

VERMONT

PROJECT
East Montpelier BF EWP2 (1)

VERMONT
AGENCY OF TRANSPORTATION
PROPOSAL

STANDARD SPECIFICATIONS FOR CONSTRUCTION
DATED 2011 SHALL APPLY TO THIS CONTRACT

SPECIAL PROVISIONS
SUPPLEMENTAL SPECIFICATIONS
SCHEDULE OF ITEMS

ELECTRONIC BID BOND to be submitted in the amount of 5% of the Contractor's bid.

BIDDING PROCEDURE

Bid Proposals will not be read unless accompanied by an electronic bid bond, and they may be rejected as irregular if they are not in compliance with Agency specifications.

NOTE: All bid proposals shall be properly filled out and submitted electronically utilizing Bid Express services.

SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS

Vermont Project East Montpelier BF EWP2 (1) in the town of East Montpelier.

The following provisions and supplemental specifications are included in this proposal and are effective for this contract.

Proposal holders are reminded of their responsibility to check the contents of this proposal against the following index. In the event that you suspect or determine the proposal is incomplete, notify the Agency's Contracts and Specifications Engineer immediately [(802)828-2641].

Proposal holders are also reminded of their other responsibilities to carefully examine all other information which affects the bidding process.

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 April 7, 2016
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
Construction General Permit (CGP) 3-9020 (Amended 2008) Authorization of Notice of Intent #4521-9020.R2 dated February 24, 2016
Storm Water Discharge Permit #4251-INDS.R dated February 19, 2013
Certification for Federal-Aid Contracts
Schedule of Items
Contractor's EEO Certification Form
Debarment & Non-Collusion Affidavit

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

- 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

- A. 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.

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.epis.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.

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.

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)**

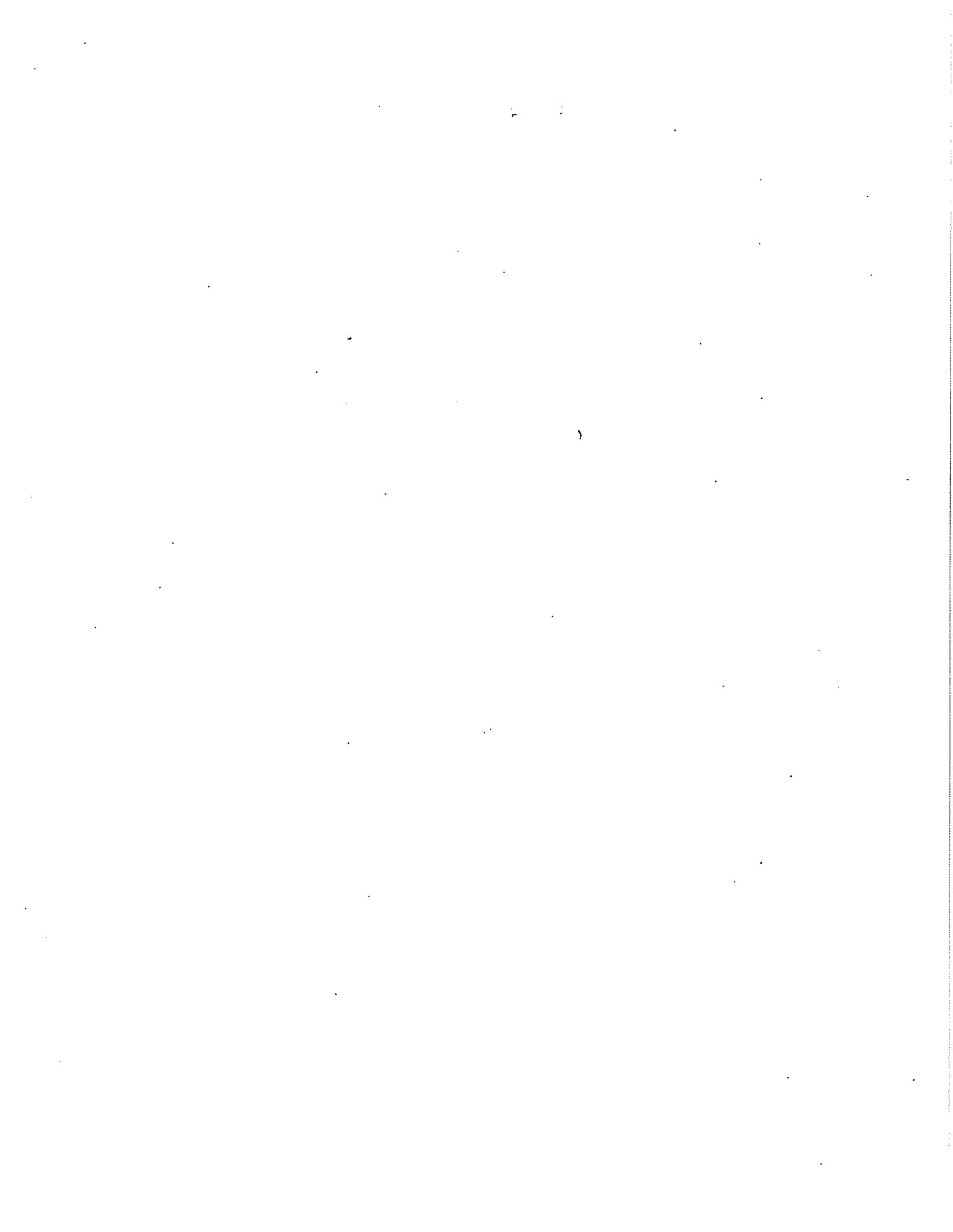
1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in 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.

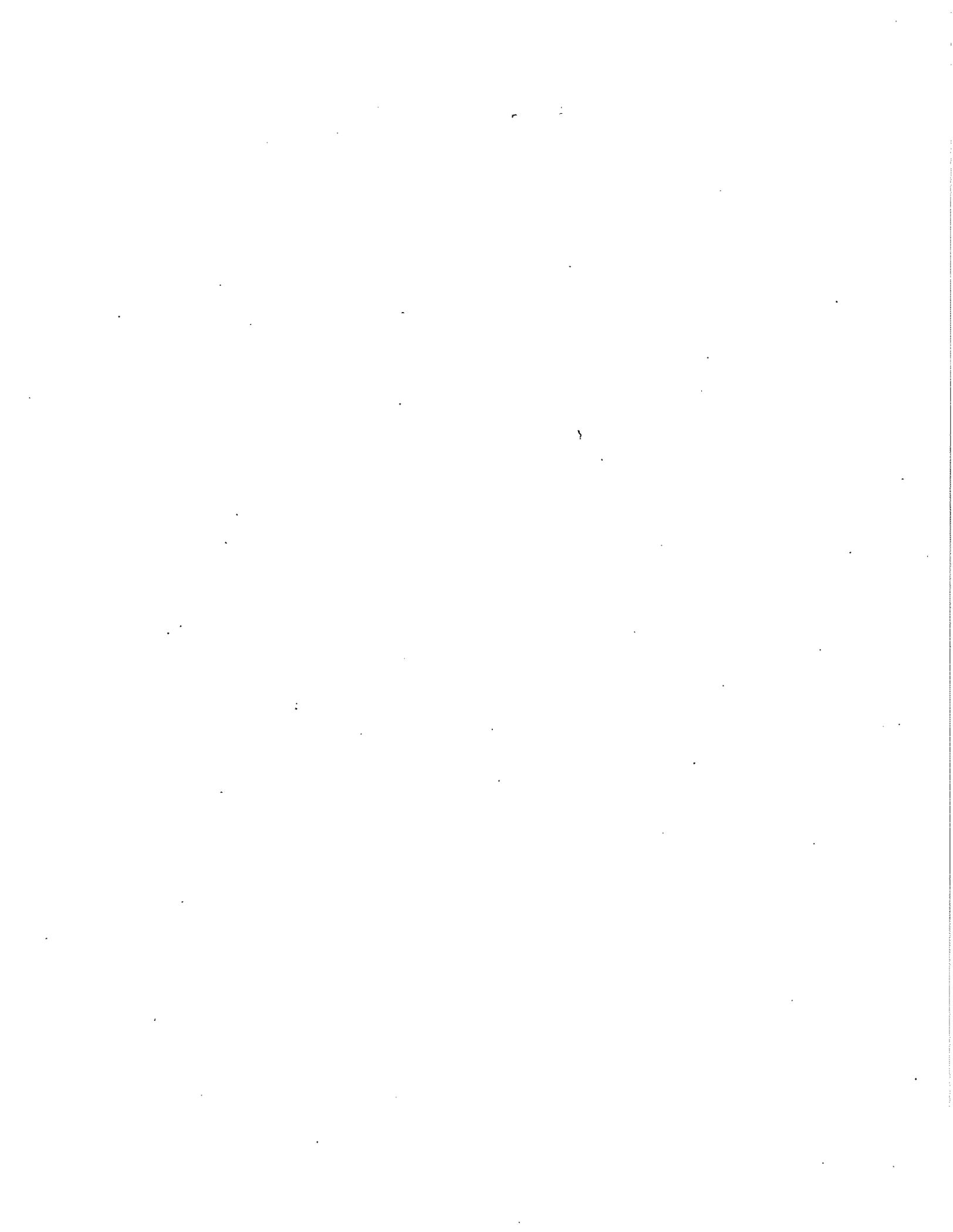
3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The 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".



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.

VERMONT AGENCY OF TRANSPORTATION
CERTIFICATE VERIFYING WORKERS' COMPENSATION COVERAGE
(PRIME CONTRACTOR)

REQUIRED FOR CONTRACTS OVER \$250,000, PER ACT 54 OF 2009 & ACT 50 OF 2011

VTrans Project: _____

Prime Contractor: _____

Vermont statutes and standard State contract provisions require contractors and subcontractors to obtain and maintain workers' compensation insurance while performing work for the State.

Evidence of coverage, including but not limited to this Certificate, must be provided prior to commencement of work.

1. The undersigned organization certifies that it either:

A. Has workers' compensation insurance

Insurance Company: _____

Policy Expiration Date: _____

-OR-

B. Is approved by the Vermont Department of Labor to operate as a self-insured for workers' compensation

2. The undersigned organization certifies that it has verified that its workers' compensation coverage contains a rider or non-cancellation clause reading in substance (per 2011 Standard Specifications for Construction §103.04(e)) as follows:

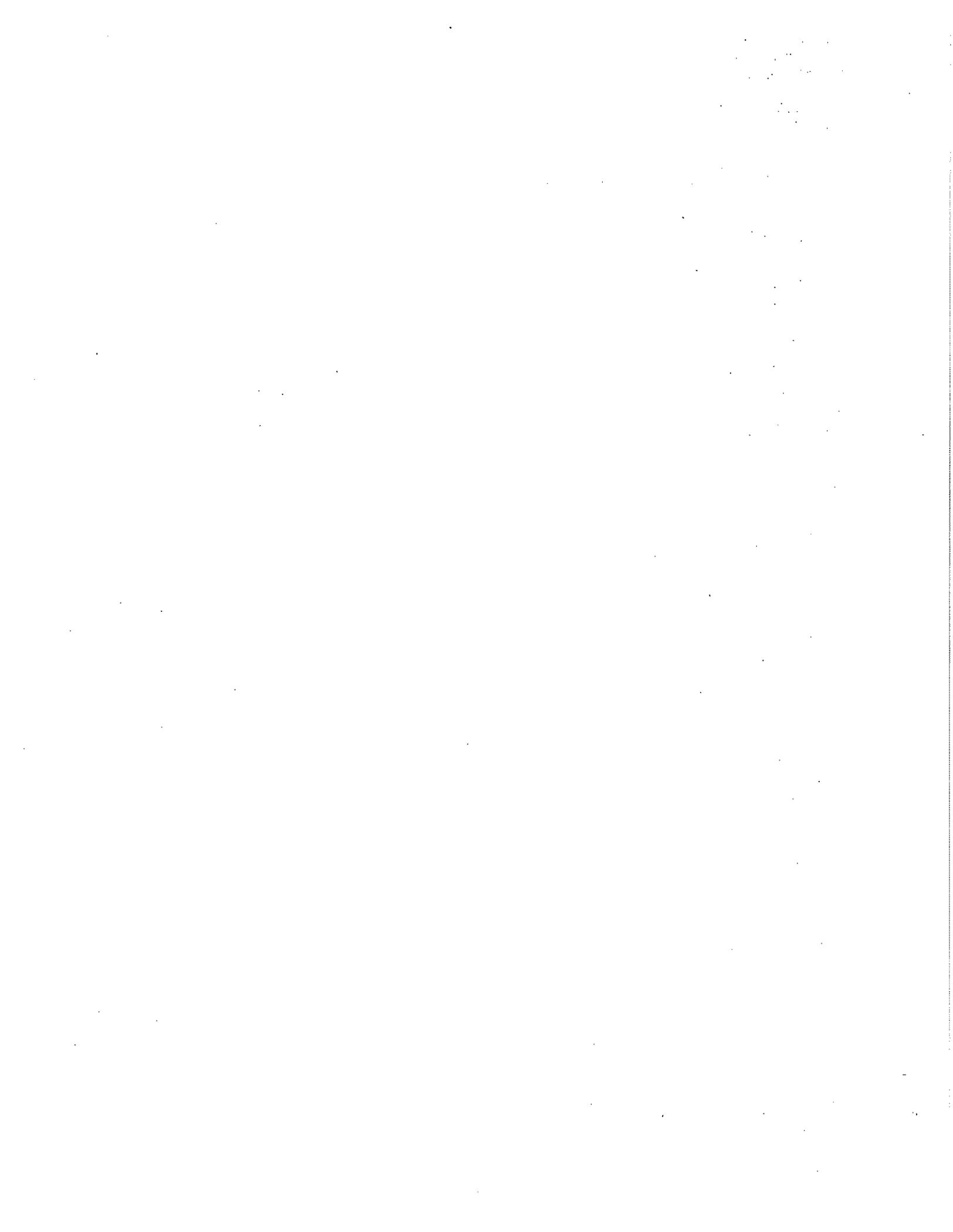
Anything herein to the contrary notwithstanding, no cancellation, termination, or alteration of this policy by the company or the assured shall become effective unless and until notice of cancellation, termination, or alteration has been given by registered mail to the Director of Program Development of the Vermont Agency of Transportation, National Life Building, Montpelier, Vermont 05633-5001, at least 30 calendar days before the effective cancellation, termination, or alteration date unless all work required to be performed under the terms of the Contract is satisfactorily completed as evidenced by the formal, final acceptance of the project by the Agency.

Signature (must be by a person authorized to sign for contractor)

Date

Print name of person signing

Title



VERMONT AGENCY OF TRANSPORTATION
CERTIFICATE VERIFYING WORKERS' COMPENSATION COVERAGE
(SUBCONTRACTORS AND SUBCONTRACTORS' SUBCONTRACTORS)

REQUIRED FOR CONTRACTS OVER \$250,000, PER ACT 54 OF 2009 & ACT 50 OF 2011

VTrans Project: _____

Prime Contractor: _____

Subcontractor: _____

Vermont statutes and standard State contract provisions require contractors and subcontractors to obtain and maintain workers' compensation insurance while performing work for the State.

Evidence of coverage, including but not limited to this Certificate, must be provided prior to commencement of work.

1. The undersigned organization [subcontractor] certifies that it either:

A. Has workers' compensation insurance

Insurance Company: _____

Policy Expiration Date: _____

-OR-

B. Is approved by the Vermont Department of Labor to operate as a self-insured for workers' compensation

2. The undersigned organization [subcontractor] certifies that it has verified that its workers' compensation coverage contains a rider or non-cancellation clause reading in substance (per 2011 Standard Specifications for Construction §103.04(e)) as follows:

Anything herein to the contrary notwithstanding, no cancellation, termination, or alteration of this policy by the company or the assured shall become effective unless and until notice of cancellation, termination, or alteration has been given by registered mail to the Director of Program Development of the Vermont Agency of Transportation, National Life Building, Montpelier, Vermont 05633-5001, at least 30 calendar days before the effective cancellation, termination, or alteration date unless all work required to be performed under the terms of the Contract is satisfactorily completed as evidenced by the formal, final acceptance of the project by the Agency.

Signature (must be by a person authorized to sign for subcontractor)

Date

Print name of person signing

Title

TO BE COMPLETED BY PRIME CONTRACTOR:

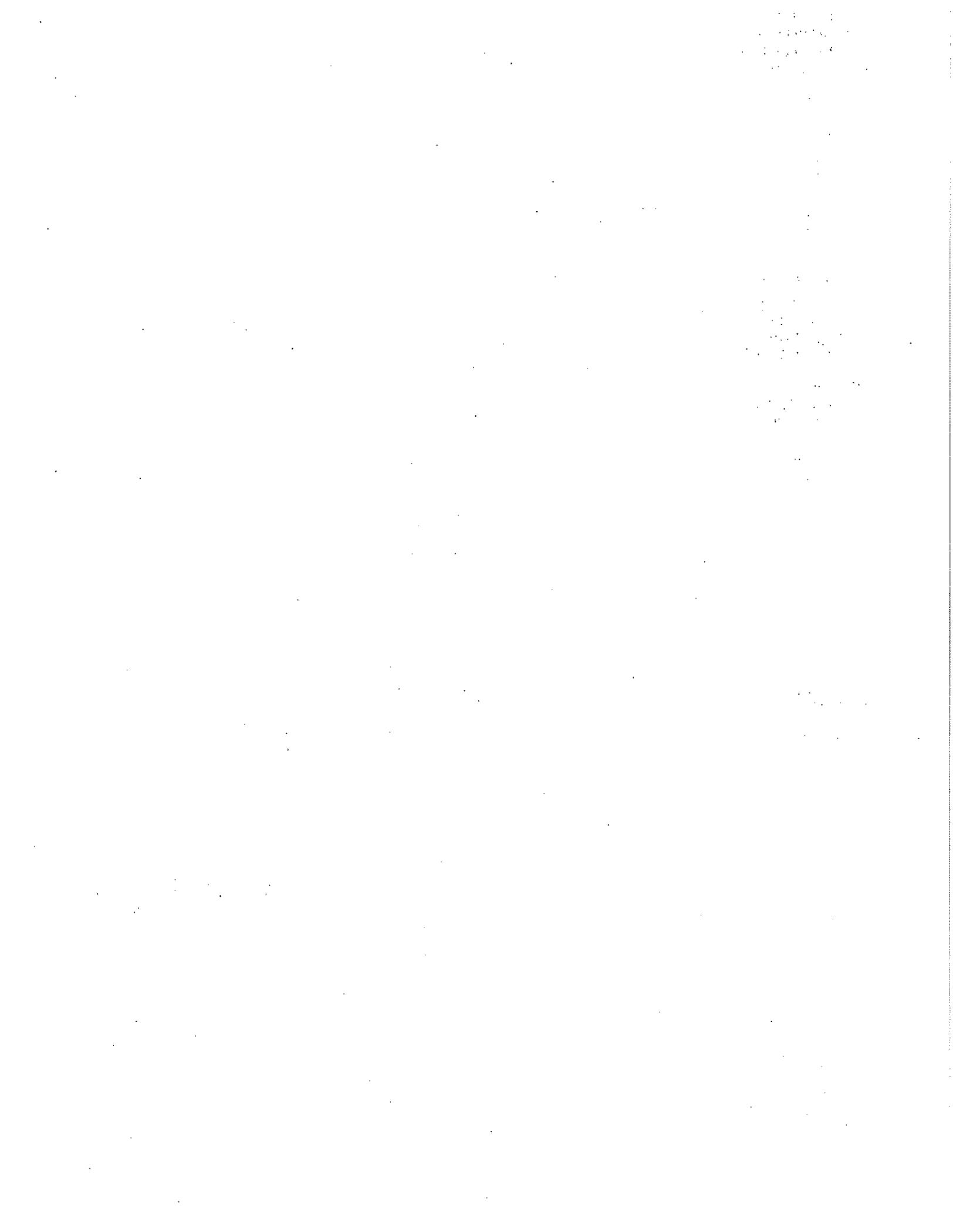
Prime Contractor (print name) _____ has specifically verified the above-claimed coverage by using the Vermont Department of Labor's on-line portal for checking workers' compensation coverage, and has retained and will retain a print-out or other recorded image of such verification for the duration of the project plus three years, to be made available upon request to the Vermont Agency of Transportation or other unit of the State of Vermont.

Signature (must be by a person authorized to sign for subcontractor)

Date

Print name of person signing

Title



GENERAL SPECIAL PROVISIONS FOR ALL PROJECTS
2011 STANDARD SPECIFICATIONS

SECTION 101 - DEFINITIONS AND TERMS

1. 101.01 ABBREVIATIONS, is hereby modified by adding the following new abbreviation directly after "ABS":

ACL Advanced Certification List

2. 101.01 ABBREVIATIONS, is hereby further modified by adding the following new abbreviation directly after "ANSI":

APL Approved Products List

3. 101.01 ABBREVIATIONS, is hereby still further modified by adding the following new abbreviation directly after "CPM":

CPPP Corrugated Polypropylene Pipe

4. 101.02 DEFINITIONS, HOLIDAYS, is hereby modified by deleting the ninth row in the listing (for "Columbus Day").

5. 101.02 DEFINITIONS, HOLIDAYS, is hereby further modified by adding the following as the twelfth row in the listing (directly after "Thanksgiving Day"):

Day After Thanksgiving Fourth Friday in November

SECTION 103 - TAXES AND INSURANCE

6. 103.04 INSURANCE REQUIREMENTS, part (e) General Insurance Conditions, is hereby modified by deleting the second paragraph in its entirety.

SECTION 105 - CONTROL OF THE WORK

7. 105.03 PLANS AND WORKING DRAWINGS, part (a) Contract Plans, is hereby modified by deleting the second paragraph in its entirety.

8. 105.03 PLANS AND WORKING DRAWINGS, part (a) Contract Plans, is hereby further modified by deleting the first sentence of the third paragraph.

9. 105.03 PLANS AND WORKING DRAWINGS, part (a) Contract Plans, is hereby still further modified by adding the phrase "in an accessible format" at the end of the third paragraph.

10. 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 "Project Manager" in the twenty-third row (beginning "641").

11. 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 ".".

12. 105.16 LOAD RESTRICTIONS, part (a) General, is hereby modified by being deleted in its entirety and replaced with the following:
- (a) General. All Contractors, subcontractors, suppliers, or others involved in any project-related activities shall comply with all legal load restrictions specified in Title 23 VSA § 1392 in the hauling of equipment or material on public roads, including that beyond the limits of the project. The application for and possession of any hauling or related permit will not relieve the Contractor or others involved in any project-related activities of any liability that may arise due to any damage resulting from the use or moving of equipment, vehicles, or any other project-related activity.
13. 105.16 LOAD RESTRICTIONS, part (b) Limitations on Use of Equipment and Vehicles, is hereby modified by being deleted in its entirety and replaced with the following:
- (b) Limitations on Use of Equipment and Vehicles. Use of equipment and vehicles is subject to the following:
- (1) No vehicle or equipment exceeding the load restrictions cited in Title 23 VSA § 1392 will be permitted on any structure as defined by the Engineer.
 - (2) The operation of any equipment or vehicle of such mass (weight) or any other project-related equipment loaded so as to cause damage to structures, the roadway, or to any other type of active construction will not be permitted, regardless of the limits set forth in Title 23.
 - (3) Hauling or operation of said vehicles or equipment over any permanent course of any bituminous pavement or any structure during active construction will not be permitted.
 - (4) No loads of any category will be permitted on a concrete pavement or concrete structure prior to expiration of the curing period and until the concrete reaches its specified 28-day compressive strength.
 - (5) Notwithstanding those restrictions above, the Contractor shall be responsible for any and all damages incurred to any public roadway as defined in Title 23 due to the use of any equipment or vehicles related to project activities.
14. 105.26 OPENING WASTE, BORROW, AND STAGING AREAS, part (f), is hereby corrected by deleting punctuation "." at the end of the paragraph.

SECTION 108 - PROSECUTION AND PROGRESS

15. 108.09 TEMPORARY SUSPENSION OF THE WORK, part (d) Seasonal Closure, is hereby modified by deleting the phrase "of the Engineer, and only under such conditions as specified therein" and replacing it with the phrase "from the Regional Construction Engineer".

16. 108.09 TEMPORARY SUSPENSION OF THE WORK, part (d) Seasonal Closure, is hereby further modified by adding the following:

Permission will only be granted for work which will result in a direct benefit to the State or the traveling public. Items which may be considered as a benefit include but are not limited to shorter Contract duration, a cost savings, increased safety for the traveling public, and an ability to ensure the quality of work. The Contractor shall request permission in writing, detailing what Contract items may be affected, a schedule of work, and the benefits to the State or traveling public.

17. 108.11 DETERMINATION OF EXTENSION OF CONTRACT TIME FOR COMPLETION, part (b) Determination of Contract Completion Date Extension, subpart (8), is hereby modified by deleting the phrase ", delays in submittals, errors in submittals, and the Contractor's means and methods of construction".

18. 108.11 DETERMINATION OF EXTENSION OF CONTRACT TIME FOR COMPLETION, part (b) Determination of Contract Completion Date Extension, subpart (9), is hereby modified by deleting the phrase ", including but not limited to the Contractor's means and methods of construction".

19. 108.11 DETERMINATION OF EXTENSION OF CONTRACT TIME FOR COMPLETION, part (b) Determination of Contract Completion Date Extension, subpart (11), is hereby modified by being deleted in its entirety and by replacing it with the following.

(11) The days from April 15th to December 1st, inclusive, on which the weather or condition of the ground caused suspension of the work.

20. 108.11 DETERMINATION OF EXTENSION OF CONTRACT TIME FOR COMPLETION, part (b) Determination of Contract Completion Date Extension, subpart (13), is hereby modified by adding the following as the first sentence:

Industry-wide material or supply shortages not reasonably anticipated by the Contractor at the time the Contract was entered.

21. 108.11 DETERMINATION OF EXTENSION OF CONTRACT TIME FOR COMPLETION, part (b) Determination of Contract Completion Date Extension, subpart (13), is hereby further modified by changing the word "Delay" to the word "Delays" at the beginning of the first sentence.

22. 108.12 FAILURE TO COMPLETE WORK ON TIME, part (c) Liquidated Damages; General; Days Charged, is hereby modified by deleting the DAILY CHARGE FOR LIQUIDATED DAMAGES FOR EACH WORKING DAY OF DELAY table in its entirety and replacing it with a new table as follows:

DAILY CHARGE FOR LIQUIDATED DAMAGES
 FOR EACH WORKING DAY OF DELAY

Original Contract Amount		
From More Than (\$)	To And Including (\$)	Daily Charge Per Day of Delay (\$)
0	500,000	1,200.00
500,000	1,000,000	1,300.00
1,000,000	1,500,000	1,400.00
1,500,000	3,000,000	1,800.00
3,000,000	5,000,000	2,300.00
5,000,000	10,000,000	3,500.00
10,000,000	20,000,000	5,900.00
20,000,000+	-----	10,700.00

SECTION 109 - MEASUREMENT AND PAYMENT

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

SECTION 203 - EXCAVATION AND EMBANKMENTS

24. 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.
25. 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.

26. 203.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

PVC Plastic Pipe.....710.06

27. 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.

28. 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).

29. 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.

30. 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.

31. 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.

32. 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.

33. 203.14 BASIS OF PAYMENT, is hereby corrected by adding a period at the end of the sixth paragraph.

34. 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 Foot)	Meter (Linear

SECTION 310 - RECLAIMED STABILIZED BASE

35. 310.04 CONSTRUCTION, is hereby modified by deleting the phrase "or dust control" after the word "stabilizing" in the third paragraph.

36. 310.04 CONSTRUCTION, is hereby further modified by adding the following sentence to the third paragraph:

When a dust control agent is not exclusively specified on the Plans, water and/or Calcium Chloride shall be used as that agent to meet all requirements of this Section.

37. 310.10 BASIS OF PAYMENT, is hereby modified by adding the following as the fourth paragraph:

Calcium Chloride used for dust control after the reclamation will not be paid for directly, but will be considered incidental to the Reclaimed Stabilized Base item.

SECTION 402 AGGREGATE SHOULDERS

38. 402 AGGREGATE SHOULDERS, is hereby deleted in its entirety and replaced with the following:

SECTION 402 AGGREGATE SHOULDERS

402.01 DESCRIPTION. This work shall consist of furnishing, placing and compacting material for Aggregate Shoulders on a prepared surface.

402.02 MATERIALS. Materials for Aggregate Shoulders and Aggregate Shoulders, RAP, shall meet the requirements of the following Subsection:

Aggregate for Surface Course and Shoulders.....704.12

402.03 PLACEMENT. Aggregate Shoulders shall be placed with equipment capable of placing the material in accordance with the Plans. The Contractor shall demonstrate to the Engineer the proposed placement procedures. If deemed necessary by the Engineer the procedures shall be adjusted to avoid damage to the wearing course. It shall be the Contractor's responsible to repair any damage to the wearing course to the satisfaction of the Engineer, at no additional cost to the Agency.

Unless otherwise directed by the Engineer or shown on the Plans, Aggregate Shoulders shall be placed in one course and shall not be placed until the adjacent wearing course has been completed. The maximum layer thickness for placement of material shall be 150 ± 50 mm (6 ± 2 inches) after compaction. When multiple layers are required, all layers shall be placed in approximately equal thicknesses.

All layers of Aggregate Shoulders shall be compacted to 95 percent of the maximum dry density determined by AASHTO T 99, method C or to the satisfaction of the Engineer.

The Contractor shall correct any segregated material, to the satisfaction of the Engineer, at no additional cost to the Agency.

All material shall have a true and even surface as shown in the Plans. All holes or depressions found prior to acceptance of the project shall be filled with additional material, reworked and compacted as necessary.

A printed load ticket, indicating truck identification, date and time of delivery, and weight shall be furnished to the Engineer with each load delivered to the project.

402.04 METHOD OF MEASUREMENT. The quantity of Aggregate Shoulders and Aggregate Shoulders, RAP to be measured for payment will be the number of metric tons (tons) used in the complete and accepted work, as determined from load tickets. Partial loads shall be paid for on a pro-rated basis.

402.05 BASIS OF PAYMENT. The accepted quantity of Aggregate Shoulders and Aggregate Shoulders, RAP will be paid for at the Contract unit price per metric ton (ton). Payment will be full compensation for performing the work specified and for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.

Water used for obtaining the required compaction will not be paid for separately but will be considered incidental to the Aggregate Shoulders item in the Contract.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
402.12 Aggregate Shoulders	Metric Ton (Ton)
402.13 Aggregate Shoulders, RAP	Metric Ton (Ton)

SECTION 406 - MARSHALL BITUMINOUS CONCRETE PAVEMENT

39. 406.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 406.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby modified by deleting footnote designation "(1)" after "Cold Feed Gradation" in the fourth row.

40. 406.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 406.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby further modified by adding the following as the fifth row:

Cold Feed % Fractured Face & Thin and Elongated Particles ⁽¹⁾	Day of initial paving and 1 per week ⁽⁴⁾	ASTM D5821 ASTM D4791
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41. 406.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 406.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby still further modified by deleting footnote 1 in its entirety and replacing it as follows:

1 - "Fractured faces" (for gravel sources only). "Thin and elongated" of particles retained on the No. 4 (4.75 mm) sieve and above.

42. 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.

43. 406.05 BITUMINOUS MIXING PLANT AND TESTING, part (a) Requirements for All Plants, subpart (12) Testing Facilities, is hereby modified by adding the following as the fourth paragraph:

The laboratory shall be equipped with a monitoring system readout that provides real-time access to active Agency project(s) production status. The system shall accumulate and provide the following information via digital display: Project name and number, truck number, ticket number, product description, and accumulated project daily quantity and load quantity accurate to the nearest metric ton (ton). The display shall be continually updated by the plant's recording system. Waivers may be considered for plants with production capacities not capable of exceeding 150 metric tons (tons) per hour.

44. 406.16 SURFACE TOLERANCE, is hereby modified by adding the phrase ", with the exception of all limited access highway on and off ramps," after the phrase "miscellaneous mix" in the second (last) sentence of the sixth (last) paragraph.

SECTION 490 - SUPERPAVE BITUMINOUS CONCRETE PAVEMENT

45. 490.03 COMPOSITION OF MIXTURE, part (b) Design Criteria, TABLE 490.03B - DESIGN CRITERIA is hereby modified by deleting the fourth row (for "Dust Proportion") in its entirety and replacing it with the following:

Dust Proportion (Filler/Asphalt Ratio)	0.60 - 1.20 (Wet Sieve) (Dry Sieve for Production - Types IS and IIS: 0.50 - 1.20 Types IIIS, IVS, and VS: 0.50 - 1.00)
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46. 490.03 COMPOSITION OF MIXTURE, part (b) Design Criteria, TABLE 490.03B - DESIGN CRITERIA is hereby further modified by deleting the sixth row (for "Voids in Mineral Aggregate") in its entirety and replacing it with the following:

Voids in Mineral Aggregate (VMA)%	12.5 min.	13.5 min.	14.5 min.	15.5 min.	16.5 min.	17.5 min.
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47. 490.03 COMPOSITION OF MIXTURE, part (b) Design Criteria, TABLE 490.03B - DESIGN CRITERIA is hereby still further modified by deleting the ninth row (for "Voids Filled With Asphalt") in its entirety.
48. 490.03 COMPOSITION OF MIXTURE, part (b) Design Criteria, TABLE 490.03B - DESIGN CRITERIA is hereby still further modified by deleting footnotes (3), (4), and (5) in their entirety.
49. 490.03 COMPOSITION OF MIXTURE, part (b) Design Criteria, is hereby modified by deleting the heading "Voids Filled With Asphalt (VFA)" and the equation " $VFA = 100 \times ((VMA - V_a)/VMA)$ " in the second paragraph.
50. 490.03 COMPOSITION OF MIXTURE, part (c) Mix Design, is hereby modified by deleting the phrase ", and a single percentage for VFA" in the first sentence of the third paragraph.
51. 490.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 490.03C - PRODUCTION TESTING TOLERANCES is hereby modified by deleting the seventh (last) row (for "VFA") in its entirety.
52. 490.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 490.03C - PRODUCTION TESTING TOLERANCES is hereby further modified by deleting footnote 2 in its entirety.

53. 490.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 490.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby modified by deleting footnote designation "(1)" after "Cold Feed Gradation" in the fourth row.
54. 490.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 490.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby further modified by adding the following as the fifth row:

Cold Feed % Fractured Face & Thin and Elongated Particles ⁽¹⁾	Day of initial paving and 1 per week ⁽⁴⁾	ASTM D5821 ASTM D4791
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55. 490.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 490.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby still further modified by deleting footnote 1 in its entirety and replacing it as follows:

1 - "Fractured faces" (for gravel sources only). "Thin and elongated" of particles retained on the No. 4 (4.75 mm) sieve and above.

56. 490.05 BITUMINOUS MIXING PLANT AND TESTING, part (a) Requirements for All Plants, subpart (12) Testing Facilities, is hereby modified by adding the following as the third paragraph:

The laboratory shall be equipped with a monitoring system readout that provides real-time access to active Agency project(s) production status. The system shall accumulate and provide the following information via digital display: Project name and number, truck number, ticket number, product description, and accumulated project daily quantity and load quantity accurate to the nearest metric ton (ton). The display shall be continually updated by the plant's recording system. Waivers may be considered for plants with production capacities not capable of exceeding 150 metric tons (tons) per hour.

57. 490.14 COMPACTION, part (c) Coring Protocol, is hereby corrected by deleting text "0" and replacing it with text ")" in the first sentence of the seventh paragraph.
58. 490.16 SURFACE TOLERANCE, is hereby modified by adding the phrase ", with the exception of all limited access highway on and off ramps," after the phrase "miscellaneous mix" in the second (last) sentence of the sixth (last) paragraph.

SECTION 501 - HPC STRUCTURAL CONCRETE

59. 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. ⁷ Slump (mm)

N/A

60. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (Metric), is hereby further modified by adding the following footnote:

⁷ 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.

61. 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. ⁷ Slump (mm)

N/A

62. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (English), is hereby corrected by deleting text "700 mm" and replacing it with text "28 inches" in footnote 4.
63. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (English), is hereby further modified by adding the following footnote:

⁷ 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.

64. 501.03 CLASSIFICATION AND PROPORTIONING, ninth paragraph (beginning "A minimum of thirty (30)..."), is hereby corrected by deleting the phrase "1716 Barre-Montpelier Rd., Berlin, Vermont 05602" and replacing it with the phrase "2178 Airport Road Unit B, Berlin, Vermont 05641" in the second sentence.
65. 501.11 DEPOSITING CONCRETE UNDERWATER, part (a) General, subpart (1), is hereby corrected by deleting the phrase "1716 Barre-Montpelier Rd., Berlin, Vermont 05602" and replacing it with the phrase "2178 Airport Road Unit B, Berlin, Vermont 05641" in the second sentence of the second paragraph.

SECTION 505 - PILING

66. 505.09 BASIS OF PAYMENT, is hereby modified by adding the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
505.12 Steel Piling, HP 250 x 85 (HP 10 x 57)	Meter (Linear Foot)

SECTION 506 - STRUCTURAL STEEL

67. 506.19 BOLTING AND CONNECTIONS, part (c) Installation, is hereby modified by deleting the tenth paragraph (Beginning "Bolts shall be tightened...") in its entirety and replacing it with the following:
- Bolts shall be tightened to develop a tension not less than 5 percent in excess of the minimum bolt tension specified in Table 506.19A. Bolts shall not be tightened to more than the maximum tension specified in Table 506.19A.
68. 506.19 BOLTING AND CONNECTIONS, part (c) Installation, is hereby further modified by deleting subparts (1) Calibrated Wrench Method, (2) Turn of the Nut Method, and (3) Torque Method in their entirety.
69. 506.19 BOLTING AND CONNECTIONS, part (c) Installation, subpart (4) Tension Control Assembly Method, is hereby modified by being re-designated as part (1).
70. 506.19 BOLTING AND CONNECTIONS, part (c) Installation, subpart (5) Direct Tension Indicator Method, is hereby modified by being re-designated as part (2).
71. 506.19 BOLTING AND CONNECTIONS, part (c) Installation, is hereby still further modified by deleting TABLE 506.19B (including associated paragraphs) in its entirety.

72. 506.19 BOLTING AND CONNECTIONS, part (d) Acceptance of Bolt Tensioning, is hereby modified by deleting the second and third sentences of the first paragraph.
73. 506.19 BOLTING AND CONNECTIONS, part (d) Acceptance of Bolt Tensioning, is hereby further modified by deleting the fourth, fifth, ninth, eleventh, and twelfth paragraphs in their entirety.

SECTION 507 - REINFORCING STEEL

74. 507.01 DESCRIPTION, is hereby modified by adding the phrase "of the level specified" after the phrase "bar reinforcement".
75. 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.

76. 507.02 MATERIALS, is hereby modified by deleting the sixth (final) entry in the Subsection listing.
77. 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.
78. 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.
79. 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.

80. 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.
81. 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.

82. 507.04 PROTECTION OF MATERIAL, is hereby still further modified by adding the following paragraph:

Ends of Level II reinforcing steel where the mild steel is exposed shall be repaired in the following manner:

- (a) Cut ends of dual-coated reinforcing steel shall be coated with a two-part epoxy patching material as specified by the coating manufacturer. The materials and procedures shall be approved by the Engineer prior to the repairs being performed.
- (b) Cut ends of stainless clad reinforcing steel shall be epoxied and capped in accordance with the manufacturer's recommendations with either stainless steel caps or plastic caps. Caps shall be sealed to prevent the intrusion of moisture.
83. 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 plastic. 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.

84. 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.
85. 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...").
86. 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)

87. 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 509 - LONGITUDINAL DECK GROOVING

88. 509.03 CONSTRUCTION DETAILS, is hereby modified by deleting the last line of the second paragraph (beginning "Depth: 4 mm...") and replacing it with the following:

Depth: 6 mm (± 2 mm) ($(1/4") (\pm 1/16")$)

SECTION 510 - PRESTRESSED CONCRETE

89. 510.12 INSTALLATION, part (a) Prestressed Concrete, subpart (2) Initial Post-tensioning, is hereby modified by deleting the first sentence in its entirety.

SECTION 516 - EXPANSION DEVICES

90. 516.01 DESCRIPTION, is hereby modified by adding the phrase ", or partially removing and modifying," after the word "installing".
91. 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.

92. 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.

93. 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

94. 525.02 MATERIALS, is hereby modified by adding the following as the third entry in the Subsection listing:

Structural Steel.....714.02

- 95. 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.

- 96. 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.

- 97. 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

- 98. 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

- 99. 540.02 MATERIALS, is hereby modified by deleting the fourteenth entry (beginning "Coated Bar Reinforcement...") in the Subsection listing.
- 100. 540.02 MATERIALS, is hereby further modified by adding the following as the twenty-ninth entry in the Subsection listing:

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

- 101. 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.

- 102. 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.

103. 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

104. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (Metric), is hereby modified by deleting footnote designation "*" in the first and fourth entries of the third row (for "Class A" concrete).
105. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (Metric), is hereby further modified by deleting footnote "*" and associated text (beginning "* When this class of concrete...").
106. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (Metric), is hereby still further modified by deleting the fourth (with header "Range in Slump (mm)") and fifth (with header "Air Cont. (%)") columns in their entirety and replacing them with the following:

Range* in Slump (mm)	Air Content (%)
---	7.0 ± 1.5
---	7.0 ± 1.5
---	7.0 ± 1.5
---	5.5 ± 1.5
---	5.5 ± 1.5
---	7.0 ± 1.5

107. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (Metric), is hereby still further modified by adding the following footnote:

* 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.

108. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (Metric) is hereby still further modified by adding the following as the eighth (bottom) row with the included footnotes:

Controlled Density (Flowable) Fill	To be designed ***	To be designed ****	To be designed *****	10 min.	704.01 (Fine Aggregate)	0.85 max. *****	---
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- *** A mineral admixture may be used to replace a portion of the cement.
- **** The minimum amount of water shall be used to produce the desirable flow for the intended use without showing segregation.
- ***** The slump (flowability) shall be such that material is able to completely fill the voids or area as needed without segregation.
- *****A minimum of 3 cylinders per test age required to constitute a test. If average strength at 28 days exceeds 115% of max. strength, then payment for Contract item 541.45 will be 85% of the Contract bid price.

109. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (English), is hereby modified by deleting footnote designation "*" in the first and fourth entries of the third row (for "Class A" concrete).

110. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (English), is hereby further modified by deleting footnote "*" and associated text (beginning "* When this class of concrete...").

111. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (English), is hereby still further modified by deleting the fourth (with header "Range in Slump (in.)") and fifth (with header "Air Cont. (%)") columns in their entirety and replacing them with the following:

Range* in Slump (mm)	Air Content (%)
---	7.0 ± 1.5
---	7.0 ± 1.5
---	7.0 ± 1.5
---	5.5 ± 1.5
---	5.5 ± 1.5
---	7.0 ± 1.5

112. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (English), is hereby still further modified by adding the following footnote:

- * 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.

113. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (English) is hereby modified by adding the following as the eighth (bottom) row with the included footnotes:

Controlled Density (Flowable) Fill	To be designed ***	To be designed ****	To be designed *****	10 min.	704.01 (Fine Aggregate)	125 max. *****	---
---	--------------------------	---------------------------	----------------------------	------------	-------------------------------	----------------------	-----

- *** A mineral admixture may be used to replace a portion of the cement.
- **** The minimum amount of water shall be used to produce the desirable flow for the intended use without showing segregation.
- ***** The slump (flowability) shall be such that material is able to completely fill the voids or area as needed without segregation.
- ***** A minimum of 3 cylinders per test age required to constitute a test. If average strength at 28 days exceeds 115% of max. strength, then payment for Contract item 541.45 will be 85% of the Contract bid price.

114. 541.10 PLACING CONCRETE, part (c) Placement Limitations, is hereby modified by adding the following paragraphs:

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.

If voids are discovered, the Engineer may direct the Contractor to submit a plan for filling the remaining voids. This work, including preparing and submitting the plan and filling any remaining voids, will be at the Contractor's expense.

115. 541.11 DEPOSITING CONCRETE UNDERWATER, part (a) General, subpart (1), is hereby corrected by deleting the phrase "1716 Barre-Montpelier Rd., Berlin, Vermont 05602" and replacing it with the phrase "2178 Airport Road Unit B, Berlin, Vermont 05641" in the second sentence of the second paragraph.

116. 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.

117. 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

118. 580.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

Polymer Concrete Repair Material.....780.05

119. 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.

120. 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.

121. 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.

122. 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.

123. 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.

124. 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.

125. 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 601 - CULVERTS AND STORM DRAINS

126. 601.02 MATERIALS, is hereby modified by adding the following as the sixth entry in the Subsection listing:

Corrugated Polypropylene Pipe.....710.07

127. 601.07 JOINING PIPE, is hereby modified by adding the following new part (d) as follows:

(d) Corrugated Polypropylene Pipe. Corrugated Polypropylene pipe shall be joined by a system designed and approved by the pipe manufacturer. Couplings and fittings shall provide sufficient longitudinal strength to preserve pipe alignment and prevent separation at the joints.

128. 601.11 BASIS OF PAYMENT, is hereby modified by changing the end of the pay item number range for CPEP Elbow from 601.5999 to 601.5899.

129. 601.11 BASIS OF PAYMENT, is hereby further modified by adding the following pay items:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
601.2800 to 601.2999 CPPP(SL)	Meter (Linear Foot)
601.5900 to 601.5999 CPPP Elbow	Each
601.7100 to 601.7199 CPPPES	Each

SECTION 608 - EQUIPMENT RENTAL

130. 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.

131. 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.

132. 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

133. 613.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

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

134. 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.

135. 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.

136. 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.

137. 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.

138. 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.

139. 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.

140. 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

141. 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.

142. 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).

143. 616.14 METHOD OF MEASUREMENT, is hereby corrected by changing the word "portland" to "Portland" in the fifth (last) paragraph.

144. 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.

145. 616.15 BASIS OF PAYMENT, is hereby corrected by changing the word "portland" to "Portland" in the fourth paragraph.

146. 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

147. 621.01 DESCRIPTION, is hereby modified by adding the phrase "repairing," after the phrase "removing,".

148. 621.02 MATERIALS, is hereby modified by adding the following as the fifth entry in the Subsection listing:

Wire Rope or Cable.....713.03

149. 621.09 TERMINALS, is hereby modified by adding the following paragraph:

All new terminal installations shall include a permanent identification of the year of installation and model identified on the Approved Product List or the standard drawing used. Payment will be incidental to the traffic barrier items.

150. 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.

151. 621.13 REPLACEMENT, ADJUSTMENT, REMOVAL, AND DISPOSAL OF GURADRAIL OR GUIDE POSTS, is hereby further modified by deleting the first sentence of the second paragraph in its entirety and replacing it with the following:

Those sections in which height over an extensive portion of the section is greater than 760 mm (30 inches) or less than 675 mm (26 ½ inches) shall be adjusted to a nominal height of 735 mm ±25 mm (29 inches ± 1 inch).

152. 621.13 REPLACEMENT, ADJUSTMENT, REMOVAL, AND DISPOSAL OF GUARDRAIL OR GUIDE POSTS, is hereby still 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.

153. 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.

154. 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.

155. 621.14 METHOD OF MEASUREMENT, is hereby further modified by adding the following as the sixth 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.

156. 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.

157. 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 seventh paragraph.

158. 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 630 - UNIFORMED TRAFFIC OFFICERS AND FLAGGERS

159. 630.03 CLOTHING AND EQUIPMENT, part (b) For Flaggers, subpart (1), is hereby modified by replacing the phrase "ANSI 107-1999" with the phrase "ANSI 107-2004" in the first sentence.
160. 630.03 CLOTHING AND EQUIPMENT, part (d) For All Traffic Control Personnel, subpart (2), is hereby modified by deleting the word "The" and replacing it with the phrase "When deemed necessary by the Engineer, or when noted in the Plans, the" at the beginning of the first sentence.

SECTION 641 - TRAFFIC CONTROL

161. 641.02 GENERAL CONSTRUCTION REQUIREMENTS, is hereby modified by adding the phrase "implement that plan or" after the phrase "the Contractor may" in the first sentence of the fourth paragraph.
162. 641.02 GENERAL CONSTRUCTION REQUIREMENTS, is hereby further modified by adding the following as the second sentence of the fourth paragraph:
- When the Contractor will implement an Agency-designed traffic control plan, written certification shall be submitted to the Engineer indicating that traffic control will be performed in accordance with the Agency design.
163. 641.02 GENERAL CONSTRUCTION REQUIREMENTS, is hereby still further modified by changing the word "This" to the word "An" in the second sentence of the fourth paragraph.
164. 641.02 GENERAL CONSTRUCTION REQUIREMENTS, is hereby still further modified by adding the following paragraph:

When the Contract Documents specify that a site-specific traffic control plan be submitted by the Contractor, Construction Drawings shall be submitted in accordance with Section 105. The submitted site-specific plan shall include, for each phase of construction requiring a significant change in temporary traffic control, a narrative description of the proposed temporary traffic control for each phase (including pedestrian accommodations where appropriate) and the major work activities to be completed in each phase; and a layout for each phase of construction showing existing lane configurations, existing traffic control devices (signs, signals, and pavement markings), driveways, ramps, and highway intersections, and the location of all proposed temporary traffic control devices, flaggers, and UTO's. All pertinent dimensions, such as taper lengths, sign spacing, temporary lane widths, and distance(s) from existing traffic control devices shall be labeled.

- 165. 641.03 TRAFFIC CONTROL DEVICES, is hereby modified by deleting the phrase "have three (3) lines of eight (8) characters per line and conform to Section 6F.55 of the MUTCD" and replacing it with the phrase "be used with a maximum of two phases, each consisting of a maximum of 3 lines of 8 characters" in the sixth paragraph.
- 166. 641.03 TRAFFIC CONTROL DEVICES, is hereby further modified by deleting the phrase "requirements in Section 6F.56 of" and replacing it with the phrase "Portable Arrow Board requirements in" in the seventh paragraph.

SECTION 646 - RETROREFLECTIVE PAVEMENT MARKINGS

- 167. 646.02 MATERIALS, is hereby modified by deleting the Subsection listing in its entirety and replacing it with the following:

Polyurea Pavement Markings.....	708.08 (a)
Low VOC Chlorinated Rubber Traffic Paint.....	708.08 (b)
Low VOC Acetone Based Traffic Paint.....	708.08 (b)
Epoxy Paint.....	708.08 (c)
Waterborne Traffic Paint.....	708.08 (d)
Methyl-methacrylate Paint.....	708.08 (e)
Glass Beads.....	708.09 (a)
Premium Optics.....	708.09 (b)
Wet Recoverable and Wet Reflective Optics.....	708.09 (c)
Thermoplastic Pavement Markings, Type A.....	708.10 (a)
Thermoplastic Pavement Markings, Type B.....	708.10 (b)
Raised Pavement Markers, Type I.....	708.11
Pavement Marking Tape, Type A.....	708.12 (a)
Pavement Marking Tape, Type B.....	708.12 (b)
Pavement Marking Tape, Type C.....	708.12 (c)
Pavement Marking Tape, Type D.....	708.12 (d)
Line Striping Targets.....	708.13 (a)
Raised Pavement Markers, Type II.....	708.13 (b)
Temporary Pavement Marking Tape.....	708.13 (c)
Pavement Marking Mask.....	708.13 (d)

- 168. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby modified by deleting the first paragraph in its entirety.
- 169. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby further modified by deleting the seventh paragraph in its entirety.

170. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby still further modified by deleting the word "interim" and replacing it with the phrase "permanent or temporary" in the first sentence of the eighth paragraph.
171. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby still further modified by adding the phrase "edgeline," after the phrase "centerlines," in the first sentence of the eighth paragraph.
172. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby still further modified by deleting the ninth paragraph in its entirety.
173. 646.04 APPLICATION OF MARKINGS, GENERAL, part (c) Weather Limitations, subpart (2), is hereby modified by being deleted in its entirety and replaced as follows:
 - (2) At the time of application of durable pavement markings, the pavement surface and ambient air temperatures shall be as per the manufacturer's published specified application temperatures, and the dew point shall be 5°F or more below the ambient air temperature. If the manufacturer's published recommendations are unavailable, the pavement surface and ambient air temperatures shall be a minimum of 10°C (50°F).
174. 646.04 APPLICATION OF MARKINGS, GENERAL, part (c) Weather Limitations, subpart (3), is hereby modified by being the word "October" and replacing it with the word "November".
175. 646.04 APPLICATION OF MARKINGS, GENERAL, part (d) Layout and Control, subpart (1) Centerline Markings, is hereby modified by deleting the number "100" and replacing it with the phrase "the same width as the lines" in the fourth sentence of the first paragraph.
176. 646.04 APPLICATION OF MARKINGS, GENERAL, part (d) Layout and Control, subpart (1) Centerline Markings, is hereby further modified by deleting the second (last) paragraph in its entirety.
177. 646.04 APPLICATION OF MARKINGS, GENERAL, part (d) Layout and Control, subpart (2) Edgeline Markings, is hereby modified by deleting the second (last) paragraph in its entirety.
178. 646.04 APPLICATION OF MARKINGS, GENERAL, part (d) Layout and Control, subpart (3) Dotted Line, is hereby modified by deleting the second (last) paragraph in its entirety.
179. 646.06 PAINT PAVEMENT MARKINGS, is hereby modified by being re-named WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS.
180. 646.06 WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS, is hereby modified by changing the word "Retroreflective" to "Retroreflective" in the first sentence of the first paragraph.
181. 646.06 WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS, is hereby further modified by deleting the phrase "shall have a dry film thickness of 380 ±25 µm (15 ±1 mil) for paint, unless otherwise specified, and" in the third (last) sentence of the first paragraph.

182. 646.06 WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS, is hereby still further modified by adding the following as the third paragraph:

The markings shall be applied at a rate to create a uniform wet film thickness of 558.8 μm (22 mils) with an allowable range of $\pm 50.8 \mu\text{m}$ (± 2 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 1.7 square meters per liter (70 square feet per gallon) with glass beads applied at a rate of 960 grams per liter (8.0 lb per gallon) of paint. The Contractor shall provide the Engineer and the Materials Section with the optic drop on rates of all optic materials and daily binder application rates.

183. 646.06 WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS, is hereby still further modified by deleting the fourth and fifth (last) paragraphs in their entirety.

184. 646.07 DURABLE PAVEMENT MARKINGS, is hereby modified by adding the following as the third sentence of the first paragraph:

Durable pavement markings shall be installed within two weeks of the placement of the wearing course.

185. 646.07 DURABLE PAVEMENT MARKINGS, is hereby further modified by changing punctuation at the end of the third sentence of the first paragraph from ":" to ".".

186. 646.07 DURABLE PAVEMENT MARKINGS, is hereby still further modified by adding the following at the end of the first paragraph:

The Contractor shall select optics that conform with Subsections 708.09(a), 708.09(b), and 708.09(c). The Contractor shall provide the Engineer and the Materials Section with the daily optic drop on rates of all optic materials and daily binder application rates. The Contractor shall perform all quality control activities and provide to the Engineer on a daily basis all retroreflectivity measurements collected. The Agency will perform all acceptance testing activities. The Engineer will select an evaluation section(s) for the purpose of collecting pavement marking retroreflectivity measurements. Retroreflectivity measurements shall be performed in accordance with ASTM D7585, as modified by Table 646.07A.

TABLE 646.07A - EVALUATION SECTION CRITERIA

PAVEMENT MARKING TYPE	EVALUATION SECTION(S) REQUIRED*	EVALUATION SECTION LENGTH m (feet)	MEASUREMENTS REQUIRED
Long Lines	1 per 3.2 km (2 miles)	120 (400)	20
Dashed Lines	1 per 3.2 km (2 miles)	120 (400)	20 (2 per dashed line)

*Projects less than 3.2 km (2 miles) in length shall have a minimum of one (1) evaluation section.

Each spot measurement for all yellow centerline retroreflectivity shall be performed in both directions at each spot location and averaged for acceptance. For long lines and dashed lines, if the average retroreflectivity as determined in accordance with ASTM D7585 fails to meet the minimum retroreflectivity requirements, or if 25% of the individual tests fail to meet the minimum retroreflectivity requirements, the entire length represented by the evaluation section shall be re-marked and re-tested until in compliance, at no additional cost to the Agency.

187. 646.07 DURABLE PAVEMENT MARKINGS, part (a) Pavement Marking Tape, Type I, is hereby modified by being deleted in its entirety and replaced as follows:

- (a) Pavement Marking Tape, Type A. Type A tape for pavement markings is classified as high performance or high durable, and non-removable. Type A tape shall conform to the requirements of Subsection 708.12(a).

Type A tapes, when used as a final durable marking, shall be applied only by being inlaid in the bituminous pavement during the rolling operation or in a recess as defined in Subsection 646.09, and shall be applied in accordance with the manufacturer's requirements. Initial dry retroreflectivity minimums shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings.

188. 646.07 DURABLE PAVEMENT MARKINGS, part (b) Epoxy Paint, is hereby modified by being re-designated as part (e).

189. 646.07 DURABLE PAVEMENT MARKINGS, part (c) Thermoplastic, is hereby modified by being re-designated as part (f) Extruded Thermoplastic.

190. 646.07 DURABLE PAVEMENT MARKINGS, part (d) Polyurea Paint, is hereby modified by being re-designated as part (h).

191. 646.07 DURABLE PAVEMENT MARKINGS, part (e) Methyl-methacrylate Paint, is hereby modified by being re-designated as part (i).

192. 646.07 DURABLE PAVEMENT MARKINGS, is hereby further modified by adding the following new parts (b), (c), and (d):

- (b) Pavement Marking Tape, Type B. Type B tape for pavement markings is classified as non-removable, used in long line applications. Type B tape shall conform to the requirements of Subsection 708.12(b).

Type B tapes, when used as a final durable marking, shall be applied only by being inlaid in the bituminous pavement during the rolling operation or in a recess as defined in Subsection 646.09, and shall be applied in accordance with the manufacturer's requirements. Initial dry retroreflectivity minimums shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings.

- (c) Pavement Marking Tape, Type C. Type C tape for pavement markings is classified as non-removable, used in intersection applications. Type C tape shall conform to the requirements of Subsection 708.12(c).

Type C tapes, when used as a final durable marking, shall be applied only by being inlaid in the bituminous pavement during the rolling operation or in a recess as defined in Subsection 646.09, and shall be applied in accordance with the manufacturer's requirements.

- (d) Pavement Marking Tape, Type D. Type D tape for pavement markings is classified as non-removable, used for symbols and legends applications. Type D tape shall conform to the requirements of Subsection 708.12(d).

Type D tapes, when used as a final durable marking, shall be applied only by being inlaid in the bituminous pavement during the rolling operation or in a recess as defined in Subsection 646.09, and shall be applied in accordance with the manufacturer's requirements. Initial dry retroreflectivity minimums shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings.

193. 646.07 DURABLE PAVEMENT MARKINGS, part (e) Epoxy Paint, is hereby modified by deleting the fifth (last) sentence in its entirety.

194. 646.07 DURABLE PAVEMENT MARKINGS, part (e) Epoxy Paint, is hereby further modified by adding the following sentences:

Epoxy paint shall be applied at a rate to create a uniform wet film in place thickness of 558.8 µm (22 mils) with an allowable range of ±50.8 µm (±2 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 1.7 square meters per liter (70 square feet per gallon). Initial dry retroreflectivity minimums shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings.

195. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, is hereby modified by replacing the phrase "708.10" with the phrase "708.10(a)" at the end of the first paragraph.

196. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, is hereby further modified by adding the following as the third paragraph:

Thermoplastic markings shall be applied at a rate to create a uniform hot film in place thickness of 2667 µm (105 mils) with an allowable range of ± 127 µm (±5 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 0.36 square meters per liter (15 square feet per gallon).

197. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (1) Thermoplastic Application Equipment, a. Mobile Applicator Equipment, is hereby modified by deleting the phrase ", between 2.4 and 2.5 mm (96 and 100 mils) thick" and replacing it with the phrase "with a uniform hot film in place thickness of 2667 µm (105 mils), with an allowable range of ± 127 µm (±5 mils)" in the second sentence of the second paragraph.

198. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (1) Thermoplastic Application Equipment, b. Portable Applicator Equipment, is hereby modified by deleting the phrase "between 2 and 2.5 mm (80 and 100 mils) thick" and replacing it with the phrase "with a uniform hot film in place thickness of 2667 µm (105 mils) with an allowable range of ± 127 µm (±5 mils)" in the fourth sentence.

199. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, b. Thermoplastic Composition, is hereby modified by replacing the phrase "708.10" with the phrase "708.10(a)".
200. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, d. Extruded Markings, is hereby modified by deleting the phrase "thickness between 2.4 and 2.5 mm (96 and 100 mils)" and replacing it with the phrase "uniform hot film in place thickness between 2.54 and 2.794 mm (100 and 110 mils)".
201. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, e. Beads, is hereby modified by being re-named Optics.
202. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, e. Optics, subpart 1., is hereby modified by adding the phrase "shall be" after the phrase "Type I".
203. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, e. Optics, subpart 1., is hereby further modified by adding the phrase "intermix of the" after the phrase "incorporated into the".
204. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, e. Optics, subpart 1., is hereby still further modified by deleting the numbers "28" and "30" and replacing them with the numbers "30" and "40", respectively.
205. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, e. Optics, subpart 2., is hereby modified by being deleted in its entirety and replaced as follows:
 2. Initial dry retroreflectivity minimums shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings.
206. 646.07 DURABLE PAVEMENT MARKINGS, is hereby still further modified by adding the following new part (g):
 - (g) Preformed Thermoplastic. Approved preformed thermoplastic marking materials shall be one of the preformed thermoplastic markings listed on the Approved Products List on file with the Agency's Research and Development Section under Subsection 708.10(b).
207. 646.07 DURABLE PAVEMENT MARKINGS, part (h) Polyurea Paint, is hereby modified by deleting the second sentence in its entirety.
208. 646.07 DURABLE PAVEMENT MARKINGS, part (h) Polyurea Paint, is hereby further modified by adding the following sentences:

Polyurea paint shall be applied at a rate to create a uniform wet film in place thickness of 558.8 µm (22 mils) with an allowable range of ±50.8 µm (±2 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 1.7 square meters per liter (70 square feet per gallon). Initial dry retroreflectivity minimums for surface-applied polyurea shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings. Initial dry retroreflectivity minimums for recessed polyurea shall be 600 mcdl/lx/m² for yellow markings and 800 mcdl/lx/m² for white markings.

209. 646.07 DURABLE PAVEMENT MARKINGS, part (i) Methyl-methacrylate Paint, is hereby modified by deleting the second sentence in its entirety.
210. 646.07 DURABLE PAVEMENT MARKINGS, part (i) Methyl-methacrylate Paint, is hereby further modified by adding new subpart (1) as follows:

(1) Application Requirements.

- a. Spray Applied Markings. All spray applied markings shall be applied at a rate to create a uniform wet film in place thickness of 762 μm (30 mils) with an allowable range of $\pm 50.8 \mu\text{m}$ (± 2 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 1.4 square meters per liter (55 square feet per gallon). Initial dry retroreflectivity minimums for surface spray applied methyl-methacrylate shall be 300 mcdl/lx/m^2 for yellow markings and 400 mcdl/lx/m^2 for white markings. Initial dry retroreflectivity minimums for recessed methyl-methacrylate shall be 300 mcdl/lx/m^2 for yellow markings and 400 mcdl/lx/m^2 for white markings.
- b. Extruded Markings. All extruded markings shall be applied at a rate to create a uniform wet film in place thickness of 2286 μm (90 mils) with an allowable range of $\pm 127 \mu\text{m}$ (± 5 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 0.45 square meters per liter (18.3 square feet per gallon). Initial dry retroreflectivity minimums shall be 300 mcdl/lx/m^2 for yellow markings and 400 mcdl/lx/m^2 for white markings.
- c. Structured Markings. All structured markings shall be applied at a rate to create a uniform wet film in place thickness as per the manufacturer's recommendations unless otherwise specified in the Contract Documents. Initial dry retroreflectivity minimums shall be 300 mcdl/lx/m^2 for yellow markings and 400 mcdl/lx/m^2 for white markings.

211. 646.08 TEMPORARY PAVEMENT MARKINGS, is hereby modified by deleting the phrase "Type II" (first entry) and replacing it with the phrase "Temporary Pavement Marking" in the first sentence.
212. 646.08 TEMPORARY PAVEMENT MARKINGS, part (a) Pavement Marking Tape, Type II, is hereby modified by being re-named Temporary Pavement Marking Tape.
213. 646.08 TEMPORARY PAVEMENT MARKINGS, part (a) Temporary Pavement Marking Tape, is hereby modified by deleting the first sentence in its entirety and replacing it as follows:

This tape for pavement markings is classified as temporary and is removable.

214. 646.08 TEMPORARY PAVEMENT MARKINGS, part (a) Temporary Pavement Marking Tape, second sentence, is hereby modified by deleting the phrase "Type II" and replacing it with the word "The" and by deleting the phrase "Subsection 708.12(b)" and replacing it with the phrase "Subsection 708.13(c)".

215. 646.08 TEMPORARY PAVEMENT MARKINGS, part (b) Pavement Marking Mask, is hereby modified by deleting the phrase "Subsection 708.12(c)" and replacing it with the phrase "Subsection 708.13(d)" in the second sentence.

216. 646.08 TEMPORARY PAVEMENT MARKINGS, part (c) Raised Pavement Markers, Type II, is hereby modified by adding the following sentence to the second (last) paragraph:

They shall conform to the requirements of Subsection 708.13(b) and shall be installed in accordance with the manufacturer's requirements.

217. 646.08 TEMPORARY PAVEMENT MARKINGS, part (d) Line Striping Targets, is hereby modified by being deleted in its entirety and replaced as follows:

(d) Line Striping Targets. Line striping targets are intended to be substitutes for pavement markings for not longer than 14 calendar days. Line striping targets shall be maintained and replaced as needed or as directed by the Engineer, until replaced by a temporary or permanent pavement marking.

Line striping targets of the color shown on the Plans or directed by the Engineer shall be installed as described below or as directed by the Engineer.

For solid longitudinal pavement markings, line striping targets shall be placed at 3 m (10 foot) intervals. For double centerline markings, line striping targets shall be paired. For dashed pavement markings, line striping targets shall be placed in groups of 3 spaced at 1.5 m (5 feet), with the groups separated by 10 m (30 foot) spaces, or as determined by the Engineer.

Line striping targets shall not be used to delineate passing zones on two lane non-divided highways.

Line striping targets shall conform to the requirements of Subsection 708.13(a) and shall be installed in accordance with the manufacturer's requirements.

218. 646.08 TEMPORARY PAVEMENT MARKINGS, is hereby further modified by deleting the first sentence of the last paragraph in its entirety and replacing it as follows:

Temporary markings on the wearing course of pavement that remain in place for fewer than fourteen calendar days shall be Temporary Pavement Marking Tape, Type II raised pavement markers, or line striping targets.

219. 646.08 TEMPORARY PAVEMENT MARKINGS, is hereby still further modified by deleting the word "seven" and replacing it with the word "fourteen" in the second (last) sentence of the last paragraph.

219. 646.09 OTHER RELATED MARKINGS, part (a) Pavement Marking Recess, is hereby modified by deleting the phrase "provided is 125% of the material marking thickness" and replacing it with the phrase "meets the requirements of Table 646.09A" in the first sentence.

220. 646.09 OTHER RELATED MARKINGS, part (a) Pavement Marking Recess, is hereby further modified by deleting the last sentence in its entirety.

221. 646.09 OTHER RELATED MARKINGS, part (a) Pavement Marking Recess, is hereby still further modified by adding the following paragraphs and Table:

The bottom of the recess shall have a smooth, flat finished surface. The use of gang stacked Diamond cutting blades is required for asphalt pavement surfaces. The spacers between blade cuts shall be such that there will be less than a 254 μm (10 mil) rise in the finished groove between the blades.

Recesses shall be clean, dry, and free of laitance, oil, dirt, grease, paint, or other foreign contaminants prior to application of the pavement markings. The Contractor shall re-clean grooves, as necessary, prior to application of any primer or permanent markings. Depth plates shall be provided by the Contractor to assure that desired groove depth is achieved.

TABLE 646.09A - PAVEMENT MARKING RECESS DEPTH

MARKING MATERIAL	STANDARD GLASS BEAD RECESS DEPTH μm (mils)	PREMIUM OPTIC RECESS DEPTH μm (mils)
Permanent Waterborne Paint	762-1016 (30-40)	762-1016 (30-40)
Spray Applied Methyl-methacrylate	1016-1270 (40-50)	1778-2286 (70-90)
Extruded Methyl-methacrylate	2540-2794 (100-110)	2540-2794 (100-110)*
Structured Methyl-methacrylate	As recommended by manufacturer	As recommended by manufacturer*
Thermoplastic	2540-2794 (100-110)	2540-2794 (100-110)*
Polyurea	762-1270 (30-50)	1778-2286 (70-90)
Epoxy	762-1270 (30-50)	1778-2286 (70-90)
Permanent Tape	As recommended by manufacturer	As recommended by manufacturer
*Thermoplastic and Methyl-methacrylate with wet recoverable or wet reflective elements shall have a recess depth of 3048-3302 μm (120-130 mils).		

222. 646.14 BASIS OF PAYMENT, part (a) Paint Pavement Markings, is hereby modified by adding the following pay item ranges:

646.200 to 646.209	100 mm (4 inch) White Line	Meter (Linear Foot)
646.2110 to 646.2119	100 mm (4 inch) Yellow Line	Meter (Linear Foot)
646.2140 to 646.2149	150 mm (6 inch) White Line	Meter (Linear Foot)
646.2150 to 646.2159	150 mm (6 inch) Yellow Line	Meter (Linear Foot)
646.221 to 646.229	200 mm (8 inch) White Line	Meter (Linear Foot)
646.231 to 646.239	200 mm (8 inch) Yellow Line	Meter (Linear Foot)
646.241 to 646.249	300 mm (12 inch) White Line	Meter (Linear Foot)
646.251 to 646.259	300 mm (12 inch) Yellow Line	Meter (Linear Foot)
646.261 to 646.269	600 mm (24 inch) Stop Bar	Meter (Linear Foot)
646.300 to 646.309	Letter or Symbol	Each
646.311 to 646.319	Crosswalk Marking	Meter (Linear Foot)
646.321 to 646.329	Railroad Crossing Symbol	Each

SECTION 653 - EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

223. 653.15 BIOTECHNICAL SLOPE PROTECTION, part (a) Erosion Logs, is hereby modified by being deleted in its entirety and replaced with the following:

- (a) Erosion Logs. Erosion logs shall be installed to intercept water flow and collect sediment and associated pollutants by settling and filtering. Erosion logs may be placed over bare or mulched soils or rolled erosion control products; around inlet and outlets; as check dams in unvegetated ditches, slope interrupters on steep slopes, and perimeter control; and along stream banks as a base for plantings. Some types of erosion logs (typically those with a heavier filtering medium such as compost) can be used in applications where underlying conditions are unsuitable (frozen ground, paved surfaces, sensitive plantings areas, etc.) for trenching.

Prior to placing erosion logs, the ground surface shall be properly graded and compacted and free of depressions or obstructions such as tree roots, protruding stones, or other foreign matter.

Erosion logs shall be installed in accordance with the manufacturer's installation guidelines, staking pattern guide, and details based upon the intended use on the construction site.

The Contractor shall remove accumulated sediment when it has reached 1/2 of the effective height of the log, or as directed by the Engineer. Alternatively, a new erosion log may be placed on top of and slightly behind the original one creating more sediment storage capacity. Erosion logs shall be maintained until disturbed area above the device has been permanently stabilized and construction activity has ceased.

When used as a temporary erosion prevention and sediment control measure, erosion logs may be cut open and left in place, but only if the fill material and netting are 100% biodegradable and the material is spread or graded flat so as to not cause concentration of future surface runoff.

SECTION 656 - PLANTING TREES, SHRUBS, AND VINES

224. 656.02 MATERIALS, is hereby modified by deleting the first entry in the Subsection listing (for "Barrier Fence") in its entirety.

225. 656.02 MATERIALS, is hereby further modified by adding the following as the second paragraph (directly below the Subsection listing):

Barrier Fence shall meet the requirements of Section 653.

SECTION 677 - OVERHEAD TRAFFIC SIGN SUPPORTS

226. 677.01 DESCRIPTION, is hereby modified by adding the phrase "and removing and disposing of existing overhead traffic sign supports," after the phrase "supports,".
227. 677.02 MATERIALS, is hereby modified by deleting subsection "753.05" for *Grounding Electrodes* and replacing it with "752.15".
228. 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.

229. 677.04 GROUNDING. is hereby modified by deleting the second and third sentences of the first paragraph, and also deleting the second and third paragraphs in their entirety.
230. 677.04 GROUNDING. is hereby further modified by adding the phrase "in accordance with section 678" at the end of the first sentence of the first paragraph.
231. 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.

232. 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

233. 678.01 DESCRIPTION, is hereby modified by adding the phrase ", and removing existing traffic control systems" after the word "system" in the first paragraph.

234. 678.02 MATERIALS, is hereby modified by deleting the following from the Subsections listing:

Junction Box.....752.12
Grounding Electrodes..... 753.05

235. 678.02 MATERIALS, is hereby further modified by adding the following to the Subsection listing at the appropriate location following the subsections sequence:

Pull Box..... 752.12(a)
Junction Box..... 752.12(b)
Grounding Electrodes..... 752.15

236. 678.02 MATERIALS, is hereby further modified by deleting "convers" and replacing it with the word "covers" in the second sentence of the last paragraph of the Subsection text.

237. 678.07 DETECTORS AND CONTROLLERS, is hereby corrected by deleting "maufacturer" and replacing it with the word "manufacturer" in the first sentence of the second (last) paragraph.

238. 678.11 INSTALLATION, sixteenth paragraph, part (a), is hereby modified by adding the following:

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

239. 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.

240. 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.

241. 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 679-STREET LIGHTING

242. 679 STREET LIGHTING, is hereby modified by deleting in its entirety and replacing with the following:

679.01 DESCRIPTION. This work shall consist of removing, furnishing, and installing the street lighting components necessary to provide a complete and operational system.

Street light assemblies shall consist of Light Pole Foundations, Transformer Bases, Light Poles, Bracket Arms and Luminaires.

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

Grounding Electrodes.....	752.15
Light Pole Foundations.....	753.01
Transformer Bases.....	753.02
Light Poles.....	753.03
Bracket Arms.....	753.04
Luminaires.....	753.05
Highway Illumination Conductor Cable.....	753.07
Street Lighting Control Device.....	753.08
Finish.....	753.09

679.03 GENERAL. Street lights shall be installed as specified in the Contract Documents.

Street Lights shall be designed to withstand an equivalent wind load of 160 KPH (100 MPH) velocity with an allowable angular deflection of 70 minutes or less.

All wiring shall meet the current National Electric Code.

Street lighting design shall conform to the current edition of Standard Specifications for the Structural Supports for Highway Signs, Luminaires and Traffic Signals, published by AASHTO, and its latest revisions.

679.04 SUBMITTALS. The Contractor shall submit Fabrication Drawings in accordance with Subsection 105.03. The submittal shall contain the following information, at a minimum:

(a) Wiring.

(1) Conductor material, insulation type, voltage rating and temperature rating.

(b) Light Pole Foundations.

(1) Dimensions and material specifications for all hardware used to mount the transformer base to the Light Pole Foundation.

- (2) For pre-cast Light Pole Foundations: complete design details and material specifications for Light Pole Foundations.

(c) Transformer Bases.

- (1) Dimensions for bottom and top of Transformer Base, height of Transformer Base, Transformer Base door dimensions, bolt pattern for mounting the Transformer Base to the Light Pole Foundation and type of Transformer Base. Including documentation indicating the Transformer Base meets the AASHTO standards.
- (2) Dimensions and material specifications for all hardware used to mount the Light Pole to the Transformer Base.

(d) Light Poles.

- (1) Dimensions for pole height, mounting height, pole diameter (top and bottom), handhole (size and location), anchor base, bolt circle, and mounting bolt size.
- (2) Dimensions for the bolt pattern for mounting the light pole to the transformer base.
 - (a) Material specifications for all components of the light pole.
 - (b) Welding information in accordance with Subsection 506.10.
 - (c) The welding process and procedures and the materials used to make the two continuous circumferential welds, one attaching the top of the anchor base to the pole shaft and the other attaching the bottom of the pole shaft to the inside of the shoe base.
 - (d) Special features as shown on the Plans, such as finish or color.

(e) Bracket Arms.

- (1) Dimensions for Bracket Arm length and diameter.
- (2) Details for connection of Bracket Arm to Light Pole (details shall be specific to the pole material the arm is to be mounted on).
- (3) Welding information in accordance with Subsection 506.10.
- (4) Material specifications for Bracket Arm and mounting hardware.

(f) Luminaires.

(1) Luminaire Data

- a. Manufacturer
- b. Model Number
- c. Wattage
- d. Lamp type (with number of LEDs)
- e. Any other features, such as finish, special wire access, etc.
- f. BUG Rating

- g. Operating Amperage
- h. Street Lighting Control Device
- (2) Photometric Data (to be supplied when a street lighting design is not included in the Plans or when changes to the Plans are proposed).
 - a. IES Distribution type.
 - b. Utilization curve.
 - c. Iso-lux curves.
 - d. Mounting height factor.
 - e. Maintenance factor.

679.05 BRACKET ARM. Bracket Arms shall be installed as shown in the Contract Documents.

The length and mounting height of Bracket Arms shall be as shown on the approved drawings. The Bracket Arm shall be mounted perpendicular to the centerline of roadway, unless otherwise specified. The Bracket Arm shall be provided with a 50 mm (2inch) slip-fit mounting of sufficient length to accommodate the Luminaire.

All welds shall conform to the requirements of Subsection 506.10, no field welds shall be allowed.

679.06 LUMINAIRE. Luminaires shall meet the requirements of the current VTrans Lighting Design Guide unless otherwise specified in the Plans.

679.07 STREET LIGHT ASSEMBLY. Street Light Assemblies shall be installed as shown in the Contract Documents and shall include the following:

- (a) Light Pole Foundation. Light Pole Foundations shall be installed as shown in the Contract Documents.

Excavation and Backfill shall be in accordance with Section 203

- (b) Transformer Bases. Transformer Bases shall be installed on Light Pole Foundations as shown in the Contract Documents. The bottom plate of the Transformer Base shall have a grounding bolt and nut, easily accessible from the transformer base door. Transformer Bases, and all wiring contained in the Transformer Bases, shall meet the requirements of the current edition of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, and its latest revisions, for breakaway features.
- (c) Light Poles. Light Poles shall be mounted on Transformer Bases as shown in the Contract Documents.

The anchor base shall be attached to the pole shaft by two continuous welds, one inside the base at the end of the shaft and the other on the outside at the top of the anchor base. All welds shall conform to the requirements of Subsection 506.10, no field welding shall be allowed.

Light Poles shall be plumb and level. A 100 by 150 mm (4 inch x 6 inch) handhole, complete with cover and hardware shall be located approximately 450 mm (18 inches) above the top of the Transformer Base directly above the transformer base door. A lip shall be provided around the handhole opening to prevent the cover from tipping and falling inside the hole. A grounding bolt and nut, easily accessible from the handhole, shall be located inside the pole shaft.

The pole cap shall be securely held in place.

(a) Bracket Arms. Bracket Arms shall be as specified herein.

(b) Luminaires. Luminaires shall be as specified herein.

679.08 REMOVE STREET LIGHT ASSEMBLY. The Contactor shall remove the entire Street Light Assembly as identified in the Plans, including the light pole foundation, transformer base, light pole, bracket arm, luminaire, wiring and all other incidentals.

The Street Light Assembly shall become property of the Contractor. All components of the Street Light Assembly shall be removed from the project and properly disposed of by the Contractor.

All voids resulting from this work shall be backfilled in accordance with Subsection 203.

679.09 REMOVE AND RESET LIGHT POLE. The Contractor shall remove, store and reset the transformer base, light pole, bracket arm, luminaire, wiring and other incidentals as shown in the Plans. All light poles shall be carefully separated from the light pole foundation on which they are mounted.

Light poles shall be completely removed from the light pole foundation, transported and stored at locations specified in the Contract Documents or as ordered by the Engineer and reset on the light pole foundation at the original location.

679.10 STREET LIGHTING CONTROL DEVICES. An Astronomical Clock shall be provided for each wired group of Street Lights and installed at the power Stanchion for each group, unless otherwise noted in the Plans.

Astronomical Clocks shall have two circuit scheduling, at least 20 set points for individual programs for each day of the week, be capable of daylight savings time adjustments, have a manual override and a power outage backup system with permanent schedule retention and memory module.

All Astronomical Clocks shall be placed in an enclosure meeting NEMA 3R standards and all shall be the same for the project, a mix of clocks will not be allowed for new installations.

679.11 POWER DROP STANCHION, STREET LIGHTING. Power Drop Stanchion, Street Lighting shall conform to the requirements of Subsection 678.08.

679.12 ELECTRIC WIRING. All wiring shall be in accordance with the NEC and Section 678.

All current carrying conductors shall have a fusible disconnect in the base of each Light Pole accessible from the hand hole or breakaway base.

Conductors shall not have any unnecessary kinks or bends. End caps, when necessary, of the appropriate size for the service conductors shall be installed at all termination points in pull boxes, junction boxes and pole bases.

679.13 FINISH. All Transformer Bases, Light Poles, Bracket Arms and Luminaires shall have either a powder coating or anodized aluminum finish, all finishes shall be factory applied finishes.

Anodized aluminum coatings shall have a minimum coating thickness of 1.0 mil.

Powder coatings shall be a thermosetting material, with a minimum film thickness of 4.0 mil. The powder coating process shall have pre-treatment steps that ensure complete cleaning and adherence of the coating materials, including at least the following steps: hot alkaline wash, rinse, hot phosphoric acid etching, and final rinse. It shall be free of blisters, cracks, stains and similar defects.

679.14 ACCEPTANCE.

- (a) Prior to acceptance of the street lighting system the system shall successfully complete a test period. The street lighting systems shall be completely operable and energized for 30 consecutive days without any defects in the system for successful completion of the test period. All required adjustments to the Street Lighting Control Device, if required, shall be completed to the satisfaction of the Engineer prior to acceptance.
- (b) The Contractor shall be responsible for all power costs through project acceptance.

679.15 METHOD OF MEASUREMENT.

The quantity of Bracket Arm to be measured for payment will be the number of each bracket arm installed in the complete and accepted work.

The quantity of Luminaire to be measured for payment will be the number of each luminaire installed in the complete and accepted work.

The quantity of Street Light Assembly to be measured for payment will be the number of each Street Light Assembly installed in the complete and accepted work.

The quantity of Remove Street Light Assembly to be measured for payment will be the number of each Street Light Assembly removed in the complete and accepted work.

The quantity of Remove and Reset Light Pole to be measured for payment will be the number of each Salvaged Light Pole removed, stored, and erected in the complete and accepted work.

The quantity for Street Lighting Control Device to be measured for payment will be the number of each Street Lighting Control Device installed in the complete and accepted work.

The accepted quantity of Power Drop Stanchion, Street Lighting to be measured for payment will be the number of each stanchion installed in the complete and accepted work.

679.16 BASIS OF PAYMENT. Street lighting item prices shall be full compensation for furnishing, transporting, handling, and placing the materials specified. When a Power Drop Stanchion, Street Lighting is not a contract item, connections to the power source, circuit testing, and the furnishing of all labor, tools, equipment, and incidentals necessary to complete the work will be incidental to other items.

The accepted quantity of Bracket Arm shall be full compensation for the bracket arm, wiring within the bracket arm, hardware required to mount the bracket arm to light pole and other incidentals as necessary to complete the work. Bracket arm shall be paid for at the Contract unit price for each.

The accepted quantity of Luminaire shall be full compensation for the luminaire housing, ballasts, lamps, photoelectric control device and other incidentals as necessary to complete the work. Luminaire shall be paid for at the Contract unit price for each.

The accepted quantity of Street Light Assembly shall be full compensation for the light pole foundation, transformer base, light pole, bracket arm luminaire, wiring within the Street Light Assembly and other incidentals as necessary to complete the work. Light pole shall be paid for at the Contract unit price for each.

The accepted quantity of Remove Street Light Assembly shall be full compensation for removing and disposing a street light assembly, including light pole foundation, transformer base, light pole, bracket arm, luminaire, wiring and other incidentals. Remove Street Light Assembly shall be paid for at the contract unit price for each.

The accepted quantity of Remove and Reset Light Pole shall be full compensation for removing, storing and installing a salvaged light pole, including transformer base, light pole, bracket arm, luminaire wiring and other incidentals as necessary to complete the work. Remove and Erect Salvaged Light Pole shall be paid for at the contract unit price for each.

The accepted quantity of Street Lighting Control Device shall be full compensation for installing a fully functional Street Lighting Control Device at the Contract unit price for each.

The accepted quantity of Power Drop Stanchion, Street Lighting shall be full compensation for all work, materials and incidentals necessary to complete the work. Power Drop Stanchion, Street Lighting shall be paid for at the Contract unit price for each.

Circuit testing and connections to power sources will not be paid for separately but will be considered incidental to the Contract items that include the costs of wiring.

The cost of furnishing and installing electrical conduit, wired conduit, electrical wiring, electrical conduit sleeve, pull boxes, and junction boxes, when not covered under the Section 678, shall be considered incidental to items in this section.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
679.24	Remove Street Light Assembly	Each
679.25	Remove and Reset Light Pole	Each
679.46	Street Light Assembly	Each
679.47	Bracket Arm	Each
679.50	Luminaire	Each
679.54	Street Lighting Control Device	Each
679.55	Power Drop Stanchion, Street Lighting	Each

SECTION 700 GENERAL

243. 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 ".".
244. 700.02 MATERIALS CERTIFICATIONS, part (a) General, is hereby modified by deleting subpart (3) in its entirety.
245. 700.02 MATERIALS CERTIFICATIONS, part (a) General, is hereby further modified by adding the following as the seventh paragraph:

All certifications shall be forwarded to the Vermont Agency of Transportation Materials Section.

SECTION 702 - BITUMINOUS MATERIALS

246. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (a) Properties, is hereby modified by adding the abbreviation "(PGB)" after the word "binder" in the first sentence.
247. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (a) Properties, is hereby further modified by deleting the second sentence of the first paragraph in its entirety and replacing it with the following:
- PGB shall be asphalt prepared solely by the refining of crude petroleum and shall meet the requirements of AASHTO M 320 from facilities compliant with AASHTO R 29 without the addition of modifiers.
248. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (a) Properties, is hereby still further modified by adding the following as the third and fourth (last) sentences of the second paragraph:
- If additives are used for the modification of asphalt, preapproval is required. The addition of any material not normally obtained during the initial refining process shall constitute modified asphalt and shall be labeled appropriately.
249. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (a) Properties, is hereby still further modified by adding the following as the third (last) paragraph:

The performance graded binder shall be manufactured in accordance with the approved Quality Control Plan. The manufacturer shall remain in compliance with the plan, including all notifications, sampling, testing, and reporting requirements.

250. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (b) Pretest, is hereby modified by being re-designated as part (c).
251. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (c) Certification, is hereby modified by being re-designated as part (d).
252. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), is hereby modified by adding the following new part (b):
- (b) Effect of Approval. VTrans reserves its right to remove its approval of any PGB lot if, in the sole discretion of the Agency, such approval was based on a material non-disclosure by the PGB supplier.

SECTION 704 - AGGREGATES

253. 704.10 AGGREGATE FOR BITUMINOUS CONCRETE PAVEMENT, part (a) Aggregate for Marshall Bituminous Concrete Pavement, subpart (1) Grading, c. Recycled Asphalt Pavement (RAP), is hereby modified by deleting the word "four" and replacing it with the word "two" in the seventh sentence of the fifth paragraph.
254. 704.10 AGGREGATE FOR BITUMINOUS CONCRETE PAVEMENT, part (b) Aggregate for Superpave Bituminous Concrete Pavement, subpart (1) Grading, c. Recycled Asphalt Pavement (RAP), is hereby modified by deleting the word "four" and replacing it with the word "two" in the seventh sentence of the sixth paragraph.
255. 704.12 AGGREGATE FOR SURFACE COURSE AND SHOULDERS, is hereby modified by deleting in its entirety and replacing them with the following:

704.12 AGGREGATE FOR SURFACE COURSE AND SHOULDERS. Aggregate for Aggregate Surface Course and Aggregate Shoulders shall consist solely of crushed gravel or crushed stone. It shall be reasonably free from silt, loam, clay, organic matter or other deleterious materials.
Aggregate for Aggregate Shoulders, RAP shall consist solely of Bituminous Concrete Pavement.

All aggregates shall meet the following requirements:

- (a) Grading. The entire gradation shall be uniformly graded and shall meet the gradation requirements of the following table as determined in accordance with AASHTO T 27 and AASHTO T 11:

TABLE 704.12A - AGGREGATE FOR SURFACE COURSE AND SHOULDERS

Sieve Designation	Percentage by Mass (Weight) Passing Square Mesh Sieves
37.5 mm (1 1/2 inch)	100
25.0 mm (1 inch)	90 to 100
4.75 mm (No. 4)	45 to 65
150 μm (No. 100)	0 to 15
75 μm (No. 200)	0 to 12

(b) Percent of Wear. The percent of wear shall not be more than 40 percent for material used as aggregate surface course or not more than 50 percent for material used as aggregate shoulders, excluding bituminous materials. Percent wear shall be in accordance with AASHTO T 96.

(c) Fractured Faces. When crushed gravel is used at least 50 percent by mass (weight), of the material coarser than the 4.75 mm (No. 4) sieve from each stockpile shall have at least two fractured faces. Fractured faces shall be in accordance with Vermont Standard Test Procedures AOT-MRD 23.

SECTION 708 - PAINTS, STAINS, AND TRAFFIC MARKING MATERIALS

256. 708.01 GENERAL REQUIREMENTS, part (c) Sampling, Testing, and Certification, subpart (2) Testing, is hereby modified by adding the following:

All other materials may be required to be tested on a cold weather AASHTO National Transportation Product Evaluation Program (NTPEP) pavement marking test deck.

257. 708.08 PAINT FOR PAVEMENT MARKINGS, part (b) Low VOC Traffic Paint, is hereby modified by adding the following as the first paragraph:

Ready-mixed Low VOC Chlorinated Rubber Traffic Paint shall consist of 100% chlorinated rubber type, fast drying traffic paint that shall contain properly formulated pigment and vehicle to give the desired results.

258. 708.08 PAINT FOR PAVEMENT MARKINGS, part (b) Low VOC Traffic Paint, subpart (1) Materials, is hereby modified by adding the following new subpart d.:

(d) The paint shall contain a maximum of 0.005% w/w (50 ppm w/w) lead. The EPA Method 1311 (TCLP) extract of the paint shall not contain amounts of cadmium, mercury, hexavalent chromium, or other toxic heavy metals in excess of the limits specified in SW-846.

259. 708.08 PAINT FOR PAVEMENT MARKINGS, part (b) Low VOC Traffic Paint, subpart (2) Composition, is hereby modified by deleting the phrase "and shall be a 100% acrylic binder" in the first sentence.

260. 708.08 PAINT FOR PAVEMENT MARKINGS, part (b) Low VOC Traffic Paint, subpart (2) Composition, is hereby further modified by deleting the phrase "Table 708.08A" and replacing it with the phrase "the following:" in the second (last) sentence.

261. 708.08 PAINT FOR PAVEMENT MARKINGS, part (b) Low VOC Traffic Paint, subpart (2) Composition, is hereby still further modified by deleting TABLE 708.08A in its entirety and replacing it with the following:

TABLE 708.08A - LOW VOC CHLORINATED RUBBER TRAFFIC PAINT COMPOSITION

PERFORMANCE CHARACTERISTIC	WHITE	YELLOW/BLUE/ GREEN
Pigment Content, % by Mass (Weight) (ASTM D3723)	55% min. 59% max.	55% min 59% max.
Vehicle Content, % by Mass (Weight)	38% min. 42% max.	38% min. 42% max.
VOC Content, Mass (Weight) per Unit Volume (ASTM D3960)	150 g/L (1.25 lb/gal) max.	150 g/L (1.25 lb/gal) max.
Lead Content, %	0.005% max.	0.005% max.
Yellow Pigment	N/A	Yellow #65 or #75
Titanium Dioxide, Rutile Type II, (ASTM D1394)	120 g/L (1.00 lb/gal) max.	.25 g/L (0.21 lb/gal) max.
Total Non-Volatile Content, % by Mass (Weight) (ASTM D2369)	70.0% min.	69.0% min.
Density, (ASTM D1475)	1.50 ± 0.04 kg/L (12.5 ± 0.33) lb/gal	1.46 ± 0.04 kg/L (12.2 +/- 0.33 lb/gal)
Close Cup Flash Point (ASTM D 3278)	4°C (39 °F) min.	4°C (39°F) min.

TABLE 708.08B - LOW VOC ACETONE BASED TRAFFIC PAINT COMPOSITION

PERFORMANCE CHARACTERISTIC	WHITE	YELLOW/BLUE/ GREEN
Pigment Content, % by Mass (Weight) (ASTM D3723)	53% min. 57% max.	51% min 56% max.
Vehicle Content, % by Mass (Weight)	37% min. 42% max.	37% min. 42% max.
VOC Content, Mass (Weight) per Unit Volume (ASTM D3960)	150 g/L (1.25 lb/gal) max.	150 g/L (1.25 lb/gal) max.
Lead Content, %	0.005% max.	0.005% max.
Yellow Pigment	N/A	Yellow #65 or #75
Titanium Dioxide, Rutile Type II, (ASTM D1394)	120 g/L (1.00 lb/gal) max.	25 g/L (0.21 lb/gal) max.
Total Non-Volatile Content, % by Mass (Weight) (ASTM D2369)	70.0% min.	69.0% min.
Density, (ASTM D1475)	1.415 ± 0.04 kg/L (11.8 ± 0.33) lb/gal	1.367 ± 0.04 kg/L (11.4 +/- 0.33 lb/gal)
Close Cup Flash Point (ASTM D 3278)	-20°C (- 4°F) min.	-20°C (-4°F) min.

262. 708.08 PAINT FOR PAVEMENT MARKINGS, part (b) Low VOC Traffic Paint, subpart (3) Laboratory Tests, subpart a. Viscosity, is hereby modified by being deleted in its entirety and replaced as follows:

a. Viscosity.

1. Chlorinated Rubber Traffic Paint. The paint viscosity shall not be less than 74 nor more than 90 Krebs units at 25°C (77°F) when tested according to ASTM D562.
2. Acetone Based Traffic Paint. The paint viscosity shall not be less than 70 nor more than 88 Krebs units at 25°C (77°F) when tested according to ASTM D562.

263. 708.08 PAINT FOR PAVEMENT MARKINGS, part (b) Low VOC Traffic Paint, subpart (4) Sampling and Testing, subpart a. Sampling Size, is hereby modified by deleting the phrase "per batch of each type and color of traffic paint" and replacing it with the phrase "of each traffic paint per batch," in the first sentence.
264. 708.08 PAINT FOR PAVEMENT MARKINGS, part (b) Low VOC Traffic Paint, subpart (4) Sampling and Testing, subpart c. Sample Delivery, is hereby modified by deleting the first paragraph in its entirety and replacing it as follows:
- All samples shall be delivered to the Materials Engineer, Vermont Agency of Transportation, Materials Section, 2178 Airport Road Unit B, Berlin, Vermont 05641.
265. 708.08 PAINT FOR PAVEMENT MARKINGS, part (d) Waterborne Traffic Paint, subpart (3) Laboratory Tests, d. Drying Time (No Pick Up Time), is hereby modified by deleting the phrase "380 microns" and replacing it with the phrase "381 μm ".
266. 708.08 PAINT FOR PAVEMENT MARKINGS, part (d) Waterborne Traffic Paint, subpart (3) Laboratory Tests, e. No Track Time (Field Test), is hereby modified by deleting the phrase "508 microns" and replacing it with the phrase "508 μm " in the second sentence.
267. 708.08 PAINT FOR PAVEMENT MARKINGS, part (d) Waterborne Traffic Paint, subpart (4) Sampling and Testing, c. Sample Delivery, is hereby corrected by deleting the phrase "1716 Barre-Montpelier Road, Berlin, VT 05602" and replacing it with the phrase "2178 Airport Road Unit B, Berlin, Vermont 05641" in the first paragraph.
268. 708.09 GLASS BEADS, is hereby modified by being re-named OPTICS.
269. 708.09 OPTICS, is hereby modified by adding new part (a) heading Glass Beads.
270. 708.09 OPTICS, part (a) Properties, is hereby modified by being re-designated as subpart (1) under part (a) heading Glass Beads.
271. 708.09 OPTICS, part (b) Certification, is hereby modified by being re-designated as subpart (2) under part (a) heading Glass Beads.
272. 708.09 OPTICS, is hereby further modified by adding the following new parts (b) and (c):
- (b) Premium Optics. Approved premium optics shall be one of the premium optics listed on the Approved Products List on file with the Agency's Research and Development Section.
- (c) Wet Recoverable and Wet Reflective Optics. Approved wet recoverable and wet reflective optics shall be one of the wet recoverable and wet reflective optics listed on the Approved Products List on file with the Agency's Research and Development Section.

273. 708.10 THERMOPLASTIC PAVEMENT MARKINGS, is hereby modified by being deleted in its entirety and replaced as follows:

708.10 THERMOPLASTIC PAVEMENT MARKINGS.

- (a) Thermoplastic Pavement Markings, Type A. Type A Thermoplastic Pavement Markings shall be one of the Thermoplastic Pavement Markings on the Approved Products List on file with the Agency's Research and Development Section. These markings shall be used in long line applications or as specified in the Contract Documents. Thermoplastic composition shall comply with Table 708.10A.

TABLE 708.10A - THERMOPLASTIC PAVEMENT MARKING COMPOSITION
(by mass (weight))

Binder	18% Minimum
Filler	40% Maximum
Glass Beads	30 ±5-40%

- (b) Thermoplastic Pavement Markings, Type B. Type B Thermoplastic Pavement Markings shall be one of the Preformed Thermoplastic Pavement Markings on the Approved Products List on file with the Agency's Research and Development Section. These markings shall be used in intersection applications for legends, stopbars, or symbols or as specified in the Contract Documents.

274. 708.11 RAISED PAVEMENT MARKERS, is hereby modified by being re-named RAISED PAVEMENT MARKERS, TYPE I.

275. 708.12 PAVEMENT MARKING TAPE, is hereby modified by deleting parts (a) Pavement Marking Tape, Type I, (b) Pavement Marking Tape, Type II, and (c) Pavement Marking Mask in their entirety and replacing them as follows:

- (a) Pavement Marking Tape, Type A. Type A Pavement Marking Tape shall be one of the non-removable permanent pavement marking tapes on the Approved Products List on file with the Agency's Research and Development Section that exhibit high adhesion, high durability, and high retroreflectivity. These markings shall be used in high AADT locations in long line applications as specified in the Contract Documents.
- (b) Pavement Marking Tape, Type B. Type B Pavement Marking Tape shall be one of the non-removable pavement marking tapes on the Approved Products List on file with the Agency's Research and Development Section. These markings shall be used in lower AADT locations in long line applications as specified in the Contract Documents.
- (c) Pavement Marking Tape, Type C. Type C Pavement Marking Tape shall be one of the non-removable pavement marking tapes on the Approved Products List on file with the Agency's Research and Development Section. These markings shall be used at intersection locations only as specified in the Contract Documents.

276. 708.12 PAVEMENT MARKING TAPE, is hereby further modified by adding the following new part (d):

- (d) Pavement Marking Tape, Type D. Type D Pavement Marking Tape for legends and symbols shall be one of the non-removable pavement marking tapes on the Approved Products List on file with the Agency's Research and Development Section. These markings shall be used for preformed traffic markings made of the same material as that of an approved permanent Type A, B, or C tape.

277. 708.13 PREFORMED TRAFFIC MARKINGS AND SYMBOLS, is hereby modified by being deleted in its entirety and replaced as follows:

708.13 TEMPORARY DELINEATION SYSTEMS.

- (a) Line Striping Targets. Line Striping Targets shall be one of the Line Striping Targets on the Approved Products List on file with the Agency's Research and Development Section.
- (b) Raised Pavement Markers, Type II. Acceptable Raised Pavement Markers shall be one of the Raised Pavement Markers on the Approved Products List on file with the Agency's Research and Development Section.
- (c) Temporary Pavement Marking Tape. Pavement Marking Tape shall be one of the removable pavement marking tapes on the Approved Products List on file with the Agency's Research and Development Section.
- (d) Pavement Marking Mask. Pavement Marking Mask shall be one of the Masking Marking Tapes on the Approved Products List on file with the Agency's Research and Development Section.

278. 708.14 LINE STRIPING TARGETS, is hereby modified by being deleted in its entirety.

SECTION 710 - CULVERTS, STROM DRAINS, AND SEWER PIPES, NONMETAL

279. 710.03 CORRUGATED POLYETHYLENE PIPE, is hereby modified by adding the following as the last sentence:

In order to maintain approval status, polyethylene pipe manufacturers must participate in, and maintain compliance with, the AASHTO National Transportation Product Evaluation Program (NTPEP), which audits producers of the pipe.

280. 710.07 CORRUGATED POLYPROPYLENE PIPE, is hereby made a new Subsection of the Standard Specifications as follows:

281. 710.07 CORRUGATED POLYPROPYLENE PIPE. Corrugated polypropylene pipe and fittings shall conform to the latest revisions of AASHTO M 330, Type S. Acceptable corrugated polypropylene pipe shall be one of the corrugated polypropylene pipe products on the Approved Products List on file with the Agency's Materials and Research Section. In order to maintain approval status, polypropylene pipe manufacturers must participate in, and maintain compliance with, the AASHTO National Transportation Product Evaluation Program (NTPEP), which audits producers of the pipe.

SECTION 712 - CRIBBING MATERIALS

282. 712.04 GABION BASKETS, part (a) Wire for Gabion Baskets, is hereby modified by changing the word "shall" to the word "may" and by adding the phrase "or welded panels" after the phrase "woven wire mesh" in the first sentence of the first paragraph.

283. 712.04 GABION BASKETS, part (a) Wire for Gabion Baskets, is hereby further modified by adding the following as the third sentence of the first paragraph:

Welded panels shall be coated by hot dip galvanizing after fabrication.

284. 712.04 GABION BASKETS, part (b) PVC Coating for Gabion Baskets, is hereby modified by adding the following new subpart (7):

- (7) Punch Test. The mesh shall achieve satisfactory performance on the Punch Test, as described in ASTM A975 13.1.4. This requirement applies to both woven and welded gabion baskets.

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

285. 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.

286. 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.
- (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.

287. 713.07 COATED BAR REINFORCEMENT, is hereby modified by being deleted in its entirety.

288. 713.02 MECHANICAL SPLICES FOR BAR REINFORCEMENT, is hereby modified by adding the phrase ", except that epoxy coated mechanical splices shall be allowed when Level II reinforcing steel is required" after the phrase "intended to splice" in the second sentence of the first paragraph.

SECTION 714 - STRUCTURAL STEEL

289. 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.
290. 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.
291. 714.09 ANCHOR BOLTS, TRAFFIC SIGNALS, LIGHTING, AND OVERHEAD SIGN STRUCTURES, is hereby modified by being deleted in its entirety and replaced with the following:

714.09 ANCHOR BOLTS, TRAFFIC SIGNALS, LIGHTING, AND OVERHEAD SIGN STRUCTURES. Anchor bolts for traffic signals, lighting, and overhead sign structures shall conform to the requirements of ASTM F 1554, Grade 55, unless otherwise specified. Nuts shall be heavy hex and conform to the requirements of ASTM A 563. Washers shall conform to the requirements of ASTM A 43 and shall be a minimum of 3/8" unless otherwise indicated on the Plans. All components shall be galvanized in accordance with Section 726.08.

All anchor bolts for traffic signals, lighting, and overhead sign structures furnished for Agency projects shall be manufactured in the United States only. All bolts, nuts, and washers furnished for a particular application shall be furnished by a single supplier.

All bolts, nuts, and washers shall have identifiable manufacturer's marking(s) on each piece.

All galvanized nuts shall be lubricated with a lubricant containing visible dye that will provide visual verification of the lubricant during installation.

All bolts, nuts, and washers shall be tested and certified as meeting the requirements of the Zinc Thickness Test as specified in Subsection 714.05, in addition to any other test and certification requirements.

Anchor bolts shall be swedged or threaded and shall conform to the shape, length, and diameter specified on the Plans.

SECTION 726 - PROTECTIVE COATINGS AND WATERPROOFING MATERIALS

292. 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.

293. 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

294. 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 752-TRAFFIC CONTROL SIGNALS

295. 752.12 JUNCTION BOX, is hereby modified by being deleted in its entirety and replaced as follows:

752.12 PULL BOX AND JUNCTION BOX

752.12 (a) PULL BOX. Pull boxes shall be constructed of Concrete, Class B. Pull box frames and covers shall be steel plate and conform to the requirements of ASTM A 36/A 36M. Where the cover is exposed to vehicle or pedestrian traffic, it shall have an approved nonskid surface such as diamond plate. Frames and covers shall be galvanized in accordance with AASHTO M 111/M 111 M. Pull boxes shall be designed and constructed to support at least an AASHTO MS-18 (HS 20) loading."

Certification. A type D Certification shall be furnished in accordance with Subsection 700.02.

752.12 (b) JUNCTION BOX. Junction boxes shall be constructed of fiberglass, high density polyethylene (HDPE), or acrylonitrile-butadiene-styrene (ABS). They shall be high-impact resistant at temperatures ranging from -35 to 50 °C (-30 to 120 °F), ultraviolet stabilized, and fire retardant. The side wall shall be ribbed for strength. The cover shall be non-skid and shall be held down with recessed hex-head bolts.

The junction box shall be capable of withstanding a loading of 67 kN (15 kips) over any 250 by 250 mm (10 x 10 inch) area on the cover. The size of the box shall be as specified in the Contract.

Certification. A Type A Certification shall be furnished in accordance with Subsection 700.02.

296. 752.15 GROUNDING ELECTRODES, is hereby made a new subsection of the Standard Specification as follows:

752.15 GROUNDING ELECTRODES. Grounding electrodes shall include grounding rod and grounding conductors.

- (a) Grounding rod shall be copperclad steel rods 16 mm (5/8 inch) in diameter by 2.4 m (8 feet) long, minimum, and shall conform to UL No. 467 (ANSI C33.8).
- (b) Grounding conductor shall be installed throughout the system back to the power source. The earth shall not be used as the sole equipment grounding conductor. Grounding conductor shall be American Wire Gauge (AWG) #6 soft copper or stranded copper conductor.
- (c) A type A Certification shall be furnished in accordance with Subsection 700.02.

SECTION 753 HIGHWAY ILLUMINATION

297. 753 HIGHWAY ILLUMINATION, is hereby modified by deleting in its entirety and replacing with the following:

753.01 LIGHT POLE FOUNDATIONS.

- (a) Concrete. Concrete shall conform to the requirements of Section 501 for Concrete, High Performance Class B.
- (b) Reinforcing Steel. Reinforcing steel for light pole bases shall conform to the requirements of Section 507 for Reinforcing Steel, Level I.
- (c) Electrical Conduit. Electrical conduit for light pole bases shall conform to the requirements of Subsection 752.08(a).
- (d) Anchor Bolts. Anchor bolts for light pole bases shall be per the Transformer Base manufacturer's recommendation and conform to the requirements of Subsection 714.09.
- (e) Grounding Electrodes. Grounding electrodes for light pole bases shall conform to the requirements of Subsection 752.15.

753.02 TRANSFORMER BASES.

- (a) Transformer bases and transformer base doors shall consist of a one-piece aluminum casting conforming to the requirements of ASTM B 26/B 26M or ASTM B 108, Alloy SG70A-T6, 356-T6. Galvanized bolts, nuts, washers and other hardware shall be provided to attach the transformer base to the anchor base of the light pole. Galvanizing shall conform to the requirements of Section 726.08.

- (b) Hardware for mounting the transformer base door to the transformer base shall be stainless steel.
- (c) A Type A Certification shall be furnished in accordance with Subsection 700.02.

753.03 LIGHT POLES.

- (a) Anchor Base. Anchor bases shall consist of a one-piece aluminum casting conforming to the requirements of ASTM B 26/B 26M or ASTM B 108, Alloy SG70A-T6, 356-T6.
- (b) Pole Shaft. Pole Shafts shall be aluminum consisting of tapered one-piece seamless tubes conforming to the requirements of ASTM B 221M (ASTM B 221), Alloy 6063-T6, 6061-T6, or 6005-T5. Minimum wall thickness shall be 3.2 mm (0.125 inch) for mounting heights of less than 6 m (20 feet) and 4.8 mm (0.188 inch) for mounting heights of 6 m (20 feet) or more.
- (c) Pole Cap. Pole Caps shall consist of a one-piece aluminum casting conforming to the requirements of ASTM B26/B26M or ASTM B108, Alloy SG70A-T6, 356-T6.
- (d) A Type A Certification, for all components (individually or as a whole), shall be furnished in accordance with Subsection 700.02

753.04 BRACKET ARMS.

- (a) Single bracket elliptical arms and the main member of truss-type arms shall be seamless tube conforming to the requirements of ASTM B 221M (ASTM B 221), Alloy 6063-T6 or Alloy 6061-T6. Other members of truss-type arms shall conform to the requirements of ASTM B 221M (ASTM B 221), Alloy 6063-T6. All screws, nuts, bolts and other hardware for mounting bracket arms to the light pole shall be stainless steel, unless otherwise specified

Bracket Arms shall be able to withstand a vertical load of 450 N (100 LBS) and a horizontal load of 225 N (50 LBS) without fracture or permanent deformation.

- (b) A Type A Certification shall be furnished in accordance with Subsection 700.02

753.05 LUMINAIRES.

- (a) All luminaires shall be 120 V unless otherwise noted in the Plans.
- (b) A Type A Certification shall be furnished in accordance with Subsection 700.02.

753.07 HIGHWAY ILLUMINATION CONDUCTOR CABLE.

- (a) Highway Illumination Conductor Cable. Highway illumination conductor cable shall be conductors of stranded, soft-drawn copper with a moisture and heat resistant thermoplastic insulation. It shall be rated for 600 V service at 75 °C (167 °F) for either dry or wet locations.

The single conductors shall conform to the National Electrical Code for the intended wire use and existing field conditions. Wire size shall be such that no more than a 3 percent voltage drop will occur anywhere in the secondary circuit. All wiring shall be color-coded.

All conductors within the streetlight pole and bracket arm shall be No. 10 AWG stranded copper wire. Street lighting conductors within strain poles or mast arm poles shall also be No. 10 AWG stranded copper wire. UF cable is allowed in the bottom of the pole below the hand hole.

A Type A Certification shall be furnished in accordance with Subsection 700.02.

753.08 STREET LIGHTING CONTROL DEVICE.

- (a) A Type A Certification shall be furnished in accordance with Subsection 700.02.

753.09 FINISH.

- (a) Powder Coating. Powder coating shall be a polyester powder coat in the manufacturer's standard black finish. Powder coatings shall be salt spray resistant in accordance with ASTM B117. Powder coating shall exhibit no discoloration, cracking or other visible defects when tested for accelerated weathering as described in ASTM D4587, cycle No. 4, for 300 continuous hours.

The chemical composition of powder coatings shall provide a highly durable UV and salt spray resistant finish in accordance to the ASTM B117-73 standard and humidity proof in accordance to the ASTM D2247-68 standard.

- (b) Anodized Aluminum. Anodized aluminum coatings shall be in accordance with ASTM B137, B244, B580 (Type A or B) and B680.

SECTION 755 - LANDSCAPING MATERIALS

298. 755.17 EROSION LOGS, is hereby modified by being deleted in its entirety and replaced with the following:

Erosion logs are available in varying diameters. The Contractor shall follow the manufacturer's recommendations for the material type and size based on the intended use.

Erosion logs shall be composed of weed-seed-free coir, straw, excelsior, compost, or other biodegradable filtering medium encased in a photo-degradable and/or biodegradable netting or mesh.

Netting shall have openings of 13 to 25 mm (1/2 to 1 inch), with the exception of compost filled logs which should be 3 to 10 mm (1/8 to 3/8 inch) or as recommended by the manufacturer and accepted by the Engineer.

Anchors for erosion logs shall be wooden stakes, U-shaped wire or earth anchors, or rebar stakes; the size and length shall be as recommended by the manufacturer.

Compost shall meet the requirements of Table 755.05A, with the exception that particle size shall be 99% < 50 mm (2 inches) and maximum 30% < 10 mm (3/8 inch).

SECTION 780 - CONCRETE REPAIR MATERIALS

299. 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, the Subrecipient will complete the Subrecipient Annual Report annually within 45 days after its fiscal year end, informing the State of Vermont whether or not a Single Audit is required for the prior fiscal year. If a Single Audit is required, the Subrecipient will submit a copy of the audit report to the granting Party within 9 months. If a single audit is not required, only the Subrecipient Annual Report is required.

For fiscal years ending before December 25, 2015, a Single Audit is required if the subrecipient expends \$500,000 or more in federal assistance during its fiscal year and must be conducted in accordance with OMB Circular A-133. For fiscal years ending on or after December 25, 2015, a Single Audit is required if the subrecipient expends \$750,000 or more in federal assistance during its fiscal year and must be conducted in accordance with 2 CFR Chapter I, Chapter II, Part 200, Subpart F. The Subrecipient Annual Report is required to be submitted within 45 days, whether or not a Single Audit is required.

10. **Records Available for Audit:** The Party shall maintain all records pertaining to performance under this agreement. "Records" means any written or recorded information, regardless of physical form or characteristics, which is produced or acquired by the Party in

the performance of this agreement. Records produced or acquired in a machine readable electronic format shall be maintained in that format. The records described shall be made available at reasonable times during the period of the Agreement and for three years thereafter or for any period required by law 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.

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 this 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.

Party further certifies under pains and penalties of perjury that, as of the date that this Agreement is signed, Party is not presently debarred, suspended, nor named on the State's debarment list at: <http://bgs.vermont.gov/purchasing/debarment>
- 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.
- 20. Internal Controls:** In the case that this Agreement is an award that is funded in whole or in part by Federal funds, in accordance with 2 CFR Part II, §200.303, the Party must establish and maintain effective internal control over the Federal award to provide reasonable assurance that the Party is managing the Federal award in compliance with Federal statutes, regulations, and the terms and conditions of the award. These internal controls should be in compliance with guidance in "Standards for Internal Control in the Federal Government" issued by the Comptroller General of the United States and the "Internal Control Integrated Framework", issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).
- 21. Mandatory Disclosures:** In the case that this Agreement is an award funded in whole or in part by Federal funds, in accordance with 2CFR Part II, §200.113, Party must disclose, in a timely manner, in writing to the State, all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award. Failure to make required disclosures may result in the imposition of sanctions which may include disallowance of costs incurred, withholding of payments, termination of the Agreement, suspension/debarment, etc.
- 22. Conflict of Interest:** Party must disclose in writing any potential conflict of interest in accordance with Uniform Guidance §200.112, Bulletin 5 Section X and Bulletin 3.5 Section IV.B.

(End of Standard Provisions)

Special Provisions for: East Montpelier BF EWP2(1)

1. LABOR SUPPLY. Available workers for this Contract may be obtained from Manager, Employment & Training, Barre, 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: <http://vtranscivilrights.vermont.gov/>. 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 21, 2016.
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.

In the included wage rates, the requirements of Executive Order 13658 do not apply to this Contract.

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 AOT.ConstructionContractingInquiry@vermont.gov.

The deadline for submitting inquiries related to this project to the Office of Contract Administration is 4:30 p.m. Eastern Standard Time on July 8, 2016. 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 April 7, 2016
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
Construction General Permit (CGP) 3-9020 (Amended 2008) Authorization of Notice of Intent #4521-9020.R2 dated February 24, 2016
Storm Water Discharge Permit # 4251-INDS.R dated February 19, 2013
Certification for Federal-Aid Contracts
Contractor's EEO Certification Form
Debarment & Non-Collusion Affidavit

8. NOTICE TO BIDDERS - CONTRACT INSURANCE REQUIREMENTS. The Contractor is hereby notified that in the event of a discrepancy between the stated insurance requirements of Bulletin 3.5 Attachment C: Standard State Provisions for Contracts and Grants and those of Subsection 103.04 of the Standard Specifications for Construction, the requirements of Subsection 103.04 of the Standard Specifications for Construction shall govern.
9. 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.
10. NOTICE TO BIDDERS-CARGO PREFERENCE REQUIREMENT. The contractor is hereby notified that the Contractor and Subcontractor(s) are required to follow the requirements of 46 CFR 381.7 (a)-(b). For guidance on requirements of Part 381 - Cargo Preference - U.S.Flag Vessels please go to the following web link: <https://www.fhwa.dot.gov/construction/cqit/cargo.cfm>.

11. NOTICE TO BIDDERS - RE-DESIGNATION OF VTRANS OFFICIALS. The Contractor is hereby notified of the following re-designation of VTrans officials as referenced in the Contract Documents:

Where in the Contract Documents it reads:	It shall be read as and shall mean:
Director of Program Development	Chief Engineer
Assistant Director of Program Development	Deputy Chief Engineer
Roadway, Traffic, and Safety Engineer; Roadway Program Manager; Highway Safety & Design Engineer;	Highway Safety and Design Program Manager
Structures Engineer	Structures Program Manager
Chief of Local Transportation Facilities	Director of Municipal Assistance Bureau
Construction Engineer; Materials and Research Engineer	Director of Construction and Materials Bureau
Director of Operations	Director of Maintenance and Operations Bureau

12. NOTICE TO BIDDERS - REQUIREMENTS FOR NIGHTTIME WORK. The Contractor is hereby notified that night work will be allowed during construction.

Night work shall be performed in accordance with the National Cooperative Highway Research Program (NCHRP) Report 476 - "Guidelines for Design and Operation of Nighttime Traffic Control for Highway Maintenance and Construction". A copy of this guideline specification may be downloaded from the following website: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_476.pdf.

Prior to beginning night work, the Contractor shall design a lighting system and submit it to the Engineer for approval. The Contractor shall not perform any night work or activities within the project limits until the lighting system has been fully approved and is in place on the project.

The designed lighting system shall be mobile, shall be mounted separately from other construction equipment, shall illuminate the entire work area to daylight intensity with minimal glare, and shall be a surrounding design that minimizes shadows in the work area as much as possible.

All costs associated with the lighting system will be considered incidental to Contract item 900.645 Special Provision (Traffic Control, All-Inclusive).

13. NOTICE TO BIDDERS - NOISE RESTRICTIONS

The Contractor shall take measures to control the noise caused by its construction operations, including but not limited to noise generated by equipment used for drilling, concrete cutting, pneumatic tools, generating power for light, excavation and hauling. Required measures for mitigation are outlined as follows:

Required Mitigation Measures:

Noise reduction mitigation measures as outlined in the FHWA Construction Noise Handbook.

(http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook07.cfm) to be utilized by the contractor include the following:

- Sequencing for concurrent operations of noisy activities; when possible.
- Schedule the noisiest activities at the least sensitive times possible (refer Table N1 below).
- Shield or insulate stationary equipment such as air compressors and light towers.
- Properly maintain equipment with attention to lubrication, air intake and exhaust and other aspects that impact noise.
- Employ systems to prevent slamming tailgates on dump trucks.
- Minimize idling of equipment
- Utilize "white-noise, whooshing sound" type of backup alarms or adjustable backup alarms that can be adjusted down for the ambient noise level.

14. TARGET GOALS (NOISE LEVELS):

Overview of Noise Measurement: The decibel (dB) is the universal unit of sound measurement and is measured with a meter that registers sound pressure and displays these readings on a sound level scale. Decibels are a logarithmic unit, which means that a noise measuring 30 decibels is actually 10 times louder than a noise registering at 20 decibels. Because in certain areas and at certain times of the day, the existing ambient noise level can be significant, the goals for limiting construction noise are relative to the existing ambient conditions.

The TARGET GOALS for limiting noise levels due to construction are outlined in the following Table N1:

Table N1: Construction Noise Target Goal Limits A-weighted in dB, RMS slow						
Noise-Receptor Locations and Land-Uses	Daytime (7AM-6PM)		Evening (6PM-10PM)		Nighttime (10PM -7AM)	
	L10	L _{max}	L10	L _{max}	L10	L _{max}
Noise-Sensitive Locations: (Residences, Institutions, Hotels, etc.)	75 or Baseline +5 (whichever is louder)	90	Baseline + 5	85	Baseline +5 >(if Baseline <70) Baseline +3 (if Baseline ≥70)	80

Notes: L₁₀ noise compliance readings are averaged over 20 minute intervals. L_{max} noise readings can occur instantaneously. In order to consider baseline noise conditions, those condition must be measured and established by the contractor and the engineer prior to construction work. This will requires baseline noise readings over three 24-hour periods at receptor locations.

Measuring Noise:

The Contractor shall provide the Engineer, for the duration of the nighttime work, with a sound level meter capable of measuring to verify the noise goal limits.

Sound level meters shall be Rion NL-20, CESVA SC-160, Extech 407780 or an approved equal capable of meeting IEC60651: 1979 Type 2 and IEC60804: 1985 Type 2 Standards.

The cost for providing this equipment and meeting the specified noise level criteria will not be paid for separately, but will be considered incidental to all other contract items.

Review of Measurements: The contractor and engineer shall meet on a weekly basis throughout the construction period to discuss construction noise measurements and to assess how noise readings compare to the goals outlined in Table N1. The contractor shall utilize the required noise mitigation measures as directed by the engineer in order to reduce the impacts of construction noise on residents and businesses in the project vicinity.

Extra Measures, if Required: If the required mitigation measures are not adequate, the Engineer will issue a Written Order directing the contractor to take additional measures to mitigate the construction noise impacts and payment will be pursuant to subsection 109.06.

15. 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 ¼") galvanized square steel anchors. No sign posts shall extend over the top edge of signs 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 Chief Engineer.
16. 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.
17. ENVIRONMENTAL.
- 1. Archeology Stipulations:
 - a. Orange snow fencing will be placed along the edge of construction limits in the NE quad to protect the mill complex sit VT-WA-170 during construction. See project plan sheets for the location of fencing.
 - b. This area will be off limits and no activities of any kind will take place within this fenced area.

2. NLEB (BAT) Provisions:

This project shall be subject to Avoidance and Minimization Measures to protect the habitat and hibernacula of the northern long-eared bat. measures applicable to this project include, Time of Year (TOY) restrictions for any potential impacts to suitable bat habitat, which include, but are not limited to trees $\geq 3'$ and /or habitat features on bridge structures.

This project's design does not identify any tree cutting or bridge related activities within the project limits as part of the work and therefore neither a habitat assessment nor an acoustic survey has been performed. If during construction, cutting trees $\geq 3'$ and/or bridge related activities are deemed necessary, further review will be required and TOY restrictions may apply. In such cases, the Engineer will coordinate further environmental review with the construction Environmental Engineer.

The contractor is hereby made aware of the potential for TOY restrictions related to proposed Waste, Borrow and Staging areas. Cutting trees outside of the contract project limits shall require review under Section 105.25 Control of Waste, Borrow, and Staging Areas.

18. UTILITIES. Existing aerial facilities owned by Green Mountain Power Corporation, Telephone Operating Co. of VT LLC, Comcast Communications and Sovernet Communications will be adjusted, as necessary, by employees or agents of the above companies in accordance with the "*Approximate Aerial Utility Relocation Route*" shown on the project plans. The contractor is cautioned to protect these facilities from damage.

Contacts for the above listed utility companies are:

Green Mountain Power Corporation	Brian Dooley	(802)229-7927
Telephone Operating Co of VT, LLC	Jeff Smith(Engineering)	(802)318-8422
Telephone Operating Co of VT, LLC	Maureen Descoteaux(Construction)	(802)951-1593
Comcast Communications	Bruce Bowser	(802)225-1801
Sovernet Communications	Mike Turner	(802)363-0460
Crystal Springs Water Company	Dean Hedges	(802)223-5060

The Contractor is advised that exploratory excavation to locate existing underground facilities may be necessary to protect these facilities from damage. Where approved by the Engineer, these utilities shall be located and/or exposed by methods such as air/vacuum excavation and/or hand digging to determine their exact location. This exploratory work shall be classified as Trench Excavation of Earth, Exploratory and payment will be made under contract Pay Item 204.22.

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.

Vermont Statutes Annotated, Title 30, Chapter 86 ("Dig Safe") requires notice to Dig Safe before starting excavation activities. The Contractor must telephone Dig Safe at 811 at least 48 hours (excluding Saturdays, Sundays and legal holidays) before, but not more than 30 days before, starting excavation activities at any location. In addition, before

excavation and/or pavement grinding in or on the state highway right-of-way, the Contractor must contact the Agency's District Transportation Administrator to obtain/verify the location of Agency's underground utility facilities or to confirm the absence of such facilities.

The Contractor is advised that many towns are not members of Dig safe. It is the contractor's responsibility to check with the towns prior to excavation and it shall protect and restore any utilities damaged within the project limits as set forth in subsection 107.13 Protection and Restoration of utilities and services.

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

All Contractors, subcontractors or material suppliers involved in any project-related activity shall comply with all applicable codes and regulations related to working around live electrical lines; including, but not limited to maintaining the required minimum clear distance from an electrical utility facility. The Contractor's Competent Safety Officer shall be well versed in OSHA and VOSHA regulations, and shall be capable of implementing a plan to conform to these regulations during prosecution of work.

19. 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 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.

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.

20. SPECIAL CONSTRUCTION REQUIREMENTS.

A. Unless otherwise permitted in writing by the Engineer, the Contractor shall not work during the holiday periods for Labor Day, Veterans Day, Thanksgiving Day, Memorial Day, and July Fourth. 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. Maintenance of Traffic on US Route 2: The contractor shall maintain two lanes of traffic (one eastbound, one westbound) through the project area during the peak hours defined below:

Peak Hours: 7:00 AM to 9:00 AM and 3:00 PM to 6:00 PM Monday through Thursday and 7:00 AM to 9:00 AM and 3:00 PM to 7:00 PM on Friday.

Maintenance of Traffic on VT 14: The contractor shall maintain two lanes of traffic (one southbound, one northbound) through the project area during the peak hours defined below:

Peak Hours: 7:00 AM to 9:00 AM and 3:00 PM to 6:00 PM Monday through Thursday and 7:00 AM to 9:00 AM and 3:00 PM to 7:00 PM on Friday.

D. Maximum Delays during weekday mid-day non-peak hours and Saturday's mid-day non-peak hours: It is anticipated that a significant portion of work will need to be done in the evening and nighttime off peak hours (6 PM to 6 AM Monday through Thursday or 7 PM to 6 AM on Friday), however, the contractor may elect to attempt certain tasks during the mid-day off peak hours (9 am to 3 pm). The contractor may restrict traffic to a single lane alternating configuration during mid-day non peak hours provided traffic delays do not exceed 10 minutes. If traffic delays exceed 10 minutes, the contractor shall reschedule activities to the evening and nighttime non-peak hours. The contractor will not receive additional compensation if rescheduling is required due to traffic delays. The Engineer may grant exceptions to this limit on delays for specific activities. Requests for exception must be made by the contractor in writing.

E. 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).

F. 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>.

SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN

21. SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN, is hereby made a new Section of the Specifications as follows:
22. 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.
23. 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.

24. 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."
25. 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.

26. 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.

27. 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 storm water from the site. During the winter construction season (October 15th to April 15th, 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.

28. 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.

29. 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.

30. 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 900 - SPECIAL PROVISION ITEMS

INLET PROTECTION DEVICE, FILTER FIBER

31. DESCRIPTION. The Contractor shall furnish, install and maintain temporary drainage inlet filters during construction periods as shown on the plans and in accordance with the specifications or as approved by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 653 of the Standard Specifications.

32. MATERIALS.

- (a) Scrim: 10-mil polyester fibers in ¼ inch by ¼ inch mesh.

- (b) Filter Fibers:
 - (1) Course Fiber: Coir (fiber from outer husk of coconuts).
 - (2) Fine Fiber: sterilized swine hair.
- (c) Fiber Coating and Binding Agent: water-based latex.
- (d) Anchors:
 - (1) Straps: HDPE (high density polyethylene) cable ties, with ¼ inch wide by 24-inch long straps having pointed ends.
 - (2) Pressure Discs: 0.060-inch thick HDPE, 3 ½ inches diameter, with two 3/8 inch wide oval-shaped openings 2 ¼ inches apart to accommodate anchor straps.
- (e) Installation Tool.

33. PERFORMANCE REQUIREMENTS.

- (a) Filters shall retain all construction debris and shall retain or otherwise control most of the sediment produced by the construction operations.
- (b) Filter installation shall not require overflow provisions. If clogging occurs, inlets shall be able to be easily unclogged by brooming the sides and top of the filter.
- (c) Installed filters shall be resistant to traffic damage, including traffic by street cleaning machines.
- (d) Filter units shall be biodegradable and may often be re-used.

34. SUBMITTALS.

- (a) Products Data: One copy of manufacturer's descriptive literature.
- (b) Sample: One standard size filter unit, complete with accessories.
- (c) Manufacturer's Instructions: One copy of manufacturer's printed installation instructions.

35. DELIVERY, STORAGE AND HANDLING.

- (a) Deliver units in manufacturers/fabricators original bundles or containers.
- (b) Protect units from dirt and damage until they are installed.

36. PREPARATION.

- (a) Clean surface of inlet grating free of foreign objects.
- (b) Cut filter unit to size, if necessary, leaving a minimum extension past all sides of grate opening of one inch.
- (c) For inlets in vertical-laced curbs, fold filter unit into 90 degree angle so it will fit snugly to inlet.
- (d) To make a neat right-angle bend in the unit, cut a 1½ inch deep notch into opposite edges of the unit with notches located a distance from end of filter equal to curb height.

37. INSTALLATION.

- (a) To install filters without lifting grates, place filter unit on inlet grate, located so it covers opening with proper excess each side.
- (b) Lift edge of filter unit enough to locate grate bar closest to corner of grate. Make a pair of openings in filter unit, with Installation Tool or flat-blade screw driver to accommodate anchor straps.
- (c) Push pointed end of anchor strap through pressure disc, down through temporary opening in filter unit, loop under grate bar, then up through the twin temporary opening in filter unit and through second opening in pressure disc.
- (d) Insert pointed end of anchor strap into locking end, but leave adequate slack for adjustment.
- (e) Repeat anchor installation operation at other recommended anchor locations.
- (f) Minimum number of anchors per filter unit:
 - (1) On curb inlets: 7
 - (2) On flat grates: 8
- (g) After installing all anchors loosely, adjust position of filter units if necessary to cover grates properly. Then, tighten all anchor straps to hold filter units firmly in place.
- (h) Trim ends of anchor straps to leave a one-inch tong tail.

38. MAINTENANCE.

- (a) Inspect all installed filter units after every rain; more often if the rain persists for an appreciable length of time.
- (b) Broom collected material off filter unit surfaces and away from edges.
- (c) Remove sediment and debris collected around filter units. Dispose of collected sediment and debris off-site in accordance with the Vermont Agency of Natural Resources, Solid Waste Management Rules.

39. METHOD OF MEASUREMENT. The quantity of Special Provision (Inlet Protection Device, Filter Fiber), to be measured for payment will be the number of each inlet protection device installed in the complete and accepted work as shown on the Plans or as directed by the Engineer.

40. BASIS OF PAYMENT. The accepted quantity of Special Provision (Inlet Protection Device, Filter Fiber) will be paid for at the Contract unit price per each. Payment will be full compensation for furnishing, transporting, handling, and installing the materials and equipment specified, performing the work specified including but not limited to, installation and removal of the temporary drainage inlet filter, maintenance, monitoring, disposal of accumulated sediment and debris, 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>
900.620 Special Provision (Inlet Protection Device, Filter Fiber)	Each

TRENCHLESS PIPE OBSTRUCTION REMOVAL

41. DESCRIPTION. This work shall consist of removing obstructions when encountered during trenchless construction operations.
42. GENERAL REQUIREMENTS. When a suspected obstruction is encountered, the Contractor shall promptly notify the Engineer and then proceed to implement the obstruction removal plan that was submitted and approved under the applicable trenchless construction specification. The Contractor shall notify the Engineer in writing of any significant changes in the means and methods to be used to remove obstructions from what was approved in earlier submittals.

 Upon notification, the Engineer shall determine if an obstruction has been encountered that will cause an increase in the time required to accomplish the trenchless work. The Contractor will be notified of the Engineer's determination as to whether or not an adjustment of the Contract is warranted. If an adjustment is warranted, the Contract will be modified in writing accordingly. Any adjustment made will exclude loss of anticipated profits.
43. OBSTRUCTIONS. Obstructions may include man-made and/or man-placed materials and natural materials, such as cobbles, boulders, ledge and tree stumps or logs, which require the use of special procedures and/or tools by the Contractor when the hole cannot be advanced using conventional procedures for advancing the heading. Such special procedures/tools may include but are not limited to chisels, boulder breakers, core barrels, air tools, and hand excavation. Subsurface obstructions at the staging areas for trenchless construction shall be removed by the Contractor. Drilling tools that are lost in the excavation shall not be considered obstructions and shall when possible be promptly removed by the Contractor without compensation.
44. METHOD OF MEASUREMENT. The quantity of Special Provision (Trenchless Pipe Obstruction Removal) shall be measured to the nearest 0.5 hour of time required to clear the obstruction as specified in the complete and accepted work.

The following will not be included for measurement:

- (a) The first hour of time spent at each site clearing obstructions.
 - (b) The time required for obtaining tools and materials for executing the approved obstruction removal plan. In addition, this time will not count toward the first hour of obstruction removal time.
 - (c) Obstruction removal time for a pilot bore.
45. BASIS OF PAYMENT. The accepted quantity of Special Provision (Trenchless Pipe Obstruction Removal) will be paid for at the Contract unit price per hour. Payment will be full compensation for performing the work specified and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.630 Special Provision (Trenchless Pipe Obstruction Removal)	Hour

HORIZONTAL DIRECTIONAL DRILLING OBSTRUCTION REMOVAL

- 46. DESCRIPTION. This work shall consist of removing obstructions when encountered during horizontal directional drilling (HDD) operations.
- 47. GENERAL REQUIREMENTS. When a suspected obstruction is encountered, the Contractor shall promptly notify the Engineer and demonstrate that an obstruction has been encountered. An obstruction that requires removal will be defined by the inability to advance the bore after three attempts to steer around or back ream through an obstruction.
- 48. OBSTRUCTIONS. Obstructions may include man-made and/or man-placed materials and natural materials, such as cobbles, boulders, ledge and tree stumps or logs, which require the use of special procedures and/or tools by the Contractor when the hole cannot be advanced using conventional procedures for advancing the heading. Drilling tools that are lost in the excavation shall not be considered obstructions and shall be promptly removed by the Contractor without compensation.
- 49. METHOD OF MEASUREMENT. The quantity of Special Provision (horizontal directional drilling obstruction Removal) shall be measured to the nearest 0.5 hour of time required to clear the obstruction as specified in the complete and accepted work.

The following will not be included for measurement:

- (a) The first hour of time spent at each site clearing obstructions.
 - (b) The time required for obtaining tools and materials for executing the approved obstruction removal plan. In addition, this time will not count toward the first hour of obstruction removal time.
50. BASIS OF PAYMENT. The accepted quantity of Special Provision (horizontal directional drilling Obstruction Removal) will be paid for at the Contract unit price per hour. Payment will be full compensation for performing the work specified and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.630 Special Provision (horizontal directional drilling Obstruction Removal)	Hour

HORIZONTAL DIRECTIONAL DRILLING (HDD) FOR CONDUIT

- 51. DESCRIPTION. This work shall consist of furnishing and installing conduit for future use by utilities using the horizontal directional drilling (HDD) method of installation, also commonly referred to as directional boring or guided horizontal boring.
- 52. MATERIALS. Materials shall be approved by the Engineer prior to use.

- (a) Conduit. Conduit shall be smooth-walled, new plain welded steel pipe conforming to ASTM A 252 with a 9.53 mm (0.375 inches) wall thickness and minimum yield strength of 241 MPa (35,000 psi) or high density polyethylene (HDPE) pipe with a dimension ratio of 11 or less, meeting the requirements of ASTM D3350, as called for in the plans.

A Type A Certification shall be furnished in accordance with Subsection 700.02.

53. QUALITY ASSURANCE. The requirements set forth herein specify a wide range of procedural precautions necessary to ensure that the very basic, essential aspects of a proper directional bore installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in this specification. Adherence to the specifications contained herein, or the Engineer's approval of any aspect of any directional bore operation covered by this specification, shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract.

- (a) Qualifications. HDD installer and field supervisor shall have demonstrated by previous experience ability to do the work. The required previous experience shall consist of having performed a minimum of five horizontal directional drill installations of 500 feet or more using 5" or greater diameter pipe.

54. SUBMITTALS.

- (a) Work Plan. Prior to beginning work, the Contractor shall submit to the Engineer a general work plan outlining the procedure and schedule to be used to execute the work.
- (b) Equipment. The Contractor shall submit specifications on directional drilling equipment to be used to ensure that the equipment will be adequate to complete the work.
- (c) Materials. Specifications on material to be used, including pipe and method(s) for joining pipe, shall be submitted to the Engineer.
- (d) Qualifications. The Contractor shall submit information to verify that the HDD installer meets the required qualifications specified in QUALITY ASSURANCE of this Section. Include contact information of the responsible party for each installation listed.
- (e) Detailed Bore Plan. Following completion of the required field exploratory work and prior to HDD installation, the Contractor shall submit for approval a detailed bore plan. At a minimum, the bore plan shall include entry and exit points, entry and exit angles, any horizontal bend radii, and a profile showing points of tangent and curvature, vertical radii, and the depth of the bore along the alignment.
- (f) All submittals shall be in accordance with Section 105.

55. EQUIPMENT REQUIREMENTS.

- (a) Work Included. The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pull-back the pipe (with a safety factor of at least 2.0), a drilling fluid mixing and delivery system of sufficient capacity to successfully complete the work, a guidance system to accurately guide boring operations, and trained and competent personnel to operate the system. Equipment shall include a vacuum trailer to withdraw excess drilling fluid and a drilling fluid cleaning system truck for mixing and recycling bentonite when deemed necessary by the engineer. All equipment shall be in good, safe, operating condition with sufficient supplies, materials, and spare parts on hand to maintain the system in good working order for the duration of the work.
- (b) Drilling System.
- (1) Drilling Rig. The directional drilling machine shall consist of a hydraulically powered system to rotate, push, and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing, and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. The hydraulic system shall be free of leaks. The rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations, and shall be grounded during drilling and pull-back operations.
- (2) Drill Head. The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.
- (3) Mud Motors. Mud motors (where required) shall be of adequate power to turn the required drilling tools.
- (4) Drill Pipe. Drill pipe shall be constructed of high quality 4130 seamless tubing, Grade D or better, with threaded box and pins. Tool joints should be hardened to 32-36 RC.
- (c) Guidance System. The guidance system shall be of a proven type and shall be set up and operated by personnel trained and experienced with the system. If using a magnetic system, the operator shall be aware of any magnetic anomalies and shall consider such influences in the operation of the guidance system. The guidance system shall be capable of knowing, at all times during the drilling operations, the exact location (vertical, horizontal, and degree of inclination) of the drill head.

(d) Drilling Fluid (Mud) System.

- (1) Mixing System. A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water, and appropriate additives. The mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The drilling fluid reservoir tank shall be of sufficient size for the work. The mixing system shall continually agitate the drilling fluid during drilling operations.
- (2) Drilling Fluid. Drilling fluid shall be composed of clean water and an appropriate additive. Water shall be from a clean source with a pH of 8.5-10. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No hazardous additives may be used.

Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of the bore wall. All materials, including any additives used to make up the drilling fluid, shall be approved by the Engineer prior to use.

(3) Handling and Disposal of Drilling Mud and Cuttings.

- a. Dispose of drilling fluids and drill cuttings in approved offsite location in accordance with local, state and Federal laws and regulations.
- b. Do not use additives that would prevent nonhazardous disposal of drilling mud.
- c. Make adequate provisions for handling and containing muddy water, drilling mud, and cuttings during drilling operations. Do not discharge these contaminants into waterways.
- d. Construct mud pits at entry and exit points in manner that completely contains mud and prevents its escape.
- e. When onsite provisions for storing muddy water, drilling mud, or cuttings onsite are exceeded, haul contaminants away to suitable legal disposal Site.
- f. Conduct directional drilling operation in such manner that drilling mud is not forced into areas where it might be objectionable.

- (4) Delivery System. The mud pumping system shall have sufficient capacity and be capable of delivering the drilling fluid at a constant pressure to meet the needs of the work. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. A berm, minimum of 12" high, shall be constructed and shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits, drilling fluid recycling system, and environment. Pumps and/or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage facilities.
- (e) Other Equipment.
- (1) Pipe Rollers. Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe while being hydro-tested and during pull-back operations. Sufficient number of rollers shall be used to prevent excess sagging of pipe. Pipes shall not be dragged on the ground surface.
- (2) Pipe Rammers. Hydraulic or pneumatic pipe rammers may only be used if necessary and with the authorization of Engineer.
- (3) Restrictions. Other devices or utility placement systems for providing horizontal thrust other than those previously defined shall not be used unless approved by the Engineer prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system will be evaluated prior to approval or rejection on its potential ability to complete the utility placement satisfactorily without undue stoppage and to maintain line and grade within the tolerances prescribed by the particular conditions of the project.

56. CONSTRUCTION REQUIREMENTS.

- (a) General. The Engineer must be notified 72 hours in advance of starting work. The directional bore shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made. The Engineer approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract.
- (b) Personnel. All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety.
- (c) Drilling Procedure.
- (1) Site Preparation. Prior to any alterations to the work site, the Contractor shall photograph or video the entire work area, including entry and exit points, one copy of which shall be provided to the Engineer and one copy to remain with the Contractor for a period of 1 year following the completion of the project.

Work site as indicated on the Plans, within right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. The Contractor shall confine all activities to designated work areas.

Prior to anchoring the drilling rig to the ground, the Contractor shall confirm locations of all underground utilities in the area of the drilling rig.

- (2) Drill Path Survey. The entire drill path shall be accurately surveyed, with entry and exit stakes placed in the appropriate locations within the areas indicated on the Plans. If the Contractor is using a magnetic guidance system, the drill path will be surveyed for any surface geo-magnetic variations or anomalies.
- (3) Surface Movement Limits and Monitoring. The Contractor will be required to obtain a professional surveyor licensed in the State of Vermont to implement and maintain a survey program for monitoring road surface settlement.

The contractor's surveyor and State surveyor will work together to produce a preconstruction baseline of all points prior to the commencement of any excavation or tunneling work. The monitoring of survey spot grades shall be done by differential leveling techniques, level and grade rod to set nails flush in the pavement and median for the original baseline elevation control points. Alternatively, monitoring of the grades can be done by automated survey techniques that meet the minimum accuracy described herein. The Contractor shall furnish, install, maintain, protect from damage the monitoring points and instrumentation.

The US Route 2 road surface must be maintained by the Contractor during construction and restored by the Contractor after construction. The Contractor is expected to minimize settlement to a maximum of 1-inch during all aspects of the construction. The Contractor shall monitor the roadway on a weekly basis for 1 month after the completion of trenchless installation or until movement is no longer detected, to determine the maximum settlement. If settlement of US Route 2 exceeds 1.0" during construction, the Contractor shall mill, patch or pave the road at the direction of the Engineer to maintain safe traffic flow. The maintenance work shall be solely at the Contractor's expense.

- (4) Environmental Protection. The Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway, or other area designated for such protection by the Contract Documents or state, federal, and local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains, and other measures. The Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200 feet of any water body or wetland. Inspect existing storm drain inlets and outlets prior to directional drilling.

- (5) Protection of Utilities. Protect existing within 20 feet of HDD alignment and construction zone. Maintain at least 18 inches of clearance from existing utilities.
- (6) Safety. The Contractor shall adhere to all applicable state, federal, and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to the Engineer.
- (7) Pilot Hole. The pilot hole shall be drilled on the bore path with no deviations greater than 5% of depth over a length of 100 feet; the Contractor will notify the Engineer and the Engineer may require the Contractor to pull-back and re-drill from the location along the bore path before the deviation.

In the event that a drilling fluid fracture, inadvertent returns, or returns loss occurs during pilot hole drilling operations, the Contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a Marsh funnel, and then wait another 30 minutes. If mud fracture or returns loss continues, the Contractor will cease operations and notify the Engineer. The Engineer and the Contractor will discuss additional options and work will then proceed accordingly.

- (8) Reaming. Upon successful completion of the pilot hole, the Contractor will ream the bore hole to a minimum of 25% greater than the outside diameter of the pipe using the appropriate tools. The Contractor will not attempt to ream at one time more than the drilling equipment and mud system are designed to safely handle.
- (9) Pull-Back. After successfully reaming the bore hole to the required diameter, the Contractor will pull the pipe through the bore hole. In front of the pipe will be a swivel. Once pull-back operations have commenced, operations must continue without interruption until the pipe is completely pulled into the bore hole. During pull-back operations, the Contractor will not apply more than the maximum safe pipe pull pressure at any time.

In the event that the pipe becomes stuck, the Contractor will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If the pipe remains stuck, the Contractor will notify the Engineer. The Engineer and the Contractor will discuss options and then work will proceed accordingly.

- (10) Inlet Grouting. Upon completion of installation, the inlet of the casing shall be grouted with a bentonite and cement grout as directed by the Engineer.
- (11) After installation, the ends of the sleeve or conduit shall be sealed against intrusion by water and dirt. The ends shall be marked so as to be easily located in future excavations prior to backfilling. Records of the locations shall be provided to the Engineer.

- (11) Conduit Sweeps. Transitions from buried conduit, to above ground conduit shall be in accordance with section 678 and the details shown on the plans, and shall be incidental to the horizontal directions drill item.
- (12) Testing. After the conduit lines are completed, the Contractor shall, in the presence of the Engineer, check the installation by pushing a one diameter mandrel having a diameter of 10 mm (1.2 inch) less than the diameter of the conduit through the length of conduit. Any obstructions, including stone and dirt, shall be removed. Damaged conduit shall be removed and replaced at the Contractor's expense.
- (13) Pull String. Once conduit has been installed and tested, the Contractor shall install a continuous low friction, pull string with a typical minimum pull strength of 5,000 lbs. The pull string shall be marked with sequential footage markings. The Contractor shall leave a minimum of 25' of spare pull tape at each end of the duct.
57. SITE RESTORATION. Following drilling operations, the Contractor will demobilize equipment and restore the work-site to original condition. All excavations will be backfilled and compacted to 95% of original density. Landscaping will be restored to original to the satisfaction of the Engineer.
58. RECORD KEEPING, AS-BUILTS. The Contractor shall maintain a daily project log of drill operations and a guidance system log with a copy given to the Engineer at completion of the work. Records shall include: Rate of penetration, torque, thrust/pull force, pump rates, calculated depth, flow, length of drill pipe, conversion factors for pressure records. As-built drawings shall be certified as to accuracy by the Contractor.
59. METHOD OF MEASUREMENT. The quantity of Special Provision (Horizontal Directional Drilling) of the type and size specified to be measured for payment will be the horizontal distance of conduit as measured by the difference on stations in the complete and accepted work. In the instance where an obstruction is encountered and verified by the engineer; the quantity will be the horizontal distance of conduit as measured by the difference on stations plus the additional distance required to route the conduit around the obstruction in the complete and accepted work.
60. BASIS OF PAYMENT. The accepted quantity of Special Provision (Horizontal Directional Drilling) of the type and size specified will be paid for at the Contract unit price per meter (linear foot). Payment shall be full compensation for furnishing all labor, tools, equipment, and materials; for excavation, sheeting and bracing, dewatering, and backfilling; for furnishing and installing the conduit utilizing horizontal directional boring method of installation; for furnishing and installing; for restoration of physical features; and for all work required for a complete installation of the conduit, excavation, excavation support, dewatering, drilling, removal of tailings, backfilling, compaction, and flushing; for preparing and furnishing required submittals, reports, and as-built drawings; 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>
900.640 Special Provision (Horizontal Directional Drilling (4") (HDPE)	Linear Foot
900.640 Special Provision (Horizontal Directional Drilling (10") (HDPE)	Linear Foot

TRENCHLESS PIPE

61. DESCRIPTION. This work shall consist of furnishing and installing pipe utilizing trenchless construction at the locations indicated in the Plans and as directed by the Engineer.

62. GENERAL.

Work required for annular backfill, as required, shall meet the requirements of ANNULAR BACKFILL of Section 900.

Work required for contact grouting, as required, shall meet the requirements of CONTACT GROUTING of Section 900.

63. DEFINITIONS. Wherever in these provisions or in other Contract Documents the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

Annular Backfill - Cementitious material placed in the annulus between a steel casing pipe and the carrier pipe used for a two-pass culvert lining system.

Auger Boring - Construction of a pipeline by hydraulically jacking consecutive sections of steel pipe into an augered hole in the ground. A continuous flight auger removes the soil concurrently with the excavation.

Auger Boring Site - Location from which the jacking frame is located and the auger penetrates into the side of the embankment.

Carrier Pipe - The product pipe that is installed within a steel casing pipe for a two-pass culvert lining system.

Casing - A pipe that is jacked into place and used to support a bore in which a carrier pipe is later inserted. See also Jacking Pipe.

Contact Grout - Cementitious grout placed in the annulus between a pipe and the ground in one-pass or two-pass culvert lining systems.

Jacking Frame - A structural component that houses the hydraulic cylinders used to propel the jacking shield and jacking pipe or product pipe. The jacking frame serves to transfer the thrust load to the jacking pipe and the reaction load to the thrust slab or other thrust reaction scheme.

Jacking Pipe - A pipe that is used to advance the jacking shield and which provides ground support within a bore. The jacking pipe can consist of the product pipe for a one-pass culvert lining system or a steel casing pipe for a two-pass culvert lining system.

Jacking Site - Location from which trenchless technology equipment is launched and driven into the side of the embankment.

Jacking Shield - A fabricated steel cylinder from within which the excavation is carried out either by hand or machine. Incorporated within the shield shall be an articulation joint to allow for precise control of line and grade.

Lubrication - A fluid, normally bentonite and/or polymers, used to reduce jacking loads on the jacking pipe.

Maximum Anticipated Jacking Load - The maximum anticipated force required of the hydraulic jacks calculated by the Contractor.

One-Pass Culvert Lining System - A culvert liner consisting of a single pipe string installed using a trenchless method. The annulus between the pipe and the ground is then grouted.

Overcut - The radial distance between the excavated hole and the outside radius of the jacking pipe.

Pipe Jacking - Construction of a pipeline by hydraulically jacking consecutive sections of jacking pipe through the ground behind a shield or tunnel boring machine.

Pipe Ramming - Method of installing steel pipe using a pneumatic or hydraulic hammer to drive the steel pipe through the ground.

Pipe Ramming Site - Location from which pipe ramming is performed and the pipe penetrates into the side of the embankment.

Product Pipe - A permanently installed drainage pipe.

Spacers - Fabricated items for positioning carrier pipe inside a steel casing pipe. Commonly contains wheels or skids to aid in the carrier pipe placement and positioning.

Spoil/Muck - Earth, rock, and other materials removed during installation.

Thrust Reaction Scheme - A Contractor designed structure used to transfer the jacking loads to the ground at the pipe jacking location.

Thrust Ring - A fabricated ring that is mounted on the face of the jacking frame. It is intended to transfer the jacking load from the jacking frame to the thrust bearing area of the pipe section being jacked.

Two-Pass Culvert Lining System - A culvert liner consisting of a carrier pipe installed within a steel casing. The annulus between the steel casing and the ground is then grouted, as is the annular space between the steel casing and carrier pipe.

Tunnel Boring Machine (TBM) - A machine with a shield and motorized rotating circular cutterhead used to excavate the ground. For the purposes of this project, personnel access to the face for removing obstructions is required.

Water Jetting - Cleansing mechanism of the cutterhead where high-pressure water is sprayed from nozzles in the cutterhead to help remove cohesive soils.

64. REFERENCE STANDARDS.

ASCE 27-00 Standard Practice for Direct Design of Precast Concrete Pipe for Jacking in Trenchless Construction
ASCE 36-01 Standard Construction Guidelines for Microtunneling
ASTM A139 Standard Specifications for Electric-Fusion (Arc)-Welded Steel Pipe
ASTM C31 Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C40 Test Method for Organic Impurities in Fine Aggregates for Concrete
ASTM C76 Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm or 2 inch Cube Specimens)
ASTM C117 Standard Test Method for Materials Finer than 75 Micrometer (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C136 Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C150 Standard Specification for Portland Cement
ASTM C311 Test Method for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland Cement Concrete
ASTM C361 Standard Specification for Concrete Pipe Using O-Ring Gasket Designs
ASTM C443 Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
ASTM C497 Specification for Testing Concrete Pipe, manhole Sections, and Tile
ASTM C618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM D2412 Standard Test Method Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
ASTM D3262 Standard Specification for Fiberglass (Glass-Reinforced Thermosetting Resin) Sewer Pipe
ASTM D4161 Standard Specification for Fiberglass (Glass-Reinforced Thermosetting Resin) Pipe Joints Using Flexible Elastomeric Seals
ASTM F477 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
AWS D1.1 Structural Welding Code
AWWA C602 Cement-Mortar Lining of Water Pipelines in Place - 100 mm (4 inch) and Larger Steel Water Pipe
Code of Federal Regulations 29 CFR 1926

65. MATERIALS.

- (a) Pipe. Pipe for trenchless installation is defined as Centrifugally Cast Fiberglass Reinforced Polymer Mortar Pipe (CCFRPM), Reinforced Concrete Pipe (RCP), Corrugated Polyethylene Pipe (CPEP), or Steel Pipe.

Requests for substitutions for the above shall be submitted to the Agency's Office of Contract Administration a minimum of 10 days in advance of the bid opening date. Substitutions for the above after award shall be approved by the Resident Engineer.

(1) Requirements for Product Pipe.

- a. CCFRPM. Acceptable manufactures include Hobas Pipe USA, Inc. Other manufacturers of equivalent products may be substituted.

Polyester resin systems with a proven history of performance in this particular application shall be used by the manufacturer. The historical data shall have been acquired from a composite material of similar construction and composition as the proposed product.

Reinforcing glass fibers used to manufacture the components shall be of the highest quality commercial grade E-glass filaments with binder and sizing compatible with impregnating resins.

Silica sand shall be 98% silica with a maximum moisture content of 0.2%.

Additive resins such as curing agents, pigments, dyes, fillers, thixotropic agents, etc., when used, shall not detrimentally affect the performance of the product.

Elastomeric gaskets shall meet ASTM F477 and be supplied by qualified gasket manufacturers and be suitable for the service intended.

1. Pipe. Manufacture pipe by the centrifugal casting process to result in a dense, nonporous, corrosion-resistant, consistent composite structure. The interior surface of the pipes exposed to sewer flow shall be manufactured using a resin with a 50% elongation (minimum) when tested in accordance with ASTM D638. The interior surface shall provide crack resistance and abrasion resistance. The exterior surface of the pipes shall be comprised of a sand and resin layer which provides UV protection to the exterior.

Jacking pipe manufacturing tolerances shall be in accordance with ASCE 36-00, including but not limited to:

- | | | |
|------|--------------------|--|
| i. | Circumference | < 0.5% |
| ii. | Exterior roundness | < 0.5% |
| iii. | End squareness | +/- 3 mm (1/8 inch) |
| iv. | Straightness | < 3 mm (1/8 inch) |
| v. | Pipe length | +/- 6 mm (1/4 inch)
per 3 m (10 feet) of
pipe length |

Test pipe in accordance with the applicable provisions of ASTM D3262. Pipe stiffness shall be tested in accordance with ASTM D2412.

2. Joints. Unless otherwise specified, the pipe shall be field connected with flush bell and spigot joints that utilize elastomeric sealing gaskets as the sole means to maintain joint watertightness. The joints must meet the performance requirements of ASTM D4161. The joint shall have approximately the same O.D. as the pipe, so when the pipes are assembled, the joints are essentially flush with the pipe outside surface.
3. Fittings. Flanges, elbows, reducers, tees, wyes, laterals, and other fittings shall be capable of withstanding all operating conditions when installed. They may be contact molded or manufactured from mitered sections of pipe joined by glass-fiber-reinforced overlays. Properly protected standard ductile iron, fusion-bonded epoxy-coated steel, and stainless steel fittings may also be used.

Install all CCFRPM in accordance with manufacturer's recommendations and approved Working Drawings. Pipe handling shall be with textile slings, other suitable material, or forklift.

Joints shall be made in the field as follows:

1. Cleaning ends of the pipe and joint components.
 2. Apply joint lubricant to the bell interior surface and the elastomeric seals. Use only lubricants approved by the pipe manufacturer.
 3. Use suitable equipment and end protection to push the pipes together.
 4. Do not exceed forces recommended by the manufacturer for joining or pushing pipe.
- b. RCP. Do not use admixtures or blends in concrete without prior approval.

A corrosion-inhibiting concrete admixture meeting the requirements of AASHTO M 194M/M 194 and ASTM G109 is required, with dosage in accordance with the manufacturer's recommendation.

Elliptical steel reinforcement is not allowed.

Pipe shall be cured by steam.

Stainless steel joint bands are required.

Jacking pipe manufacturing tolerances shall be in accordance with ASCE 36-00, including but not limited to:

1. Circumference < 0.5%
2. Exterior roundness < 0.5%

3. End squareness +/- 3 mm (1/8 inch)
4. Straightness < 3 mm (1/8 inch)
5. Pipe length +/- 6 mm (1/4 inch) per 3 m (10 feet) of pipe length

Test pipe in accordance with the applicable provisions of ASTM C497.

Conform the basis of acceptance for reinforced concrete pipe with Section 5.1.1 of ASTM C76 and these specifications.

Prior to manufacturing production run pipe, conduct all tests required by Sections 9 and 10 of ASTM C443.

Test one to three finished pipe sections of each diameter and class by the three-edge-bearing method in accordance with Section 11.3 of ASTM C76. The Engineer will select the pipe sections to be tested.

- c. CPEP. Pipe shall meet the requirements of Section 601.
- d. Steel. Pipe used for jacking and ramming shall have manufacturing tolerances in accordance with ASCE 36-00, including but not limited to:
 1. Circumference < 0.5%
 2. Exterior roundness < 0.5%
 3. End squareness +/- 3 mm (1/8 inch)
 4. Straightness < 3 mm (1/8 inch)
 5. Pipe length +/- 6 mm (1/4 inch) per 3 m (10 feet) of pipe length

Test pipe in accordance with applicable provisions of ASTM A139.

Conform the basis of acceptance steel pipe with ASTM A139 and these specifications.

(b) Trenchless Construction.

(1) Auger Boring.

- a. One-Pass Lining System. Pipe shall be steel pipe with field-applied cement mortar lining and shall be contact grouted.
- b. Two-Pass Lining System. The casing shall be steel pipe. The product pipe shall be either CCFRPM or RCP. The annulus between the casing and product pipes shall be filled with annular backfill.

(2) Pipe Jacking.

- a. One-Pass Lining System. Jacking pipe shall be either CCFRPM, RCP, or steel pipe with field-applied cement mortar lining and shall be contact grouted.
- b. Two-Pass Lining System. Jacking pipe (casing) shall be steel pipe. The carrier (product) pipe shall be either CCFRPM or RCP. The annulus between the casing and product pipes shall be filled with annular backfill.

(3) Pipe Ramming.

- a. One-Pass Lining System. Pipe shall be steel pipe with field-applied cement mortar lining and shall be contact grouted.
- b. Two-Pass Lining System. The casing pipe shall be steel pipe. The product pipe shall be either CCFRPM or RCP. The annulus between the casing and product pipes shall be filled with annular backfill.

(4) Restrictions. Steel product pipe with field-applied cement mortar lining will not be allowed for Bridge No. 69-1. Steel pipe may only be used for Bridge No. 69-1 as casing pipe in a two-pass option.

- (c) Certification. A Type D certification shall be furnished in accordance with Subsection 700.02 for all specified materials.

66. DESIGN CRITERIA.

- (a) Pipe. Pipe shall be designed in accordance with the following requirements:

(1) CCFRPM.

- a. Jacking Pipe for One-Pass Lining System. CCFRPM jacking pipe shall be per ASTM D3262, designed by the Contractor and structurally capable of resisting the maximum anticipated earth, grouting, and jacking loads determined by the Contractor. The methods of analyses shall be acceptable to the Engineer.

Size the jacking pipe to meet the project requirements shown on the Plans and specified in these provisions.

Jacking pipe joints shall be per ASTM D4161, watertight, flush with outer wall of the pipe, and capable of withstanding the maximum anticipated jacking loads.

Jacking pipe shall be fitted with cast iron 2 inch threaded grout holes and plugs. Three grout ports spaced at 120 degrees on center shall be installed at 4 to 6 foot intervals along the axis of the pipe.

- b. Carrier Pipe for Two-Pass Lining System. CCFRPM Carrier Pipe shall be per ASTM 3262, designed by the Contractor and structurally capable of resisting the maximum earth loads, installation loads, and annular backfilling pressures.

Size the carrier pipe in accordance with required minimum annulus between the casing.

Carrier pipe joints shall be per ASTM D4161.

Carrier shall be fitted with cast iron 2 inch threaded grout holes and plugs. Three grout ports spaced at 120 degrees on center shall be installed at 4 to 6 foot intervals along the axis of the pipe.

(2) RCP.

- a. Jacking Pipe for One-Pass Lining System. RCP jacking pipe shall be per ASTM C76, designed by the Contractor and structurally capable of resisting the maximum anticipated earth and jacking loads determined by the Contractor. The methods of analyses shall be acceptable to the Engineer.

Size the jacking pipe to meet the project requirements shown on the Plans. Use Wall C per ASTM C361.

Jacking pipe joints shall be per ASTM C443, watertight, flush with outer wall of the pipe, and capable of withstanding the maximum anticipated jacking loads. Packers shall be provided at each joint.

Jacking pipe shall be fitted with cast iron 2 inch threaded grout holes and plugs. Three grout ports spaced at 120 degrees on center shall be installed at 4 to 6 foot intervals along the axis of the pipe.

- b. Carrier Pipe for Two-Pass Lining System. RCP Carrier Pipe shall be per ASTM C76, designed by the Contractor and structurally capable of resisting the maximum earth loads, installation loads, and grouting pressures.

Size the carrier pipe in accordance with required minimum annulus with the casing.

Carrier pipe joints shall be per ASTM C443.

Carrier shall be fitted with cast iron 2 inch threaded grout holes and plugs. Three grout ports spaced at 120 degrees on center shall be installed at 4 to 6 foot intervals along the axis of the pipe.

(3) Steel.

- a. Steel Pipe for One-Pass Lining System. Steel pipe shall be per ASTM A139, Grade B or better, with a minimum yield strength of 35,000 psi, designed by the Contractor and structurally capable of resisting the maximum anticipated earth loads, jacking loads, and grouting pressures determined by the Contractor. The methods of analyses shall be acceptable to the Engineer.

Jacking pipe joints shall be watertight and capable of withstanding the maximum anticipated jacking loads. Joints shall be square cut with beveled ends for welding. Steel pipe joints shall be full penetration butt welded or Permalok™ T5.

Jacking pipe shall be fitted with cast iron 2 inch threaded grout holes and plugs. Three grout ports spaced at 120 degrees on center shall be installed at 4 to 6 foot intervals along the axis of the pipe.

- b. Steel Pipe for Two-Pass Culvert Lining System. Same design criteria as for one-pass steel pipe culvert lining system.

- (b) Trenchless Construction. The Contractor is responsible for the selection and design of all auger boring, pipe jacking, and pipe ramming equipment, and all ancillary equipment, and its use (means and methods). The selected equipment and means and methods shall be compatible with the subsurface conditions described in the Subsurface Probes and Boring Logs.

The system shall be capable of advancing each pipe section forward with the shield or TBM, as applicable, in such a way as to provide complete and adequate ground support at all times.

Design a thrust reaction scheme such as a thrust slab for transferring the jacking force to the ground underlying the auger boring sites or jacking locations. Verify with a test boring, test pit, or test pile prior to construction of the thrust reaction scheme the suitability of the soils at the jacking locations to fully resist the jacking forces.

Bracing and thrust reaction shall be so designed and jacks shall be of sufficient rating so that the jacking can progress without stoppage, except for adding lengths of pipe.

Develop a uniform distribution of the jacking or ramming force around the circumference of the pipe. Maximum forces applied to the pipe shall not exceed 80 percent of the design compressive strength of the pipe or the manufacturer's recommended allowable stresses, whichever is lower.

Where pipe ramming is used, steel pipe shall be open and the lead section shall be fitted with a prefabricated cutting shoe that is compatible with advancing the installed pilot bore case.

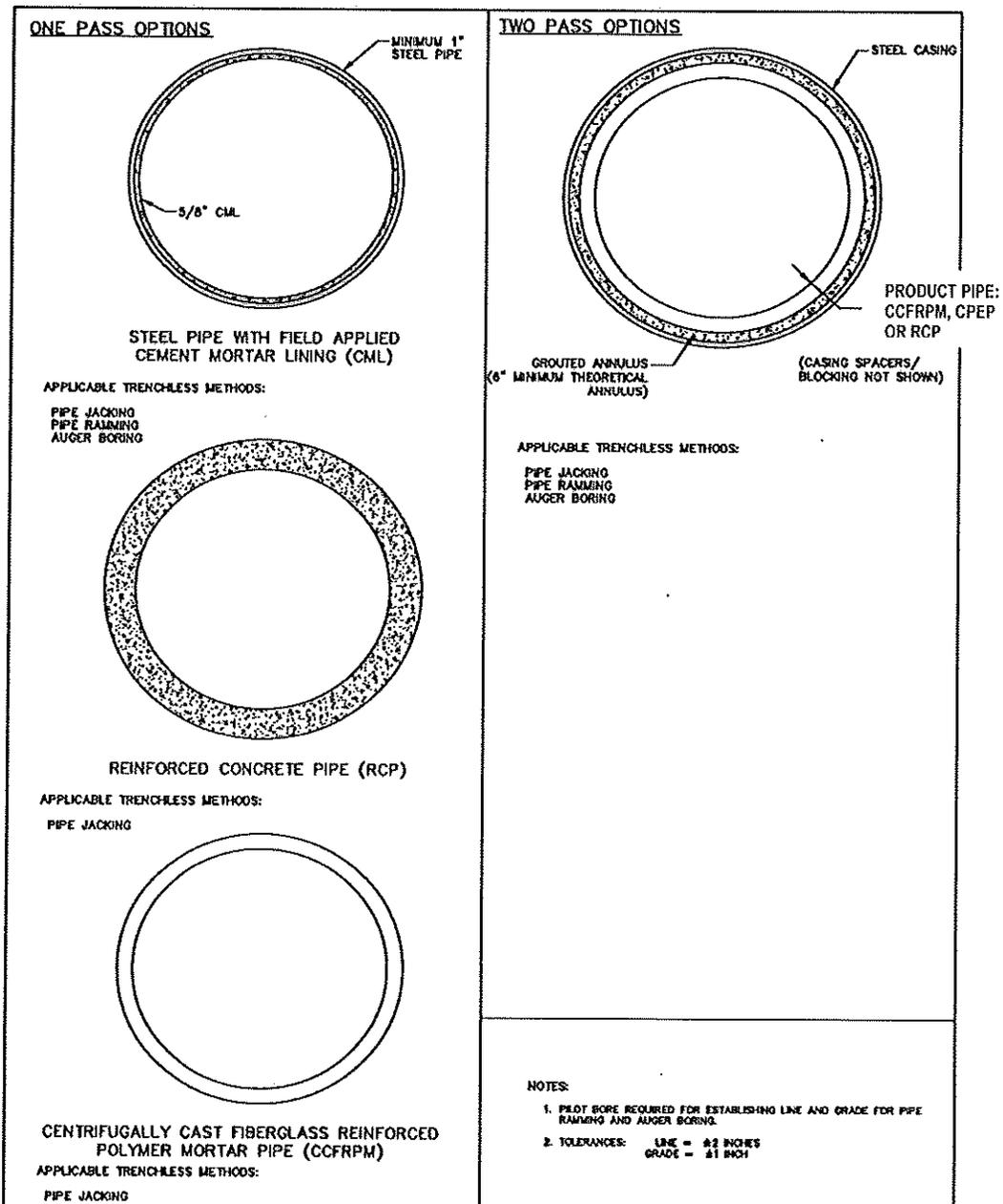
Provide for efficient removal of spoils.

Select and design a culvert lining system based on the options provided herein. See Figure 3.

The line and grade tolerance for the completed culvert shall be ± 2 inches and ± 1 inch, respectively. Where auger boring or pipe ramming are used, a pilot bore shall be used to assist achieving the line and grade tolerance. The Contractor is responsible for the selection and design of the pilot bore method and equipment and its use (means and methods). Pilot bore equipment and installation methods shall be compatible with the anticipated ground conditions as described in the GBR. Where pipe jacking is used, provide a means for controlling line and grade and making steering corrections using an optical or laser guidance system and shield jacks.

Develop means and methods for maintaining stability of the face and control rate of soil excavation at all times.

FIGURE 3 - CULVERT MATERIALS AND TRENCHLESS INSTALLATION OPTIONS



67. QUALIFICATIONS.

- (a) Trenchless Construction. The auger boring, pipe jacking, or pipe ramming contractor must have successfully completed five auger boring, pipe jacking, or pipe ramming projects, respectively, or installed over 610 m (2000 feet) of 36 to 72 inch steel pipe in the last four years using auger boring, pipe jacking, or pipe ramming equipment and materials, respectively, of the type that meet the minimum requirements of these specifications.

At least one of the projects must have been completed within one year prior to the date of work under this project. In addition, at least one project must have been in an area with geological and subsurface conditions similar to those described for this project.

The project supervisor(s) and equipment operator(s) shall have a minimum of five years experience and two years of experience, respectively, using similar type of equipment required for this project. Submit the names, resume, and experience summary of at least three project supervisors and three equipment operators who will be available for this project. Two of the proposed project supervisors and two of the proposed equipment operators must be assigned to this project.

The auger boring, pipe jacking, or pipe ramming engineer shall be a Professional Engineer registered in the State of Vermont. Experience shall include design calculations on three auger boring, pipe jacking, or pipe ramming projects, respectively, within the last five years. The engineer shall have experience with the culvert lining options provided herein.

- (b) Welding. Welding shall be performed by qualified welding operators in accordance with the requirements of ANSI/AWS D1.1.

68. SUBMITTALS.

- (a) Pipe.

- (1) CCFRPM.

- a. Fabrication Drawings. Submit complete Fabrication Drawings for all CCFRPM, fittings, and specials showing dimensions, strength, and material specifications and standards, joint details, and reinforcement position for review prior to manufacture.
- b. Material Compliance. Submit notarized affidavit of material compliance with ASTM D3262.
- c. Product Compliance. Submit notarized affidavit of pipe compliance with ASTM D3262 and these specifications.
- d. Joint Compliance. Submit notarized affidavit of joint compliance with ASTM D4161 and these specifications.
- e. Quality Control. Submit certified results of shop tests for approval.

(2) RCP.

- a. Fabrication Drawings. Submit complete Fabrication Drawings for all diameters and classes of reinforced pipe, fittings, and specials showing dimensions, strength, and material specifications and standards, joint details, and reinforcement position for review prior to manufacture.
- b. Material Compliance. Submit notarized affidavit of material compliance with ASTM C76.
- c. Product Compliance. Submit notarized affidavit of pipe compliance with ASTM C76 and these specifications.
- d. Joint Compliance. Submit notarized affidavit of joint compliance with ASTM C443 and these specifications.
- e. Quality Control. Submit certified results of shop tests for approval.

(3) CPEP. Shall meet requirements of Section 601.

(4) Steel.

- a. Fabrication Drawings. Submit complete Fabrication Drawings for all diameters and classes of steel pipe, fittings, and specials showing dimensions, strength, and material specifications and standards, and joint details for review prior to manufacture.
- b. Material Compliance. Submit notarized affidavit of material compliance with ASTM A139.
- c. Product Compliance. Submit notarized affidavit of pipe compliance with ASTM A139 and these specifications.
- d. Joint Compliance. Submit notarized affidavit of joint compliance with these specifications.
- e. Quality Control. Submit certified results of shop tests for approval. Include test results of the weld for steel pipe.

(b) Trenchless Construction. Not less than three (3) weeks prior to beginning any auger boring, pipe jacking, or pipe ramming, and pilot bore (if used), the Contractor shall submit the following to the Engineer for review and, where specified, approval:

- (1) A complete description of projects for which actual work was performed by the auger boring, pipe jacking, or pipe ramming contractor. This list is to include project locations, dates of projects, owner, owner's construction representative, owner's construction representative's current telephone number, type of equipment utilized, type and size of steel pipe used in auger boring operations, contract or subcontract amount, description of all litigation and/or unresolved claims in connection with these projects, and any other information relevant to the issue of the successful completion of the projects. Include projects where the trenchless contractor was prime contractor or a subcontractor. If the trenchless contractor has not completed any such project(s) other than those which are in progress upon submittal of the information required herein, the trenchless contractor must demonstrate to the satisfaction of the Engineer that the cause of the lack of completion is unrelated to criteria determining qualification for this project.
- (2) Resumes of proposed project supervisor(s) and other specified personnel that demonstrate the minimum qualifications and experience described above.
- (3) Welding procedures and welder certifications as applicable. For each welding process and for each welder, the appropriate Welding Procedure Specifications (WPS), Procedure Qualification Records (PQR) for non-qualified procedures, and Welding Operator Performance Qualifications (WPQ) are required.
- (4) A narrative describing the proposed execution of the work specified herein. Clearly demonstrate that the methods and materials used to execute the work have a proven track record of at least five years.
- (5) For approval in accordance with Section 105, complete Working Drawings showing details of the proposed method of construction and the sequence of operations to be performed during construction. Supporting calculations shall be prepared, stamped, and signed by a qualified Licensed Professional Engineer registered in the State of Vermont.

Working Drawings shall include, but not be limited to, the following:

- a. A detailed description of the auger boring, pipe jacking, or pipe ramming, and pilot bore (if used) procedure(s), including construction techniques to install pipe in conformance with the Contract Documents.
- b. Manufacturer's literature describing in detail the auger boring, pipe jacking, or pipe ramming, and pilot bore (if used), systems to be used.

- c. Calculations and drawings indicating limits and slopes of temporary embankment excavations and any ground support to be utilized.
 - d. Certification by the auger boring, pipe jacking, or pipe ramming equipment manufacturer of the thrust, condition, and operational characteristics of all equipment to be used for installing pipe.
 - e. Provisions for supporting the excavation face and to prevent caving beyond the outside circumference of the pipe.
 - f. Layout of auger boring, pipe jacking, or pipe ramming and ancillary equipment at each auger boring, jacking, or ramming location.
 - g. Configuration of the jacking shield or TBM cutterhead tools and muck openings, or cutterhead shoe and overcut, as applicable for the proposed means and methods.
 - h. Pipe lubrication system details.
 - i. Grade and alignment control system details.
 - j. Detail of mucking and spoil removal system(s), and soil disposal methods.
 - k. Pipe jointing details, including field welding procedure where steel pipe is used.
 - l. Calculations demonstrating that the pipe selected has been designed to support the maximum anticipated earth loads and superimposed live loads, both static and dynamic, which may be imposed on the pipe. Determine the additional stresses imposed on the pipe during jacking or ramming operations and upgrade the quality and strength of the pipe and pipe joints to the extent necessary to withstand the additional stresses imposed by the jacking or ramming operation.
 - m. Complete information on auger boring, pipe jacking, or pipe ramming contractor's safety plan for personnel conducting the pipe jacking operations and appurtenance installation. The plan shall include provisions for lighting and electrical safeguards.
 - n. Methods for collecting, treating, and discharging groundwater and construction water associated with auger boring, pipe jacking, or pipe ramming work. Provide a layout showing water collection points, designated water flow paths, pumps, sumps, water storage and settlement containers, treatment facilities, and discharge points.
- (6) Certification from the pipe manufacturer meeting ASTM Standards of the pipe material to be used.

- (7) Contingency plans for line and grade out of tolerance, jacking or ramming forces exceeding the maximum anticipated jacking or ramming load, excessive settlement or other ground movement, significant increases of groundwater inflows or soil emanating from a pilot bore, auger bore, or pipe rammed hole, and pipe advance halted due to subsurface obstructions.
- (8) Pipe repair procedures shall be submitted for review prior to performing any repairs.

The Contractor shall submit daily field reports from the prior day by 10:00 a.m. each work day. At a minimum, daily field reports shall contain:

- (1) The position of the pipe in relation to the design line and grade.
- (2) The date, starting time, and finish time.
- (3) Inclination.
- (4) Advance rates.
- (5) Operating pressure and hammer strokes per minute as applicable.
- (6) Muck quantities removed.

The Contractor shall submit the following additional information:

- (1) As-builts at the end of pipe installation.
- (2) Pipe repair certifications.

69. EQUIPMENT. Equipment for trenchless construction shall meet the following requirements:

- (a) Auger Boring. The equipment shall be capable of providing the Maximum Allowable Jacking Force to push the steel pipe string between the launch and receiving exit locations identified on the Plans. Develop a uniform distribution of jacking forces on the end of the pipe.

The jacks shall be of ample capacity to provide more than the necessary or anticipated jacking capacity.

The jacking system and thrust reaction shall be properly designed and constructed and shall have design capacity equal to the maximum anticipated jacking loads with a factor of safety of two.

The jacking frame, upon which the steel pipe being installed will rest, shall be of railroad rails or other suitable steel or wooden members set to the correct line and grade to act as guides for true alignment of the pipe.

The jacking apparatus shall be strongly constructed, and set and maintained in proper relative position and alignment, in order to minimize forces which would tend to bend the pipe, cause it to deflect from true alignment, or displace the reaction blocks.

(b) Pipe Jacking.

- (1) Jacking Shield. The jacking shield system selected shall be designed with consideration of the project site constraints shown on the Plans and the anticipated ground conditions described in the GBR. At a minimum, the shield shall be of steel construction designed to support the required soil loading and jacking stresses, be adequately braced, and be provided with the necessary appurtenances for completely bulkheading the face with horizontal or vertical breastboards. The shield shall be capable of being steered by the use of an articulated joint and steering jacks located in the shield.
- (2) TBM and Components. The TBM system selected shall be designed with consideration of the project site constraints shown on the Plans and the anticipated ground conditions described in the GBR.

Only TBMs that meet the requirements of this specification shall be permitted. Those TBMs which operate with a pressurized face which is not accessible to personnel such as earth pressure balance machines (EPBM) and microtunnel boring machines (MTBM) are not allowed.

The TBM shall:

- a. Be steerable.
- b. Incorporate a water tight seal between the TBM and the leading pipe.
- c. Protect the electric and hydraulic motors and operating controls against water damage.
- d. Use bi-directional drive on the cutter head wheel, and/or adjustable fins or other means, to control roll.

The TBM, in conjunction with other means as needed, shall be capable of preventing loss of ground through the machine during shutdowns and controlling of the rate of excavated material removed at the tunnel face.

- (3) Pipe Jacking Equipment. The equipment shall be capable of providing the Maximum Allowable Jacking Force to push the jacking shield or TBM and the pipe string between the launch and receiving locations identified on the Plans. Hydraulic cylinder extension rates shall be synchronized with the excavation rate of the TBM. Develop a uniform distribution of jacking forces on the end of the pipe.

The jacking frame, upon which the jacking pipe being installed will rest, shall be of railroad rails or other suitable steel or wooden members set to the correct line and grade to act as guides for true alignment of the pipe.

The jacks shall be of ample capacity to provide more than the necessary or anticipated jacking capacity.

The jacking system and thrust blocks shall be properly designed and constructed and shall have design capacity equal to the maximum anticipated jacking loads with a factor of safety of two.

The jacking apparatus shall be strongly constructed, and set and maintained in proper relative position and alignment, in order to minimize forces which would tend to bend the pipe, cause it to deflect from true alignment, or displace the reaction blocks.

- (c) Pipe Ramming. The equipment shall be capable of providing the Maximum Allowable Ramming Load to ram the steel pipe between the launch and receiving exit locations identified on the Plans. Develop a uniform distribution of ramming forces on the end of the pipe.

The ramming device shall be of ample capacity to provide more than the necessary or anticipated ramming capacity.

70. EXECUTION. Trenchless construction operations shall be performed in accordance with the following requirements:

- (a) Sites. Investigate the soil conditions at the auger boring or jacking sites shown on the Plans to confirm that the Maximum Anticipated Jacking Load can be fully transferred to the ground with the Contractor-designed thrust reaction scheme. Modify the design of the thrust reaction scheme if needed based on the results of the Contractor's investigation of the subsurface conditions at no additional cost to the State.

Ramming sites shall be constructed at the locations indicated on the Plans.

Construction techniques required to provide access for auger boring, pipe jacking, or pipe ramming shall be such as to ensure the safety of all work activities. Acceptable temporary embankment excavation methods include but are not limited to the use of interlocked steel piling, soil nailing, or open excavation with shotcrete facing to control slope raveling and sloughing.

Steel or jacking pipe lengths selected by the Contractor for installation shall be compatible with the limits of the auger boring or jacking sites shown on the Plans.

The Contractor shall properly support all excavations and limit movement of soil, pavement, utilities, or structures outside of the excavation.

All excavations shall conform to applicable local safety, VOSHA, trenching, and shoring standards.

If at any time the method being used by the Contractor for supporting any material or structure adjacent to any excavation is not safe in the opinion of the Engineer and/or applicable Federal, State, or local inspection authorities, the Contractor shall provide additional bracing and support necessary to achieve the degree of safety required.

The auger boring, jacking, or ramming sites must be constructed to accommodate the installation of pipe and the jacking frame and appurtenant components, or ramming device as required. Install seals in the excavation support walls as required to control ground movement where the pipe enters and exits the ground.

All work for or associated with excavating, shoring, bracing, and pipe jacking or ramming shall be executed so that settlement is minimized. The in-place pipe shall have full bearing against the earth and no voids or pockets left in any portion of the work.

Before beginning construction, structures and other permanent objects shall be adequately protected. The repair of damage to permanent facilities due to negligence or lack of adequate protection on the part of the Contractor shall be performed by the Contractor at no additional cost to the State.

Surface drainage shall be provided as required under the Plans and Specifications. All groundwater inflows emanating from pipe jacking or ramming work shall be collected, treated, and discharged in an approved manner.

- (b) Establishing Line and Grade. The Contractor shall establish the baseline and benchmarks indicated on the Plans. Baselines and benchmarks shall be checked at the beginning of the Contract period and any errors or discrepancies reported to the Engineer.

Use these baselines and benchmarks to furnish and maintain all reference lines and grades for the pipe installation. Use these lines and grades to establish the exact starting location of the jacking pipe, pilot bore (if used), and product pipe.

No pipe ramming or auger boring shall be performed until a pilot bore has been completed for the purpose of establishing the culvert line and grade and accepted by the Engineer.

The Contractor shall submit to the Engineer copies of field notes used to establish all lines and grades; however, the Contractor remains fully responsible for the accuracy of the work and the correction of the work as required.

After installation is complete, the Contractor shall provide the Engineer with access to both pipe ends for visual inspection of the line and grade of the pipe.

- (c) Pilot Bore. Perform a pilot bore to assist in achieving the line and grade shown on the Plans during auger boring or pipe ramming. Provide and install a steel casing within the pilot bore to maintain the stability of the ground. The casing diameter and means and methods of installation shall be determined by the Contractor. The installed pilot bore casing shall be fitted to the leading edge of the steel pipe to be installed by auger boring or ramming at the entry point in the embankment, in a manner that allows for the simultaneous advancement of the pilot bore casing with the steel pipe during auger boring or pipe ramming.

A soil displacement-type pilot bore method is not allowed.

- (d) Auger Boring, Pipe Jacking, and Pipe Ramming. No auger boring, pipe jacking, or pipe ramming work shall begin until the required Working Drawings have been approved in writing by the Engineer. The Contractor is responsible for the performance of the equipment and methods selected for all auger boring, pipe jacking, or pipe ramming procedures. Invert elevations of existing drainage structures must be field verified before the auger boring, pipe jacking, or pipe ramming operations begin.

The jacking frame and thrust ring or hammer frame shall be positioned to develop a uniform distribution of forces around the periphery of the pipe. Special care shall be taken by the Contractor to ensure that the launch seal is properly designed and constructed. Special care should be taken when setting the pipe guardrails to ensure correctness of the alignment.

Where auger boring or pipe ramming are used, each pipe section shall be jacked into the augered bore, or rammed forward as the excavation progresses, in such a way as to provide complete and adequate ground support at all times. Jack extension rates shall be coordinated with the advance rate of the auger cutting face. Advancing the auger cutting face in front of the leading edge of the steel pipe, or excavating ahead of the forward end of the pipe, are prohibited unless approved in writing by the Engineer.

Where pipe jacking is used, each pipe section shall be jacked forward as the excavation progresses in such a way to provide complete and adequate ground support at all times. Excavation ahead of jacking shield or TBM is prohibited, unless approved in writing by the Engineer.

A lubrication system shall be provided that injects bentonite or other approved lubricant on the outside of the shield and pipe to lower the friction developed on the sides of the pipe during jacking or ramming. Spacing of lubricant points shall be at the Contractor's option with approval from the Engineer. The over cut on the pipe, jacking shield, or TBM shall not exceed 25 mm (1 inch) without the approval of the Engineer. The annular space created by the over cut shall be filled with a lubricant that has proven suitable for the particular soil conditions.

Monitor effluent from the existing culverts for lubricant and grout migration into surface waters. Contain and dispose of lubricant and grout-contaminated surface waters in an approved manner.

The Contractor shall be responsible for monitoring ground movements associated with the work and making suitable changes in the construction methods to control ground movements and prevent damage or detrimental movement to the work, traveling motorists, and adjacent structures and pavements.

Where voids are created outside the pipe, jacking shield, or TBM during the advance, or due to the removal of material at the front of the pipe, jacking shield, or TBM, such voids shall be immediately filled with sand, clay, bentonite, or other non-decomposable material and rammed into place. When the steel pipe has been completely installed, all voids that were filled with temporary material shall be finally filled with Portland cement grout pumped through the grout holes in the pipe by starting at the low end.

All excavated material from auger boring, pipe jacking, or pipe ramming, and from site construction shall be disposed of off-site by the Contractor.

Control groundwater inflows at the excavation face. Do not allow groundwater to accumulate at the face.

The Contractor shall keep a record, independent of that which may be kept by the Engineer, of all pertinent data relative to the installation. This record shall be available for the Engineer's inspection until the completion of the project, and a copy shall be transmitted to the Engineer within three (3) days of the completion of each installation of trenchless pipe. This record is to include for each pipe installed:

- a. The position of the pipe in relation to the design line and grade.
- b. The date, starting time, and finish time.
- c. Inclination.
- d. Advance rates.
- e. Hammer strokes per minute, as applicable.
- f. Operating pressure.
- g. Muck quantities removed.

The Contractor shall keep and maintain up to date at the construction site a complete set of field drawings for recording as-built conditions, which shall have marked or noted thereon all properly dated field information and recorded as-built conditions.

- (e) Contact Grouting. Contact grout shall be injected into the annular space outside the installed casing or product pipe if the overcut is greater than 0.75 inches, ground movement exceeds the Action levels defined in GEOTECHNICAL INSTRUMENTATION of Section 900, a void extending outside the pipe circumference is known to have occurred during the installation of the pipe, or if the installed pipe is to be used as the product pipe.
- (f) Product Pipe Installation. Visually inspect the installed pipe. No groundwater leakage will be permitted. Clean the inside of the pipe and leave it free of debris.

For a one-pass culvert lining system using steel pipe, apply the cement mortar lining as specified under related specification Field Applied Cement Mortar Lining.

For a two-pass culvert lining system, support the product pipe within the casing pipe to the design line and grade while maintaining an actual minimum annular space of 3 inches. Use casing spacers. Install blocking supports at the crown to prevent flotation of the pipe during annular backfilling.

71. SURVEY OF INSTALLED PIPE. The installed product pipe shall be mandrel tested within 24 hours of pullback completion. A mandrel or pig that is 90% of the internal diameter of the product pipe, taking into account internal beads formed during the fusing process, shall be pulled through the entire length of the pipeline. Pipeline found to be obstructed or flattened shall be considered defective work and shall be removed, discarded, re-drilled, and tested at no cost to the Owner.
72. SURFACE MOVEMENT LIMITS AND MONITORING. The Contractor will be required to obtain a professional surveyor licensed in the State of Vermont to implement and maintain a survey program for monitoring road surface settlement.

The Contractor's surveyor and State surveyor will work together to produce a preconstruction baseline of all points prior to the commencement of any excavation or tunneling work. The monitoring of survey spot grades shall be done by differential leveling techniques, level and grade rod to set nails flush in the pavement and median for the original baseline elevation control points. Alternatively, monitoring of the grades can be done by automated survey techniques that meet the minimum accuracy described herein. The Contractor shall furnish, install, maintain, protect from damage the monitoring points and instrumentation.

The US Route 2 road surface must be maintained by the Contractor during construction and restored by the Contractor after construction. The Contractor is expected to minimize settlement to a maximum of 1 inch during all aspects of the construction. The Contractor shall monitor the roadway on a weekly basis for 1 month after the completion of the trenchless installation or until movement is no longer detected, to determine the maximum settlement. The Contractor shall mill and repave the area noted on the plans at the conclusion of the monitoring period. If settlement of US Route 2 exceeds 1.0" during construction, the Contractor shall mill, patch or pave the road at the direction of the Engineer to maintain safe traffic flow. The maintenance work shall be solely at the Contractor's expense.

73. METHOD OF MEASUREMENT. The quantity of Special Provision (Trenchless Pipe) of the size specified to be measured for payment will be the number of meters (feet) of product pipe installed in the complete and accepted work.
74. BASIS OF PAYMENT. The accepted quantity of Special Provision (Trenchless Pipe) of the size specified will be paid for at the Contract unit price per meter (linear foot). Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified; fabricating, saw cutting, joint fusing, and placing all pipe materials, including pull wire and end caps; investigating and constructing the jacking sites; performing pilot bore construction; disposing of excess excavation from pipe jacking operations; preparing and providing required submittals and records of installation; restoring each pipe jacking site to its original condition to the satisfaction of the Engineer; 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>
900.640 Special Provision (Trenchless Pipe)(42") Meter	(Linear Foot)
900.640 Special Provision (Trenchless Pipe)(18") Meter	(Linear Foot)

TRAFFIC CONTROL

75. 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.

76. TRAFFIC CONTROL DEVICES. Temporary traffic barrier shall meet the requirements of Section 621. Traffic control devices shall meet the requirements of Section 641.

77. 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 quantities for Uniformed Traffic Officers and Flaggers will be measured separately in accordance with Section 630.

78. 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 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 implementing, inspecting, maintaining, and removing the applicable traffic control plan and required traffic control devices, including but not limited to furnishing, relocating and removing reflectorized drums, temporary traffic barrier, remove and reset traffic barrier, Energy absorption attenuator, portable arrow boards, any necessary construction signing, relocating existing signs, removal of existing pavement markings, temporary pavement lines and markings, restoration of existing pavement markings, temporary relocating mailboxes, lighting plan, temporary work zone lighting; maintaining drainage facilities, for providing public ingress and egress; all other incidental required to control traffic during the entire duration of construction, and for furnishing all labor, tools, materials, equipment, and incidentals necessary to complete the work.

Uniformed Traffic Officers and Flaggers will be paid for separately under Contract items 630.10 and 630.15, respectively.

Payment will be made under:

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

PRECAST CONCRETE GRAVITY RETAINING WALL WITH PEDESTRIAN RAILING

79. DESCRIPTION. This work shall consist of designing, fabricating, furnishing, and erecting precast concrete gravity retaining walls at the locations specified and in conformance with the lines and grades shown on the Plans or as directed by the Engineer.

80. DESIGN REQUIREMENTS. The design of the wall shall be performed in accordance with the *AASHTO LRFD Bridge Design Specifications*, the Geotechnical Memorandum dated November 22, 2013 that is included in the Contract Documents, and the design criteria specified in the Plans.

81. APPROVED WALL SYSTEMS.

The wall system is to be a precast concrete block retaining wall system with multiple finished faces as indicated on the Plans and that is as included on the Agency's approved *Earth Retaining* earth retaining system *Selection Chart*.

No additional right-of-way, beyond that which has already been acquired for the construction of this project, will be available for the construction of an alternate wall system.

82. MATERIALS. Materials shall meet the following requirements:

Precast Concrete. Precast concrete shall meet the requirements of Section 540.

(a) Cast-in-Place Concrete. Concrete for support(s) and/or leveling pad(s), as recommended by the manufacturer, shall meet the requirements of Section 501 for Concrete, High Performance Class B.

(b) Reinforcing Steel. Reinforcing steel shall meet the requirements of Sections 507 and 713 for Level 1 (epoxy coated) reinforcing steel.

(c) Geotextile. Geotextile shall be a non-woven fabric meeting the requirements of Section 649 for Geotextile Under Stone Fill.

(d) Backfill. Backfill material shall meet the requirements of Section 204 for Granular Backfill for Structures.

(e) Underdrain. Underdrain (perforated) shall meet the requirements of Section 605.

(f) Pedestrian Railing. Pedestrian Railing shall meet the requirements in the plans.

83. PRECAST CONCRETE INSPECTION. Materials furnished and the work performed may be inspected by the Agency.

The Fabricator shall provide a tentative casting schedule to the Engineer and Structural Concrete Engineer for the following casting week a minimum of three (3) calendar days prior (a casting week will be Sunday to Saturday). The Fabricator shall also maintain a Quality Control file that shall contain at a minimum the block identification, date and time cast, concrete test results, quantity of concrete used per block, batch quantity printout, cylinder results, and aggregate gradation and moisture.

Advance notification of at least two (2) weeks shall be provided by the Fabricator to the Agency's Engineer and Structural Concrete Engineer concerning the proposed intention to commence work. A minimum of five (5) working days notification must be provided to the Structural Concrete Engineer by the Fabricator to confirm the fabrication start date.

The Inspector shall have the authority to reject any material or work that does not meet the requirements of these specifications.

Prior to shipment of any members, the Materials and Research Engineer will have approved all applicable material certifications required in accordance with Subsection 700.02.

- 84. SUBMITTALS. As soon as practical after the award of the Contract, all required information shall be prepared and submitted.

A complete copy of the structural design calculations for the precast concrete gravity retaining wall shall be submitted as Construction Drawings in accordance with Section 105. The design calculations shall substantiate that the proposed precast concrete gravity retaining wall and attached pedestrian railing satisfies the design parameters of the Contract. The design calculations shall be stamped by a Professional Engineer licensed in the State of Vermont and shall include any general construction notes required for the fabrication and construction of the precast concrete gravity retaining wall.

Fabrication Drawings for the precast concrete gravity retaining wall shall be submitted in accordance with Section 105. In addition to the requirements of Section 105, the Fabrication Drawings shall include dimensions of all precast concrete gravity retaining wall blocks used.

The Contractor shall supply a sample block for approval by the Engineer prior to installation.

- 85. METHOD OF MEASUREMENT. The quantity of Special Provision (Precast Concrete Gravity Retaining Wall with Pedestrian Railing) to be measured for payment will be the number of square meters (square yard) of wall surface area complete and in place in the accepted work, measured as the sum of the areas of panels above the finished grade in the wall.

- 86. BASIS OF PAYMENT. The accepted quantity of Special Provision (Precast Concrete Gravity Retaining Wall with Pedestrian Railing) will be paid for at the Contract unit price per square meter (square yard). Payment will be full compensation for designing, fabricating, and installing the materials specified, including but not limited to geotextile fabric, underdrain, backfill material, concrete blocks, pedestrian railing 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.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.675 Special Provision(Precast Concrete Gravity Retaining Wall With Pedestrian Railing)	Square yard

Minimum Labor and Truck Rates
Under Title 19, Vermont Statutes
Annotated Section 18, as amended

April 3, 1997
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:

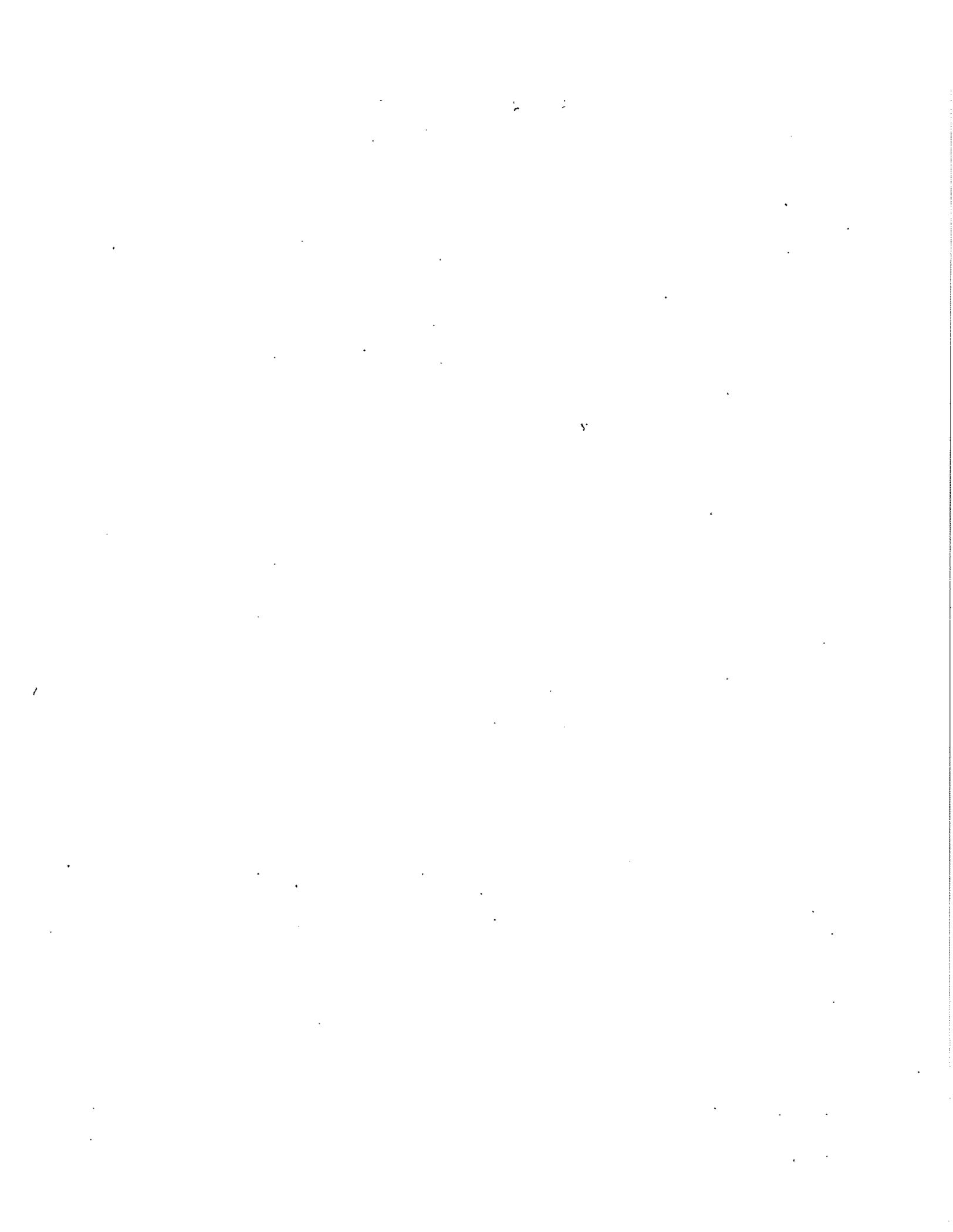
The minimum wage for common labor will not be less than the State or Federal minimum wage, whichever is higher.

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	\$1.65



**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 Civil Rights website.

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 VTrans Civil Rights website . 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 the VTrans Civil Rights website. 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: VT160042 01/08/2016 VT42

Superseded General Decision Number: VT20150042

State: Vermont

Construction Type: Highway

County: Washington 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)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016

* SUVT2011-027 09/14/2011

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 13.98	1.32
CEMENT MASON/CONCRETE FINISHER...	\$ 25.34	0.00
ELECTRICIAN, Includes Installation of Traffic Signals.....	\$ 23.32	0.00
GUARDRAIL INSTALLER.....	\$ 12.23	2.35
IRONWORKER, REINFORCING.....	\$ 13.80	1.30
IRONWORKER, STRUCTURAL.....	\$ 21.93	15.54
LABORER: Common or General Includes Asphalt Raker and Concrete Work.....	\$ 14.21	0.00
LABORER: Flagger.....	\$ 10.97	0.00
LABORER: Landscape.....	\$ 12.31	1.03
LABORER: Screedman.....	\$ 16.30	4.23

LABORER: Sign Erector/Installer.....	\$ 15.96	3.59
OPERATOR: Asphalt Roller.....	\$ 17.36	3.54
OPERATOR: Backhoe.....	\$ 18.99	1.64
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 16.76	1.68
OPERATOR: Broom.....	\$ 18.28	3.72
OPERATOR: Bulldozer.....	\$ 19.15	1.39
OPERATOR: Cold Planer/Milling Machine.....	\$ 16.16	0.00
OPERATOR: Crane.....	\$ 19.01	1.36
OPERATOR: Excavator.....	\$ 18.38	1.48
OPERATOR: Grader/Blade.....	\$ 18.44	3.50
OPERATOR: Loader.....	\$ 17.95	1.68
OPERATOR: Mechanic.....	\$ 20.45	0.00
OPERATOR: Paver.....	\$ 19.12	0.00
OPERATOR: Pounder.....	\$ 18.11	0.00
OPERATOR: Roller excluding Asphalt.....	\$ 16.16	3.54
OPERATOR: Screed.....	\$ 18.55	3.60
OPERATOR: Sweeper.....	\$ 24.44	12.24
PAINTER (Parking Lot and Highway Striping Only).....	\$ 17.42	3.44
TRUCK DRIVER, Includes all axles including Dump Trucks.....	\$ 16.48	2.03
TRUCK DRIVER: Distributor Truck.....	\$ 17.89	0.00
TRUCK DRIVER: Semi/Trailer Truck.....	\$ 14.72	4.39

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)).

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 a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those

classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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

Notice of Authorization
Under Vermont Construction General Permit 3-9020
For Low Risk Projects



Project Name: East Montpelier BRF 037-1(7)	Notice of Intent Number: 4521-9020.R2
Permittee Name: Vermont Agency of Transportation / Jeff Ramsey	Date of Authorization: 02/24/2016
	Date of Expiration: 02/24/2018

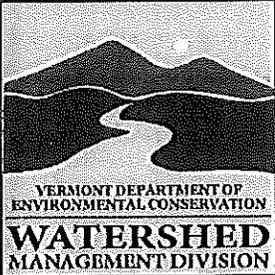
The project listed above has received authorization under General Permit 3-9020 to discharge stormwater from the following construction activities:
Replacement of Bridge 68 on VT-14 over the Winooski River, new traffic signal system, roadway widening and related highway reconstruction work.

- 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 stabilized 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. 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.
 5. 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.
 6. 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:

Vermont DEC, Watershed Management Division
Main Building, Second Floor
One National Life Drive
Montpelier, VT 05620-3522
(802) 828-1535

[See next page for posting requirements]



**NOTICE OF INTENT (NOI)
FOR STORMWATER DISCHARGES
ASSOCIATED WITH CONSTRUCTION
ACTIVITIES ON LOW RISK SITES**

Under Vermont Construction General Permit 3-9020

For Dept. Use Only

Notice of Intent No:

4251-9020.R2



Submission of this completed Notice of Intent (NOI) constitutes notice that the entities in Section 1 intend to be authorized to discharge pollutants to waters of the State, from the project identified in Section 3, under Vermont's Construction General Permit (CGP). Submission of the NOI constitutes notice that the parties identified in Section 1 of this form have read, understand, and meet the eligibility conditions of the CGP; have determined that the project qualifies for coverage as a Low Risk project in conformance with Appendix A of the CGP; agree to comply with all applicable terms and conditions of the CGP; understand that continued authorization under the CGP is contingent on maintaining eligibility for coverage; and that all applicable practices in the Low Risk Site Handbook for Erosion Prevention and Sediment Control must be implemented and maintained for the duration of construction activities. In order to be granted coverage, all information required on this form must be provided and an application fee payable to the State of Vermont must be submitted.

1. Applicant(s) Information¹ (*starred fields in Section 1 are required)

A. Landowner Name*: Vermont Agency of Transportation / Jeff Ramsey
Address*: 1 National Life Drive
City*: Montpelier State*: Vermont Zip*: 05633
Telephone Number*: 802-828-1278 E-mail Address*: jeff.ramsey@vermont.gov

B. Principal Operator (if known): _____
Address(s): _____
City: _____ State: _____ Zip: _____
Telephone Number: _____ E-mail Address: _____

2. Application Preparer/ Consultant Information

Application Preparer Name: Karl Richardson, PE
Application Preparer Company: Stantec Consulting Services
Address of Application Preparer: 55 Green Mountain Drive
City South Burlington State Vermont Zip 05403
Telephone Number: 802-864-0223 E-mail Address: karl.richardson@stantec.com

See filing directions for Low Risk Projects here: http://www.watershedmanagement.vt.gov/stormwater/docs/Address%20Changes%2010-2014/sw_Low_Risk_Filing%20Directions-10.2014.pdf

3. Project Information - *All information in this section is required.

A. Project Name: East Montpelier BRF 037-1(7)

Is this project part of a Common Plan of Development¹? Yes No

If yes, name of Development: _____

B. Does this project have any previously issued or pending stormwater discharge permits? Yes No

If yes, prior NOI number(S): 4251-9020.R1

C. Location Address

Street: VT Route 14s @ US Route 2 City/Town: East Montpelier

Latitude: 44 ° 16 ' 05 " Longitude: 72 ° 29 ' 19 " County: Washington

D. Name of Receiving Water(s)²: Winooski River

E. Include a topographic location map - Must provide sufficient information to determine the location of the project. Must be in the form of a USGS topographical map or directional map.

F. Project Type: Residential Commercial Industrial Other: Public Highway

G. Total Area of Disturbance: 2.70 acres (<= 5 acres: \$100 per application, > 5 acres: \$220 per application)

H. Description of construction activities to be permitted (below):

Replacement of Bridge 68 on VT-14 over the Winooski River, new traffic signal system, roadway widening and related highway reconstruction work.

4. Public Notice Requirement

Prior to submitting the complete NOI for review, you must provide a copy of this complete NOI and related Appendix A to the municipal clerk for posting in the municipality in which the project is located. If the project and the related discharge(s) are located in different municipalities, then the completed NOI must be filed with the municipal clerk in each municipality. In order to be considered complete, you must include the date of posting.

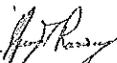
Date of Posting at Municipal Office(s): 01/27/16

Information for the Municipal Clerk regarding posting instructions can be found on Page 4 of this NOI.

5. 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: Vermont Agency of Transportation Title: Environmental Specialist Supervisor

Signature:  Date: 2016.01.27 15:34:17 -05'00'

Principal Operator (if known): _____ Title: _____

Signature: _____ Date: _____

Application Preparer (if applicable): Karl Richardson, PE Title: Senior Engineer

Signature: Karl Richardson Date: 01.19.2016

Digitally signed by Karl Richardson
DN: cn=Karl Richardson, o=State of Vermont, ou=State of Vermont, email=karlrichardson@vt.gov, c=US
Date: 2016.01.19 13:24:46 -05'00'

Submit this form and the \$ 100.00 fee to:

Vermont DEC Watershed Management Division, Stormwater Program
1 National Life Drive, Main Building Second Floor
Montpelier, VT 05620-3522

¹"Common Plan of Development" is defined within the CGP 3-9020, Appendix C - Definitions, page A-12

²"Waters of the State" (i.e. receiving water) is defined within the CGP 3-9020, Appendix C - Definitions, page A-16

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 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 4251-9020. R2

Dated this 24th day of February, 2016

Alyssa Schuren, Commissioner, Department of Environmental Conservation



By: _____
Padraic Monks, Program Manager
Stormwater Program

PUBLIC COMMENT

Public comments concerning this Notice of Intent to discharge under CGP 3-9020 (amended 2008) 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 CGP 3-9020 (amended 2008). 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 CGP 3-9020 (amended 2008). Send written comments to:

Vermont Department of Environmental Conservation
Watershed Management Division, Stormwater Program
1 National Life Drive, Main Building Second Floor
Montpelier, VT 05620-3522
Please cite the NOI number in any correspondence.

APPEALS

Renewable Energy Projects – Right to Appeal to Public Service Board

If this decision relates to a renewable energy plant for which a certificate of public good is required under 30 V.S.A. §248, any appeal of this decision must be filed with the Vermont Public Service Board pursuant to 10 V.S.A. §8506. This section does not apply to a facility that is subject to 10 V.S.A. §1004 (dams before the Federal Energy Regulatory Commission), 10 V.S.A. §1006 (certification of hydroelectric projects) or 10 V.S.A. Chapter 43 (dams). Any appeal under this section must be filed with the clerk of the Public Service Board within 30 days of the date of this decision. For further information, see the Public Service Board website at <http://psb.vermont.gov> or call (802) 828-2358. The address for the Public Service Board is 112 State Street Montpelier, Vermont 05620-2701.

All Other Projects – Right to Appeal to Environmental Court

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 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 online at www.vermontjudiciary.org or call (802) 951-1740. The address for the Environmental Court is 32 Cherry Street, 2nd Floor Suite 303, Burlington, Vermont 05401.

A copy of CGP 3-9020 (amended 2008) may be obtained by calling (802) 828-1535; by visiting the Department at the above address between the hours of 7:45 am and 4:30 pm; or by download from the Watershed Management Division's Web site at: www.watershedmanagement.vt.gov

INFORMATION FOR MUNICIPAL CLERK

Please post this notice and instruction sheet in a conspicuous place for 10 days from the date received (per 10 V.S.A. Chapter 47 §1263(b)). If you have any questions, contact the Watershed Management Division of the Department of Environmental Conservation at (802) 828-1535.

Submit this form and the \$ 100.00 fee to:

**Vermont Department of Environmental Conservation
Watershed Management Division, Stormwater Program
1 National Life Drive, Main Building Second Floor
Montpelier, VT 05620-3522**

STATE OF VERMONT
AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STORMWATER DISCHARGE PERMIT

STORMWATER RUNOFF TO WATERS OF THE STATE

In compliance with provisions of 10 V.S.A. §1264, the Stormwater Management Rule and in accordance with "Terms and Conditions" hereinafter specified,

Vermont Agency of Transportation
One National Life Drive
Montpelier, VT 05633

Impervious Area: .24 acres

the permittee, is hereby granted permission to discharge stormwater runoff from East Montpelier BRF 037-1(7) located at BR68 on VT Route 14 at the intersection with US2 in the Town of East Montpelier, Vermont to the Winooski River.

1. Expiration Date: Five years from issuance date of final permit. Note: This permit, unless revoked, modified or suspended, shall be valid until the designated expiration date notwithstanding any intervening change in water quality, effluent, or treatment standards, or classification of the receiving waters including groundwater. However, any such changed standard or classification, and any applicable requirement in a total maximum daily load (TMDL) for the Winooski River, shall be applied in determining whether or not to renew this permit, and in determining the conditions of a renewed permit.

The permittee shall reapply for a renewed discharge permit ninety days prior to the expiration date of this permit.

2. Revocation: 10 V.S.A. §1267 provides as follows:

The Secretary may, after notice and opportunity for a public hearing, revoke, modify or suspend this permit if it is found that the permittee submitted false or inaccurate information in its application or has violated any requirement, restrictions, or condition of this permit, or if there is any change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge. The Secretary shall impose conditions as the Secretary deems necessary for regulating the discharges of a permittee whose permit has been revoked, modified or suspended. Revocation shall be effective upon actual notice thereof to the permittee.

3. Operating Fees: This discharge is subject to operating fees under 3 V.S.A. §2822. The permittee shall submit the operating fees to the Agency in accordance with procedures provided by the Secretary.
4. Transfer of Permit: This permit is not transferable without prior written approval of the Secretary. Provided all applicable fees under 3 V.S.A. §2822 have been paid, a permittee may submit a notice of transfer to the Stormwater Management Program. The notice shall be submitted at least five (5) days prior to the proposed date of transfer. The notice shall state that the prospective permittee has adequate

funding to comply with this permit. The permittee shall provide a copy of this permit to the new owner or tenant and inform him of the responsibility to make application for a permit which shall be issued in his name. Any failure to do so shall be considered a violation of this permit.

5. Right of Entry: The permittee shall allow the Secretary, or his or her authorized representatives, at reasonable times, upon presentation of credentials, to enter upon and inspect the permitted premises, and the stormwater collection, treatment and control system; and to sample any discharge to determine compliance with this permit; and to have access to and inspect and copy any records required to be kept pursuant to this permit.
6. Receiving Waters: Winooski River
7. Manner of Discharge:
S/N 001: Stormwater runoff from Vermont Route 14, station 123+00 to 126+75, via roadside swales and culverts, to an infiltration trench and an underground sand filter, located at station 126+75 right, discharging to the Winooski River.

S/N 002: Stormwater runoff from Vermont Route 14, from station 126+75 to the bridge, to the Winooski River. (Discharge is at station Vermont Route 14 station 127+54.)

S/N 003: Stormwater runoff from Vermont Route 2 to the Winooski River. (Discharge is at Vermont Route 2 station 122+66.)

The Site Balancing Procedure for the Discharge of Stormwater Runoff from the Expansion or Redevelopment of Impervious Surfaces was utilized to meet applicable treatment standards for this project.
8. Wastes Permitted: Stormwater runoff from S/N 001, S/N 002 and S/N 003 of the East Montpelier BRF 037-1(7) project after treatment from an infiltration trench, underground sand filter and grass channels.
9. Volumes Permitted and Frequency of Discharge: Such volumes and frequency as required by the discharge specified in #8 above.
10. Approved Project Design: This project shall be constructed and operated in accordance with the following site plans and details prepared by Agency of Transportation (Sheets: Sheets titled 'East Montpelier BRF 037-1(7) Stormwater Site Plan'; 'East Montpelier BRF 037-1(7) Stormwater Treatment Plan'; 'East Montpelier BRF 037-1(7) Infiltration Trench Detail'; 'East Montpelier BRF 037-1(7) Layout 1 through 4'; all dated 11/28/2006; Sheets titled 'East Montpelier BRF 037-1(7) Layout Sheet 1 through 4', dated 11/28/2006 ; and supporting information).

By reference, the above noted plans are made a part of this permit.
11. Inspection and Maintenance Reporting Requirements:
 - a. The basins, grass channels, and related stormwater collection, treatment and control system shall be maintained in good operating condition at all times and shall be inspected annually and cleaned as necessary to maintain design specifications. The inspections shall be conducted between the conclusion of spring snow melt and June 15th of each year.
 - b. Any sediment removed from the basins, grass channels, and related stormwater collection, treatment and control system shall be disposed of properly in accordance with state and federal statutes and regulations.

- c. **By July 15 of each year the permittee shall submit a written report to:**

Department of Environmental Conservation
Watershed Management Division
Stormwater Management Program
Main Building, Second Floor
One National Life Drive
Montpelier, VT 05620-3522

This report shall include, at a minimum:

- i. Unless previously submitted by the permittee(s) under a previously issued authorization or discharge permit, the first report shall include an inspection and designer's certification that the project was built in compliance with the Approved Project Design per #11 above;
 - ii. the dates and details of any cleaning and maintenance operations carried out in the preceding year;
 - iii. a narrative summarizing the results of any inspections conducted in the preceding year and highlighting any stormwater related problems encountered, and all remedial steps taken in response.
- d. Should any erosion problems occur, the permittee is required to immediately correct any such problems.
- e. Any basins, grass channels, or related stormwater devices used during construction for erosion control shall be inspected and cleaned to design specifications immediately after construction has been completed.
12. Personnel and Training Requirements: Such personnel and training as necessary to fulfill the requirements of #12 above.
13. Monitoring and Reporting Requirement: No monitoring required; reporting requirement as specified in #12 above.
14. Other Requirements:
- a. Treated stormwater runoff is the only waste authorized for disposal under the terms and conditions of this permit. The discharge of any hazardous materials or hazardous waste into the stormwater management system is prohibited.
 - b. The issuance of this permit does not relieve the permittee from the responsibility to obtain any other local, state or federal permits required by law.
15. Compliance with Anti-degradation and Water Quality Standards: The Secretary has determined that the permitted discharges satisfy Vermont's Anti-Degradation Policy described in the Department of Environmental Conservation's Interim Anti-Degradation Implementation Procedure, because the procedure allows a presumption of compliance for discharges that are in compliance with the Vermont Stormwater Management Manual and any additional best management practices that will be used to control the stormwater discharge as described in Section IX.D.1.d of the Department's Interim Anti-Degradation Implementation Procedure. The Secretary has also determined that for such discharges that

qualify for the presumption under IX.D.1.d, all existing uses of surface waters, and the level of water quality necessary to protect those existing uses will be maintained and protected. The Secretary has determined that if the permittee is in full compliance with all permit conditions, including approved plans, monitoring, reporting and recordkeeping conditions, and is fully implementing stormwater BMPs required by this permit, the permitted discharges will meet the requirements of the Vermont Stormwater Management Manual and qualify for the presumption described in Section IX.D.1.d of the Department's Interim Anti-Degradation Implementation Procedure and will be presumed to comply with the Vermont Water Quality Standards, including but not limited to §1-03 (Anti-degradation Policy).

16. Renewable Energy Projects – Right to Appeal to Public Service Board:

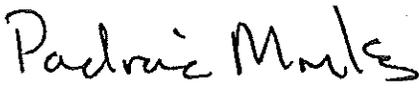
Any appeal of this decision must be filed with the clerk of the Vermont Public Service Board pursuant to 10 V.S.A. §8506 within 30 days of the date of this decision. The appellant must file with the Clerk an original and six copies of its appeal. The appellant shall provide notice of the filing of an appeal in accordance with 10 V.S.A. §8504(c)(2), and shall also serve a copy of the Notice of Appeal on the Vermont Department of Public Service. For information, see the Rules and General orders of the Public Service Board available on line at www.psb.vermont.gov. The address for the Public Service Board is 112 State Street Montpelier, Vermont 05620-2701 (Tel. #802-828-2358).

All Other Projects – Right to Appeal to Environmental Court:

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 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 online at www.vermontjudiciary.org or call (802) 828-1660. The address for the Environmental Court is 2418 Airport Road, Suite 1, Barre, Vermont 05641.

Dated this 19th day of February, 2013

David K. Mears, Commissioner
Department of Environmental Conservation

By 
Padraic Monks, Program Manager
Stormwater Management Program

**NOTICE OF ISSUANCE OF STORMWATER DISCHARGE PERMIT
BY THE VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

Notice is hereby given that an individual stormwater discharge permit or an authorization to discharge pursuant to a general stormwater discharge permit has been issued by the Vermont Department of Environmental Conservation to Permittee(s) named herein for the discharge of stormwater runoff from impervious surfaces (e.g. roadways, rooftops, parking lots, walkways) pursuant to 10 V.S.A. Section 1264 for the property identified below. The permit/authorization requires treatment and control of stormwater runoff, long-term maintenance of the treatment and control structures and payment of yearly operational fees.

Permittee(s): _____

Permit/Authorization Number: _____

911 Address of Property: _____

Name of condominium, subdivision or planned community association (if applicable):

Signature of Permittee or Authorized Representative: _____

Printed Name of Permittee or Authorized Representative: _____

Date of Signature: _____

Recording information: Municipal clerks - please index this document listing the State of Vermont, Department of Environmental Conservation as "Grantee". Please index this document listing the above named Permittee(s) as "Grantor(s)". Additionally, if this notice lists the name of a condominium, subdivision or planned community association, please list the named association as an additional "Grantor".

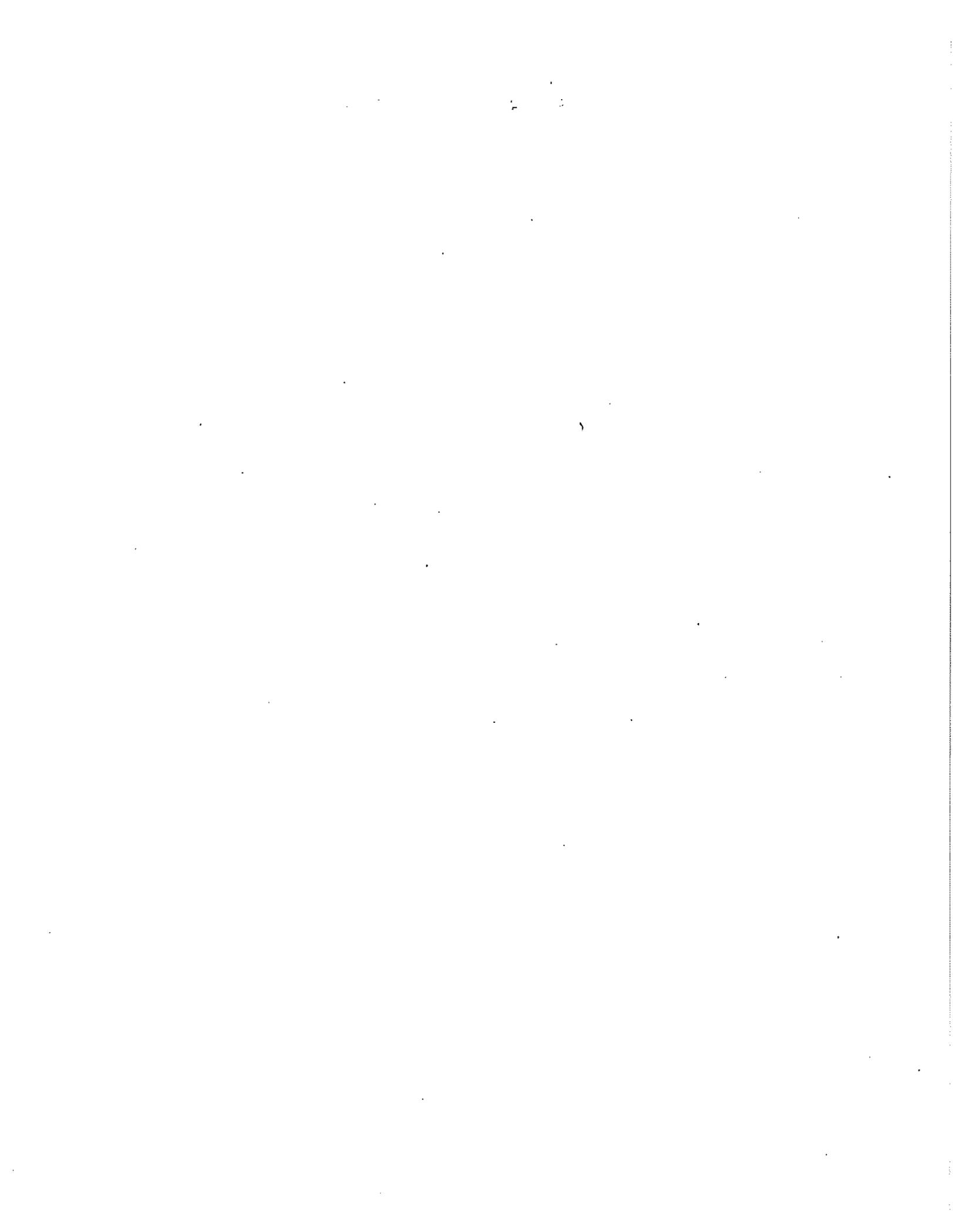
CERTIFICATION FOR FEDERAL-AID CONTRACTS

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.



VERMONT AGENCY OF TRANSPORTATION
SCHEDULE OF ITEMS

LETTING DATE : 07/15/16 11:00 A.M.

CONTRACT ID : 16B065
PROJECT(S) : EAST MONTPELIER BF EWP2(1)

ITEM NO.	LINE NO.	DESCRIPTION	QUANTITY	UNITS
SECTION NO. 0001				
201.10	0005	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	1.000	LUMP
204.20	0010	TRENCH EXCAVATION OF EARTH	175.000	CY
204.22	0015	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	12.000	CY
507.11	0020	REINFORCING STEEL, LEVEL I	990.000	LB
541.25	0025	CONCRETE, CLASS B	9.000	CY
601.0817	0030	18" RCP CLASS V	37.000	LF
601.2615	0035	18" CPEP(SL)	45.000	LF
601.7015	0040	18" CPEPES	1.000	EACH
604.18	0045	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE (4' X 4')	2.000	EACH
604.18	0050	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE (4' X 6')	3.000	EACH
609.10	0055	DUST CONTROL WITH WATER	2.000	MGAL
609.15	0060	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	1.000	TON
613.10	0065	STONE FILL, TYPE I	4.000	CY
621.75	0070	REMOVE AND RESET GUARDRAIL	25.000	LF
630.10	0075	UNIFORMED TRAFFIC OFFICERS	300.000	HR
630.15	0080	FLAGGERS	1,100.000	HR
631.16	0085	TESTING EQUIPMENT, CONCRETE	1.000	LUMP
635.11	0090	MOBILIZATION/DEMOBILIZATION	1.000	LUMP
641.15	0095	PORTABLE CHANGEABLE MESSAGE SIGN	3.000	EACH
649.31	0100	GEOTEXTILE UNDER STONE FILL	9.000	SY
649.515	0105	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	135.000	SY
651.15	0110	SEED	20.000	LB
651.18	0115	FERTILIZER	110.000	LB
651.20	0120	AGRICULTURAL LIMESTONE	0.500	TON
651.25	0125	HAY MULCH	0.500	TON
651.35	0130	TOPSOIL	100.000	CY
652.10	0135	EPSC PLAN	1.000	LUMP
652.20	0140	MONITORING EPSC PLAN	40.000	HR
652.30	0145	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	1.000	LU
653.20	0150	TEMPORARY EROSION MATTING	115.000	SY
653.25	0155	TEMPORARY STONE CHECK DAM, TYPE I	30.000	CY
653.35	0160	VEHICLE TRACKING PAD	20.000	CY
653.40	0165	INLET PROTECTION DEVICE, TYPE I	1.000	EACH
653.45	0170	FILTER BAG	2.000	EACH
653.50	0175	BARRIER FENCE	280.000	LF
653.55	0180	PROJECT DEMARCATION FENCE	240.000	LF
900.620	0185	SPECIAL PROVISION (INLET PROTECTION DEVICE, FILTER FIBER)	3.000	EACH
900.630	0190	SPECIAL PROVISION (HORIZONTAL DIRECTION DRILLING OBSTRUCTION REMOVAL)	100.000	HR
900.630	0195	SPECIAL PROVISION (TRENCHLESS PIPE OBSTRUCTION REMOVAL)	40.000	HR
900.640	0200	SPECIAL PROVISION (HORIZONTAL DIRECTIONAL DRILLING) (10") (HDPE)	54.000	LF
900.640	0205	SPECIAL PROVISION (HORIZONTAL DIRECTIONAL DRILLING) (4") (HDPE)	1,120.000	LF

VERMONT AGENCY OF TRANSPORTATION
 SCHEDULE OF ITEMS

LETTING DATE : 07/15/16 11:00 A.M.

CONTRACT ID : 16B065
 PROJECT(S) : EAST MONTPELLIER BF EWP2(1)

ITEM NO.	LINE NO.	DESCRIPTION	QUANTITY	UNITS
SECTION NO. 0001				
900.640	0210	SPECIAL PROVISION (TRENCHLESS PIPE) (18")	37.000	LF
900.640	0215	SPECIAL PROVISION (TRENCHLESS PIPE) (42")	88.000	LF
900.645	0220	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	1.000	LUMP
900.675	0225	SPECIAL PROVISION (PRECAST CONCRETE GRAVITY RETAINING WALL WITH PEDESTRIAN RAILING)	71.000	SY

CONTRACTOR'S EEO CERTIFICATION FORM

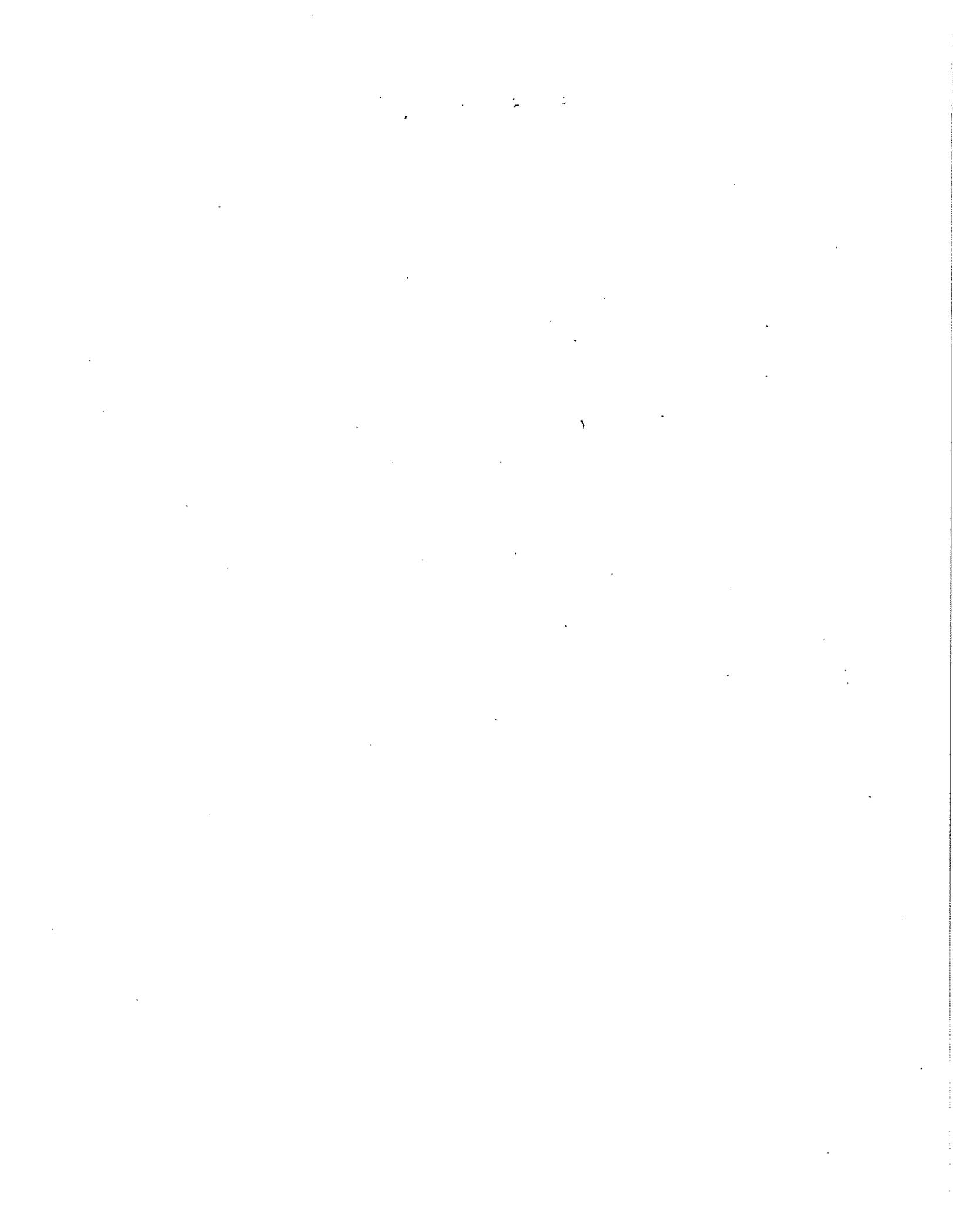
Certification with regard to the Performance of Previous Contracts of Subcontracts subject to the Equal Opportunity Clause and the filing of Required Reports.

The bidder _____, proposed subcontractor _____, hereby certifies that he/she has _____, has not _____, 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 _____, has not _____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Company	By	Title
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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.



STATE OF VERMONT
AGENCY OF TRANSPORTATION
DEBARMENT AND NON-COLLUSION AFFIDAVIT

I, _____, representing
(Official Authorized to Sign Contracts)

_____ of _____
(Individual, Partnership or Corporation) (City or State)

being duly sworn, depose and certify under the penalties of perjury under the laws of the State of Vermont and the United States that on behalf of the person, firm, association, or corporation submitting the bid certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid for the Vermont project:

_____ (Project Name)

_____ project located on _____
(Project Number) (Route or Highway)

bids opened at _____
(Town or City)

Vermont on _____, 20____.
(Date)

I further depose and certify under the penalties of perjury under the laws of the State of Vermont and the United States that except as noted below said individual, partnership or corporation or any person associated therewith in any capacity is not currently, and has not been within the past three (3) years, suspended, debarred, voluntarily excluded or determined ineligible by any Federal or State Agency; does not have a proposed suspension, debarment, voluntary exclusion or ineligibility determination pending; and has not been indicted, convicted, or had a civil judgement rendered against (it, him, her, them) by a court having jurisdiction in any matter involving fraud or official misconduct within the past three (3) years.

Exceptions: ____ No ____ Yes. (If yes complete back of this form.)

Sworn to before me this

_____ day of _____, 20____

_____ L.S.
(Name of Individual, Partnership or Corporation)

_____ L.S.
(Signature of Official Authorized to Sign Contracts)

_____ (Notary Public)

_____ L.S.
(Name of Individual Signing Affidavit)

(My commission expires _____)

_____ L.S.
(Title of Individual Signing Affidavit)

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate below to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administration sanctions.

EXCEPTIONS: