelines, outfalls, intakes, and horizontal directional drilling.</p> <p>Zebra Mussel control projects.</p> <p>Fishery habitat enhancement structures.</p> <p>Sea Lamprey control projects</p> <p>Nuisance aquatic plant control projects.</p> <p>Utility lines installed by directional bore.</p>	<p>Projects where an EIS is required by the Corps.</p> <p>Activities or activities with docked or moored vessels extending within the horizontal limits of Corps FNP<sup>15</sup> (does not include utility lines, aerial lines and subsurface crossings in Cat 2).</p>
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*End Notes/Definitions*

<sup>1</sup> Waters of the United States (U.S.):

- a. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- b. All interstate waters including interstate wetlands;
- c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
  - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
- d. All impoundments of waters otherwise defined as waters of the U.S. under the definition;
- e. Tributaries of waters identified in paragraphs (a)-(d) above;
- f. The territorial seas;

g. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in (a)-(f) above. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet this definition's criteria) are not waters of the U.S. h. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA.

<sup>2</sup> **Inland Waters and Wetlands:** These are a subset of waters of the U.S., are regulated under Section 404 of the CWA, and include rivers, streams, lakes, ponds and wetlands, excluding Section 10 Navigable Waters of the U.S. The jurisdictional limits [33 CFR 328.4(c)] are the ordinary high water (OHW) mark in the absence of adjacent wetlands, beyond the OHW mark to the limit of adjacent wetlands are present, and the wetland limit when only wetlands are present.

<sup>3</sup> **Navigable Waters of the U.S.:** These are a subset of waters of the U.S., and are defined at 33 CFR 329. The jurisdictional limits [33 CFR 329.11] extend laterally to the entire water surface and bed of a navigable waterbody, which includes all the land and waters below the ordinary high water mark. Jurisdiction thus extends to the edge (as determined above) of all such waterbodies, even though portions of the waterbody may be extremely shallow, or obstructed by shoals, vegetation or other barriers. Marshlands and similar areas are thus considered navigable in law, but only so far as the area is subject to inundation by the ordinary high waters. In Vermont these waters are: the Connecticut River, Lake Champlain, Lake Memphremagog, Wallace Pond, Ompompanoosuc River (to mile 3.8), Waits River (to mile 0.9), the Black River (mouth to mile 25 in Craftsbury), the Battenkill River (to mile 50 in Manchester), the Lamoille River (mouth to mile 79 in Greensboro), the Missisquoi River (including the North Branch, from the mouth to mile 88.5 in Lowell), Otter Creek (mouth to mile 63.8 in Procter), Winooski River (mouth to Marshfield), Moose River (from Passumpsic River to the Victory Town Line), Nulhegan River (mouth to its source including the East Branch, the Black Branch and the Yellow Branch), Paul Stream (mouth to the source), East Branch of the Passumpsic River (from the confluence with the Passumpsic River to East Haven), Passumpsic River (mouth to confluence with the East Branch), White River (mouth to its source), Wells River (mouth to Groton Pond).

<sup>4</sup> **Direct, Secondary (Indirect), and Cumulative Impacts:**

**Direct Impacts:** The immediate loss of aquatic ecosystem within the footprint of the fill.

**Secondary (Indirect) Impacts:** These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. (40 CFR 230.11 (h)). Secondary impacts are those impacts outside the footprint of the fill (e.g., beyond the bounds of the disposal site) that arise from and are associated with the direct discharge of dredged or fill material. Some examples are: I) Habitat Fragmentation. This occurs when a relatively undisturbed habitat block is interrupted or broken apart by roads, ditches, disturbance of vegetation, or development of structures. II) Interruption of Travel Corridors. Travel corridors are routes that many species travel on to find food, mates, shelter, and cover. Many aquatic species follow stream channels and wetlands, and follow established routes season after season. III) Vernal Pools. These are critically important breeding habitats for amphibians. Many amphibians disperse several hundred feet from their breeding ponds into the adjacent upland habitat after the breeding season has ended. IV) Hydrology, hydrological functions and non-point source impacts: A) Interference with the migration or movement of fish and shellfish from one area to another, such as placement of a dam eliminating access to spawning grounds for anadromous fish. B) Greater amounts of sediment, nutrients, and other pollutants such as lead, oil, gas, and salt that could impact wetlands and streams. Sediment causes turbidity, which reduces aquatic life and usually transports pesticides, heavy metals and other toxins into streams. This is especially a concern in watersheds where the streams are already listed as impaired by the VT ANR. C) Submerged aquatic vegetation is very dependent on light transmission and small changes in ambient turbidity can preclude it from growing in certain areas. D) Trout spawning areas are selected in areas that are well flushed and aerated, and new amounts of deposition may result in a spawning area being eliminated due to siltation of fish eggs. E) Physical effects such as erosion, accretion, entrenchment, sedimentation, embedment, channel or shoreline migration and failure to pass bedload material, organic matter and large woody debris.

**Cumulative Impacts:** The extent of past, present, and foreseeable developments in the area may be an important consideration in evaluating the significance of a particular project's impacts. Although the impacts associated with a particular discharge may be minor, the cumulative effect of numerous similar discharges can result in a large impact. Cumulative impacts should be estimated only to the extent that they are reasonable and practical.

<sup>5</sup> **Incidental Fillback:** The term "discharge of dredged or fill material" also includes certain discharges resulting from excavation.

<sup>6</sup> **Water Diversions:** Water diversions are activities such as bypass pumping or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions. See GC 21.

<sup>7</sup> **Special Aquatic Sites:** Include inland wetlands, mudflats, vegetated shallows (permanently inundated areas that support rooted aquatic vegetation), and riffle and pool complexes. (40 CFR 230)

<sup>8</sup> **Special Wetlands:** Jurisdictional vernal pools, bogs, fens, and wetlands which provide habitat for threatened or endangered or species as designated by the State of VT Natural Heritage Program. See GC 27 for website. The following definitions for bogs, fens and vernal pools apply for the purposes of this GP:  
**Bog** - A peat accumulating wetland with hydric, organic soils, a complete, or nearly complete, Sphagnum cover and a pH value ranging from 3.5 to 5.6 that receives water primarily from precipitation. Typical species include Sphagnum, leatherleaf and pitcher plant.

**Fen** - A peat accumulating wetland with hydric organic soils and a pH value ranging from 4.0 to 8.0. Sphagnum moss may be present, however, not as a complete cover. It generally receives water and minerals from runoff flowing through it. Typical species include low sedges, Sphagnum, other mosses and heath shrubs.

**Vernal Pools and Habitat:** Vernal pools are confined basin depressions with water for two or more continuous months in the spring and/or summer, for which evidence of one of more of the following obligate vernal pools species: wood frogs (*Rana sylvatica*), mole salamanders (*Ambystoma* spp), and fairy shrimp (*Eubranchipus* spp) has been documented **OR** for which evidence of two or more of the following facultative organisms: caddisfly (*Trichoptera*) larvae casings, fingernail clams (*Sphaeriidae*), or amphibious snails (*Basammatophora*) and evidence that the pool does not contain an established reproducing fish population has been documented. Vernal pool habitat is the seasonal pool depression, seasonal pool envelope (100 FT radius from the pool edge) and seasonal pool terrestrial habitat (750 FT radius from the pool edge).

<sup>9</sup> **Corps Properties & Easements:** Contact the Corps, Real Estate Division (978) 318-8580 to initiate reviews about both Corps holdings and permit requirements.

<sup>10</sup> **Restoration:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former wetland or other aquatic resource (called re-establishment) or a degraded wetland or other aquatic resource (called rehabilitation). Restoration means the result of actions which, in the opinion of the Federal and state resource agencies, reinstates, or will reinstate, insofar as possible, the functions and values of a wetland or aquatic resource which has been altered. Restoration is the re-creation or rehabilitation of wetland or other aquatic resource ecosystems whose natural functions have been destroyed or impaired. The Corps will decide if a project qualifies as proactive restoration and must determine along with Federal & state agencies that the net effects would be no more than minimal.

<sup>11</sup> **Rivers of Concern:** The following are rivers of concern due to either endangered species or cumulative impacts. There are no non-reporting bank stabilization activities in these rivers: Batten Kill River (to the headwaters), Black River (from its mouth in Springfield to its headwaters), Connecticut River, Lamoille River (from Hardwick to the confluence with Lake Champlain), Lewis Creek (from the Rte 116 crossing to the confluence with Lake Champlain), Missisquoi River (from the International Boundary in Richford, VT to the confluence with Lake Champlain), Ompompanoosuc River (to the headwaters), Otter Creek (from Rutland to the confluence with Lake Champlain), Pikes Falls (to the headwaters of North Branch of Ball Mountain Brook), Poultney River (to the headwaters), West River (from Jamaica to the confluence with the Connecticut River), White River (to the headwaters), Winooski River (from Montpelier to Lake Champlain).

<sup>12</sup> **Minor deviations.** Changes to the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards, which are necessary to make repair, rehabilitation, or replacement are permitted, provided the adverse environmental effects resulting from such repair, rehabilitation, or replacement are minimal. Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

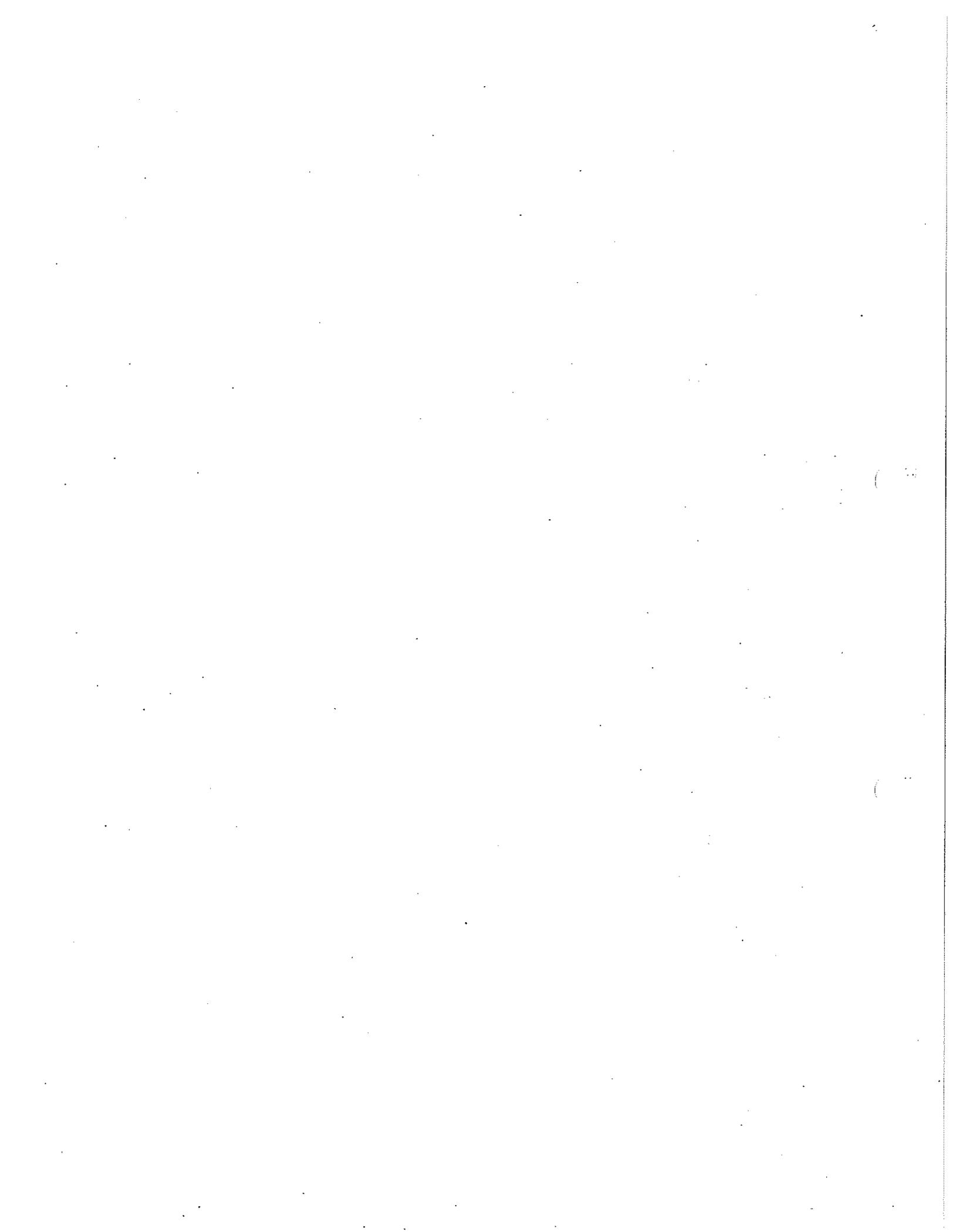
<sup>13</sup> **Maintenance Dredging.** Includes areas and depths previously authorized by the Corps and dredged. **New Dredging:** Includes dredging proposed in previously undredged areas and/or in areas exceeding previously authorized dimensions (deeper or wider than previously authorized) excluding normal overdrudge.

<sup>14</sup> **Boating Facilities:** Facilities that provide, rent or sell mooring space, e.g., marinas, yacht clubs, boat yards, dockminiums.

<sup>15</sup> **Federal Navigation Projects (FNPs):** FNPs are comprised of Federal channels and Federal anchorages. Contact the Corps for their location and information.  
**Horizontal Limits:** The outer edge of an FNP. **Buffer zone:** Equal to three times the authorized depth of that channel.

<sup>16</sup> **Swamp Mats:** Swamp mats is a generic term used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A type of swamp mat is a timber mat, which consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be swamp mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like swamp mats, they are considered as fill whether they're installed temporarily or permanently.

<sup>17</sup> **Headwater and Ephemeral Streams:** Forested upland and wetland clearing can lead to additional direct and indirect impacts to the headwater streams and ephemeral streams on individual sites. Headwater streams and wetlands provide a rich resource base that contributes to the productivity of both local food webs and those farther downstream. Land use changes in the vicinity of small streams and wetlands can impair the natural functions of headwater systems. These systems are vitally important to maintaining the quality and quantity of water and aquatic health of streams lower in the watershed.



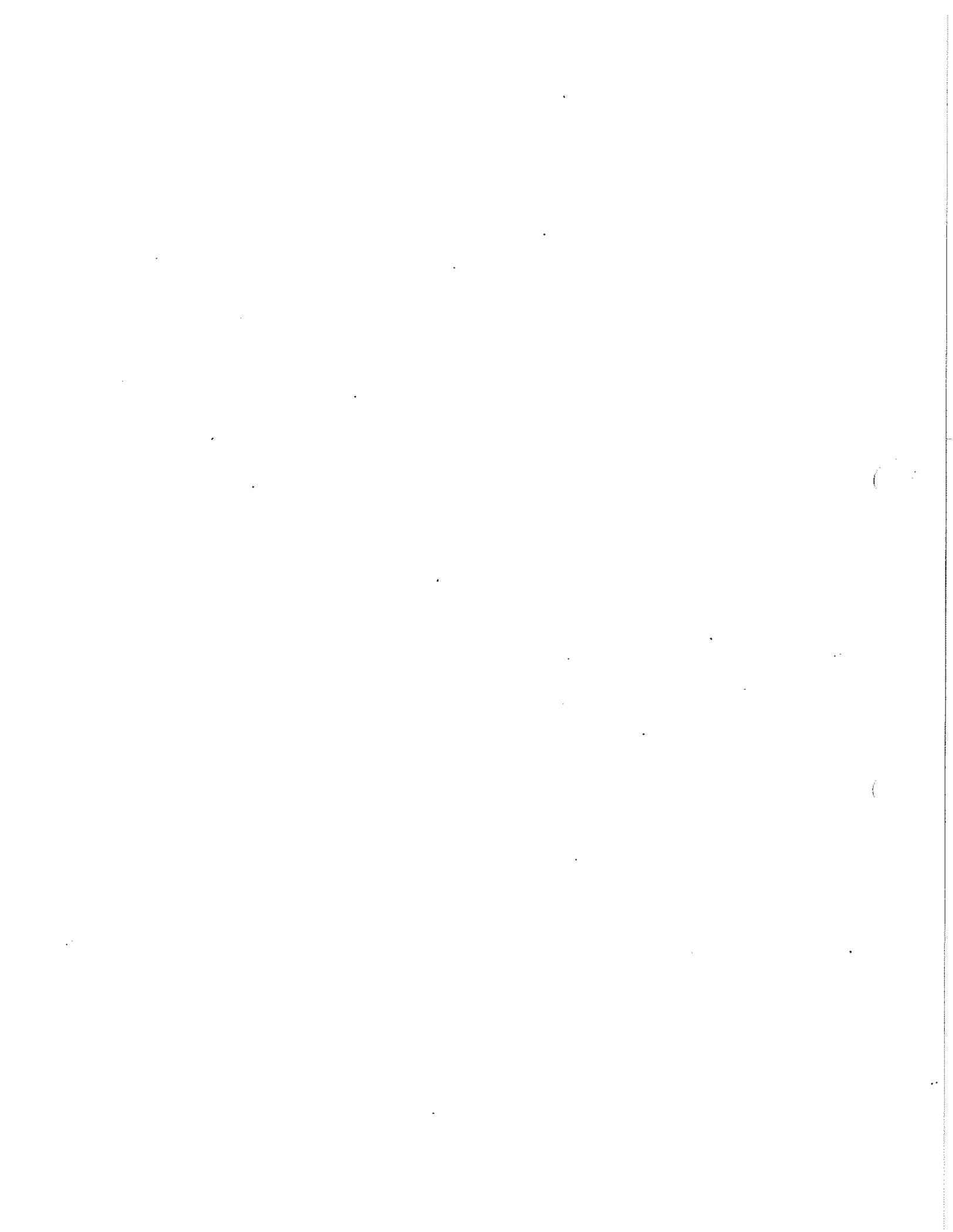
**CERTIFICATION FOR FEDERAL-AID CONTRACTS**

The prospective bidder, by signing and submitting this bid proposal, certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person or influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered to. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such sub-recipients shall certify and disclose accordingly.



State of Vermont  
Agency of Transportation  
CONTRACTORS EEO CERTIFICATION FORM

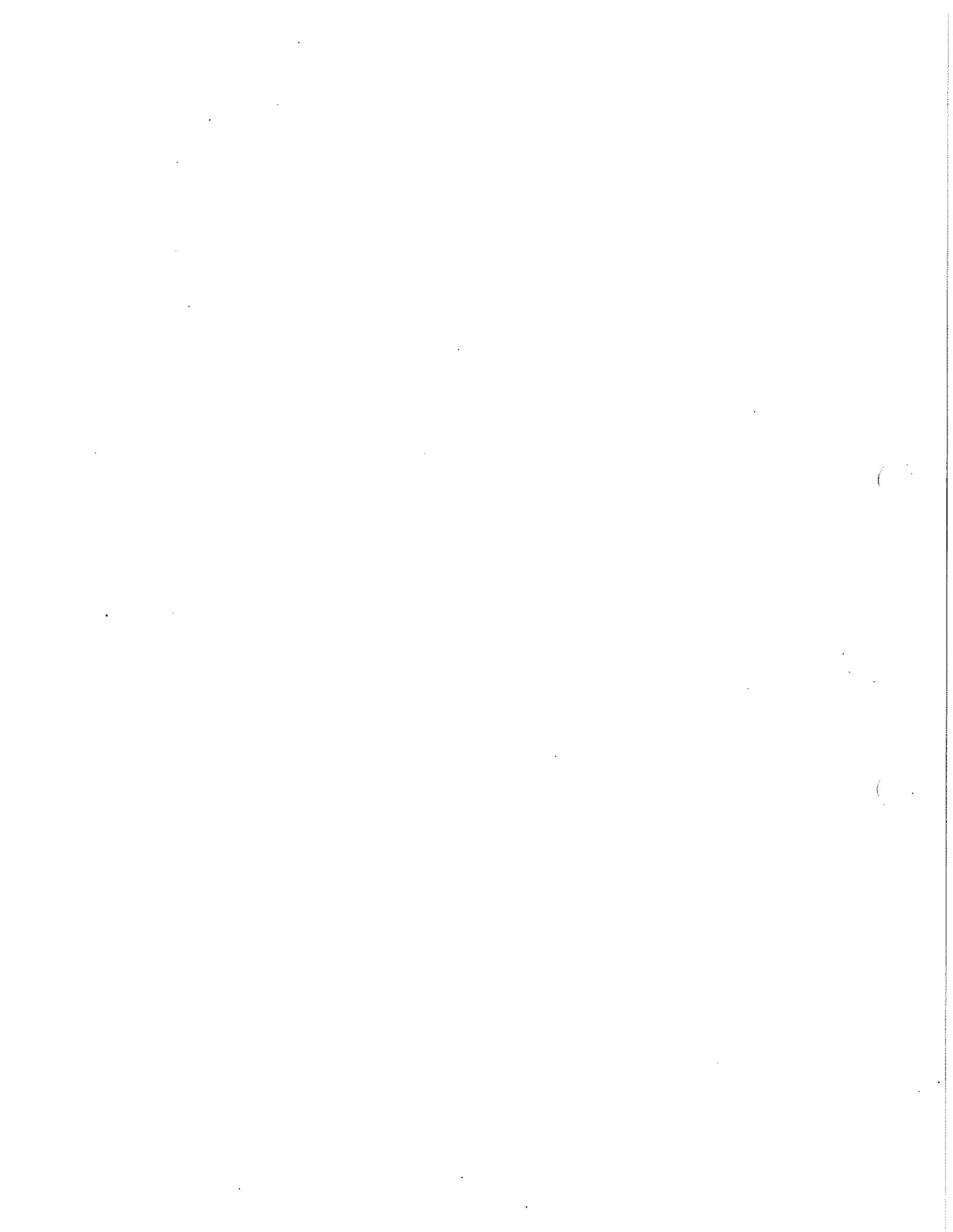
Certification with regard to the Performance of Previous Contracts of Subcontractors subject to the Equal Employment Opportunity Clause and the filing of Required Reports.

The bidder, hereby certifies that he/she has participated in a previous contract or subcontract subject to the equal opportunity clause as required by Executive Orders 10925, 11114, or 11246 as amended, and that he/she has, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the Presidents committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

T. Buck Construction, Inc Company	Terry Buck By	President Title
--------------------------------------	------------------	--------------------

NOTE: The above certification is required by the Equal Employment Opportunity regulations of the Secretary of Labor(41 CFR 60-1.7(b)(1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5 (Generally only contracts or subcontracts of \$10,000 or under are exempt.) Currently, Standard Form 100(EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration, or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.



CONSTRUCTION CONTRACT

**1. Parties.** This is a construction contract made this 7<sup>th</sup> day of JANUARY, 2013 between the State of Vermont, by its Agency of Transportation (hereafter called "State" or "Agency"), and T. Buck Construction, Incorporated of 249 Merrow Road, Auburn ME 04210, a corporation, incorporated under the laws of the State of Maine, its successors and assigns, (hereafter called Contractor).

**2. Subject Matter:** The Contractor, in consideration of the payment or payments specified in this Contract and agreed to by State, hereby agrees to furnish all the materials and to perform all the work and labor in the improvement of a certain project in the Town of Jamaica, County of Windham, State of Vermont, being approximately 300 Feet in length, at the unit prices bid by Contractor for the respective estimated quantities, aggregating approximately the sum of Two Million Three Hundred Seventy One Thousand One Hundred Thirty Dollars and No Cents (\$2,371,130.00), and such other items, as are mentioned in the original Proposal. The original Proposal and prices named, together with the Standard Specifications for Construction ("Specifications") as are listed in the Schedule of Prices, are made a part of this Contract Also, the drawings of the roadway prepared by the Agency, as verified by the Agency are made a part this Contract. The project is situated as follows:

Jamaica ER BRF 013-1 (16): LOCATED APPROXIMATELY 1.5 MILES SOUTH OF THE JUNCTION OF VT ROUTE 100 AND VT ROUTE 30.

The construction consists of: REPLACE EXISTING BRIDGE WITH RELATED ROADWAY APPROACH AND CHANNEL WORK.

**3. Labor and Material; Specifications.** The Contractor shall perform all the work and labor in the best and most workmanlike manner. The materials and labor shall be in strict and entire conformity, in every respect, with the Specifications and drawings and shall be subject to the inspection and approval of the Agency. If any of the material or labor shall be rejected by the Agency as defective or unsuitable, then the Contractor shall remove and replace the defective or unsuitable materials with other approved materials and do the labor anew, to the satisfaction and approval of the Agency, at the cost and expense of the Contractor. The Standard Specifications for Construction, approved and adopted by the Agency in 2011 are incorporated herein, and made a part of this Contract.

**4. Time for Performance; Liquidated Damages.** The Contractor shall furnish the materials and perform the labor in every respect to the satisfaction and approval of the Agency, on or before October 18, 2013 after written notice has been given by the Engineer to begin work. In case of the failure on the part of the Contractor, for any reason, except as provided in this Contract, to complete the furnishing of the materials and performing the work on or before October 18, 2013 the State shall deduct from any moneys due or which may become due the Contractor, or if no moneys shall be due, the State shall have the right to recover the amount of liquidated damages as provided in the Specifications for each and every day elapsing between the time stipulated for the completion and the actual date of completion, in accordance with the terms of the Contract Any such deductions or sums to be recovered are not penalties but liquidated damages. However, the Agency at its discretion, shall make allowance over the period specified for the completion of the work, for causes over which the Contractor has no control and which must delay the completion of the work, in such case, the Contractor shall become liable for liquidated damages for delays beginning from the date on which the extended period shall expire.

**5. Extra Work or Materials; Claims.** The Contractor understands and agrees that the Agency will not allow any claim for extra work or materials, not specifically provided in this Contract. The Contractor shall not do any work or furnish any materials not covered by these Specifications and Contract, unless such work is ordered in writing by the Agency. In no event shall the Contractor incur any liability by reason of any verbal directions or instructions that he may be given by the Agency. The State will not be liable for any materials furnished or used or for any work or labor done, unless the materials, work or labor are required of the Contractor on written order furnished by the Agency. Any such work or material which may be done or furnished by the Contractor without such written order first being given by the Agency shall be at the Contractor's own risk, cost and expense. The Contractor agrees that without such written order the Contractor shall make no claim for compensation for work or materials so done or furnished.

**6. Assignment; Subcontracting.** The Contractor shall not assign this Contract or any part of this Contract, or any right to any moneys to be paid the Contractor under this Contract, without the prior written approval of the Agency. The Contractor shall not subcontract any part of the work to be done or materials furnished under the Contract without the written approval of the Agency.

**7. Acceptance of Final Payment; Release.** The Contractor's acceptance of the final payment shall be considered as a release in full of all claims against the State of Vermont arising out of, or by reason of the work done and materials furnished under this Contract.

**8. Bonds.** The Bonds given by the Contractor, a Compliance Bond in a sum equal to one-hundred (100) per centum, and a Labor and Materials Bond in the sum equal to one-hundred (100) per centum of the total contract price of the work to be done, to secure a proper compliance with the terms and provisions of this Contract, are attached to and made a part of this Contract.

**9. Dispute Resolution; Exclusivity of Administrative Remedies.** All questions or disputes arising between the parties hereto respecting any matter pertaining to this Contract or any part of this Contract, or any breach of this Contract shall be referred to the Secretary of Transportation, whose decision and award shall be final, binding and conclusive upon all parties, subject to the right of appeal to the Transportation Board under 19 V.S.A. § 5(d) (4). All other rights or rights of action at law or in equity under and by virtue of this Contract and all matters connected with and relating to this Contract are hereby expressly waived.

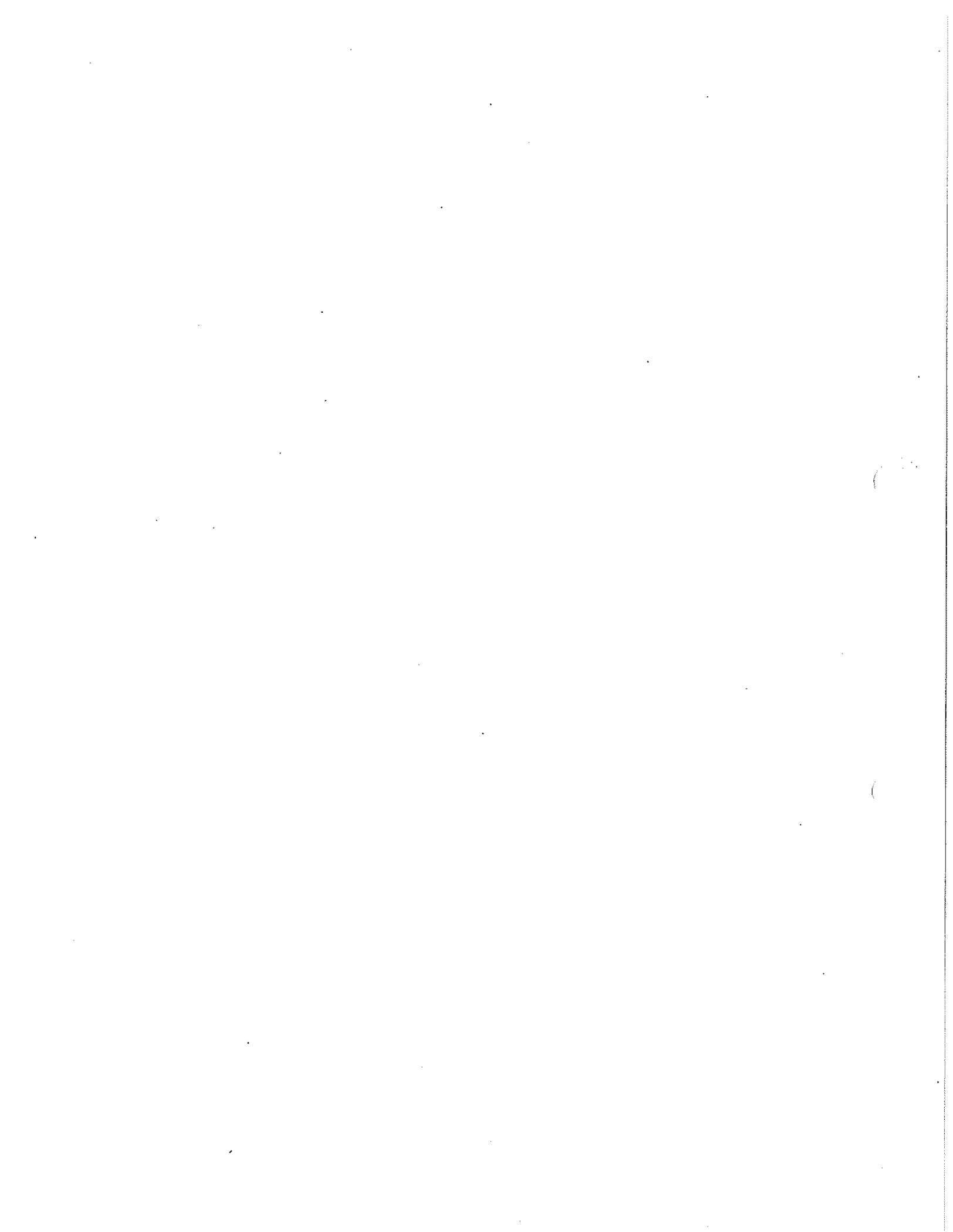
**10. Compensation for Contract Work.** The Contractor agrees to receive the prices set forth in the following Schedule of Prices as full compensation for furnishing all the materials and labor which may be required in the prosecution and completion of the whole of the work to be done under this Contract and in all respects to complete this Contract to the satisfaction of the Agency.

## CONTRACT SCHEDULE

CONTRACT ID: 11B212

PROJECT(S): JAMAICA ER BRF 013-1(16)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0005	201.10 CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	1.000 LS	5,000.00000		5,000.00	
0010	203.15 COMMON EXCAVATION	2,330.000 CY	11.00000		25,630.00	
0015	203.27 UNCLASSIFIED CHANNEL EXCAVATION	4,200.000 CY	9.00000		37,800.00	
0020	204.25 STRUCTURE EXCAVATION	350.000 CY	17.00000		5,950.00	
0025	204.30 GRANULAR BACKFILL FOR STRUCTURES	240.000 CY	42.00000		10,080.00	
0030	208.30 COFFERDAM EXCAVATION, EARTH	380.000 CY	21.00000		7,980.00	
0035	208.40 COFFERDAM (PIER)	1.000 LS	186,000.00000		186,000.00	
0040	210.10 COLD PLANING, BITUMINOUS PAVEMENT	950.000 SY	13.00000		12,350.00	
0045	404.65 EMULSIFIED ASPHALT	6.300 CWT	450.00000		2,835.00	
0050	406.50 PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	1.000 LU	1.00000		1.00	
0055	501.33 CONCRETE, HIGH PERFORMANCE CLASS A	360.000 CY	600.00000		216,000.00	

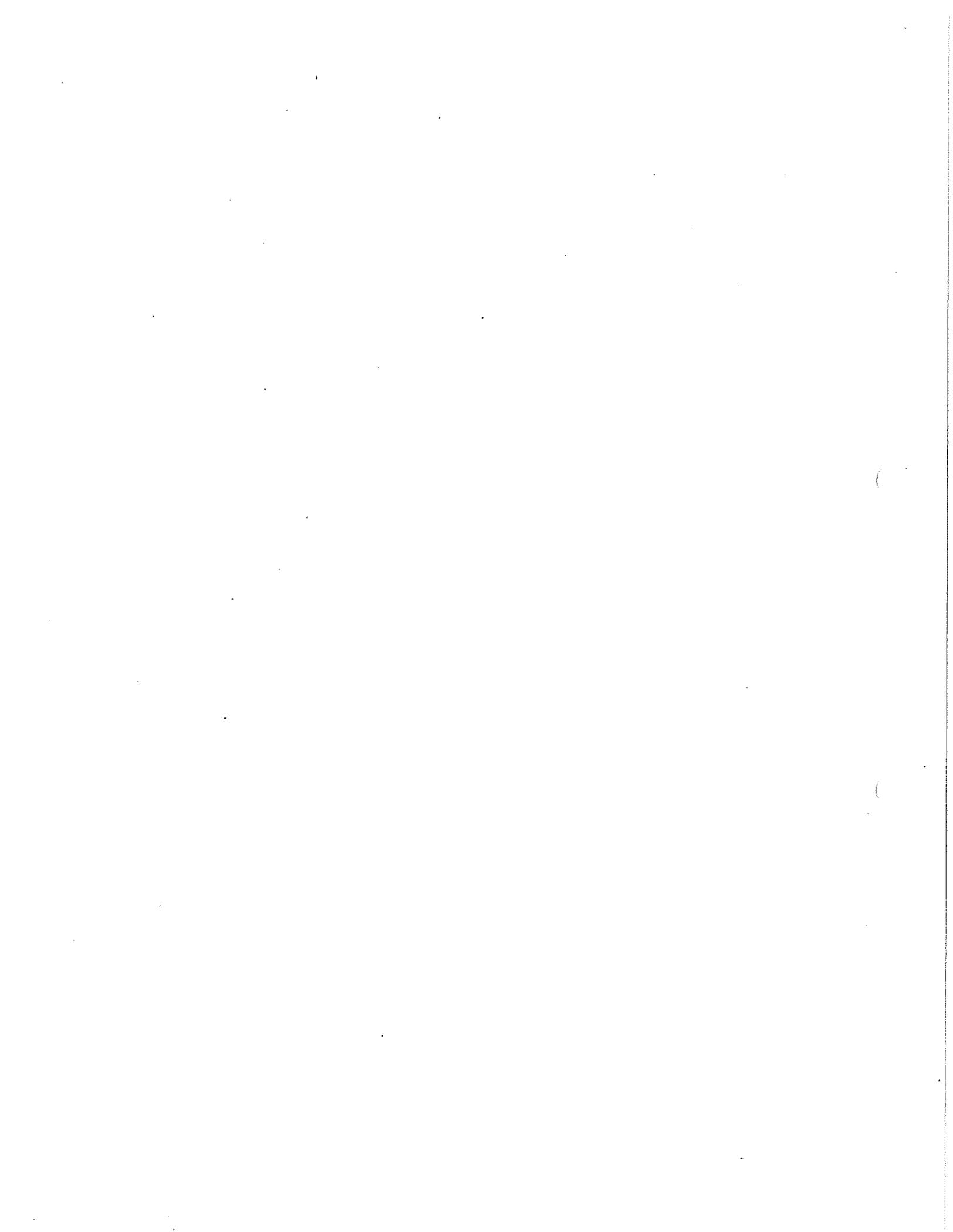


## CONTRACT SCHEDULE

CONTRACT ID: 11B212

PROJECT(S): JAMAICA ER BRF 013-1(16)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0060	501.34 CONCRETE, HIGH PERFORMANCE CLASS B	183.000 CY	400.00000		73,200.00	
0065	504.10 FURNISHING EQUIPMENT FOR DRIVING PILING	1.000 LS	150,000.00000		150,000.00	
0070	505.19 STEEL PILING, HP 14 X 102	1,614.000 LF	40.00000		64,560.00	
0075	505.45 DYNAMIC PILE LOADING TEST	3.000 EACH	7,000.00000		21,000.00	
0080	506.55 STRUCTURAL STEEL, PLATE GIRDER	331,200.000 LB	1.45000		480,240.00	
0085	507.11 REINFORCING STEEL, LEVEL I (FPQ)	28,900.000 LB	1.00000		28,900.00	
0090	507.12 REINFORCING STEEL, LEVEL II (FPQ)	100,500.000 LB	2.00000		201,000.00	
0095	508.15 SHEAR CONNECTORS (2456 - 7/8" X 7")	1.000 LS	15,000.00000		15,000.00	
0100	509.10 LONGITUDINAL DECK GROOVING	825.000 SY	11.00000		9,075.00	
0105	514.10 WATER REPELLENT, SILANE	50.000 GAL	40.00000		2,000.00	
0110	516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	60.000 LF	132.00000		7,920.00	



## CONTRACT SCHEDULE

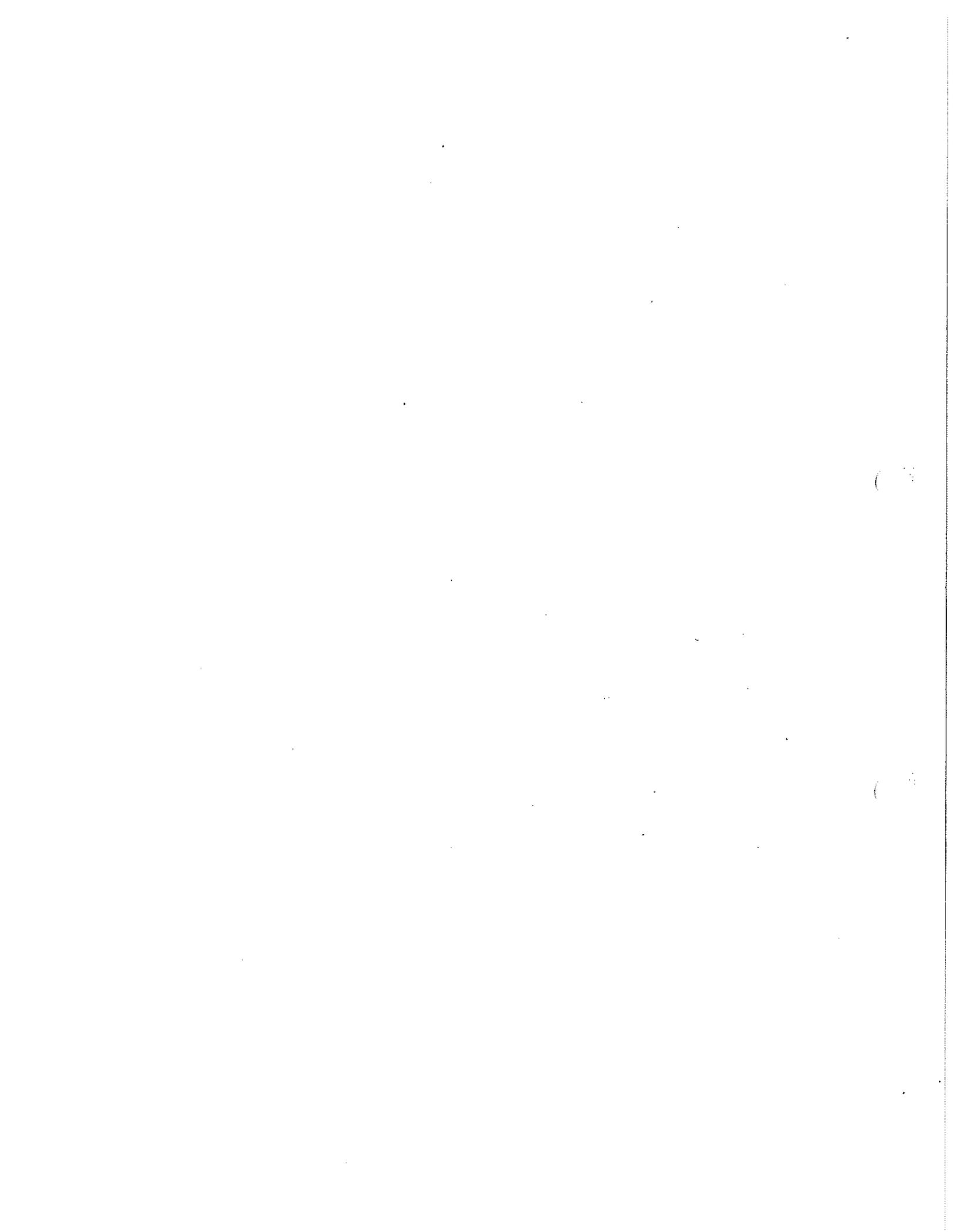
DATE : 11/30/12

REVISED: 11/26/12

CONTRACT ID: 11B212

PROJECT(S): JAMAICA ER BRF 013-1(16)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0115	524.11 JOINT SEALER, HOT POURED	60.000 LF	16.00000		960.00	
0120	525.70 BRIDGE RAILING, CONCRETE F-SHAPE	490.000 LF	190.00000		93,100.00	
0125	527.10 MAINTENANCE OF STRUCTURES AND APPROACHES	1.000 LS	3,000.00000		3,000.00	
0130	540.10 PRECAST CONCRETE STRUCTURE (PIER SUB-CAP)	1.000 LS	28,000.00000		28,000.00	
0135	608.25 ALL PURPOSE EXCAVATOR RENTAL, TYPE I	10.000 HR	125.00000		1,250.00	
0140	609.15 DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	1.000 TON	450.00000		450.00	
0145	613.13 STONE FILL, TYPE IV	3,200.000 CY	40.00000		128,000.00	
0150	621.21 HD STEEL BEAM GUARDRAIL, GALVANIZED	246.000 LF	20.00000		4,920.00	
0155	621.60 ANCHOR FOR STEEL BEAM RAIL	4.000 EACH	700.00000		2,800.00	
0160	621.747 GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING, TL-3	4.000 EACH	1,500.00000		6,000.00	
0165	621.80 REMOVAL AND DISPOSAL OF GUARDRAIL	163.000 LF	2.00000		326.00	



## CONTRACT SCHEDULE

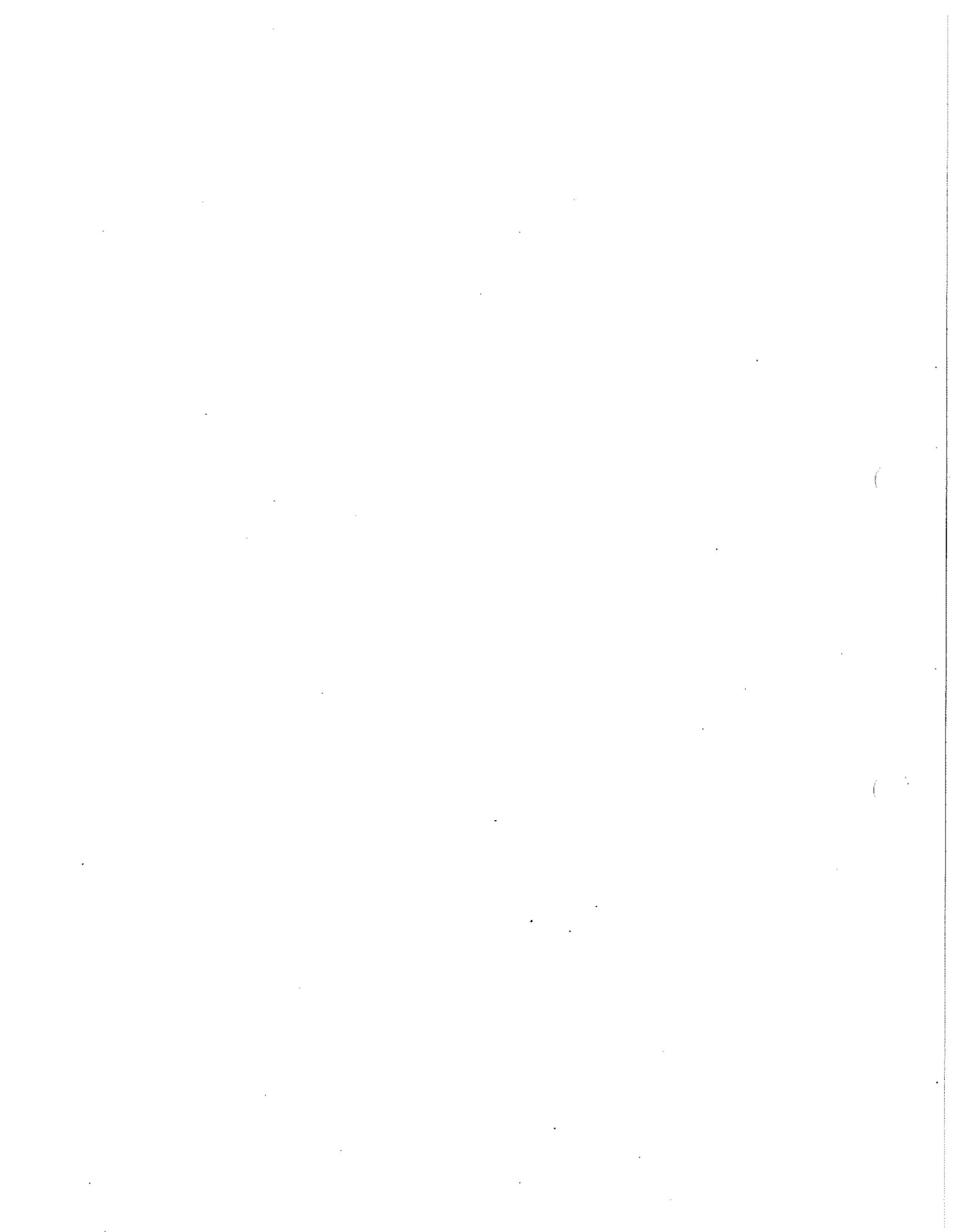
DATE : 11/30/12

REVISED: 11/26/12

CONTRACT ID: 11B212

PROJECT(S): JAMAICA ER BRF 013-1(16)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0170	630.15 FLAGGERS	200.000 HR	20.00000		4,000.00	
0175	631.10 FIELD OFFICE, ENGINEERS	1.000 LS	9,000.00000		9,000.00	
0180	631.16 TESTING EQUIPMENT, CONCRETE	1.000 LS	1,000.00000		1,000.00	
0185	631.17 TESTING EQUIPMENT, BITUMINOUS	1.000 LS	750.00000		750.00	
0190	631.26 FIELD OFFICE TELEPHONE (N.A.B.I.)	3,000.000 DL	1.00000		3,000.00	
0195	634.10 EMPLOYEE TRAINEESHIP	520.000 HR	1.00000		520.00	
0200	635.11 MOBILIZATION/DEMOBILIZATION	1.000 LS	229,201.85000		229,201.85	
0205	646.20 4 INCH WHITE LINE	1,605.000 LF	0.50000		802.50	
0210	646.21 4 INCH YELLOW LINE	1,490.000 LF	0.50000		745.00	
0215	649.31 GEOTEXTILE UNDER STONE FILL	2,300.000 SY	2.00000		4,600.00	
0220	649.515 GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	300.000 SY	10.00000		3,000.00	



## CONTRACT SCHEDULE

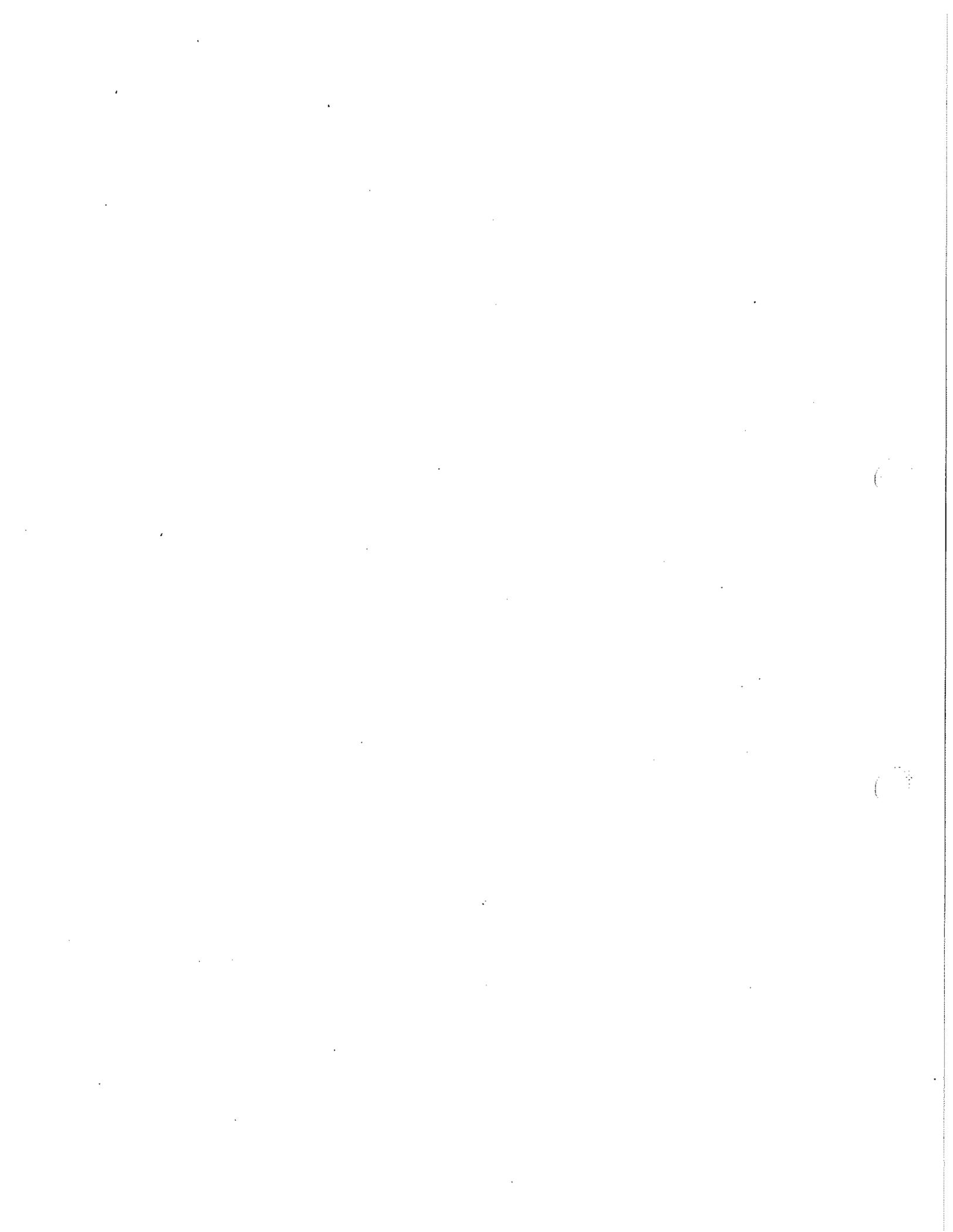
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REVISED: 11/26/12

CONTRACT ID: 11B212

PROJECT(S): JAMAICA ER BR F 013-1(16)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0225	649.61 GEOTEXTILE FOR FILTER CURTAIN	100.000 SY	15.00000		1,500.00	
0230	651.15 SEED	40.000 LB	8.00000		320.00	
0235	651.18 FERTILIZER	300.000 LB	1.00000		300.00	
0240	651.20 AGRICULTURAL LIMESTONE	2.000 TON	200.00000		400.00	
0245	651.25 HAY MULCH	2.000 TON	400.00000		800.00	
0250	651.35 TOPSOIL	125.000 CY	25.00000		3,125.00	
0255	651.40 GRUBBING MATERIAL	500.000 SY	10.00000		5,000.00	
0260	652.10 EPSC PLAN	1.000 LS	2,500.00000		2,500.00	
0265	652.20 MONITORING EPSC PLAN	15.000 HR	55.00000		825.00	
0270	652.30 MAINTENANCE OF EPSC PLAN (N.A.B.I.)	1.000 LU	7,000.00000		7,000.00	
0275	653.20 TEMPORARY EROSION MATTING	700.000 SY	1.25000		875.00	

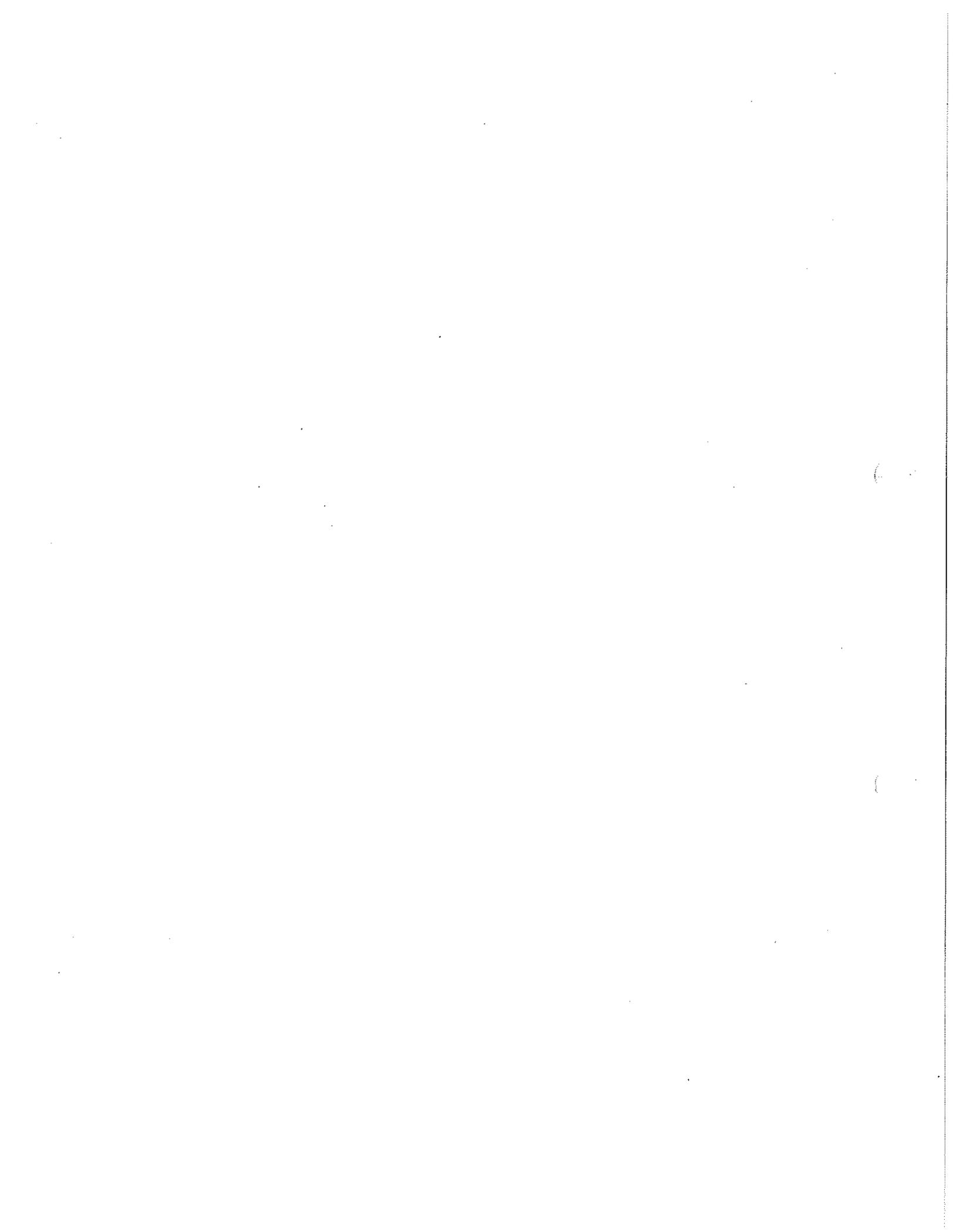


## CONTRACT SCHEDULE

CONTRACT ID: 11B212

PROJECT(S): JAMAICA ER BRP-013-1(16)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0280	653.35 VEHICLE TRACKING PAD	60.000 CY	40.00000		2,400.00	
0285	653.45 FILTER BAG	1.000 EACH	500.00000		500.00	
0290	653.50 BARRIER FENCE	400.000 LF	2.00000		800.00	
0295	653.55 PROJECT DEMARCATION FENCE	1,000.000 LF	2.00000		2,000.00	
0300	675.20 TRAFFIC SIGNS, TYPE A	6.910 SF	15.00000		103.65	
0305	675.341 SQUARE TUBE SIGN POST AND ANCHOR	44.000 LF	8.00000		352.00	
0310	675.50 REMOVING SIGNS	2.000 EACH	100.00000		200.00	
0315	675.60 ERECTING SALVAGED SIGNS	2.000 EACH	150.00000		300.00	
0320	690.50 PRICE ADJUSTMENT, FUEL (N.A.B.I.)	1.000 LU	1.00000		1.00	
0325	900.608 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A HIGH STRENGTH)	33.000 CY	800.00000		26,400.00	
0330	900.640 SPECIAL PROVISION (OBSTRUCTION REMOVAL FOR DRIVING PILES)	240.000 LF	40.00000		9,600.00	



## CONTRACT SCHEDULE

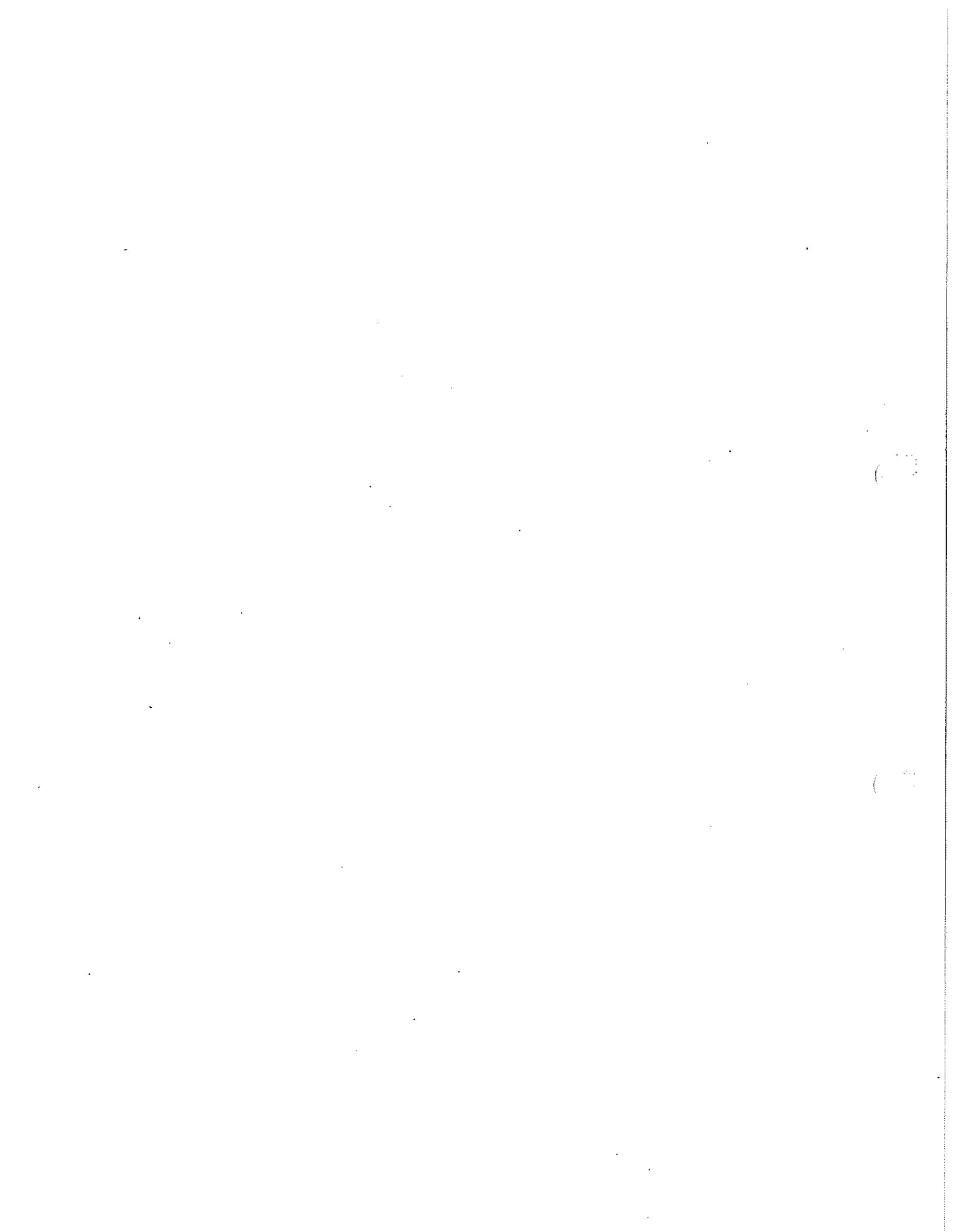
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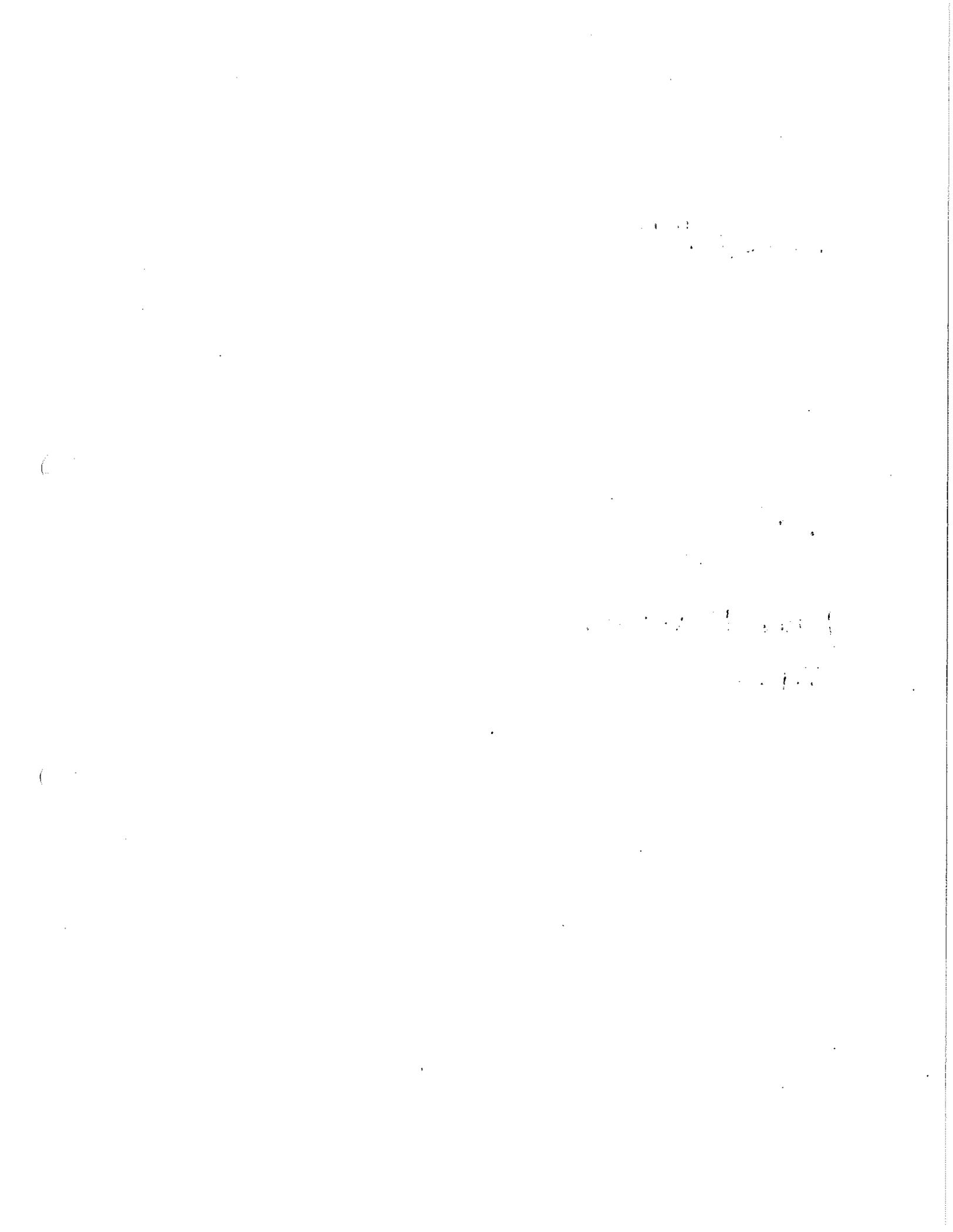
REVISED: 11/26/12

CONTRACT ID: 11B212

PROJECT(S): JAMAICA ER BRF 013-1(16)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT		
			DOLLARS	CTS	DOLLARS	CTS	
0335	900.645 SPECIAL PROVISION (POST-TENSIONING, PIER CAP)	1.000 LS	20,000.00000		20,000.00		
0340	900.645 SPECIAL PROVISION (POST-TENSIONING, PIER SUB-CAP)	1.000 LS	35,000.00000		35,000.00		
0345	900.645 SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES)	1.000 LS	50,000.00000		50,000.00		
0350	900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	1.000 LS	5,000.00000		5,000.00		
0355	900.650 SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	1.000 LU	1.00000		1.00		
0360	900.650 SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N. A.B.I.)	1.000 LU	1.00000		1.00		
0365	900.670 SPECIAL PROVISION (RETAINING WALL)	53.000 SF	60.00000		3,180.00		
0370	900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	375.000 TON	220.00000		82,500.00		
0375	301.15 SUBBASE OF GRAVEL	600.000 CY	33.00000		19,800.00		
0390	616.26 PRECAST REINFORCED CONCRETE CURB, TYPE B	48.000 LF	50.00000		2,400.00		
TOTAL BID						2,371,130.00	





Project Name & Number: Jamaica ER BRF 013-1 (16)

EMPLOYER IDENTIFICATION NUMBER 08.0488957

WE THE UNDERSIGNED PARTIES AGREE TO BE BOUND BY THIS CONTRACT

**By the State of Vermont:**

Date: 1/7/13

Signature: 

*FOR*  
Name: Brian R. Searles/Susan M. Minter

Agency: Transportation

**By the Contractor:**

Date: 12/26/12

Signature: 

Name: MARK MCPHETERS

Title: V.P.