

**Burlington Greenway Rehabilitation
Leddy Pause Place & Beach Access and
Starr Farm Fitness Station**

Contract Documents - Bid Documents

**City of Burlington, Vermont
Department of Parks & Recreation**



Date of Issuance: April 24, 2019

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1. City of Burlington – Livable Wage Ordinance and Certification of Compliance*
2. City of Burlington – Union Deterrence Ordinance and Certification of Compliance*
3. City of Burlington – Outsourcing Ordinance and Certification of Compliance*

** The pages above marked with asterisks must be completed and signed and included in bid submittal*

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ADVERTISEMENT FOR BIDS

City of Burlington
Parks & Recreation
645 Pine Street, Suite B
Burlington, VT 05401

Sealed bids for the construction of the **Burlington Greenway Rehabilitation Leddy Park Pause Place & Beach Access and Starr Farm Fitness Station** are due to the City of Burlington, Vermont, at the office of Parks & Recreation, 645 Pine Street, Suite B, Burlington, Vermont 05401, by 5:00 p.m., Friday, May 24, 2019.

Each bid must be accompanied by a certified check payable to the City in the amount of 5% of the bid price. A bid bond may be used in lieu of a certified check. Qualifying bids will be reviewed by BPRW

A copy of the contract documents and plans may be examined after 8:30 a.m. on Thursday, April 25, 2019 at the office of Burlington Parks, Recreation & Waterfront located at 645 Pine Street, Suite B, Burlington, VT 05401. Electronic plans and contract documents may be obtained from the City of Burlington website: burlingtonvt.gov/rfp

Prospective bidders must formally notify BPRW, and will be included on the list of contractors taking out plans. This list shall be used to distribute addendums or other pertinent information as needed.

Notify BPRW (Intent to bid & Request for electronic PDF)

BPRW
Jon Adams-Kollitz
645 Pine St.
Burlington, VT 05401
Email: jadamskollitz@burlingtonvt.gov

Questions Due:

May 15, 2019 @ 5:00 PM

Parks, Recreation & Waterfront
Jon Adams-Kollitz, Parks Project Coordinator
645 Pine Street, Suite B
Burlington, VT 05401
Email: jadamskollitz@burlingtonvt.gov
With subject line "Burlington Greenway Rehabilitation Leddy Pause Place Questions"

A Performance Bond and a Payment Bond each in an amount equal to one hundred percent (100%) of the contract price will be required. Irrevocable letters of Credit from an approved bank may be used in lieu of the Performance and Payment Bonds or cash in the amount equal to one hundred percent (100%) of the contract price at the approval of the City.

A contract awarded under this Advertisement of Bids will be funded by the City of Burlington.

The City of Burlington reserves the right to reject or waive any informalities in, or to reject any and all proposals, or to accept any proposal deemed in the best interest of the City of Burlington.

INSTRUCTIONS TO BIDDERS

April 25, 2019

Bids for the Burlington Greenway Rehabilitation Phase 2 Leddy Park Pause Place & Beach Access and Starr Farm Fitness Station project, will be received by the Burlington Parks, Recreation & Waterfront Department (herein called the "City"), at 645 Pine Street, Suite B, Burlington, Vermont until 5:00 p.m., Friday, March 24, 2019. Qualifying bids will be reviewed by BPRW.

Each bid must be received electronically, e-mailed to jadamskollitz@burlingtonvt.gov. A verification of on time receipt email will be sent to the sender.

The following items must be completed, signed and notarized (where applicable), and included in the bid submittal:

Lump Sum bids for the following:

- Leddy Park Pause Place (see boundaries on attached)
- Leddy Park Beach/Equipment Access Path from Pause Place (Arena back parking lot)
- Leddy Beach Staircase replacement
- Starr Farm Fitness Station Concrete Pad

Bid Form for key items that may need unit pricing

Bid Bond

City of Burlington Livable Wage Ordinance Compliance Certificate

City of Burlington Union Deterrence Ordinance Compliance Certificate

City of Burlington Outsourcing Ordinance Compliance Certificate

A Qualifications Detail consisting of:

- a) Cover letter including statement of understanding & approach to this project;
- b) Proposed Project Team Members: Clearly indicate the applicant's designated project manager as well as sub-contractors who will be assigned to the work and their respective expertise in such work;
- c) A List of Specific Project Experience: Descriptions detailing completed, similar or relevant project experience that the applicant has executed;
- d) A List of References: Provide a minimum of three client references with which the applicant has provided similar design/bid/build services within the last five years. Include the name and telephone number of the contact person and a description of the role and services provided to that contact.

A Technical Proposal consisting of:

- a) A description of the approach to be taken toward completion of the project, an explanation of any variances to the proposed scope of work as outlined in the contract documents, and any insights into the project gained as a result of developing the proposal;
- b) A summary that clearly identifies the percentage of work to be completed by the prime contractor and each sub-contractor;
- c) A proposed schedule that indicates project milestones and overall time for completion;

This project is funded with public funds and will require compliance with all federal, state and local rules and regulations including:

- A. Civil Rights & Equal Employment Opportunity: The contractor shall not discriminate on the basis of race, color, national origin, sex, physical disability or veteran status in the award and performance of USDOT assisted contracts.
- B. Livable Wage Ordinance City of Burlington Code of Ordinances 21-80 et seq.: Requires payment of an annually adjusted “livable wage” to employees working on the funded project.
- C. Pre-qualification of Construction Contractors: All bidders on this project shall be pre-qualified for Bicycle and/or Pedestrian (Transportation) Path Construction by the Vermont Agency of Transportation, Contract Administration a minimum of seven (7) working days prior to the bid opening.
- D. Union Deterrence Ordinance 21-100 et seq.: It is the policy of the City of Burlington to limit letting contracts to organizations that provide union deterrence services to other companies.
- E. Outsourcing Ordinance 21-90 et seq.: It is the policy of the City of Burlington to let service contracts to contractors, subcontractors and vendors who perform work in the United States.

All bids must include separate lump sum prices on the Leddy Park Pause Place, Leddy Arena Beach Access Path (add alternate) and the Leddy Beach Staircase (add alternate) and Starr Farm Fitness Station Concrete Pad and be accompanied by a certified check payable to the City for 5% of the bid price. A bid bond may be used in lieu of a certified check.

The City may waive any informalities or minor defects or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified, shall not be considered. No Bidder may withdraw a bid within 90 days after the actual date of the opening thereof. Should there be reasons the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the City and the Bidder.

Bidders must satisfy themselves of the accuracy of the estimated quantities in the bid form by examination of the site and a review of the drawings and/or specifications including addenda. After bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done.

All questions by prospective Bidders as to the interpretations of the Instructions to Bidders, Forms of Proposal, Forms of Contract, Plans, Specifications or Bonds, must be submitted in writing to:

Jon Adams-Kollitz, Parks Project Coordinator; City of Burlington, Department of Parks, Recreation & Waterfront, email: jadamskollitz@burlingtonvt.gov.

All questions shall be emailed and have the following in the subject line: “Burlington Greenway Rehabilitation Leddy Park Pause Place Questions”. No questions will be accepted after May 15, 2019 at 5:00 p.m. An interpretation of all questions so raised which, in the City’s opinion, require interpretation, will be included in an addendum to be furnished to all Bidders on the list of contractors that have obtained plans and contract documents. Failure of any Bidder to receive any such addenda or interpretation shall not relieve such bidder from any obligation under their bid as submitted. All addenda so issued shall become part of the Contract Documents.

No bid will be accepted which does not contain a unit price for each item as specified in the Bid Form.

Prospective bidders and their agents will be permitted to make, at their own responsibility and

expense, such investigations over the site of the proposed work as they deem necessary. They must satisfy themselves by personal examination of the location of the proposed work, and by such other means as they deem necessary, as to the actual conditions and requirements of the work. Prices bid shall include every and all costs for the construction complete between the limits indicated on the Plans and/or as set out in the Specifications.

At the time of the opening of bids, each Bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any Bidder to receive or examine any form, instrument, or documents shall in no way, relieve any Bidder from the obligation in respect to their addenda.

At the Bidder's request the City shall provide all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired.

The Contract Documents contain the provisions required for the construction of the Project. Information obtained from any officer, agent, or employee of the City or any other person shall not affect the risks or obligations assumed by the Contractor or relieve them from fulfilling any of the conditions of the contract.

Each bid must be accompanied by a certified check payable to the City for 5% of the bid price. As soon as the bid prices have been compared, the City will return the certified checks of all except the three lowest responsive, responsible bidders. When the Agreement is executed, the certified checks of the two remaining unsuccessful bidders will be returned. The certified check of the successful Bidder will be retained until the payment bond and performance bond have been executed and approved, after which it will be returned. A bid bond may be used in lieu of a certified check.

A performance bond and a payment bond, each in the amount of 100 percent of the contract price, with a corporate surety approved by the City, will be required for the faithful performance of the contract. Irrevocable Letters of Credit from an approved bank may be used in lieu of the performance and payment bonds, each in the amount of one-hundred percent (100%) of the contract price, with the approval of the City Project Manager.

Attorneys-in-fact who sign bid bonds or payment bonds and performance bonds must file with each bond a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance bond and payment bond within ten (10) business days from the date when Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Agreement and bond forms. In case of failure of the Bidder to execute the Agreement, the City may, at their option, consider the Bidder in default, in which case the addenda bond or certified check accompanying the proposal shall become the property of the City.

The party to whom the contract is awarded shall provide a work schedule to the City within 10 days of award in the critical path form.

A pre-construction conference will be held in the Burlington Parks, Recreation & Waterfront Department, 645 Pine Street, soon after delivery of the Notice of Award. The Contractor will be notified of the exact time and date. Those invited shall include departments affected by construction activities, and topics of discussion shall include coordination and scheduling of work requirements by

all concerned parties.

The City, within ten (10) business days of receipt of acceptable performance bond, payment bond and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the City not execute the Agreement within such period, the Bidder may by written notice, withdraw their signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the City.

The Notice to Proceed shall be issued within ten (10) days of the execution of the Agreement by the City. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the City and Contractor. If the Notice to Proceed has not been issued within the ten (10) day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

The City may make such investigations as they deem necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the City, all such information and data for this purpose as the City may request.

A conditional or qualified bid will not be accepted.

Award will be made to the responsive, responsible Bidder that is deemed to provide the best value to the City. A responsive, responsible bidder is any bidder who meets all the requirements of the Instructions to Bidders, completes the required documents, and has successfully completed projects of similar magnitude and scope.

To ensure a high level of construction quality and minimize maintenance and repairs of Parks & Recreation infrastructure, the City will use an evaluation matrix to score all proposals.

EVALUATION CRITERIA

In compliance with the City of Burlington's Procurement Policy, Parks & Recreation will evaluate all complete bids from qualified Contractors on the following criteria. Contractors will be scored up to a maximum of 100 points based on the following evaluation criteria:

Parks & Recreation Bid Evaluation Criteria

1 - Competitive Cost Proposal & Value	25 points
2 - Qualifications	15 points
3 - Ability to Meet Schedule	10 points
4 - Project Understanding	10 points
5 - Depth of Skills	10 points
6 - Demonstration of Innovation	10 points
7 - Level of Experience	10 points
8 - Quality, Clarity & Completeness of Proposal	<u>10 points</u>
Total Points	100

Bid Due Date & Contractor Selection Process:

All bids are due by 5:00 p.m., Friday, May 24, 2019

The City is NOT required to hold a public bid opening. The City expects to complete bid analysis and notification to all parties by May 31, 2019, including the Notice of Apparent Bid Winner

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project, shall apply to the contract throughout.

This Project is subject to all of the Safety and Health Regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on August 1, 1991 (VOSHA). The Contractor shall become familiar with the requirements of these regulations.

Contracts for work under this proposal will obligate the Contractors and Subcontractors not to discriminate in employment practices.

The Bidder awarded the contract shall supply the names and addresses of major material Suppliers and Subcontractors to the City. The Bidder, as prime contractor, must perform a minimum of 50% of the work.

Bidders must satisfy themselves with respect to the locations of buried utilities in the work area which may have an impact on their ability to perform the work. All coordination between the Utilities and the Bidder is the responsibility of the Bidder.

Bidder shall comply with DIG SAFE per Title 30, Vermont Statutes.

The Contractor shall not commence work under this contract until they have obtained all the insurance required hereunder and such insurance has been approved by the City, nor shall the Contractor allow any subcontractor to commence work on their subcontract until all similar insurance required of the subcontractor has been so obtained and approved. Approval of the insurance by the City shall not relieve or decrease the liability of the Contractor hereunder.

The Contractor shall take out and maintain during the life of the contract such Comprehensive General Bodily Liability and Property Damage Liability Insurance and Automobile Bodily Injury Liability and Property Damage Liability as shall protect them and any subcontractor performing work covered by this contract for claims for damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from operations under this contract, whether such operations by the contractor or by any subcontractor or by anyone directly or indirectly employed by either of them.

The Method of Measurement and Basis of Payment for all contract items shall follow the Vermont Agency of Transportation ("VTrans") 2011 Standard Specification for Construction, unless modified in these Contract Documents.

When it is indicated in the contract documents that payment or cost of work and/or materials are incidental to one or more other contract items (but not to specific other items), such costs shall be included by the bidder in the bid price for all other contract items.

By submitting a bid, a prospective bidder/contractor certifies that it shall report in writing to the City any error or inconsistency discovered in the plans, proposal, specifications, or contract documents immediately upon discovery of such error or inconsistency.

By submitting a bid, a prospective bidder/contractor certifies that it shall assert no claim, cause of action, litigation, or defense against the City unless notice was provided to the City in writing of any error or inconsistency found in the plans, proposal, specifications, and/or contract documents immediately upon

discovery of such error or inconsistency.

By submitting a bid an entity certifies that it is familiar with all Federal, State and local laws, ordinances and regulations which affect in any way the materials, equipment, haul roads, used in or upon the work, the conduct of the work, and the persons engaged or employed in the performance of the work to be performed pursuant to the contract.

By submitting a bid an entity certifies that it shall forthwith report in writing to the City any provisions in the plans, proposal, specifications or proposed contract that the bidder/contractor believes conflicts with or inconsistent with any Federal, State or local law, ordinance or regulation.

By submitting a bid a prospective Bidder certifies that if, during its investigation of the work in the process of preparing its bid, it discovers or encounters subsurface or latent physical conditions at a project site differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, it shall notify in writing the City of the specific differing conditions immediately upon discovering or encountering the differing site conditions.

An entity further certifies that if it fails to notify the City of any differing site conditions as described above, it shall waive any and all rights that it might have to additional compensation from the City for additional work as a result of the differing site conditions and that it shall not bring a claim for additional compensation because of differing site conditions.

By submitting a bid, a prospective bidder/contractor certifies that no claim or defense of ignorance or misunderstanding concerning Federal, State or local laws, ordinances and/or regulations will be employed by a bidder/contractor or considered by the City in claims, litigation, alternative dispute resolution procedures, or other matters concerning the contract for which the bid is submitted.

INSURANCE

Insurance Coverage Requirements:

By submitting a bid, a perspective bidder certifies that it carries all insurance types and amounts described in Section 4 of The City of Burlington – Standard Contract Conditions.

INDEMNIFICATION

By submitting a bid, a perspective bidder agrees to the indemnification in Section 1 of The City of Burlington – Standard Contract Conditions.

BID FORM

Proposal of _____ (hereinafter called
"Contractor"), organized and existing under the laws of the State of _____
doing business as _____ (corporation, partnership, individual)
To the City of Burlington (hereinafter called "City")

In compliance with the Advertisement and Instructions to Bidders of the City of Burlington for the **Burlington Greenway Rehabilitation Leddy Park Pause Place & Beach Access and the Starr Farm Park Fitness Station**, and in conformity with the Bid Form, Contract, Specifications and Contract Drawings, I, or we, hereby certify that I am, or we are, the only person, firm, or corporation; that an examination has been made of the Bid Form, Contract, the Contract Drawings, the Specifications, and the site of the work, and that I, or we, propose to furnish all necessary machinery, equipment, tools, labor and other means of construction, and all materials specified, in the manner and at the time prescribed, understanding that the quantities of work as shown herein are approximate only and are subject to increase or decrease and that all quantities of work, whether increased or decreased, are to be performed at the following unit prices (including sales tax and all other applicable taxes and fees):

ATTENTION TO CONTRACTORS

This Proposal shall be filled in by the Contractor, written IN WORDS AND IN FIGURES and the extensions properly made in figures.

For complete information concerning these items see Specifications, Contract Drawings, and Contract.

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid, each party thereto certifies as to their own organization, that its Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

The Bidder hereby agrees to commence Work under this contract on the date of issuance of the Notice to Proceed and to reach Final Completion of Pause Place Construction by May 24, 2019. Final completion of any add alternates as contracted by November 15, 2019

LUMP SUM BID FOR LEDDY PAUSE PLACE CONSTRUCTION: \$ _____

(IN WORDS) _____

All work between the Leddy Park Arena main parking lot and the southwest corner of the Leddy Park Arena back parking lot to include: pause place oval (any/all demolition work except as noted; replacement of pipe under walk and replacement of headwall, exposed concrete and wood construction, asphalt paving (including any repairs to bike path, and construction of path from Arena main parking lot to Arena front door, and path to Arena back parking lot); exposed aggregate concrete pad for Leddy Park Fitness Station; minimum 6" of pre-approved clean topsoil, fined graded in all areas of disturbance; final cleanup and punch list items as directed by resident engineer.

To exclude the following work by others: removal of any existing trees over 6" diameter, installation of all planting material, installation of pre-approved bark mulch

Additionally, BPRW requests unit prices as backup for any change orders

Item Number	Item Description	Unit	Unit Price
201.15	COMMON EXCAVATION	CY	\$
	UNIT PRICE IN WORDS:		
203.28	EXCAVATION OF SURFACES AND PAVEMENTS	CY	\$
	UNIT PRICE IN WORDS:		
204.3	GRANULAR BACKFILL FOR STRUCTURES	CY	\$
	UNIT PRICE IN WORDS:		
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE	CY	\$
	UNIT PRICE IN WORDS:		
522.35	KEBONY LUMBER	MFBM	\$
	UNIT PRICE IN WORDS:		

Item Number	Item Description	Unit	Unit Price
635.11	MOBILIZATION/DEMobilIZATION	LS	\$
	UNIT PRICE IN WORDS:		
649.31	GEOTEXTILE UNDER STONE FILL	SY	\$
	UNIT PRICE IN WORDS:		
649.51	GEOTEXTILE FOR SILT FENCE	SY	\$
	UNIT PRICE IN WORDS:		
651.25	HAY MULCH	TON	\$
	UNIT PRICE IN WORDS:		
651.35	TOPSOIL	CY	\$
	UNIT PRICE IN WORDS:		
652.1	EPSC PLAN	LS	\$
	UNIT PRICE IN WORDS:		
652.2	MONITORING EPSC PLAN	HR	\$
	UNIT PRICE IN WORDS:		
653.55	Project DEMARCATION FENCE	LF	\$
	UNIT PRICE IN WORDS:		

Item Number	Item Description	Unit	Unit Price
710.03	CORRUGATED POLYETHYLENE PIPE	LF	\$
	UNIT PRICE IN WORDS:		
752.08	ELECTRICAL CONDUIT	LF	\$
	UNIT PRICE IN WORDS:		
900.608	SPECIAL PROVISION (STONE SCREENINGS)	CY	\$
	UNIT PRICE IN WORDS:		
900.608	SPECIAL PROVISION (EXPOSED AGGREGATE CONCRETE)	CY	\$
	UNIT PRICE IN WORDS:		
900.62	SPECIAL PROVISION (SCRIBED INSET BOULDER)	EA	\$
	UNIT PRICE IN WORDS:		
900.62	SPECIAL PROVISION (ORNAMENTAL LIGHT TYPE A)	EACH	\$
	UNIT PRICE IN WORDS:		
900.62	SPECIAL PROVISION (ORNAMENTAL LIGHT TYPE B)	EACH	\$
	UNIT PRICE IN WORDS:		

Item Number			
Item Number	Item Description	Unit	Unit Price
900.62	SPECIAL PROVISION (ORNAMENTAL LIGHT TYPE C)	EACH	\$
900.62 900.62	SPECIAL PROVISION (ORNAMENTAL LIGHT TYPE C) UNIT PRICE IN WORDS:	EACH	\$
	SPECIAL PROVISION (BIKE RACKS)		
900.62 900.645	SPECIAL PROVISION (BIKE RACKS) UNIT PRICE IN WORDS:	EACH	\$
	SPECIAL PROVISION (KEBONY DECKING)		
900.645 900.645	SPECIAL PROVISION (KEBONY DECKING) UNIT PRICE IN WORDS:	LS	\$
	SPECIAL PROVISION (RECONSTRUCT CULVERT AND HEADWALL NEAR BIKE PATH INTERSECTION)		
900.645 900.645	SPECIAL PROVISION (RECONSTRUCT CULVERT AND HEADWALL NEAR BIKE PATH INTERSECTION) UNIT PRICE IN WORDS:	LS	\$
	SPECIAL PROVISION (BOULDER RETAINING WALL AT BEACH / EXISTING OUTLET)		
900.645	SPECIAL PROVISION (BOULDER RETAINING WALL AT BEACH / EXISTING OUTLET) UNIT PRICE IN WORDS:	LS	\$

ADD ALTERNATE 1: LUMP SUM BID FOR LEDDY PARK BEACH/EQUIPMENT ACCESS PATH:

\$ _____

(IN WORDS) _____

ADD ALTERNATE 2: LUMP SUM addenda DEMOLITION & COMPLETE REMOVAL OF EXISTING STAIR SYSTEM, INSTALLATION OF PROPOSED POWDERCOATED STEEL STAIR SYSTEM WITH WEATHER RESISTANT WOOD AS AS SPECIFIED

\$ _____

(IN WORDS) _____

ADD ALTERNATE 3: LUMP SUM addenda FOR INSTALLATION OF 1017 SQUARE FEET OF EXPOSED AGGREGATE CONCRETE PAD AT STARR FARM PARK (SEE LOCATION MAP AND ATTACHED PLAN) ON 9" OF APPROVED SUB-BASE. EXCESS MATERIAL SHALL BE INCORPORATED ONSITE

\$ _____

(IN WORDS) _____

By submission of this bid, each Contractor certifies, and in the case of a joint bid each party thereto certifies as to his own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to the bid with any other Contractor or competitor.

Contractor acknowledges receipt of the following ADDENDA:

Respectfully,

(Signature)

(Address)

(Title)

(Date)

_____ Being duly sworn, deposes and says that (s)he is

_____ Of _____
(Name of Organization)

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

Sworn to before me this _____ day of _____, 20____

(Notary Public)

My commission expires _____

(Seal – if addenda is by corporation)

ATTEST: _____

BID BOND

KNOWN BY ALL BY THESE PRESENT, that we, the undersigned,

as Principal, and _____ as _____

Surety, are hereby held and firmly bound unto the City of Burlington
as the CITY in the penal sum of _____
for the payment of which, well and truly to be made, we hereby
jointly and severally find ourselves, successors and assigns.

Signed this _____ day of _____, 2019.

The Condition of the above obligation in such that whereas the

Principal has submitted to City of Burlington a certain
bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for Burlington
Greenway Rehabilitation Leddy Pause Place & Beach Access and Starr Farm Fitness Station

NOW, THEREFORE,

- (a) If said bid shall be rejected, or
- (b) If said bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said addenda) and shall furnish a bond for their faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said addenda, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the City may accept such bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and those present to be signed by their proper officers, the day and year first set forth above.

_____(L.S.)
Principal

Surety

By:_____

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

Notice of Award

To: _____

Project Description: **Burlington Greenway Rehabilitation Leddy Pause Place & Beach Access and Starr Farm Fitness Station**

The City has considered the bid submitted by you for the above described work in response to its Information for Bidders, dated _____, 2019.

You are hereby notified that your bid has been accepted for all items, in the amount of \$_____.

You are required by the Information for Bidders and Contract Conditions to execute the Agreement and furnish the required Contractor's Performance bond, Payment bond and certificates of insurance, within five (10) business days from the date of this Notice to you.

If you fail to execute said Agreement and do not furnish said bonds within five (10) days from the date of this Notice, said City will be entitled to consider all your rights arising out of the City's acceptance of your bid as abandoned and as a forfeiture of your bid bond. The City will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the City. Dated

this _____ day of _____, 2019.

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award for **Burlington Greenway Rehabilitation Leddy Pause Place & Beach Access and Starr Farm Fitness Station** project is hereby acknowledged.

By: _____ Date: _____

Title: _____

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AGREEMENT

THIS AGREEMENT, is made this _____ day of _____, 2019, by and between City of Burlington Department of Parks & Recreation, hereinafter called the "City" and _____ doing business as a corporation, hereinafter called "Contractor". WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The Contractor will commence and complete the construction of the Burlington Greenway Rehabilitation Leddy Pause Place & Beach Access and Starr Farm Fitness Station Project as described in the Contract Documents.
2. The Contractor will furnish all the material, supplies, tools, equipment, labor, traffic control measurements, and other services necessary for the construction and completion of the Project described herein.
3. The Contractor will commence the work required by the Contract Documents on the date of issuance of the Notice to Proceed and will substantially complete the work by May 24th, 2019, unless the period for completion is extended otherwise by the Contract Documents.
 - ***Substantial Completion is defined as the date when, in the opinion of the Resident Engineer, the work to be performed pursuant to the Contract has been sufficiently complete to enable use of the Project or facilities for the intended purpose.***

The entire project must reach Final Completion prior to November 15, 2019.

4. The Contractor agrees to perform all the work described in the Contract Documents and comply with the terms therein as shown in the addenda schedule. The Contractor shall perform a minimum of 50% of the work with their own forces.

5. The term "Contract Documents" means and includes the following:

- (A) ADVERTISEMENT FOR BIDS
- (B) INSTRUCTIONS TO BIDDERS
- (C) BID FORM
- (D) BID BOND
- (E) NOTICE OF AWARD
- (F) AGREEMENT
- (G) PERFORMANCE BOND
- (H) PAYMENT BOND
- (I) NOTICE TO PROCEED
- (J) CHANGE ORDER
- (K) CITY OF BURLINGTON – STANDARD CONTRACT CONDITIONS
- (L) CITY OF BURLINGTON – SUPPLEMENTARY CONDITIONS
- (M) CITY OF BURLINGTON – GENERAL SPECIFICATIONS
- (N) SPECIAL PROVISIONS
- (O) VTRANS 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION
- (P) CITY OF BURLINGTON – LIVABLE WAGE ORDINANCE
- (Q) CITY OF BURLINGTON – UNION DETERRENCE ORDINANCE
- (R) CITY OF BURLINGTON – OUTSOURCING ORDINANCE

(S) DRAWINGS PREPARED BY VHB, NUMBERED 1 THROUGH 165 AND DATED
APRIL 2017

6. The City will pay to the Contractor in the manner and at such times as set forth in the General Conditions such amounts as required by the Contract Documents.
7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in duplicate, each of which shall be deemed an original on the date first above written.

City: **City OF BURLINGTON**

Name _____

Signature _____

Title _____

(SEAL)

Attest _____

Name _____
(Please Type)

Title _____

Contractor:

Firm _____

Name and Title _____

Signature _____

Address _____

(SEAL)

Attest: _____

Name: _____
(Please Type)

Title _____

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**Certificate of Acknowledgment of Contractor
of a Corporation for
CONTRACT AGREEMENT**

State of (_____)

County of (_____) ss:

On this _____ day of _____, 2019,

before me personally came _____,

to me known, who being duly sworn did say as follows: that he/she

resides at _____

and is the _____

of _____, the corporation

described in and which executed the foregoing instrument; that he knows the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order of the Board of Directors of said corporation; and that by the like order he/she signed thereto his/her name and official designation.

Notary Public

(Seal)

My commission expires _____

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Performance Bond

KNOW ALL MEN AND WOMEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Contractor,
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

City of Burlington
(Name of City)

645 Pine St, Suite B, Burlington, Vermont 05401
(Address of City)

hereinafter called City, and the in the aggregate penal sum of _____
_____ Dollars, \$(_____) in lawful money of the United States, for
the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors,
administrators, successors, and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that whereas, the Principal entered into a certain contract with the
City, dated the _____ day of _____, 2019, a copy of which is hereto attached and
made a part hereof for the construction of:

**The City of Burlington – Burlington Greenway Rehabilitation Leddy Park Pause Place & Beach
Access and Starr Farm Park Fitness Station**

NOW, THEREFORE, if the principal shall well, truly and faithfully perform its duties, all the undertakings,
covenants, terms, conditions and agreements of said contract during the original term thereof, and any
extensions thereof which may be granted by the City, with or without notice to the Surety and during the one
year guaranty period, and if the Contractor shall satisfy all claims and demands incurred under such
contract, and shall fully indemnify and save harmless the City from all costs and damages which it may
suffer by reason of failure to do so, and shall reimburse and repay the City all outlay and expense which the
City may incur in making good any default, then this obligation shall be void; otherwise to remain in full
force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change,
extension of time, alteration or addition to the terms of the contract or to the work to be performed
thereunder or the specifications accompanying the same shall in any wise affect its obligation on this

bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that it is expressly agreed that the bond shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than twenty percent, so as to bind the Contractor and the Surety to the full and faithful performance of the contract as so amended. The term "Amendment", wherever used in this bond, and whether referring to this bond, the Contract or the Loan Documents shall include and alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the City and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in__ (number) counterparts, each one of which shall be deemed an original, this the ____ day of _____, 2019.

ATTEST:

(Principal Secretary)

(Principal)

(SEAL)

By: _____(s)

Address: _____

(Witness as to Principal)

Address: _____

Surety

ATTEST:

By: _____
Attorney-in-Fact

Address: _____

Witness as to Surety

Address: _____

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570) as amended and be authorized to transact business in the State where the Project is located.

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Payment Bond

KNOW ALL MEN OR WOMEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Contractor,
(Corporation, Partnership or Individual)

and, _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

City of Burlington
(Name of City)

645 Pine St., Suite B, Burlington, Vermont 05401
(Address of City)

hereinafter called City, and unto all persons, firms, and corporations who or which may furnish labor, or who furnish materials to perform as described under the contract and to their successors and assigns in the total aggregate penal sum of _____ Dollars, (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Contractor entered into a certain contract with the City, dated the _____ day of _____ 2018, a copy of which is hereto attached and made a part hereof for the construction of:

The City of Burlington – Burlington Greenway Rehabilitation Leddy Pause Place and Starr Farm Fitness Station

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and for all labor costs incurred in such work including that by a subcontractor, and to any mechanic or materialman lienholder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in force and effect.

PROVIDED, that beneficiaries or claimants hereunder shall be limited to the subcontractors, and persons, firms, and corporations having a direct contract with the Contractor or its subcontractors.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications .

PROVIDED, FURTHER, that no suit or action shall be commenced hereunder by any claimant: (a) Unless claimant, other than one having a direct contract with the Contractor, shall have given written notice to any two of the following: The Contractor, the City, or the Surety above named within ninety (90) days after such claimant did or performed the list of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Contractor, City, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer. (b) After the expiration of one (1) year following the date of which Contractor ceased work on said contract, is being understood, however, that if any limitation embodied in the bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

PROVIDED, FURTHER, that it is expressly agreed that this bond shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the Contractor and the Surety to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this bond and whether referring to this bond, the contract or the loan Documents shall include any alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the City and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in___(number) counterparts, each one of which shall be deemed an original, this, the_____day of _____2019.

ATTEST:

Principal

(Principal Secretary)

(SEAL)

By:____(s)

Address: _____

Witness as to Principal

Address: _____

Surety

ATTEST:

By: _____
Attorney-in-Fact

Witness as to Surety

Address: _____

Address: _____

NOTE: Date of bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570) as amended and be authorized to transact business in the State where the Project is located.

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Notice to Proceed

To: _____ Date: _____
Contractor

Project: **City of Burlington – Burlington Greenway Rehabilitation Leddy Pause Place and Starr Farm Fitness Station**

You are hereby notified to commence work in accordance with the AGREEMENT dated _____, 2019, and you are to complete the work according to the following schedule:

City: **City of Burlington**

Name: _____

Title: _____

Signature: _____

Date: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged.

Contractor: _____

Name: _____

Title: _____

Signature: _____

Date: _____

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CHANGE ORDER # _____

Project No. _____ Date: _____

Contract No. _____ Agreement Date: _____

contract TITLE: _____ ORIGINAL price: _____

City (GRANTEE): **City of Burlington** _____

Contractor: _____

The following changes are hereby made to the Contract Documents:

DESCRIPTION:

JUSTIFICATION:

PRICE:

Current Contract Price per most recent C.O. : \$ _____

This C.O. will (not change/increase/decrease)
the Contract Price by: \$ _____

The new Contract Price including this C.O. is: \$ _____

TIME:

Current Contract Calendar Days as per most
recent C.O. : DAYS _____

This C.O. will (not change/increase/decrease)
the Contract Calendar Days By: DAYS _____

The new Contract Calendar Days including this
C.O. is DAYS _____

The new Contract Completion Date is, therefore: _____

(Reflects increases or decreases in

Contract Time as authorized by this C.O.)

REQUESTED BY: _____

(Contractor, City, Engineer,) SIGNATURES/APPROVALS:

Recommended by: _____

Accepted by: _____
(Contractor)

Ordered by: _____
(City)

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**General Contractor's or Subcontractor's
Release and Waiver of Lien**

For and in consideration of the receipt of \$_____, in payment for labor and/or materials furnished, the undersigned does hereby waive, release and relinquish any and all claims, demands and rights of lien for all work, labor, materials, machinery or other goods, equipment or services done, performed or furnished for the construction located at the site hereinafter described, to with:

**Burlington Greenway Rehabilitation Leddy Pause Place and Starr Farm Fitness Station – City of
Burlington, VT**
(Project Name and City)

_____, Vermont as of _____
(Date)

The undersigned further warrants and represents that any and all valid labor and/or materials and equipment bills, now due and payable on the property hereinabove described in behalf of the undersigned, have been paid in full to date of this waiver, or will be paid from these funds.

\$ _____
Total Paid to Date This Contract

Current Payment Due

\$ _____
Total Billed to Date This Contract

Contractor/Sub-Contractor

(Witness)

Contractor/Subcontractor

By: _____

(Witness)

Title: _____

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Certificate of Substantial Completion

City's Project No.: _____ Engineer's Project No.: _____

Project: _____

Contractor: _____ Contract Date: _____

Contract For: _____

Project or Specified Part Shall Include _____

DEFINITION OF SUBSTANTIAL COMPLETION

The date of Substantial Completion of a Project or specified part of a Project is the date when the construction is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part of the Project can be utilized for the purpose for which it was intended.

To: _____
(City)

And To: _____
(Contractor)

Date of Substantial Completion: _____

The Work performed under this contract has been inspected by authorized representatives of the City, Contractor and Engineer, and the Project is hereby declared to be substantially completed on the above date.

If a tentative list of items to be completed or corrected is appended hereto, the failure to include an item on it does not alter the responsibility of the Contractor to complete all the work in accordance with the Contract Documents and contract time.

Recommended by:

Engineer Authorized Representative Date

Approved by:

City Authorized Representative Date

The Contractor accepts the above Certificate of Substantial Completion.

Contractor

Authorized Representative

Date

Exceptions as to Guarantees and Warranties:

Attachments:

Certificate of Final Completion of Work

Contract No.: _____ Agreement Date: _____

Contract Description: _____

FINAL CERTIFICATION OF Contractor

I hereby certify that the work as identified in the Final Estimate of Payment for construction contract work dated _____, represents full compensation for the actual value of work completed. All work completed conforms to the terms of the Agreement and authorized changes.

Date Contractor: _____

Signature: _____

Title: _____

FINAL CERTIFICATION OF ENGINEER

I have reviewed the Contractor'S Final Payment Request dated _____ and hereby certify that to the best of my knowledge, the cost of the work identified on the Final Estimate represents full compensation for the actual value of work completed and that the work has been completed in accordance with the terms of the Agreement and authorized changes.

Date ENGINEER: _____

Signature: _____

Title: _____

FINAL ACCEPTANCE OF City

I, as representative of the City, accept the above Final Certifications and authorize Final Payment in the amount of \$ _____.

City: _____

Date: _____

Authorized Representative: _____

Title: _____

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City OF BURLINGTON STANDARD CONTRACT CONDITIONS

Wherever used, abbreviations may be used in place of a word or phrase and definitions may be used to interpret statements for the meaning of words phrases or expressions. The intent and meaning for abbreviations and definitions shall be interpreted as herein set forth:

AGC	Associated General Contractors of America
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
CES	Contractor Engineering Services
CFR	Code of Federal Regulations
EEO	Equal Employment Opportunity
FSS	Federal Specifications and Standards
IBC	International Building Code
IPC	International Plumbing Code
NEC	National Electrical Code
SIR	Self Insured Retention
USC	United States Code
USEPA	United States Environmental Protection Agency
VOSHA	Vermont Occupational Safety and Health Act
VSA	Vermont Statutes Annotated

1. INDEMNIFICATION:

The Contractor will act in an independent capacity and not as officers or employees of the City. The Contractor shall indemnify, defend and hold harmless the City and its officers and employees from liability and any claims, suits, expenses, losses, judgments, and damages arising as a result of the Contractor's negligent acts and/or omissions in the performance of this contract.

2. NON-APPROPRIATION

The obligations of the City to make payments under the contract during each of the City's fiscal years shall constitute a current expense of the City and shall not in any way be construed to be a debt of the City in contravention of any applicable constitutional, statutory limitation or requirement, or the City's charter, nor shall anything contained in the agreement constitute a pledge of the credit or tax revenues, funds or monies of the City. The decision whether or not to budget and appropriate funds during each fiscal year of the City is within the discretion of the governing body of the City. The obligations of the City under the contract are subject to annual appropriations by the governing body of the City.

In the event no funds or insufficient funds are appropriated and budgeted for lease payments due under this contract, the City may elect to terminate this contract in accordance with this paragraph. City's election to terminate must be exercised by delivering its prior written notice of its intent to terminate together with a certified statement by an authorized official indicating that insufficient sums have been appropriated for the ensuing fiscal year of the contract.

3. RELATIONSHIP:

The parties agree that the Contractor is an independent Contractor. To that end, the Contractor shall determine the method, details, and means of performing the work, but will comply with all legal requirements in doing so. City shall provide the Contractor with no specific instructions or training in how to provide the required services, except to the extent required by law or regulation. The Contractor shall provide its own tools, materials or equipment. The parties agree that neither the Contractor nor its Principal is an employee of City or any of its departments, agencies, or related entities. The parties also agree that neither the Contractor nor its Principal is entitled to any employee benefits from City.

Contractor understands and agrees that it and its Principal have no right to claim any benefits under the Burlington Employee Retirement System, City's worker's compensation benefits, health insurance, dental insurance, life insurance or any other employee benefit plan offered by City. The Contractor agrees to execute any certifications or other documents and provide any certificates of insurance required by the City and understands that this contract is conditioned on its doing so, if requested.

The Contractor understands and agrees that it is responsible for the payment of all taxes on the above sums and that City will not withhold or pay for Social Security, Medicare, or other taxes or benefits or be responsible for any unemployment benefits.

4. INSURANCE:

Prior to beginning any work the Contractor shall obtain the following insurance coverage from an insurance company registered and licensed to do business in the State of Vermont and having an A.M. Best insurance rating of at least A-, financial size category VII or greater (www.ambest.com). The certificate of insurance coverage shall be documented on forms acceptable to the City. Evidence of compliance with minimum limits and coverage, evidenced by a certificate of insurance showing policies and carriers that are acceptable to the City, must be received prior to the effective date of the Agreement. The insurance policies shall provide that insurance coverage cannot be canceled or revised without thirty (30) days prior notice to the City. In the event that this Contract extends to greater than one year, evidence of continuing coverage must be submitted to the City on an annual basis.

Certified copies of any insurance policies may be required. Each policy (with the exception of professional liability and workers compensation) shall name the City as an additional insured for the possible liabilities resulting from the Contractor's actions or omissions. It is agreed that the liability insurance furnished by the Contractor is primary and non-contributory for all the additional insured.

The Contractor is responsible to verify and confirm in writing to the City that:

- (a) All SUB-Contractors, agents or workers meet the minimum coverage and limits plus maintain current certificates of coverage for all SUB-Contractors, agents or workers. SUB-Contractors must comply with the same insurance requirements as the Contractor.
- (b) All coverage shall include adequate protection for activities involving hazardous materials.
- (c) All work activities related to the agreement shall meet minimum coverage and limits.

No warranty is made that the coverage and limits listed herein are adequate to cover and protect the interests of the Contractor for the Contractor's operations. These are solely minimums that have been developed and must be met to protect the interests of the City.

GENERAL LIABILITY AND PROPERTY DAMAGE:

With respect to all operations performed by the Contractor, SUB- Contractors, agents or workers, it is the Contractor's responsibility to insure that general liability insurance coverage, on an occurrence form, provides all major divisions of coverage including, but not limited to and with limits not less than:

- 1. Premises Operations
- 2. Independent ContractorS' Protective
- 3. Products and Completed Operations
- 4. Personal Injury Liability
- 5. Contractual Liability
- 6. Broad Form Property Damage
- 7. Medical Expenses
- 8. Collapse, Underground and Explosion Hazards

1. General Aggregate	\$2,000,000
2. Products-Completed/Operations	\$2,000,000
3. Personal & Advertising Injury	\$1,000,000
4. Each	\$1,000,000
5. Fire Damage (Any one fire)	\$ 250,000
6. Med. Expense (Any one)	\$ 5,000

WORKERS' COMPENSATION:

With respect to all operations performed, the Contractor shall carry workers compensation insurance in accordance with the laws of the State of Vermont and ensure that all Sub-Contractors and Sub-Contractors carry the same workers' compensation insurance for all work performed by them under this contract. Minimum limits for Employer's Liability:

- (a) Bodily Injury by Accident: \$500,000 each accident
- (b) Bodily Injury by Disease: \$500,000 policy limit, \$500,000 each employee

AUTOMOBILE LIABILITY:

The Contractor shall carry commercial automobile liability insurance covering all motor vehicles, including owned, non-owned and hired, used in connection with the agreement. Each policy shall provide coverage with a limit not less than: \$1,000,000 - Combined Single Limit for each occurrence.

UMBRELLA LIABILITY:

\$1,000,000 Each Event Limit
\$1,000,000 General Aggregate Limit

COMPLIANCE WITH LAWS

5. GENERAL COMPLIANCE WITH LAWS

The Contractor shall comply with all applicable Federal, State and local laws, including but not limited to the Burlington Livable Wage Ordinance, the Non-Outsourcing Ordinance and the Union-Deterrence Ordinance and shall provide the required certifications attesting to compliance with these ordinances (see attached ordinances and certifications).

Provisions of the Agreement shall be interpreted and implemented in a manner consistent with each other and using procedures that will achieve the intent of both parties. If, for any reason, a provision in the Agreement is unenforceable or invalid, that provision shall be deemed severed from the Agreement, and the remaining provisions shall be carried out with the same force and effect as if the severed provisions had never been a part of the Agreement.

6. CIVIL RIGHTS and EQUAL EMPLOYMENT OPPORTUNITY

During performance of the Agreement, the Contractor will not discriminate against any employee or applicant for employment because of race, age, color, religion, sex, sexual orientation, gender identity, marital status, veteran status, disability, HIV positive status or genetic information.

The Contractor shall comply with the applicable provisions of Title VI of the Civil Rights Act of 1964 as amended, Executive Order 11246 as amended by Executive Order 11375 and as supplemented by the Department of Labor regulations (41 CFR Part 60). The Contractor shall also comply with the rules, regulations and relevant orders of the Secretary of Labor, Nondiscrimination regulations 49 CFR § 21 through Appendix C, and Regulations under 23 CFR§710.405 (b). Accordingly, all subcontracts shall include reference to the above. The Contractor shall comply with all the requirements of Title 21, VSA, Chapter 5, Subchapter 6 and 7, relating to fair employment practices to the extent applicable. A similar provision shall be included in any and all subcontracts.

7. CHILD SUPPORT PAYMENTS

By signing the Contract the Contractor certifies, as of the date of signing the Agreement, that they are:

- (a) Not under an 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 ChildSupport Services and is in full compliance with that plan. If the Contractor is a sole proprietorship, the Contractor's statement applies only to the proprietor. If the Contractor is a partnership, the Contractor's statement applies to all general partners with a permanent residence in Vermont. If the Contractor is a corporation, this provision does not apply.

8. TAX REQUIREMENTS

By signing the Agreement, the Contractor certifies, as required by law under 32 VSA, Section 3113, that under the pains and penalties of perjury, he/she is in good standing with respect to payment, or in full compliance with a plan to pay, any and all taxes due the State of Vermont as of the date of signature on the Agreement

CONTRACTUAL AGREEMENTS

9. REGISTRATION: The Contractor agrees to be registered with the Vermont Secretary of State's office as a business entity doing business in the State of Vermont at all times this contract is effective. This registration must be complete prior to contract execution.

10. PERSONNEL REQUIREMENTS AND CONDITIONS: A Contractor shall employ only qualified personnel, for responsible authority to supervise the work. The City shall have the right to approve or disapprove key personnel assigned to administer activities related to the Agreement.

Except with the approval of the City, during the life of the Agreement, the Contractor shall not employ:

- (a) Personnel on the payroll of the City who are directly involved with the awarding, administration, monitoring, or performance of the Agreement or any project(s) that are the subjects of the Agreement.
- (b) Any person so involved within one (1) year of termination of employment with the City.

The Contractor warrants that no company or person has been employed or retained, other than a bonafide employee working solely for the Contractor, to solicit or secure this Agreement, and that no company or person has been paid or has an agreement with the Contractor to be paid, other than a bonafide employee working solely for the Contractor, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of the Agreement. For breach or violation of this warranty, the City shall have the right to annul the Agreement, without liability to the City, and to regain all costs incurred by the City in the performance of the Agreement.

The City reserves the right to require removal of any person employed by a Contractor, from work related to the Agreement, for misconduct, incompetence, or negligence, in the opinion of the City in the due and proper performance of its duties, or who neglects or refuses to comply with the requirements of the Agreement.

11. TRANSFERS, SUBLETTING, ETC:

A Contractor shall not assign, sublet, or transfer any interest in the work, covered by an Agreement, without prior written consent of the City and further, if any SUB-Contractor participates in any work involving additional services, the estimated extent and cost of the contemplated work must receive prior written consent of the City. The approval or consent to assign or sublet any portion of the work, shall in no way relieve the Contractor of responsibility for the performance of that portion of the work so transferred. The form of the SUB-Contractor's agreement shall be as developed by the Contractor and approved by the City. The Contractor shall ensure that insurance coverage exists for any operations to be performed by any SUB-Contractor as specified in the insurance requirements section of this agreement.

The services of the Contractor, to be performed under the Agreement, are personal and shall not be transferred without written authorization of the City. Any authorized sub agreements shall contain all of the same provisions for and attached to the original agreement with the City.

12. CONTINUING OBLIGATIONS

The Contractor agrees that if, because of death or other occurrences, it becomes impossible to effectively perform its services in compliance with the Agreement, neither the Contractor nor its surviving members shall be relieved of their obligations to complete the Agreement. However, the City may terminate the Agreement if it considers a death or incapacity of any members to be a loss of such magnitude that it would affect the firm's ability to satisfactorily execute the Agreement.

13. OWNERSHIP OF THE work

The Contractor agrees that the ownership of all studies, data sheets, survey notes, subsoil information, drawings, tracings, estimates, specifications, proposals, diagrams, calculations, EDM and other material prepared or collected by the Contractors, hereafter referred to as "instruments of professional service", shall become the property of the City as they are prepared and/or developed during execution of the Agreement. The Contractor agrees to allow access to all "instruments of professional service" at any time. The Contractor shall not copyright any material originating under the Agreement without prior written approval of the City. No publications or publicity of the work, in part or in total, shall be made without the agreement of the City, except that Contractors may in general terms use previously developed instruments of professional service to describe its abilities for a project in promotional materials.

14. PROPRIETARY RIGHTS

The parties under the Agreement hereby mutually agree that, if patentable discoveries or inventions should result from work performed under the Agreement, all rights accruing from such discoveries or inventions shall be the sole property of the Contractor. The Contractor, however, agrees to and does hereby grant to the City, the State of Vermont and the United States Government an irrevocable, nonexclusive, non-transferable, and royalty-free license to practice each invention in the manufacture, use, and disposition, according to law, of any article or material or use of method that may be developed, as a part of the work under the Agreement.

15. PUBLIC RECORDS

Any and all records submitted to the City, whether electronic, paper, or otherwise recorded, are subject to the Vermont Public Records Act. The determination of how those records must be handled is solely within the purview of City. All records considered to be trade secrets, as that term is defined by subsection 317(c)(9) of the Vermont Public Records Act, shall be identified, as shall all other records considered to be exempt under the Act. It is not sufficient to merely state generally that the proposal is proprietary or a trade secret or is otherwise exempt. Particular records, pages or section which

are believed to be exempt must be specifically identified as such and must be separated from other records with a convincing explanation and rationale sufficient to justify each exemption from release consistent with Section 317 of Title 1 of the Vermont Statutes Annotated.

16. RECORDS RETENTION

The Contractor agrees to retain, in its files, and to produce to City within the time periods requested, all books, documents, EDM, accounting records, and other evidence related to City, at any time during this Agreement and for a period of at least three (3) years after its termination. The Contractor further agrees that the City shall have access to all the above information for the purpose of reviewing and audit during the Agreement period and anytime within the aforementioned retention period. Copies of all of the above referenced information shall be provided to the City if requested. Contractor, SUB- Contractors, or any representatives performing work related to the Agreement, are responsible to insure that all data and information created or stored on EDM is secure and can be duplicated if the EDM mechanism is subjected to power outage or damage.

17. APPEARANCES:

(a) Hearings and Conferences. The Contractor shall provide professional services required by the City and necessary for furtherance of any work covered under the Agreement. Professional services shall include appropriate representation at design conferences, public gatherings and hearings, and appearances before any legislative body, commission, board, or court, to justify, explain and defend its contractual services covered under the Agreement.

The Contractor shall perform any liaison that the City deems necessary for the furtherance of the work and participate in conferences with the City, at any reasonable time, concerning interpretation and evaluation of all aspects covered under the Agreement.

The Contractor further agrees to participate in meetings with the City and any other interested or affected participant, for the purpose of review or resolution of any conflicts pertaining to the Agreement.

The Contractor shall be equitably paid for such services and for any reasonable expenses incurred in relation thereto in accordance with the Contract document.

(b) Appearance as Witness. If and when required by the City, a Contractor, or an appropriate representative, shall prepare and appear for any litigation concerning any relevant project or related Agreement, on behalf of the City. The Contractor shall be equitably paid for such services and for any reasonable expenses incurred in relation thereto, in accordance with the

Contract document.

18. CHANGES AND AMENDMENTS:

No changes or amendments of the Agreement shall be effective unless documented in writing and signed by authorized representatives of the City and the Contractor.

19. APPENDICES

The City may attach, to these specifications, appendices containing various forms and typical sample sheets for guidance and assistance to the Contractor in the performance of the work. It is understood, however, that such forms and samples may be modified, altered, and augmented from time to time by the City as occasions may require. It is the responsibility of the Contractor to ensure that they have the latest versions applicable to the Agreement.

20. EXTENSION OF TIME

The Contractor agrees to prosecute the work continuously and diligently and no charges or claims for damages shall be made by the Contractor for delays or hindrances, from any cause whatsoever, during the progress of any portion of services specified in the Agreement. Such delays or hindrances, if any, may be compensated for by an extension of time for such reasonable period as the City may decide. Time extensions shall be granted by amendment, only for excusable delays, such as delays beyond the control of the Contractor and without the fault or negligence of the Contractor.

21. SETTLEMENTS OF MISUNDERSTANDINGS

In order to prevent misunderstandings and litigation, it is mutually agreed by all parties that all questions arising under the terms of an Agreement will first be evaluated by the Local Project Manager. Should a claim be denied in whole or in part by the Local Project Manager the Contractor may appeal to the Director of Public Works, except that for claims involving payments, appeals shall be made to the Director of Parks & Recreation and the Chief Administrative Officer.

A Contractor may appeal any determination regarding the contract by filing a notice of appeal by hand delivery or courier to the Local Project Manager. The notice of appeal shall specifically state the grounds of the protest. Within seven (7) calendar days of the notice of appeal the Contractor must file the Municipality a detailed statement of the grounds, legal authorities and facts, including all documents and evidentiary statements, in support of the appeal. Evidentiary statements, if any, shall be submitted under penalty of perjury. The Contractor shall have the burden of proving its appeal by the preponderance of the evidence. Failure to file a notice of appeal or a detailed statement within the applicable period shall constitute an unconditional waiver of the right to

appeal the evaluation or qualified process and decisions thereunder.

22. FAILURE TO COMPLY WITH TIME SCHEDULE

It is mutually understood and agreed to, that neither party hereto shall be held responsible for delay in performing the work encompassed herein, when such delay is due to unforeseeable causes such as acts of God, or a public enemy, fire, strikes, floods, or legal acts of public authorities. In the event that any such causes for delay are of such magnitude as to prevent the complete performance of the Agreement within two (2) years of the originally scheduled completion date, either party may by written notice request to amend or terminate the Agreement.

23. CITY's OPTION TO TERMINATE

The Agreement may be terminated in accordance with the following provisions, which are not exclusive:

- (a) Breach of Contract. Administrative remedies - the City reserves the right to terminate a Contract for breach of Contract agreements. Termination for breach of Contract will be without further compensation to the Contractor.
- (b) Termination for Cause. The City reserves the right, upon written notice to the Contractor, to terminate the Agreement, as of a date to be specified by the City, if the Contractor fails to complete the designated work to the satisfaction of the City, within the time schedule agreed upon. The Contractor shall be compensated on the basis of the work performed and accepted by the City at the date of final acceptance of the Agreement.
- (c) Termination for Convenience. In addition to its rights and options to terminate an Agreement as provided herein, the City may, at any time prior to completion of services specified under an Agreement, terminate the Agreement by submitting written notice to a Contractor, within not less than fifteen (15) days prior to the effective date, via certified or registered mail, of its intention to do so. If the termination is for the City's convenience, payment to the Contractor will be made promptly for the amount of any fees earned to the date of the notice of termination, less any payments previously made. However, if a notice of termination is given to a Contractor prior to completion of twenty (20) percent of the estimated services, as set forth in the approved Work Schedule and progress Report, the Contractor will be reimbursed for that portion of any reasonable and necessary expenses incurred to date of the notice of termination, that are in excess of the amount earned under its approved fee to the date of said termination. Such requests for reimbursement shall be supported with factual data and shall be subject to the City's approval. The Contractor shall make no claim for additional compensation against the City by reason of such termination.

24. ACKNOWLEDGEMENTS

Acknowledgment of the City of Burlington's support must be included in any and all publications, renderings and project publicity, including audio/visual materials developed under this contract.

25. WAIVER

No waiver by City of any breach of or cause to terminate this Agreement by the Contractor shall constitute a waiver of any subsequent breach by the Contractor, and no delay in enforcement of any breach or such cause shall be deemed a waiver of that breach or cause.

OPERATIONAL STANDARDS

26. RESPONSIBILITY FOR SUPERVISION

The Contractor shall assume primary responsibility for general supervision of Contractor employees and his/her or their subcontractors for all work performed under the Contract and shall be solely responsible for all procedures, methods of analysis, interpretation, conclusions and contents of work performed under the Agreement.

27. INDEPENDENCE

The Contractor shall act in an independent capacity and not as officers or employees of the City.

28. UTILITIES

Whenever a facility or component of a private, public, or cooperatively-owned utility will be affected by any proposed construction, the Contractor will counsel with the City, plus achieve any necessary contacts and discussions with the affected owners, regarding any requirement necessary for revisions of facilities or existing installations, both above and below ground. Any such installations must be completely and accurately exhibited on any detail sheets or plans. The Contractor shall inform the City, in writing, of any such contacts and the results thereof.

29. PUBLIC RELATIONS

Whenever it is necessary to perform work in the field, particularly with respect to reconnaissance, the Contractor will endeavor to maintain good relations with the public and any affected property owners. Personnel employed by or representing the Contractor shall conduct themselves with propriety. The Contractor agrees to inform property owners and/or tenants, in a timely

manner, if there is need for entering upon private property as an agent of the City, in accordance with VSA Title 19 § 35 and §503, in order to accomplish the work under the Agreement. The Contractor agrees that any work will be done with minimum damage to the land and disturbance to the City. Upon request of the Contractor, the City shall furnish a letter of introduction to property owners soliciting their cooperation and explaining that the Contractor is acting as an agent of the City.

30. INSPECTION OF WORK:

The City shall, at all times, have access to the Contractor's work for the purposes of inspection, accounting, and auditing, and the Contractor shall provide whatever access is considered necessary to accomplish such inspections. At any time, the Contractor shall permit the City or representative for the City the opportunity to inspect any plans, drawings, estimates, specifications, or other materials prepared or undertaken by the Contractor pursuant to execution of the Agreement.

Conferences, visits to a site, or an inspection of the work, may be held at the request of any involved party or by representatives of the City.

31. RETURN OF MATERIALS

Contractor agrees that at the termination of this Agreement, it shall return to City all materials provided to it during its engagement on behalf of City.

PROJECT DEVELOPMENT AND STANDARDS

32. PLANS RECORDS AND AVAILABLE DATA

The City agrees to make available, at no charge, for the Contractor's use all available data related to the Agreement including any preliminary plans, maps, drawings, photographs, reports, traffic data, calculations, EDM, valuable papers, topographic survey, utility location plats, or any other pertinent public records.

33. DESIGN STANDARDS

Unless otherwise specifically provided for in the Agreement, or directed in writing, Contractor services, studies or designs, that include or make reference to plans, specifications, special provisions, computations, estimates, or other data necessary for construction of a designed facility, shall be in conformance with applicable portions of the following specifications, manuals, codes or regulations, including supplements to or revisions thereof, adopted and in effect prior to award of the Agreement:

(a) VAOT'S latest edition of the Standard Specifications for Construction.

(b) Other City directives and guidelines current at the time of the Agreement and as may be issued by the City during the progress of the design.

In case of any conflict with the guidelines referenced, the Contractor is responsible to identify and follow any course of direction provided by the City.

34. REVIEWS AND ACCEPTANCES

All preliminary and detailed designs, plans, specifications, estimates or other documents prepared by the Contractor, shall be subject to review and endorsement by the City.

Approval for any inspections or sequences of progress of work shall be documented by letters, memoranda or other appropriate written means.

A frequency for formal reviews shall be set forth in the Agreement. Informal reviews, conducted by the City will be performed as deemed necessary. The Contractor shall respond to all official comments regardless of their source. The Contractor shall supply the City with written copies of all correspondence relating to formal and informal reviews.

No acceptance shall relieve a Contractor of their professional obligation to correct any defects or errors in their work at their own expense.

35. BINDING NATURE AND JURISDICTION

This agreement shall be binding upon and shall inure to the benefit of the parties hereto, their successors or heirs and representatives, and assigns. This agreement shall be governed by Vermont law, and the Contractor expressly agrees to submit to the jurisdiction of the courts of the State of Vermont.

PAYMENT FOR SERVICES RENDERED:

36. PAYMENT PROCEDURES

The City shall pay, or cause to be paid to the Contractor or the Contractor's legal representative, payments in accordance with the Agreement. When applicable, for the type of payment specified in the Agreement, the progress report shall summarize actual costs and any earned portion of fixed fee.

All invoices and correspondence shall indicate the applicable project name, project number and the Agreement number. When relevant, the invoice shall further be broken down in detail between projects.

When applicable, for the type of payment specified in the Agreement, expenses for meals and travel shall be limited to the current approved in-state rates, as determined by the State of Vermont's labor contract, and need not be

receipted. All other expenses are subject to approval by the City and must be accompanied with documentation to substantiate their charges.

No approval given or payment made under an Agreement, shall be conclusive evidence of the performance of said Agreement, either wholly or in part thereof, and no payment shall be construed to be acceptance of defective work or improper materials.

The City agrees to pay the Contractor and the Contractor agrees to accept, as full compensation, for performance of all services rendered and expenses encompassed in conformance therewith, the type of fee specified in the Agreement.

Upon completion of all services covered under the Agreement and payment of the agreed upon fee, the Agreement with its mutual obligations shall be terminated.

37. PAYMENT FOR ADDITIONS OR DELETIONS

The City may, upon written notice, and without invalidating the Agreement, require any changes to, additions to, or deletions from, the originally contemplated extent of the work, prior to completion of the Agreement by means of an amendment to the original Agreement. Any adjustments of this nature shall be executed under the appropriate fee established in the Agreement, based on the adjusted quantity of work, except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such addition or deletion.

38. PAYMENT FOR EXTRA work, ADDITIONAL SERVICES OR CHANGES:

The City may, upon written notice, and without invalidating the Agreement, require changes resulting from revision or abandonment of work already performed by the Contractor or changes in the scope of work.

The value of such changes, to the extent not reflected in other payments to the Contractor, shall be incorporated in an amendment and be determined by mutual agreement, by one or more of the following:

- (a) Fixed Price. By a price that is not subject to any adjustment on the basis of the Contractor's expenses experienced in performing the work. The Contractor is fully responsible for all costs and resulting profit or loss.
- (b) Rate Schedule. By unit prices designated in the Agreement, or by unit prices covered under any subsequent Agreements.
- (c) Actual Cost. By amounts determined on the basis of actual costs incurred, as distinguished from forecasted expenditures.

No changes, for which additional fee payment is claimed, shall be made unless pursuant to a written order from the City, and no claim shall be valid unless so ordered.

The Contractor agrees to maintain complete and accurate records, in a form satisfactory to the City for all time devoted directly to same by Contractor employees. The City reserves the right to audit the records of the Contractor related to any extra work or additional services. Any such services rendered shall be subject, in all other respects, to the terms of the Agreement. When changes are so ordered, no additional work shall be performed by the Contractor until an Agreement amendment has been fully executed, unless written notice to proceed is issued by the City. Any claim for extension of time, which may be necessitated as a result of extra work or additional services and changes, shall be given consideration and evaluated insofar as it directly relates to the change.

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City OF BURLINGTON - SUPPLEMENTARY CONDITIONS

1. Maintenance of Traffic

Work shall be performed in accordance with all portions of VTrans sections 104.04, excluding 104.04(b).

2. Hours of Work

The Contractor is limited to working 7:00 AM to 4:00 PM, Monday through Friday and 7:00 AM to 4:00 PM, Saturday unless a waiver is requested in writing and is granted by the City.

3. Business/Driveway Access

The Contractor shall notify property owners or residents 24 hours in advance before blocking access to any drives. Access shall be provided to all drives during non-working hours. The Contractor shall maintain pedestrian access to homes and businesses at all times.

4. Construction Signing

The Contractor shall erect and maintain adequate construction signing for protection of the public on all Project streets and adjacent streets in accordance with Sections 104.04, 107.07, 107.08, and 107.09 of the VTrans Standard Specifications.

5. Dust Control

Work shall be performed in accordance with all portions of Sections 105.24 and 609 of the VTrans Standard Specifications.

6. Temporary Barricades

The Contractor shall provide and maintain temporary barricades in all locations where any hazard to the public may occur or as ordered by the City or to protect public safety as described in portions of Section 107 of the VTrans Standard Specifications.

7. Maintenance of Utility Services

The Contractor shall maintain all existing utility services to homes at all times except during switch-overs from existing services to new services and cooperate with utilities as described in Sections 105.7 and 107.13 of the VTrans Standard Specifications.

8. Emergency Work

Prior to the start of construction, the Contractor shall submit a list of personnel authorized and capable to operate all necessary equipment, to be contracted on call, complete with telephone numbers and addresses, should any emergency work be required within the project limits during non-working hours. If the Contractor is not available to perform the required repairs, the municipality or its assigns will perform the required work and reduce the Contract value by a like amount plus 15% administrative costs and all related expenses.

9. Explosive Materials and Use of Explosives

Work shall be performed in accordance with all portions of Sections 106.08, 107.11 and 107.12 of the VTrans Standard Specifications.

10. Utility Work

The Contractor must coordinate work and cooperate with Burlington Electric, Burlington Water, Burlington Telecom, Fairpoint, Comcast, Level 3, TelJet, and Vermont Gas, as needed. There may be an inspector from Burlington Electric Department on site, if needed.

Employees or agents of the above listed utility companies are to be allowed full and free 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 utility company. Should the Contractor desire additional adjustments of utility facilities for his or her convenience, proper arrangements shall be in conformance with subsection 105.07 and 107.13 of the VTrans Standard Specifications.

City OF BURLINGTON – GENERAL SPECIAL PROVISIONS

Standard Specifications. The provisions of the 2011 VTrans STANDARD SPECIFICATIONS FOR CONSTRUCTION, as modified herein, shall apply to this Contract unless they conflict with previously defined terms or provisions provided by the City of Burlington. In case of conflict, the City provisions shall govern.

Contract Completion Date. This Contract shall be substantially completed on or before November 15, 2018 per Substantial Completion in Agreement.

Utilities. The Contractor is advised to use caution when working around aerial or underground utilities to protect the facilities from damage.

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

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

Act No. 86 of 1987 (30 VSA Chapter 86) ("Dig Safe") requires that notice be given prior to making an excavation. It is suggested that the Permit Holder or his/her contractor telephone 1-888-344-73 at least 48 hours before, and not more than 30 days before, beginning any excavation at any location.

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.

Notice to Bidders. All temporary construction signs shall meet the following requirements:

- A. All sign stands and post installation shall be National Cooperative Highway Research Program Report (NCHRP) 350 compliant.
- B. As a minimum, roll up sign material shall have ASTM D 4956-01 Type VI fluorescent orange retro-reflective sheeting.
- C. All post-mounted signs and solid substrate portable signs shall have ASTM D 4956-01 Type VII, Type VIII, or Type IX fluorescent orange retro-reflective sheeting.
- D. All retro-reflective sheeting on traffic cones, barricades, and drums shall be at a minimum ASTM Type III sheeting.
- E. All stationary signs shall be mounted on two 4.5 kg/m (3 lb/ft) flanged channel posts or 51 mm (2 inch) square steel inserted in 57 mm (2 ¼") galvanized square steel anchors. No sign posts shall extend over the top edge of 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.

All retro-reflective sheeting on permanent signs (signs to remain after the project is completed) shall be at a minimum ASTM Type III sheeting, unless otherwise shown on the Plans.

Construction Vehicle 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 City roadways. All trucks or equipment so stopped or parked shall be at least 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 or workers will not be permitted to stop or park on the shoulders or right-of-way of the highway.

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

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

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

SECTION 101 – Definitions and Terms

101.02, Definitions, are hereby modified by deleting the existing definitions and replacing as follows:

Actual Completion Date – Date noted in the Completion and Acceptance memorandum on which designated responsible Municipal personnel have reviewed the project and determined that all Contract work is complete and all Contract requirements have been met, generally considered to be the last day the Contractor performed physical work on any contract item.

Agency – Wherever the word Agency appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean; the **City of Burlington** except when referenced to documents or publications.

Board – Wherever the term Board or Transportation Board appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean; the Transportation Board of the State of Vermont or its successor.

Chief of Contract Administration – Wherever the term Chief of Contract administration appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean the City of Burlington's Director of Parks, Recreation & Waterfront.

Construction Engineer – Wherever the term Construction Engineer appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean; the Resident Engineer and/or Full Time City Employee in Responsible Charge.

Director of Project Development – Wherever the terms Director of Project Development, director of Engineering and Construction, Director of Construction and Maintenance, Director, or Chief Engineer appears on the plans, in any specification, or in the Contract, they shall be read as and shall mean; the City of Burlington's Director of Parks, Recreation & Waterfront.

Director of Program Development – Wherever the term Director of Program Development appears on the plans, in any specification, or in the contract it shall read as, and shall mean; The City of Burlington's Director of Parks, Recreation & Waterfront.

Engineer – Wherever the term Engineer appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean; the Resident Engineer (RE).

Final Acceptance Date – Wherever the term Final Acceptance Date appears on the plans, in any specification, or in the Contract, it shall mean the date that **City of Burlington** signs the Final Completion Certificate.

Materials and Research Engineer – Whenever the term Materials and Research Engineer appears on the plans, in any specification, or in the Contract, it shall be read as, and shall mean; Resident Engineer.

Proposal Form – Whenever the term Proposal Form appears on the plans, in any specification, or in the Contract it shall be read as, and shall mean; the addenda FORM unless specifically referenced otherwise in these Special Provisions.

Regional Construction Engineer – Whenever the term Regional Construction Engineer appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean; the Resident Engineer.

Secretary – Wherever the term Secretary appears on the plans, in any specification, or in the contract it shall be read as, and shall mean; the **City of Burlington**.

State – Wherever the term State appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean; the **City of Burlington**.

ADD the following definitions:

Addendum (Addenda) – Contract revisions developed after advertisement and before opening bids.

Advertisement – A public announcement, inviting bids for work to be performed or materials to be furnished.

Agreement – The written instrument which is evidence of the agreement between **City of Burlington** and the Contractor.

Award – The formal acceptance by **City of Burlington** of a proposal.

Calendar Day – Any day shown on the calendar, beginning and ending at midnight.

Change Order – A document recommended by the Engineer, signed by the Contractor and **City of Burlington** authorizing changes in the plans or quantities or both, within the scope of the Contract, establishing the basis of payment and time adjustments for the Work affected by the changes.

Consultant Engineer – Whenever the term Consultant Engineer appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean; the registered engineer or specialist who acts for a client or City.

Completion – Completion of the project occurs when the Contractor has completed all work required by the Contract and has satisfactorily executed and delivered to the Engineer all documents, certificates and proofs of compliance required by the contract.

Contract – The written agreement between **City of Burlington** and a contractor setting out the obligations of the parties to the contract for the performance of the work described therein.

General Special Provisions – Approved additions and revisions to the Standard Specifications for Construction.

Incidental and Incidental Item – These terms are used to indicate work for which no direct payment will be made. Such work is incidental to items having contract prices, and the bid prices submitted by the contractor shall be sufficient to absorb the cost of all work designated as incidental or as incidental items.

Resident Engineer – An entity employed by **City of Burlington** to perform supervisory duties including the oversight of testing services on the project.

Invitation for Bids – An advertisement for receiving proposals for all work and/or materials on which bids are invited from prospective contractors.

Local Project Manager – A person or firm employed or appointed by **City of Burlington** to provide administrative services for the project.

City – **City of Burlington**

Prequalification:

Annual Prequalification – The Agency of Transportation process by which an entity is generally approved to bid on contracts advertised by the Local Project Sponsor. Depending on the project size annual prequalification may be the only prequalification necessary.

Prequalification Administrator – An Agency of Transportation employee charged with administration of the prequalification process for the Prequalification Committee.

Proposal – The offer of a bidder, on the prescribed form, to perform work and/or provide materials at the price quoted in the offer.

Special Provisions – Additions and revisions to the Standard Specifications for Construction, Supplemental Specifications, General Special Provisions, Plans, or other documents that are part of a particular contract.

Standard Specifications – The Vermont Agency of Transportation book entitled 2011 Standard Specifications For Construction and the specifications included therein, as approved for general and repetitive use and application in Agency/Municipal projects.

Surety – An individual or legal entity acceptable to **City of Burlington** executing the bond or bonds furnished by the bidder or contractor.

Testing Firm – An independent firm employed by **City of Burlington** or Resident Engineer to perform all sampling and testing of materials as specified in the Contract Documents.

Work – The furnishing of all labor, materials, equipment, and incidentals necessary or convenient to the successful completion of a project and the carrying out of all duties and obligations imposed by a contract.

Working Day – A calendar day during which normal construction operations could proceed for a major part of the daylight hours, and specifically excluding Sundays, and those days of the standard work week on which holidays are celebrated.

The following sections represent modifications to the VTRANS 2011 Standard Specifications for Construction

Section 105 – Control of the Work

105.03, Plans and Working Drawings, paragraph 1, part (b) Working Drawings, and subpart (3) Categories of Working Drawings, a. Fabrication Drawings, and subpart b. Construction Drawings; where the Structures Engineer is mentioned it shall mean the BPRW Director not the Agency's Structures Engineer. In addition, Construction drawings under Section 501A and 510A normally submitted to the Construction Engineer shall be submitted to both the Resident Engineer and the BPRW Director not the Agency's Structures Engineer.

The address where these drawings should be sent is:

Cindi Wright
Director Burlington Parks, Recreation & Waterfront
645 Pine Street
Burlington, VT 05401
Telephone: 802-864-0123

105.09, Construction Stakes, Part (a) Initial Layout, (b) Layout of Subgrade and (c) Permanent Marking Layout delete these paragraphs in their entirety and replace with the following:

Horizontal and vertical control information for the project shall be provided in accordance with the City of Burlington General Conditions, Section 10 SURVEY, PERMITS, REGULATIONS. The Contractor will be responsible for the accuracy and preservation of the staking.

105.20 Claims for Adjustments, (c) Claims Procedure; Delete the second, third and fourth sentence and replace with the following:

Claims must be evaluated first by the Engineer and then by the Local Project Manager. Should a claim be ruled in favor of the Contractor, it will be allowed, in whole or in part, and paid as provided in the Contract. Should a claim be denied in whole or in part by the Local Project Manager the Contractor may appeal to the governing body of the project sponsor. Should a claim be denied in whole or in part by the governing body of the project sponsor, the Contractor may appeal to the Director of Program Development.

(a) Claims Documentation Requirements; in the first sentence, replace Construction Engineer with Local Project Manager.

Section 106 – Control of Material

106.03 Samples and Tests, Add the following two paragraphs to the beginning:

A qualified independent testing firm hired directly by **City of Burlington** or indirectly by **City of Burlington** through its Resident Engineer shall be responsible for all acceptance sampling and testing of materials and completed work.

The Contractor shall be responsible for their Quality Control. The cost of their Quality Control shall be considered incidental to the payment items in the bid. Any sampling, testing, retesting, and submission of reports and certifications by the Contractor as required by the contract documents and plans shall be considered incidental to the payment items in the bid.

Change the last word in the first paragraph from Agency to **City of Burlington**.

Delete the first sentence of the second paragraph and replace with the following:

Samples will be taken and testing performed by qualified personnel of the testing firm in accordance with the requirements of the latest edition of the Vermont Agency of Transportation's Quality Assurance Program and Material Sampling Manual for Level 3.

http://vtransengineering.vermont.gov/sites/aot_program_development/files/documents/materialsandresearch/MandR2010 MSM Final 030110.pdf

Modify the last sentence of the third paragraph to read as follows:

Copies of all test results shall be forwarded directly to the Resident Engineer and the Contractor by the testing firm.

Section 108 – Prosecution and Progress

108.12 Failure to Complete Work on Time. Add the following sentence after the last sentence of paragraph (c)

“Reference Section 15 of the General Conditions provided by the City of Burlington for additional detail on liquidated damages.”

Section 641 – Traffic Control

Supplemental Information: The Contractor is hereby advised that, due to certain permitting restrictions, no construction will be allowed between Starr Farm Road and North Avenue Extension until early August, 2017 (date to be determined). The anticipated sequence of construction reflected on the Drawings is as follows:

1. Construct Segment 16 (North Avenue Extension to Winooski River Bridge)
2. Construct path between southern project limit and Killarney Drive
3. Construct path between Killarney Drive and North Avenue Extension

The Contractor may stage construction with additional phases or different sequences with the approval of the Resident Engineer, and as allowed under the project permits.

Section 651 – Turf Establishment

Section 651.04 - Add the following after the last paragraph:

Submit certificates of inspection required by law for transportation to the Resident Engineer. Inspection by governmental officials at point of origin does not preclude rejection of materials at project site.

Samples and Product Data: Prior to delivery to site, submit samples, test data, and manufacturers' literature for the following items:

1. Organic Amendments: 1 pint for each type
2. Topsoil: ½ pound
3. Soil Mixes: ½ pound for each type
4. Sand: ½ pound
5. Chemical Additives: 1 pint for each type

Labeling: Furnish standard products in unopened manufacturer's standard containers bearing original labels showing quantity, analysis and name of manufacturer.

Storage: Store products with protection from weather or other conditions which would damage or impair the effectiveness of the product.

Testing of Materials: Obtain an agricultural suitability analysis of the soil from an accredited soils laboratory at the contractors cost. The analysis shall verify the suitability of the existing soils, analyze the soil texture, organic and chemical qualities and recommend additional soil amendments beyond those specified. Additional amendments recommended by the analysis beyond those specified shall be an additional cost. A minimum of three (3) samples shall be taken from the site. Submit soils analysis and recommendations to the Resident Engineer for acceptance. Amend topsoil per accepted soils analysis report.

The soil amendments currently specified will be the minimum incorporated. Remove rejected materials immediately from the site at Contractor's expense. Contractor shall pay cost of all on-site soil testing and of materials not meeting specifications.

Moisture Content: Do not work soil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in air or that clods will not break readily. Apply water, if necessary to bring soil to an optimum moisture content for tilling and planting. Maintain within 2 percent above or below optimum moisture content at all times during the work.

Clearing of Debris: Clear all planting areas of stones 2 inches in diameter and larger, weeds, debris and other extraneous materials prior to amending existing soil and incorporating imported topsoil.

Cultivation: Rip or cultivate all areas to be soil conditioned to a depth of 6 in. for all lawn and grass area and 18" for all perennial and ground cover immediately prior to amending existing soil.

Trees to Remain: Hand cultivate within the dripline of existing trees to remain. Depth of cultivation shall not exceed 2 inches. Cultivate immediately prior to amending existing soil.

Notification: Submit to the Resident Engineer in writing all soils or drainage conditions considered detrimental to growth of plant materials. State condition and submit proposal and cost estimate for correcting condition.

Section 651.05 –Add the following after the last paragraph:

Responsibility:

1. Contractor shall be responsible for proper repair to landscape, utilities, fences, pavements and other site improvements damaged by seeding operations under this Section.
2. Contractor shall pay for repairs to existing site improvements damaged during construction at no cost to the City.
3. Contractor shall identify prepared sod areas requiring protection and shall provide traffic control.

Clearing: Prior to any soil preparation, existing vegetation not to remain and which might interfere with the specified soil preparation shall be mowed, grubbed, raked, and the debris removed from the site. Prior to or during grading or tillage operations, the ground surface shall be cleared of materials which might hinder final operations.

Seeding Areas: Remove weeds, debris, rubble, rocks, and plant material larger than 1/2" not scheduled to remain.

Repair: Re-establish grade and specified conditions to existing or damaged sod areas prior to placing sod. Provide smooth grade transitions at interface with existing sod areas.

Fine Grading: Perform as required to maintain positive drainage, prevent ponding and direct run-off into catch basins, drainage structures, etc., and as required to provide smooth well-contoured surface prior to proceeding. Tolerance: +/-0.10 ft.

Prior to seeding low maintenance grasses, irrigate for a minimum of three weeks to allow germination of weed seeds.

Turf Soil Preparation: Spread the following amendments over the entire irrigated turf and incorporate into the top four inches of soil by discing or roto-tilling until a uniform mixture is obtained with no pockets of soil or amendments remaining. Fertilizer and conditioners shall be applied as required by test results of topsoil.

Subsequent Applications: Distribute fertilizer uniformly at a rate of 1 lb. actual nitrogen per 1,000 S.F. using 20-5-10 with at least 50% Sulfur coated Urea. (Note: This fertilizer application only applies if project has not been accepted by the Resident Engineer by this date).

Section 651.06 – Replace the entire Section with the following:

Topsoil –

- A. General Qualifications: Use as a planting medium for the project only fertile, friable, well-drained soil, of uniform quality, free of stones over 1 in. diameter, sticks, oils, chemicals, plaster, concrete, pests and infestations and other deleterious materials. Conduct soil analysis and submit soil analysis as indicated above in "Testing of Material" for imported topsoil.
 1. Spread topsoil to achieve a uniform depth of 6" for lawn areas.
 2. Apply topsoil using a hand roller to lightly compact topsoil.
 3. Confirm topsoil meets all testing requirements.

- B. Organic Matter: All topsoil shall be tested and have a minimum organic matter content of 2.5%. Contractor shall amend topsoil that does not meet this requirement and retest at contractor's cost.
- C. Samples: The Resident Engineer reserves the right to take samples of imported topsoil delivered to the site for conformance to the Specifications and have it tested at the Contractor's expense.
- D. Rejected Topsoil: Immediately remove rejected topsoil off the site at Contractor's expense.
- E. Stockpiling: If stockpiling is requested, locations and amounts of stockpiles will be designated by the Resident Engineer.

Fine Sand –

- A. Physical Properties (dry weight basis):

Percent Passing	Sieve Size
100	4.76 mm (4, 4 mesh)
95-100	1.00 mm (#18, 16 mesh)
65-100	500 micron (#35, 32 mesh)
0- 50	250 micron (#60, 60 mesh)
0- 20	105 micron (#140, 150 mesh)
0- 5	53 micron (#270, 270 mesh)

- B. Chemical Properties:
 - 1. Salinity: The saturation extract conductivity shall not exceed 3.0 milliohms/cm @ 25 degrees C.
 - 2. Boron: The concentration in the saturation extract shall not exceed 1.0 ppm.
 - 3. Sodium: The sodium absorption ratio (SAR) as calculated from analysis of the saturation extract shall not exceed 6.0.

Chemical Additives –

The following additives may or may not be used depending on the outcome of the soils agricultural suitability report.

- A. Ground Limestone: Agricultural limestone containing not less than 85% of total carbonates, ground to such fineness that 50% will pass #100 sieve and 90% will pass #20 sieve.
- B. Dolomite Lime: Agricultural grade mineral soil conditioner containing 35% minimum magnesium carbonate and 49% minimum calcium carbonate, 100% passing #65 sieve. "Kaiser Dolomite 65 AG" as manufactured by Kaiser, Inc. Mineral Products Department, or equal.
- C. Gypsum: Agricultural grade product containing 80% minimum calcium sulphate.
- D. Iron Sulfate (Ferric or Ferrous): Supplied by a commercial fertilizer supplier, containing 20% to 30% iron and 35% to 40% sulphur.

- E. Sulphate of Potash: Agricultural grade containing 50% to 53% of water-soluble potash.
- F. Single Superphosphate: Commercial product containing 20% to 25% available phosphoric acid.
- G. Ammonium Sulphate: Commercial product containing approximately 21% ammonia.
- H. Ammonium Nitrate: Commercial product containing approximately 34% ammonia.
- I. Calcium Nitrate: Agricultural grade containing 15-1/2% nitrogen.
- J. Urea Formaldehyde: Granular commercial product containing 38% nitrogen.
- K. I.B.D.U. (Iso-Butyldiene Diurea: Commercial product containing 31% nitrogen.

Section 651.08(a) - Add the following after the last paragraph:

Seed Materials: Subject to inspection and acceptance. Resident Engineer reserves the right to reject prior to acceptance, any work and seed materials which in the opinion of the Resident Engineer fails to meet the specifications. Deliver seed to site in original unopened container bearing manufacturer's guaranteed seed analysis, name, trade name, trademark, warranty and conformance to state law.

1. Material shall be inspected by the Resident Engineer upon arrival at job site. Primarily for quality; however, other requirements are not waived even though visual inspection results in acceptance. Inspection will be made daily during seeding operations, at completion and at end of warranty period by Resident Engineer.
2. Store seed in cool, dry place prior to application.
3. Unacceptable materials shall be immediately removed from job site.

Seed Certificates: State, Federal and other inspection certificates shall accompany the invoice for materials showing source or origin. Submit to Resident Engineer prior to acceptance of material.

Notification: Give notice requesting inspection by Resident Engineer at least 7 days prior to the anticipated date of completion. All sod must be alive and healthy in order to be considered complete.

Maintenance: The maintenance period shall begin immediately after each area is seeded and continue until final acceptance of entire project, which is one year from date of accepted substantial completion. During this time, the Contractor shall be responsible for watering, mowing, spraying, weeding, aerating, fertilizing, and all related work as necessary to ensure that seeded areas are in a vigorous growing condition. Furnish all supervision, labor, material and equipment to maintain turf areas, including winterization and start-up procedures. Seed shall be visibly germinated in twenty days, with 50% coverage in 45 days and 90% coverage in 60 days. Any deficiency shall be reseeded until a suitable coverage is achieved.

Watering: Initially water seeded areas upon completion of convenient work areas until installation is complete. Water seeded areas sufficiently to moisten subsoil at least 4" deep in a manner not to cause erosion or damage to adjacent finished surfaces. Water shall be free of substances harmful to plant growth. For frequency of watering, see the Landscape Maintenance specification.

Fertilizers: Deliver inorganic or chemical fertilizer to site in original unopened container bearing manufacturer's guaranteed chemical analysis, name, trade name, trademark, warranty and conformance to state law. Furnish delivery receipts for all organic and chemical fertilizers used to the Resident Engineer.

1. Material shall be inspected upon arrival at job site.
2. Immediately remove unacceptable material from job site.

If work has not received final acceptance within 45 days after initial fertilizer application to seeded areas, repeat fertilizer application to maintain optimal vigor.

Mowing and Trimming: Mow and trim around trees (keeping mulch in saucers and beds), walls, fences, etc., maintaining turf at 2" to 2-3/4" height. Do not remove more than 33% of grass leaf in single mowing. Remove grass clippings from pavement areas.

Re-seeding: All seeded grass areas are to be assured of obtaining a satisfactory stand of growth. The total area occupied by bare spots larger than 0.5 square feet must not exceed ten percent (10%) of the total seeded area. Maximum single bare spot size of non-irrigated seed is two (2) square feet. All seeded grass areas which do not meet the satisfactory stand of growth qualification shall be reseeded with additional straw mulch applied by mechanical crimper. Re-seed areas in May following initial seeding that in the opinion of the Resident Engineer are not adequately established.

After one growing season, there shall be no visual difference between seed and healthy non-irrigated seed areas.

Insect and Disease Control: As required, using insecticides and fungicides approved by City.

Section 651.08(b)2. - Add the following after the last paragraph:

- A. Wood Cellulose Fiber Mulch: Wood cellulose fiber mulch shall be for use with hydraulic application of grass seed and fertilizer. Fiber shall not contain germination or growth inhibiting factors. It shall be dyed an appropriate color to allow visual metering of its application. The fiber shall be sprayed uniformly on the soil surface, providing a cover that readily absorbs water and infiltration to the soil below. Suppliers shall be prepared to certify that laboratory and field testing of their product has been accomplished, and that it meets all of the foregoing requirements.
 1. Hydraulic Mulch: "Silva-Fiber" manufactured by Weyerhaeuser Company.
 2. Tackifier: "M-Binder" manufactured by Ecology Controls.
- B. Fertilizer for Tank Mix: Shall be 13-13-13 grade, pelleted, uniform in composition, free-flowing, and suitable for application with approved equipment. Fertilizer shall be delivered to the site fully labeled, conforming to the applicable state fertilizer laws, and bearing the name or trademark and warranty of the producer.
- C. Site inspection and review: Verify that existing site conditions are as specified and indicated before beginning work under this section. Verify layout of seeded areas as indicated prior to starting operations. Verify fine grading is complete and accepted by the City and is within +/- 0.10 ft. of grades indicated on plans.
- D. Unsatisfactory Conditions: Furnish analytical data for all hydraulic mulch to the Resident Engineer. Report in writing to City with copy to Resident Engineer.

- E. Beginning of work in this section implies acceptance of existing conditions by the Contractor.
- F. Hydraulic Mulch all seeded areas. Mix ingredients to form a homogeneous slurry. Using the color of the mulch as a metering agent, spray the slurry mixture uniformly over the designated seeded area.
- G. The mixture shall be applied at a rate of 2,000 lbs. per acre for Silva-Fiber, 800 lbs. per acre for fertilizer, and of 70 lbs. per acre for M-Binder.
- H. Hydraulic Mulch shall not be done in the presence of surface water. Thoroughly clean site amenities after mulching.

Section 656 – Planting Trees, Shrubs and Vines

Replace Section 656 – Planting Trees, Shrubs and Vines, in its entirety, with the following:

PART 1 - GENERAL

1.01 DESCRIPTION

This work shall consist of furnishing, transporting, planting, and transplanting various size trees, shrubs, vines, perennials, and ground cover plants.

1.02 QUALITY ASSURANCE

- A. Certificates:
 - 1. Submit certificates of inspection as may be required by local law for transportation of each shipment of plants along with invoice to the Resident Engineer. Inspection by Federal or State Governments at place of growth does not preclude rejection of plants at project site.
- B. Applicable Standards: Apply standards for plant materials as described in the following:
 - 1. "American Standard for Nursery Stock," May 2, 1986 Edition, American Association of Nurserymen, Inc. This Section shall supersede these criteria in the event of contradiction or ambiguity.
 - 2. Hortus III - 1976 Edition, Bailey Hortorium, Cornell University.

1.03 PROTECTION OF EXISTING PLANTS TO REMAIN

- A. General:
 - 1. Contractor shall make every effort to minimize or prevent tree damage that may result from proposed construction activities.
 - 2. Trees to be saved are identified in the Drawings. Contractor shall not damage or remove these trees without written authorization by the Resident Engineer. Additional trees not shown on the Drawings may be identified during construction.

- B. Soil Compaction:
1. To prevent soil compaction, designated routes for equipment and foot traffic by work crews shall be predetermined prior to commencing construction activities. These routes shall be marked at the site, before construction commences, with durable fencing material that is a minimum of four feet in height (flagging tape or any other material that may be torn down, moved, or accessed through is not acceptable).
 2. It shall be the responsibility of the project supervisor to inform all construction crew members of access route location, and to ensure that only these routes are used.
 3. To prevent tree root smothering, soil, supplies, equipment or any other material shall not be piled within dripline. Material shall not be placed within dripline or less than 15 feet from trunk, whichever is greater, of pyramidal or columnar shaped trees.
 4. No heavy objects such as wood pallets, metal railings, etc., shall lean against or come into contact with the tree trunk.
- C. Tree Fencing:
1. Fencing material shall encircle any tree whose outer dripline edge is within 20 feet of any construction activities.
 2. Fencing material shall be a bright, contrasting color, durable, and a minimum of four feet in height (See Figure 2). Posts used shall be comparable to metal T-post or heavier weight, and placed to a depth or no less than two feet below ground level.
 3. Fencing material shall be placed at the drip line or 15 feet from tree trunk, whichever is greater, and maintained in an upright position throughout the duration of construction activities.
- D. Attachment of Foreign Materials to Trees: The attachment or installation to trees of any metal material, sign, cable, wire, nail, swing, or any other material that is foreign to the natural structure of the tree, is prohibited. Standard arboricultural techniques (such as bracing and cabling) that are performed by tree professionals are excepted.
- E. Maintenance Requirements:
1. Additional maintenance may be required by Contractor for all existing trees in close proximity to construction activities to reduce stress related tree problems.
 2. Root Protection:
 - a. Trees having roots cut between the months of March and August may be required to receive supplemental deep root watering once per week for a minimum of two months after the date of the root cut. When roots are cut between September 1 and October 15, supplemental watering is needed once per week until October 31.
 - b. Tree roots shall not be fertilized for a period of one year following the cessation of construction activities.
 3. Compaction Mitigation:
 - a. Soil around tree drip line shall be aerated before and after construction activities. This is necessary even when compaction results from heavy foot traffic. Conventional turf aeration equipment is acceptable, although the Resident Engineer may approve deeper aeration.
 - b. When foot traffic or equipment use is unavoidable within the drip line, the area within drip line shall be mulched with wood chips to a depth of six inches prior to construction activity. Six-inch mulch depth shall be maintained for the duration of the project, and

shall be removed upon completion.

4. Pruning: No pruning shall occur during or after construction activities except for the removal of dead or damaged branches, or to prevent branch damage. Pruning of healthy branches shall be delayed for a period of two years.

1.04 SUBMITTALS

- A. Samples: Submit prior to delivery to site. Attach product name, address of manufacturer and/or supplier to each sample.
 1. Mulch: One (1) pint.
 2. Nylon Tree Strap: One (1)

1.05 SELECTION, TAGGING AND ORDERING OF PLANT MATERIAL

- A. Documentation: Submit documentation within 60 days after Notice to Proceed that all plant materials have been ordered. Arrange procedure for review of plant materials at time of submission.
- B. Review: Request for review of plant materials and quantity at place of growth or from nursery shipment site at least 7 days in advance of shipping to site. Right is reserved to refuse review at this time if, in Resident Engineer's judgment, a sufficient quantity of plants is not available.
- C. Transportation: Contractor shall accompany Resident Engineer to all review(s) of plant materials at the nursery. Resident Engineer will review and tag plants at place of growth and upon delivery for conformity to specifications.
- D. Distant Material: Submit photographs with a person adjacent to plants for preliminary review. Such review shall not impair the right of review and rejection during progress of the work.
- E. Unavailable Material: If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of Contract price. Substantiate such proof in writing no later than 20 days after award of contract. Approval of late substitutions is at the sole discretion of the Resident Engineer.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Labeling: Furnish products in manufacturer's standard containers bearing original labels legibly showing quantity, analysis, genus/species and name of manufacturer/grower.
- B. Storage: Store products with protection from weather or other conditions that would damage or impair the effectiveness of the product. Protect metal containers from sun during summer months with temperatures above 80 degrees F. Protect plants from sun or drying winds. Keep plants that cannot be planted immediately upon delivery in the shade, well-protected and well-watered. Heel in and protect with burlap all B&B plant materials which cannot be planted upon delivery.
- C. Handling: Do not lift or handle container plants by tops, stems or trunks at any time. Do not bind or handle plants with wire or rope at any time.

- D. Anti-Desiccant: At Contractor's option, spray all evergreen or deciduous plant material in full leaf immediately before transporting with anti-desiccant. Apply an adequate film over trunks, branches, twigs and foliage.
- E. Digging: Dig ball and burlap plants with firm, natural balls of earth of diameter not less than that recommended by USDA Standard for Nursery Stock, and of sufficient depth to include the fibrous and feeding roots.

1.07 ANALYSES OF SAMPLES AND TESTS

- A. Sampling: Right is reserved to take and analyze samples of materials for conformity to specifications at any time. Furnish samples upon request.
- B. Rejected Materials: Remove rejected materials immediately from the site at Contractor's expense. Pay cost of testing of materials not meeting specifications.

1.08 MAINTENANCE PERIOD AND FINAL ACCEPTANCE

- A. Work Included specifically included for maintenance includes:
 - 1. Watering, pruning, weed control and replacement of mulch for trees, shrubs, groundcovers, and perennials.
 - 2. Mowing, edging, fertilization, watering and weed control within turf areas.
 - 3. Winter watering as required.
 - 4. Monthly site inspection of potential insect, pest and disease problems and filing of monthly status report.
 - 5. Weekly clean-up of trash, litter and debris.
- B. Work which may be required under this Section, but which if required will be considered a claim for extra work (see General Conditions), include the following:
 - 1. Insect, pest and disease control.
 - 2. Plant replacement due to theft, vandalism, or accidental damage by others after final acceptance. (Supplemental unit prices will apply for one (1) year following final acceptance).
 - 3. Repair of damages to the irrigation system which have not been caused by Contractor's maintenance practices or negligence.
- C. Work Force
 - 1. Experience: The landscape maintenance firm shall have a full-time foreman assigned to the job for the duration of the contract. He shall have a minimum of four years' experience in landscape maintenance supervision, with experience or training in entomology, pest control, soils, fertilizers and plant identification.
 - 2. Labor Force: The landscape maintenance firm's labor force shall be thoroughly familiar and trained in the work to be accomplished.
 - 3. Supervision: The foreman shall directly supervise the work force at all times. Notify Resident Engineer of all changes in supervision.
 - 4. Identification: Provide proper identification at all times for landscape maintenance firm's vehicles and labor force.

- D. Submittals - Submit copies each of the following items to the Resident Engineer:
1. Schedule of maintenance operations and monthly status report including list of all equipment and materials proposed for the job.
 2. All licenses and insurances required by the local governing authority and the State of Vermont pertaining to this work.
 3. Monthly record of all herbicides, insecticides and disease control chemicals used for the project.
- E. Project Conditions
1. Site Visit: At beginning of maintenance period, visit and walk the site with the Resident Engineer to clarify scope of work and understand existing project/site conditions.
 2. Documentation of Conditions: Document general condition of existing trees, shrubs, vines, groundcovers and lawn recording all plant materials which are damaged or dying, if any.
- F. Scheduling
1. Perform all maintenance during hours mutually agreed upon between City and Contractor.
 2. Work force shall be present at the project site at least once a week and as often as necessary to perform specified maintenance in accordance with the approved maintenance schedule.
- G. Fertilizers
1. Tightly-compressed, slow-release and long-lasting complete fertilizer tablets bearing manufacturer's label of guaranteed analysis of chemicals present.
 2. Balanced, once-a-season application controlled-release fertilizers with a blend of coated prills which supply controlled-release nitrogen, phosphorus and potassium, and uncoated, rapidly soluble prills containing nitrogen and phosphorous.
- H. Execution
1. Duration: Continuously maintain each plant and each portion of groundcover area after installation, during progress of work, and for a period of 90 days after completion of all planting work following Final Acceptance.
 2. Protection:
 - a. Protect all planting areas from damage of all kinds from beginning of work until Final Acceptance.
 - b. Maintenance includes temporary protection fences, barriers and signs as required for animal protection.
- I. Replacements
1. Immediately treat or replace plants which become damaged or injured due to Contractor's operations or negligence, as directed by Resident Engineer at no additional cost to City.
 2. Replacement plants shall be of acceptable size, condition and variety.
- J. Watering Basins
1. Maintain all watering basins around plants so that enough water can be applied to establish moisture through major root zones.
 2. For supplemental hand watering, use a water wand to break the water force. Do not permit crown roots to become exposed to air through dislodging of soil and mulch.

3. Water as frequently as necessary to maintain healthy growth of trees. The amount and frequency of irrigation will depend on several factors, amount of rainfall, daily temperatures, wind conditions, moisture-holding capacity of soil, and drainage.
 4. Maintain original depth of mulch to reduce evaporation and frequency of watering.
 5. In rainy season, open basins to allow surface drainage away from the root crown where excess water may accumulate. Restore watering basins at end of rainy season.
- K. Resetting - Reset plants to proper grades or upright position.
- L. Weed Control
1. All areas between plants, including watering basins, shall be weed free.
 2. Control weeds through proper cultural practices including cultivation, hand removal and hoeing, being careful to avoid damage to plant material.
 3. Proceed with the application of pre-emergent and selective systemic herbicides only at the approval of the City's Representative.
- M. Pruning
1. Prune trees to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached, and which have vertical spacing of 18 in. to 48 in. in radial orientation so as not to overlay one another.
 2. Prune trees to eliminate diseased or damaged growth, and narrow V-shaped branch forks that lack strength. Reduce toppling and wind damage by thinning out crowns.
 3. Prune trees to maintain growth within space limitations, maintaining a natural appearance and balancing crown with roots.
 4. Stripping of lower branches ("raising up") of young trees will not be permitted.
 5. Retain lower branches in a "tipped back" or pinched condition to promote caliper trunk growth (tapered trunk). Do not cut back to fewer than six buds or leaves on such branches. Only cut lower branches flush with the trunk after the tree is able to stand erect without staking or other support.
 6. Thin out and shape evergreen trees when necessary to prevent wind and storm damage. Do primary pruning of deciduous trees during the dormant season. Do not permit any pruning of trees prone to excessive "bleeding" during growth season.
 7. Prune damaged trees or those that constitute health or safety hazards at any time of year as required.
 8. Make all cuts clean and close to the trunk, without cutting into the branch collar. "Stubbing" will not be permitted. Cut smaller branches flush with trunk or lateral branch. Make larger cuts (1 in. in diameter or larger) parallel to shoulder rings with the top edge of the cut at the trunk or lateral branch.
 9. Branches too heavy to handle shall be precut in three stages to prevent splitting or peeling of bark. Make the first two cuts 18 in. or more from the trunk to remove the branch. Make the third cut at the trunk to remove the resulting stub.
 10. Do not prune or clip shrubs into balled or boxed forms unless specifically called for by design.
- N. Staking or Guying of Trees
1. Inspect stakes and guys at least once a month to check for rubbing that causes bark wounds.
- O. Maintenance of Existing Trees and Shrubs to Remain
1. General: Conform to all applicable paragraphs regarding pruning, watering, spraying and

fertilizing of new plant materials as specified in this section.

2. Be alert to symptoms of construction damage to root systems of existing trees and shrubs as evidenced by wilting, unseasonal or early flowering or loss of leaves, and insect or disease infestation due to declining vigor.
3. Give notification in writing of all evidence of declining tree or shrub vigor immediately upon discerning the problem. Take appropriate interim measures to mitigate the severity of the problem as specified in this section.
4. Submit written proposal and cost estimate for the correction of all conditions before proceeding with permanent correction work.

P. Seeded Grasses

1. Watering
 - a. Water lawns at such frequency as weather conditions require, to replenish soil moisture to 6 in. below root zone.
 - b. Provide a total of 1 in. of water weekly during hot summer weather, in two (2) applications per week.
 - c. Water at night if irrigation system is electrically controlled. Otherwise, watering shall be done during early mornings.
2. Weed Control - Control broadleaf weeds, primarily Canadian Thistle.
3. Mowing and Edging - Mow grasses as directed by the City.
4. Reseeding of Lawn Areas - Match existing seed mix of adjacent areas.
5. Renovating - Top dress with 1/4" of compost in early spring.

Q. Perennials

1. Watering
 - a. Species, sizes of plants, container sizes and orientation shall dictate frequency of watering. Submit to City a watering schedule for different seasonal requirements.
2. Weed Control - All planting beds with perennials shall be weed-free at all times.
3. Pruning
 - a. Limit pruning to removal of damaged or dead twigs and foliage.
 - b. Remove spent flowers on a weekly basis.

R. Insects, Pests, and Disease Control

1. Inspection: Inspect all plant materials for signs of stress, damage and potential trouble from the following:
 - a. Presence of insects, moles, voles, gophers, ground squirrels, snails and slugs in planting areas.
 - b. Discolored or blotching leaves or needles.
 - c. Unusually light green or yellowish green color inconsistent with normal green color of leaves.
2. Personnel: Perform spraying for insect, pest and disease control only by licensed, qualified, trained personnel.
3. Application: Spray with extreme care to avoid all hazards to any person or pet in the area or adjacent areas.

S. The 90-Day Maintenance Period

1. **Preliminary Review: As soon as all plantings are completed per Contract Documents, hold a preliminary review to determine the condition of the work.**

2. **Date of Review: Submit a written request at least five (5) working days prior to anticipated date of review.**
3. **Beginning of the 90 Day Maintenance Period: The date on which the Resident Engineer issues a letter of Final Acceptance to the Contractor.**

T. Final Acceptance

1. Acceptance:
 - a. Work will be accepted by the Resident Engineer upon satisfactory completion of all work, including maintenance period, but exclusive of replacement of materials under the Warranty Period.
 - b. Submit a written request to Resident Engineer for review of Final Acceptance at least five (5) working days prior to anticipated Final Review date, which is at the end of the Maintenance Period.
2. Corrective Work:
 - a. Work requiring corrective action or replacement shall be performed within ten (10) calendar days after the Final Review.
 - b. Perform corrective work and materials replacement in accordance with the Drawings and Specifications, and shall be made by the Contractor at no cost to the City.
 - c. After corrective work is completed, the Contractor shall again request a Final Review for Final Acceptance as outlined above.
 - d. Continue maintenance of all landscaped areas until all corrective measures have been completed and accepted.
3. Conditions for Acceptance of Work at End of Maintenance Period:
 - a. Each plant shall be alive and thriving, showing signs of growth and no signs of stress, disease, or any other weaknesses.
 - b. All plants not meeting these conditions shall be replaced and a 90 Day Maintenance Period commenced for such plants.
4. Final Acceptance Date: The date on which the Resident Engineer issues a Letter of Final Acceptance. Upon Final Acceptance, the City will assume responsibility for maintenance of the work.

1.09 WARRANTY PERIOD

- A. Warranties - Warranty period shall begin when Resident Engineer issues letter for Final Acceptance:
 1. Correct Species: Warrant that all plant materials are true to species and variety.
 2. Vigor: Warrant that all trees and shrubs planted (except those species specifically noted below) under this Contract will be healthy and in flourishing condition of active growth one year from date of Final Acceptance. Similarly, warranty perennial and groundcover for two (2) full growing season from date of Final Acceptance.
- B. Delays: All delays in completion of planting operations that extend the planting into more than one planting season shall extend the Warranty Period correspondingly.
- C. Condition of Plants: Plants shall be free of dead or dying branches and branch tips, with all foliage of a normal density, size and color.
- D. Replacements: As soon as weather conditions permit, replace, without cost to City all dead

plants and all plants not in a vigorous, thriving condition, as determined by Project Manager during and at the end of Warranty Period. Replacement trees shall have similar warranty for one year from date of replacement planting.

- E. Exclusions: Contractor shall not be held responsible for failures due to neglect by City, vandalism, etc., during Warranty Period. Report such conditions in writing to the Resident Engineer.

1.10 REPLACEMENTS

- A. Guarantee: For a period of one (2) years after final acceptance of all work and at no additional cost to the City, the Contractor is to replace any new or transplanted plant material that is dead, or that is, in the opinion of the Resident Engineer, in unhealthy or unsightly condition, or that has lost their natural shape due to dead branches or excessive pruning of dead branches, or that has been damaged beyond repair due, in the judgment of the Resident Engineer, to inadequate maintenance and/or protection from animal damage or the natural elements.
- B. Failed Materials:
 - 1. Plant materials exhibiting conditions which are determined as being unacceptable due to workmanship by the Contractor shall be repaired and/or replaced at no additional cost to the City as determined by Resident Engineer.
 - 2. Closely match replacements to adjacent specimens of the same species. Apply all requirements of this Specification to all replacements.
 - 3. Contractor shall be held responsible for a maximum of two (2) replacements for each failed tree and shrub after final acceptance during warranty period.
- C. Incorrect Materials:
 - 1. During Warranty Period, replace at no cost to City all plants revealed as being untrue to name.
 - 2. Provide replacements of a size and quality to match the planted materials at the time the mistake is discovered.
- D Existing Tree Protection: In addition to any other criminal or civil penalty, if , as the result of the violation, the injury, mutilation, or death of a tree, shrub, or other plant located on the City's property is caused, the cost of repair or replacement of such tree, shrub, or other plant shall be borne by the party in violation. Replacement value of trees and shrubs shall be determined in accordance with the latest revision of "Valuation of Landscape Trees, Shrubs, and Other Plants," as published by the International Society of Arboriculture.

PART 2 – PRODUCTS AND MATERIALS: In accordance with Section 656.02, and as follows:

2.01 PLANT MATERIALS

- A. General: Verify that all container stock has been grown in the containers in which delivered for at least two (2) months, but not over two (2) years for shrubs or one (1) year for perennials. Do not install container plants that have cracked or broken balls of earth when taken from container.
 - 1. Growing Conditions: Plants shall be nursery-grown in accordance with good horticultural practices under similar climatic conditions to those of the project for at least two years

unless otherwise specifically authorized. Collected material shall be identified for approval by the Resident Engineer.

2. Appearance: All plants shall be exceptionally heavy, symmetrical, tightly knit, and so trained or favored in development and appearance as to be superior in form for their species, with regard to number of branches, compactness and symmetry.
3. Vigor: Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs, or larvae. They shall have healthy, well-developed root systems. Plants shall be free from physical damage or adverse conditions that would prevent thriving growth.

B. Condition of Root System: Samples must prove to be completely free of circling, kinked or girdling trunk surface and center roots and show no evidence of a root-bound condition.

C. Measurements:

1. General: Measure plants when branches are in their normal upright position. Height and spread dimensions specified refer to main body of plant and not branch tip to tip. Take caliper measurement at a point on the trunk 6 in. above natural ground line for trees up to 4 in. in caliper and at a point 12 in. above the natural ground line for trees over 4 in. in caliper. Evergreen trees shall be measured from the base of the tree to the midpoint of the top central leader.
2. Size Range: If a range of size is given, do not use plant materials less than the minimum size. Not less than 40 percent of the plants shall be as large as the maximum size specified. The measurements specified are the minimum size acceptable and are the measurements after pruning, where pruning is required. Plants that meet the measurements specified, but not possess a normal balance between height and spread shall be rejected.
3. Substitutions: Substituted plants shall be true to species and variety and shall conform to measurements specified except that plants larger than specified may be used if accepted. Use of such plants shall not increase Contract price. If larger plants are accepted, increase the ball of earth in proportion to the size of the plant.

D. Pruning: Do not prune plants before delivery.

E. Condition: Trees which have multiple leaders, unless specified, or damaged or crooked leaders, will be rejected. Trees having a main leader shall not have been headed back. Trees with abrasions of the bark, sunscalds, disfiguring knots, or fresh cuts of limbs over 3/4 in. which have not completely callused, will be rejected.

2.02 COMMERCIAL FERTILIZERS

A. Top-dress Fertilizer: Complete fertilizer, 50 percent of the nitrogen to be derived from natural organic sources or urea-form. Available phosphoric acid shall be from superphosphate, bone or tankage. Potash shall be derived from muriate of potash containing 60 percent potash:

16% Nitrogen
6% Phosphoric Acid
8% Potash

B. Perennials: Diammonium Phosphate (18-46-0).

2.03 STAKING MATERIALS

- A. Tree Stakes: Rough-sawn, sound, new hardwood, free of knots, holes, cross grain, and other defects, 2 by 2 inches by length indicated, pointed at one end.
- B. Wire Ties: 11 gauge, single strand, galvanized steel.
- C. Nylon Straps: 2" X 12" wide nylon/cotton weave with ¾" grommet at each end as accepted by Resident Engineer.

2.04 GUYING MATERIALS

- A. Anchor and Hardware:
 - 1. Standard Steel 'T' posts, dark green; 2'-6" long. Cut flush to the ground after guying trees.
 - 2. Hardware: 11 gauge, single strand, galvanized steel wire ties with rubber, two-ply, dark-colored, ½"- 5/8" diameter protective hose loops or approved equal.
 - 3. Plastic Guy Covers: 3/8 in. diameter x 3 ft. long white plastic tubing. Provide for all guyed installations as identified in the field by the Resident Engineer.
 - 4. Provide for all guyed installations of evergreen trees.

2.05 TREE PROTECTION MATERIALS

- A. Tree Wrap: Tree wrapping material shall be first quality, 4" wide bituminous, impregnated tape, corrugates or crepe brown paper, specifically manufactured for tree wrapping and having a quality to resist insect infestation.

2.06 MULCH

- A. Organic mulch, free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 - 1. Type: Ground or shredded hemlock bark, dark brown in color.

2.07 ANTI-DESICCANT

- A. Type: Anti-desiccants for retarding excessive loss of plant moisture and inhibiting wilt shall be sprayable, water insoluble vinyl-vinylidene complex which will produce a moisture retarding barrier not removable by rain or snow.

B Manufacturer: Wilt-pruf Formula NCF as manufactured by Nursery Specialty Products, Greenwich, CT, or accepted equal.

PART 3 - EXECUTION

3.01 REPLANT REVIEW

- A. General: Do not commence planting work prior to acceptance of soil preparation.

- B. Finish Grades: Finish grades for all planting areas shall have been established by in accordance to the Drawings. Verify that all grades are within 1 in. plus or minus of required finish grade and that all soil amendments have been installed as specified. Fine rake planting beds prior to planting shrubs.
- C. Notification: Submit written notification of all conditions inconsistent with specifications for soil preparation and mixing.

3.02 LAYOUT AND EXCAVATION OF PLANTING AREAS

- A. Layout and Staking: Lay out all trees, shrubs and container locations as shown on Drawings. City and Resident Engineer reserves the right to review and adjust plant locations.
- B. Review: Locations of plants will be checked in the field and will be adjusted to exact position before planting begins. Right is reserved to refuse review at this time if, in the Resident Engineer's opinion, an insufficient quantity of plants is available.
- C. Equipment for Digging Plant Pits: Use of an auger or vernier spade to dig plant pits is prohibited. Backhoe is acceptable, with scarification of the tree pit after excavation - see below.

3.03 PLANTING OPERATIONS

- A. Handling and De-potting of Plant Materials:
 - 1. Metal Containers: Cut can on two sides with accepted cutting tool. Do not use spade.
 - 2. Plastic Containers: Tip container to horizontal orientation and carefully remove shrub. Support rootball during installation to prevent cracking or shedding of soil.
 - 3. Balled and Burlap Plants: Avoid all damage to rootballs. If rootball is cracked or broken during handling, plant will be rejected. Lift and carry by bottom of ball only. Do not remove wrapping until plant is set in plant pit. Cut and remove all wire completely from around root ball and peel burlap away from the entire rootball prior to backfilling.
- B. Installation:
 - 1. Scarification:
 - a. Plant Rootball: After removing plant from container, scarify the sides of the rootball to a depth of 1 in. at four to six equally-spaced locations around the perimeter of the ball. Completely sever or remove all circling roots over 3/8 in. diameter.
 - b. Plant Pit: Excavate deep enough to accommodate the ball and bed of prepared back fill mix. Compact before setting of plants. Scarify sides of plant pit, thoroughly breaking up all surfaces and eliminating all "glazed" areas.
 - 2. Positioning: Top of rootball should be placed at same level that the plant material was grown in the nursery. Thoroughly foot tamp all backfill. Position plant in planting pit, maintaining plumb condition.
 - 3. Backfilling:
 - a. Use backfill mix as specified on the Drawings to backfill plant pits. Brace each plant plumb and rigidly in position until planting soil has been tamped solidly around the ball and roots.
 - b. When plant pits have been backfilled approximately 2/3 full, water thoroughly and saturate rootball, before installing remainder of the backfill mix to top of pit,

eliminating all air pockets.

4. Staking and/or Guying: When required, stake or guy as detailed.
- C. Adjustment: Adjust plants so that after full settlement has occurred, the grade at the base of the plants is 2 in. above the adjacent planting finish grade.
- D. Watering Basin: Form saucer with 3 in. high berm centered around tree and shrub pits 12 in. wider than ball diameter.
- F. Watering: Water all plants immediately after completion of planting operations.
- G. Labels: Remove all nursery-type plant labels, wires and ties from plants.

3.04 STAKING AND GUYING

- A. General:
 1. Trees shall be able to stand upright without support, and shall return to the vertical after their tops have been deflected horizontally and released. Stake or guy trees which do not meet this qualification.
 2. All plant materials shall remain plumb and straight for all given conditions from installation through the guarantee period.
- B. Staking (Deciduous Trees):
 1. Locate stakes in a line with trunk of tree, perpendicular to prevailing wind and as close to the main trunk as is practical, avoiding root injury. Drive stakes at least 30 in. into firm ground. See Planting Details.
 2. Wire support straps shall be placed around the trunk in a single loop. Run wire through grommets on support strap, tighten, and keep taut.

3.05 MULCHING

- A. Install a 2-inch deep layer of specified mulch over all planting areas including tree and shrub watering basins unless otherwise noted on drawings.

3.06 PERENNIAL PLANTING

- A. Planting: Plant plants at optimum depth for proper growth. Avoid air pockets. Equally spaced triangularly, at distances called for in the Drawings. See Planting Details.
- B. Fertilizers: Apply top-dress fertilizer at the rate of 3 pounds per 1,000 square feet immediately after planting.
- C. Watering: Water bed thoroughly after fertilizer application. Wash all fertilizer from leaves of plant materials.

3.07 TREE WRAPPING

- A. Wrap trunks of deciduous trees with sun-sensitive bark with a spiral wrapping to the height of the third branch.
- B. Wrap from top down and tape wrapping securely in place.

PART 4 – METHOD OF MEASUREMENT: In accordance with Section 656.11.

PART 5 – BASIS OF PAYMENT: In accordance with Section 656.12.

SECTION 406 – Marshall Bituminous Concrete Pavement

406.04 Weather and Seasonal Limitations

Delete the third paragraph, and replace with the following text:

The paving season shall be extended beyond the date of October 15th for the application of all bituminous materials. Bituminous materials shall be applied at the discretion and agreement of the Resident Engineer, Construction Engineer and City of Burlington Project Manager.

GENERAL SPECIAL PROVISIONS FOR ALL Projects
2011 STANDARD SPECIFICATIONS

SECTION 101 - DEFINITIONS AND TERMS

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

ACL Advanced Certification List

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

APL Approved Products List

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

CPPP Corrugated Polypropylene Pipe

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

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

Day After Thanksgiving Fourth Friday in November

SECTION 103 - TAXES AND INSURANCE

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

SECTION 105 - CONTROL OF THE work

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

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

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

10. 105.03 PLANS AND working DRAWINGS, part (b) Working Drawings, subpart (4) List of Working Drawings, is hereby modified by deleting the phrase "Roadway, Traffic, and Safety Engineer" and replacing it with the phrase "Project Manager" in the twenty-third row (beginning "641").

11. 105.14 SUNDAY AND HOLIDAY work, part (b) Holidays, is hereby corrected by deleting punctuation "," at the end of the paragraph and replacing it with punctuation ".".

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

SECTION 108 - PROSECUTION AND PROGRESS

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

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

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

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

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

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

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

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

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

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

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

DAILY CHARGE FOR LIQUIDATED DAMAGES
FOR EACH working DAY OF DELAY

Original Contract Amount		
From More Than (\$)	To and Including (\$)	Daily Charge Per Day of Delay (\$)
0	300,000	1,400.00
300,000	500,000	1,500.00
500,000	1,000,000	1,600.00
1,000,000	1,500,000	1,700.00
1,500,000	3,000,000	2,100.00
3,000,000	5,000,000	2,600.00
5,000,000	10,000,000	3,800.00
10,000,000	20,000,000	6,300.00
20,000,000+	-----	11,200.00

SECTION 109 - MEASUREMENT AND PAYMENT

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

SECTION 203 - EXCAVATION AND EMBANKMENTS

24. 203.01 DESCRIPTION, is hereby modified by adding the phrase "performing test borings for the purpose of determining areas of roadway and embankment subsurface voids;" after the phrase "trimming and shaping of slopes;" in the first sentence of the first paragraph.
25. 203.01 DESCRIPTION, is hereby further modified by adding the following new part (1):

(1) Test Borings. Test Borings shall consist of an investigative and planned approach to determining areas of roadway and embankment subsurface voids and repairing bored areas.

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

PVC Plastic Pipe..... 710.06

27. 203.02 MATERIALS, is hereby further modified by adding the following paragraphs:

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

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

28. 203.03 GENERAL CONSTRUCTION REQUIREMENTS, is hereby modified by adding the following as the eighth paragraph:

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

29. 203.11 EMBANKMENTS, is hereby modified by adding the following new part (e):

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

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

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

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

30. 203.13 METHOD OF MEASUREMENT, is hereby modified by adding the following new part (e):

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

31. 203.14 BASIS OF PAYMENT, is hereby modified by adding the phrase "and Test Borings" after the phrase "Shoulder Berm Removal" in the first sentence of the first paragraph.

32. 203.14 BASIS OF PAYMENT, is hereby further modified by adding the phrase "submitting site-specific plans as required, performing test borings, installing sleeves, backfilling, patching with bituminous concrete pavement," after the phrase "work specified," in the second sentence of the first paragraph.

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

34. 203.14 BASIS OF PAYMENT, is hereby still further modified by adding the following paragraph and pay item:

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

Payment will be made under:

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

SECTION 310 - RECLAIMED STABILIZED BASE

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

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

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

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

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

SECTION 402 AGGREGATE SHOULDERS

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

SECTION 402 AGGREGATE SHOULDERS

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

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

Aggregate for Surface Course and Shoulders..... 704.12(a)
Aggregate Shoulders, RAP..... 704.12(b)

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

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

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

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

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

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

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

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

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

Payment will be made under:

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

SECTION 406 - MARSHALL BITUMINOUS CONCRETE PAVEMENT

39. 406.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 406.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby modified by deleting footnote designation "(1)" after "Cold Feed Gradation" in the fourth row.
40. 406.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 406.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby further modified by adding the following as the fifth row:

Cold Feed % Fractured Face & Thin and Elongated Particles ⁽¹⁾	Day of initial paving and 1 per week ⁽⁴⁾	ASTM D5821 ASTM D4791
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41. 406.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 406.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby still further modified by deleting footnote 1 in its entirety and replacing it as follows:
- 1 - "Fractured faces" (for gravel sources only). "Thin and elongated" of particles retained on the No. 4 (4.75 mm) sieve and above.
42. 406.03 COMPOSITION OF MIXTURE, part (f) Boxed Samples, is hereby corrected by adding the word "Engineer" to the end of the second (last) sentence.
43. 406.05 BITUMINOUS MIXING PLANT AND TESTING, part (a) Requirements for All Plants, subpart (12) Testing Facilities, is hereby modified by adding the following as the fourth paragraph:

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

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

SECTION 490 - SUPERPAVE BITUMINOUS CONCRETE PAVEMENT

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

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

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

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

Cold Feed % Fractured Face & Thin and Elongated Particles ⁽¹⁾	Day of initial paving and 1 per week ⁽⁴⁾	ASTM D5821 ASTM D4791
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55. 490.03 COMPOSITION OF MIXTURE, part (d) Control of Mixtures, TABLE 490.03D - MINIMUM QUALITY CONTROL GUIDELINES, is hereby still further modified by deleting footnote 1 in its entirety and replacing it as follows:
- 1 - "Fractured faces" (for gravel sources only). "Thin and elongated" of particles retained on the No. 4 (4.75 mm) sieve and above.
56. 490.05 BITUMINOUS MIXING PLANT AND TESTING, part (a) Requirements for All Plants, subpart (12) Testing Facilities, is hereby modified by adding the following as the third paragraph:

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

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

SECTION 501 - HPC STRUCTURAL CONCRETE

59. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (Metric), is hereby modified by deleting the fourth column (with header "Max. Slump (mm)") in its entirety and replacing it with the following:

Max. ⁷ Slump (mm)

N/A

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

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

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

61. 501.03 CLASSIFICATION AND PROPORTIONING, TABLE 501.03A (English), is hereby modified by deleting the fourth column (with header "Max. Slump (in)") in its entirety and replacing it with the following:

Max. ⁷ Slump (mm)

N/A

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

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

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

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

SECTION 505 - PILING

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

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

SECTION 506 - STRUCTURAL STEEL

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

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

SECTION 507 - REINFORCING STEEL

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

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

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

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

76. 507.02 MATERIALS, is hereby modified by deleting the sixth (final) entry in the Subsection listing.
77. 507.03 FABRICATION AND SHIPMENT, part (a) General, is hereby modified by adding the phrase "deformed bar" after the phrase "shall be" in the first paragraph.
78. 507.03 FABRICATION AND SHIPMENT, part (a) General, is hereby corrected by deleting punctuation ".." and replacing it with punctuation "." at the end of the first paragraph.
79. 507.04 PROTECTION OF MATERIAL, is hereby modified by adding the following as the second sentence in the first paragraph:
- When multiple levels of reinforcing steel are used on a project, they shall be stored separately, including during transport in order that there is no direct contact between the bars.
80. 507.04 PROTECTION OF MATERIAL, is hereby further modified by deleting the phrase "The epoxy coating" and replacing it with the word "Coatings" in the third sentence of the third paragraph.
81. 507.04 PROTECTION OF MATERIAL, is hereby still further modified by deleting the phrase "as required for damaged areas" and replacing it with the phrase "per the coating manufacturer's recommendations and to the satisfaction of the Engineer" in the third sentence of the fifth (last) paragraph.

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

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

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

83. 507.05 PLACING AND FASTENING REINFORCING STEEL, is hereby modified by deleting the sixth paragraph in its entirety and replacing it with the following:

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

84. 507.10 METHOD OF MEASUREMENT, is hereby modified by deleting the phrase ", Epoxy Coated Reinforcing Steel, and Galvanized Reinforcing Steel" and replacing it with the phrase "of the type and size specified" in the first paragraph.

85. 507.10 METHOD OF MEASUREMENT, is hereby further modified by adding the phrase "of the type specified" at the end of the second paragraph (beginning "The quantity of Drilling and Grouting Dowels...").

86. 507.11 BASIS OF PAYMENT, is hereby modified by deleting the following pay items:

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

87. 507.11 BASIS OF PAYMENT, is hereby further modified by adding the following pay items:

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

SECTION 509 - LONGITUDINAL DECK GROOVING

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

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

SECTION 510 - PRESTRESSED CONCRETE

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

SECTION 516 - EXPANSION DEVICES

90. 516.01 DESCRIPTION, is hereby modified by adding the phrase ", or partially removing and modifying," after the word "installing".
91. 516.05A PARTIAL REMOVAL AND MODIFICATION, is hereby made a new Subsection of the Standard Specifications as follows:

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

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

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

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

92. 516.06 METHOD OF MEASUREMENT, is hereby modified by adding the following paragraph:

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

93. 516.07 BASIS OF PAYMENT, is hereby modified by adding the following paragraph and pay item:

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

Payment will be made under:

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

SECTION 525 - BRIDGE RAILINGS

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

Structural Steel..... 714.02

95. 525.06 INSTALLATION, part (a) General, is hereby modified by adding the following as the sixth (last) paragraph:

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

96. 525.08 BASIS OF PAYMENT, is hereby modified by adding the phrase "for furnishing all forms, joint filler, admixtures, trial batches, and connection plates for approach railing terminal connectors; for satisfactory completion of any necessary repairs, surface finishing, and curing;" after the phrase "for all work necessary for verifying and adjusting post height and/or bolt spacing of existing posts;" in the second (last) sentence of the third paragraph.

97. 525.08 BASIS OF PAYMENT, is hereby further modified by adding the following pay item:

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

SECTION 531 - BRIDGE BEARING DEVICES

98. 531.04 FABRICATION, part (b) Surface Protection, is hereby corrected by deleting punctuation ", ." at the end of the paragraph and replacing it with punctuation ".".

SECTION 540 - PRECAST CONCRETE

99. 540.02 MATERIALS, is hereby modified by deleting the fourteenth entry (beginning "Coated Bar Reinforcement...") in the Subsection listing.

100. 540.02 MATERIALS, is hereby further modified by adding the following as the twenty-ninth entry in the Subsection listing:

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

101. 540.07 FABRICATION, part (e) Placing Concrete, is hereby modified by deleting the phrase "done with care" and replacing it with the phrase "performed in accordance with Subsection 501.10(f)" in the third (last) sentence.

102. 540.10 INSTALLATION, is hereby modified by adding the following new part (c):

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

Material for membrane shall meet the requirements of Subsection 726.11.

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

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

103. 540.14 BASIS OF PAYMENT, is hereby modified by adding the following paragraph:

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

SECTION 541 - STRUCTURAL CONCRETE

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

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

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

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

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

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

Controlled Density (Flowable) Fill	To be designed ***	To be designed ****	To be designed *****	10 min.	704.01 (Fine Aggregate)	0.85 max. *****	---
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*** A mineral admixture may be used to replace a portion of the cement.

**** The minimum amount of water shall be used to produce the desirable flow for the intended use without showing segregation.

***** The slump (flowability) shall be such that material is able to completely fill the voids or area as needed without segregation.

*****A minimum of 3 cylinders per test age required to constitute a test. If average strength at 28 days exceeds 115% of max. strength, then payment for Contract item 541.45 will be 85% of the Contract bid price.

109. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (English), is hereby modified by deleting footnote designation "*" in the first and fourth entries of the third row (for "Class A" concrete).
110. 541.03 CLASSIFICATION AND PROPORTIONING, TABLE 541.03A (English), is hereby further modified by deleting footnote "*" and associated text (beginning "* When this class of concrete...").

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

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

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

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

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

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

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

*** A mineral admixture may be used to replace a portion of the cement.

**** The minimum amount of water shall be used to produce the desirable flow for the intended use without showing segregation.

***** The slump (flowability) shall be such that material is able to completely fill the voids or area as needed without segregation.

*****A minimum of 3 cylinders per test age required to constitute a test. If average strength at 28 days exceeds 115% of max. strength, then payment for Contract item 541.45 will be 85% of the Contract bid price.

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

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

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

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

116. 541.19 METHOD OF MEASUREMENT, is hereby modified by deleting the phrase "or LW" and replacing it with the phrase "LW, or Flowable Fill" in the first sentence of the first paragraph.

117. 541.20 BASIS OF PAYMENT, is hereby modified by adding the following pay item:

Payment will be made under:

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

SECTION 580 - STRUCTURAL CONCRETE REPAIR

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

Polymer Concrete Repair Material..... 780.05

119. 580.03 PROPORTIONING AND MIXING, is hereby modified by deleting the last sentence of the first paragraph in its entirety and replacing it with the following:

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

120. 580.04 SURFACE PREPARATION FOR REPAIRS, OVERLAYS AND MEMBRANES, is hereby modified by adding the word "abrasive" after the phrase "shall be" and before the phrase "blast cleaned" in the first sentence of the third paragraph.

121. 580.04 SURFACE PREPARATION FOR REPAIRS, OVERLAYS AND MEMBRANES, is hereby further modified by adding the phrase ", or Polymer Concrete Repair Material," after the word "Aggregate" in the sixth paragraph.

122. 580.08 METHOD OF MEASUREMENT, is hereby modified by deleting the phrase "and not for new patches, which will be the responsibility of the Contractor" and replacing it with the phrase ", with no deductions made for areas of new patches" in the second sentence of the ninth paragraph.

123. 580.08 METHOD OF MEASUREMENT, is hereby further modified by adding the phrase ", and Polymer Concrete Repair Material" after the word "Aggregate" in the first sentence of the tenth paragraph.
124. 580.09 BASIS OF PAYMENT, is hereby modified by adding the phrase ", and Polymer Concrete Repair Material" after the word "Aggregate" in the seventh paragraph.
125. 580.09 BASIS OF PAYMENT, is hereby further modified by adding the following pay item:

Payment will be made under:

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

SECTION 601 - CULVERTS AND STORM DRAINS

126. 601.02 MATERIALS, is hereby modified by adding the following as the sixth entry in the Subsection listing:
- Corrugated Polypropylene Pipe..... 710.07
127. 601.07 JOINING PIPE, is hereby modified by adding the following new part (d) as follows:
- (d) Corrugated Polypropylene Pipe. Corrugated Polypropylene pipe shall be joined by a system designed and approved by the pipe manufacturer. Couplings and fittings shall provide sufficient longitudinal strength to preserve pipe alignment and prevent separation at the joints.
128. 601.11 BASIS OF PAYMENT, is hereby modified by changing the end of the pay item number range for CPEP Elbow from 601.5999 to 601.5899.
129. 601.11 BASIS OF PAYMENT, is hereby further modified by adding the following pay items:

Payment will be made under:

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

SECTION 608 - EQUIPMENT RENTAL

130. 608.02 GENERAL REQUIREMENTS, is hereby modified by adding the following new part (i):

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

131. 608.04 BASIS OF PAYMENT, is hereby modified by changing the word "item" to "items" and by adding the phrase "and Truck-Mounted Attenuator, AWV/PV" after the phrase "Truck-Mounted Attenuator" in the second (last) paragraph.

132. 608.04 BASIS OF PAYMENT, is hereby further modified by adding the following pay item:

Payment will be made under:

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

SECTION 613 - STONE FILL, RIPRAP, AND SLOPE PAVING

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

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

134. 613.04 PLACING, is hereby modified by adding the following new part (d):

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

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

135. 613.05 METHOD OF MEASUREMENT, is hereby modified by adding the following paragraph:

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

136. 613.06 BASIS OF PAYMENT, is hereby modified by adding the phrase "and Gabion Wall" after the word "specified" in the first sentence of the first paragraph.

137. 613.06 BASIS OF PAYMENT, is hereby modified by adding the phrase ", including gabion baskets," after the word "material" in the third (last) sentence of the first paragraph.

138. 613.06 BASIS OF PAYMENT, is hereby still further modified by adding the phrase "or rock" after the word "stone" in the first sentence of the second paragraph.

139. 613.06 BASIS OF PAYMENT, is hereby still further modified by adding the following paragraph:

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

140. 613.06 BASIS OF PAYMENT, is hereby still further modified by adding the following pay item:

Payment will be made under:

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

SECTION 616 - CURBS AND GUTTERS

141. 616.05 REPOINTING GRANITE BRIDGE CURB, is hereby made a new Subsection of the Standard Specifications as follows:

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

142. 616.14 METHOD OF MEASUREMENT, is hereby modified by adding the following as the second paragraph:

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

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

144. 616.15 BASIS OF PAYMENT, is hereby modified by adding the following as the second paragraph:

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

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

146. 616.15 BASIS OF PAYMENT, is hereby further modified by adding the following pay item:

Payment will be made under:

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

SECTION 620 - FENCES

147. 620.02 MATERIALS, is hereby modified by deleting subsection "753.05" for Grounding Electrodes and replacing it with "752.15".

SECTION 621 - TRAFFIC BARRIERS

148. 621.01 DESCRIPTION, is hereby modified by adding the phrase "repairing," after the phrase "removing,".

149. 621.02 MATERIALS, is hereby modified by adding the following as the fifth entry in the Subsection listing:

Wire Rope or Cable..... 713.03

150. 621.09 TERMINALS, is hereby modified by adding the following paragraph:

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

151. 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.

152. 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).

153. 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.

154. 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.

155. 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.

156. 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.

157. 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.

158. 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.

159. 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>
Cable Guardrail J-Bolt, Galvanized	Each
Cable Guardrail Splice Unit	Each
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	Each
Type I	
621.71 Guardrail Approach Section, Galvanized	Each
Type II	
621.726 Guardrail Approach Section, Galvanized	Each
3 Rail Box Beam w/Curb	
621.735 Guardrail Approach Section, Steel Beam	Each
621.736 Guardrail Approach Section, Steel Beam	Each
w/2.4 m (8 feet) Posts	
621.737 Guardrail Approach Section, Galvanized	Each
HD Steel Beam	

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

160. 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.
161. 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

162. 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.
163. 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.

164. 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.
165. 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.

166. 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.

167. 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

168. 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)

169. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby modified by deleting the first paragraph in its entirety.
170. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby further modified by deleting the seventh paragraph in its entirety.
171. 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.
172. 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.
173. 646.04 APPLICATION OF MARKINGS, GENERAL, part (a) Placement of Markings, is hereby still further modified by deleting the ninth paragraph in its entirety.

174. 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).

175. 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".
176. 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.
177. 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.
178. 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.
179. 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.
180. 646.06 PAINT PAVEMENT MARKINGS, is hereby modified by being re-named WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS.
181. 646.06 WATERBORNE AND LOW VOC CHLORINATED RUBBER AND ACETONE BASED PAINT PAVEMENT MARKINGS, is hereby modified by changing the word "Retroreflective" to "Retroreflective" in the first sentence of the first paragraph.
182. 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.
183. 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 ±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) 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.

184. 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.

185. 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.

186. 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 ".".

187. 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.

188. 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.

189. 646.07 DURABLE PAVEMENT MARKINGS, part (b) Epoxy Paint, is hereby modified by being re-designated as part (e).
190. 646.07 DURABLE PAVEMENT MARKINGS, part (c) Thermoplastic, is hereby modified by being re-designated as part (f) Extruded Thermoplastic.
191. 646.07 DURABLE PAVEMENT MARKINGS, part (d) Polyurea Paint, is hereby modified by being re-designated as part (h).
192. 646.07 DURABLE PAVEMENT MARKINGS, part (e) Methyl-methacrylate Paint, is hereby modified by being re-designated as part (i).
193. 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.

194. 646.07 DURABLE PAVEMENT MARKINGS, part (e) Epoxy Paint, is hereby modified by deleting the fifth (last) sentence in its entirety.

195. 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 $\pm 50.8 \mu\text{m}$ (± 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 shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings.

196. 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.

197. 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 $\pm 127 \mu\text{m}$ (± 5 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 0.36 square meters per liter (15 square feet per gallon).

198. 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 $\pm 127 \mu\text{m}$ (± 5 mils)" in the second sentence of the second paragraph.

199. 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 $\pm 127 \mu\text{m}$ (± 5 mils)" in the fourth sentence.

200. 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)".

201. 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)".

202. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, e. Beads, is hereby modified by being re-named Optics.

203. 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".

204. 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".
205. 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.
206. 646.07 DURABLE PAVEMENT MARKINGS, part (f) Extruded Thermoplastic, subpart (2) Application Requirements, e. Optics, subpart 2., is hereby modified by being deleted in its entirety and replaced as follows:
2. Initial dry retroreflectivity minimums shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings.
207. 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).
208. 646.07 DURABLE PAVEMENT MARKINGS, part (h) Polyurea Paint, is hereby modified by deleting the second sentence in its entirety.
209. 646.07 DURABLE PAVEMENT MARKINGS, part (h) Polyurea Paint, is hereby further modified by adding the following sentences:
- Polyurea paint shall be applied at a rate to create a uniform wet film in place thickness of 558.8 µm (22 mils) with an allowable range of ±50.8 µm (±2 mils) unless otherwise specified in the Contract Documents. Minimum application rates are 1.7 square meters per liter (70 square feet per gallon). Initial dry retroreflectivity minimums for surface-applied polyurea shall be 300 mcdl/lx/m² for yellow markings and 400 mcdl/lx/m² for white markings. Initial dry retroreflectivity minimums for recessed polyurea shall be 600 mcdl/lx/m² for yellow markings and 800 mcdl/lx/m² for white markings.
210. 646.07 DURABLE PAVEMENT MARKINGS, part (i) Methyl-methacrylate Paint, is hereby modified by deleting the second sentence in its entirety.
211. 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.
212. 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.
213. 646.08 TEMPORARY PAVEMENT MARKINGS, part (a) Pavement Marking Tape, Type II, is hereby modified by being re-named Temporary Pavement Marking Tape.
214. 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.
215. 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)".
216. 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.

217. 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.

218. 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.

219. 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.

220. 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.

221. 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.

222. 646.09 OTHER RELATED MARKINGS, part (a) Pavement Marking Recess, is hereby further modified by deleting the last sentence in its entirety.

223. 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).		

224. 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

225. 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

226. 656.02 MATERIALS, is hereby modified by deleting the first entry in the Subsection listing (for "Barrier Fence") in its entirety.
227. 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

228. 677.01 DESCRIPTION, is hereby modified by adding the phrase "and removing and disposing of existing overhead traffic sign supports," after the phrase "supports,".
229. 677.02 MATERIALS, is hereby modified by deleting subsection "753.05" for Grounding Electrodes and replacing it with "752.15".
230. 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.

231. 677.04 GROUNDING. is hereby modified by deleting the second and third sentences of the first paragraph, and also deleting the second and third paragraphs in their entirety.
232. 677.04 GROUNDING. is hereby further modified by adding the phrase "in accordance with section 678" at the end of the first sentence of the first paragraph.
233. 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.

234. 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

235. 678.01 DESCRIPTION, is hereby modified by adding the phrase ", and removing existing traffic control systems" after the word "system" in the first paragraph.

236. 678.02 MATERIALS, is hereby modified by deleting the following from the Subsections listing:

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

237. 678.02 MATERIALS, is hereby further modified by adding the following to the Subsection listing at the appropriate location following the subsections sequence:

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

238. 678.02 MATERIALS, is hereby further modified by deleting "convers" and replacing it with the word "covers" in the second sentence of the last paragraph of the Subsection text.

239. 678.07 DETECTORS AND CONTROLLERS, is hereby corrected by deleting "manufacturer" and replacing it with the word "manufacturer" in the first sentence of the second (last) paragraph.

240. 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.

241. 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.

242. 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.

243. 678.14 BASIS OF PAYMENT, is hereby further modified by adding the following paragraph and pay item:

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

Payment will be made under:

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

SECTION 679-STREET LIGHTING

244. 679 STREET LIGHTING, is hereby modified by deleting in its entirety and replacing with the following:

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

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

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

Grounding Electrodes.....	752.15
Light Pole Foundations.....	753.06
Transformer Bases.....	753.07
Light Poles.....	753.08
Bracket Arms.....	753.09
Luminaires.....	753.10
Highway Illumination Conductor Cable..	753.11
Street Lighting Control Device.....	753.12
Finish.....	753.13

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

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

All wiring shall meet the current National Electric Code.

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

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

(a) Wiring.

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

(b) Light Pole Foundations.

- (1) Dimensions and material specifications for all hardware used to mount the transformer base to the Light Pole Foundation.
- (2) For pre-cast Light Pole Foundations: complete design details and material specifications for Light Pole Foundations.

(c) Transformer Bases.

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

(d) Light Poles.

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

(e) Bracket Arms.

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

(f) Luminaires.

(1) Luminaire Data

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

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

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

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

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

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

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

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

Excavation and Backfill shall be in accordance with Section 203

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

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

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

The pole cap shall be securely held in place.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

679.14 ACCEPTANCE.

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

679.15 METHOD OF MEASUREMENT.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Payment will be made under:

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

SECTION 700 GENERAL

245. 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 “.”.
246. 700.02 MATERIALS CERTIFICATIONS, part (a) General, is hereby modified by deleting subpart (3) in its entirety.
247. 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

248. 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.
249. 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.
250. 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.
251. 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.

252. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (b) Pretest, is hereby modified by being re-designated as part (c).
253. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), part (c) Certification, is hereby modified by being re-designated as part (d).
254. 702.02 PERFORMANCE-GRADED ASPHALT BINDER (PREPARED FROM PETROLEUM), is hereby modified by adding the following new part (b):
- (b) Effect of Approval. VTrans reserves its right to remove its approval of any PGB lot if, in the sole discretion of the Agency, such approval was based on a material non-disclosure by the PGB supplier.

SECTION 704 - AGGREGATES

255. 704.10 AGGREGATE FOR BITUMINOUS CONCRETE PAVEMENT, part (a) Aggregate for Marshall Bituminous Concrete Pavement, subpart (1) Grading, c. Recycled Asphalt Pavement (RAP), is hereby modified by deleting the word "four" and replacing it with the word "two" in the seventh sentence of the fifth paragraph.
256. 704.10 AGGREGATE FOR BITUMINOUS CONCRETE PAVEMENT, part (b) Aggregate for Superpave Bituminous Concrete Pavement, subpart (1) Grading, c. Recycled Asphalt Pavement (RAP), is hereby modified by deleting the word "four" and replacing it with the word "two" in the seventh sentence of the sixth paragraph.
257. 704.12 AGGREGATE FOR SURFACE COURSE AND SHOULDERS, is hereby modified by deleting in its entirety and replacing them with the following:

704.12 AGGREGATE FOR SURFACE COURSE AND SHOULDERS.

- (a) Aggregate for Aggregate Surface Course and Aggregate Shoulders. Aggregate shall consist solely of crushed gravel or crushed stone. It shall be reasonably free from silt, loam, clay, organic matter or other deleterious materials.

All aggregates shall meet the following requirements:

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

TABLE 704.12A - AGGREGATE FOR SURFACECOURSE AND SHOULDERS

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

- (2) Percent of Wear. The percent of wear shall not be more than 40 percent for material used as aggregate surface course or not more than 50 percent for material used as aggregate shoulders, excluding bituminous materials. Percent wear shall be in accordance with AASHTO T 96.
- (3) Fractured Faces. When crushed gravel is used at least 50 percent by mass (weight), of the material coarser than the 4.75 mm (No. 4) sieve from each stockpile shall have at least two fractured faces. Fractured faces shall be in accordance with Vermont Standard Test Procedures AOT-MRD 23.

- (b) Aggregate Shoulders, RAP. Aggregate for Aggregate Shoulders, RAP shall consist solely of Bituminous Concrete Pavement. RAP shall be such that 100% of the material passes the 37.5 mm (1 ½ inch) sieve prior to placement.

SECTION 708 - PAINTS, STAINS, AND TRAFFIC MARKING MATERIALS

258. 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.

259. 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.

260. 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.

261. 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.

262. 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.

263. 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.

264. 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.

265. 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.
266. 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.
267. 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 ".
268. 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.
269. 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.
270. 708.09 GLASS BEADS, is hereby modified by being re-named OPTICS.
271. 708.09 OPTICS, is hereby modified by adding new part (a) heading Glass Beads.
272. 708.09 OPTICS, part (a) Properties, is hereby modified by being re-designated as subpart (1) under part (a) heading Glass Beads.
273. 708.09 OPTICS, part (b) Certification, is hereby modified by being re-designated as subpart (2) under part (a) heading Glass Beads.
274. 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.

275. 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.
276. 708.11 RAISED PAVEMENT MARKERS, is hereby modified by being re-named RAISED PAVEMENT MARKERS, TYPE I.
277. 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.

278. 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.

279. 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.

280. 708.14 LINE STRIPING TARGETS, is hereby modified by being deleted in its entirety.

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

281. 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.

282. 710.07 CORRUGATED POLYPROPYLENE PIPE, is hereby made a new Subsection of the Standard Specifications as follows:

283. 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

284. 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.

285. 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.

286. 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

287. 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.

288. 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.

289. 713.07 COATED BAR REINFORCEMENT, is hereby modified by being deleted in its entirety.
290. 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

291. 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.
292. 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.
293. 714.09 ANCHOR BOLTS, TRAFFIC SIGNALS, LIGHTING, AND OVERHEAD SIGN STRUCTURES, is hereby modified by being deleted in its entirety and replaced with the following:

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

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

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

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

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

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

SECTION 726 - PROTECTIVE COATINGS AND WATERPROOFING MATERIALS

294. 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.

295. 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

296. 731.03 ELASTOMERIC MATERIAL, is hereby modified by deleting the second and third paragraphs in their entirety and replacing them with the following:

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

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

TABLE 731.03A - REQUIRED TESTS

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

SECTION 752-TRAFFIC CONTROL SIGNALS

297. 752.03 TRAFFIC SIGNAL POLES WITH MAST ARMS OR BRACKET ARMS, part (c) Aluminum Poles, Bases, and Mast Arms, is hereby modified by replacing "753.01(b)" in the first sentence with "753.07 and Subsection 753.08".

298. 752.03 TRAFFIC SIGNAL POLES WITH MAST ARMS OR BRACKET ARMS, part (d) Luminaire Bracket Arms, is hereby modified by deleting the second sentence in its entirety and replacing as follows:

"Luminaire Bracket Arms shall conform to the requirements of Subsection 753.09"

299. 752.12 JUNCTION BOX, is hereby modified by being deleted in its entirety and replaced as follows:

752.12 PULL BOX AND JUNCTION BOX

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

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

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

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

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

300. 752.15 GROUNDING ELECTRODES, is hereby made a new subsection of the Standard Specification as follows:

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

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

SECTION 753 HIGHWAY ILLUMINATION

301. 753 HIGHWAY ILLUMINATION, is hereby modified by deleting in its entirety and replacing with the following:

753.06 LIGHT POLE FOUNDATIONS.

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

753.07 TRANSFORMER BASES.

- (a) Transformer bases and transformer base doors shall consist of a one-piece aluminum casting conforming to the requirements of ASTM B 26/B 26M or ASTM B 108, Alloy SG70A-T6, 356-T6. Galvanized bolts, nuts, washers and other hardware shall be provided to attach the transformer base to the anchor base of the light pole. Galvanizing shall conform to the requirements of Section 726.08.
- (b) Hardware for mounting the transformer base door to the transformer base shall be stainless steel.
- (c) A Type A Certification shall be furnished in accordance with Subsection 700.02.

753.08 LIGHT POLES.

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

753.09 BRACKET ARMS.

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

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

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

753.10 LUMINAIRES.

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

753.11 HIGHWAY ILLUMINATION CONDUCTOR CABLE.

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

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

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

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

753.12 STREET LIGHTING CONTROL DEVICE.

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

753.13 FINISH.

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

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

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

SECTION 755 - LANDSCAPING MATERIALS

302. 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

303. 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.

****ADD contract SPECIAL PROVISION
SPECIFICATIONS HERE****

SECTION 900 - SPECIAL PROVISION

EXPOSED AGGREGATE CONCRETE

1. **DESCRIPTION.** This work shall consist of the construction of exposed aggregate concrete crossings where indicated on the construction documents. Work shall be consistent with VTrans Standard Specifications Section 618, with the additions and modifications below.
2. **MATERIALS.** Materials shall meet the requirements of Section 618.02 except as indicated below.
 - a. Concrete shall conform to the requirements of Section 541 for Concrete, Class A. No fly ash is required in the mix.
 - b. Coarse aggregate materials for concrete shall be red quartzite meeting the requirements of Section 704.02A.
 - c. Welded Wire Reinforcement..... 713.05
3. **REFERENCES.** Work shall meet the requirements of the following reference standards.
 - a. The State of Vermont, Agency of Transportation "Standard Specifications for Construction", dated 2011 (designated VAOT), and the latest revision of the Agency of Transportation "General Special Provisions".
 - b. American Concrete Institute (ACI) sections: 318, 301, 308, 330.
4. **SUBMITTALS.** The contractor shall submit and / or provide the following for approval by the City, Engineer, and Landscape Architect prior to any permanent installation of exposed aggregate concrete under the contract.
 - a. Samples for each exposed product and for each color and texture specified, minimum 2-gallon volume per sample.
 - b. Test pour of the proposed mix design, minimum size 4 square feet, placed and finished in the manner proposed for the final concrete installation. Note that this material may remain in the finished work if approved by the City, Engineer, and Landscape Architect.
 - c. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments in accordance with ACI 301 and 318.
 - d. Include service record data for proposed aggregate materials indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
 - e. Product data for any surface retardants proposed for use.

5. **FINISHING.** Use bristle brushes to remove cement paste between coarse aggregate to a depth of 1/8 inch once concrete has set sufficiently to avoid dislodging aggregate from the surrounding matrix. The exposed aggregate finish is only required for portions of the concrete that will ultimately be exposed and viewable to the public. The areas that will be paved-over by the Path surface need not have an exposed finish.
6. **METHOD OF MEASUREMENT.** The quantity of Special Provision (Exposed Aggregate Concrete) to be measured for payment will be the number of Cubic Yards of the approved material installed in the complete and accepted work.
7. **BASIS OF PAYMENT.** The accepted quantity of Special Provision (Exposed Aggregate Concrete) will be paid at the contract unit price per Cubic Yard. Payment will constitute full compensation for furnishing, transporting, handling, placing, and finishing the materials specified, including expansion joint material and welded wire reinforcement as well as for furnishing all labor, tools, equipment, and incidentals necessary to complete the work. Submittals and test pour shall be incidental to this item along with any cleaning needed to remove excess cement paste from the exposed aggregate surface.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.608 Special Provision (Exposed Aggregate Concrete)	Cubic Yard

SECTION 900 - SPECIAL PROVISION

HEMLOCK BARK MULCH

1. **DESCRIPTION.** This work shall consist of furnishing and placing bark mulch in the planting areas indicated in the Plans and as directed by the Engineer.
2. **GENERAL.**
 - a. All materials and incidentals, and their installation, shall be furnished and performed in accordance with the Contract Documents.
 - b. The Contractor shall make every effort to minimize or prevent damage to proposed plantings and existing plantings to remain while installing bark mulch.
3. **SUBMITTALS.** Submit mulch sample prior to delivery to site. Attach product name, address of manufacturer and/or supplier to each sample. Volume of mulch sample shall be one (1) pint.
4. **MATERIALS.** Bark mulch shall be organic and free from deleterious materials and suitable as a top dressing of trees and shrubs. Mulch shall be a uniform mixture of the following:
 - a. Hemlock Bark Mulch, Ground or shredded, dark brown in color.
5. **INSTALLATION.** Install a 3-inch deep layer of the specified mulch over all planting areas including around all trees and shrubs, unless otherwise noted on the plans.
6. **METHOD OF MEASUREMENT.** The quantity of Special Provision (Hemlock Bark Mulch) to be measured for payment will be the number of cubic yards of mulch furnished and installed in the designated areas in the complete and accepted work.
7. **BASIS OF PAYMENT.** The accepted quantity of Special Provision (Hemlock Bark Mulch) will be paid for at the Contract unit price per cubic yard. Payment will be full compensation for furnishing, transporting, handling, and installing the material 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>
900.608 Special Provision (Hemlock Bark Mulch)	CY

SECTION 900 - SPECIAL PROVISION

STONE SCREENINGS

1. DESCRIPTION.

This work shall consist of furnishing and placing shoulders of approved aggregate on a prepared surface. The stone screenings shall not be blue or grey, but shall be red in color.

The work under this Section shall be performed in accordance with Section 402 of the Standard Specifications and the following.

2. MATERIALS.

Materials shall meet the requirements of subsection 704.12 – AGGREGATE FOR SURFACE COURSE AND SHOULDERS amended as follows:

AMEND: TABLE 704.12A – AGGREGATE FOR SURFACE COURSE AND SHOULDERS as follows:

Sieve Designation	Percentage by Mass (Weight) Passing Square Mesh Sieves
3/8 inch	100
No. 4	90 to 100
No. 8	75 to 85
No. 100	15 to 20
No. 200	5 to 10

Materials shall be free from organic material and lumps or balls of clay.

Material passing the No. 4 sieve shall consist of natural or crushed sand and fine mineral particles. The material including any blended filler, shall have a plasticity index of not more than 6 and a liquid limit of not more than 25 when tested in accordance with ASTM D4318.

It is desirable (but not strictly required) that aggregate contain a minimum of 5% clay particles and no more than 50% of that portion of material passing the No. 200 sieve size shall be clay. Inorganic clay to be included as binder shall conform to the following:

Passing No. 200... 75%
Liquid Limit..... 30 min.
Plastic Index 8 min.

The fraction of material passing the No. 200 sieve size shall be determined by washing as indicated in ASTM D1140, "Amount of Material in Soils Finer than the No. 200 Sieve." The fractured faces for the coarse aggregate portion (retained on the No. 4 Sieve) shall have an area of each face equal to at least 75% of the smallest midsection area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces. Fractured faces shall be obtained by mechanical crushing.

Material samples and Certificates of Compliance shall be provided to the Engineer for review and approval prior to purchase and delivery to the project site of bulk quantities.

The City reserves the right to conduct quality control inspection and testing at any time to determine the reliability of the test results and Certificate of Compliance. Materials delivered that do not comply with the specifications and/or certificates shall be removed from the site at no cost to the City.

Payment will be made under:

Pay Item

Pay Unit

900.608 Special Provision (Stone Screenings)

Cubic Yard (CY)

SECTION 900 SPECIAL PROVISION

BIKE RACKS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Bike Racks

1.2 SUBMITTALS

- A. Product Data: For each product indicated.
- B. Samples: For exposed finish and color specified.
- C. Maintenance data.
- D. Shop drawings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

1. Products: Subject to compliance with requirements, provide products from one of the manufacturers specified.

2.2 MATERIALS

A. Steel: See Section 01101 – Bid and Contract Procedures, 1.2C – Buy American provisions for all steel and iron products.

1. Tubing: Cold-formed steel tubing complying with ASTM A 500.
2. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester-TGIC, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

- B. Anchors, Fasteners, Fittings, and Hardware: Commercial quality; tamperproof, vandal and theft resistant; concealed, recessed, and capped or plugged. Provide as required for site furnishings' assembly, mounting, and secure attachment.
 - 1. Material: Manufacturer's standard, corrosion-resistant-coated or non-corrodible materials.
- C. Nonshrink, Nonmetallic Grout: ASTM C 1107; for exterior applications.
- D. Erosion-Resistant Anchoring Cement: Factory-packaged formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended for exterior applications.

2.3 BIKE RACK

- A. Products:
 - 1. Bike Rack: Hoop Rack Heavy Duty (refer to detail)
 - 2. Manufacturers:
 - a. Derovations, Inc.
 - b. Or Approved equal
- B. Frames: Comprised of tubular steel. See manufacturers shop drawings.
- C. Installation Method: As indicated on Drawings. Comply with all manufacturers recommendations.
- D. Finish: Powder Coated.
 - 1. Color: Black

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Complete field assembly of bike racks, where required as per Manufacturer's specifications.
- B. Unless otherwise indicated, install bike racks after landscaping and paving have been completed.
- C. See drawings for installation method.
- D. Install bike racks level, plumb and, true at locations directed by the City.

PART 4 - PAYMENT

4.1 METHOD OF MEASUREMENT

- A. The quantity of Special Provision Bike Rack will be paid on an each (EA) basis to install bike racks in the designated locations within the limits shown on the plans.

4.2 BASIS OF PAYMENT

- A. The accepted quantity of Special Provision Bike Rack will be paid for at the Contract EA price. The bike racks, installation, and all necessary materials shall be paid for incidental to this pay item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision Bike Rack	EA

END SECTION

SECTION 900 SPECIAL PROVISION

BIKE TUNING STATION

PART 1 GENERAL

1.1 Summary

- A. This section includes specifications for the Fixit.

1.2 Quality Assurance

- A. **Installer Qualifications:** An experienced installer who has completed installation of bicycle repair stands similar in material, design, and extent to that indicated for this project and whose work has resulted in construction with a record of successful in-service performance.
- B. **Manufacturer Qualifications:** A firm experienced in manufacturing bicycle repair stands similar to those required for this project and with a record of successful in-service performance.
- C. **Source Limitations:** Obtain each color, finish, shape and type of bicycle repair stand from a single source with resources to provide components of consistent quality in appearance and physical properties.
- D. **Product Options:** Drawings indicate size, shape and dimensional requirements of bicycle repair stands and are based on the specific system indicated.

1.3 Submittals

- A. **Product Data:** Include physical characteristics such as shape, dimensions, bicycle parking capacity and finish for each bicycle repair stand.
- B. **Shop Drawings:** Show installation details for each bicycle repair stand.
- C. **Samples for Verification:** Submit finish samples for review and verification.
- D. **Maintenance Data:** For each bicycle repair stand.
 - 1. Include recommended methods for repairing damage to the finish.

1.4 Delivery, Storage and Handling

- A. Upon delivery, before signing for shipment, inspect for any damages and notate on the B.O.L.
- B. Store bicycle repair stands in original undamaged packages and containers until ready for installation
- C. Handle bicycle repair stands with sufficient care to prevent any scratches or damage to the finish.

5. Warranty

- A. Bicycle racks carry a one year manufacturer's limited warranty against defects in materials and workmanship. The one year warranty period begins the date the product is shipped from the manufacturer.
- B. The air pump for the Dero Air Kit and Dero Fixit Rack have limited operating temperatures ranges.
 - 1. Air Kit 2 and 3: -30F to 120F.

PART 2 PRODUCTS

2.1 Acceptable Manufacturers

- A. Provide bicycle repair stands manufactured by DERO BIKE RACK CO., 42 Northern Stacks Drive, Suite 100, Minneapolis, MN 55421, 1-888-337-6729. Fax: 612-331-2731
Website: www.dero.com

2.2 Materials

- A. Main body: 6 x 3/16" tube.
- B. Bike Hanger: 1.5" sch. 40 pipe, 1/4" plate.
- C. Foot: 10" dia. x .25" plate.
- D. Tool tethers: 5/32" stainless steel cable.
- E. Manual air pump.
- F. Hand tools:
 - 1. Philips and flat head screwdrivers
 - 2. 2.5, 3, 4, 5, 6, 8mm Allen wrenches
 - 3. Headset wrench
 - 4. Pedal wrench
 - 5. 8, 9, 10, 11mm box wrenches
 - 6. Tire levers

2.3 Finishes

- A. A hot-dipped galvanized finish performed after fabrication is standard.
- B. Over 250 high quality TGIC powder-coated colors are available from Dero Bike Rack Co.
 - 1. A TGIC powdercoat finish is available.
 - 2. For powder coated/ painted racks, the following specifications are required: Part is prepared for painting with hard sandblasting. An epoxy primer is electrostatically applied. A final TGIC, UV resistant polyester powder coat is applied. Final coating mil thickness shall be no less than 6 mils.

- C. Thermoplastic coatings may be added over hot-dipped galvanized finishes. In addition to an increased thickness (8-10mils), the thermoplastic finish offers superior impact resistance over powder coating.
- D. Color: Black

2.4 Fixit

A. Space Use

1. The Fixit can accommodate one bike at a time and will use approximately the amount of space listed in the installation diagrams.
2. To ensure that the Fixit is convenient and safe for bicyclists, use these minimum space use configurations when installing the Fixit next to a wall or street.

B. Setbacks

1. Wall Setback: The back of the Fixit should be at least 12" from a wall. Both sides of the Fixit should be 36" from either wall.
2. No part of the Fixit should protrude onto a walkway, bike lane, or common area.
3. Street Setback: For Fixits running parallel to the street, a 96" setback is recommended. For Fixits installed perpendicular to the street, a 60" setback is the minimum.
4. The foot-mounted Fixit has one 10" dia. x .25" plate that is installed onto a concrete base with 4 masonry anchors. 3/8" anchors are the standard anchor shipped with this rack.

PART 3 EXECUTION

3.1 Installation

- A. It is the responsibility of the installer to ensure that all base materials into which the rack will be installed can support the rack and will not be damaged by any required installation procedures.

3.2 Ordering Information

- A. When ordering or specifying this rack, make sure the product type, pump type, finish and fastener type (if applicable) are included. Contact your Dero representative for a current price list or to place an order.

3.3 Included with every Bike Rack

- A. Included in the price is a hot-dipped galvanized finish. The foot-mounted Fixit includes 4 wedge anchors or concrete spikes.

PART 1 - PAYMENT

4.1 METHOD OF MEASUREMENT

- A. The quantity of Special Provision Bike Tuning Station will be paid on an each (EA) basis to install bike tuning station in the designated locations within the limits shown on the plans.

4.2 BASIS OF PAYMENT

- A. The accepted quantity of Special Provision Bike Tuning Station will be paid for at the Contract EA price. The bike tuning station, installation, and all necessary materials shall be paid for incidental to this pay item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision Bike Tuning Station	EA

END SECTION

SECTION 900 – SPECIAL PROVISION

METAL STAIRS

1. **DESCRIPTION.** This work shall consist of designing, fabricating, furnishing and installing metal stairs to replace the existing wooden stairs at the locations indicated in the Plans and as directed by the Engineer.
2. **MATERIALS.** Materials shall meet the requirements specified in the Plans, and as directed by BPRW.
3. **CONSTRUCTION REQUIREMENTS.** The metal stairs shall be constructed on a design build basis and as directed by the Engineer.
4. **METHOD OF MEASUREMENT.** The quantity of Special Provision (Metal Stair) to be measured for payment will be for each set of metal stairs installed in the complete and accepted work.
5. **BASIS OF PAYMENT.** The accepted quantity of Special Provision (Metal Stair) will be paid for at the Contract unit price per Each. Payment will be full compensation for designing, fabricating, furnishing and installing the metal stairs specified including all materials, sleeves, posts, wood treads and risers, and foundations where required, and for furnishing all labor, tools, equipment, hardware, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Items</u>	<u>Pay Unit</u>
900.620 Special Provision (Metal Stairs – Leddy)	Each
900.620 Special Provision (Metal Stairs - North Shore)	Each

SECTION 900

SPECIAL PROVISION ORNAMENTAL LIGHT

PART 1 – GENERAL

- 1.01 DESCRIPTION. This work shall consist of furnishing and installing ornamental light poles, fixtures, lights, foundations, wiring, and all incidentals, as shown 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 679 of the Standard specifications.

- 1.02 MATERIALS. Materials shall be in accordance with Section 679 and the following requirements:

- (a) Concrete: Concrete shall meet the requirements of Section 541 for Concrete, Class B.
- (b) Light Poles: Poles shall be decorative aluminum 4" round. The pole shall have a 14 foot mounting height.
- (c) Base Cover: The decorative base cover shall be made from two cast-aluminum pieces fastened together with stainless steel hardware around the base of the light pole. The base cover shall be complete with a door to access the pole maintenance opening.
- (d) Finish: The light poles, bases, base covers and fixture adapters shall be a "black" surface treatment, thermosetting polyester resin based powder coating.
- (e) Light Fixtures: The luminaires shall have a glass globe, with decorative base adaptor, with finials, with decorative band and vertical support. Each luminaire shall include a photoelectric cell. All Type B light fixtures will require a decorative twin mounting arm.
- (f) Fixture/Lamps: The lamp wattage for the luminaires shall be 63 watt LED with a kelvin rating of 4,000. The optical system shall be Type III distribution.
- (g) Wiring: The Contractor shall provide and install all wiring for the proposed lighting system. The wire shall be copper, 600 volt insulated, type XHHW-2 to the gages as provided by the electrical contractor.
- (h) Banner Arms: The banner arms shall be able to accommodate banners that are 18"x36". The banner arms shall be designed to fit on a pole, using a central tubing insert through two opposite holes. All connecting hardware should be stainless steel.
- (i) Duplex Receptacle: The light fixture/pole shall include a 120V duplex receptacle with common ground fault interrupter with a weather proof cover.

Manufacturer Ordering Summary

The ordering information for equivalent ornamental street lights for Fixture Types A, B and C are as follows:

Fixture A:

Manufacturer:	Architectural Area Lighting
Luminaire	UCM
Hood	Straight (STR), No Luminous Element
LED Wattage	32watt
Lamp Temperature	4,000K
Optical System	T3
Voltage	120-277v
Pole	DB6-4F14
Pole Options	GFI w/ waterproof cover
Mounting Arm:	SLA17
Banner Arms	(Two Arms, spaced to accommodate 48" banner)
Finish	BLK (Black)

Fixture B:

Manufacturer:	Architectural Area Lighting
Luminaire	UCM
Hood	Straight (STR), No Luminous Element
LED Wattage	32watt
Lamp Temperature	4,000K
Optical System	T3
Voltage	120-277v
Pole	DB6-4F14
Pole Options	GFI w/ waterproof cover
Mounting Arm:	SLA17-2
Banner Arms	(Two Arms, spaced to accommodate 48" banner)
Finish	BLK (Black)

Fixture C:

Manufacturer:	Architectural Area Lighting
Luminaire	UCM
Hood	Straight (STR), No Luminous Element
LED Wattage	32watt
Lamp Temperature	4,000K
Optical System	T3
Voltage	120-277v
Mounting Arm:	WMA17 (Wall mount)
Finish	BLK (Black)

Local Contact:
Swaney Lighting
PO Box 1597
Scarborough, ME 04070
207-883-7100 tel.

PART 2 - EXECUTION

2.01 CONSTRUCTION REQUIREMENTS.

The Contractor shall submit manufacturer's descriptive literature for materials specified in accordance with 105.03.

Transport, storage, and handling of products shall be in accordance with manufacturer's instructions.

Ornamental lights shall only be installed in the locations specified on the plans and in accordance with manufacturer's instructions.

2.02 SUBMITTALS.

The Contractor shall submit shop drawings of light fixture, pole, and banner arms for review and approval.

PART 3 - PAYMENT

1.04 METHOD OF MEASUREMENT. The quantity of Special Provision (Ornamental Light) will be measured by the number of units installed, complete with all poles, light fixtures, lamps, anchors, grounding, receptacles, wiring, photocells, banner arms, accessories and incidentals. Wired conduit will be measured and paid separately.

1.05 BASIS OF PAYMENT. The accepted quantity of Special Provision(Ornamental Light) will be paid for at the Contract unit price per each. Payment will be full compensation for furnishing, transporting, handling, assembling, and placing the materials specified.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Ornamental Light-Fixture A)	Each
900.620 Special Provision (Ornamental Light-Fixture B)	Each
900.620 Special Provision (Ornamental Light-Fixture C)	Each

END OF SECTION

SECTION 900 – SPECIAL PROVISION
ROOT PRUNING AND TREE PROTECTION

1. **DESCRIPTION.** This work shall consist of protecting existing trees and roots from construction operations.
2. **GENERAL.** Before beginning any field work, the contractor is required to meet with the City Arborist or designee at the site to review all work procedures, access routes, storage areas, and tree protection measures. The City Arborist or designee also must first inspect each tree to determine if the plant will tolerate root pruning. Considerations include tree species, age, crown size, site exposure, and presence of existing defects, relative to vigor, and severity of necessary root pruning. Additional tree pruning required for clearance during construction must be performed by a certified arborist and not by construction personnel. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the City Arborist so that appropriate treatments can be applied. Any grading, construction, demolition, or other work that is expected to encounter tree roots must be monitored by the City Arborist.

Root pruning is most efficiently accomplished with equipment specifically designed for that purpose. Large circular saws used to cut concrete, and rock saws also are effective. The saws must cut through the woody roots to the depth of the required excavation. Root pruning equipment designed primarily for curb and sidewalk repair may cut only 4 inches deep. Where excavation must occur very close to trees, it may be necessary to dig the soil away with a shovel, then cut the exposed root with a saw. The following procedure is recommended:

- A. Stake the edge of excavation. The City Arborist or designee and Resident Engineer will meet with the contractor to layout the edge of excavation for root pruning.
- B. Root pruning shall be done with a stump grinder where possible. Do not use trenchers or backhoes, which can rip the roots closer to the root collar than the intended cut. If a stump grinder cannot be used to perform root pruning, roots shall be exposed by hand excavation and roots 1" or greater shall be cut with a freshly sharpened hand or chainsaw.
- C. If root-pruning equipment cannot be used, dig a trench along the staked line. Equipment such as a backhoe can be used until roots larger than 1 inch in diameter are encountered. Then, dig with a shovel.
- D. When a root is encountered, expose it by removing soil by hand, and cut it cleanly with a saw at the outside edge of the trench (towards the tree). Cut to a lateral root when possible. Do not paint the cut root end. If excavation is for installation of underground utilities, leave the root intact and thread the lines underneath.

- E. If possible, all roots 4 inches or greater in diameter shall be left intact.
- F. Replace soil in the trench.
- G. Allow grading equipment to operate freely outside the tree protection zone.
- H. The contractor shall anticipate approximately fifteen (15 +/-) trees requiring these stipulations.

- 3. CONSTRUCTION REQUIREMENTS.** The Contractor shall excavate, place shoulder aggregate, remove existing bituminous concrete pavement and overlay new bituminous concrete pavement as shown in the plans and in a manner that will not harm the existing trees.

The tree canopy over the bike path is approximately 10 to 15 feet off of the existing ground in this area and is not to be harmed. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the City Arborist or designee so that appropriate treatments can be applied.

- 4. METHOD OF MEASUREMENT.** The quantity of Special Provision (Root Pruning and Tree Protection) to be measured for payment will be on a Lump Sum basis in the complete and accepted work.

- 5. BASIS OF PAYMENT.** The accepted quantity of Special Provision (Root Pruning and Tree Protection) will be paid for at the Contract unit price per Lump Sum. The work shall include all labor, materials, and equipment for root pruning and tree protection including but not limited to any hand or machine excavation of soil to access the roots, and ensuring appropriate construction equipment is used based on the spatial constraints of the area.

The costs for the installation of tree protection fencing shall be paid for separately under the appropriate Contract pay item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Root Pruning and Tree Protection)	Lump Sum

ATTACHMENT 1 – BURLINGTON’S LIVABLE WAGE ORDINANCE

ARTICLE VI. LIVABLE WAGES¹

21-80 Findings and purpose.

In enacting this article, the City council states the following findings and purposes:

- (a) Income from full-time work should be sufficient to meet an individual’s basic needs;
- (b) The City of Burlington is committed to ensuring that its employees have an opportunity for a decent quality of life and are compensated such that they are not dependent on public assistance to meet their basic needs;
- (c) The City of Burlington is committed, through its contracts with vendors and provision of financial assistance, to encourage the private sector to pay its employees a livable wage and contribute to employee health care benefits;
- (d) The creation of jobs that pay livable wages promotes the prosperity and general welfare of the City of Burlington and its residents, increases consumer spending with local businesses, improves the economic welfare and security of affected employees and reduces expenditures for public assistance;
- (e) It is the intention of the City council in passing this article to provide a minimum level of compensation for employees of the City of Burlington and employees of entities that enter into service contracts or receive financial assistance from the City of Burlington.

(Ord. of 11-19-01; Ord. of 10-21-13)

21-81 Definitions.

As used in this article, the following terms shall be defined as follows:

(a) *Contractor or vendor* is a person or entity that has a service contract with the City of Burlington where the total amount of the service contract or service contracts exceeds fifteen thousand dollars (\$15,000.00) for any twelve (12) month period, including any subcontractors of such contractor or vendor.

(b) *Grantee* is a person or entity that is the recipient of financial assistance from the City of Burlington in the form of grants, including any contractors or subgrantees of the grantee, that exceed fifteen thousand dollars (\$15,000.00) for any twelve (12) month period.

(c) *Covered employer* means the City of Burlington, a contractor or vendor or a grantee as defined above. The primary contractor, vendor, or grantee shall be responsible for the compliance of each of its subcontractors (or of each subgrantee) that is a covered employer.

(d) *Covered employee* means an "employee" as defined below, who is employed by a "covered employer," subject to the following:

(1) An employee who is employed by a contractor or vendor is a "covered employee" during the period of time he or she expends on furnishing services under a service contract with the City of

Burlington, notwithstanding that the employee may be a temporary or seasonal employee;

(2) An employee who is employed by a grantee who expends at least half of his or her time on activities funded by the City of Burlington is a "covered employee."

(e) *Designated accountability monitor* shall mean a nonprofit corporation which has established and maintains valid nonprofit status under Section 501(c)(3) of the United States Internal Revenue Code of 1986, as amended, and that is independent of the parties it is monitoring.

(f) *Employee* means a person who is employed on a full-time or part-time regular basis. In addition, commencing with the next fiscal year, a seasonal or temporary employee of the City of Burlington who works ten (10) or more hours per week and has been employed by the City of Burlington for a period of four (4) years shall be considered a covered employee commencing in the fifth year of employment. "Employee" shall not refer to volunteers working without pay or for a nominal stipend, persons working in an approved apprenticeship program, persons who are hired for a prescribed period of six (6) months or less to fulfill the requirements to obtain a professional license as an attorney, persons who are hired through youth employment programs or student workers or interns participating in established educational internship programs.

(g) *Employer-assisted health care* means health care benefits provided by employers for employees (or employees and their dependents) at the employer's cost or at an employer contribution towards the purchase of such health care benefits, provided that the employer cost or contribution consists of at least one dollar and twenty cents (\$1.20) per hour. (Said amount shall be adjusted every two (2) years for inflation, by the chief administrative officer of the City.) (h) *Livable wage* has the meaning set forth in Section [21-82](#).

(i) *Retaliation* shall mean the denial of any right guaranteed under this article, and any threat, discipline, discharge, demotion, suspension, reduction of hours, or any other adverse action against an employee for exercising any right guaranteed under this article. Retaliation shall also include coercion, intimidation, threat, harassment, or interference in any manner with any investigation, proceeding, or hearing under this article.

(j) *Service contract* means a contract primarily for the furnishing of services to the City of Burlington (as opposed to the purchasing or leasing of goods or

property). A contract involving the furnishing of financial products, insurance products, or software, even if that contract also includes some support or other services related to the provision of the products, shall not be considered a service contract.

(Ord. of 11-19-01; Ord. of 10-21-13)

21-82 Livable wages required.

- (a) Every covered employer shall pay each and every covered employee at least a livable wage no less than:
 - (1) For a covered employer that provides employer assisted health care, the livable wage shall be at least thirteen dollars and ninety-four cents (\$13.94) per hour on the effective date of the amendments to this article.
 - (2) For a covered employer that does not provide employer assisted health care, the livable wage shall be at least fifteen dollars and eighty-three cents (\$15.83) per hour on the effective date of the amendments to this article.
 - (3) Covered employees whose wage compensation consists of more or other than hourly wages, including, but not limited to, tips, commissions, flat fees or bonuses, shall be paid so that the total of all wage compensation will at least equal the livable wage as established under this article.
- (b) The amount of the livable wage established in this section shall be adjusted by the chief administrative officer of the City as of July 1 of each year based upon a report of the Joint Fiscal Office of the State of Vermont that describes the basic needs budget for a single person but utilizes a model of two (2) adults residing in a two (2) bedroom living unit in an urban area with the moderate cost food plan. Should there be no such report from the Joint Fiscal Office, the chief administrative officer shall obtain

and utilize a basic needs budget that applies a similar methodology. The livable wage rates derived from utilizing a model of two (2) adults residing in a two (2) bedroom living unit in an urban area with a moderate cost food plan shall not become effective until rates meet or exceed the 2010 posted livable wage rates. Prior to May 1 preceding any such adjustment and prior to May 1 of each calendar year thereafter, the chief administrative officer will provide public notice of this adjustment by posting a written notice in a prominent place in City Hall by sending written notice to the City council and, in the case of covered employers that have requested individual notice and provided contact information to the chief administrative officer, by notice to each such covered employer. However, once a livable wage is applied to an individual employee, no reduction in that employee's pay rate is permissible due to this annual adjustment.

- (c) Covered employers shall provide at least twelve (12) compensated days off per year for full-time covered employees, and a proportionate amount for part-time covered employees, for sick leave, vacation, personal, or combined time off leave.

(Ord. of 11-19-01; Ord. of 5-2-11; Ord. of 6-13-11; Ord. of 10-21-13)

21-83 Applicability.

(a) This article shall apply to any service contract or grant, as provided by this article that is awarded or entered into after the effective date of the article. After the effective date of the article, entering into any agreement or an extension, renewal or amendment of any contract or grant as defined herein shall be subject to compliance with this article.

(b) The requirements of this article shall apply during the term of any service contract subject to the article. Covered employers who receive grants shall comply with this article during the period of time the funds awarded by the City of Burlington are being expended by the covered employer.

21-84 Enforcement.

- (a) Each service contract or grant covered by this article shall contain provisions requiring that the covered employer or grantee submit a written certification, under oath, during each year during the term of the service contract or grant, that the covered employer or grantee (including all of its subcontractors and subgrantees, if any) is in compliance with this article. The failure of a contract to contain such provisions does not excuse a covered employer from its obligations under this article. The covered employer shall agree to post a notice regarding the applicability of this section in any workplace or other location where employees or other persons contracted for employment are working. The covered employer shall agree to provide payroll records or other documentation for itself and any subcontractors or subgrantees, as deemed necessary by the chief administrative officer of the City of Burlington, within ten (10) business days from receipt of the City of Burlington's request.
- (b) The chief administrative officer of the City of Burlington may require that a covered employer submit proof of compliance with this article at any time, including but not limited to:
 - (1) Verification of an individual employee's compensation;
 - (2) Production of payroll, health insurance enrollment records, or other relevant documentation; or
 - (3) Evidence of proper posting of notice.

If a covered employer is not able to provide that information within ten (10) business days of the request, the chief administrative officer may turn the matter over to the City attorney's office for further enforcement proceedings.

(c) The City of Burlington shall appoint a designated accountability monitor that shall have the authority:

- (1) To inform and educate employees of all applicable provisions of this article and other applicable laws, codes, and regulations;
- (2) To create a telephonic and electronic accountability system under this article that shall be available at all times to receive complaints under this article;
- (3) To establish and implement a system for processing employees' complaints under this article, including a system for investigating complaints and determining their initial credibility; and
- (4) To refer credible complaints to the City attorney's office for potential enforcement action under this article.

The designated accountability monitor shall forward to the City of Burlington all credible complaints of violations within ten (10) days of their receipt.

(d) Any covered employee who believes his or her covered employer is not complying with this article may file a complaint in writing with the City attorney's office within one (1) year after the alleged violation. The City attorney's office shall conduct an investigation of the complaint, during which it may require from the covered employer evidence such as may be required to determine whether the covered employer has been compliant, and shall make a finding of compliance or noncompliance within a reasonable time after receiving the complaint. Prior to ordering any penalty provided in subsection (e), (f), or (g) of this section, the City attorney's office shall give notice to the covered employer. The covered employer may request a hearing within thirty (30) days of receipt of such notice. The hearing shall be conducted by a hearing officer appointed by the City attorney's office, who shall affirm or reverse the finding or the penalty based upon evidence presented by the City attorney's office and the covered employer.

- (e) The City of Burlington shall have the right to modify, terminate and/or seek specific performance of any contract or grant with a covered employer from any court of competent jurisdiction, if the covered employer has not complied with this article.
- (f) Any covered employer who violates this article may be barred from receiving a contract or grant from the City for a period up to two (2) years from the date of the finding of violation.
- (g) A violation of this article shall be a civil offense subject to a civil penalty of from two hundred dollars (\$200.00) to five hundred dollars (\$500.00). All law enforcement officers and any other duly authorized municipal officials are authorized to issue a municipal complaint for a violation of this article. Each day any covered employee is not compensated as required by this article shall constitute a separate violation.
- (h) If a complaint is received that implicates any City of Burlington employee in a possible violation of this article, that complaint will be handled through the City's personnel procedures, not through the process outlined in this article.
- (i) Any covered employee aggrieved by a violation of this article may bring a civil action in a court of competent jurisdiction against the covered employer within two (2) years after discovery of the alleged violation. The court may award any covered employee who files suit pursuant to this section, as to the relevant period of time, the following:
 - (1) The difference between the livable wage required under this article and the amount actually paid to the covered employee;
 - (2) Equitable payment for any compensated days off that were unlawfully denied or were not properly compensated;

- (3) Liquidated damages in an amount equal to the amount of back wages and/or compensated days off unlawfully withheld or fifty dollars (\$50.00) for each employee or person whose rights under this article were violated for each day that the violation occurred or continued, whichever is greater;
 - (4) Reinstatement in employment and/or injunctive relief; and
 - (5) Reasonable attorneys' fees and costs.
- (j) It shall be unlawful for an employer or any other person to interfere with, restrain, or deny the exercise of, or the attempt to exercise, any right protected under this article. No person shall engage in retaliation against an employee or threaten to do so because such employee has exercised rights or is planning to exercise rights protected under this article or has cooperated in any investigation conducted pursuant to this article.

(Ord. of 11-19-01; Ord. of 2-17-04; Ord. of 5-2-11; Ord. of 10-21-13)

21-85 Other provisions.

- (a) No covered employer shall reduce the compensation, wages, fringe benefits or leave available to any covered employee in order to pay the livable wage required by this article. Any action in violation of this subsection shall be deemed a violation of this article subject to the remedies of Section [21-84](#).
- (b) No covered employer with a current contract, as of the effective date of this provision, with the City of Burlington for the use of property located at the Burlington International Airport may reduce, during the term of that contract, the wages of a covered employee below the livable wage as a result of amendments to this article.

(c) Where pursuant to a contract for services with the City, the contractor or subcontractor incurs a contractual obligation to pay its employees certain wage rates, in no case except as stated in subsection (d) of this section, shall the wage rates paid pursuant to that contract be less than the minimum livable wage paid pursuant to this article.

(d) Notwithstanding subsection (c) of this section, where employees are represented by a bargaining unit or labor union pursuant to rights conferred by state or federal law and a collective bargaining labor agreement is in effect governing the terms and conditions of employment of those employees, this chapter shall not apply to those employees, and the collective bargaining labor agreement shall control.

(e) Covered employers shall inform employees making less than twelve dollars (\$12.00) per hour of their possible right to the Earned Income Tax Credit under federal and state law.

(f) The chief administrative officer of the City shall have the authority to promulgate rules as necessary to administer the provisions of this article, which shall become effective upon approval by the City council.

(Ord. of 11-19-01; Ord. of 10-21-13)

21-86 Exemptions.

An exemption from any requirement of this article may be requested for a period not to exceed two (2) years:

(a) By a covered employer where payment of the livable wage would cause substantial economic hardship; and

(b) By the City of Burlington where application of this article to a particular contract or grant is found to violate specific state or federal statutory, regulatory or constitutional provisions or where granting the exemption would be in the best interests of the City.

A covered employer or grantee granted an exemption under this section may reapply for an exemption upon the expiration of the exemption. Requests for exemption may be granted by majority vote of the City council. All requests for exemption shall be submitted to the chief administrative officer. The finance committee of the City of Burlington shall first consider such request and make a recommendation to the City council. The decision of the City council shall be final.

(Ord. of 11-19-01; Ord. of 10-21-13)

21-87 Severability.

If any part or parts or application of any part of this article is held invalid, such holding shall not affect the validity of the remaining parts of this article.

(Ord. of 11-19-01; Ord. of 10-21-13)

21-88 Annual reporting.

On or before April 15 of each year, the City attorney's office shall submit a report to the City council that provides the following information:

- (a) A list of all covered employers broken down by department;
- (b) A list of all covered employers whose service contract did not contain the language required by this article; and
- (c) All complaints filed and investigated by the City attorney's office and the results of such investigation.

(Ord. of 10-21-13)

21-89 Effective date.

The amendments to this article shall take effect on January 1, 2014, and shall not be retroactively applied.

(Ord. of 10-21-13)

ATTACHMENT 1

Certification of Compliance with the City of Burlington's Livable Wage Ordinance

I, _____, on behalf of _____ ("the Contractor") in connection with a contract for _____ services that we provide to the City, hereby certify under oath that the Contractor (and any subcontractors under this contract) is and will remain in compliance with the City of Burlington's Livable Wage Ordinance, B.C.O. 21-80 et seq., and that

(1) as a condition of entering into this contract or grant, we confirm that all covered employees as defined by Burlington's Livable Wage Ordinance (including the covered employees of subcontractors) shall be paid a livable wage (as determined, or adjusted, annually by the City of Burlington's chief administrative officer) and provided appropriate time off for the term of the contract;

(2) a notice regarding the applicability of the Livable Wage Ordinance shall be posted in the workplace(s) or other location(s) where covered employees work;

(3) we will provide verification of an employee's compensation, produce payroll or health insurance enrollment records or provide other relevant documentation (including that of any subcontractor), as deemed necessary by the chief administrative officer, within ten (10) business days from receipt of a request by the City;

(4) we will cooperate in any investigation conducted by the City of Burlington's City Attorney's office pursuant to this ordinance; and

(5) we will not retaliate (nor allow any subcontractor to retaliate) against an employee or other person because an employee has exercised rights or the person has cooperated in an investigation conducted pursuant to this ordinance.

Date _____ By: _____
Contractor

Subscribed and sworn to before me:

Date _____
Notary

ATTACHMENT 2 - BURLINGTON'S UNION DETERRENCE ORDINANCE

ARTICLE VIII. UNION DETERRENCE

21-100 Policy.

It is the policy of the City of Burlington to limit letting contracts to organizations that provide union deterrence services to other companies.

(Ord. of 3-27-06/4-26-06)

21-101 Definitions.

- (a) *Contractor or vendor.* A person or entity that has a contract with the City of Burlington primarily for the furnishing of services (as opposed to the purchasing of goods), including any subcontractors of such contractor or vendor.
- (b) *Government funded project.* Any contract for services which involves any City funds and the total amount of the contract is fifteen thousand dollars (\$15,000.00) or more. Burlington School Department contracts shall not be considered government funded projects under this article.
- (c) *Union deterrence services.* Services provided by a contractor, subcontractor or vendor that are not restricted to advice concerning what activities by an employer are prohibited and permitted by applicable laws and regulations, but extend beyond such legal advice to encouraging an employer to do any of the following:
- 1) Hold captive audience, (i.e., mandatory) meetings with employees encouraging employees to vote against the union;
 - 2) Have supervisors force workers to meet individually with them to discuss the union;
 - 3) Imply to employees, whether through written or oral communication, that their employer may have to shut down or lay people off if the union wins the election;
 - 4) Discipline or fire workers for union activity;
 - 5) Train managers on how to dissuade employees from supporting the union.
- (d) *Substantial portion of income.* For the purposes of this article, substantial portion of income shall mean greater than ten (10) percent of annual gross revenues or one hundred thousand dollars (\$100,000.00), whichever is less.

(Ord. of 3-27-06/4-26-06)

21-102 Implementation.

- (a) No contract for a government funded project shall be let to any contractor, subcontractor, or vendor who
- 1) Advises or has advised an employer to conduct any illegal activity in its dealings with a union.
 - 2) Advertises union deterrence services as specialty services;
 - 3) Earns a substantial portion of its income by providing union deterrence services to other companies in order to defeat union organizing efforts.
- (b) Prior to the commencement of work on a government funded project a contractor, subcontractor or vendor shall provide written certification that it has not advised the conduct of any illegal activity, it does not currently, nor will it over the life of the contract provide union deterrence services in violation of this article.

(Ord. of 3-27-06/4-26-06)

21-103 Enforcement.

- (a) Any contractor, subcontractor or vendor who files false or materially misleading information in connection with an application, certification or request for information pursuant to the provisions of this article or provided union deterrence services during the life of a contract for a government funded project shall be deemed to be in violation of this article.
- (b) The City of Burlington shall have the right to modify, terminate and or seek specific performance of any contract for a government funded project if the contractor, subcontractor or vendor has not complied with this article.

(Ord. of 3-27-06/4-26-06)

21-104—21-110 Reserved.

ATTACHMENT 2

Certification of Compliance with the City of Burlington's
Union Deterrence Ordinance

I, _____, on behalf of _____ (Contractor) and in connection with the _____ project, hereby certify under oath that _____ (Contractor) has not advised the conduct of any illegal activity, and it does not currently, nor will it over the life of the contract advertise or provide union deterrence services in violation of the City's union deterrence ordinance.

Dated at _____, Vermont this ____ day of _____, 2018.

By: _____ Duly Authorized
Agent

ATTACHMENT 3 - BURLINGTON'S OUTSOURCING ORDINANCE

ARTICLE VII. OUTSOURCING **21-90 Policy.**

It is the policy of the City of Burlington to let service contracts to contractors, subcontractors and vendors who perform work in the United States.

(Ord. of 11-21-05/12-21-05)

21-91 Definitions.

- (a) *Contractor or vendor.* A person or entity that has a contract with the City of Burlington primarily for the furnishing of services (as opposed to the purchasing of goods), including any subcontractors of such contractor or vendor.
- (b) *Government funded project.* Any contract for services which involves any City funds and the total amount of the contract is fifty thousand dollars (\$50,000.00) or more. Burlington School Department contracts shall not be considered government funded projects under this article.
- (c) *Outsourcing.* The assigning or reassigning, directly, or indirectly through subcontracting, of services under a government funded project to workers performing the work outside of the United States.

(Ord. of 11-21-05/12-21-05)

21-92 Implementation.

- (a) No contract for a government funded project shall be let to any contractor, subcontractor, or vendor who is outsourcing, or causing the work to be performed outside of the United States or Canada.
- (b) Prior to the commencement of work on a government funded project a contractor, subcontractor or vendor shall provide written certification that the services provided under the contract will be performed in the United States or Canada.

(Ord. of 11-21-05/12-21-05)

21-93 Exemption.

An exemption from requirements of this article may be authorized by the chief administrative officer based upon a determination that the services to be performed for the government funded project are not available in the United States or Canada at a reasonable cost. Any such exemption decision by the chief administrative officer shall be reported to the board of finance in writing within five (5) days. The board of finance may, if it should vote to do so, override the exemption decision if such vote occurs within fourteen

(14) days of the date of the chief administrative officer's communication to such board.

(Ord. of 11-21-05/12-21-05)

21-94 Enforcement.

- (a) Any contractor, subcontractor or vendor who files false or materially misleading information in connection with an application, certification or request for information pursuant to the provisions of this article or outsources work on a government funded project shall be deemed to be in violation of this article.
- (b) A violation of this article shall be a civil offense subject to a civil penalty of from one hundred dollars (\$100.00) to five hundred (\$500.00). All law enforcement officers and any other duly authorized municipal officials are authorized to issue a municipal complaint for a violation of this article. Each day any violation of any provision of this article shall continue shall constitute a separate violation.
- (c) The City of Burlington shall have the right to modify, terminate and or seek specific performance of any contract for a government funded project if the contractor, subcontractor or vendor has not complied with this article.

(Ord. of 11-21-05/12-21-05)

21-95—21-99 Reserved.

ATTACHMENT 3

Certification of Compliance with the City of Burlington's Outsourcing Ordinance

I, _____, on behalf of _____ (Contractor) and in connection with the _____ project, hereby certify under oath that (1) Contractor shall comply with the City of Burlington's Outsourcing Ordinance (Ordinance §§ 21-90 – 21-93); (2) as a condition of entering into this contract or grant, Contractor confirms that the services provided under the above-referenced contract will be performed in the United States or Canada.

Dated at _____, Vermont this ____ day of _____, 2017.

By: _____ Duly Authorized
Agent

Subscribed and sworn to before me: _____
Notary

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