

Minutes of Annual Shareholder Meeting

PCL CIVIL CONSTRUCTORS, INC.

An annual shareholder meeting of PCL Civil Constructors, Inc., a Colorado corporation, was held at 9:00 a.m. MST on the 31st of January, 2014 by telephone conference.

The President and Secretary of the corporation acted respectively as Chairman and Secretary of the meeting.

The Chairman called the meeting to order and the Secretary presented a duly authorized proxy allowing L. S. Ventoza to vote on behalf of PCL Infrastructure Management, Inc., the only shareholder of the corporation.

Upon a motion duly made in writing from L. S. Ventoza and approved, the following directors were nominated and elected to hold office until the next annual shareholder meeting or until they cease to hold office or are removed according to the corporation's bylaws:

S. P. Yancey
L. S. Ventoza
D. T. Morgan

The financial statements of the corporation for the year ended October 31, 2013 had been previously presented to the shareholder and were approved.

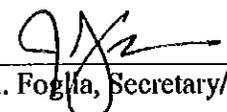
The public accounting firm of KPMG is appointed as external auditors of the corporation.

There being no further business to come before the meeting, upon motion duly made and passed, the meeting adjourned.

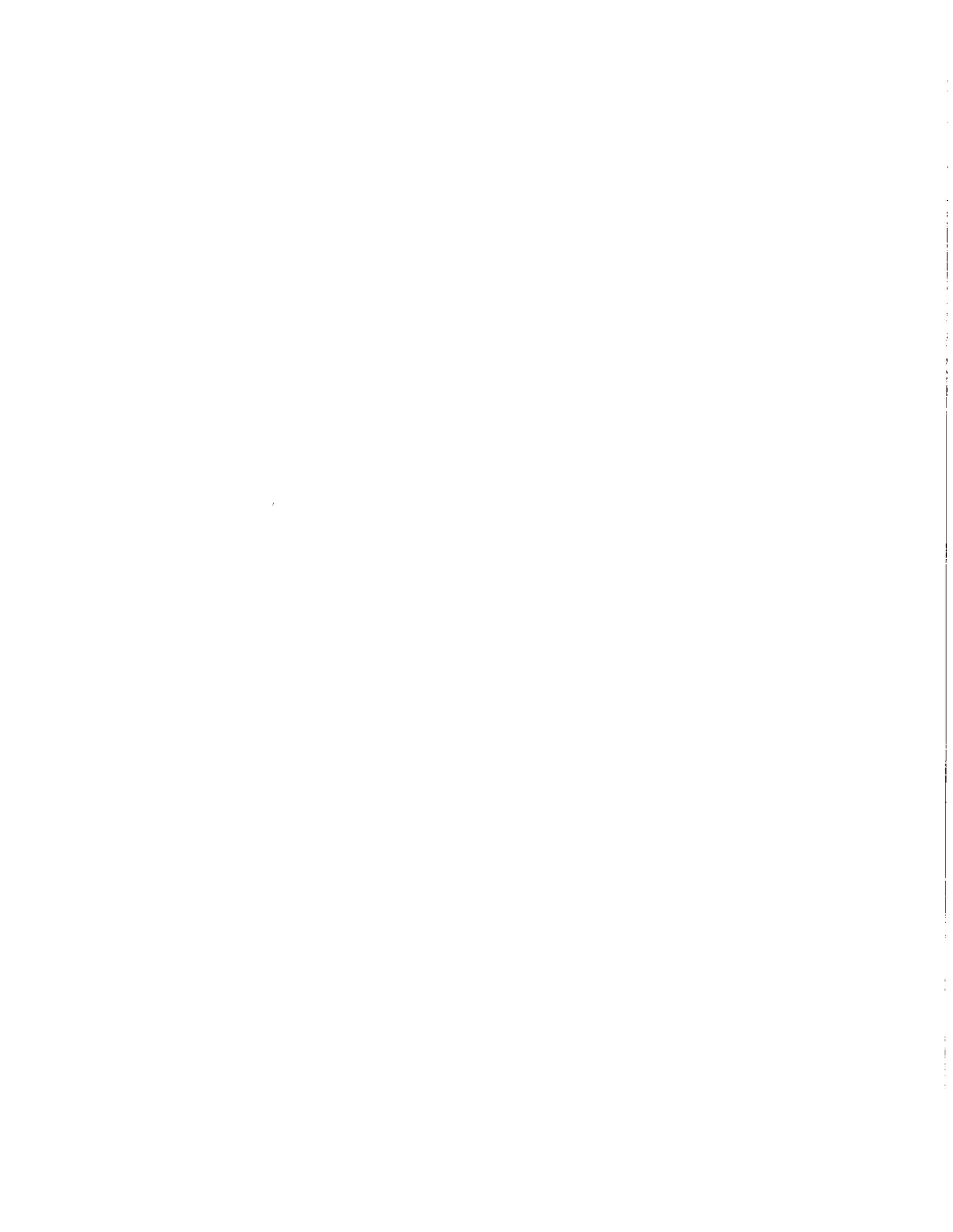


L. S. Ventoza, President & COO Civil Infrastructure

Attest:



J. A. Foglia, Secretary/Treasurer



**Minutes of a Meeting of
The Board of Directors of
PCL CIVIL CONSTRUCTORS, INC.**

A meeting of the Board of Directors of PCL Civil Constructors, Inc., a Colorado corporation, was held at 9:05 a.m. MST on the 31st of January, 2014 by telephone conference.

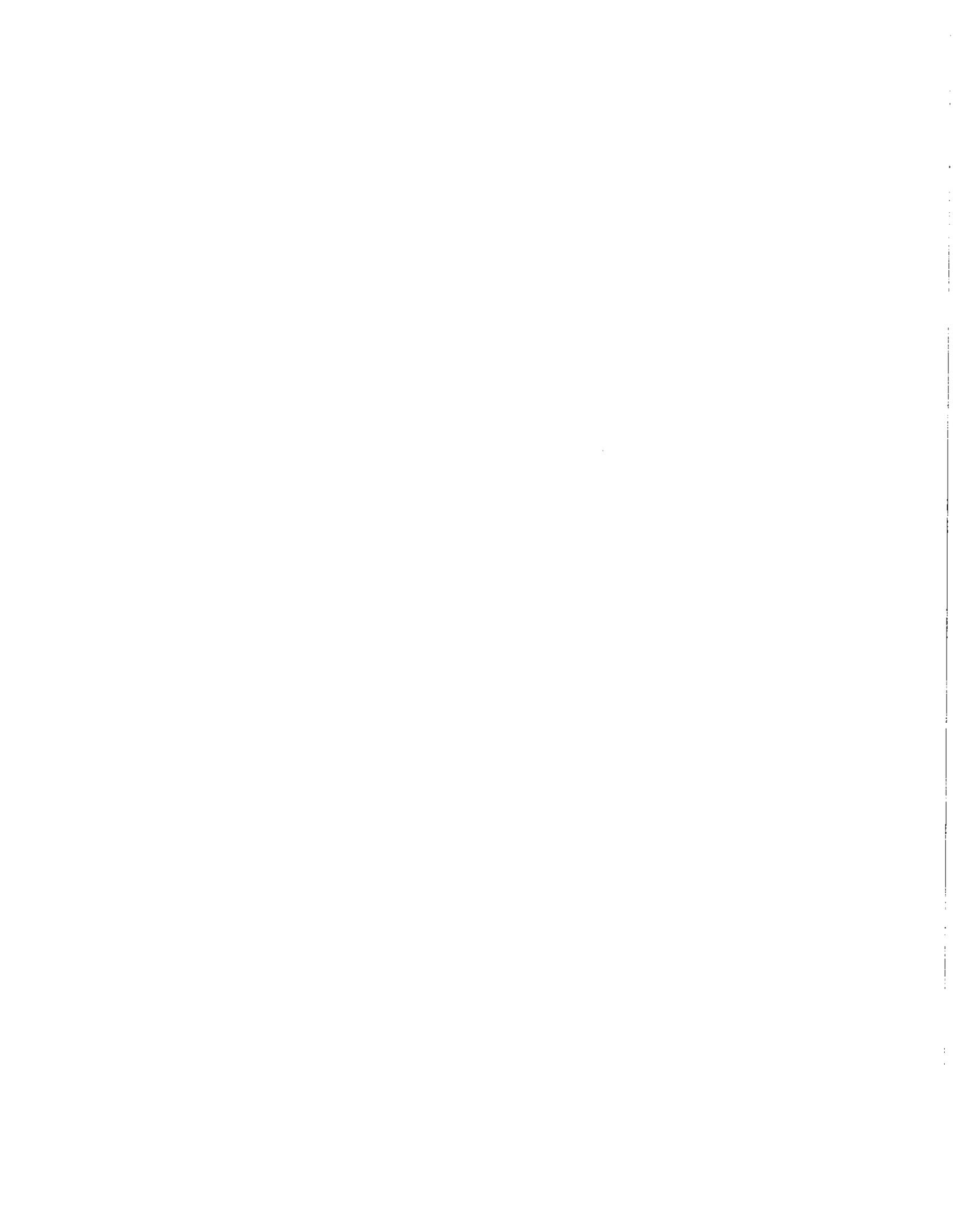
The undersigned, constituting all of the Directors of PCL Civil Constructors, Inc., a Colorado corporation, adopt the following resolutions pursuant to the authority of Colorado General Corporation Law:

Resolution: That the following persons be appointed officers and authorized signing authorities of the corporation. Such authority shall extend to the opening and closing of corporate bank accounts when two such signatures are present. The appointments shall be for the ensuing year or until their successors are designated:

Denver	L. S. Ventoza	President & COO Civil Infrastructure
	B. C. Stieritz	Vice President
	D. T. Morgan	Assistant Secretary
	G. L. Basher	Assistant Secretary
Florida	E. G. Grady	District Manager
	J. A. Foglia	Manager, Finance & Administration, Secretary/Treasurer
	M. R. Eveld	Assistant Secretary
Phoenix	T. R. O'Donnell	Vice President & District Manager
	S. W. Britton	Senior Manager, Finance & Administration, Assistant Secretary
	A. R. Talwar	District Manager
Seattle	H. K. Fleetwood	Manager, Finance & Administration, Assistant Secretary
	J. A. Schneiderman	Authorized Signer
Raleigh	J. D. Covitz	Assistant Secretary

Resolution: That the following persons shall be appointed Authorized Banking Agents for the purposes of administering the controlled disbursement banking functions with Wells Fargo and UMB Bank, which the Company participates in, where two signatures are required for opening and closing bank accounts, account service changes, account disbursements, and other activities as more particularly described in the bank service agreements:

M. J. Kehoe
D. T. Morgan
T. E. Kijanka
J. S. Norton
K. L. Churchley

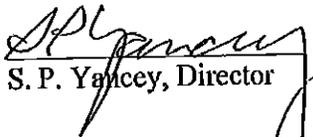


Resolution: The financial statements of the corporation for the fiscal year ended October 31, 2013, were reviewed and approved.

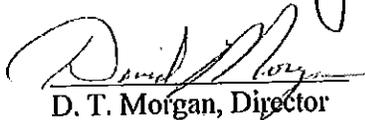
Resolution: S. P. Yancey is hereby appointed as the Chairman of the Board.

Resolution: The memo drafted by Steve Richards, General Counsel, titled Legal Obligations & Protections of Directors and Officers, was reviewed and accepted. The corporation will distribute this memo to all officers of the corporation.

These resolutions are effective on January 31, 2014.


S. P. Yancey, Director


L. S. Ventoza, Director


D. T. Morgan, Director



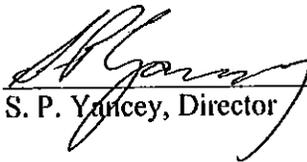
**Minutes of a Meeting of
The Board of Directors of**

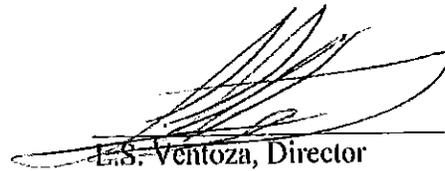
PCL CIVIL CONSTRUCTORS, INC.

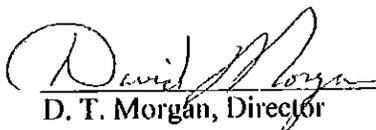
The undersigned, constituting all of the Directors of PCL Civil Constructors, Inc., a Colorado corporation, adopt the following resolution pursuant to the authority of Colorado General Corporation Law:

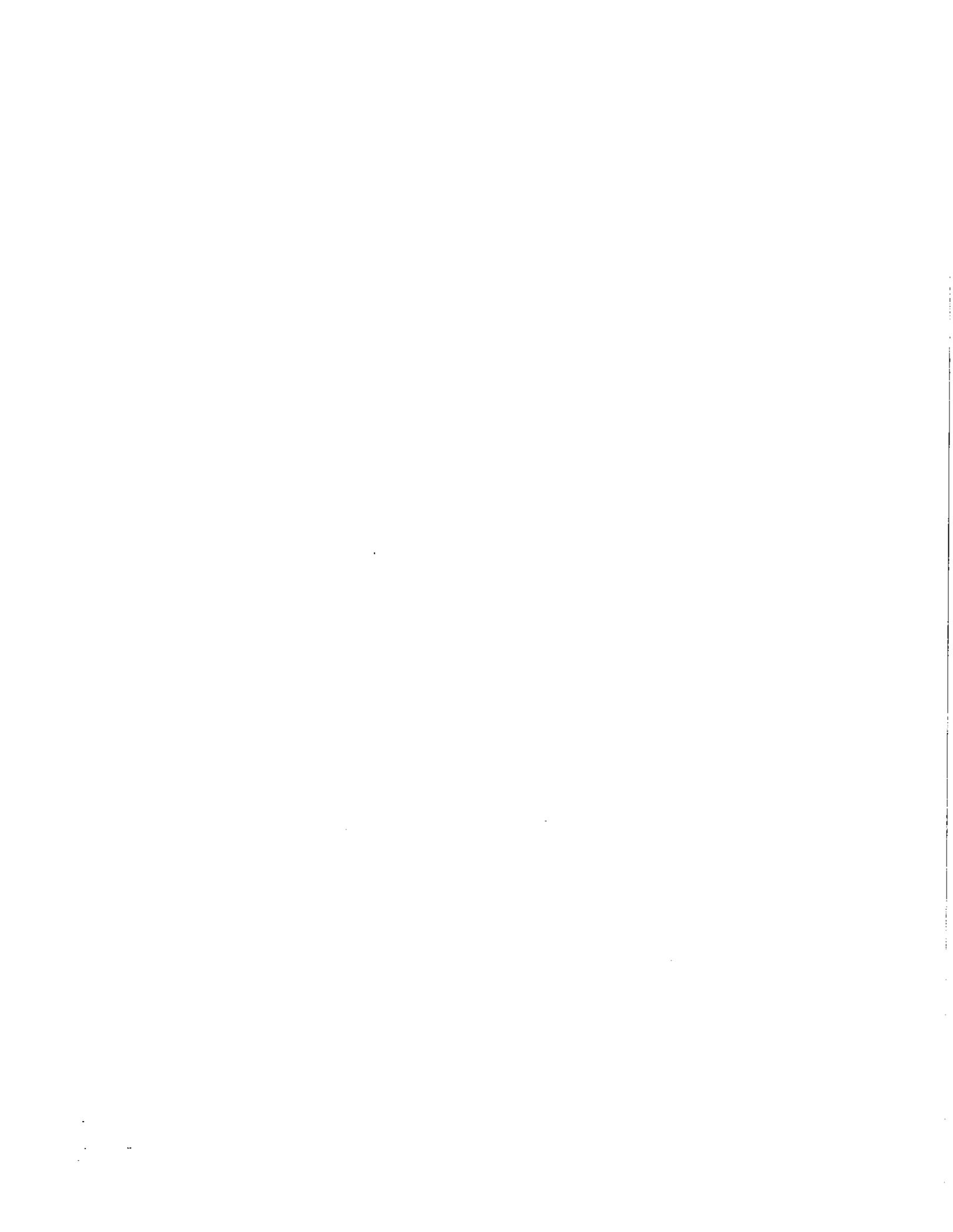
Resolution: That T. R. Spangler is appointed Manager Finance & Administration and Secretary/Treasurer and is named as an authorized signing authority of the corporation. The appointment shall remain effective until such time as a successor is designated.

This resolution is effective August 18, 2014


S. P. Yancey, Director


L.S. Ventoza, Director


D. T. Morgan, Director



STATE OF VERMONT
CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS, That we

PCL Civil Constructors, Incorporated
3810 Northdale Blvd., Suite 200
Tampa, FL 33624

as Principal, and Fidelity and Deposit Company of Maryland, Travelers Casualty and Surety Company of America, Federal Insurance Company

As Surety, are held and firmly bounden, unto the Secretary of Transportation for the State of Vermont, and his successors in office, as Obligee, in the penal sum of Eleven Million One Hundred Thirty Two Thousand Five Hundred Ninety Two Dollars and Sixty Six Cents (\$11,132,592.66), good and lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a certain written contract with the State of Vermont, dated the 10th day of February A.D. 2014 for the construction of a certain project in the State of Vermont known Hartford IM 091-2 (79) CMGC which contract is hereby referred to and made a part hereof as fully and to the same extent as if set forth at length herein:

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

In Witness Whereof we hereunto set our hands and seals this 4th day of February A.D. 2015.

In Presence of (TWO WITNESSES REQUIRED)

Cheryl L. Spielberg
[Signature]
as to Principal

PCL Civil Constructors, Inc.
Name of Corporation, Co-partnership or Individual

[Signature] L.S.
Authorized Signature

Thomas Spangler, Secretary/Treasurer
Title Authorized Signatory

Fidelity and Deposit Company of Maryland, Travelers Casualty and Surety Company of America, Federal Insurance Company
Bonding Company

[Signature] L.S.
Authorized Signature

Sandra M. Winsled, Attorney-in-Fact
Title

(TWO WITNESSES REQUIRED)

[Signature]
Judi Lucky-Effimov
[Signature]
Samantha Chierici
as to Surety.

Labor & Materials Bond

CONTRACT BOND

Bond No. 6342297, 106043515, 82337451

PCL Civil Constructors, Incorporated

3810 Northdale Blvd., Suite 200
Tampa, FL 33624

Principal

Fidelity and Deposit Company of Maryland
Travelers Casualty and Surety Company of America
Federal Insurance Company
Surety.

and

STATE OF VERMONT

Obligee.

Date 2/10 2015

Amount \$11,132,592.66

Approved 2/10 2015



Secretary of Transportation
or Duly Authorized Agent

Compliance Bond

CONTRACT BOND

Bond No. 6342297, 106043515, 82337451

PCL Civil Constructors, Incorporated

3810 Northdale Blvd., Suite 200
Tampa, FL 33624

Principal

Fidelity and Deposit Company of Maryland
Travelers Casualty and Surety Company of America
Federal Insurance Company
Surety.

and

STATE OF VERMONT

Obligee.

Date 2/10 2015

Amount, \$11,132,592.66

Approved 2/10 2015

James M. Nutter

Secretary of Transportation
or Duly Authorized Agent

STATE OF VERMONT
CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS, That we PCL Civil Constructors, Incorporated
3810 Northdale Blvd., Suite 200
Tampa, FL 33624

as Principal, and Fidelity and Deposit Company of Maryland, Travelers Casualty and Surety Company of America, Federal Insurance Company

as Surety, are held and firmly bound unto the State of Vermont, as Obligee, in the penal sum of Eleven Million One Hundred Thirty Two Thousand Five Hundred Ninety Two Dollars and Sixty Six Cents (\$11,132,592.66), good and lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a certain written contract with the above named Obligee, the State of Vermont dated the 10th day of February A.D. 2014 for the construction of a certain project in the State of Vermont known as Hartford IM 091-2 (79) CMGC which contract is hereby referred to and made a part hereof as fully and to the same extent as if set forth at length herein:

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

In Witness Whereof we hereunto set our hands and seals this 4th day of February A.D. 2015.

In Presence of (TWO WITNESSES REQUIRED)

Cheryl L. Spitzberg
Robert E. Hanaly
as to Principal

PCL Civil Constructors, Inc.
Name of Corporation, Co-partnership or Individual
TS L.S.
Authorized Signature

(TWO WITNESSES REQUIRED)

Judi Nicky-Efimov
Samantha Chierici
Samantha Chierici
as to Surety.

Thomas Spangler, Secretary/Treasurer
Title Authorized Signatory
Fidelity and Deposit Company of Maryland, Travelers Casualty and Surety Company of America, Federal Insurance Company
Bonding Company
Sandra M. Winsted L.S.
Authorized Signature
Sandra M. Winsted, Attorney-in-Fact
Title

SCHEDULE OF INSURANCE RATES ON EXTRA WORK
APPLICABLE TO THE Hartford IM 091-2 (79) CMGC PROJECT

To the Secretary of Transportation, Montpelier, Vermont

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

WORKER'S COMPENSATION

Classification No. 5222 - Concrete Bridge Rate 8.40%

Classification No. 5606 - Supervision Rate 2.08%

Classification No. 6003 - Pile Driving Rate 7.26%

Classification No. 8810 - Clerical Rate 0.30%

GENERAL LIABILITY

Classification No. ALL CLASSIFICATIONS Rate \$11.00 PER \$1,000 OF CONTRACT VALUE

Classification No. _____ Rate _____

Classification No. _____ Rate _____

Classification No. _____ Rate _____

AUTOMOBILE LIABILITY

Classification No. ALL CLASSIFICATIONS Rate INCLUDED IN RENTAL RATES

Classification No. _____ Rate _____

Classification No. _____ Rate _____

Classification No. _____ Rate _____

*Federal Social Security Act Rate 5.87%

*Federal Unemployment Insurance Rate 1.07% (Net)

*Vermont Unemployment Compensation Act Rate 5.05%

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

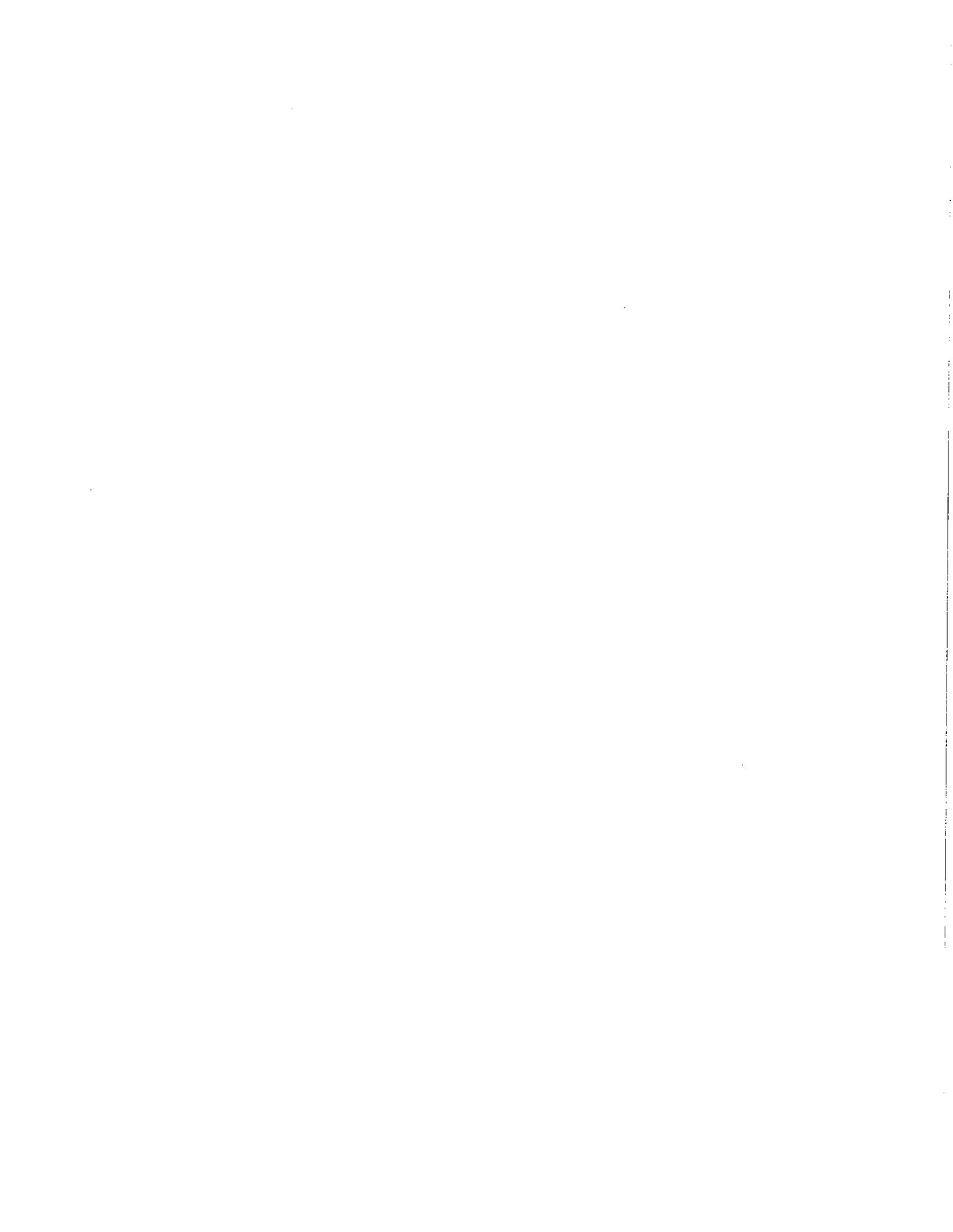
02/03/2015
Date

PCL CIVIL CONSTRUCTORS, INC.
Name of Corporation, Co-Partnership or Individual

E. GAYLE GRADY, DISTRICT MGR & AUTHORIZED SIGNATORY
Name and Title of Individual Signing the Contract

TAMPA, FL
Town or City, State

*MUST BE FILLED IN





State of Vermont
Agency of Transportation
Contract Administration
One National Life Drive
Montpelier, VT 05633-5001
www.aot.state.vt.us/conadmin

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

CA-95

TO: CONTRACT ADMINISTRATION
MONTPELIER, VERMONT

RE: Hartford IM 091-2 (79) CMGC

I hereby certify that I have access to the STANDARD SPECIFICATIONS FOR CONSTRUCTION, dated 2011, by clicking: <http://vttranscontracts.vermont.gov/construction-contracting/2011-standard-specifications>

Respectfully,

PCL Civil Constructors, Inc. Corporation

Name of Corporation, Co-Partnership or Individual

E. Gayle Grady

Name of Individual Signing the Contract

Signature of Individual Signing the Contract

District Manager, Authorized Signatory

Title of Individual Signing the Contract

(Street) 3810 Northdale Blvd., Suite 200

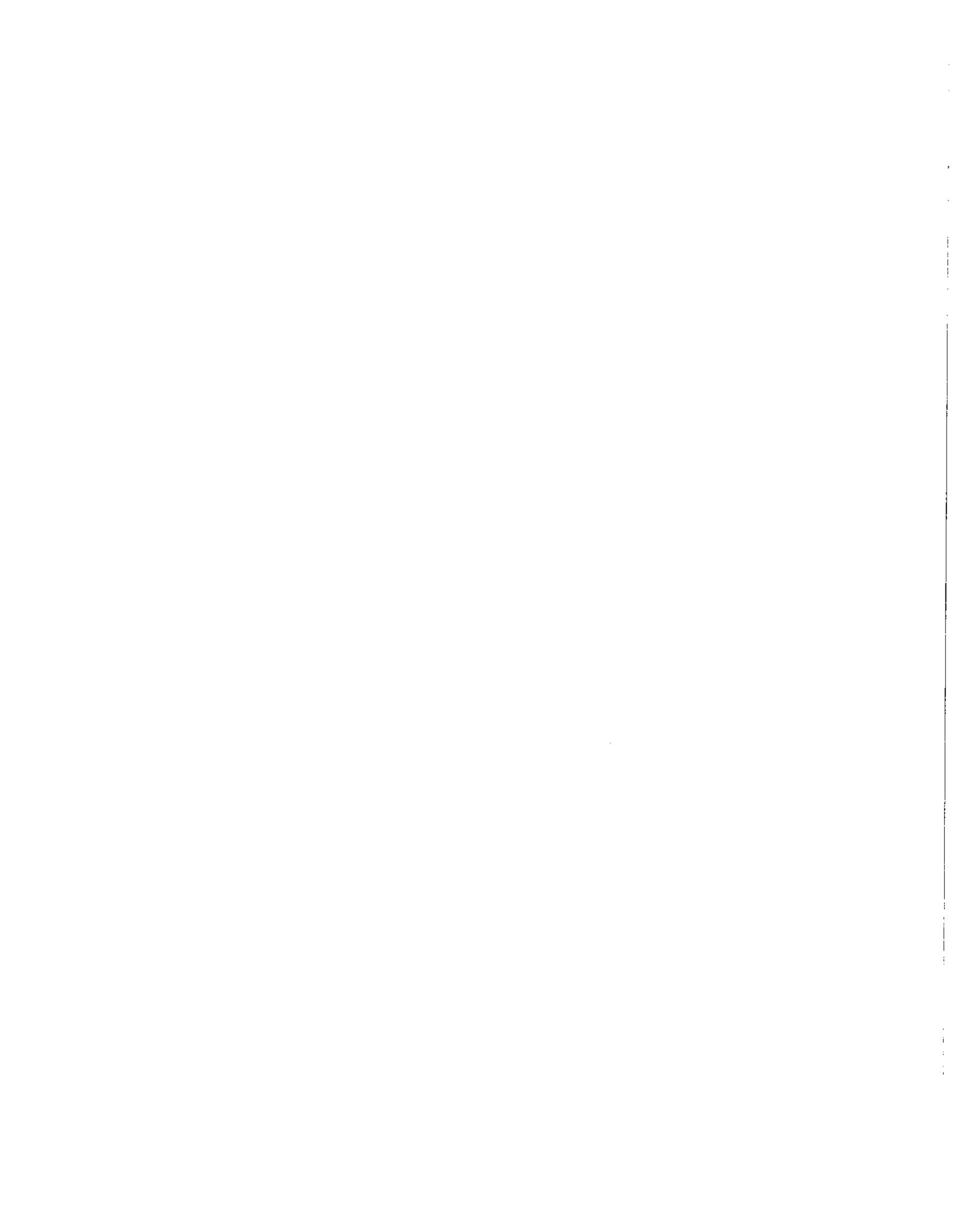
(Town or City) Tampa

(State) Florida

(Date) 2/3/2015

To be filled
in completely
by Contractor

To be filled
in completely
by Contractor





CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
01/26/2015

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

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

PRODUCER Aon Risk Services Central, Inc. Chicago IL Office 200 East Randolph Chicago IL 60601 USA	CONTACT NAME: PHONE (A.C. No. Ext): (866) 283-7122 FAX (A.C. No.): (800) 363-0105 E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	NAIC #
INSURED PCL Civil Constructors, Inc. 3810 Northdale Boulevard Suite 200 Tampa FL 33624 USA	INSURER A: Zurich American Ins Co	16535
	INSURER B: American Zurich Ins Co	40142
	INSURER C: Indian Harbor Insurance Company	36940
	INSURER D:	
	INSURER E:	
	INSURER F:	

Holder Identifier : X

COVERAGES CERTIFICATE NUMBER: 570056684913 REVISION NUMBER:

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

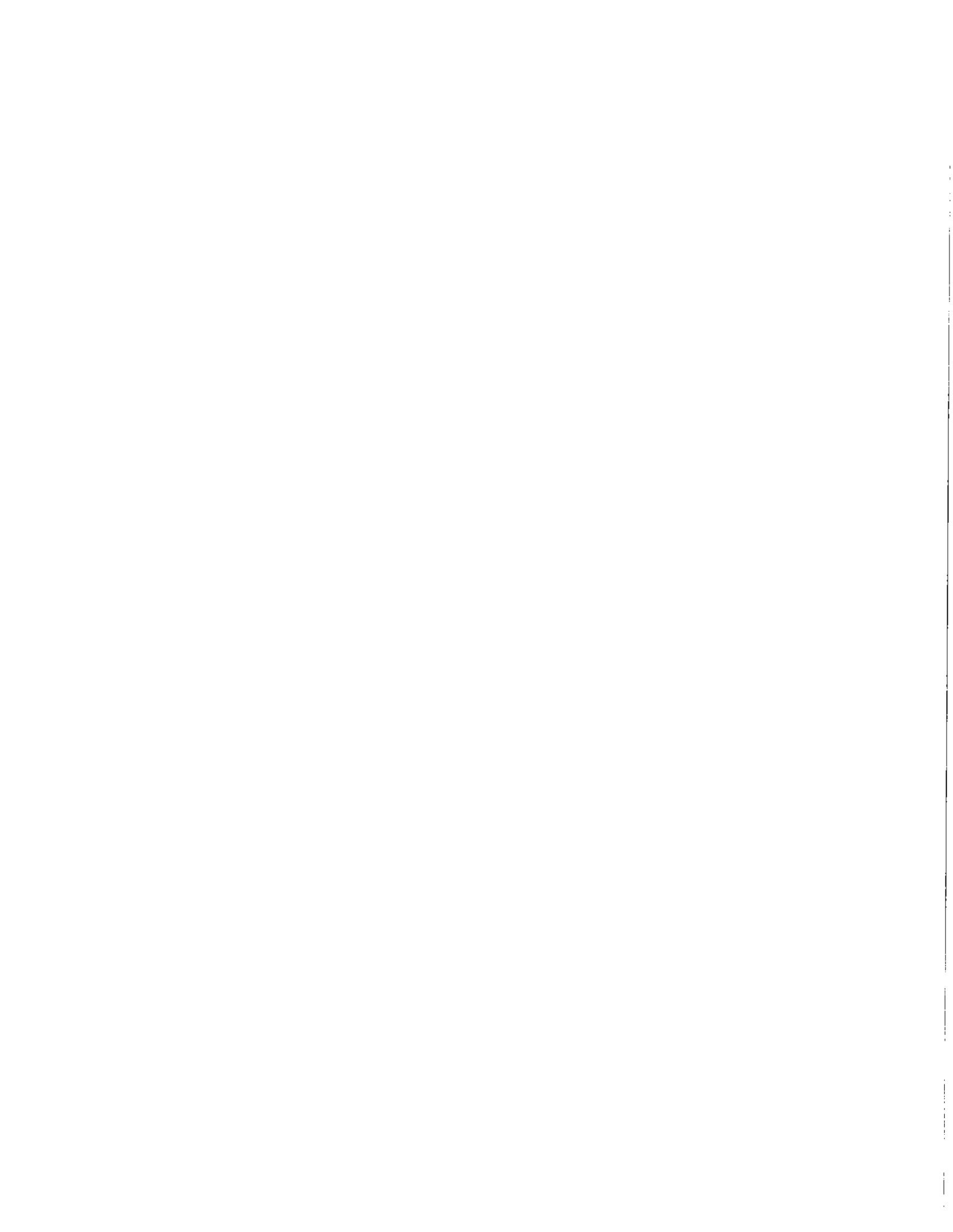
INSR LTR	TYPE OF INSURANCE	ADDL SUBR WSD YWD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC <input type="checkbox"/> OTHER:		GL0209077316	07/01/2014	07/01/2015	EACH OCCURRENCE \$5,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$5,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$5,000,000 GENERAL AGGREGATE \$10,000,000 PRODUCTS - COMP/OP AGG \$10,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS		8AP 2090771-16	07/01/2014	07/01/2015	COMBINED SINGLE LIMIT (Ea accident) \$2,000,000 BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
C	<input type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION		CPX742008701	07/01/2014	07/01/2015	EACH OCCURRENCE \$20,000,000 AGGREGATE \$20,000,000
B A B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N N/A	WC209077217 WC209082915 WC593180201	07/01/2014 07/01/2014 07/01/2014	07/01/2015 07/01/2015 07/01/2015	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$2,000,000 E.L. DISEASE-EA EMPLOYEE \$2,000,000 E.L. DISEASE-POLICY LIMIT \$2,000,000

Certificate No : 570056684913

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: Hartford Lateral Slide Project, I-91 Bridge Improvements (Bridges 43N and 43S over US Route 5); Hartford VT, Project No.: IM 091-2(79). See attached.

CERTIFICATE HOLDER State of Vermont Agency of Transportation Attn: Kristin Higgins One National Life Drive Montpelier, VT 05633-5001 USA	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE <i>Aon Risk Services Central, Inc.</i>
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ADDITIONAL REMARKS SCHEDULE

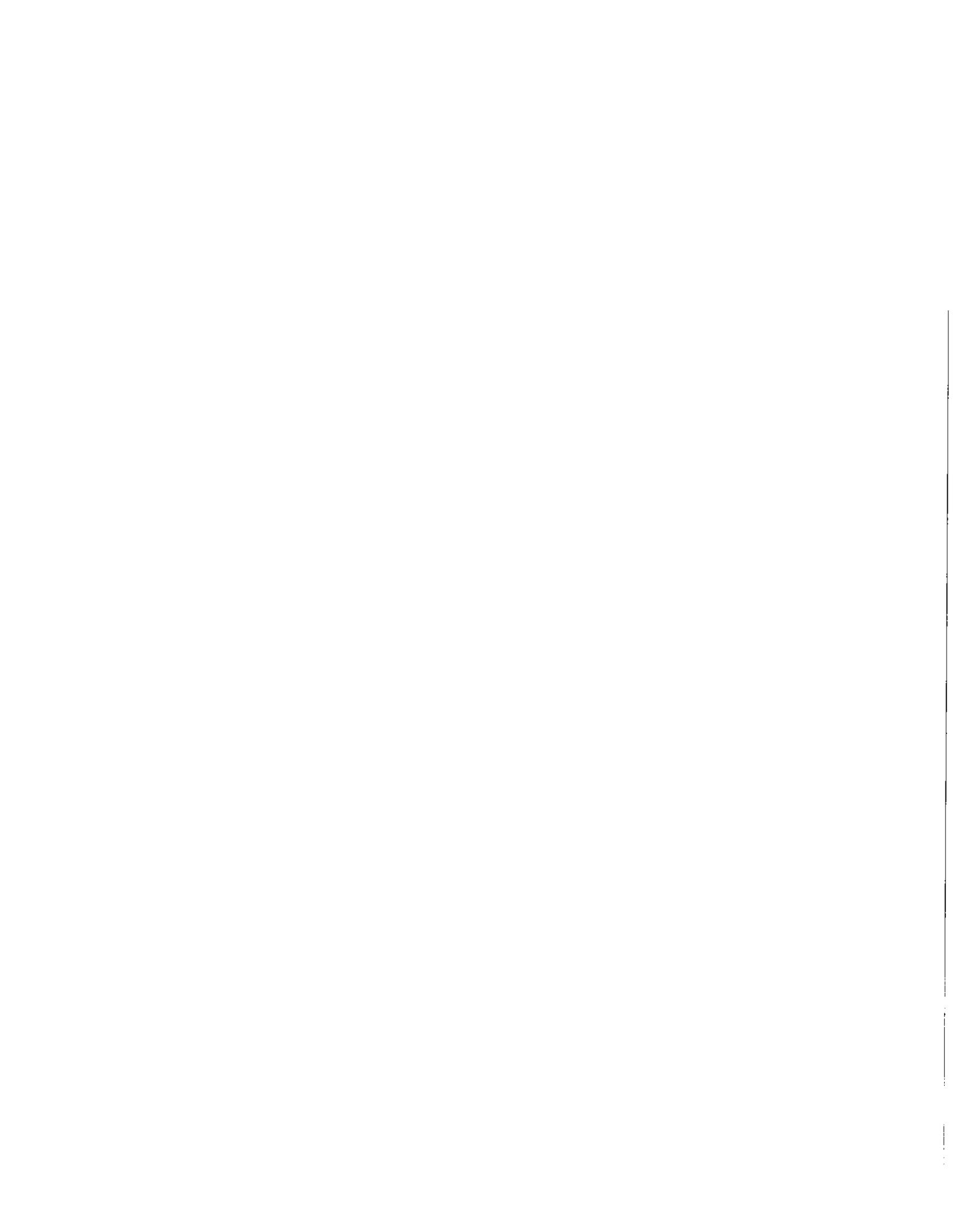
AGENCY Aon Risk Services Central, Inc.		NAMED INSURED PCL Civil Constructors, Inc.	
POLICY NUMBER See Certificate Number: 570056684913			
CARRIER See Certificate Number: 570056684913	NAIC CODE	EFFECTIVE DATE:	

ADDITIONAL REMARKS

**THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
 FORM NUMBER: ACORD 25 FORM TITLE: Certificate of Liability Insurance**

Continuation

State of Vermont Agency of Transportation is an Additional Insured pertaining to General Liability, Automobile Liability and Excess Liability with respects to liability arising out of the Named Insured's operations on the referenced project. Professional services for Architects, Engineers, Consultants, etc. are excluded.

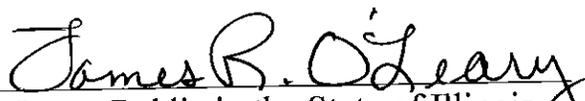


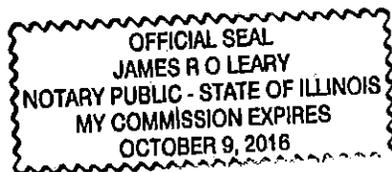
ACKNOWLEDGEMENT BY SURETY

STATE OF ILLINOIS
COUNTY OF COOK

On this 4th day of February, 2015 before me, James R. O'Leary, a Notary Public, within and for said County and State, personally appeared Sandra M. Winsted to me personally known to be the Attorney-in-Fact of and for Fidelity and Deposit Company of Maryland, Travelers Casualty and Surety Company of America, Federal Insurance Company and acknowledged that she executed the said instrument as the free act and deed of said Company.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in the aforesaid County, the day and year in this certificate first above written.


Notary Public in the State of Illinois
County of Cook



**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by THOMAS O. MCCLELLAN, Vice President, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint Sandra M. WINSTED, Susan A. WELSH, Judith A. LUCKY-EFTIMOV, James B. MCTAGGART, Debra J. DOYLE, Sandra M. NOWAK and Melissa L. FORTIER, all of Chicago, Illinois, EACH its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: any and all bonds and undertakings, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 23rd day of December, A.D. 2013.

ATTEST:

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



Gerald F. Haley

By: _____

*Assistant Secretary
Gerald F. Haley*

Thomas O. McClellan

*Vice President
Thomas O. McClellan*

State of Maryland
City of Baltimore

On this 23rd day of December, A.D. 2013, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified; THOMAS O. MCCLELLAN, Vice President, and GERALD F. HALEY, Assistant Secretary, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Maria D. Adamski

Maria D. Adamski, Notary Public
My Commission Expires: July 8, 2015



EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 4 day of February, 2015.



James M. Carroll, Vice President



POWER OF ATTORNEY

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

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

Attorney-In Fact No. 227874

Certificate No. 006163062

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

Debra J. Doyle, Diane M. O'Leary, James B. McTaggart, Jennifer L. Jakaitis, Judith A. Lucky-Eftimov, Sandra M. Winsted, Sandra M. Nowak, Susan A. Welsh, and Melissa L. Fortier

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

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 20th day of November, 2014.

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

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



State of Connecticut
City of Hartford ss.

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

On this the 20th day of November, 2014, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

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



[Signature]
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 4 day of February, 20 15.

Kevin E. Hughes
Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.



**Chubb
Surety**

**POWER
OF
ATTORNEY**

**Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company**

**Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059**

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint **Marcia K. Cesafsky, Debra J. Doyle, Robert E. Duncan, Melissa L. Fortier, Jennifer L. Jakaltis, James B. McTaggart, Linda M. Napolillo, Sandra M. Nowak, Diane M. O'Leary, Christopher P. Troha, Susan A. Welsh and Sandra M. Winsted** of Chicago, Illinois

each as their true and lawful Attorney- In- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations. In Witness Whereof, said **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** have each executed and attested these presents and affixed their corporate seals on this **28th** day of **July, 2014**.

Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

David B. Norris, Jr.

David B. Norris, Jr., Vice President



STATE OF NEW JERSEY

ss.

County of Somerset

On this **28th** day of **July, 2014** before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY**, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By- Laws and in deponent's presence.

Notarial Seal



**KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316885
Commission Expires July 16, 2019**

Katherine J. Adelaar
Notary Public

CERTIFICATION

Extract from the By- Laws of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY**:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- In- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Dawn M. Chloros, Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** (the "Companies") do hereby certify that

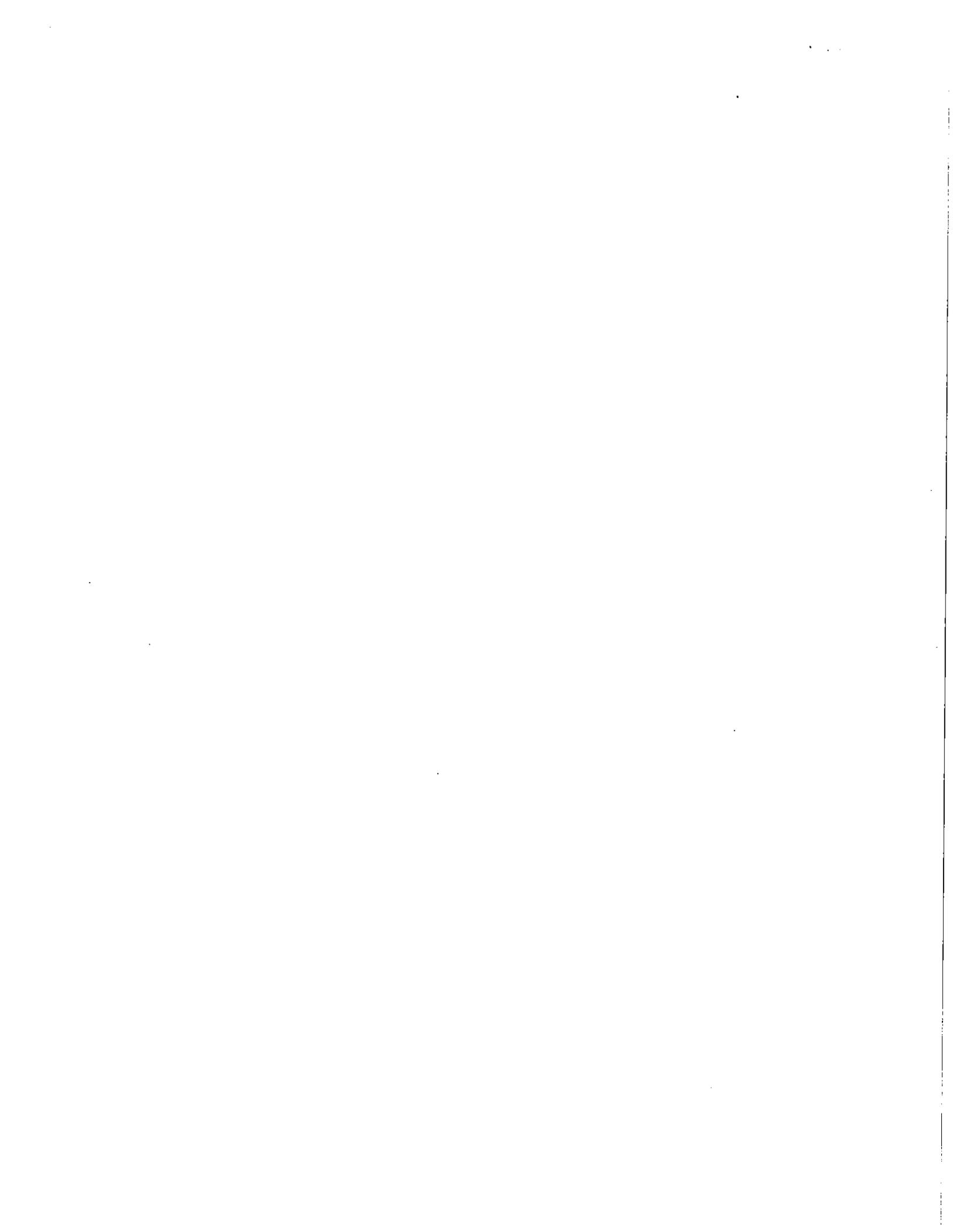
- (i) the foregoing extract of the By- Laws of the Companies is true and correct,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, Puerto Rico, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this **2/4/15**



Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary



ENDORSEMENT

ZURICH AMERICAN INSURANCE COMPANY

Named Insured: PCL Construction Enterprises, Inc.

Effective Date: 07/01/2014 12:01 A.M., Standard Time

Agent Name: AON RISK SERVICES CENTRAL INC

Agent No. 30380-000

BLANKET NOTIFICATION TO OTHERS OF CANCELLATION

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

THIS ENDORSEMENT MODIFIES INSURANCE PROVIDED UNDER THE:
COMMERCIAL GENERAL LIABILITY COVERAGE PART

- A. IF WE CANCEL THIS COVERAGE PART(S) BY WRITTEN NOTICE TO THE FIRST NAMED INSURED FOR ANY REASON OTHER THAN NONPAYMENT OF PREMIUM, WE WILL MAIL OR DELIVER A COPY OF SUCH WRITTEN NOTICE OF CANCELLATION:
1. TO THE NAME AND ADDRESS CORRESPONDING TO EACH PERSON OR ORGANIZATION SHOWN IN THE SCHEDULE BELOW; AND
 2. AT LEAST 10 DAYS PRIOR TO THE EFFECTIVE DATE OF THE CANCELLATION, AS ADVISED IN OUR NOTICE TO THE FIRST NAMED INSURED, OR THE LONGER NUMBER OF DAYS NOTICE IF INDICATED IN THE SCHEDULE BELOW.
- B. IF WE CANCEL THIS COVERAGE PART(S) BY WRITTEN NOTICE TO THE FIRST NAMED INSURED FOR NONPAYMENT OF PREMIUM, WE WILL MAIL OR DELIVER A COPY OF SUCH WRITTEN NOTICE OF CANCELLATION TO THE NAME AND ADDRESS CORRESPONDING TO EACH PERSON OR ORGANIZATION SHOWN IN THE SCHEDULE BELOW AT LEAST 10 DAYS PRIOR TO THE EFFECTIVE DATE OF SUCH CANCELLATION.
- C. IF NOTICE AS DESCRIBED IN PARAGRAPHS A. OR B. OF THIS ENDORSEMENT IS MAILED, PROOF OF MAILING WILL BE SUFFICIENT PROOF OF SUCH NOTICE.

NAME AND ADDRESS OF OTHER PERSONS OR ORGANIZATIONS:

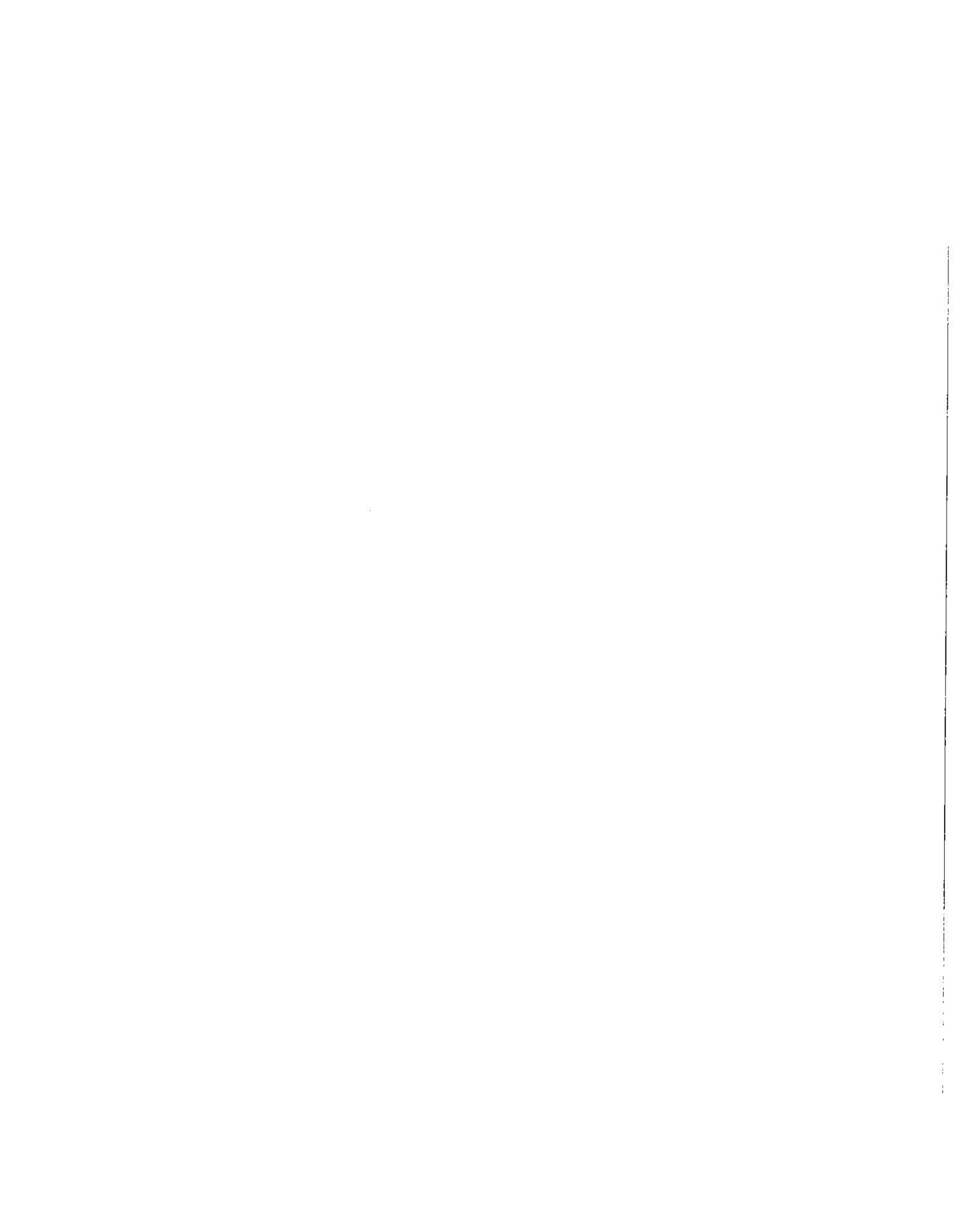
ALL CERTIFICATE HOLDERS WHERE NOTICE OF CANCELLATION IS REQUIRED BY WRITTEN CONTRACT WITH THE NAMED INSURED SUBJECT TO THE FOLLOWING PROCEDURES:

WE WILL MAIL OR DELIVER NOTIFICATION THAT SUCH COVERAGE PART HAS BEEN CANCELLED TO EACH PERSON OR ORGANIZATION SHOWN IN AN ACCURATE SCHEDULE PROVIDED TO US BY THE FIRST NAMED INSURED AT INCEPTION OF THE POLICY OR AS PERIODICALLY UPDATED.

NOTICE WILL BE MAILED OR DELIVERED AS SOON AS PRACTICABLE AFTER AN ACCURATE LIST OF NAMES AND ADDRESSES IS PROVIDED TO US BY THE FIRST NAMED INSURED IN RESPONSE TO OUR REQUEST.

NUMBER OF DAYS NOTICE: 120 DAYS

ALL OTHER TERMS AND CONDITIONS OF THIS POLICY REMAIN UNCHANGED.





ZURICH[®]

Blanket Notification to Others of Cancellation

Policy No.	Eff. Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer No.	Add'l. Prem	Return Prem.
BAP 2090771-16	07/01/2014	07/01/2015	07/01/2014	30380-000	N/A	N/A

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the:

Commercial Auto Coverage Part

- A. IF WE CANCEL THIS COVERAGE PART(S) BY WRITTEN NOTICE TO THE FIRST NAMED INSURED FOR ANY REASON OTHER THAN NONPAYMENT OF PREMIUM, WE WILL MAIL OR DELIVER A COPY OF SUCH WRITTEN NOTICE OF CANCELLATION:
- TO THE NAME AND ADDRESS CORRESPONDING TO EACH PERSON OR ORGANIZATION SHOWN IN THE SCHEDULE BELOW; AND
 - AT LEAST 10 DAYS PRIOR TO THE EFFECTIVE DATE OF THE CANCELLATION, AS ADVISED IN OUR NOTICE TO THE FIRST NAMED INSURED, OR THE LONGER NUMBER OF DAYS NOTICE IF INDICATED IN THE SCHEDULE BELOW.
- B. IF WE CANCEL THIS COVERAGE PART(S) BY WRITTEN NOTICE TO THE FIRST NAMED INSURED FOR NONPAYMENT OF PREMIUM, WE WILL MAIL OR DELIVER A COPY OF SUCH WRITTEN NOTICE OF CANCELLATION TO THE NAME AND ADDRESS CORRESPONDING TO EACH PERSON OR ORGANIZATION SHOWN IN THE SCHEDULE BELOW AT LEAST 10 DAYS PRIOR TO THE EFFECTIVE DATE OF SUCH CANCELLATION.
- C. IF NOTICE AS DESCRIBED IN PARAGRAPHS A. OR B. OF THIS ENDORSEMENT IS MAILED, PROOF OF MAILING WILL BE SUFFICIENT PROOF OF SUCH NOTICE.

NAME AND ADDRESS OF OTHER PERSONS OR ORGANIZATIONS:

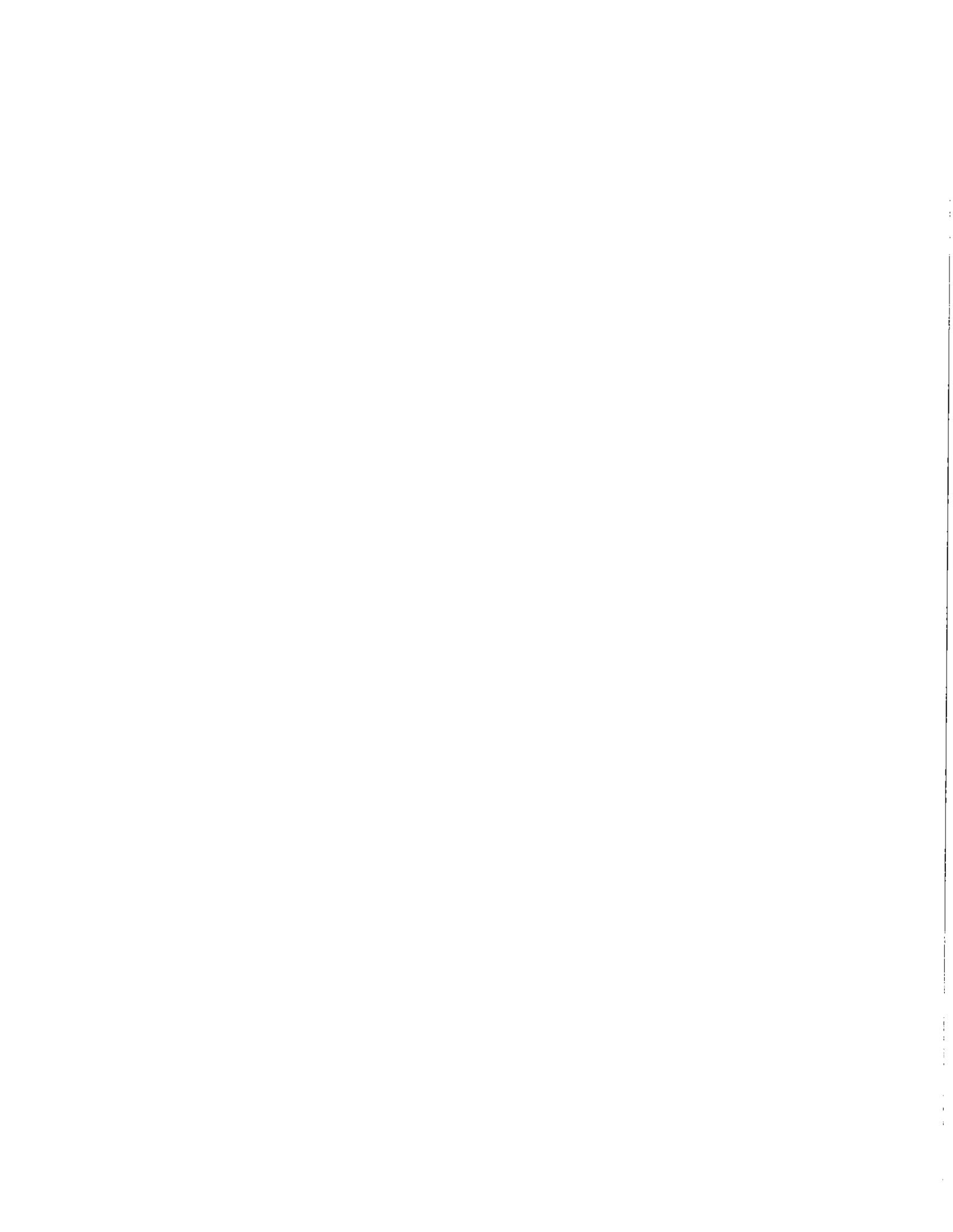
ALL CERTIFICATE HOLDERS WHERE NOTICE OF CANCELLATION IS REQUIRED BY WRITTEN CONTRACT WITH THE NAMED INSURED SUBJECT TO THE FOLLOWING PROCEDURES:

WE WILL MAIL OR DELIVER NOTIFICATION THAT SUCH COVERAGE PART HAS BEEN CANCELLED TO EACH PERSON OR ORGANIZATION SHOWN IN AN ACCURATE SCHEDULE PROVIDED TO US BY THE FIRST NAMED INSURED AT INCEPTION OF THE POLICY OR AS PERIODICALLY UPDATED.

NOTICE WILL BE MAILED OR DELIVERED AS SOON AS PRACTICABLE AFTER AN ACCURATE LIST OF NAMES AND ADDRESSES IS PROVIDED TO US BY THE FIRST NAMED INSURED IN RESPONSE TO OUR REQUEST.

NUMBER OF DAYS NOTICE: 120 DAYS

ALL OTHER TERMS AND CONDITIONS OF THIS POLICY REMAIN UNCHANGED.



NOTIFICATION TO OTHERS OF CANCELLATION ENDORSEMENT

This endorsement is used to add the following to Part Six of the policy.

PART SIX – CONDITIONS**F. Notification To Others Of Cancellation**

All other terms and conditions of this policy remain unchanged.

A. IF WE CANCEL THIS COVERAGE PART(S) BY WRITTEN NOTICE TO THE FIRST NAMED INSURED FOR ANY REASON OTHER THAN NONPAYMENT OF PREMIUM WE WILL MAIL OR DELIVER A COPY OF SUCH WRITTEN NOTICE OF CANCELLATION:

1. TO THE NAME AND ADDRESS CORRESPONDING TO EACH PERSON OR ORGANIZATION SHOWN IN THE SCHEDULE BELOW; AND
2. AT LEAST 10 DAYS PRIOR TO THE EFFECTIVE DATE OF THE CANCELLATION, AS ADVISED IN OUR NOTICE TO THE FIRST NAMED INSURED, OR THE LONGER NUMBER OF DAYS NOTICE IF INDICATED IN THE SCHEDULE BELOW.

B. IF WE CANCEL THIS COVERAGE PART(S) BY WRITTEN NOTICE TO THE FIRST NAMED INSURED FOR NONPAYMENT OF PREMIUM, WE WILL MAIL OR DELIVER A COPY OF SUCH WRITTEN NOTICE OF CANCELLATION TO THE NAME AND ADDRESS CORRESPONDING TO EACH PERSON OR ORGANIZATION SHOWN IN THE SCHEDULE BELOW AT LEAST 10 DAYS PRIOR TO THE EFFECTIVE DATE OF SUCH CANCELLATION.

C. IF NOTICE AS DESCRIBED IN PARAGRAPHS A. OR B. OF THIS ENDORSEMENT IS MAILED, PROOF OF MAILING WILL BE SUFFICIENT PROOF OF SUCH NOTICE.

NAME AND ADDRESS OF OTHER PERSONS OR ORGANIZATIONS:

ALL CERTIFICATE HOLDERS WHERE NOTICE OF CANCELLATION IS REQUIRED BY WRITTEN CONTRACT WITH THE NAMED INSURED SUBJECT TO THE FOLLOWING PROCEDURES:

WE WILL MAIL OR DELIVER NOTIFICATION THAT SUCH COVERAGE PART HAS BEEN CANCELLED TO EACH PERSON OR ORGANIZATION SHOWN IN AN ACCURATE SCHEDULE PROVIDED TO US BY THE FIRST NAMED INSURED AT INCEPTION OF THE POLICY OR AS PERIODICALLY UPDATED.

NOTICE WILL BE MAILED OR DELIVERED AS SOON AS PRACTICABLE AFTER AN ACCURATE LIST OF NAMES AND ADDRESSES IS PROVIDED TO US BY THE FIRST NAMED INSURED IN RESPONSE TO OUR REQUEST.

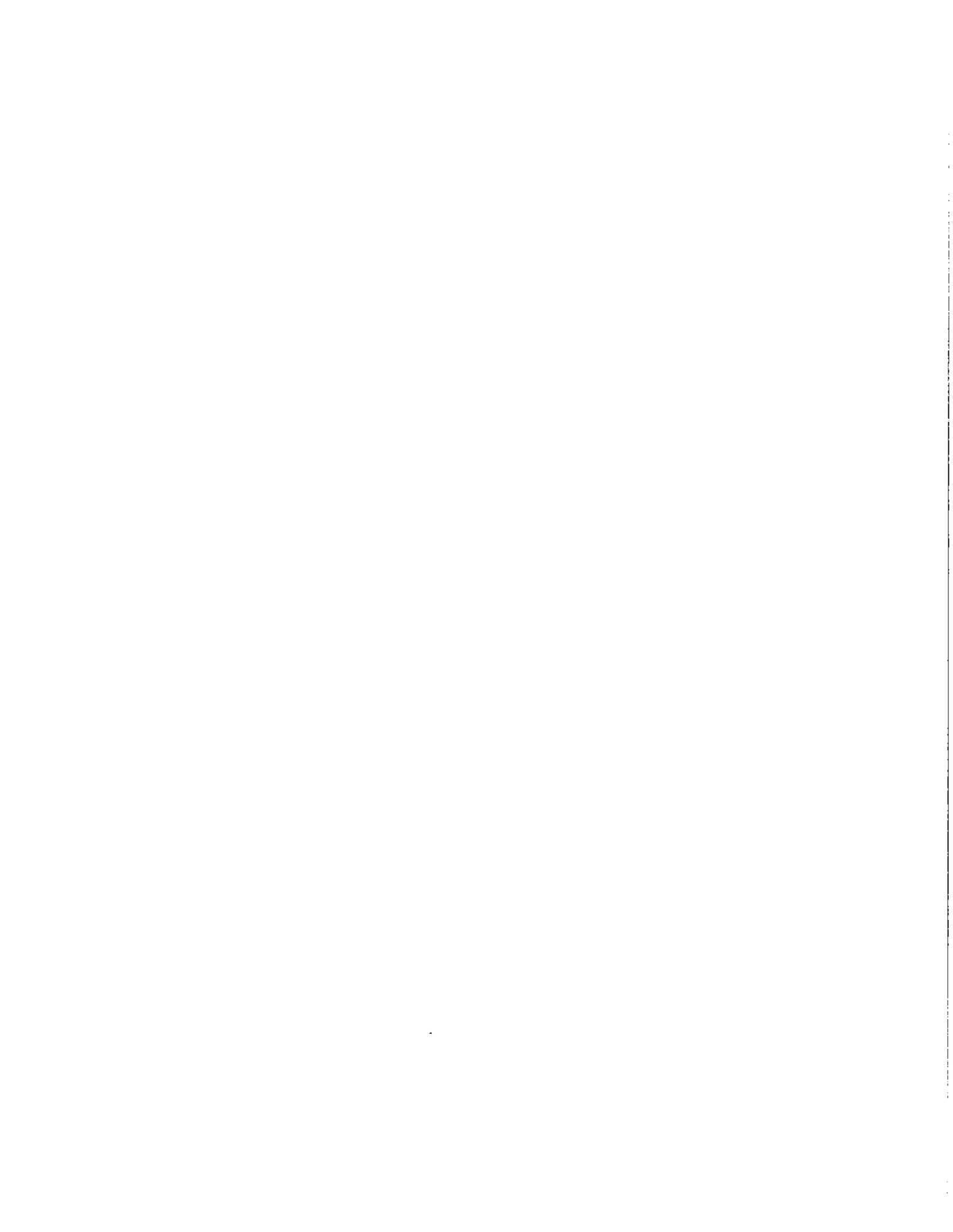
NUMBER OF DAYS NOTICE: 120 DAYS

ALL OTHER TERMS AND CONDITIONS OF THIS POLICY REMAIN UNCHANGED.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.
(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective 07/01/2014 Policy No. WC 2090772-17
Insured PCL Construction Enterprises, Inc.
Insurance Company: AMERICAN ZURICH INSURANCE COMPANY

Endorsement No.
Premium \$



STATE OF VERMONT
OFFICE OF SECRETARY OF STATE

The Office of Secretary of State hereby grants a

Certificate of Authority

to

PCL CIVIL CONSTRUCTORS, INC.

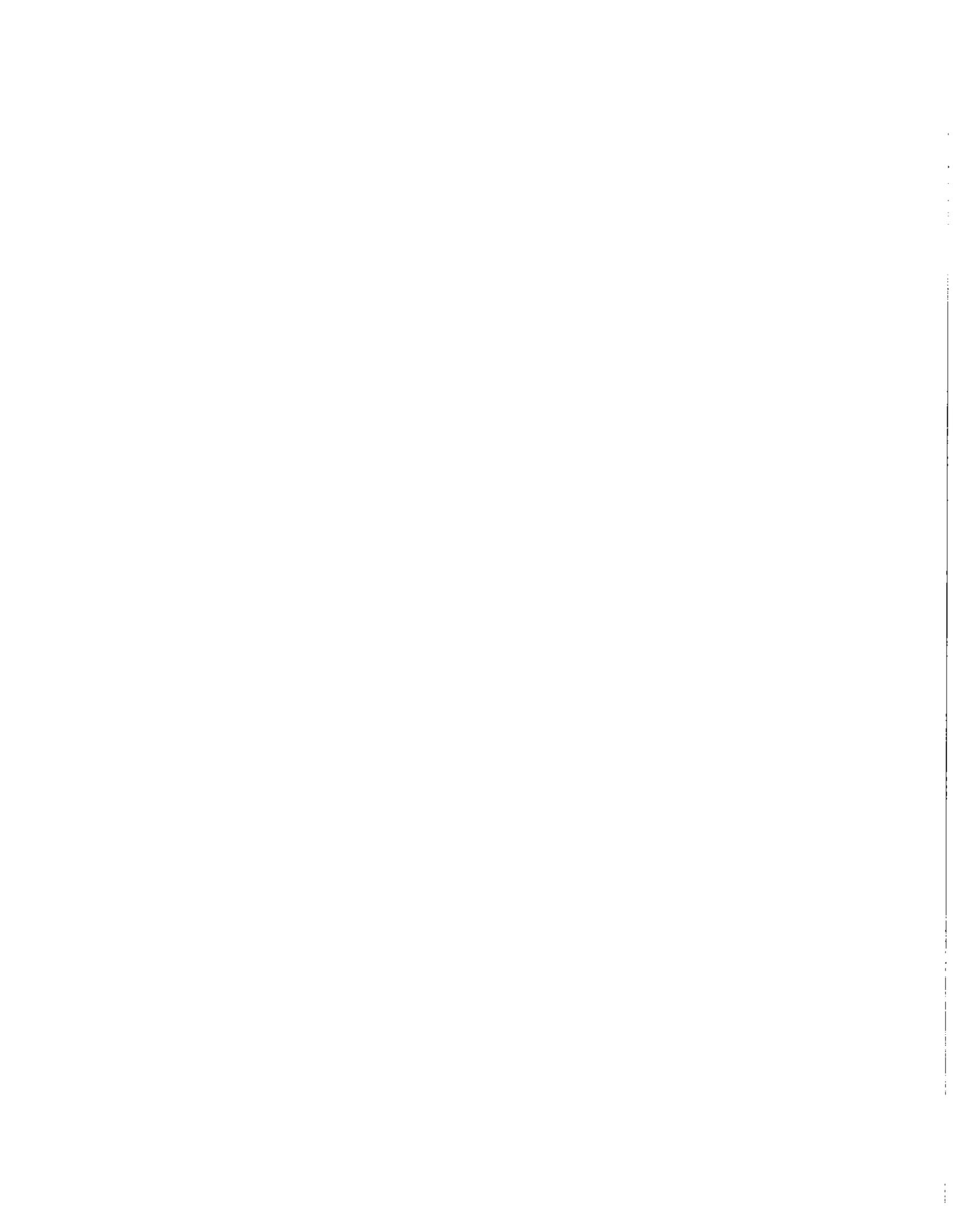
a Colorado domestic corporation, effective June 25, 2012

June 28, 2012

Given under my hand and the seal
of the State of Vermont, at
Montpelier, the State Capital



James C. Condos
Secretary of State



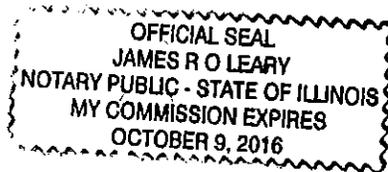
ACKNOWLEDGEMENT BY SURETY

STATE OF ILLINOIS
COUNTY OF COOK

On this 4th day of February, 2015 before me, James R. O'Leary, a Notary Public, within and for said County and State, personally appeared Sandra M. Winsted to me personally known to be the Attorney-in-Fact of and for Fidelity and Deposit Company of Maryland, Travelers Casualty and Surety Company of America, Federal Insurance Company and acknowledged that she executed the said instrument as the free act and deed of said Company.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in the aforesaid County, the day and year in this certificate first above written.

James R. O'Leary
Notary Public in the State of Illinois
County of Cook



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**ZURICH AMERICAN INSURANCE COMPANY
 COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
 FIDELITY AND DEPOSIT COMPANY OF MARYLAND
 POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY; a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by THOMAS O. MCCLELLAN, Vice President, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint Sandra M. WINSTED, Susan A. WELSH, Judith A. LUCKY-EFTIMOV, James B. MCTAGGART, Debra J. DOYLE, Sandra M. NOWAK and Melissa L. FORTIER, all of Chicago, Illinois, EACH its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: any and all bonds and undertakings, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 23rd day of December, A.D. 2013.

ATTEST:

**ZURICH AMERICAN INSURANCE COMPANY
 COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
 FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



Gerald F. Haley

By: _____

*Assistant Secretary
 Gerald F. Haley*

Thomas O. McClellan

*Vice President
 Thomas O. McClellan*

State of Maryland
 City of Baltimore

On this 23rd day of December, A.D. 2013, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, THOMAS O. MCCLELLAN, Vice President, and GERALD F. HALEY, Assistant Secretary, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Maria D. Adamski

Maria D. Adamski, Notary Public
 My Commission Expires: July 8, 2015



EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 4 day of February, 2015.



James M. Carroll, Vice President



POWER OF ATTORNEY

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

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

Attorney-In Fact No. 227874

Certificate No. 006163061

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

Debra J. Doyle, Diane M. O'Leary, James B. McTaggart, Jennifer L. Jakaitis, Judith A. Lucky-Eftimov, Sandra M. Winsted, Sandra M. Nowak, Susan A. Welsh, and Melissa L. Fortier

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

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 20th day of November, 2014.

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

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



State of Connecticut
City of Hartford ss.

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

On this the 20th day of November, 2014, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

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



[Signature]
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 4 day of February, 20 15.

Kevin E. Hughes
Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.



**Chubb
Surety**

**POWER
OF
ATTORNEY**

**Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company**

**Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059**

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint **Marla K. Cesafsky, Debra J. Doyle, Robert E. Dunoan, Melissa L. Fortier, Jennifer L. Jakaitis, James B. McTaggart, Linda M. Napolillo, Sandra M. Nowak, Diane M. O'Leary, Christopher P. Troha, Susan A. Welsh and Sandra M. Winsted** of Chicago, Illinois

each as their true and lawful Attorney- In- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations. In Witness Whereof, said **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** have each executed and attested these presents and affixed their corporate seals on this **28th** day of **July, 2014**.

Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

David B. Norris, Jr.

David B. Norris, Jr., Vice President



STATE OF NEW JERSEY

ss.

County of Somerset

On this **28th** day of **July, 2014** before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY**, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By- Laws and in deponent's presence.

Notarial Seal



**KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316685
Commission Expires July 16, 2019**

Katherine J. Adelaar
Notary Public

CERTIFICATION

Extract from the By- Laws of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY**:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- In- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

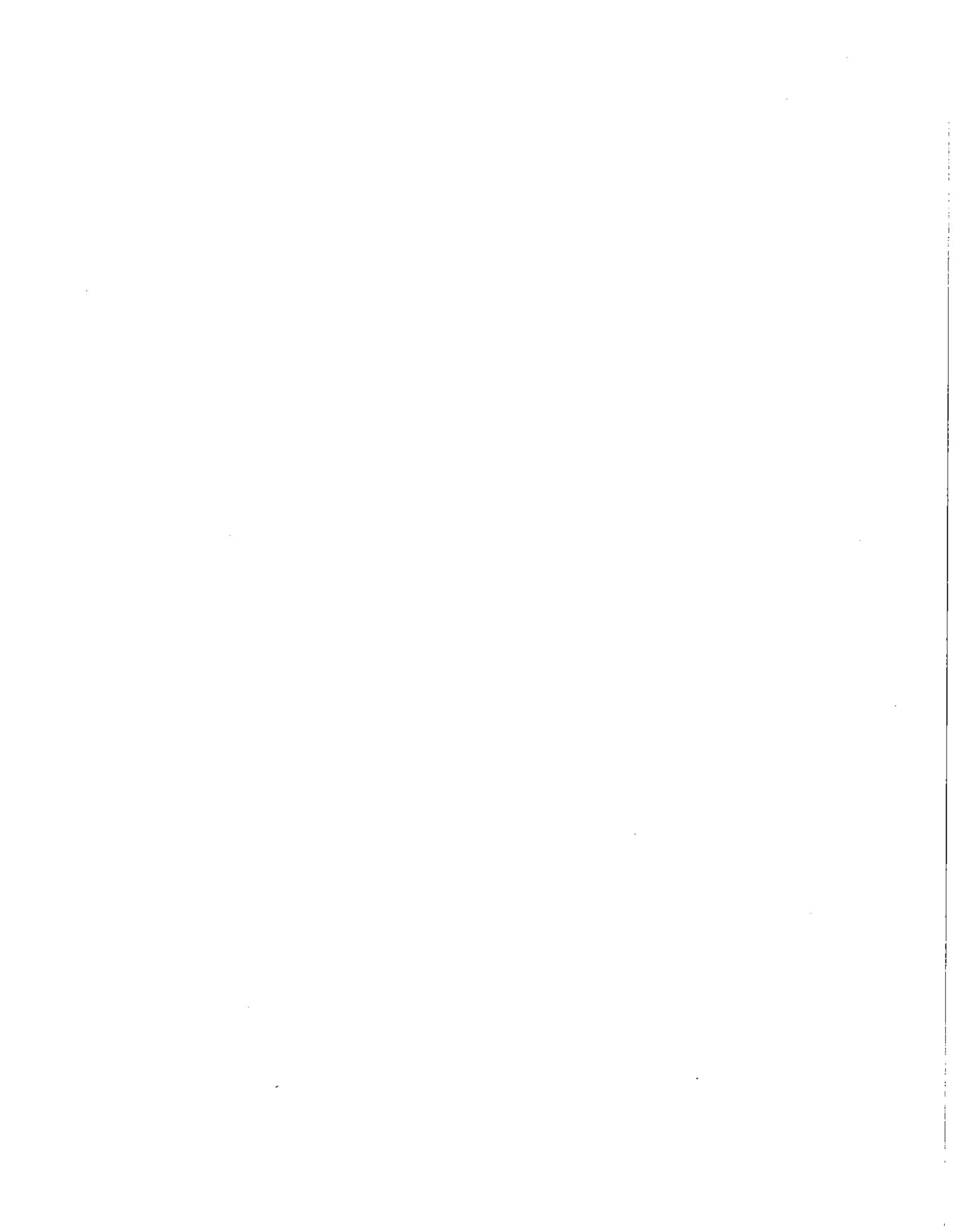
I, Dawn M. Chloros, Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** (the "Companies") do hereby certify that

- (i) the foregoing extract of the By- Laws of the Companies is true and correct,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, Puerto Rico, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this **2/4/15**



Dawn M. Chloros
Dawn M. Chloros, Assistant Secretary



VERMONT

CA-111-A

Project
Hartford IM 091-2 (79) CMGC

VERMONT
AGENCY OF TRANSPORTATION
2011 Standard Specifications for Construction

CONTRACT AGREEMENT

PCL Civil Constructors, Incorporated
3810 Northdale Blvd., Suite 200
Tampa, FL 33624

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 December 2, 2014
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
Certification for Federal-Aid Contracts
Contractor's EEO Certification
Contract CA-111-B Form
Schedule of Items
Contractor's Signature Page

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

- 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 contacting 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.epls.gov/>), which is compiled by the General Services Administration.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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)**

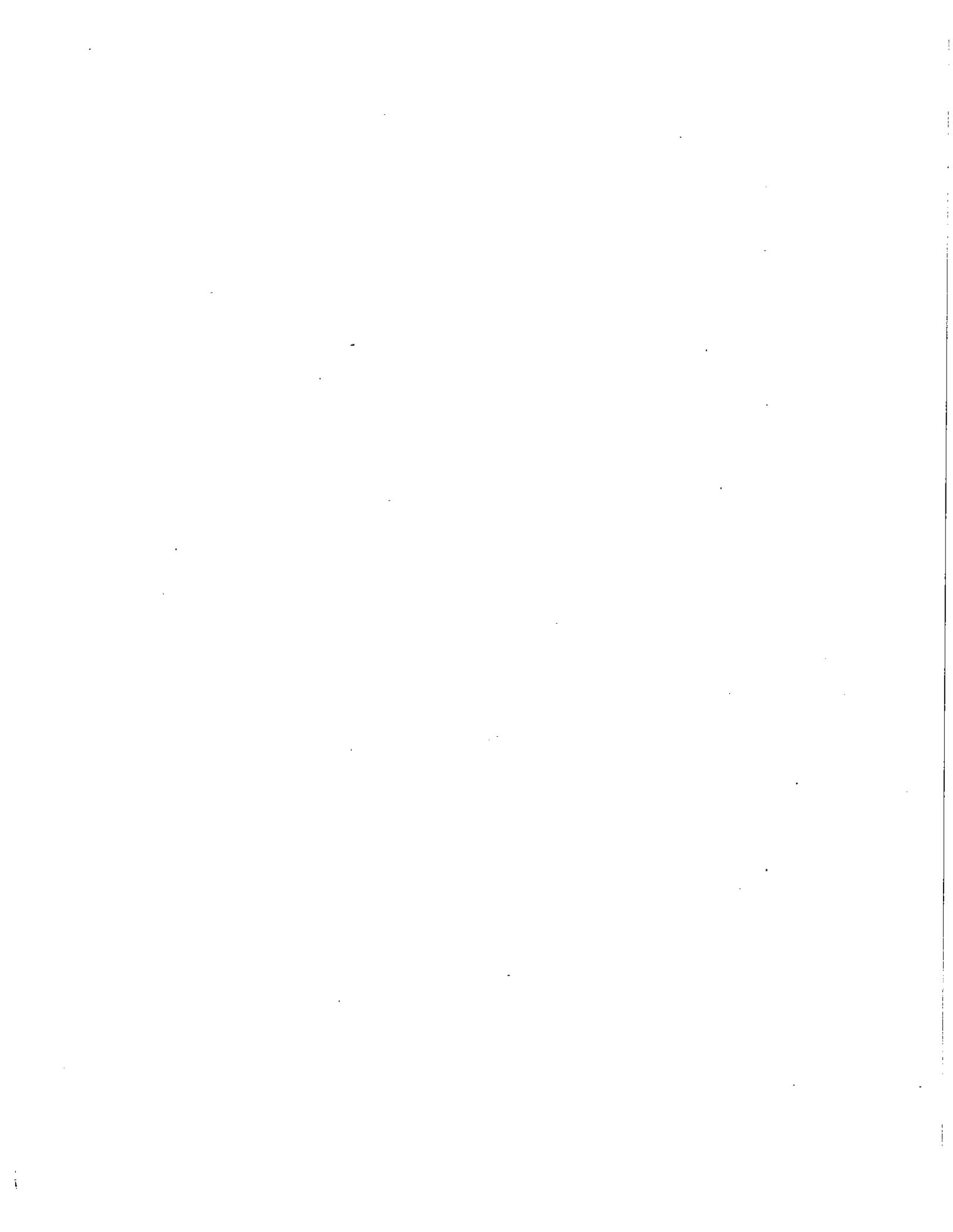
1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in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

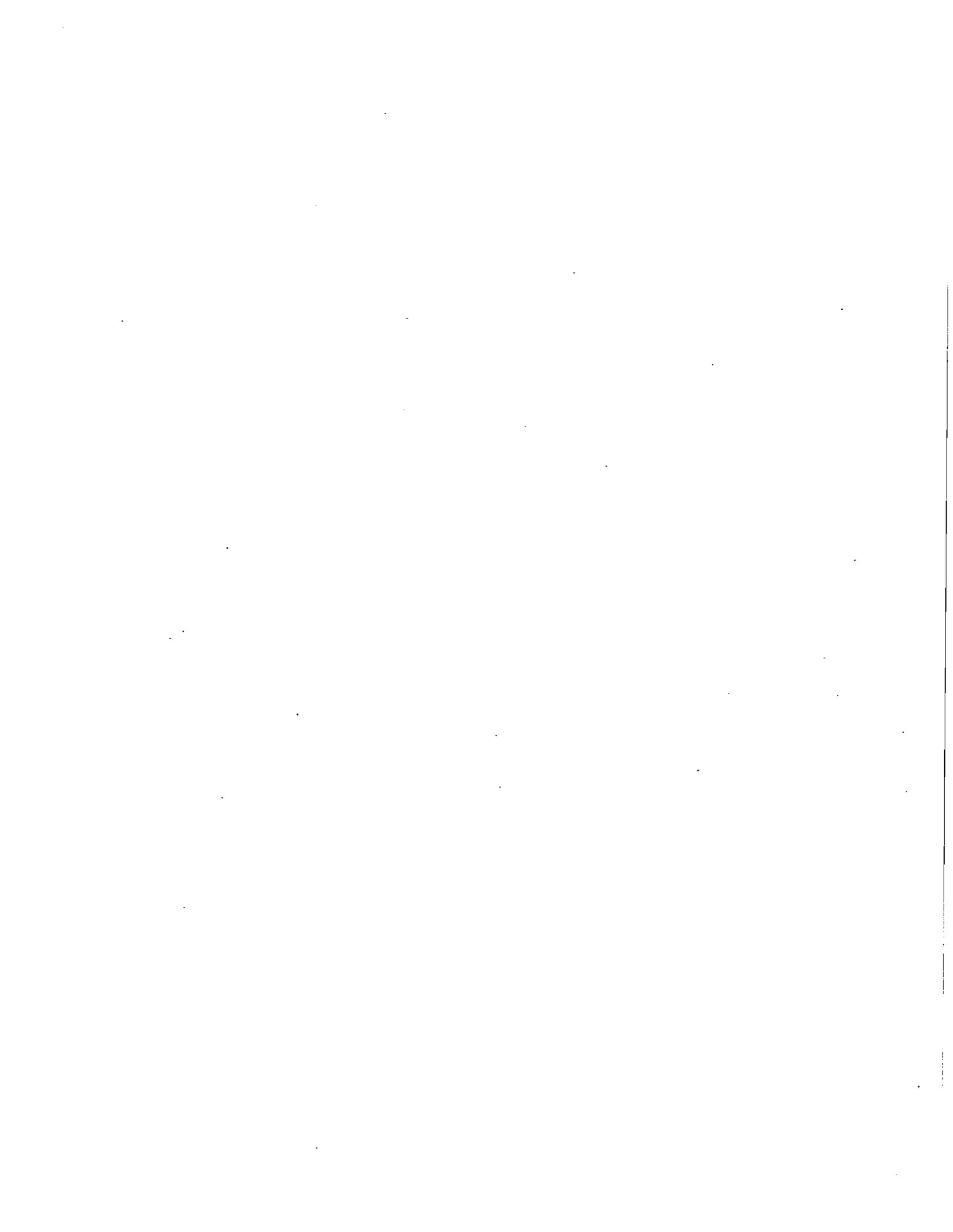
3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The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



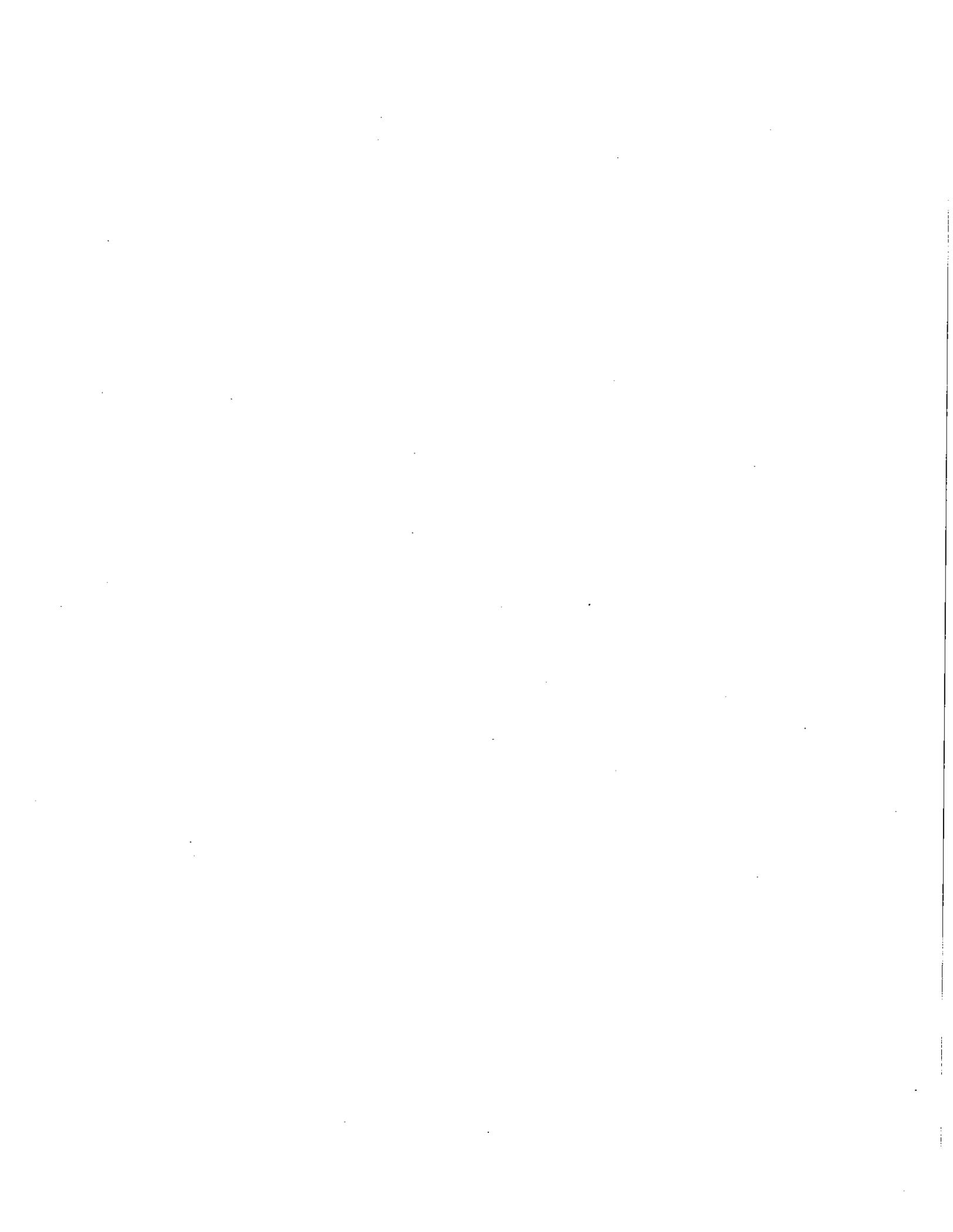
**INSTRUCTIONS FOR FILING
MONTHLY EMPLOYMENT UTILIZATION REPORT**

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.



10. 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.

11. 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

12. 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".

13. 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.

14. 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".

15. 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".
16. 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.
17. 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.

18. 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.
19. 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

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

SECTION 203 - EXCAVATION AND EMBANKMENTS

21. 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.
22. 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.

23. 203.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

PVC Plastic Pipe.....710.06

24. 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.

25. 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).

26. 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.

27. 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.

28. 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.
29. 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.
30. 203.14 BASIS OF PAYMENT, is hereby corrected by adding a period at the end of the sixth paragraph.
31. 203.14 BASIS OF PAYMENT, is hereby still further modified by adding the following paragraph and pay item:

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

Payment will be made under:

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

SECTION 310 - RECLAIMED STABILIZED BASE

32. 310.04 CONSTRUCTION, is hereby modified by deleting the phrase "or dust control" after the word "stabilizing" in the third paragraph.
33. 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.

34. 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 406 - MARSHALL BITUMINOUS CONCRETE PAVEMENT

35. 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.
36. 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

37. 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.

38. 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

39. 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

40. 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.

41. 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

42. 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.

43. 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.

44. 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.
45. 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

46. 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

47. 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.
48. 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.
49. 506.19 BOLTING AND CONNECTIONS, part (c) Installation, subpart (4) Tension Control Assembly Method, is hereby modified by being re-designated as part (1).
50. 506.19 BOLTING AND CONNECTIONS, part (c) Installation, subpart (5) Direct Tension Indicator Method, is hereby modified by being re-designated as part (2).
51. 506.19 BOLTING AND CONNECTIONS, part (c) Installation, is hereby still further modified by deleting TABLE 506.19B (including associated paragraphs) in its entirety.
52. 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.
53. 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

54. 507.01 DESCRIPTION, is hereby modified by adding the phrase "of the level specified" after the phrase "bar reinforcement".
55. 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.

56. 507.02 MATERIALS, is hereby modified by deleting the sixth (final) entry in the Subsection listing.
57. 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.
58. 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.
59. 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.

60. 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.
61. 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.
62. 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.
63. 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.

64. 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.

65. 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...").
66. 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)

67. 507.11 BASIS OF PAYMENT, is hereby further modified by adding the following pay items:

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

SECTION 516 - EXPANSION DEVICES

68. 516.01 DESCRIPTION, is hereby modified by adding the phrase ", or partially removing and modifying," after the word "installing".
69. 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.

70. 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.

71. 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

72. 525.02 MATERIALS, is hereby modified by adding the following as the third entry in the Subsection listing:

Structural Steel.....714.02

73. 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.

74. 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.

75. 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

76. 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

77. 540.02 MATERIALS, is hereby modified by deleting the fourteenth entry (beginning "Coated Bar Reinforcement...") in the Subsection listing.
78. 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

79. 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.
80. 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.

81. 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

82. 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).
83. 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...").

84. 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

85. 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.

86. 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.

87. 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).
88. 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...").
89. 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

90. 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.

91. 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.

92. 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.

93. 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.

94. 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.

95. 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

96. 580.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

Polymer Concrete Repair Material.....780.05

97. 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.

98. 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.

99. 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.

100. 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.

101. 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.

102. 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.

103. 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

104. 601.02 MATERIALS, is hereby modified by adding the following as the sixth entry in the Subsection listing:

Corrugated Polypropylene Pipe.....710.07

105. 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.

106. 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.

107. 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

108. 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.

109. 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.

110. 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

111. 613.02 MATERIALS, is hereby modified by adding the following to the Subsection listing:

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

112. 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.

113. 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.

114. 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.

115. 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.

116. 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.

117. 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.

118. 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

119. 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.

120. 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).

121. 616.14 METHOD OF MEASUREMENT, is hereby corrected by changing the word "portland" to "Portland" in the fifth (last) paragraph.

122. 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.

123. 616.15 BASIS OF PAYMENT, is hereby corrected by changing the word "portland" to "Portland" in the fourth paragraph.

124. 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

125. 621.01 DESCRIPTION, is hereby modified by adding the phrase "repairing," after the phrase "removing,".

126. 621.02 MATERIALS, is hereby modified by adding the following as the fifth entry in the Subsection listing:

Wire Rope or Cable.....713.03

127. 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.

128. 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).

129. 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.

130. 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.

131. 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.

132. 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.

133. 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.

134. 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.

135. 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

136. 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.

137. 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

138. 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.

139. 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.

140. 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.

141. 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.

142. 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.

143. 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

144. 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)

145. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby modified by deleting the first paragraph in its entirety.
146. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby further modified by deleting the seventh paragraph in its entirety.
147. 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.
148. 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.
149. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby still further modified by deleting the ninth paragraph in its entirety.

150. 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).
151. 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".
152. 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.
153. 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.
154. 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.
155. 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.
156. 646.06 PAINT PAVEMENT MARKINGS, is hereby modified by being re-named WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS.
157. 646.06 WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS, is hereby modified by changing the word "Retroflective" to "Retroreflective" in the first sentence of the first paragraph.
158. 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.

159. 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.

160. 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.

161. 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.

162. 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 ".".

163. 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.

164. 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.

165. 646.07 DURABLE PAVEMENT MARKINGS, part (b) Epoxy Paint, is hereby modified by being re-designated as part (e).
166. 646.07 DURABLE PAVEMENT MARKINGS, part (c) Thermoplastic, is hereby modified by being re-designated as part (f) Extruded Thermoplastic.
167. 646.07 DURABLE PAVEMENT MARKINGS, part (d) Polyurea Paint, is hereby modified by being re-designated as part (h).
168. 646.07 DURABLE PAVEMENT MARKINGS, part (e) Methyl-methacrylate Paint, is hereby modified by being re-designated as part (i).
169. 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.

170. 646.07 DURABLE PAVEMENT MARKINGS, part (e) Epoxy Paint, is hereby modified by deleting the fifth (last) sentence in its entirety.

171. 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.

172. 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.

173. 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).

174. 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.

175. 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.

176. 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)".
177. 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)".
178. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, e. Beads, is hereby modified by being re-named Optics.
179. 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".
180. 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".
181. 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.
182. 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 mc dl/lx/m² for yellow markings and 400 mc dl/lx/m² for white markings.
183. 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).
184. 646.07 DURABLE PAVEMENT MARKINGS, part (h) Polyurea Paint, is hereby modified by deleting the second sentence in its entirety.

185. 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 $\pm 50.8 \mu\text{m}$ (± 2 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 1.7 square meters per liter (70 square feet per gallon). 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.

186. 646.07 DURABLE PAVEMENT MARKINGS, part (i) Methyl-methacrylate Paint, is hereby modified by deleting the second sentence in its entirety.

187. 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/m² for yellow markings and 400 mcdl/lx/m² for white markings. Initial dry retroreflectivity minimums for recessed methyl-methacrylate shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² 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/m² for yellow markings and 400 mcdl/lx/m² 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/m² for yellow markings and 400 mcdl/lx/m² for white markings.

188. 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.

189. 646.08 TEMPORARY PAVEMENT MARKINGS, part (a) Pavement Marking Tape, Type II, is hereby modified by being re-named Temporary Pavement Marking Tape.

190. 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.

191. 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)".

192. 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.

193. 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.

194. 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.

195. 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.

196. 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.

197. 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.

198. 646.09 OTHER RELATED MARKINGS, part (a) Pavement Marking Recess, is hereby further modified by deleting the last sentence in its entirety.

199. 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).		

200. 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

201. 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

202. 656.02 MATERIALS, is hereby modified by deleting the first entry in the Subsection listing (for "Barrier Fence") in its entirety.
203. 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

204. 677.01 DESCRIPTION, is hereby modified by adding the phrase "and removing and disposing of existing overhead traffic sign supports," after the phrase "supports,".

205. 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.

206. 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.

207. 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

208. 678.01 DESCRIPTION, is hereby modified by adding the phrase ", and removing existing traffic control systems" after the word "system" in the first paragraph.
209. 678.02 MATERIALS, is hereby corrected by deleting "convers" and replacing it with the word "covers" in the second sentence of the last paragraph of the Subsection text.
210. 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.
211. 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.

212. 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.

213. 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.

214. 678.14 BASIS OF PAYMENT, is hereby further modified by adding the following paragraph and pay item:

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

Payment will be made under:

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

SECTION 700 GENERAL

215. 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 ".".
216. 700.02 MATERIALS CERTIFICATIONS, part (a) General, is hereby modified by deleting subpart (3) in its entirety.
217. 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

218. 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.
219. 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.

220. 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.

221. 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.

222. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (b) Pretest, is hereby modified by being re-designated as part (c).

223. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (c) Certification, is hereby modified by being re-designated as part (d).

224. 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 708 - PAINTS, STAINS, AND TRAFFIC MARKING MATERIALS

225. 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.

226. 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.

227. 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.
228. 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.
229. 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.

230. 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.

231. 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.

232. 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.
233. 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.
234. 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 ".
235. 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.
236. 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.
237. 708.09 GLASS BEADS, is hereby modified by being re-named OPTICS.
238. 708.09 OPTICS, is hereby modified by adding new part (a) heading Glass Beads.
239. 708.09 OPTICS, part (a) Properties, is hereby modified by being re-designated as subpart (1) under part (a) heading Glass Beads.
240. 708.09 OPTICS, part (b) Certification, is hereby modified by being re-designated as subpart (2) under part (a) heading Glass Beads.
241. 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.

242. 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.

243. 708.11 RAISED PAVEMENT MARKERS, is hereby modified by being re-named RAISED PAVEMENT MARKERS, TYPE I.

244. 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.

245. 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.

246. 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.
247. 708.14 LINE STRIPING TARGETS, is hereby modified by being deleted in its entirety.

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

248. 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.

249. 710.07 CORRUGATED POLYPROPYLENE PIPE, is hereby made a new Subsection of the Standard Specifications as follows:

250. 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

251. 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.
252. 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.
253. 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

254. 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.
255. 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.

256. 713.07 COATED BAR REINFORCEMENT, is hereby modified by being deleted in its entirety.
257. 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

258. 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.
259. 714.08 ANCHOR BOLTS, BEARING DEVICES, is hereby further corrected by deleting punctuation ".,," and replacing it with punctuation "." at the end of the second sentence of the first paragraph.

SECTION 726 - PROTECTIVE COATINGS AND WATERPROOFING MATERIALS

260. 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.

261. 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

262. 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 755 - LANDSCAPING MATERIALS

263. 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.

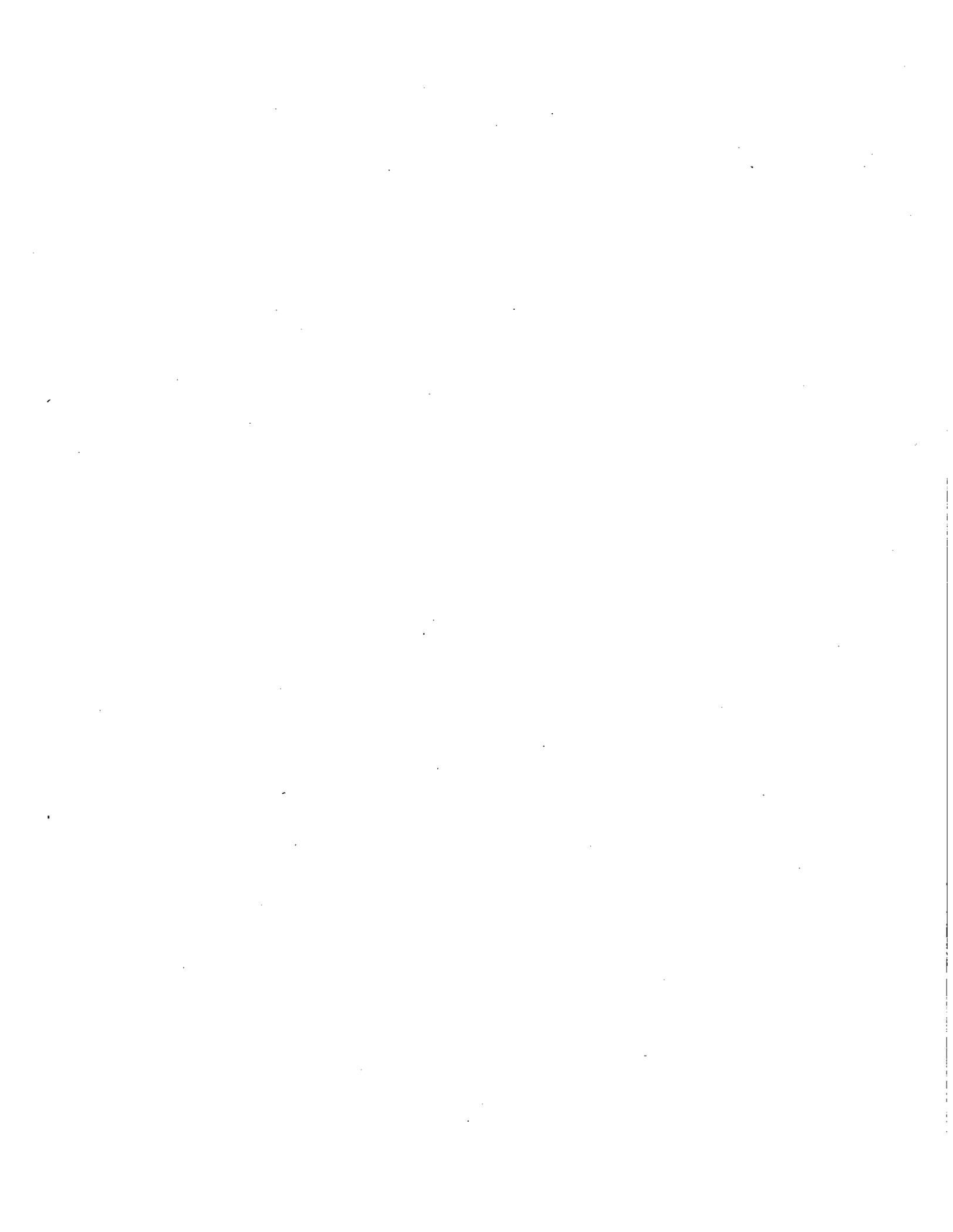
Anchors for erosion logs shall be wooden stakes, U-shaped wire or earth anchors, or rebar stakes; the size and length shall be as recommended by the manufacturer.

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

264. 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.

(End of Standard Provisions)

Special Provisions for: Hartford IM 091-2(79)

1. LABOR SUPPLY. Available workers for this Contract may be obtained from Manager, Employment & Training, White River Junction, VT. The latest edition of the DBE Registry can be obtained from the Office of Civil Rights and Labor's Webpage at the following address: www.aot.state.vt.us/CivilRights/default.htm. 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(25). This Contract shall be completed on or before October 30, 2015.
3. NOTICE TO BIDDERS. U.S. Department of Labor Davis-Bacon wage rates are applicable to this Contract. Copies of the applicable rates are included in this proposal.
4. CONTACT WITH THE AGENCY. From the time of advertising until the actual bid opening for this Contract, all prospective Contractors, subcontractors, and suppliers shall direct all inquiries related to this project solely to the Agency's Office of Contract Administration at (802) 828-2641. This number may also be accessed via the Agency's TTY/TDD Telecommunications Relay Service at 1-800-253-0191.

The deadline for submitting inquiries related to this project to the Office of Contract Administration is 4:30 p.m. Eastern Standard Time on December 16, 2014. 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 May 6, 2014
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
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 - START OF WORK. The contractor is hereby notified that no on-site work shall start prior to March 23rd, 2015, with the exception of the deployment of the Smart Work Zone system.
11. NOTICE TO BIDDERS - INCENTIVE/DISINCENTIVE (I/D). The Agency's intent is to have the bridge closure periods (BCPs) for Bridges Nos. 43N and 43S be as short a duration as possible. To encourage the Contractor to provide a maximum effort to complete the identified work for I/D within the period as defined below, the Agency is willing to pay an incentive.

- (a) Dates. The allowable BCP for each bridge will be one (1) weekend, herein defined for the purposes of this contract as the period from 6:00pm Friday to 6:00am on the following Monday. Approved closure dates (in the calendar year 2015) are as follows:

August 7 - August 10
August 14 - August 17
August 21 - August 24
August 28 - August 31
September 11 - September 14
September 18 - September 21

The Contractor shall select a separate BCP for each bridge.

During the BCP, the Contractor will be allowed to work 24 hours per day. Night work will be allowed during the BCP. The Contractor is to schedule their work such that the bridge is not closed during a holiday period. See Special Provision Nos. 12 NOTICE TO BIDDERS - REQUIREMENTS FOR NIGHTTIME WORK and 13 NOTICE TO BIDDERS - NIGHTTIME WORK RESTRICTIONS for additional information and requirements.

Upon any Contractor's receipt of the VAOT Contract award letter, the Contractor shall submit to the VAOT Construction Section for review and approval a certified letter indicating the BEGIN CONSTRUCTION DATE for the BCP work. This letter shall be received by the Construction Section a minimum of seven (7) calendar days prior to the BEGIN CONSTRUCTION DATE indicated in

the letter. The letter shall indicate the last day of the BCP, the I/D finish date. The BEGIN CONSTRUCTION DATE shall be determined by the Contractor.

The I/D dates as established above for this Contract are absolute fixed dates and will not be changed for any Act of God, omission, improper action, direction of the Engineer, or any other reason unless done so by the Secretary and only under extreme conditions as determined by the Secretary.

There shall be a pre-closure coordination meeting held on site with all subcontractors, the Contractor's superintendent, the Engineer, the Project Manager, the Public Outreach Coordinator, AOT District 4 Garage, NHDOT, Dartmouth College, VA Medical Center, Dartmouth-Hitchcock Medical Center, Vermont State Police, Windsor County Sheriff, New Hampshire State Police the Towns of Hartford, Hartland and Lebanon to discuss durations of work, types of night work, work sequencing, etc. The Contractor shall be responsible for setting this meeting up and making appropriate contacts. In addition, weekly meetings between the Contractor, Engineer and other pertinent parties as determined by the Engineer shall be held to discuss the project progress and future construction activities, and current CPM progress schedules and narratives.

(b) Identified Work.

The Contractor shall maintain a minimum of two-lanes, two-way traffic for US-5 during the peak hours of 6:00am-9:00am and 3:00pm-6:00pm. One-lane, two-way alternating traffic shall be maintained during non-peak hours. The Contractor shall limit any temporary traffic delays to non-peak hours and not to exceed 10 minutes in length between the hours of 9:00am-3:00pm and 6:00pm-9:00pm. Traffic delays may exceed 10 minutes but not to exceed 20 minutes in length between the hours of 9:00pm-6:00am.

- (1) Bridge No. 43N. All work required to open the new Bridge to two lanes of traffic including:
 - a. Base Course on approaches;
 - b. All permanent bridge railing;
 - c. Temporary barrier placed on approaches allowing two (2) 12'-0" minimum wide lanes within the project limits.
 - d. Temporary Pavement Markings.
 - e. All detour signs removed or covered.

Prior to and following the end of the BCP, the Contractor shall maintain a minimum of two-lanes, one-way traffic for I-91 Northbound during the peak hours of 6:00am and 6:00pm and shall maintain one-lane, one-way traffic during non-peak hours. All traffic shall be maintained on the existing structure prior to the BCP. The Contractor shall only be allowed to reduce Northbound traffic to one-way, one-lane during peak hours two days prior to the BCP.

- (2) Bridge No. 43S. All work required to open the new Bridge to two lanes of traffic including:
- a. Base Course on bridge and approaches;
 - b. All permanent bridge railing;
 - c. Temporary barrier placed on approaches allowing two (2) 12'-0" minimum wide lanes within the project limits.
 - d. Temporary Pavement Markings.
 - e. All detour signs removed or covered.

Prior to and following the end of the BCP, the Contractor shall maintain a minimum of two-lanes, one-way traffic for I-91 Southbound during the peak hours of 6:00am and 6:00pm and shall maintain one-lane, one-way traffic during non-peak hours. All traffic shall be maintained on the existing structure prior to the BCP. The Contractor shall only be allowed to reduce Southbound traffic to one-way, one-lane during peak hours two days prior to the BCP.

(c) Pay Schedule.

(1) Bridge No. 43N. The Contractor will receive a lump sum compensation of Fifty-Thousand Dollars (\$50,000) for completing the Identified Work before the end of the I/D finish date.

The maximum amount payable under the incentive clause shall be Fifty-Thousand Dollars (\$50,000).

For each hour or part thereof, after the I/D finish date that the identified work remains uncompleted, the Contractor will be assessed disincentive at a rate of one-thousand-nine-hundred dollars (\$1,900) per hour. There shall be no maximum on the disincentive amount.

This assessed disincentive is separate from, and will be imposed in addition to, Liquidated Damages which may be imposed for failure to complete the Contract on time.

(2) Bridge No. 43S. The Contractor will receive a lump sum compensation of Fifty-Thousand Dollars (\$50,000) for completing the Identified Work before the end of the I/D finish date.

The maximum amount payable under the incentive clause shall be Fifty-Thousand Dollars (\$50,000).

For each hour or part thereof, after the I/D finish date that the identified work remains uncompleted, the Contractor will be assessed disincentive at a rate of one-thousand-nine-hundred dollars (\$1,900) per hour. There shall be no maximum on the disincentive amount.

This assessed disincentive is separate from, and will be imposed in addition to, Liquidated Damages which may be imposed for failure to complete the Contract on time.

- (d) Underruns and Overruns. The proposal indicates an estimated quantity for each Contract pay item. The fact that the actual amounts used in the construction of this project may vary from the estimate will not be a basis or cause for changing any of the conditions for I/D.

The Agency recognizes that additional work beyond the work indicated in the Plans, is always possible in any construction contract. The Agency is willing to pay for necessary additional work in accordance with the terms and requirements of the Contract and the Standard Specifications for Construction, however, the Contractor shall absorb any resulting construction time within the original project and CPM Schedules, and there will be no adjustments or changes to the I/D dates or I/D conditions.

- (e) Payment. Payment will be made as specified in Section 900.

12. NOTICE TO BIDDERS - REQUIREMENTS FOR NIGHTTIME WORK. The Contractor is hereby notified that night work will be allowed within the bridge closure period.

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 present 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 items 641.10 TRAFFIC CONTROL (I-91 NORTHBOUND), 641.10 TRAFFIC CONTROL (I-91 SOUTHBOUND) AND 641.10 TRAFFIC CONTROL (US RT 5).

13. NOTICE TO BIDDERS - NIGHTTIME WORK RESTRICTIONS. The Contractor is hereby notified that during the non-bridge closure periods, excluding the 48 hours preceding each BCP, no work shall be performed between the hours of 9:00 p.m. and 6:00 a.m. that creates a noise level exceeding 90 decibels. The decibel level shall be measured from the point of activity to the nearest occupied residence.

The Contractor shall provide the Engineer, for the duration of the nighttime work, with a sound level meter capable of measuring this noise criteria during the bridge closure period.

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.

14. 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; Structures Engineer; Structures Program Manager	Director of Project Delivery Bureau
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

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 sign assemblies 36" or wider shall be mounted on two 4.5 kg/m (3 lb/ft) flanged channel posts or 51 mm (2 inch) square steel inserted in 57 mm (2 1/4") galvanized square steel anchors. No sign posts shall extend over the top edge of sign installed on said posts.
 - F. Prior to placing temporary work zone signs on the project, the Contractor must furnish for the Engineer's approval a detail for temporary work zone signs on steel posts showing stubs projecting a maximum of 100 mm (4 inches) above ground level and bolts for sign post.
 - G. Construction signs shall be installed so as to not interfere with nor obstruct the view of existing traffic control devices, stopping sight distance, and corner sight distance from drives and town highways.
 - H. Speed zones, if used, should be a maximum of 16 kph (10 mph) below existing posted speeds. Temporary speed limit certificates must be approved by the Director of Program Development.
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. UTILITY SPECIAL PROVISIONS. Existing underground facilities owned by The Town of Hartford and Comcast Communications will be adjusted, as necessary, by employees or agents of the above companies in accordance with the "Approximate Underground Utility Relocation Route" shown on the project plans.

Existing underground facilities owned by Telephone Operating Co. of VT LLC and The Town of Hartford will not require adjustment. The Contractor is cautioned to protect these facilities from damage.

Contacts for the above listed companies are as follows:

Telephone Operating Co. of VT LLC	
Randy Chapman	(802) 295-8175
Comcast Communications	
Brendan Fitzgerald	(802) 776-1611
Town of Hartford	
John Choate	(802) 295-3622

The Contractor is advised that the existing 12 inch waterline will be active between shutoff valves until notice is given to the Town to back feed the system. Once the valves are shutoff, demolition of the waterline can be done as needed for construction. The new 12 inch waterline will not be installed in its new location until after pier #1 is removed. All coordination with The Town of Hartford shall be done through the Resident Engineer. Please note that sufficient notice needs to be given to the Town for the waterline to be placed in the new location prior to backfilling the area.

The Contractor shall be aware that no blasting will be permitted within 10 feet of any Utility without prior consent from the Utility and the Resident Engineer. The Contractor shall give the effected Utility three working days notice to allow time for a site visit at each location.

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 shall be through Pay Item 204.22, Trench Excavation of Earth, Exploratory.

Employees or agents of the above listed company(ies) 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.

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.

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

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

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

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

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

19. SPECIAL CONSTRUCTION REQUIREMENTS.

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

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

- B. The Contractor shall maintain a safe access to all drives and intersecting side roads at all times during the construction of this project.
- C. Two-way radios shall be provided by the Contractor when requested by the Engineer for use by traffic control personnel. All costs for furnishing and using two-way radios will not be paid for directly, but will be considered incidental to Contract items 641.10 TRAFFIC CONTROL (I-91 NORTHBOUND), 641.10 TRAFFIC CONTROL (I-91 SOUTHBOUND) AND 641.10 TRAFFIC CONTROL (US RT 5).
- D. The Contractor shall have available on the project the current editions of the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Highway Signs and Markings (SHSM) Book. Information for obtaining these publications may be found at: <http://mutcd.fhwa.dot.gov/index.htm>.

ASPHALT PRICE ADJUSTMENT

20. SUPPLEMENTAL SPECIFICATION - ASPHALT PRICE ADJUSTMENT, dated April 6, 2010, is hereby made a new Subsection of the Specifications, superseding all previous editions and their modifications.

21. SUPPLEMENTAL SPECIFICATION - ASPHALT PRICE ADJUSTMENT, dated April 6, 2010, GENERAL REQUIREMENTS AND CONDITIONS, part (b) text, is hereby modified by being deleted in its entirety and replaced with text "NOT USED".

The index price for asphalt cement is \$609.00 per ton.

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

SECTION 108 - PROSECUTION AND PROGRESS

22. 108.11 DETERMINATION OF EXTENSION OF CONTRACT TIME FOR COMPLETION, part (b) Determination of Contract Completion Date Extension, is hereby modified by adding new subpart (11) as follows:

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

SECTION 490 - SUPERPAVE BITUMINOUS CONCRETE PAVEMENT

23. 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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24. 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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25. 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.
26. 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.
27. 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.
28. 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.

29. 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.
30. 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.
31. 490.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, is hereby modified by deleting the third (beginning "For those projects having 2000 metric tons (tons) or less...") through sixth paragraphs in their entirety and replacing them with the following:

Control of mixtures will be analyzed by utilizing the following procedure:

SECTION 501 - HPC STRUCTURAL CONCRETE

32. 501.02 MATERIALS, is hereby modified by adding the following:

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

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

Manufacturer: Sika Construction Product Division
Product name: - Sika Control 40
Tel.: 1-800-933-7452
Website: <http://www.sikaconstruction.com/tds-cpd-SikaControl40-us.pdf>

Manufacturer: The Euclid Chemical Company
Product name: Eucon SRA
Tel.: 1-800-321-7628
Website: <http://www.euclidchemical.com/fileshare/ProductFiles/techdata/euconsra.pdf>

Manufacturer: BASF (Master Builders)
Product name: Tetraguard AS20
Tel.: 1-800-628-9900
Website: <http://www.basf-admixtures.com/NR/rdonlyres/84C7EC12-F527-44FD-A8B9-3A007609FF76/0/TETRAGUARD AS20 DS307.pdf>

Manufacturer: Grace Construction Products
Product name: Eclipse Plus
Tel.: 1-877-423-6491
Website: <http://www.na.graceconstruction.com/concrete/download/EC-13B 2.pdf>

SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN

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

34. 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.
35. 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.

36. 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."
37. 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 SECTION 900 - CPM SCHEDULE.

38. 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.

39. 652.06 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN. The Contractor shall designate a person (On-Site Plan Coordinator) who is directly responsible for the on-site implementation of the EPSC Plan. This person shall generally be on-site on a daily basis during active construction and have the authority to halt construction activities if necessary. The On-Site Plan Coordinator shall have demonstrated experience in construction practices as they relate to erosion prevention and sediment control as well as a general understanding of State and Federal environmental regulations and permits pertaining to the National Pollutant Discharge Elimination System Construction Program. The On-Site Plan Coordinator shall be proficient at reading and interpreting engineering and EPSC plans. Preference will be given to a Licensed Professional Civil Engineer registered in the State of Vermont or a qualified professional in erosion prevention and sediment control, certified by CPESC, Inc. or equivalent. The qualifications of the On-Site Plan Coordinator shall be included in the EPSC Plan. The Engineer, if not satisfied with the performance of this individual, may at any time request a replacement. During active construction and periods of inactivity, the On-Site Plan Coordinator shall be responsible for inspections and reporting.

- (a) Active Construction. Inspections shall occur once every seven calendar days and within 24 hours of the end of a storm event that results in a discharge of stormwater from the site. During the winter construction season (October 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.

40. 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.

41. 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.

42. 652.09 BASIS OF PAYMENT. The accepted quantity of EPSC Plan will be paid for at the Contract lump sum price. Payment will be full compensation for the initial preparation of modifications, submittals, and all incidentals necessary to complete the work. Subsequent

modifications to the EPSC Plan during Construction will be considered incidental to Contract item 652.10.

Partial payments will be made as follows:

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

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

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

Payment will be made under:

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

SECTION 690 - FUEL PRICE ADJUSTMENT

43. In addition to materials produced under Contract pay item(s) included in Table 1 Pay Item Fuel Usage Factors and Quantity Thresholds as allowed under this Section, fuel usage under Contract item 900.680 Special Provision (Bituminous Concrete Pavement, Small Quantity) will be included for adjustment, utilizing the Fuel Usage Factors for item 490.30 in Table 1.

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

45. 690.01 GENERAL REQUIREMENTS AND CONDITIONS

- (a) This specification contains price adjustment provisions for fuel used on Vermont Agency of Transportation (Agency) construction projects. This price adjustment clause is being inserted in this Contract to provide for either additional compensation to the Contractor or a payment to the Agency, depending upon an

increase or decrease in the average price of diesel fuel or gasoline during the construction of this project.

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

In such cases that estimated quantities are used to determine estimated fuel price adjustments throughout the duration of the Contract, reconciliation of those estimated adjustments will be made upon the determination of actual final quantities and final adjustments to the total final quantity made by prorating those estimated adjustments over the applicable fuel price adjustment periods previously paid. Reconciliation of any fuel price adjustment will only be performed in those instances where the actual final quantity differs by more than five percent from the total estimated quantity. Payments owed to either the Contractor or VTrans will not be subject to any applicable interest claims.

46. 690.02 PRICE ADJUSTMENT PROCEDURES

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

The index price (retail) for gasoline is \$2.94 per gallon. The index price (retail) for diesel fuel is \$3.59 per gallon.

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

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

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

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

 For PPD/IPD and $PPG/IPG \leq 0.95$ or ≥ 1.05 :
 $PA = [FUFU \times (PPD - IPD) + FUFU \times (PPG - IPG)] \times \text{Pay Item Quantity}$
- (f) The Contract bid prices for the applicable pay items will be paid under the Contract. The price adjustment, when such adjustment is required as specified in part (c) of this Subsection, will be made subsequent to the month in which the applicable Contract work was performed and will be entered on the next bi-weekly estimate.
- (g) Payment for Price Adjustment, Fuel shall be debited or credited against the Contract price (Lump Unit) bid for Price Adjustment, Fuel.

Payment will be made under:

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

Table 1
Pay Item Fuel Usage Factors and Quantity Thresholds

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

SECTION 900 - SPECIAL PROVISION ITEMS

HIGH PERFORMANCE CONCRETE, RAPID SET

47. DESCRIPTION. This work shall consist of designing, furnishing, and placing a high-early strength, high performance, portland cement concrete at the locations indicated in the Plans and as directed by the Engineer.

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

48. MATERIALS. Materials shall meet the requirements of Subsection 501.02 and the following:

High Early Strength Portland Cement.....701.04

49. MIX DESIGN SUBMISSION CRITERIA. Concrete shall meet the following requirements:

- (a) The mix shall be classified and tested as self-consolidating concrete (SCC) mix. If the project will only be using this mix in flat work application, then the mix will be classified and tested as a conventional concrete with a slump not to exceed 9".
- (b) Compressive Strength.
28 Day Compressive Strength - 5000 psi
- (c) Permeability. 56 Day Permeability - 2500 Coulombs (The permeability may be tested prior to 56 days but results must still be 2500 Coulombs or less). Test shall be performed in accordance with Subsection 510.04 b(6)(f).
- (d) Air Content. 7 ± 1.5%
- (e) Slump/Spread. The mix shall not exhibit segregation at the slump/spread being used.
- (1) For SCC mix the visual stability index (VSI) shall be equal to or less than 1.
- (f) Alkali-Silica Reactivity (ASR). Test shall be performed in accordance with Subsections 510.04 b(6)(g) and 510.04 b(7).
- (g) The mix may contain shrinkage-compensating admixtures such that there will be no separation of concrete from adjacent precast units. The Contractor shall include results for the unrestrained shrinkage test method, ASTM C 157. The maximum shrinkage allowed shall be 0.04%. Testing shall be performed by an independent lab that is CCRL accredited in AASHTO T 303 or ASTM C 1260.

A proprietary concrete mix design meeting the same performance requirements may also be considered for use.

50. SUBMITTALS. A minimum of fourteen (14) calendar days prior to placement (or prior to the pre-placement meeting, if one is required), the Contractor shall submit the mix design for approval. The mix

design shall be submitted to the Agency's Materials Laboratory, attention Composite Materials Engineer. Concrete under this provision shall not be placed until the mix design has been approved.

- (a) Trial Batch. Twenty-one (21) to seven (7) days prior to the first placement, the Contractor shall produce and place a 2 cubic yard trial batch, as an SCC, at a location agreed upon by the Contractor and the Engineer. The purpose of this trial batch is to show that the mix is capable of producing the wet test results within the specified ranges. The Engineer shall be given a minimum of seven (7) days notice prior to the trial batch pour. The trial batch shall be poured in the presence of the Engineer and the Composite Materials Engineer. The trial batch shall be produced and poured in the same manner, estimated concrete temperature, and time frames that will occur during construction. The Contractor shall provide qualified personnel to test spread, air content, and temperature of the trial batch. If this mix will be used in flat work application, a second trial batch will be required at the anticipated slump the contractor will need. This trial batch will be tested for the same properties except for spread, where it will be for slump. If the mix will only be used in flat work application for the project, then the requirement for testing the mix as an SCC will be disregarded. If the trial mix falls outside of any of the listed ranges for the tested criteria, the trail batch shall be subject to rejection.
51. MIX ACCEPTANCE CRITERIA. The placed concrete will be tested for all mix design criteria as listed above with the exception of permeability, shrinkage and ASR. If the mix falls outside of any of the above listed ranges for the tested criteria, it shall be subject to rejection.
52. CURING CONCRETE. The method of wet curing used shall meet the requirements of Subsection 501.17. Concrete shall be wet cured until it has reached the minimum approach slab joint design strength as specified in the plans, verified by testing of field cylinders.
53. LOADING OF CONCRETE. After the concrete has been placed and the finishing operations concluded, it shall not be walked on or disturbed in any manner, including the removal of forms, until curing is complete, as specified above.

The concrete shall obtain the minimum approach slab joint design strength prior to any vehicular loading.

A portable compression testing machine shall be provided by the Contractor and available on-site for cylinder testing of field cured cylinders for construction progress. 28 day standard cure cylinders will be tested at the central laboratory. All testing and equipment shall conform to ASTM C 39 and performed by a qualified Agency project individual(s). The individual(s) shall be trained on the operation of the machine by the owner, or representative of the machine, who is proficient in the operations and functions of the machine. Once the Agency individual(s) is confident in the operation and test procedure, a Materials Lab individual shall complete a proficiency check on-site, of the individual(s) while operating the machine, using practice cylinders, for the purpose of qualifying the individual(s). This

compression machine must be calibrated in accordance with the provisions of Section 5, ASTM C 39.

If an independent lab is proposed to be used to test the field cured cylinders, the contractor shall submit documentation from the lab of calibration of the compression machine in accordance with section 5, ASTM C39; and that the compression machine meets the requirements of ASTM C39; and, proficiency documentation for the technician who will be performing the test methods. The Engineer may approve barring any other unforeseen requirements. The State at any time reserves the right to perform an independent proficiency of the technician for the test methods used and review of the testing facility.

54. METHOD OF MEASUREMENT. The quantity of Special Provision (High Performance Concrete, Rapid Set) to be measured for payment will be the number of cubic meters (cubic yards) of concrete placed in the complete and accepted work, as determined by the prismatic method using dimensions shown on the Plans or as directed by the Engineer, including the volume of precast concrete stay-in-place forms, but excluding the volume of steel or other stay-in-place forms and form filling materials. No deductions will be made for the volume of concrete displaced by steel reinforcement, structural steel, expansion joint material, scuppers, weep holes, conduits, tops of piles, scoring, chamfers or corners, inset panels of 38 mm (1 1/2 inches) or less in depth, or any pipe less than 200 mm (8 inches) in diameter.

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

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

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

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

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.608 Special Provision (High Performance Concrete, Rapid Set) (FPQ)	Cubic Yard

GPS TIME CLOCK

60. DESCRIPTION. This work shall consist of furnishing and installing GPS Time Clock equipment for an existing traffic control signal system at the location(s) 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 678 of the Standard Specifications.

61. GENERAL REQUIREMENTS. All associated electrical work performed and all materials installed shall be subject to inspection and approval of the State or Municipal Electrical Inspector, whichever is *applicable*. As a minimum, all work must meet the requirements of the National Electrical Code (NEC) and the National Electrical Safety Code (NESC).
62. SUBMITTALS.

(b) Documentation Requirements. Three (3) advance copies of equipment manuals furnished by the manufacturer shall be submitted to the Engineer for review a minimum of ten days prior to the scheduled start of the first 24-hour operation test period. The Engineer will verify the manufacturer's equipment manual as part of the test and integration process. The equipment manual incorporating the Engineer's corrections and comments shall be integrated by the Contractor into the operations and maintenance manual. The manual shall, as a minimum, include the following:

- (1) Complete and accurate schematic diagrams.
- (2) Complete installation and operation procedures.
- (3) Complete performance specifications (functions, electrical, mechanical, and environmental) of the unit.
- (4) Complete accurate troubleshooting, diagnostic, and maintenance procedures.

63. CONSTRUCTION REQUIREMENTS. GPS Time Clock equipment shall be installed on existing mast arm poles and in the existing controller cabinet, as required. GPS Time Clock equipment shall be located or positioned as indicated on the Plans, unless otherwise directed by the Engineer.

Prior to beginning any work, the Contractor and the Engineer will perform a joint inspection of the condition of existing equipment and components. Any equipment that is found to be defective or damaged prior to beginning work shall be maintained in at least as good condition until replaced under the Contract.

64. METHOD OF MEASUREMENT. The quantity of Special Provision (GPS Time Clock) to be measured for payment will be the number of each GPS Time Clock system installed in the complete and accepted work.

65. BASIS OF PAYMENT. The accepted quantity of Special Provision (GPS Time Clock) will be paid for at the Contract unit price per each at each designated intersection. Payment will be full compensation for furnishing, handling, and placing the equipment and materials specified in the Contract Documents; removing and disposing of or abandoning any existing equipment and/or materials that are replaced or no longer

needed as a result of installation of new equipment and/or materials; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made as follows:

- (a) Upon installation of a functioning system as indicated by a successful continuous 24-hour operation test period, 30 percent of the Contract unit price will be paid.
- (b) Forty percent of the Contract unit price will be paid upon receipt by the Engineer of notice from all responsible Agency parties that all paperwork related to the system installation has been completed to the satisfaction of the Agency.
- (c) Thirty percent of the Contract unit price will be paid after successful completion of the 30-day test period. The 30-day test period shall not commence until after US Route 5 is returned to existing lane configuration.

At the discretion of the Engineer, the Contractor may be required to replace existing traffic signal system components not anticipated to require replacement, including poles and/or cabinets/controllers that are lost or damaged due to an accident. If required, such work will be considered Extra Work under Subsection 109.06 and additional payment will be allowed.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (GPS Time Clock)	Each

STRUCTURAL STEEL, PLATE GIRDER, GRADE HPS 70W

- 66. DESCRIPTION. This work shall consist of furnishing, erecting, and when specified, coating fabricated high performance structural steel components. The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 506 of the Standard Specifications.
- 67. MATERIALS. Material shall be unpainted, high-strength low-alloy steel conforming to ASTM A709M/A709 Grade HPS 70W.
- 68. METHOD OF MEASUREMENT. The quantity of Special Provision (Structural Steel, Plate Girder, Grade HPS 70W) to be measured for payment will be the number of kilograms (pounds) used in the complete and accepted work, as measured in accordance with Subsection 506.24(a).
- 69. BASIS OF PAYMENT. The basis of payment shall be in accordance with the basis of payment for structural steel under standard specification section 506.25.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.635 Special Provision (Structural Steel, Plate Girder, Grade HPS 70W)	Pound

MICROPILES

70. DESCRIPTION. This work shall consist of furnishing and installing micropiles at the locations and to the required capacities indicated in the Contract Documents.

71. MATERIALS. Materials shall meet the following requirements:

(a) Permanent Casing. Permanent casing shall be new, flush joint-type steel pipe of appropriate thickness to withstand the stresses associated with advancing it into the ground, in addition to the stresses due to hydrostatic and earth pressures. The permanent steel casing/pipe shall conform to the minimum requirements outlined in ASTM A 252 for Grade 3 pipe except the minimum yield stress shall be 80 ksi.

(1) Certification. Certification for permanent casing pipe shall meet the following requirements.

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

(2) Additional Requirements. Additional requirements for permanent casing that is installed in coupled (spliced) sections shall meet the following requirements:

a. The casing shall be flush joint and the pipe joint shall be completely shouldered with no stripped threads.

b. Welds shall meet the requirements of Subsection 506.10. The welding plan and procedures shall be approved by the VTrans Fabrication Supervisor.

(b) Bar Reinforcement. Bar reinforcement shall be Grade 520 (Grade 75), continuously threaded bar, meeting the requirements of AASHTO M 31M/M 31 (ASTM A 615/A 615M) or continuously threaded Uncoated High-Strength Steel Bars conforming to AASHTO M 275M/M 275 (ASTM A 722/A 722M), as used in the design submittal.

Bar couplers, if required, shall develop the ultimate tensile strength of the bars without any evidence of failure.

(c) Cement. Cement shall meet the requirements of Subsection 701.02.

(d) Grout. Grout shall be a neat cement or sand/cement mixture with a minimum compressive strength of 4,500 psi at 28 days. Water for mixing grout shall be potable. The use of Grout Sand and Fly Ash in the mix is optional.

During production, micropile grout shall be tested by the Contractor for compressive strength at an approved laboratory in accordance with AASHTO T 106 (ASTM C 109) at a frequency of no less than one set of three 2 inch grout cubes from each grout plant each day of operation or per every 10 piles, whichever occurs more frequently. The compressive strength shall be the average of the 3 cubes tested.

Grout consistency as measured by grout density shall be determined by the Contractor per AASHTO T 133 (ASTM C 188) or

API RP-13B-1 at a frequency of at least one test per pile, conducted just prior to start of pile grouting. The Baroid Mud Balance used in accordance with API RP-13B-1 is an approved device for determining the grout density of neat cement grout. The measured grout shall have a specific gravity of between 1.9 and 2.0, or as used in the mix design submittal.

Grout samples shall be taken directly from the grout plant. The grout cube compressive strength and grout density test results shall be provided to the Engineer within 24 hours of testing.

- (e) Centralizers and Spacers. Centralizers and spacers shall be fabricated from Schedule 40 PVC pipe, tube, steel, or material non-detrimental to the reinforcing steel. Wood shall not be used.
- (f) Structural Steel. Structural steel shall meet the requirements of Subsection 714.02 or 714.03 as used in the design submittal.

72. SUBMITTALS. The Contractor shall submit the following:

- (a) Qualifications. The micropile Contractor shall be fully experienced in all aspects of micropile and construction, and shall furnish all necessary plant, materials, skilled labor, and supervision to carry out the work under the Contract. The experience information outlined below shall be submitted to the Engineer for approval. This information shall be approved prior to any other work occurring under this specification. The Contractor shall allow 10 working days for the review of this material.
 - (1) Five projects in the past five years of similar scope and size to that indicated in the Contract Documents. A brief description of the scope of work and a reference shall be included for each project. As a minimum, the reference shall include an individual's name and current contact information. The micropile contractor shall not sublet the whole or any part of the work under the Contract without the written approval of the Engineer.
 - (2) The proposed On-Site Supervisor for this work having supervised the successful installation of micropiles on at least five projects in the past five years.
 - (3) The proposed key personnel (Superintendent, Driller, and Project Engineer/Manager) who will be materially involved, with each having at least three years of relevant experience.
- (b) Installation Procedure. Submit the installation procedure information outlined below to the Engineer for acceptance. The Contractor shall allow 20 working days for the review of this material. Work shall not begin prior to receiving acceptance by the Engineer. Acceptance of the installation method by the Engineer does not constitute a guarantee of acceptable pile installations. Acceptable installations are the responsibility of the Contractor.

The submitted installation procedure shall include the following information:

- (1) Proposed steel drill casing/pipe
- (2) Equipment for pile installation.
- (3) Procedures for pile installation, including but not limited to installation sequence and the approximate time required for each sequence step.
- (4) Procedures for advancing through boulders and other obstructions.
- (5) Procedures for containment of drilling fluid and spoil, and disposal of spoil.
- (6) Where applicable, drawings that show specific work can be performed under limited headroom conditions and as close to obstructions as site conditions warrant, to install the piles at the locations and pile batters indicated in the Contract Documents. Provide information on the length of the casing sections to be used, as dictated by the length of the drill mast and by the available overhead clearance, and the resulting location of joints. Welding procedures for all shop and/or field welds shall be submitted.
- (7) Procedures and equipment for placing grout.
 - a. Prepare the mix design for the grout and obtain documentation from an AMRL accredited laboratory showing the following:
 1. The mix design conforms to the submitted mix and meets the 28 day strength requirements.
 2. The compressive strength of the mix, tested at 3, 7, 14, and 28 days.
 3. The specific gravity of the mix.
 - b. Identify a method for monitoring quality control of the mix. At a minimum, the Contractor shall use a Baroid Mud Balance per American Petroleum Institute (API) Recommended Practice (RP) 13B-1: Standard Procedure for Testing Water-Based Drilling Fluids, to check the specific gravity of the mixed grout prior to placement of the grout into each micropile.
 - c. Provide pressure gages capable of measuring the actual grout pressures used and such that actual pressure readings are within the middle third of the gage.
- (8) If applicable, post-grouting equipment and procedures, including the method, sequence of operations, and equipment required.
- (9) Layout drawings showing the proposed sequence of pile installation. Coordinate this sequence with the proposed phasing and scheduling. Layout drawings should include micropile number, type and size of bar reinforcement,

minimum total bond length, total micropile length, and the pile top attachment details.

- (c) Record Information. Submit revisions to the installation procedure information outlined in part (b) of SUBMITTALS of this Section to the Engineer as required within 60 days from completion of micropile installation.

73. CONSTRUCTION REQUIREMENTS.

- (a) Drilling and Excavation. Progress all micropiles using steel drill casing. The hole shall be advanced using a duplex drilling method without drilling or flushing ahead of the drill casing by more than 1 foot. Drilling and excavation shall be performed in such a manner as to prevent collapse of the hole. Use of bentonite slurry is not permitted. Use of polymer slurry to remove cuttings from the cased hole shall be approved by the Engineer.

An obstruction is defined as something encountered while advancing a micropile that is not expected based on boring log findings or known obstructions identified on the Plans. Boulders, cobbles, bedrock, and very dense till material are not considered obstructions. When obstructions are encountered during excavation for a pile, the hole shall be advanced by means of coring, a tricone roller bit, or other tooling approved by the Engineer. Use of drop-type impact hammers and blasting are not permitted. Use of down-the-hole hammers shall be approved by the Engineer.

The Contractor shall notify the Engineer in writing when a potential obstruction is encountered. Upon notification, the Engineer shall determine if an obstruction has been encountered that will cause an increase in the time required to accomplish the 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.

All tools and materials required to remove the obstruction shall be available at the site at all times during micropile installation and in sufficient quantities to avoid delays in the execution of this work.

Procedures and operations shall be controlled so as to prevent undermining, damage, or settlement to adjacent structures, tunnels, utilities, or adjacent ground. All drilling operations shall be discontinued at the first sign of undermining, damage, or settlement and a written plan shall be provided to the Engineer for review with procedures to avoid reoccurrence. Work shall be resumed only after the Engineer has approved the plan in writing. All damage and settlement shall be repaired at no additional cost to VTrans.

The rate of fluid flow used to progress the holes shall be monitored. Drilling fluid shall be controlled and spoils shall be disposed of in accordance with the approved procedures.

Holes shall not be progressed, pressure-grouted, or post-grouted, within a radius of 5 feet of a micropile until the grout for that micropile has set for 24 hours.

The drill hole shall be open along its full length to at least the design minimum diameter prior to grout placement.

- (b) Reinforcement and Post Grout Tube Placement. Centralizers sized to position the reinforcement within 3/8 inch of plan location from the center of the pile shall be provided. The centralizers shall be sized to allow grout tremie pipe insertion to the bottom of the drill hole and to allow grout to freely flow up the drill hole and casing. The centralizers shall be securely attached to the reinforcement to withstand installation stresses. Centralizers shall be provided at centers not to exceed 10 foot spacing. Micropile reinforcement shall not be dropped into the hole. When a post grout tube is used, it shall be attached to the steel reinforcement prior to lowering it into the hole.
- (c) Grout Placement and Casing Removal. The Contractor shall perform grout testing in accordance with part (d) of MATERIALS of this Section.

Grout shall be placed by means of a tremie pipe from the bottom of the pile upward. The initial volume of grout required to fill the hole shall be recorded along with the grouting pressure and volume of grout being pumped into the pile during pressure grouting. Upon completion, the grout level shall be maintained at or above the pile cut-off elevation until the grout has set.

The grout pressure and volume measuring gages at the pile installation site shall be accessible and legible to the inspector during the grouting operations.

- (d) Construction Tolerances. Piles shall be installed so that the center of each micropile does not vary from the location indicated in the Plans by more than 3 inches. Micropiles shall not vary from the vertical or established batter by more than 1/4 inch per foot, as measured above ground. The top elevation of the completed micropile shall have a tolerance of plus or minus one inch.
- (f) Pile Acceptance Criteria. Pile(s) shall be accepted if all of the following criteria are met:
- (1) Pile meets Construction Tolerance criteria.
 - (2) Pile meets the MATERIALS requirements of this Section and was installed in accordance with the approved submittal.
 - (3) Pile is not damaged.
- (g) Unacceptable Piles. Unacceptable piles are piles which do not meet the acceptance criteria identified in part (f) above.

A written plan shall be submitted to the Engineer for remedial action, indicating how to correct the problem and prevent its reoccurrence. Unacceptable piles shall be repaired, augmented, or replaced in accordance with the approved remedial plan at no additional cost to VTrans.

74. METHOD OF MEASUREMENT. The quantities of Special Provision (Micropile, Cased) and Special Provision (Micropile, Uncased) of the size specified to be measured for payment will be the number of meters (linear feet) installed in the complete and accepted work.

The quantity of Special Provision (Furnishing Equipment for Installing Micropiles) to be measured for payment will be on a lump sum basis in the complete and accepted work.

The quantity of Unexpected Obstruction Drilling to be measured for payment will be the number of hours taken to advance the micropile through the obstruction.

75. BASIS OF PAYMENT. The accepted quantities of Special Provision (Micropile, Cased) and Special Provision (Micropile, Uncased) of the size specified will be paid for at the Contract unit price per meter (linear foot). Payment will be full compensation for providing all required submittals; for furnishing, transporting, storing, handling, and placing the materials specified, including but not limited to permanent casing, bar reinforcement, grout, centralizers, spacers, and pile top attachment; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

The Contractor shall be responsible for estimating the grout take. There will be no extra compensation allowed for grout overruns.

The accepted quantity of Special Provision (Furnishing Equipment for Installing Micropiles) will be paid for at the Contract lump sum price. Payment will be full compensation for furnishing and mobilizing to the project site all equipment required for installing the micropiles, operating and maintaining the equipment while in service on the project, and demobilizing the equipment from the project site.

When the equipment for installing the micropiles has been set up and installation of production piles has started, a payment of 50 percent of the Contract lump sum price will be allowed. The remaining 50 percent of the Contract lump sum price will be paid when the micropile installations are complete and the equipment has been removed from the site to the satisfaction of the Engineer.

The accepted quantity of Unexpected Obstruction Drilling will be paid for at the Contract unit price per hour. Payment will be full compensation for performing the work of overcoming encountered obstructions and for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the task.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.640 Special Provision (Micropile, Cased) (9.625")	Linear Foot
900.640 Special Provision (Micropile, Uncased) (8.535")	Linear Foot
900.645 Special Provision (Furnishing Equipment for Installing Micropiles)	Lump Sum
900.630 Unexpected Obstruction Drilling	Hour

PUBLIC PROTECTION FOR BRIDGE PROJECTS

76. DESCRIPTION. This work shall consist of maintaining the public safety for vehicular and pedestrian traffic traveling below a bridge that is under construction.
77. SUBMITTALS. A plan detailing the Contractor's intentions for performing the work under this Section, to include a listing of the materials and methods to be used, shall be submitted to the Engineer for approval. Approval will be granted for the proposed plan only if it provides a reasonable expectation that any member of the public passing beneath the bridge while it is under construction will be safe from falling objects and all construction operations.
78. GENERAL REQUIREMENTS. The Contractor shall determine the materials and methods to use for this work based on the conditions at a particular location.
- (a) Enclosures. Should the Contractor choose to use an enclosure, it shall be made of material of adequate strength and size to completely protect the public from any falling object(s) related to the construction activities. Any roadway enclosure or containment system shall be of adequate width to allow passage of oversize vehicles. If required by the Engineer, vehicular enclosures which are more than 15 m (50 feet) long shall have their interior illuminated during daylight hours. Pedestrian enclosures shall have their interior illuminated for the full duration of their use.
- (b) Diversions. Should the Contractor choose to divert the vehicular and pedestrian traffic from passing beneath the bridge under construction, the diversion course shall be via an acceptable public route; meet the requirements of the MUTCD for traffic control; and meet the requirements of this specification.
- (c) Interruptions. Should the Contractor choose to interrupt the flow of vehicular or pedestrian traffic below a bridge under construction, Flaggers shall be used. An interruption shall be defined as the stopping of traffic. The duration of time for each individual interruption shall not exceed ten minutes, and the total of the interruptions shall not exceed thirty minutes in any hour.

The method or combination of methods the Contractor chooses to use shall be fully operational before any construction work begins on the bridge which might endanger the public.

79. METHOD OF MEASUREMENT. The quantity of Special Provision (Public Protection for Bridge Projects) to be measured for payment will be on a lump sum basis in the complete and accepted work.

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

80. BASIS OF PAYMENT. The accepted quantity of Special Provision (Public Protection for Bridge Projects) will be paid for at the Contract lump sum price. Payment will be full compensation for preparing a public protection plan, and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Partial payments will be made as follows:

- (a) The first 30% of the Contract lump sum price, as prescribed at each location in the Contract Documents, will be paid upon approval of the public protection plan.
- (b) The remaining 70% of the Contract lump sum price will be paid on a prorated basis for the estimated duration of the Contract work remaining.

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 (Public Protection for Bridge Projects)	Lump Sum

SMART WORK ZONE

The intent of a Work Zone ITS System ("Smart Work Zone") is to monitor the project's work zone and disseminate real-time information to the traveling public through

- a) Devices installed on the project and
- b) A browser based webpage monitored at the Vermont Agency of Transportation, Traffic Operations Center (TOC).

The TOC is located at 1 National Life Drive, Montpelier Vermont and the telephone number is 802-828-2648.

81. DESCRIPTION. This work shall consist of furnishing, installing, re-locating, operating and maintaining any devices called out per Contract plans that provide an automated, portable, real-time work zone (meeting the requirements noted herein). The Contractor shall be responsible for providing, installing, and maintaining any devices called out per the plans and for incorporating them into the Smart Work Zone. The Contractor shall be responsible for relocating any Contractor-provided field devices as requested by the Engineer during the duration of the project. Included in the operational responsibilities is the assumption of all communication costs for Contractor-provided devices including but not limited to FCC licensing, cellular telephone, wireless data networks, satellite and Internet subscription charges, solar system support and battery charging and maintenance. The Contractor shall be responsible for all software integration and development required to provide and operate a real time browser based webpage that can present real time travel information (messages, speed data, video feeds) to the traveling public.

In addition to these requirements, the Contractor shall assume all responsibility for any damage to Contractor-provided equipment due to crashes, vandalism, adverse weather, etc. for the duration of the project.

It is anticipated that traffic conditions may vary due to queuing caused by high traffic volumes, work zone vehicle interference, weather, grade changes, etc. This project shall require the Contractor

to supply the necessary equipment as called out per Contract plans or as directed by the Engineer to monitor traffic due to these conditions.

82. GENERAL REQUIREMENTS. This project shall require that Portable Queue Trailer (PQT) sensors called out per Contract plans have the capability to collect and transfer real time speed and volume to a browser based Contractor hosted webpage as well as transfer data in a file format compatible with Oracle back to the TOC. The bidder is expected to work with the TOC and Agency staff to develop the necessary software enhancements to integrate the data into the Agency's system.

This project shall require that Portable Changeable Message Signs (PCMS) called out per Contract plans have the capability to automatically post condition-responsive messages. The devices shall be capable of transferring real time PCMS message data to a browser-based, Contractor-hosted webpage as well as transfer data in a file format compatible with Oracle back to the TOC. The bidder is expected to work with the TOC and Agency staff to develop the necessary software enhancements to integrate the data into the Agency's system.

This project shall require that the Mobile Video Trailer w/ Pan Tilt Zoom (PTZ) cameras called out per Contract plans have the capability to send streaming video feeds to the TOC as well as display these feeds on a browser-based Contractor hosted webpage. The Contractor is expected to work with the TOC and Agency staff to develop the necessary software enhancements to integrate the data into the Agency's system.

83. PERFORMANCE. The System as called out per Contract plans shall Perform with no major malfunctions throughout the entire contract duration unless the Engineer requests the system to be removed. Malfunctions include, but are not limited to: the inability of the equipment to provide accurate-real time video feeds to the TOC or to the browser based Contractor hosted webpage; delay of travel time information to the PCMS message boards or to the browser based Contractor hosted webpage; and/or inability to withstand a construction roadside environment or normal weather conditions, etc. The Agency reserves the right to terminate item(s) at any time if it determines this Work Zone ITS System is not performing in accordance with this. The System shall be capable of withstanding winter and inclement weather conditions providing adequate solar and battery. The Agency reserves the right to terminate item(s) at any time if it determines this Work Zone ITS System is not performing in accordance with this.

All of the required components of the Work Zone ITS System as specified herein shall be fully operational two weeks prior to the start of work.

If the system is not fully operational a pay reduction of 5% of the pro-rated monthly payment per day shall occur until the system is approved by the Engineer.

The Contractor shall be required to make all necessary corrections to the Contractor-provided components of the system within 2 hours of error notification during the Bridge Closure Periods, and 24 hours during the Non-Bridge Closure Periods. If all corrections are made within this appropriate response period and the system is brought back on-line, no pay reduction shall occur.

Components of a Work Zone ITS System may include any or all of the following: Video Trailers with Pan Tilt Zoom (PTZ) cameras; Speed and Volume Sensors (PQT); Communications Equipment; Computer hardware and

software required to place the real time information on the PCMS; the browser based Contractor hosted webpage; and the video feeds to the project Webpage.

If the appropriate timeframe expires and the Contractor-provided components of the Work Zone ITS System are not fully restored to proper working order, no payment shall be made from the time of initial notification until the system is brought back on-line. The pro-rated monthly payment shall be determined as follows:

During Bridge Closure Periods:

2 hours = 10% pay reduction	18 hours = 50% pay reduction
4 hours = 20% pay reduction	24 hours = 60% pay reduction
8 hours = 30% pay reduction	48 hours = 70% pay reduction
12 hours = 40% pay reduction	72 hours = 80% pay reduction

During Non-Bridge Closure Periods:

1 day = 5% pay reduction	6 days = 30% pay reduction
2 days = 7% pay reduction	7 days = 35% pay reduction
3 days = 10% pay reduction	8 days = 40% pay reduction
4 days = 20% pay reduction	9 days = 50% pay reduction
5 days = 25% pay reduction	10 days = 75% pay reduction

If the contractor-provided components of the Work Zone ITS System are down for more than 10 total days in a month whether they are consecutive or cumulative, then NO payment shall be made for that month. The Agency reserves the right to remove the Work Zone ITS components at this time if it determines the System is not performing in accordance with this specification, in which no further payment shall be made.

84. MATERIALS.

(a) Work Zone ITS Deployment (System Field Installation). Smart Work Zone devices shall be installed in accordance with a site-specific layout plan developed by the Contractor in consultation with the Engineer which reflects conditions in the field at the time of deployment. Layout plans provided in this document are conceptual only for bidding estimate purposes only.

The system shall be maintained and operated as referenced in section 84(g) of this specification.

The Contractor shall prepare the locations to receive the equipment in accordance with the equipment manufacturer's requirements.

The Contractor shall install each component of the system in accordance with the manufacturer's recommendations in compliance with all industry standards and codes such that each device is fully operational and can be operated and controlled from the Agency's TOC and from the field via laptop.

The approved field locations of the equipment must meet the clear zone requirements established in the most recent Roadside Design Guide.

The Contractor shall submit the proposed device layout to the Engineer for approval at least 3 weeks prior to installation of the Work Zone ITS devices.

The Contractor shall submit shop drawings of the Work Zone ITS devices in accordance with Section 105, with details of how and which communications systems shall be used and implementation of the browser based Contractor hosted webpage.

Upon approval of the device layout from the Engineer, the contractor shall work with the TOC to validate that the Work Zone ITS devices are communicating and posting the correct default messages on the message boards, prior to turning the message signs to the viewing public.

(b) Device Components

The Work Zone System may consist of any of the following devices as called out per Contract plans:

- (1) Portable Queue Trailer/Sensors (PQT)
- (2) Portable Changeable Message Signs (PCMS)
- (3) Mobile Video Trailer with Pan Tilt Zoom (PTZ) cameras.
- (4) The contractor shall provide the software necessary to manage the SWZ.
- (5) Communication equipment for all above pieces including wireless data networks, base stations, cell phone data interfaces, Ethernet network interfaces and internet interfaces.
- (6) Customized browser based Contractor hosted webpage integrated with the Work Zone ITS devices.
- (7) Software package customized for this particular project needs or equivalent.

In addition to the above referenced equipment, the following shall be provided for each PCMS, PQT and PTZ as called out per Contract plans:

- (1) Each shall be individually mounted on trailer units with solar power.
- (2) Each shall be equipped with digital modems or wireless data interfaces as required
- (3) Each shall be linked back to the Work Zone ITS provider's central software server

(a) Device Requirements/Configurations

The PTZ devices shall be configured with the following camera requirements as a minimum:

- (1) Provide camera housings and hardware that are white in color or as noted in the plans.

- (2) Ensure that the camera housing has a sunshield to reduce the solar heating of the camera.
- (3) Ensure that the lower dome of the camera housing is distortion free clear plastic.
- (4) Ensure that the upper dome of the camera housing is light in color.
- (5) Ensure that pressurized dome-type housings are capable of pressurization at 5 pounds per square inch (psi) using dry nitrogen, that they have a low-pressure alarm feature, and carry a NEMA 4X/IP-67 rating.
- (6) If a non-pressurized dome-type housing enclosure is used, ensure that the unit is vented with a thermostat-controlled, 24-volt DC heater and blower.
- (7) Ensure that the non-pressurized enclosure has a NEMA 4/IP-66 rating.
- (8) Ensure that the housing protects the camera and other internal components from rain, dust, corrosive elements, and typical conditions found at a roadside environment.
- (9) Coat the exterior of the dome-type enclosure's lower half with a clear, rain repellent product prior to final acceptance.
- (10) Cameras must be capable of operating on both solar and A/C power.
- (11) The Contractor shall be responsible for cleaning the camera housing to restore focus if image quality is degraded by dust, dirt, snow, ice or other debris on the camera lens.

The PTZ devices shall be configured with the following video requirements:

- (1) The video from the cameras shall be provided in a format capable of being displayed in the TOC and on the project web page at a rate of at least 1 frame per second.
- (2) The web page provided shall allow at least 100 users to access the video on the web page without having the frame rate drop to less than 1 frame per second.
- (3) The video must be viewable through the browser based Contractor hosted web page.
- (4) The video format must be capable of providing an RTSP stream to the TOC.
- (5) The central software shall be capable of transferring an .mpeg streaming format to the TOC from each camera.

The PQT devices shall meet the following minimum requirements:

- (1) Work Zone ITS traffic sensors shall communicate with the Work Zone ITS provider's central software server as well as the webpage to activate the appropriate PCMS whenever the prevailing traffic speed slows to below 45 miles per hour (or other designated trigger as approved by the TOC Program Manager or the Engineer). Once configured and activated, preprogrammed messages shall be automatically displayed on the PCMS based on the pre-determined speed triggers.
- (2) The Work Zone ITS traffic sensors shall be configured to acquiring speed, volume and a minimum of 3 vehicle classifications data from up to six total lanes of traffic in multiple directions, e.g. northbound and southbound. Vehicle classifications are to be selected by the TOC Program Manager from the most recent FHWA Vehicle Classification chart.
- (3) The Work Zone ITS traffic sensors shall be configured to send an alert notification to the TOC when the speed limit has fallen below the default speed triggers and pre-defined messages are displayed on the message boards.
- (4) Email alerts shall be sent to the TOC when the speed has resumed to normal free flow and the triggered message has been removed from the message board. Email addresses will be provided to the Contractor.
- (5) Work Zone ITS traffic sensors shall be such that the accuracy is not degraded by inclement weather and visibility conditions including precipitation, fog, darkness, excessive dust, foliage, and/or road debris.

Software Interface. The Work Zone ITS software interface shall provide the following:

- (1) The Work Zone ITS software shall be configured so that appropriate personnel at the TOC are notified by email each time a device malfunction has occurred in the system and a malfunction record is made in the database. The Agency will provide the email distribution list, and the Contractor will be expected to update the list as directed by the Engineer. Configure the software so that any number of approved personnel can be notified in this manner. The e-mail message shall also display an error message for the device or devices affected. Please note that the Work Zone ITS Contractor is responsible for this notification procedure. Refer to Section 84(h)(7) for additional information.
- (2) The Work Zone ITS software shall be configured to provide current operational and location status (i.e. current traffic data and messages, communications system, signs and sensors as well as lat/long of all deployed devices) via the Internet to a dedicated browser based Contractor hosted

webpage established for the purpose of monitoring the corridor and the Work Zone ITS equipment.

- (3) The Work Zone ITS System shall be configured to assess any type of malfunction that has occurred. This assessment includes communications disruption between any device in the system configuration, changeable message board malfunctioning, speed sensor malfunction, loss of power, low battery, etc. This malfunction information shall be sent via email in text format to the TOC for each occurrence.

Any proprietary component protocols must be disclosed to the Agency so that any necessary software enhancements to integrate the data and video into the Agency system can be completed by the Agency's TOC.

Work Zone ITS Webpage. The Work Zone ITS Webpage shall have the following:

- (1) The Webpage shall be configured to provide a password protected link for approved personnel to have access to the operational characteristics of the system to manually override errant messages on the PCMS's due to communication interruptions or other system failures.
- (2) Via the Internet and the dedicated webpage, the webpage shall provide a full color map using Google Maps or equivalent depicting the project area with locations of PQT, PCMS and PTZ devices. Placement of all devices shall be shown using lat/lon coordinates.
- (3) Using an Agency-approved color-coding scheme, the map reflects the current average speed at each traffic sensor and the direction of traffic flow. The map displays the entire information message being shown by each PCMS either on the map or on the side bar of the webpage. The map display the streaming video being shown by the video camera located on the project site. The map should be automatically refreshed a minimum of once every minute to display any changes to the devices as called out per Contract plans.
- (4) The TOC Program Manager, prior to release of the webpage, shall approve the placement of these devices on the webpage. The webpage shall allow the user to toggle devices to be viewable or non-viewable.
- (5) The Webpage shall be configured to display current traffic conditions and real time speed to the nearest minute. The "real time" delay information displayed on the PCMS's is updated every 1 minute minimum and the webpage delay information is updated simultaneously with the delay information displayed on the PCMS's.
- (6) The Webpage shall be configured to support scheduling of messages by the operator for non-recurring events. Such scheduling shall allow the operator to set a message on a sign or group of signs to turn on and to turn off at times set in the future.

- (7) Additionally, users shall have the ability to generate sensor data reports, i.e. speed, volume and occupancy reports, delay time reports and average monthly volumes from the data that is generated from each PQT sensor installed on the project. These reports must be available specific to the district or jurisdiction the project covers.
 - (8) The Webpage shall have a link for comments directed to Jill Barrett, Project Outreach Coordinator at jbarrett@fhiplan.com
 - (9) The Webpage shall allow the Agency's own webpages to link to it.
- (f) System Communications. The Contractor shall ensure that the Work Zone ITS communications meet the following requirements:
- (1) The Contractor performs the required configuration of the communications system during system initialization.
 - (2) Communications between the server and any individual PCMS, PTZ and PQT sensor are independent through the full range of deployed locations and do not rely upon communications with any other PCMS, PTZ or PQT sensor.
 - (3) The Smart Work Zone's communications system incorporates an error detection/correction mechanism to insure the integrity of all traffic conditions data and motorist information messages. Refer to the Section on Data Acquisition and Reporting for alert email communication.
 - (4) The wireless communications system(s) used for this project must be reliable, dependable, and capable of functioning 24 hours a day, 365 days a year regardless of weather, locations and cell phone usage. Contractor shall be responsible for all communications cost, utilities, and satellite or cellular phone services needed to provide the dependable functioning Work Zone ITS System. Communication outages shall be tracked via outage reports as referenced in Section 84(h) (7).
- (g) Operational Requirements. In addition to meeting manufacturer's specifications, the Contractor shall program the Work Zone ITS System to ensure that the following General Operational requirements are met:
- (1) The Work Zone ITS System as called out per Contract plans shall operate continuously (24 hours a day, 7 days a week) when deployed on the project. It shall always be collecting data, and providing real time data feeds to the TOC.
 - (2) The System shall autonomously restart in case of power failure in any part of the system.
 - (3) The Work Zone ITS System shall be capable of providing current operational status of those devices called out per Contract plans (i.e. current traffic data and

messages, communications system, signs and sensors, video feeds) via the dedicated project webpage.

- (4) The Work Zone ITS central software shall automatically select default and advisory messages based on traffic conditions at a single traffic sensor point or at multiple traffic sensor points in combination. The message content is programmable from the webpage.
- (5) Any request to change pre-set advisory messages on the PCMS shall be approved by the Engineer.
- (6) Admin users have the capacity to create and save a library of messages with up to 20 different default or automatic advisory messages for each PCMS.
- (7) To provide for remote sign operation, the Webpage shall allow password-protected Agency operators to manually override the automated messaging in order to display a message at any time. The operator shall be able to send a pre-programmed or custom message to one sign or multiple signs simultaneously without sending the identical message to all PCMS individually.
- (8) The Work Zone ITS Software shall provide a group send feature. The operator shall be able to cancel a manual operator override and initiate any and all of the systems automated messaging features at any time.
- (9) Each Portable Changeable Message Sign (PCMS) shall be capable of displaying eight characters on each of the three rows as detailed in Section. Standard Motorist Information Messages are defined in the "Work Zone ITS Motorist Information Messages" section below.
- (10) To support incident management, the Work Zone ITS shall allow project field staff with password privileges to manually override motorist's information messages for a user-specified duration, after which automatic operation shall resume with display of messages appropriate to the prevailing traffic conditions.
 - a. Training and Support. The following personnel, training and support shall be required:
 - (1) Ensure that the Work Zone ITS System as called out per Contract plans is furnished, installed and maintained by personnel who are experienced in this type of work. Deploying firm/personnel must have a minimum of five similar deployments.
 - (2) Ensure that a technician, who is skilled in the operation of all the Work Zone ITS equipment and software is available 24 hours a day, 7 days a week to maintain the system components, move Contractor-provided portable devices as necessary

and to respond to emergency situations within 4 hours. Ensure that this technician is equipped with sufficient resources to make needed corrections of deficiencies within 4 hours of notification.

- (3) Training shall be provided to project staff on the use and operation of both the physical field hardware and the electronic version (webpage) of the Smart Work Zone.
- (h) Data Acquisition & Reporting. The following data acquisition requirements are to be met:
- (1) The Work Zone ITS central software shall be capable of calculating and providing "real time" delay or time of day information that can be displayed on the Portable and Fixed Changeable Message Signs. This "real time" delay shall be calculated and displayed on the CMS's to the nearest minute.
 - (2) The Work Zone ITS traffic sensors shall be capable of acquiring speed, volume and a minimum of 3 vehicle classifications data from up to six lanes of traffic in multiple directions, e.g. northbound and southbound. Vehicle classifications are to be selected by the TOC Program Manager from the most recent FHWA Vehicle Classification chart.
 - (3) The Contractor shall provide redundancy for data archiving and exchange. The Contractor shall provide a CDN (Content Delivery Network) to aggregate video data streams from any Work Zone ITS PTZ camera to a centralized location to reduce bandwidth consumption from each individual PTZ camera head to end users and allow for separate controllable/configurable streams for public and operator user.
 - (4) The CDN should be capable of allowing the TOC operators to start and stop public feeds from the Work Zone ITS Webpage while not interfering with the private TOC feeds being displayed on the webpage.
 - (5) The CDN should be capable of archiving video data for a period of up to 30 days for each individual Work Zone ITS PTZ camera.
 - (6) All traffic sensor and message board data acquired by the Work Zone ITS central software including but not limited to, calculated data fields, shall be archived in a log file with time and date stamps for the duration of the project.
 - (7) During the project, requests for archived data shall be made through the TOC to the Work Zone ITS Contractor. The Contractor shall provide this data to the TOC within 5 days upon receipt of the original request.

- (8) At the end of the project, the Work Zone ITS Contractor shall provide the Agency comprehensive project archive data with the exception of video. This logged information shall be in a format compatible with Agency Standards. The Contractor should coordinate with the TOC at for current standards.
 - (9) The Work Zone ITS central software shall provide device outage alerts via email to the TOC for outages greater than 30 minutes. These shall be used to generate a monthly summary spreadsheet displaying outages greater than 24 hours to both the Engineer and the TOC management. The outage alerts are to contain date and timestamp data for when the devices went offline and when they came back online. The email addressees for recipients of these outage alerts shall be provided by the Agency. Any pay reductions as per Section 83, the pro-rated schedule shall be calculated from these outage summaries
 - (10) The Work Zone ITS central software shall have an issue track in place that provides an automated alert notification process. This process shall provide an automated escalation to the contractor's management team or the Agency's management team in the event an issue is not resolved in 30 days.
 - (11) The central software shall be capable of transferring for each camera device an .mpeg streaming format.
 - (12) The Contractor shall provide notification of data format changes to the Agency before they take place.
 - (13) Unique device identifiers shall be coordinated at the beginning of the project and shall **NOT** change once the Work Zone ITS Contractor has initially defined them unless approved by the Agency.
85. METHOD OF MEASUREMENT. The quantity of Special Provision (Smart Work Zone) for payment will be on a lump sum basis in the complete and accepted work.
86. BASIS OF PAYMENT. The accepted quantity of Special Provision (Smart Work Zone) will be paid for at the Contract lump sum price. Payment will be full compensation for all materials, labor, tools, equipment, and incidentals necessary to complete the work. Payment will be made as follows:
- (a) Upon installation of a functioning system as indicated by a successful continuous 24-hour operation test period, 35% of the Contract lump sum price will be paid.
 - (b) The remaining 65% of the Contract lump sum price will be paid on a prorated basis for the estimated duration of the Contract work remaining.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Smart Work Zone)	Lump Sum

TEMPORARY SUPPORTS AND HORIZONTAL SLIDE

87. DESCRIPTION. This work shall consist of designing, fabricating, erecting, maintaining, and dismantling all temporary structural supports. This work shall also consist of performing lateral bridge slide, monitoring bridge movement, removing lateral slide equipment, and performing post-slide inspections and any necessary remedial actions.

88. DEFINITIONS.

Temporary Structural Supports shall refer to all components of the temporary falsework erected adjacent to the current bridge location supporting the construction activities to erect the complete superstructure including but not exclusive of the temporary bents, lateral bracing, foundations, work platforms and all personnel safety systems.

Horizontal Slide shall refer to all components (including but not exclusive of the temporary sliding bearings, jacks, tracks, and pumps) and processes (including but not exclusive of submittal preparation, execution of the bridge movement, monitoring of bridge movement, post event inspections and remedial action) related to moving the newly erected superstructure from the temporary structural supports onto the permanent substructure units.

89. MATERIALS. Materials used for the temporary structural supports may be timber, reinforced concrete, or steel, or a combination of each, at the Contractor's option, and, whether new or used, shall be sound and of adequate cross section for the intended loads. If the Contractor proposes to construct with used materials, the Contractor's Professional Engineer shall submit with the plans the method for documenting that all primary member material meets the physical properties required by the design. The Agency reserves the right to perform in-process fabrication inspection of all materials proposed for use. The Contractor shall notify the Engineer of the fabrication schedule 7 calendar days prior to commencement of fabrication.

All welding required for the fabrication of any temporary steel structure shall be detailed on the Working Drawings and be performed in accordance with Section 506.

Materials used for the temporary sliding bearings shall be in like new condition, as approved by the engineer, with no reclaimed material incorporated in the finished bearing.

A. Steel Reinforced Elastomeric Bearing Pads:

Material requirements of subsection 531.02 apply for any steel reinforced elastomeric bearing components.

B. Polytetrafluoroethylene (PTFE) Sheet:

Material requirements of subsection 731.08 apply for any PTFE Sheet.

The mating sliding surface of filled PTFE sheet in contact with the stainless steel sliding surface shall be polished or burnished to ensure smooth and low-friction movement of the bearing.

C. Stainless Steel:

Material requirements of subsection 731.05 apply for any stainless steel sliding surfaces.

90. DESIGN

Temporary structural supports shall be designed to support all vertical and horizontal loading including but not limited to live load and impact, differential settlement forces, horizontal and longitudinal forces, and shall account for any temporary unbalanced loading due to jacking forces and other loading during load transfer.

Design Criteria

In the absence of any other stated referenced national code based criteria, the design and use of the horizontal slide system and temporary structural supports shall meet the requirements of AASHTO Guide Design Specifications for Bridge Temporary Works (2008 Interim). The design of modifications to the permanent bridge superstructure necessitated by the Contractor's elected horizontal slide system shall meet the requirements of AASHTO LRFD Bridge Design Specifications (current edition). For items not addressed by the above documents or for any other circumstances, submit a proposal and seek the guidance and approval of the Engineer prior to proceeding.

Submittal Requirements

The Contractor shall develop, update as necessary, and implement a comprehensive Assembly Plan for this project. The Assembly Plan shall be organized by major project elements and shall provide sufficient detail to convey the work proposed. The Assembly Plan shall be submitted to the Engineer for review at least 30 days prior to the scheduled start of temporary works construction. This Assembly Plan at a minimum shall contain the elements in the list below. The Assembly Plan shall be updated as necessary based on changes required or proposed to the planned work.

Assembly Plan Submission:

1. Horizontal slide system (including jacks, tracks, and pumps)
2. Horizontal slide execution (including geometric control)
3. Monitoring of bridge movement (including pre- and post-event inspections and remedial action)
4. Vertical jacking and elastomeric bearing installation
5. Contingency plans (including backup equipment and key personnel)

Provide checking (QC/QA) procedures prior to the horizontal movement of the superstructure in order to ensure its completion.

Provide contingency plans in the event of a major breakdown or equipment malfunction.

Provide operational details for the control of the movement, including any system of check-off items for the operators and for safety purposes.

The temporary structural supports and horizontal slide system shall be designed and sealed by a Professional Engineer, licensed in accordance with the laws of the State of Vermont. If the Agency requires changes to plans or computations, based on Contract requirements, then the Contractor shall implement the changes at no additional cost to the

Agency. The submittal shall provide details of the temporary falsework components (including but not exclusive of the bents, lateral bracing, foundations, work platforms and all personnel safety systems).

Work shall include preparation and submittal of calculations and working drawings (with working load capacities) for horizontal slide equipment and temporary structural supports.

Working Drawings and Calculations

Provide detailed calculations for all falsework elements and working drawings showing the location and details of temporary works used to support the construction activities for the permanent superstructure. Include bents, bracing, foundations, work platforms, personnel safety details and support of sliding track. Indicate the type and grade for all materials. Provide calculations and details for methods used to stabilize excavations. If attachment of the temporary falsework to the permanent bridge substructure is required for any reason (i.e. strength or stability of frames or moving systems), the Contractor shall submit calculations and details for any proposed attachments/modifications to the Engineer for approval.

Show details of horizontal slide system, including but not exclusive of the jacks, tracks, and pumps, and schematic hydraulic layout, used to move the bridge superstructure from the temporary structure onto the permanent bridge substructure. Indicate the distance that the superstructure is to be moved. Provide type and grade for all materials. Clearly show on the Working Drawings and in the calculations the push/pull capacity of the horizontal slide system and limitations during all jacking operations. Provide jacking/pulling locations. Provide a detailed slide procedure, including but not limited to execution of the bridge movement, monitoring of the bridge movement, post-event inspections and remedial action.

Procedures shall include checklists to support the activities prior to, during and after the bridge superstructure has been moved to its final location. Provide checking (QC/QA) procedures prior to the horizontal movement of the superstructure in order to ensure its completion. Provide contingency plans in the event of a major breakdown or equipment malfunction. Provide operational details for the control of the movement, including any system of check-off items for the operators and for safety purposes. If attachment of the horizontal slide system to the permanent bridge substructure is required for any reason, the Contractor shall submit detailed calculations and drawings for any proposed attachments/modifications to the permanent bridge details and/or materials to the Engineer for approval.

The Contractor shall be responsible for all damages resulting from the failure of temporary structural support.

91. ERECTION AND REMOVAL. The erection of temporary supports and horizontal slide equipment shall be in strict conformance with the approved design and details and shall use only the materials approved for use. No loads shall be placed on the temporary supports without the prior approval of the Engineer. No loads shall be placed on temporary supports which are adjacent to traveled ways or which support structures carrying traffic unless the Engineer responsible for the design has certified that the system was erected in conformance with the approved plans and design details.

The approval by the Resident Engineer of all or part of temporary supports shall not be construed as in any way relieving the Contractor of their responsibility and the work shall be entirely at the Contractor's risk. Upon completing the work requiring the use of the temporary structural supports and horizontal slide equipment, they shall be removed and the area under and around the temporary structural supports and horizontal slide equipment shall be restored to its original condition.

92. HORIZONTAL SLIDE. The Contractor has overall responsibility for the construction of the temporary falsework structure and horizontal slide system in accordance with the reviewed Working Drawings and procedures.

Movement of Superstructure

The intent during movement is to ensure that the structure is delivered to the Owner, in its final location, with no damage or adverse loss of strength, loss of performance, or loss of long-term durability. Any damages to the permanent structure caused by the move shall be repaired at no cost to the State. The Contractor shall ensure that the superstructure itself remains as free as possible from harmful effects of differential movements at all sliding surfaces.

The Contractor shall establish survey control points and benchmarks as necessary, and shall maintain records of observations and operations. In the event of errors in control of movement, the Contractor shall immediately notify the Engineer and submit proposals for corrective adjustments or modifications for review prior to their implementation. The final bridge superstructure position shall not exceed 1/4 inch maximum deviation from the plan location in any horizontal direction (i.e. longitudinal or transverse directions). The final bridge superstructure position shall also not exceed 1/4 inch maximum vertical deviation from the proposed finished roadway elevations at each end of the bridge.

Trial Horizontal Slide

The Contractor is required to perform a trial horizontal slide for each structure, following approved horizontal slide procedures in the Working Drawings. This trial slide shall occur a minimum of 5 days prior to the slide of the bridge into its final position. The Contractor shall notify the Engineer of the date and time at which the trial slide is to occur in writing a minimum of 3 days prior to the trial slide. The trial slide shall demonstrate two cycles of the contractor's equipment (move, reset, move) and shall demonstrate the ability to move the structure in the opposite direction, should the final position be overshoot. The contractor shall monitor any additional settlements at the temporary falsework during the trial slide.

93. METHOD OF MEASUREMENT. The quantity of Special Provision (Temporary Supports and Horizontal Slide) for payment will be on an each unit basis in the complete and accepted work.
94. BASIS OF PAYMENT. The accepted quantity of Special Provision (Temporary Supports and Horizontal Slide) will be paid for at the Contract unit price per each designated location. Payment will be full compensation for all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made as follows:

- (a) Forty percent of the Contract unit price will be paid after the acceptance of the Assembly Plan.
- (b) Thirty percent of the Contract unit price will be paid after successful completion of the trial horizontal slide.
- (c) Thirty percent of the Contract unit price will be paid after successful completion of the horizontal slide and bridge is in its final location.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Temporary Supports and Horizontal Slide)	Each

CRITICAL PATH METHOD (CPM) SCHEDULE

95. DESCRIPTION. This work shall consist of preparing, submitting, and modifying Critical Path Method (CPM) construction schedule(s) for the Contract work occurring during each Bridge Closure Period, and the 48 hours before each, as specified herein and as directed by the Engineer.

The Contractor is advised that its schedule and narrative, as specified herein, will be used by the Engineer to monitor project progress, plan the level-of-effort by its own work forces and consultants, and as a critical decision making tool. Accordingly, the Contractor shall ensure that it complies fully with the requirements specified herein and that its schedule(s) are both timely and accurate throughout the life of the project.

96. SUBMITTALS.

- (a) Within ten (10) working days after the award of the Contract, the Contractor shall submit to the Engineer sufficient information that the CPM software it proposes to use on the Contract is fully capable of producing the specified schedules required by the Contract. The software used must be MS Project or be compatible with MS Project.

The Engineer shall notify the Contractor in writing, within seven (7) working days after the receipt of the Contractor's notification on the software, if there are any objections to the CPM software selected.

- (b) No more than thirty (30) days after the award of the Contract, and no less than ten (10) calendar days prior to the start of work, the Contractor shall submit to the Engineer for acceptance a baseline construction schedule and narrative meeting the following requirements:

- (1) Baseline Schedule Requirements.

- a. Define a complete and logical plan that can realistically be accomplished for executing the work defined in the Contract.

- b. Include sufficient activities for adequate project planning for subcontractor, third party, vendor, and supplier activities. These activities shall include Working Drawing submissions as well as provide for adequate review times.
- c. Clearly show the critical path using the longest path definition and other critical elements of work.
- d. Include a unique identification number for each schedule activity.

Clearly and uniquely define each activity description. Do not use descriptions referring to a percent complete of a multi-element task.

- e. Define the duration of each activity.
 - 1. Limit the maximum duration of any activity to fifteen (15) days unless otherwise accepted by the Engineer.
 - 2. When the project contains a road closure period, the work within the closure period shall be broken down by hours instead of days. The maximum duration of each activity within the closure period shall be limited to twelve (12) hours.
- f. Clearly identify the relationships tying activities together.
- g. Do not have open-ended activities except for one start and one finish activity.
- h. Do not have any constrained activities unless the Engineer accepts such constraints.
- i. Include milestones to define significant contractual events such as Notice to Proceed, Interim Completion(s), road closures, road openings, Substantial Completion(s), and/or others as necessary.

(2) Baseline Narrative Requirements.

- a. The construction philosophy supporting the approach to the work outlined in the baseline schedule. Address the reasons for the sequencing of work and describe any limited resources, potential conflicts, and/or other items that may affect the schedule and how they may be resolved.
- b. Provide information on assumed resources, crew sizes, working hours, equipment, etc.
- c. The justification for activities with durations exceeding fourteen (14) working days or exceeding twelve (12) hours for those activities falling within a road closure period.

- d. The justification for constraints used.
 - e. The approach used to apply relationships between activities.
 - f. The project critical path and challenges that may arise associated with the critical path.
- (c) The Contractor shall submit one hard copy and one electronic copy of an updated construction schedule each month during the life of the Contract up to Substantial Completion.
- (1) Schedule Updates. Schedule updates shall include the following:
- a. Actual start and finish dates for completed activities.
 - b. Actual start dates, percent complete, and remaining duration for activities in progress.
 - c. Projected sequences of activities for future work.
 - d. Revised relationships and durations for unfinished activities, if warranted.
 - e. A well defined critical path.
 - f. A narrative describing the following:
 - 1. Work performed during the previous monthly period.
 - 2. Problems or delays that have been experienced to date, the party responsible for the problems or delays, and the Contractor's plan to resolve the problems or bring the delayed activities back on schedule.
 - 3. Differences between the work performed and the work planned for the period, including explanations for the deviations.
 - 4. The current critical path of the project, explaining any changes since the last update and the impacts of these changes.
 - 5. Potential problems that may be encountered during the next monthly period. Identify all potential problems the Agency may be party to and explain what action the Agency needs to take and the date by which time the action needs to be taken to avoid the problem.
- (d) The Contractor shall participate in progress meetings at the request of the Engineer to review and discuss updated schedule information including any activity delay, remedies, coordination requirements, change orders, potential delays, and other relevant issues.

Projects with short duration road closures of fourteen (14) calendar days or less are of particular importance as the project float will be limited. The Contractor shall promptly inform the Engineer of any schedule delays or changes that occur during one of these periods.

When the Engineer requests a meeting the Contractor shall:

- (1) Make available the project manager, scheduler, and appropriate field personnel.
- (2) Make and record an action item list that describes who is responsible for resolving existing or pending issues and the date by which the issue needs to be resolved to avoid Contract delays.
- (3) Submit a revised schedule update if necessary.

The Engineer will review the Contractor's schedule submittals and provide comments and disposition, either accepting the schedule or requiring revision and resubmittal of the schedule. The Engineer's comments may address work that has been omitted, unacceptable durations for items of work, or Contract violations. The planning, execution of the work, and the accuracy of their representation in the Contract Progress Schedule shall remain the sole responsibility of the Contractor.

The Contractor shall not be relieved of its responsibility for satisfactorily completing the work within the Contract time due to its failure to submit an acceptable project schedule. Additionally, the Contractor shall not withhold monthly or requested schedule submissions in the event that the Engineer does not provide formal review comments. The Contractor is to provide monthly updates regardless of any outstanding issues.

Failure to provide schedule updates as required under this Specification will result in a written notification from the Engineer. Upon receipt of this notification the Contractor has two (2) weeks to provide an updated schedule as required. Failure to provide an updated schedule will result in withholding of full Contract quantity payments until an updated schedule is received.

97. PROJECT FLOAT. Float belongs to the project and is a shared commodity between the Agency and the Contractor, and is not for the exclusive use or benefit of either party. The float may be claimed by whichever party first demonstrates a need for it.
98. METHOD OF MEASUREMENT. The quantity of Special Provision (CPM Schedule) to be measured for payment will be on a lump sum basis for providing project schedules and narratives in the complete and accepted work.
99. BASIS OF PAYMENT. The accepted quantity of Special Provision (CPM Schedule) will be paid for at the Contract lump sum price. Payment will be full compensation for initial preparation, submittals, modifications, resubmittals, and all incidentals necessary to complete the work. Subsequent modifications to the CPM Schedule during construction will be considered incidental to Special Provision (CPM Schedule).

Partial payments will be made as follows:

- (a) The first 25% of the Contract lump sum price will be paid upon the approval of the baseline schedule and narrative.
- (b) The remaining 75% of the Contract lump sum price will be pro-rated in equal amounts on a monthly basis. The time used for pro-rating will be equal to the number of months from approval of the baseline schedule to the anticipated Contract Completion Date.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (CPM Schedule) (Bridge 43N)	Lump Sum
900.645 Special Provision (CPM Schedule) (Bridge 43S)	Lump Sum

INCENTIVE/DISINCENTIVE (I/D)

100. INCENTIVE/DISINCENTIVE (I/D), is hereby made a new Section of the Specifications as follows:

The payment of monies for performance under the Incentive/Disincentive (I/D) specifications contained in these Special Provisions shall be as follows:

- 1. For the incentive payment as described in part (c) of Special Provision No. 10, the Contractor will be paid in the next bi-weekly estimate in which the Contractor has satisfactorily met the requirements of I/D.
- 2. For the disincentive penalties as described in part (c) of Special Provision No. 10, the Engineer will deduct the amount due the Agency from the monies due the Contractor on the next bi-weekly estimate.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.615 Special Provision (Incentive/Disincentive) (N.A.B.I.) (Bridge 43N)	Dollars
900.615 Special Provision (Incentive/Disincentive) (N.A.B.I.) (Bridge 43S)	Dollars

PRECAST PRESTRESSED CONCRETE DECK PANEL

101. DESCRIPTION. This work shall consist of manufacturing, transporting, and installing precast prestressed concrete deck panels at the locations indicated in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 510 of the Standard Specifications.

102. FABRICATION AND CONSTRUCTION REQUIREMENTS. Concrete deck panels shall be fabricated and installed to the configuration shown in the Plans.

103. METHOD OF MEASUREMENT. The quantity of Special Provision (Precast Prestressed Concrete Deck Panel) to be measured for payment will be the number of square meters (square feet) of deck panel used in the complete and accepted work.

104. BASIS OF PAYMENT. The accepted quantity of Special Provision (Precast Prestressed Concrete Deck Panel) will be paid for at the Contract unit price per square meter (square foot). Payment will be full compensation for detailing, fabricating, repairing, sandblasting, quality control testing, transporting, handling, and installing the materials specified, including concrete, reinforcement, prestressing steel, transverse ties, enclosures for prestressing steel, anchorages, anchor rods, and any other material contained within or attached to the members; for furnishing and implementing the erection plan; 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>
900.670 Special Provision (Precast Prestressed Concrete Deck Panel) (3½")	Square Foot

CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURES

105. DESCRIPTION. This work shall consist of manufacturing, transporting, handling, and erecting precast concrete structure components fabricated by the Contractor at a location other than a Precast Concrete Institute (PCI) or Nation Precast Concrete Association (NPCA) certified precast concrete facility.

106. MATERIALS. Materials shall meet the requirements of Subsections 501.02, 507.02 and 540.02 of the Standard Specifications.

107. CONCRETE

Concrete shall meet the Standard Specification of 540.05, excluding 540.05 (a)

540.05 (b) (1) is modified as follow:

(1) The cementitious material content shall be between 237 and 534 kg/m³ (400 and 900 pounds per cubic yard) of concrete

540.05 (b) (4) is modified as follow:

(4) the maximum water-cement ratio shall be 0.44 or maximum water content of 33.5 gallons per cubic yard, whichever is less. The concrete mixture shall not demonstrate segregation at the proposed slump/spread.

108. GENERAL FABRICATION REQUIREMENTS. Unless noted otherwise herein, Contractor-fabricated precast concrete (CFPC) produced and paid under this Special Provision shall meet the requirements of Section 501 - HPC

Structural Concrete, Section 507 - Reinforcing Steel and Section 540 - Precast Concrete, of the Standard Specifications for Construction.

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

A complete copy of the structural design calculations for the CFPC shall be submitted as Construction Drawings in accordance with Section 105. The design calculations shall substantiate that the proposed precast concrete satisfies the design parameters of the Contract. The applicable design code will be the latest edition of the AASHTO *LRFD Bridge Design Specifications* unless indicated otherwise in the Contract Documents.

Fabrication Drawings for the precast concrete shall be submitted in accordance with Section 105, with an additional copy to the Composite Materials Engineer. In addition to the requirements for Fabrication Drawings in Section 105, the following shall be included:

- (a) Dimensions of the precast concrete to be fabricated.
- (b) The concrete mix design, including but not limited to the following:
 - (1) Batch weights specifying dry or saturated surface dry.
 - (2) Material names and sources.
 - (3) Aggregate properties and date tested.
 - (4) Chemical and physical properties of cementitious material.
 - (5) Admixture names and sources.
 - (6) Lab data that shall include, but not be limited to:
 - a. Slump.
 - b. Air Content.
 - c. Temperature.
 - d. Ratio of Water/Cementitious Material.
 - e. Cylinder breaks for 3, 7, and 28 days cured in the same manner as the piece to be fabricated.
 - f. 56 day Rapid Chloride Ion Permeability - AASHTO T 277 test data. The results shall be the average from testing 3 specimens, but the individual specimen results shall also be included. Testing shall be performed by an independent laboratory accredited by AMRL in this test method.
 - g. Alkali-Silica Reactivity (ASR) - AASHTO T 303 data from testing of both the fine and coarse aggregates. Testing shall be performed by an independent laboratory accredited by AMRL in this test method.

- (7) Alkali-Silica Reactivity (ASR) - If potentially reactive aggregates are to be used in a mix design, then proposed mitigation method(s) and test results must be provided. The AASHTO T 303 test must be run again with the proposed mitigation method(s) and using the proposed job cementitious material proportioning. The proposed mitigation method(s) shall reduce expansion to below 0.10%.

If a mix design, including the testing results, has been submitted and approved within a 12 month period, it may be used in lieu of submitting an additional mix design. However, if any change in the material sources, properties or proportions has occurred, then a new mix design with lab test data will be required regardless of previous approval.

The requirements for testing in Subsections 540.04(b)(6)f, 540.04(b)(6)g, and 540.04(b)(7) above shall be waived if the submitted mix design has a minimum proportion of the cementitious material content of that allowed for use in High Performance Concrete in section 501.

The mix design shall be approved by the Composite Materials Engineer prior to fabrication.

- (c) The sources and properties of the materials proposed for use.
- (d) The placement of reinforcing steel, welded wire fabric, mechanical bar connectors, and inserts.
- (e) The type of surface finish and how the finish will be obtained. Include details of potential repair procedures.
- (f) The curing method, detailing sequence and duration.
- (g) The minimum required concrete strength for design strength and form removal.
- (h) The design of the lifting attachments.
- (i) Transportation, handling, and storage details.
- (j) The installation procedure including a detailed grouting procedure.
- (k) Description of Quality Control Processes addressing but not limited to: Concrete Production, Formwork, Rebar, Concrete finishing, Concrete Cure, Shipping /Installation procedures.

110. INSPECTION. Materials furnished and the work performed herein shall be inspected by the Agency. The agency will test all concrete incorporated into the work per section 501 of the standard specifications. The inspector shall have the authority to reject any material or work that does not meet the requirements of the Specifications. Advance notification of at least two weeks must be provided by the Contractor to the Agency's Engineer and the Composite Materials Engineer concerning the proposed intention to commence work. A minimum of five working days notification must be provided to the

Agency's Engineer and the Composite Materials Engineer by the Contractor to confirm the fabrication start date.

Prior to placing any precast concrete elements produced under these Specifications, the Materials and Research Engineer shall have approved all applicable material certifications required in accordance with Subsection 700.02.

111. FABRICATION.

- (a) Pre-Production Meeting. Unless the Engineer deems, in writing, that a pre-production meeting is unnecessary, then a pre-production meeting shall be held a minimum of seven (7) calendar days prior to beginning concrete placement. The pre-production meeting shall be attended by, and including but not limited to, the Crew Supervisor, Contractor Project Manager, Concrete Producer, Resident Engineer, Project Manager, and Composite Materials Engineer.
- (b) Placing Concrete. Concrete placement shall be in accordance with Standard Specification 501.10 and as noted herein. Concrete shall not be deposited in the forms until the Agency representative has approved placement of the reinforcement, conduits, and anchorages.
- (c) Repairs/Patching. Contractor-fabricated precast concrete structure components that contain minor defects caused by manufacture or handling may be repaired at the manufacturing site. Minor defects are defined as holes, honeycombing, or spalls, which are 150 mm (6 inches) or less in diameter, that do not penetrate deeper than 25 mm (1 inch) into the concrete. Surface voids or "bugholes" that are less than 16 mm (5/8 inch) in diameter and less than 6 mm (1/4 inch) deep need not be repaired. Repairs shall be made using a material from the Approved Products List for overhead and vertical concrete repair. The repair material shall be cured as specified by the manufacturer. Repairs shall be approved by the Engineer.
- (d) Cracking. Cracks less than 0.25 mm (0.01 inch) in width shall be sealed by a method approved by the Engineer. Cracks in excess of 0.25 mm (0.01 inch) may be cause for rejection. At the Engineer's discretion, cracked Contractor-fabricated precast concrete structure components shall be repaired or replaced at the Contractor's expense.
- (e) Dimensional Tolerances for Contractor-Fabricated Precast Concrete Structure Components. All tolerances shall be in accordance with the latest editions of both PCI MNL 116 *Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products* and PCI MNL 135 *Tolerance Manual for Precast and Prestressed Concrete Construction*, or with the *National Precast Concrete Association (NPCA) Quality Control Manual for Precast Concrete*, unless otherwise noted in the Contract Documents or as approved by the Engineer.
- (f) Marking. The date of manufacture, the production lot number and the piece mark shall be clearly marked on each individual piece of precast concrete. The mark shall be in a location that will not be visible in the finished product.

112. HANDLING, STORAGE, AND SHIPPING. All CFPC Structures shall be handled, stored, and shipped in such a manner as to minimize chipping, cracks, fractures, discoloration, and excessive bending stresses. Units damaged by handling, storage, or shipping shall be replaced at the Contractor's expense.

CFPC Structures shall not be installed until the respective unit has been inspected. This inspection shall verify that the pieces are free from defects and all specification requirements including the compressive strength and tolerance requirements have been achieved. In addition, CFPC structures will not be considered for shipment until the completion of the cure period and the required strength has been attained as demonstrated by field cured cylinder breaks.

113. INSTALLATION METHODS, EQUIPMENT AND ERECTION. Cranes, lifting devices, and other equipment for Contractor-fabricated precast concrete structure erection shall be of adequate design and capacity to safely erect, align, and secure all members and components in their final positions without damage. The Contractor is solely responsible for the methods and equipment employed for the erection of the precast concrete structure components.

Construction Drawings for precast concrete structure component erection shall be submitted in accordance with Section 105. The erection plan shall include the necessary computations to indicate the magnitude of stress in the units during erection and to demonstrate that all of the erection equipment has adequate capacity for the work to be performed, and provisions for all stages of construction, including temporary stoppages.

Post tensioning shall comply with section 540.12 of the Standard Specifications

Submittal of the erection plan is for the Agency's documentation only and shall in no way be construed as approval of the proposed method of erection. The Contractor shall follow the erection plan as submitted.

114. GROUT.

- (a) Unless otherwise noted Grout shall be used to fill shear keys, leveling screw voids, transverse tie anchor recesses, dowel holes, and for fairing joints as detailed in the Contract or as ordered by the Engineer.

Grout shall be Mortar, Type IV. Acceptable grout materials shall be those included on the Approved Products List on file with the Agency's Materials and Research Section. Additional aggregates shall not be added to the material during field mixing.

The Contractor, with written permission from the Engineer, has the option to use ready mixed mortar for the grouting process. The Contractor shall prepare and submit for approval the mix design for the grout. The maximum quantity that can be delivered in a single load is one cubic meter (1.25 cubic yards), which must be delivered and placed within the time limits specified by the manufacturer.

For testing, 6 neat 50 mm (2 inch) cubes shall be molded and cured in accordance with AASHTO T 106 (ASTM C 109). The average

compressive strength of 3 cubes shall be a minimum of 7 MPa (1000 psi) at 3 days and a minimum of 35 MPa (5000 psi) at 28 days.

- (b) The surface to be grouted shall be thoroughly cleaned, wetted, and free of all standing water. The grout shall be mixed using a mechanical mixer according to the manufacturer's recommendations and shall be readily pourable so that it completely fills the shape of the shear keys or holes, depending on the product being installed. The placement of the grout shall be continuous. The grouting of each shear key shall be completed in its entirety within a single working day.
- (c) All exposed grout shall be cured for a period of not less than three days by the wetted burlap method in accordance with Section 501. Curing shall commence as soon as practical after grout placement.
115. METHOD OF MEASUREMENT. The quantity of Contractor-Fabricated Precast Concrete Structures of the types and sizes specified to be measured for payment shall be on a lump sum basis. The lump sum shall include all of the elements indicated to be Contractor-Fabricated Precast Concrete Structures in the complete and accepted work for the locations specified in the Contract.
116. BASIS OF PAYMENT. The accepted quantity of Contractor-Fabricated Precast Concrete Structures will be paid for at the Contract lump sum price. Payment shall be full compensation for designing, detailing, fabricating, repairing, transporting, handling, and erecting the elements specified, for furnishing and implementing the erection plan, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Any grouting work, such as fairing out unevenness between adjacent precast concrete structure components and filling leveling screw holes, shear keys, transverse anchor recesses, and dowel holes, is considered incidental to the work for Contractor-Fabricated Precast Concrete Structure.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Contractor-Fabricated Precast Concrete Structures (Approach Slab #1)	Lump Sum
900.645 Contractor-Fabricated Precast Concrete Structures (Approach Slab #2)	Lump Sum
900.645 Contractor-Fabricated Precast Concrete Structures (Approach Slab #3)	Lump Sum
900.645 Contractor-Fabricated Precast Concrete Structures (Approach Slab #4)	Lump Sum

PEDESTRIAN SHUTTLE

117. DESCRIPTION. This work shall consist of providing a shuttle to transport pedestrians through the work zone during each BCP.
118. GENERAL REQUIREMENTS. The shuttle shall have a minimum capacity of ten passengers, be ADA compliant and capable of carrying bicycles.
119. METHOD OF MEASUREMENT. The quantity of Special Provision (Pedestrian Shuttle) to be measured for payment will be on a lump unit basis in the complete and accepted work.
120. BASIS OF PAYMENT. A dollar amount of three-thousand-seven-hundred-fifty dollars (\$3,750) has been included in the bid proposal for shuttle services for each BCP. Payment will be for reimbursing the Contractor for the actual invoice amount paid to the shuttle service provider by the Contractor. The contractor shall submit four copies of paid receipted itemized bills to the Agency for review and approval. The Contractor's overhead will not be reimbursed.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.615 Special Provision (Pedestrian Shuttle) (N.A.B.I.) (Bridge 43N)	Dollar
900.615 Special Provision (Pedestrian Shuttle) (N.A.B.I.) (Bridge 43S)	Dollar

CPM SCHEDULE

121. DESCRIPTION. This work shall consist of developing and furnishing a CPM Schedule, including narratives, updates, and revisions for the duration of the Contract.

These provisions supersede Subsection 108.03(a) of the Standard Specifications.

122. SUBMISSION.
- (a) The Contractor is responsible for the scheduling of all Contract work, which shall include, but is not limited to subcontracted work, complete and acceptable submissions, work component fabrications, and delivery of materials. The schedule shall include allowance for time for all aspects of the work including sufficient time for VTrans to perform its functions as indicated in the Contract, including but not limited to acceptance inspection and/or testing, and review and acceptance/approval of any required Working Drawings as defined in Section 105 or otherwise in the Contract Documents.
- (b) Provide the following items with each schedule submission. The schedule shall be prepared with MS Project, or in a form that can be fully restored in MS Project without requiring conversion.
- (1) One paper copy and one electronic copy in MS Project format with run date and version of the schedule;

- (2) A CPM illustrated in color, depicting no more than 50 activities on each 280 by 430 mm (11 by 17 in.) sheet, and with each sheet including title, project name and number, match data for diagram correlation, and a key;
 - (3) A four-week look-ahead narrative to provide a more detailed plan of upcoming work highlighting the near term priorities;
 - (4) Narrative report indicating the workdays per week, number of shifts per day, and number of hours per shift.
- (c) The CPM schedule shall include the following:
- (1) Activities that describe the essential features of the work, activities that might delay Contract completion, and which activities are on the critical path;
 - (2) The planned start and completion dates for each activity and the duration of each activity stated in work days (field activities of more than 15 work days in duration shall be broken into two or more activities distinguished by location or some other logical feature); this estimated figure shall include considerations for permit limitations, seasonal limitations, and any other anticipated delays.
 - (3) Finish-to-start relationships among activities, without leads or lags unless otherwise approved by the Engineer;
 - (4) Project suspension or work inactivity that is three (3) days or longer;
 - (5) Dates related to the procurement of materials, equipment, and articles of special manufacture;
 - (6) Dates related to the submission of Working Drawings, plans, and other data specified for review or approval by the Agency;
 - (7) Interim, milestone, and project completion dates specified in the Contract as the only constraints in the schedule logic;
 - (8) Activities related to Agency inspections and activities related to specified activities by the Agency and third parties.
- (d) For contracts with an original Contract amount in excess of \$8,000,000.00 the following additional information shall be shown on the CPM schedule:
- (1) Each Contract bid item identified with at least one activity, except:

Lump Sum items, Lump Unit items, Contract items paid by the "Hour", Contract items paid by the "Dollar", Section 641 pay items, and Section 653 pay items.
 - (2) Each compensable activity shall identify the applicable Contract item(s), along with the total quantity intended to be placed during that activity.

123. PROGRESS SCHEDULE. A schedule of work shall be submitted a minimum of seven (7) calendar days prior to the preconstruction meeting. The Engineer and Contractor will review the schedule at the preconstruction meeting. Any requested information and a revised schedule shall be submitted within five (5) working days after receiving the Engineer's request. The Engineer will review the schedule by assessing the schedule's compliance with these provisions and conformance with the Contract requirements. The Engineer shall be allowed 21 calendar days to review the schedule. By accepting the schedule, the Engineer does not modify the Contract in any way.

The schedule shall define and sequence activities so as to accurately describe the project and to meet Contract requirements for scope of work, phasing, accommodations for traffic, and interim, milestone, and project completion dates. Use work days to create the schedule, beginning with the date of the Notice to Proceed.

124. SCHEDULE UPDATES. The schedule shall be updated during active construction at the end of every other bi-weekly estimate period (update period) and when directed by the Engineer. The Engineer shall be allowed ten (10) calendar days to review the update for compliance with these provisions. Include the following with each update:

- (1) Actual start dates of each activity started;
- (2) Actual finish dates of each activity finished, or remaining durations of activities started but not yet completed;
- (3) Narrative report describing progress during the update period, shifts in the critical activities from the previous update, sources of delay, potential problem areas, work planned for the next update period, and changes made to the schedule. Changes include additions, deletions, or revisions to activities due to the issuance of a Contract revision, changes to an activity duration, changes to relationships between activities, or changes to the planned sequence of work or the method and manner of its performance.

125. REVISIONS. Schedule revisions shall be submitted within ten (10) calendar days after any of the following:

- (1) A written request from the Engineer;
- (2) A delay (actual or projected) to scheduled milestones or project completion dates;
- (3) When actual progress falls behind the schedule accepted by the Engineer, either by falling more than two (2) weeks behind schedule or by 5% of the total Contract time, the Contractor shall immediately inform the Engineer in writing. The Engineer may require the Contractor to submit a revised schedule. Neither the Engineer's acceptance of such revised schedule nor any Agency feedback regarding the revised schedule shall be construed as an approval of the revised schedule, nor should it be construed as the Agency's dictation of the Contractor's means and methods;
- (4) Issuance of a Change Order/Supplemental Agreement(s) that by adding, deleting, or revising activities, changes the planned sequence of work or the method and manner of its performance;

- (5) Issuance of a Change Order/Supplemental Agreement(s) that adds time to the Contract.

The Engineer shall be allowed ten (10) calendar days to review the revised schedule for compliance with these provisions.

- 126. FLOAT. It is understood by the Contractor that any float in the schedule is to be shared equally between the Agency and the Contractor. That is, when actual project progress or schedule updates result in changes to the critical path, the Contractor shall discuss these potential changes with the Engineer before submitting a revised schedule.
- 127. FAILURE TO SUBMIT SCHEDULE. Failure to submit a schedule (i.e. original baseline schedule, required updates, revisions, and when requested by the Engineer) in accordance with these provisions may be grounds for suspension of partial payments, as identified in Subsection 109.08, until a satisfactory schedule meeting the requirements of these provisions is received by the Engineer.
- 128. METHOD OF MEASUREMENT. The quantity of Special Provision (CPM Schedule) to be measured for payment will be the number of each CPM Schedule (i.e. original baseline schedule, required updates, revisions, and when requested by the Engineer), accepted by the Engineer through the duration of the Contract.
- 129. BASIS OF PAYMENT. The accepted quantity of Special Provision (CPM Schedule) will be paid for at the Contract unit price for each. Payment will be full compensation for preparing and submitting a schedule as specified, 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>
900.620 Special Provision (CPM Schedule)	Each

UNIFORMED TRAFFIC OFFICERS

- 130. 900.01 DESCRIPTION. This work shall consist of furnishing qualified uniformed traffic officers (UTOs) in accordance with all the applicable requirements of SECTION 630 - UNIFORMED TRAFFIC OFFICERS AND FLAGGERS of the 2011 Standard Specifications for Construction and as modified by the current General Special Provisions for All Projects.
- 131. 900.02 METHOD OF MEASUREMENT. The quantity of Special Provision-Uniformed Traffic Officers to be measured for payment will be to the nearest hundredth of a dollar for services provided. The Agency will include in the proposal a quantity of dollars for all Uniformed Traffic Officer services required. However, the Contractor will be reimbursed the actual costs of providing these services as evidenced by the paid invoices submitted to the Engineer. Upon entering the cost of the submitted bill into the next biweekly estimate, the Engineer will forward the original paid bill to the Construction Office to be retained with the project records and will place a copy of the paid bill into the field office records.

132. 900.03 BASIS OF PAYMENT. The quantity of Uniformed Traffic Officers to be paid will be the total of all paid invoices for providing Uniformed Traffic Officers for the project.

Payment will be made under:

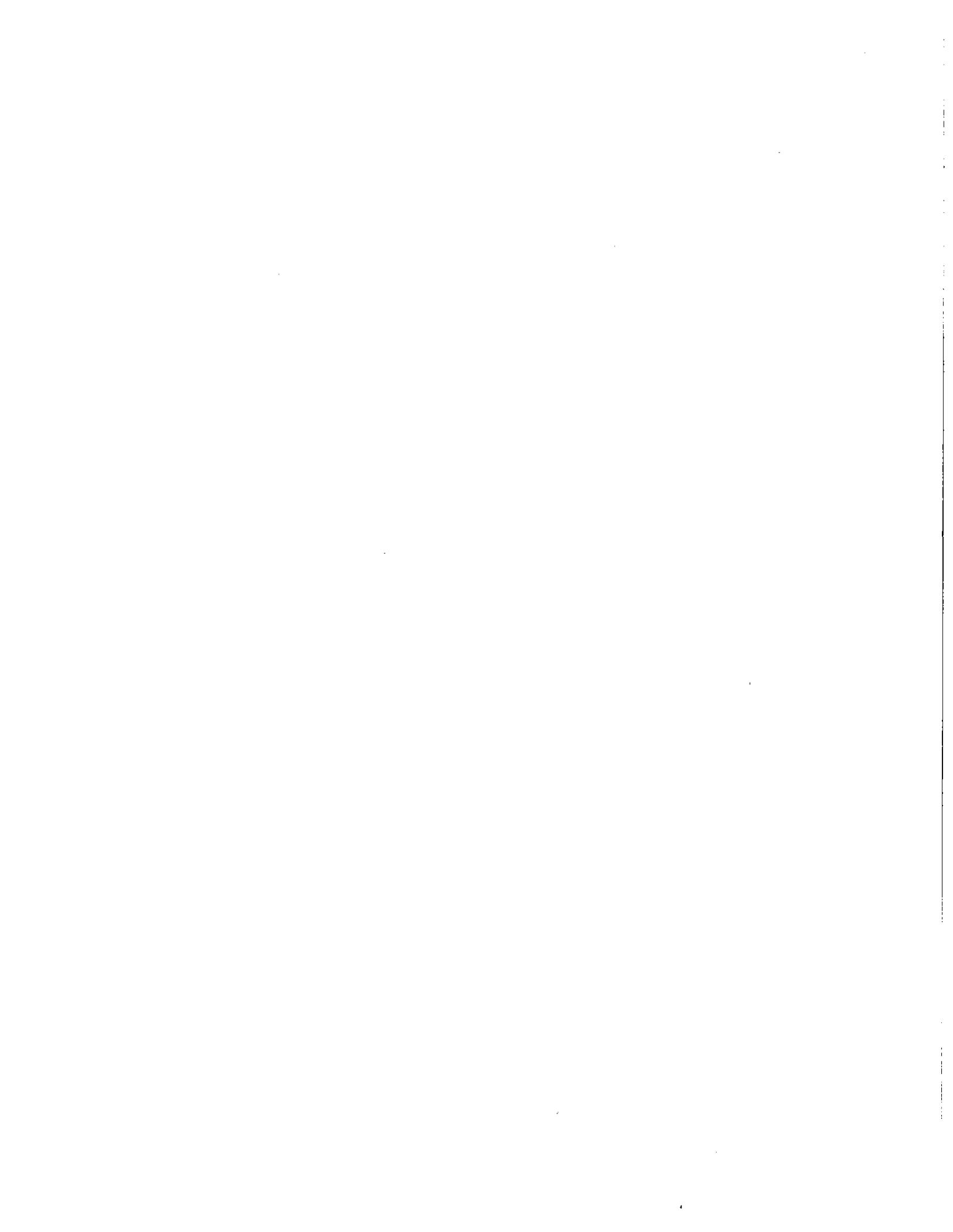
<u>Pay Item</u>	<u>Pay Unit</u>
900.615 Special Provision (Uniformed Traffic Officers) (N.A.B.I.)	Dollar

PAVEMENT JET DRYER

133. 900.01 DESCRIPTION. This work shall consist of using a jet dryer, if necessary, to dry the base surface prior to paving. Mobilization and Demobilization of this equipment will be considered incidental to other contract items.
134. 900.02 METHOD OF MEASUREMENT. The quantity of Pavement Jet Dryer to be measured for payment will be the number of hours that the piece of equipment actually works, measured to the nearest 10th of an hour.
135. 900.03 BASIS OF PAYMENT. The accepted quantity of Pavement Jet Dryer will be paid for at the Contract unit price per hour. Payment will be full compensation for operating and supervising the use of this equipment, including fuel and repairs, and for furnishing all labor, tools, other 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 (Pavement Jet Dryer(N.A.B.I)	Hour



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

State of Vermont
Agency of Transportation

March 2011
CA-110

DISADVANTAGED BUSINESS ENTERPRISE (DBE) POLICY CONTRACT REQUIREMENTS

Disadvantaged Business Enterprise (DBE) Policy. It shall be the policy of the Vermont Agency of Transportation (VTrans) to ensure nondiscriminatory opportunity for Disadvantaged Business Enterprises (DBEs) to participate in the performance of all contracts and subcontracts financed with Federal funds as specified by the regulations of the United States Department of Transportation (USDOT), Federal Highway Administration and as set forth below.

1. **Policy.** It is the policy of USDOT that DBEs as defined in 49 Code of Federal Regulation (CFR) Part 26 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. Consequently, the DBE requirements of 49 CFR Part 26 and 23 CFR, Chapter 1, Part 230, Subpart b apply to this contract.
2. **DBE Obligation.** The State and its Contractors agree to ensure that DBEs as defined in 49 CFR Part 26, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. **Each subcontract the prime contractor signs with a subcontractor must include this assurance:** *The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as VTrans deems appropriate.*
3. **Sanctions for Noncompliance.** The Contractor is hereby advised that failure of the Contractor, or any Subcontractor performing work under this contract, to carry out the requirements set forth in paragraphs 1 and 2 above shall constitute a breach of contract and after the notification of the Vermont Agency of Transportation, Secretary of Transportation, may result in termination of this contract by the State or such remedy as the State deems necessary.
4. **Inclusion in Subcontracts.** The Contractor shall insert in each of its subcontracts this Disadvantaged Business Enterprise (DBE) Policy and also a clause requiring its subcontractors to include this same Policy in any lower tier subcontracts which they may enter into, together with a clause requiring the inclusion of the Policy in any further subcontract that may in turn be made. This Policy shall not be incorporated by reference.

Disadvantaged Business Enterprise (DBE) Program Goals. The Vermont Agency of Transportation (VTrans) is required to set an overall DBE goal for participation in all transportation related Federal-aid projects. The goal is determined following guidelines set forth in 49 CFR 26.45, and based on the availability of ready, willing and able DBEs who submitted bids and quotes for transportation related projects, compared as a percentage of all available contractors who submitted bids and quotes for transportation related projects during the same time period. The DBE goal may be adjusted to take into account other factors impacting DBE utilization, in an effort to narrowly tailor the overall DBE goal. The detailed goal setting methodology and current overall DBE goal may be viewed on the VTrans website at: <http://www.aot.state.vt.us/CivilRights/DBEGoals.htm> .

VTrans currently utilizes a race/gender neutral policy to fulfill its overall DBE goals, and relies on the voluntary participation of contractors to utilize certified DBEs on every project sufficient to obtain the Agency's overall DBE goal. In order for this practice to continue, contractors must be proactive and solicit bids and quotes from certified DBEs for use when submitting their own bids, and employ certified DBEs when participating on transportation related projects. Otherwise, VTrans may have to implement specified contract goals on projects to ensure the overall DBE goals are met. VTrans may include specific DBE contract goals in certain cases to ensure DBE participation, if failure to obtain the project DBE goal would negatively impact the Agency's overall DBE goal because of the size of the contract.

Disadvantaged Business Enterprise (DBE) Definition. A DBE is defined as a business that is owned and controlled by one or more socially and economically disadvantaged person(s). For the purposes of this definition:

- (1) "Socially and economically disadvantaged person" means an individual who is a citizen or lawful permanent resident of the United States and who is a Woman, Black, Hispanic, Portuguese, Native American, Asian American, or a member of another group, or an individual found to be disadvantaged by the Small Business Administration pursuant to Section 3 of the Small Business Act.
- (2) "Owned and controlled" means a business which is:
 - a. A sole proprietorship legitimately owned and controlled by an individual who is a disadvantaged person.
 - b. A partnership, joint venture or limited liability company in which at least 51% of the beneficial ownership interests legitimately is held by a disadvantaged person(s).
 - c. A corporation or other entity in which at least 51% of the voting interest and 51% of the beneficial ownership interests legitimately are held by a disadvantaged person(s).

The disadvantaged group owner(s) or stockholder(s) must possess control over management, interest in capital, and interest in earnings commensurate with percentage of ownership. Disadvantaged participation in a joint venture must also be based on the sharing of real earnings, as above. If the disadvantaged group ownership interests are real, substantial and continuing and not created solely to meet the requirements of the program, a firm is considered a bona fide DBE.

Certified DBE Directory. The current Vermont Unified Disadvantaged Business Enterprise (DBE) Directory is available online at: <http://www.aot.state.vt.us/CivilRights/DBEDirectory.htm>. This directory contains all currently certified DBEs available for work in Vermont, and is updated continuously. Only firms listed in this directory are eligible for DBE credit on Vermont Federal-aid projects. If you have questions about DBE certification, or do not have access to the Internet, please call the DBE Program Manager at (802) 828-5858 for assistance.

Counting DBE Participation Towards Project Goals. In order for payments made to DBE contractors to be counted toward DBE goals, the DBE contractors must perform a commercially useful function (CUF). The DBE must be responsible for execution of the work of the contract and must carry out its responsibilities by actually performing, managing, and supervising the work involved, consistent with standard industry practices.

This means that:

- The DBE must also be responsible for ordering its own materials and supplies, determining quantity and quality, negotiating price, installing (where applicable) and paying for the material itself;
- The DBE must perform work commensurate with the amount of its contract;
- The DBE's contribution cannot be that of an extra participant or a conduit through which funds are passed in order to obtain the appearance of DBE participation;
- The DBE must exercise responsibility for at least fifty percent of the total cost of its contract with its own workforce;
- None of the DBE's work can be subcontracted back to the prime contractor, nor can the DBE employ the prime's or other subcontractor's supervisors currently working on the project;
- The DBE's labor force must be separate and apart from that of the prime contractor or other subcontractors on the project. Transferring crews between primes, subcontractors, and DBE contractors is not acceptable;
- The DBE owner must hold necessary professional or craft license(s) or certification(s) for the type of work he/she performs on the project;
- The DBE may rent or lease, at competitive rates, equipment needed on the project from customary leasing sources or from other subcontractors on the project.

Allowable credit for payments made to DBEs for work performed. A contractor may take credit for payments made to a certified DBE that satisfies CUF requirements at the following rate:

- A DBE Prime Contractor: Count 100% of the value of the work performed by own forces, equipment and materials towards the DBE goals.
- An approved DBE subcontractor: Count 100% of the value of work performed by the DBE's own forces, equipment and materials, excluding the following:
 - The cost of materials/supplies purchased from a non-DBE Prime Contractor.
 - The value of work provided by non-DBE lower tier subcontractors, including non-DBE trucking to deliver asphalt to a DBE contractor.
- A DBE owner-operator of construction equipment: Count 100% of expenditures committed.
- A DBE manufacturer: Count 100% of expenditures committed. The manufacturer must be a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.
- A regular DBE dealer/supplier: Count 60% of expenditures committed. A regular dealer/supplier is defined as a firm that owns, operates, or maintains a store, warehouse or other establishment, in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. A person may be a dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business, if the person both owns and operates distribution equipment for the products, by the means of a long term agreement, and not by a contract by contract basis.
- A DBE broker: Count for DBE credit only the fees or commissions charged for assistance in the procurement, and, fees and transportation charges for the delivery of materials or supplies required at the job site, but not the cost of materials procured. A broker is defined as any person(s) or firm who arranges or expedites transactions for materials or supplies, and does not take physical possession of the materials or supplies at their place of business for resale.
- A DBE renter of construction equipment to a contractor: Count 20% of expenditures committed, with or without operator.

- A bona fide DBE service provider: Count 100% of reasonable fees or commissions. Eligible services include professional, technical, consultant, or managerial, services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for the performance of the contract. Eligible services also include agencies providing bonding and insurance specifically required for the performance of the contract.
- A trucking, hauling or delivery operation: Count 100% of expenditures committed when trucks are owned, operated, licensed and insured by the DBE and used on the contract and, if applicable, includes the cost of the materials and supplies. 100% of expenditures committed when the DBE leases trucks from another DBE firm including an owner-operator. 100% of reasonable fees, or commissions, the DBE receives as a result of a lease arrangement for trucks from a non-DBE, including an owner-operator.
- Any combination of the above.

Removal of Approved DBE From Transportation Related Project. Contractors may not terminate for convenience, any approved DBE subcontractor and perform the work with their own forces, without prior written consent from the VTrans DBE Program Manager or VTrans Chief of Civil Rights.

Federal-aid projects which specify a DBE contract goal. The provisions of the Vermont Agency of Transportation Supplemental Specification – Disadvantaged Business Enterprise (DBE) Utilization (CA 160) shall apply to all VTrans Federal-aid projects which specify a DBE contract goal.

Compliance With Prompt Payment Statute. In accordance with Vermont's Prompt Payment Act and VTrans Standard Specifications for Construction, Section 107.01(g), the Contractor shall fully comply with the provisions of 9 V.S.A. Chapter 102, also referred to as Act No. 74 of 1991 or the Prompt Payment Act, as amended.

Subcontractor Payments. In accordance with VTrans Standard Specifications for Construction, Section 107.01(h), on all federal-aid and state funded contracts, the Contractor, during the life of the Contract and on a monthly basis, shall submit electronically, a listing of payments to subcontractors on the form specified by the State and made available at: <http://apps.vtrans.vermont.gov/db/>. Electronic reports shall be filed with the Agency Office of Civil Rights by an authorized representative and received in the Agency Office of Civil Rights on or before the tenth working day after month end. Contractors without access to the internet shall obtain and submit manual reports to the Agency Office of Civil Rights. Manual reports shall be signed by an authorized representative, sent to the Agency Office of Civil Rights, and postmarked on or before the tenth working day after month end. There shall be no direct compensation allowed the Contractor for this work, but the cost thereof shall be included in the general cost of the work. In accordance with 9 V.S.A. Section 4003, notwithstanding any contrary agreement, payments made to subcontractors after seven days from receipt of a corresponding progress payment by the State to the Contractor, or seven days after receipt of a subcontractor's invoice, whichever is later, violate this agreement. Violations shall be reported to the Agency Office of Civil Rights for review. Failure to resolve disputes in a timely manner may result in a complaint made to the Agency Pre-qualification Committee. In this Committee's judgment, appropriate penalties may be involved for failure to comply with this specification. Penalties may include suspension, reduction or revocation of the Contractor's pre-qualification rating. This clause shall be included in the prime Contractor's Contract made with all of its subcontractors.

General Decision Number: VT140044 01/03/2014 VT44

Superseded General Decision Number: VT20130044

State: Vermont

Construction Type: Highway

County: Windsor County in Vermont.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels; building structures in rest areas; railroad construction; bascule, suspension & spandrel arch bridges; bridges designed for commercial navigation; bridges involving marine construction; and other major bridges)

Modification Number 0 Publication Date 01/03/2014

* SUVT2011-029 09/14/2011

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 16.24	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 25.34	0.00
ELECTRICIAN, Includes Installation of Traffic Signals.....	\$ 24.75	0.00
GUARDRAIL INSTALLER.....	\$ 13.51	0.00
IRONWORKER, REINFORCING.....	\$ 15.47	0.52
IRONWORKER, STRUCTURAL.....	\$ 21.15	15.54
LABORER: Asphalt Raker.....	\$ 15.01	0.00
LABORER: Common or General.....	\$ 14.43	0.00
LABORER: Concrete Worker.....	\$ 14.06	1.47
LABORER: Flagger.....	\$ 11.15	4.40
LABORER: Landscape.....	\$ 12.31	1.03
LABORER: Screedman.....	\$ 16.30	4.23
LABORER: Sign Erector/Installer.....	\$ 14.31	4.70
OPERATOR: Asphalt Roller.....	\$ 19.89	7.52
OPERATOR: Backhoe.....	\$ 19.29	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 19.23	0.00

OPERATOR: Broom.....	\$ 15.88	3.72
OPERATOR: Bulldozer.....	\$ 18.94	3.35
OPERATOR: Cold Planer/Milling Machine.....	\$ 21.03	0.00
OPERATOR: Crane.....	\$ 20.37	2.63
OPERATOR: Excavator.....	\$ 19.07	1.36
OPERATOR: Grader/Blade.....	\$ 18.92	3.50
OPERATOR: Loader.....	\$ 20.55	0.00
OPERATOR: Mechanic.....	\$ 21.38	8.33
OPERATOR: Paver.....	\$ 18.64	0.00
OPERATOR: Pounder.....	\$ 18.49	0.00
OPERATOR: Roller excluding Asphalt.....	\$ 17.48	6.05
OPERATOR: Screed.....	\$ 17.82	4.09
PAINTER (Parking Lot and Highway Striping Only).....	\$ 16.39	3.56
TRUCK DRIVER, Includes all axles including Dump Trucks.....	\$ 16.55	1.14
TRUCK DRIVER: Distributor Truck.....	\$ 17.89	0.00
TRUCK DRIVER: Semi/Trailer Truck.....	\$ 13.27	4.61

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 union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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

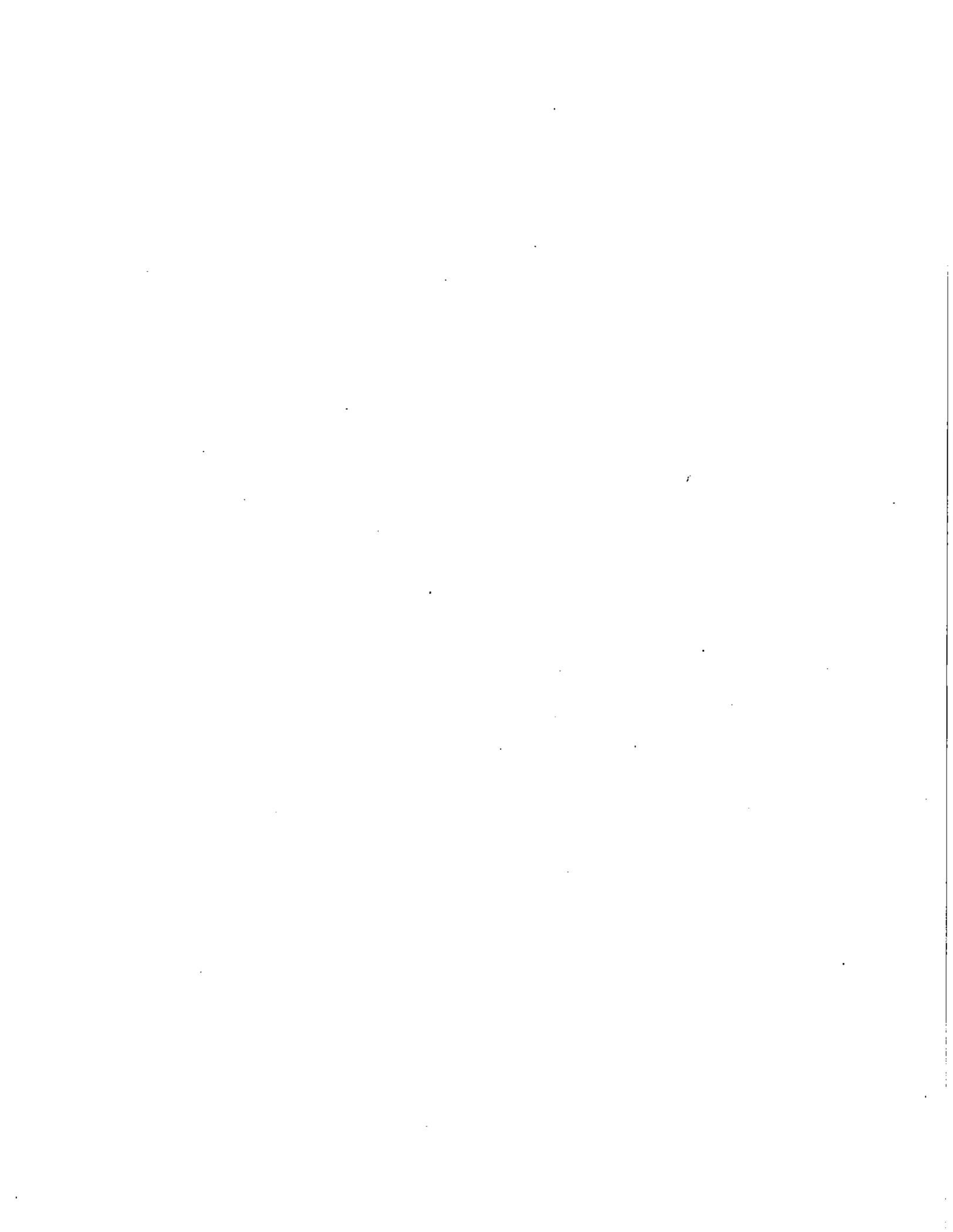
CERTIFICATION FOR FEDERAL-AID CONTRACTS

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.



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 X, proposed subcontractor _____, hereby certifies that he/she has X, 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 X, 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.

PCL Civil Constructors, Inc.
Company


By

T.R. Spangler, Secretary/Treasurer
Title

NOTE: The above certification is required by the Equal Employment Opportunity regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5 (Generally only contracts or subcontracts of \$10,000 or under are exempt.) Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration, or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.



CONSTRUCTION CONTRACT

1. Parties. This is a construction contract made this 10th day of February, 2015 between the State of Vermont, by its Agency of Transportation (hereafter called "State" or "Agency"), and PCL Civil Constructors, Incorporated of 3810 Northdale Blvd., Suite 200, Tampa, FL 33624, a corporation, incorporated under the laws of the State of Florida, its successors and assigns, (hereafter called Contractor).

2. Subject Matter. The Contractor, in consideration of the payment or payments specified in this Contract and agreed to by State, hereby agrees to furnish all the materials and to perform all the work and labor in the improvement of a certain project in the Town of Hartford, County of Windsor, State of Vermont, being approximately 225 Feet in length, at the unit prices bid by Contractor for the respective estimated quantities, aggregating approximately the sum of Eleven Million One Hundred Thirty Two Thousand Five Hundred Ninety Two Dollars and Sixty Six Cents (\$11,132,592.66), and such other items, as are mentioned in the original Proposal. The original Proposal and prices named, together with the Standard Specifications for Construction ("Specifications") as are listed in the Schedule of Prices, are made a part of this Contract. Also, the drawings of the roadway prepared by the Agency, as verified by the Agency are made a part this Contract.

The project is situated as follows:

Hartford IM 091-2 (79) CMGC: I-91 HARTFORD EXIT 11 BRIDGES 43 N&S

The construction consists of: DEMOLITION OF EXISTING BRIDGES AND REPLACEMENT WITH NEWSINGLE SPAN BRIDGES

3. Labor and Material; Specifications. The Contractor shall perform all the work and labor in the best and most workmanlike manner. The materials and labor shall be in strict and entire conformity, in every respect, with the Specifications and drawings and shall be subject to the inspection and approval of the Agency. If any of the material or labor shall be rejected by the Agency as defective or unsuitable, then the Contractor shall remove and replace the defective or unsuitable materials with other approved materials and do the labor anew, to the satisfaction and approval of the Agency, at the cost and expense of the Contractor. The Standard Specifications for Construction, approved and adopted by the Agency in 2011 are incorporated herein, and made a part of this Contract.

4. Time for Performance; Liquidated Damages. The Contractor shall furnish the materials and perform the labor in every respect to the satisfaction and approval of the Agency, on or before October 30, 2015 after written notice has been given by the Engineer to begin work. In case of the failure on the part of the Contractor, for any reason, except as provided in this Contract, to complete the furnishing of the materials and performing the work on or before October 30, 2015 the State shall deduct from any moneys due or which may become due the Contractor, or if no moneys shall be due, the State shall have the right to recover the amount of liquidated damages as provided in the Specifications for each and every day elapsing between the time stipulated for the completion and the actual date of completion, in accordance with the terms of the Contract. Any such deductions or sums to be recovered are not penalties but liquidated damages. However, the Agency at its discretion, shall make allowance over the period specified for the completion of the work, for causes over which the Contractor has no control and which must delay the completion of the work, in such case, the Contractor shall become liable for liquidated damages for delays beginning from the date on which the extended period shall expire.

5. Extra Work or Materials; Claims. The Contractor understands and agrees that the Agency will not allow any claim for extra work or materials, not specifically provided in this Contract. The Contractor shall not do any work or furnish any materials not covered by these Specifications and Contract, unless such work is ordered in writing by the Agency. In no event shall the Contractor incur any liability by reason of any verbal directions or instructions that he may be given by the Agency. The State will not be liable for any materials furnished or used or for any work or labor done, unless the materials, work or labor are required of the Contractor on written order furnished by the Agency. Any such work or material which may be done or furnished by the Contractor without such written order first being given by the Agency shall be at the Contractor's own risk, cost and expense. The Contractor agrees that without such written order the Contractor shall make no claim for compensation for work or materials so done or furnished.

6. Assignment; Subcontracting. The Contractor shall not assign this Contract or any part of this Contract, or any right to any moneys to be paid the Contractor under this Contract, without the prior written approval of the Agency. The Contractor shall not subcontract any part of the work to be done or materials furnished under the Contract without the written approval of the Agency.

7. Acceptance of Final Payment; Release. The Contractor's acceptance of the final payment shall be considered as a release in full of all claims against the State of Vermont arising out of, or by reason of the work done and materials furnished under this Contract.

8. Bonds. The Bonds given by the Contractor, a Compliance Bond in a sum equal to one-hundred (100) per centum, and a Labor and Materials Bond in the sum equal to one-hundred (100) per centum of the total contract price of the work to be done, to secure a proper compliance with the terms and provisions of this Contract, are attached to and made a part of this Contract.

9. Dispute Resolution; Exclusivity of Administrative Remedies. All questions or disputes arising between the parties hereto respecting any matter pertaining to this Contract or any part of this Contract, or any breach of this Contract shall be referred to the Secretary of Transportation, whose decision and award shall be final, binding and conclusive upon all parties, subject to the right of appeal to the Transportation Board under 19 V.S.A. § 5(d) (4). All other rights or rights of action at law or in equity under and by virtue of this Contract and all matters connected with and relating to this Contract are hereby expressly waived.

10. Compensation for Contract Work. The Contractor agrees to receive the prices set forth in the following Schedule of Prices as full compensation for furnishing all the materials and labor which may be required in the prosecution and completion of the whole of the work to be done under this Contract and in all respects to complete this Contract to the satisfaction of the Agency.

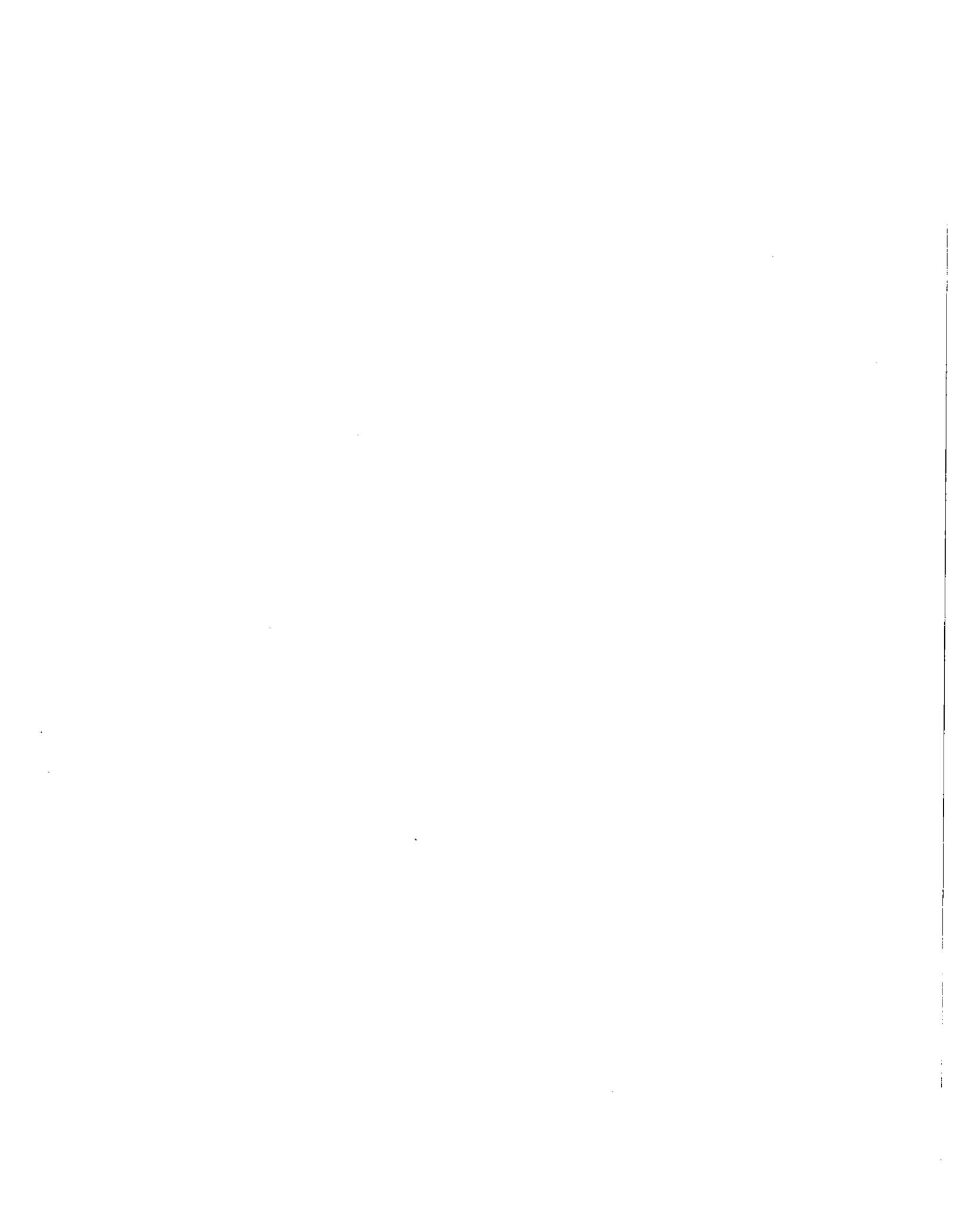
CONTRACT SCHEDULE

REVISED:

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0005	201.10 CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	1.000 LS	7,302.00000		7,302.00	
0010	203.15 COMMON EXCAVATION	2,560.000 CY	36.00000		92,160.00	
0015	203.16 SOLID ROCK EXCAVATION	240.000 CY	129.00000		30,960.00	
0020	203.28 EXCAVATION OF SURFACES AND PAVEMENTS	300.000 CY	33.00000		9,900.00	
0025	203.31 SAND BORROW	70.000 CY	60.00000		4,200.00	
0030	203.32 GRANULAR BORROW	1,770.000 CY	65.00000		115,050.00	
0035	204.20 TRENCH EXCAVATION OF EARTH	25.000 CY	54.00000		1,350.00	
0040	204.21 TRENCH EXCAVATION OF ROCK	22.000 CY	215.00000		4,730.00	
0045	204.22 TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A. B.I.)	1.000 CY	75.00000		75.00	
0050	204.25 STRUCTURE EXCAVATION (ABUTMENT #4)	731.200 CY	75.00000		54,840.00	
0055	204.25 STRUCTURE EXCAVATION (ABUTMENTS #1-#3)	1,951.300 CY	92.00000		179,519.60	



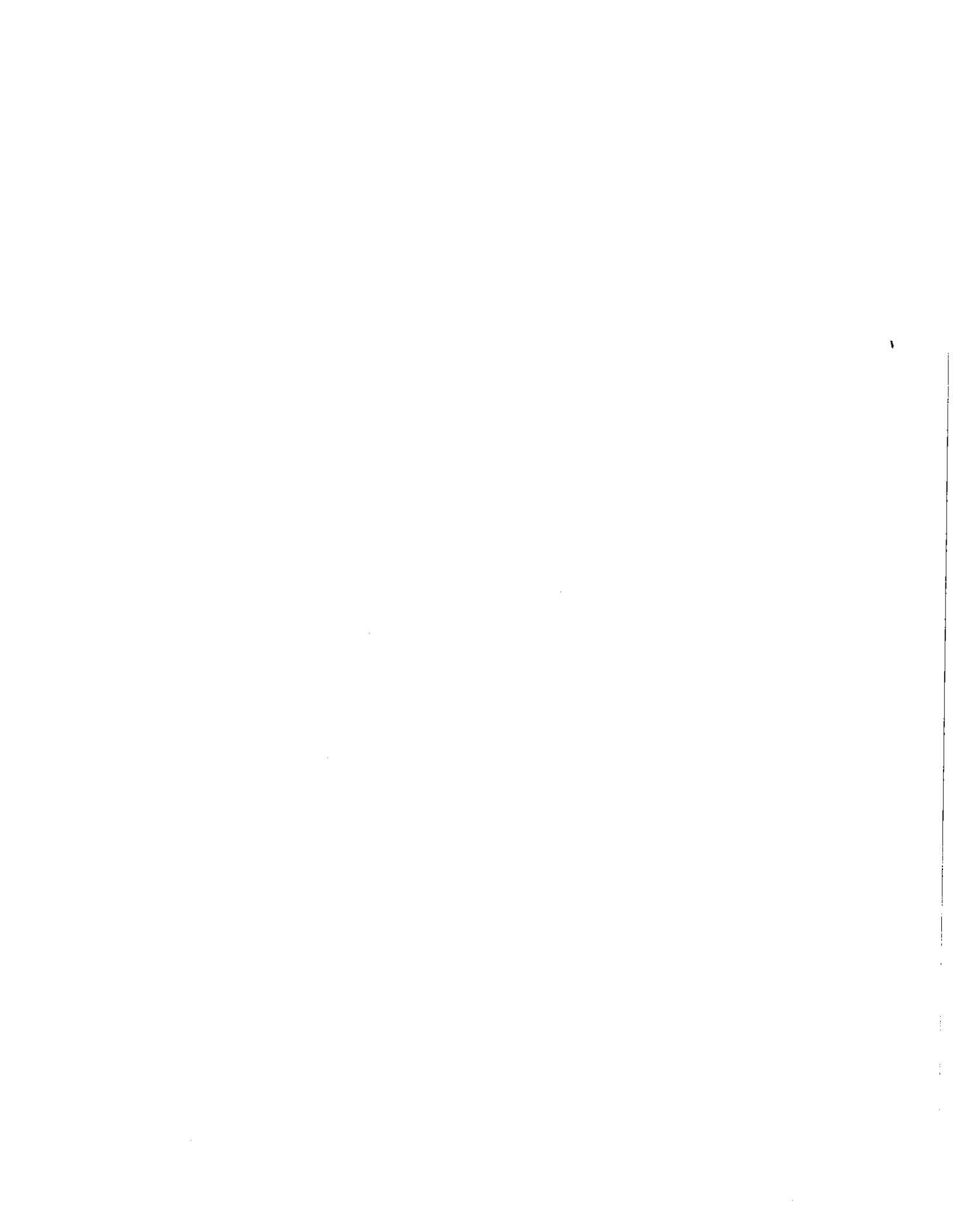
CONTRACT SCHEDULE

REVISED:

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0060	204.30 GRANULAR BACKFILL FOR STRUCTURES	2,379.100 CY	74.00000		176,053.40	
0065	210.10 COLD PLANING, BITUMINOUS PAVEMENT	10,060.000 SY	14.00000		140,840.00	
0070	213.10 MILLED RUMBLE STRIPS	890.000 LF	1.00000		890.00	
0075	301.35 SUBBASE OF DENSE GRADED CRUSHED STONE	2,240.000 CY	68.00000		152,320.00	
0080	402.10 AGGREGATE SHOULDERS, IN PLACE	135.000 CY	64.00000		8,640.00	
0085	404.65 EMULSIFIED ASPHALT	89.000 CWT	193.00000		17,177.00	
0090	406.50 PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	1.000 LU	1.00000		1.00	
0095	490.30 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	2,490.000 TON	210.00000		522,900.00	
0100	490.31 AIR VOIDS PAY ADJUSTMENT (N.A.B.I.)	1.000 LU	1.00000		1.00	
0105	490.32 MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	1.000 LU	1.00000		1.00	
0110	501.33 CONCRETE, HIGH PERFORMANCE CLASS A	370.000 CY	1,826.00000		675,620.00	



CONTRACT SCHEDULE

REVISED:

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0115	501.34 CONCRETE, HIGH PERFORMANCE CLASS B	1,495.000 CY	625.00000		934,375.00	
0120	506.50 STRUCTURAL STEEL, ROLLED BEAM (W30X90 DIAPHRAGM)	34,682.000 LB	3.00000		104,046.00	
0125	506.50 STRUCTURAL STEEL, ROLLED BEAM (W40 X 149 DIAPHRAGM)	45,832.000 LB	3.00000		137,496.00	
0130	506.55 STRUCTURAL STEEL, PLATE GIRDER	368,300.000 LB	2.05000		755,015.00	
0135	507.11 REINFORCING STEEL, LEVEL I	134,180.000 LB	1.57000		210,662.60	
0140	507.13 REINFORCING STEEL, LEVEL III	123,627.000 LB	4.52000		558,794.04	
0145	507.16 DRILLING AND GROUTING DOWELS	144.000 LF	121.00000		17,424.00	
0150	507.19 MECHANICAL BAR CONNECTOR	200.000 EACH	100.00000		20,000.00	
0155	508.15 SHEAR CONNECTORS (2634 EA. - 7/8" X 7") (BRIDGE 43S)	1.000 LS	16,215.00000		16,215.00	
0160	508.15 SHEAR CONNECTORS (3072 EA. - 7/8" X 7") (BRIDGE 43N)	1.000 LS	19,610.57000		19,610.57	
0165	509.10 LONGITUDINAL DECK GROOVING	1,342.000 SY	17.00000		22,814.00	



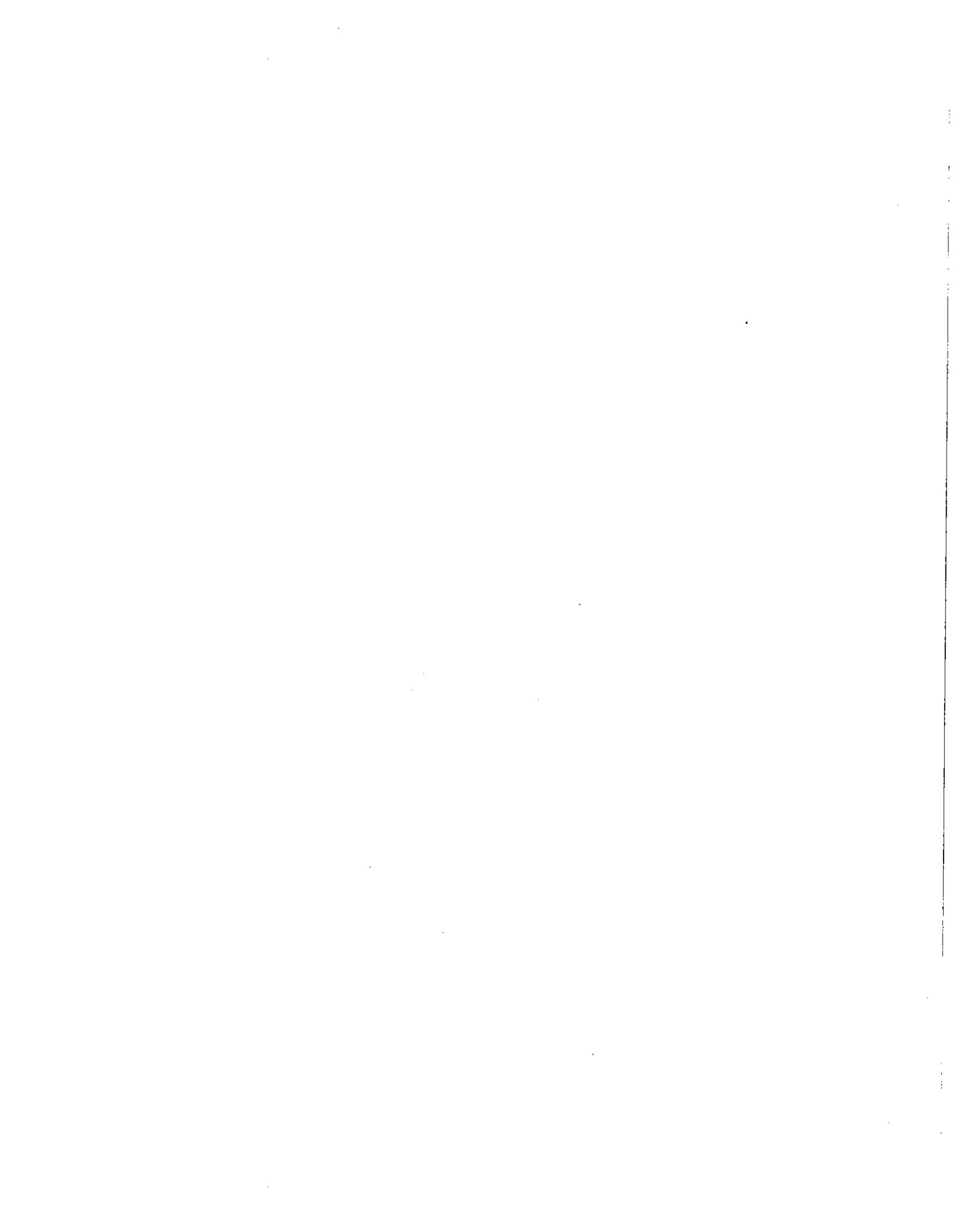
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REVISED:

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0170	514.10 WATER REPELLENT, SILANE	195.000 GAL	76.00000		14,820.00	
0175	516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	195.000 LF	50.00000		9,750.00	
0180	524.11 JOINT SEALER, HOT POURED	195.000 LF	31.00000		6,045.00	
0185	525.70 BRIDGE RAILING, CONCRETE F-SHAPE	554.000 LF	419.00000		232,126.00	
0190	529.20 PARTIAL REMOVAL OF STRUCTURE (SUBSTRUCTURE 43N)	1.000 EACH	36,871.00000		36,871.00	
0195	529.20 PARTIAL REMOVAL OF STRUCTURE (SUBSTRUCTURE 43S)	1.000 EACH	41,719.00000		41,719.00	
0200	529.20 PARTIAL REMOVAL OF STRUCTURE (SUPERSTRUCTURE 43N)	1.000 EACH	254,255.00000		254,255.00	
0205	529.20 PARTIAL REMOVAL OF STRUCTURE (SUPERSTRUCTURE 43S)	1.000 EACH	254,255.00000		254,255.00	
0210	531.18 BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD W/ EXT. LOAD PLATES	24.000 EACH	1,711.00000		41,064.00	
0215	541.30 CONCRETE, CLASS C	50.000 CY	462.00000		23,100.00	
0220	604.18 PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	1.000 EACH	3,579.00000		3,579.00	



CONTRACT SCHEDULE

REVISED:

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0225	604.40 CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES	2.000 EACH	1,432.00000		2,864.00	
0230	604.55 CAST IRON COVER WITH FRAME	1.000 EACH	1,074.00000		1,074.00	
0235	609.10 DUST CONTROL WITH WATER	280.000 MGAL	50.00000		14,000.00	
0240	609.15 DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	2.000 TON	501.00000		1,002.00	
0245	613.11 STONE FILL, TYPE II	92.000 CY	86.00000		7,912.00	
0250	616.20 GRANITE SLOPE EDGING	648.000 LF	64.00000		41,472.00	
0255	616.21 VERTICAL GRANITE CURB	362.000 LF	72.00000		26,064.00	
0260	616.305 BITUMINOUS CONCRETE CURB, TYPE A	106.000 LF	21.00000		2,226.00	
0265	619.16 STEEL MARKER POSTS	11.000 EACH	66.00000		726.00	
0270	620.50 REMOVING AND RESETTING FENCE	90.000 LF	49.00000		4,410.00	
0275	621.20 STEEL BEAM GUARDRAIL, GALVANIZED	954.000 LF	29.00000		27,666.00	



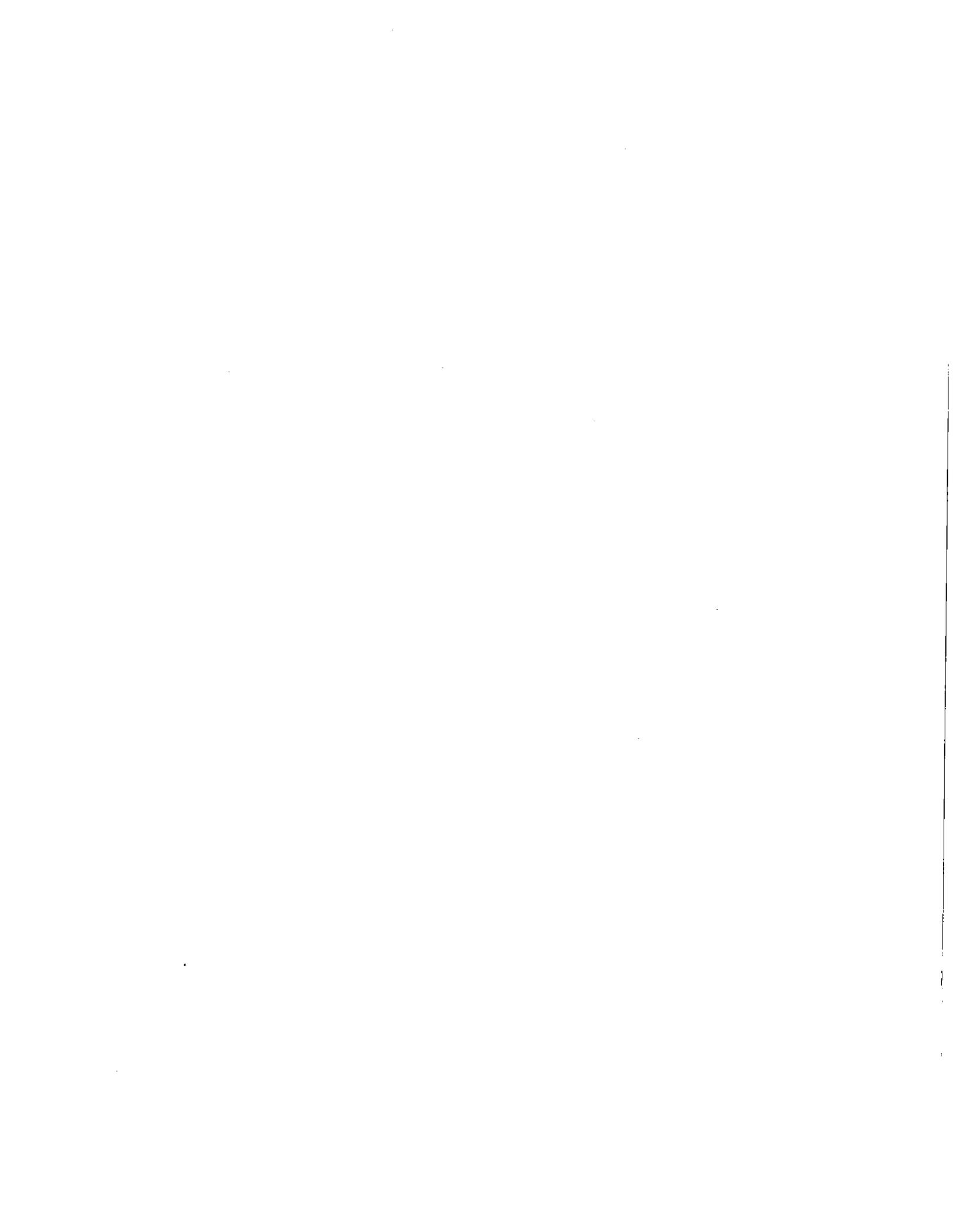
CONTRACT SCHEDULE

REVISED:

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0280	621.205 STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS	58.000 LF	43.00000		2,494.00	
0285	621.50 MANUFACTURED TERMINAL SECTION, FLARED	1.000 EACH	2,505.00000		2,505.00	
0290	621.60 ANCHOR FOR STEEL BEAM RAIL	6.000 EACH	1,145.00000		6,870.00	
0295	621.747 GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING, TL-3	8.000 EACH	2,434.00000		19,472.00	
0300	621.75 REMOVE AND RESET GUARDRAIL	175.000 LF	14.00000		2,450.00	
0305	621.80 REMOVAL AND DISPOSAL OF GUARDRAIL	1,325.000 LF	4.00000		5,300.00	
0310	621.90 TEMPORARY TRAFFIC BARRIER	2,910.000 LF	47.00000		136,770.00	
0315	621.95 REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	810.000 LF	44.00000		35,640.00	
0320	630.15 FLAGGERS	4,500.000 HR	35.00000		157,500.00	
0325	631.10 FIELD OFFICE, ENGINEERS	1.000 LS	57,267.00000		57,267.00	
0330	631.16 TESTING EQUIPMENT, CONCRETE	1.000 LS	1,432.00000		1,432.00	



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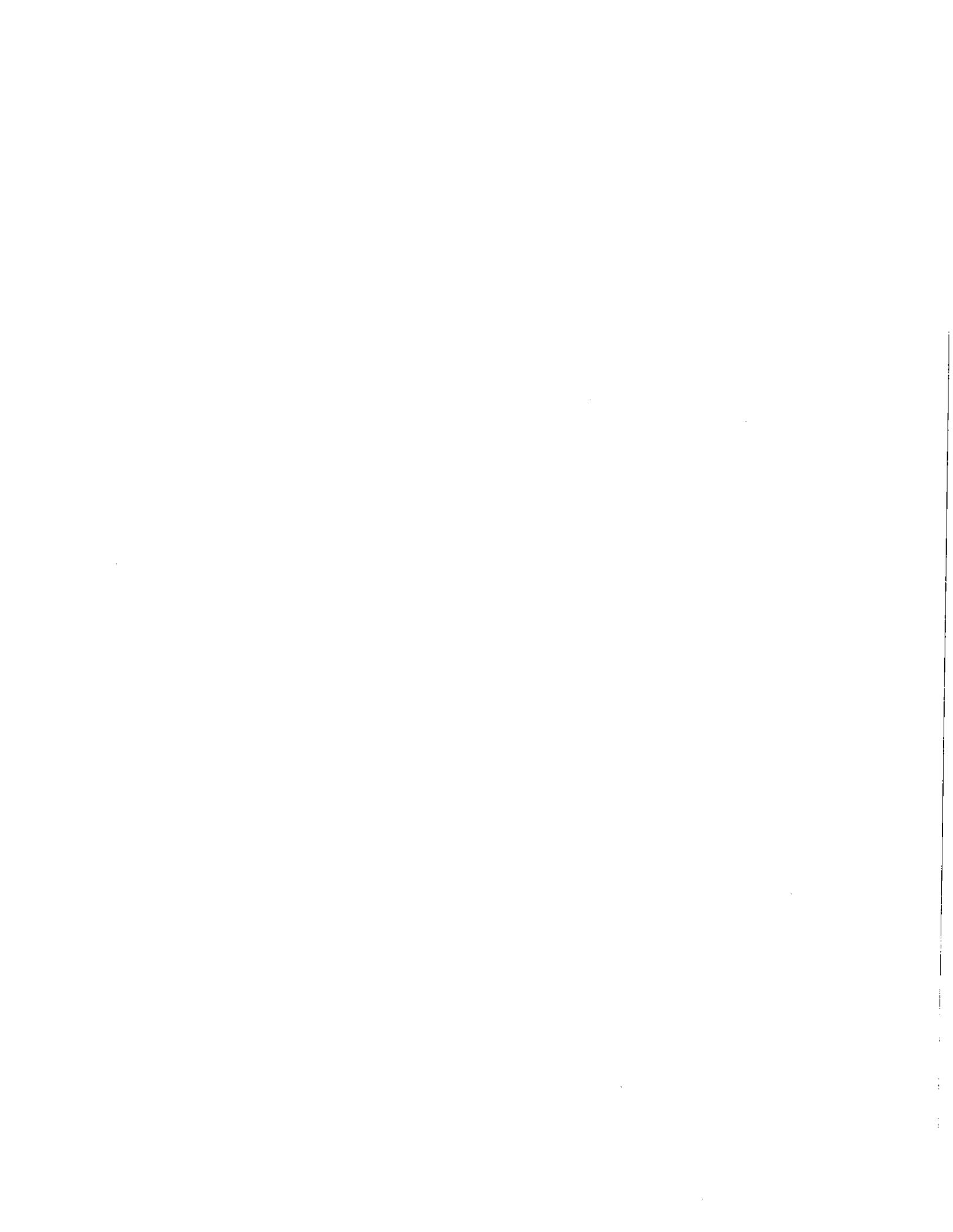
CONTRACT SCHEDULE

REVISED:

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0335	631.17 TESTING EQUIPMENT, BITUMINOUS	1.000 LS	716.00000		716.00	
0340	631.26 FIELD OFFICE TELEPHONE (N.A.B.I.)	5,000.000 DL	1.00000		5,000.00	
0345	634.10 EMPLOYEE TRAINEESHIP	1,040.000 HR	10.00000		10,400.00	
0350	635.11 MOBILIZATION/DEMOBILIZATION	1.000 LS	1,112,000.00000		1,112,000.00	
0355	641.10 TRAFFIC CONTROL (I-91 NORTHBOUND)	1.000 LS	150,000.00000		150,000.00	
0360	641.10 TRAFFIC CONTROL (I-91 SOUTHBOUND)	1.000 LS	150,000.00000		150,000.00	
0365	641.10 TRAFFIC CONTROL (US RT 5)	1.000 LS	100,000.00000		100,000.00	
0370	641.15 PORTABLE CHANGEABLE MESSAGE SIGN	6.000 EACH	5,463.00000		32,778.00	
0375	646.404 DURABLE 4 INCH WHITE LINE, POLYUREA	3,750.000 LF	3.00000		11,250.00	
0380	646.414 DURABLE 4 INCH YELLOW LINE, POLYUREA	4,040.000 LF	3.00000		12,120.00	
0385	646.426 DURABLE 6 INCH WHITE LINE, RECESSED POLYUREA	1,515.000 LF	4.00000		6,060.00	



VERMONT AGENCY OF TRANSPORTATION

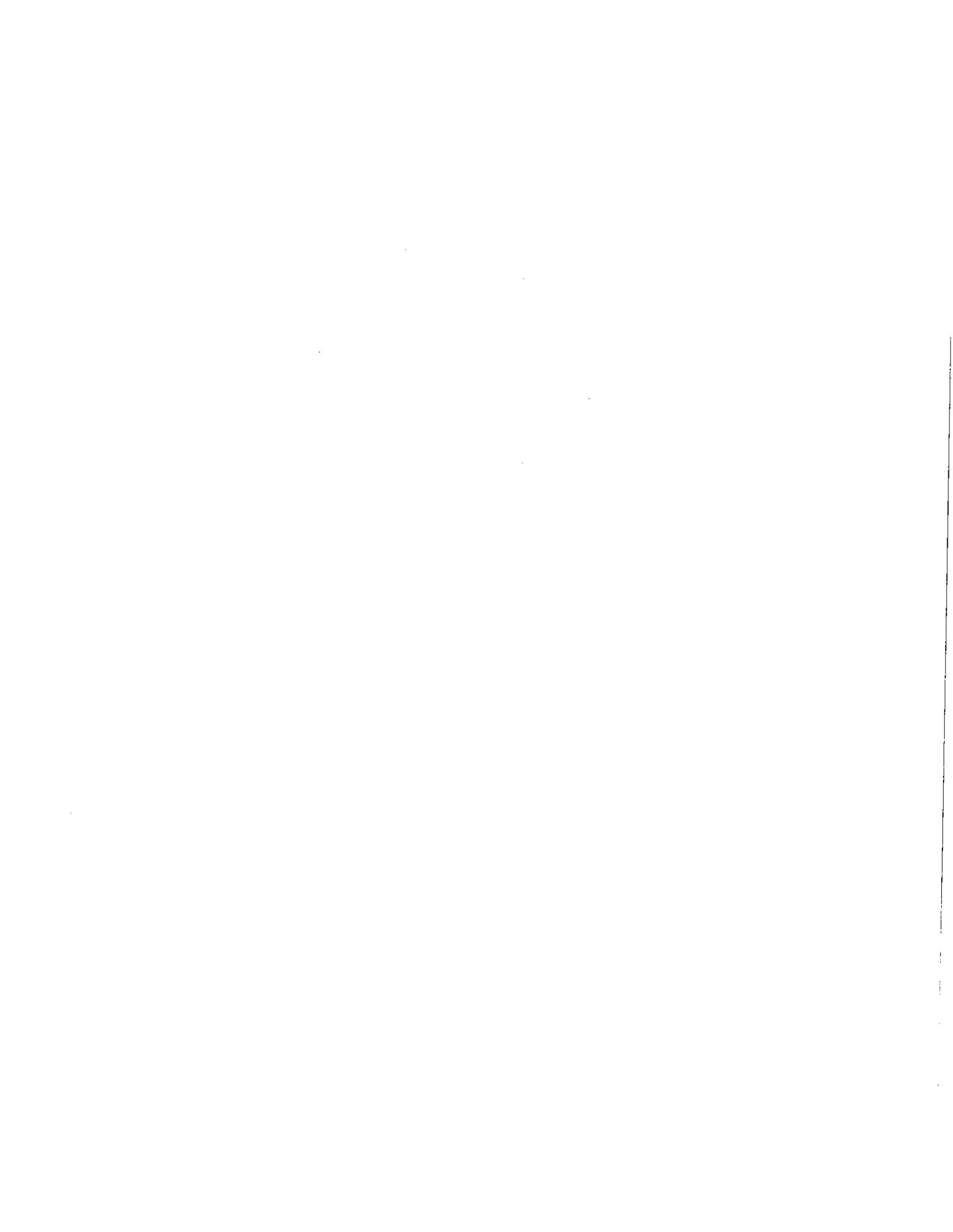
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CONTRACT SCHEDULE

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0390	646.436 DURABLE 6 INCH YELLOW LINE, RECESSED POLYUREA	1,078.000 LF	4.00000		4,312.00	
0395	646.444 DURABLE 8 INCH WHITE LINE, POLYUREA	835.000 LF	6.00000		5,010.00	
0400	646.454 DURABLE 8 INCH YELLOW LINE, POLYUREA	500.000 LF	6.00000		3,000.00	
0405	646.466 DURABLE 12 INCH WHITE LINE, RECESSED POLYUREA	50.000 LF	9.00000		450.00	
0410	646.484 DURABLE 24 INCH STOP BAR, POLYUREA	60.000 LF	11.00000		660.00	
0415	646.494 DURABLE LETTER OR SYMBOL, POLYUREA	49.000 EACH	107.00000		5,243.00	
0420	649.11 GEOTEXTILE FOR ROADBED SEPARATOR	1,625.000 SY	3.00000		4,875.00	
0425	649.31 GEOTEXTILE UNDER STONE FILL	183.000 SY	4.00000		732.00	
0430	649.51 GEOTEXTILE FOR SILT FENCE	1,600.000 SY	11.00000		17,600.00	
0435	651.15 SEED	105.000 LB	17.00000		1,785.00	
0440	651.18 FERTILIZER	860.000 LB	6.00000		5,160.00	



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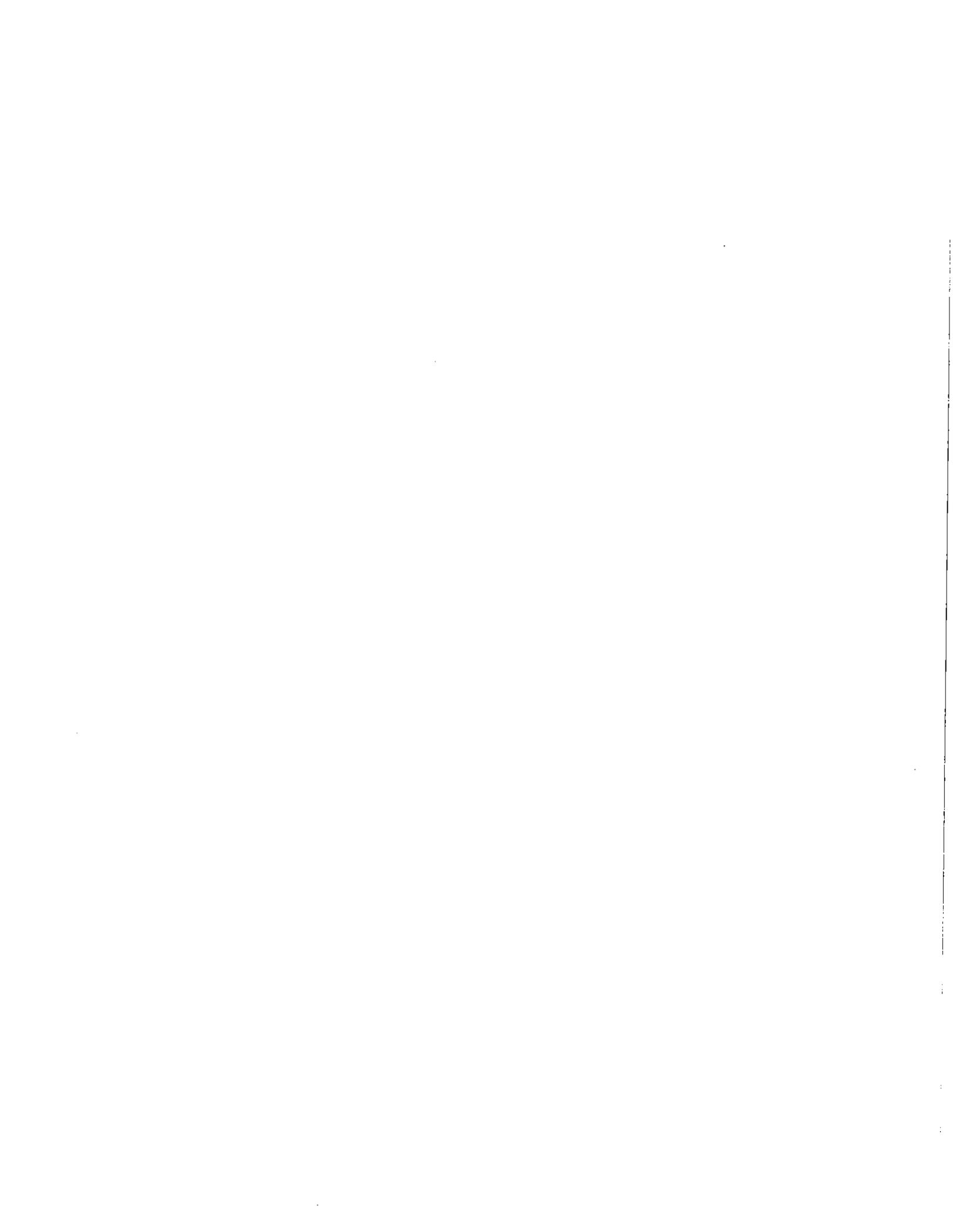
CONTRACT SCHEDULE

REVISED:

CONTRACT ID: 12A132

PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0445	651.20 AGRICULTURAL LIMESTONE	4.000 TON	931.00000		3,724.00	
0450	651.25 HAY MULCH	4.000 TON	859.00000		3,436.00	
0455	651.35 TOPSOIL	930.000 CY	60.00000		55,800.00	
0460	652.10 EPSC PLAN	1.000 LS	5,000.00000		5,000.00	
0465	652.20 MONITORING EPSC PLAN	200.000 HR	72.00000		14,400.00	
0470	652.30 MAINTENANCE OF EPSC PLAN (N.A.B.I.)	1.000 LU	5,500.00000		5,500.00	
0475	653.20 TEMPORARY EROSION MATTING	1,425.000 SY	5.00000		7,125.00	
0480	653.25 TEMPORARY STONE CHECK DAM, TYPE I	20.000 CY	107.00000		2,140.00	
0485	653.35 VEHICLE TRACKING PAD	200.000 CY	86.00000		17,200.00	
0490	653.40 INLET PROTECTION DEVICE, TYPE I	11.000 EACH	286.00000		3,146.00	
0495	653.50 BARRIER FENCE	3,925.000 LF	4.00000		15,700.00	



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PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0500	675.20 TRAFFIC SIGNS, TYPE A	77.950 SF	21.00000		1,636.95	
0505	675.341 SQUARE TUBE SIGN POST AND ANCHOR	183.000 LF	16.00000		2,928.00	
0510	675.50 REMOVING SIGNS	34.000 EACH	10.00000		340.00	
0515	675.60 ERECTING SALVAGED SIGNS	8.000 EACH	34.00000		272.00	
0520	676.10 DELINEATOR WITH STEEL POST (BLUE)	2.000 EACH	86.00000		172.00	
0525	676.10 DELINEATOR WITH STEEL POST (GREEN)	2.000 EACH	86.00000		172.00	
0530	676.10 DELINEATOR WITH STEEL POST (YELLOW)	4.000 EACH	86.00000		344.00	
0535	676.12 REMOVAL OF EXISTING DELINEATOR	11.000 EACH	1.00000		11.00	
0540	677.25 REMOVE AND RESET OVERHEAD TRAFFIC SIGN SUPPORT	1.000 EACH	10,580.00000		10,580.00	
0545	678.40 TEMPORARY TRAFFIC SIGNAL SYSTEM	2.000 EACH	76,866.00000		153,732.00	
0550	679.25 REMOVING AND RESETTING LIGHT POLE	1.000 EACH	2,863.00000		2,863.00	



VERMONT AGENCY OF TRANSPORTATION
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PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0555	690.50 PRICE ADJUSTMENT, FUEL (N.A.B.I.)	1.000 LU	1.00000		1.00	
0560	900.608 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	4.000 CY	12,637.00000		50,548.00	
0565	900.615 SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I.) (BRIDGE 43N)	50,000.000 DL	1.00000		50,000.00	
0570	900.615 SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I.) (BRIDGE 43S)	50,000.000 DL	1.00000		50,000.00	
0575	900.615 SPECIAL PROVISION (PEDESTRIAN SHUTTLE) (N.A.B.I)	8,625.000 DL	1.00000		8,625.00	
0580	900.615 SPECIAL PROVISION (UNIFORMED TRAFFIC OFFICERS)	220,000.000 DL	1.00000		220,000.00	
0585	900.620 SPECIAL PROVISION (CPM SCHEDULE)	8.000 EACH	1,000.00000		8,000.00	
0590	900.620 SPECIAL PROVISION (GPS TIME CLOCK)	1.000 EACH	8,733.00000		8,733.00	
0595	900.620 SPECIAL PROVISION (TEMPORARY SUPPORTS AND HORIZONTAL SLIDE)	2.000 EACH	380,000.00000		760,000.00	
0600	900.630 SPECIAL PROVISION (JET DRYER)	10.000 HR	550.00000		5,500.00	
0605	900.630 SPECIAL PROVISION (UNEXPECTED OBSTRUCTION DRILLING)	40.000 HR	1,145.00000		45,800.00	



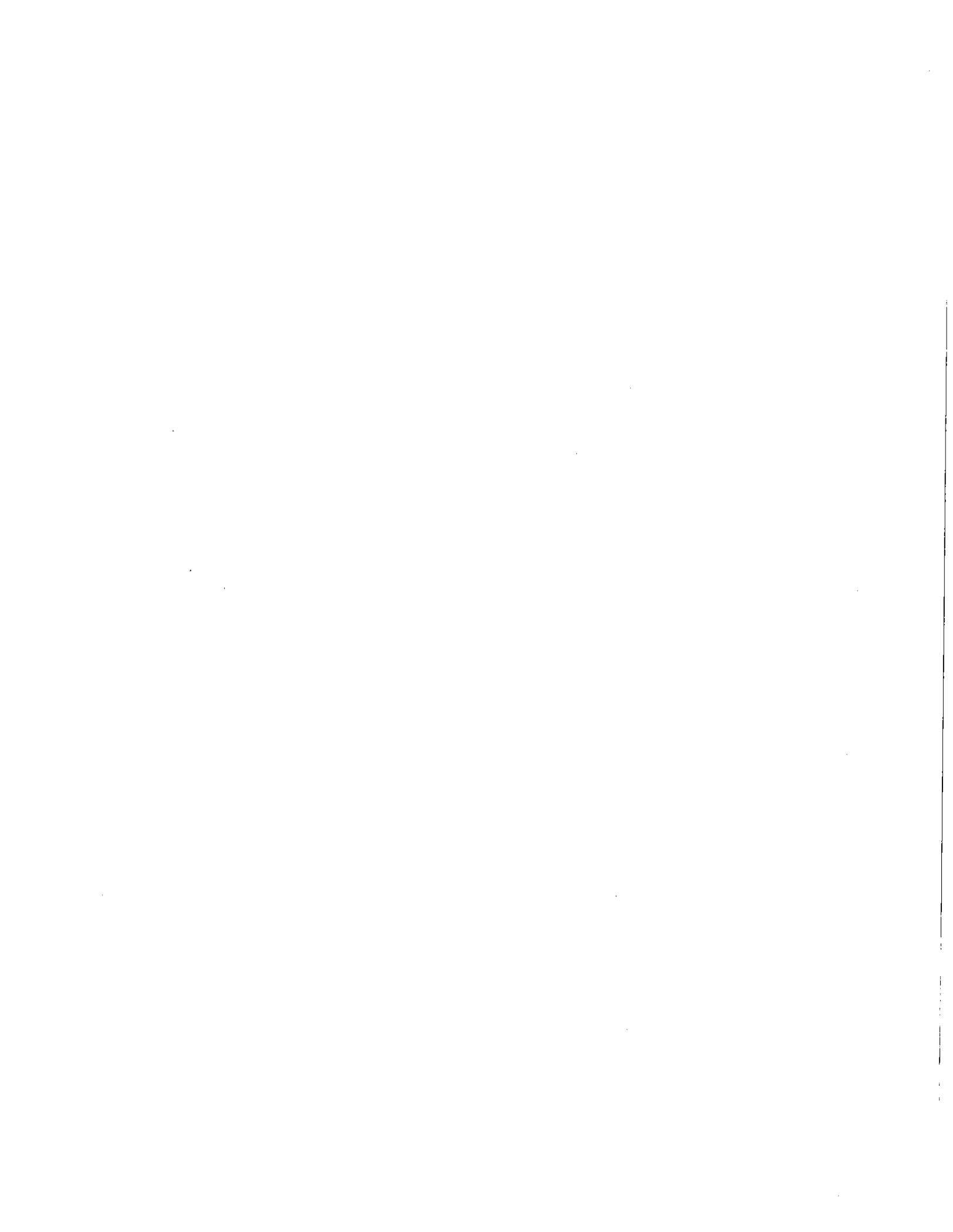
CONTRACT SCHEDULE

REVISED:

CONTRACT ID: 12A132

PROJECT(S) : HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0610	900.635 SPECIAL PROVISION (STRUCTURAL STEEL, PLATE GIRDER, GRADE HPS 70W)	88,470.000 LB	2.15000		190,210.50	
0615	900.640 SPECIAL PROVISION (MICROPILE, CASED) (9.625")	1,410.000 LF	343.00000		483,630.00	
0620	900.640 SPECIAL PROVISION (MICROPILE, UNCASED) (8.535")	330.000 LF	343.00000		113,190.00	
0625	900.645 SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB #1)	1.000 LS	54,205.00000		54,205.00	
0630	900.645 SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB #2)	1.000 LS	54,205.00000		54,205.00	
0635	900.645 SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB #3)	1.000 LS	54,205.00000		54,205.00	
0640	900.645 SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB #4)	1.000 LS	54,205.00000		54,205.00	
0645	900.645 SPECIAL PROVISION (CPM SCHEDULE) (BRIDGE 43N)	1.000 LS	2,500.00000		2,500.00	
0650	900.645 SPECIAL PROVISION (CPM SCHEDULE) (BRIDGE 43S)	1.000 LS	2,500.00000		2,500.00	



CONTRACT SCHEDULE

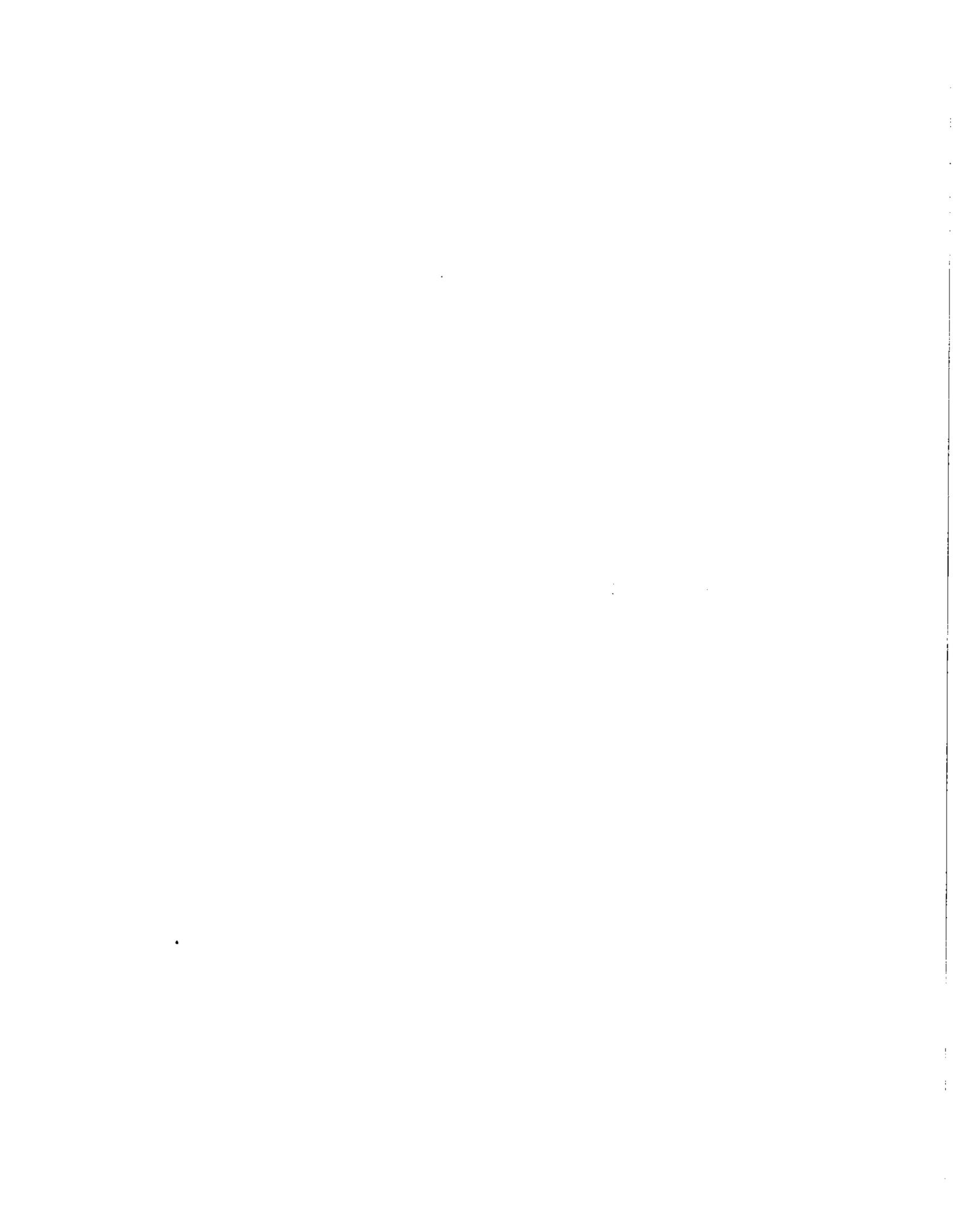
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PROJECT(S): HARTFORD IM 091-2(79)

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0655	900.645 SPECIAL PROVISION (FURNISHING EQUIPMENT FOR INSTALLING MICROPILES)	1.000 LS	11,453.00000		11,453.00	
0660	900.645 SPECIAL PROVISION (PUBLIC PROTECTION FOR BRIDGE PROJECTS)	1.000 LS	40,832.00000		40,832.00	
0665	900.645 SPECIAL PROVISION (SMART WORK ZONE)	1.000 LS	233,435.00000		233,435.00	
0670	900.670 SPECIAL PROVISION (PRECAST PRESTRESSED CONCRETE DECK PANEL) (3 1/2")	8,662.000 SF	25.00000		216,550.00	
0675	601.0015 18" CSP .064 (2-2/3 X 1/2)	30.000 LF	107.00000		3,210.00	
TOTAL BID						11,132,592.66



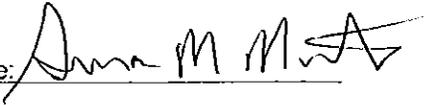


Project Name & Number: Hartford IM 091-2 (79) CMGC
EMPLOYER IDENTIFICATION NUMBER 84-0915605

WE THE UNDERSIGNED PARTIES AGREE TO BE BOUND BY THIS CONTRACT

By the State of Vermont:

Date: 2/10/15

Signature: 

Name: Susan M. Minter/Chris Cole

Agency: Transportation

By the Contractor:

Date: 2/3/2015

Signature: 

Name: E. Gayle Grady

Title: District Manager, Authorized Signatory