**CITY OF BURLINGTON, VERMONT**

****

**2023 ENGINEERING SPECIFICATIONS**

INTRODUCTION

The City of Burlington Engineering Standards and Specifications (“Standards”) have been developed for use on all City of Burlington projects managed by the Department of Public Works and the Department of Parks, Recreation, and Waterfront. As part of this document, the provisions of the VTRANS 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION and the most recent published revisions to this document shall apply to all contracts.

The provisions of the City of Burlington Engineering Standards and Specifications shall supersede the corresponding provisions in the VTrans 2024 Standard Specifications for Construction.

, n case of discrepancy, precedence of the Contract Documents will be determined by Section 101.05 Coordination of Contract Documents of the latest edition of the VTrans Standard Specifications for Construction.

Any work done using these Standards is subject to review and approval by the City of Burlington. The Standards are to be used by engineering professionals for projects within the City. The Standards may need to be modified with approval by the City Engineer to meet project specific applications. The Standards do not cover all aspects of water resources and other infrastructure and it is the responsibility of the designer to ensure construction details are complete for specific applications. The City is not responsible for the misuse of these Standards for applications where they are not appropriate.

**VTRANS PROJECT SPECIAL PROVISIONS**

**[The following special provisions, as a minimum, are to be included in all locally managed projects using the VTrans Construction Specifications. Additional project-specific special provisions must be added as necessary. REMOVE THIS TEXT IN THE FINAL BID DOCUMENTS.]**

**NOTICE TO BIDDERS – 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 utilities.

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

Should the Contractor desire additional adjustments of the utility facilities for his/her convenience, proper arrangements shall be made in conformance with Subsection 105.09 Cooperation with Utilities of the Standard Specifications for Construction.

**NOTICE TO BIDDERS – TEMPORARY CONSTRUCTION SIGNS.** 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) Where sign installations are not protected by guardrail or other approved traffic barriers, all sign stands and post installations shall meet National Cooperative Highway Research Program (NCHRP) Report 350 or the AASHTO Manual for Assessing Safety Hardware (MASH). The appropriate resource shall be determined as described in the MASH publication.

(c) As a minimum, roll up sign material shall have ASTM D 4956 Type VI fluorescent orange retroreflective sheeting.

(d) All post-mounted signs and solid substrate portable signs shall have ASTM D 4956 Type VII, Type VIII, or Type IX fluorescent orange retroreflective sheeting.

(e) All retroreflective sheeting on traffic cones, barricades, and drums shall be at a minimum ASTM D 4956 Type III sheeting.

(f) All stationary signs shall be mounted on two 3 lb/ft flanged channel posts or 2 inch square steel inserted in 2-1/4” galvanized square steel anchors. No sign posts shall extend over the top edge of sign installed on said posts.

(g) 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.

(h) 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.

(i) Speed zones, if used, should be a maximum of 10 mph below existing posted speeds. Temporary speed limit certificates must be approved by the Chief Engineer on State highways and can be approved by the governing municipality on local roads.

(j) An accessible sidewalk route must be available for pedestrians at all times when a sidewalk or roadway is closed. Provide a sign, “Sidewalk Closed Ahead”, at both ends of the street when the sidewalk is closed. Only sidewalk on one side of a street can be closed at a time.

**NOTICE TO BIDDERS – RETROREFLECTIVE SHEETING**. All retroreflective 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.

**NOTICE TO BIDDERS – GENDER-FREE SINGLE OCCUPANCY RESTROOMS.** The Contractor shall comply with all of the requirements of Vermont Act 127 (H.333) relating to the designation and signage of single-user toilet facilities in public buildings or places of public accommodation. Any such facilities may be identified by a sign, provided that the sign marks the facility as a restroom and does not indicate any specific gender.

**NOTICE TO BIDDERS – CONTAMINATED SHARPS (HYPODERMIC NEEDLES).** The Contractor is hereby notified that there are an increasing number of hypodermic needles (also known as contaminated sharps) being found throughout Vermont, and there is the potential to find them along any project. In accordance with Section 107.05, Sanitary Provisions, the Contractor is required to provide a neat and sanitary working environment for each of its employees and workers at no additional cost to the Agency.

 The Contractor may reach out to local Police, the City Health Officer or the Vermont Department of Health at <https://dec.vermont.gov/content/safe-disposal-sharps> for guidance.

 If the sharps are located in an area where work is required, the Contractor shall dispose of the sharps in accordance with OSHA Standard 1910.1030 for blood borne pathogens. OSHA has an e-tool for disposal of sharps on their website as well. The standard can be found at the following link: <https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051>.

 If the sharps are not in an area where the Contractor or workers will come into contact with them, it is best practice to avoid them altogether. The area can be marked and workers should be notified to stay out of the area.

**NOTICE TO BIDDERS: Emerald Ash Borer (EAB).**

As of 2024, the emerald ash borer (EAB), Agrilus planipennis, has been confirmed within Vermont’s borders. To provide an assurance of compliance with state and federal EAB laws the contractor shall adhere to the following:

Wherever a potential EAB infestation is identified, the Contractor shall notify and coordinate with the City Arborist as well as the MPM prior to mitigation occurring.

Known EAB infestation areas are changing rapidly. Therefore the Contractor shall consult the online version of the EAB Infested Area Map (Located here: [www.vtinvasives.org/land/emerald-ash-borer-vermont](http://www.vtinvasives.org/land/emerald-ash-borer-vermont)) on the same day cutting is to occur. If the project is located with an EAB infested area, ALL tree material, regardless of species, within the project area shall be handled in accordance with a document developed by the Vermont Department of Forests, Parks and Recreation and the Vermont Agency of Agriculture titled “Recommendations to SLOW THE SPREAD of Emerald Ash Borer When Moving Ash from the Infested Area”, <https://vtinvasives.org/sites/default/files/images/SLS/SlowSpreadWoodVT%20FINAL.pdf>.  Tree material shall not be moved out of state.

 Alternatively, the Contractor may choose to hire a qualified professional (Arborist certified by the International Society of Arboriculture or Licensed Forester), at their own expense, to identify the presence of ash trees. Those identified ash trees would be subject to the above referenced recommendations, however other tree species would not.

The Contractor is also hereby made aware of the same potential restrictions as they relate to proposed Waste, Borrow and Staging areas.

**NOTICE TO BIDDERS – ENVIRONMENTAL COMMITMENTS.** Contract Commitments as written – found on Environmental Commitments Memo.

**NOTICE TO BIDDERS – PARKING RESTRICTIONS.** Only such trucks and equipment as are necessary for the construction of this project will be permitted to stop or park on the shoulders or right-of-way of the roadway. 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.

**NOTICE TO BIDDERS – MEASURES TO MITIGATE POTENTIAL IMPACTS DUE TO THE COVID-19 PANDEMIC**. The Contractor is hereby notified that they should anticipate the possibility of future temporary Contract shutdowns, delays, or suspensions as a result of the COVID-19 pandemic. The Contractor shall consider risks associated with the COVID–19 pandemic as the Contractor develops project schedules and advances the work. The Contractor shall schedule work in a manner that in the event of a temporary shutdown, delay, or suspension, the impacts to mobility will be minimized. The sequence and progression of the work will be solely the Contractor’s responsibility. The Contractor is expected to communicate with the Agency regularly to discuss the risks to the project and proposed mitigation measures. VTrans will collaborate with the contractor to mitigate the risks to the project and adjust the sequence of work as necessary to ensure that mobility is not impaired unnecessarily.

If a shutdown, suspension or delay occurs due to the COVID-19 pandemic, the Contractor shall ensure the site is in a stable, safe, and maintainable condition by implementing mitigation measures. Such mitigation measures may include, but are not limited to, limiting the area of milled surfaces exposed at once, or limiting the number of work operations in progress at any one time. The Contractor is solely responsible for any additional maintenance activities or delays related to the sequence and progression of operations. The Agency has established a contract duration which may be longer than expected for the specified work to account for inefficiencies related to the COVID-19 pandemic. The Contractor should anticipate mobility, labor, employee protection measures and material supply issues related to the COVID-19 pandemic. The Contractor is also expected to comply with any Executive Orders.

**NOTICE TO BIDDERS – SITE CONDITION.** Prior to any shutdown or suspension, the site condition shall be in a stable, safe, and maintainable condition for the travelling public. Stable, safe, and maintainable condition means that the Contractor shall establish necessary erosion and environmental controls; ensure that the full width of the roadway is fully paved with no milled sections; install all safety features including guardrail, traffic signs, and pavement markings as designed or restored to the existing condition to meet the existing geometry; and undertake any additional measures as needed based on site conditions. No lane reductions will be allowed through the winter months. Subsection 109.06, Extra and Force Account Work, will not apply for work that is required to bring a project to a satisfactory shutdown condition. In the event of a project Suspension of Work Ordered by the Engineer, the Contractor shall be reimbursed per Subsection 108.16, Compensable and Non-Compensable Delays.

**NOTICE TO BIDDERS – CONCURRENT CONSTRUCTION.** The Contractor is made aware of the following VTrans construction project(s) which are expected to be in progress within the area of this project during its construction.

TABLE 1 – CONCURRENT CONSTRUCTION PROJECTS

|  |  |  |
| --- | --- | --- |
| Project | Contractor | Anticipated Contract Completion Date |
| Project Name & Number | Name if known | Date if known |

This list is not all-inclusive, and it is possible there may be other VTrans, municipal, or private construction projects within the area of this project during its construction. The Contractor shall coordinate construction schedules and traffic control with the work required for these projects. There will be no extra compensation paid to the Contractor for any inconvenience caused by working around these or other projects.

**NOTICE TO BIDDERS – STANDARD DRAWINGS**. The Vermont Agency of Transportation Standard Drawings listed on the Index of Sheets are not included in the plan set, but may be found at the following address: <https://outside.vermont.gov/agency/vtrans/external/CADD/WebFiles/Downloads/Standards/VAOTconSTD_Owner.xml>

The City of Burlington Standard Drawings may be found at the following address: https://www.burlingtonvt.gov/engineeringstandards

**DIVISION 100**

**GENERAL PROVISIONS**

SECTION 101 – DEFINITION AND TERMS

101.02 DEFINITIONS. **The following shall be added after the first sentence:** Terms listed below are hereby added or replaced from the VTrans 2024 Standard Specifications for Construction and the latest version of the VTrans General Special Provisions, defined 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.

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.

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.

AGREEMENT – The written instrument which is evidence of the agreement between the Municipality and the Contractor.

AWARD – The formal acceptance by the Municipality of a proposal.

BID – The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

BID BOND – A proposal guarantees as outlined in the Instructions to Bidders for Contracts.

BIDDER – The individual, partnership, firm, corporation, or any combination thereof, or joint venture, submitting a Bid in accordance with the bidding requirements.

BOARD OR TRANSPORTATION 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 Chief Administrative Officer for the City of Burlington.

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 Municipal Project Manager.

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.

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 Municipal Project Manager and/or Full Time Employee in Responsible Charge.

CONTRACT COMPLETION DATE - The calendar date specified in the Contract and as adjusted by Change Order when applicable, by which the Contractor shall achieve Substantial Completion.

CONTRACT TIME – Refers to CONTRACT DURATION.

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 Director of Public Works for the City of Burlington.

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 Director of Public Works for the City of Burlington.

ENGINEER OR CHIEF ENGINEER– Wherever the term Engineer or Chief Engineer appears on the plans, in any specification, or in the contract, it shall be read as, and shall mean; the City Engineer or Designer of Record.

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 the Municipality signs the Final Completion Certificate.

GOVERNING BODY – Shall refer to the Public Works Commission.

HOLIDAYS – In addition to the holidays listed in the VTrans 2024 Standard Specifications for Construction, the Contractor shall observe Juneteenth on June 19th.

INCIDENTAL AND INCIDENTAL ITEM – These terms are used to indicate work for which no direct payment will be made. Such work is considered to be 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.

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

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; the Resident Engineer (RE).

MUNICIPAL PROJECT MANAGER – A person or firm employed or appointed by the Municipality to provide administrative services for the project.

NOTICE OF AWARD – The written notice of the acceptance of the Bid from the Owner to the successful Bidder.

OWNER – City of Burlington.

PREQUALIFICATION:

Annual Prequalification – The Vermont 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.

Contract Specific Prequalification – The process by which an entity is approved to bid on a specific contract determined by the Municipality to be of a size or scope to warrant more than an Annual Prequalification.

PREQUALIFICATION ADMINISTRATOR – A State and/or Municipal employee charged with administration of their respective 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.

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 BID FORM unless specifically referenced otherwise in these Special Provisions.

PROPOSAL GUARANTEE – The security furnished with a bid to ensure that the bidder will enter into a contract if the bidder’s proposal is accepted by the Municipality.

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 Burlington Public Works Engineer or designated representative.

RESIDENT ENGINEER – An entity employed by the Municipality to perform supervisory duties including the oversight of testing services on the project and oversite and communication with the contractors foreman that the work is performed according to the specifications and other Contract Documents.

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 Burlington Public Works Director.

SPECIAL PROVISIONS OR PROJECT 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:

State – The Vermont Agency of Transportation book entitled 2024 Standard Specifications for Construction, and the specifications included therein, as approved for general and repetitive use and application in Agency/Municipal projects.

Burlington – The City of Burlington Department of Public Works Document entitled City of Burlington, Vermont 2023 Engineering Specifications, and the specifications included therein, as approved for general and repetitive use and application in Agency/Municipal projects.

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 State of Vermont.

TESTING FIRM – An independent firm employed by the Municipality or Resident Engineer to perform all sampling and testing of materials as specified in the Contract Documents and as defined in the VTrans Qualified Laboratory Program.

VTRANS – Wherever the term VTRANS appears on the plans, in and specification, or in the contract it shall be read as, and shall mean; VTRANS or THE BURLINGTON DEPARTMENT OF PUBLIC WORKS, whichever is deemed applicable by the OWNER.

END OF DEFINITIONS

SECTION 105 CONTROL OF WORK

105.11 CONSTRUCTION STAKES.

**Delete parts (a) Initial Layout and (b) Permanent Marking Layout, and replace with the following:**

Unless horizontal and vertical control information for the project is shown on the project plans, the project shall be staked according to existing conditions. The Contractor shall perform all staking requirements for the proposed work. The Contractor will be responsible for the accuracy and preservation of the staking. The City shall not be held responsible for damage to project staking.

105.20 CLAIMS FOR ADJUSTMENT.

**In part (g) Appeal to the Chief Engineer, paragraph (2) Decision Making, delete:**

Paragraph 9 of the Construction Contract, “Dispute Resolution, Exclusivity of Administrative Remedies”;

**and replace with:**

The Dispute Resolution Section of the Construction Contract.

105.21 PAYROLLS.

**After part (c), add:** (d) The Contractor shall submit certified payroll to the Municipal Project Manager with each pay request. Certified payrolls of subcontractors shall also be submitted with corresponding invoices for which payment is sought.

SECTION 106 – CONTROL OF MATERIAL

106.03 SAMPLES AND TESTS.

**Before the first paragraph, add:**

A qualified independent testing firm hired by the City of Burlington *or* its Resident Engineer shall be responsible for Quality Assurance sampling and testing of materials and completed work. The Resident Engineer or Owner may request additional testing as deemed necessary to accept the work.

**After the first sentence of the first paragraph, add:**

 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.

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

Samples will be taken and testing performed by qualified personnel 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, unless otherwise specified in the contract documents.

**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 107 – LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.10 USE OF EXPLOSIVES.

**In part (a) General Requirements, add**: All blasting shall be done at the lowest detonation levels practical and feasible, that still achieve appropriate peak particle velocity for the nearby structures, and in those locations where other methods of excavation cannot be reasonable utilized.

A performance bond or letter or credit, in the amount to be determined by staff, shall be provided by the developer.

SECTION 108 – PROSECUTION AND PROGRESS

108.12 FAILURE TO COMPLETE WORK ON TIME. **Delete TABLE 108.12A and replace with the following:**

Amount of Liquidated Damages.

1-15 DAYS OVER CONTRACT COMPLETION DATE: The Owner will deduct the cost to employ the Seasonal Paving Inspector and City personnel time up to a maximum of $500.00 per day.

15+ DAYS OVER CONTRACT COMPLETION DATE: The Owner will deduct $1,000.00 per day.

Should the contract not be completed prior to the close of the asphalt plants or determination of the winter shut down for work, then liquidated damages charged to the Contractor shall be equal to the time of City Personnel directly accrued as it relates to this Contract. The count for number of WORKING DAYS OF DELAY shall resume on April 15th of the following construction season.

END OF SECTION 100

**DIVISION 300**

**SUBBASE AND BASE COURSES**

SECTION 301 - SUBBASE

301.02 MATERIALS.

**After the last paragraph, add the following:**

If indicated in the Contract, the contractor may reuse or rework suitable subbase material under sidewalk slabs where conditions allow, as approved by the Engineer. Suitable subbase material shall conform to the requirements outlined in this Section.

301.07 METHOD OF MEASUREMENT.

**After the first paragraph, add the following:**

The quantity of Reuse of Existing Sidewalk Subbase to be measured for payment will be the number of cubic yards, as determined by the accepted quantity in place.

301.08 BASIS OF PAYMENT.

**After the first paragraph, add the following:**

For Reuse of Existing Sidewalk Subbase, excavation and stockpiling of existing subbase to be reused shall be considered incidental to that pay item.

**Add the following to the list of Pay Items:**

 Pay Item Pay Unit

301.50 Reuse of Existing Sidewalk Subbase…………………………......................... Cubic Yard

END SECTION 300

**DIVISION 400**

**SURFACE COURSES AND PAVEMENTS**

SECTION 406 – BITUMINOUS CONCRETE PAVEMENT

Section to be amended.

END SECTION 400

**DIVISION 600**

**INCIDENTAL CONSTRUCTION**

SECTION 641 – TRAFFIC CONTROL

641.02 GENERAL CONSTRUCTION REQUIREMENTS. **Add the following after the fourth paragraph in section (a) General Requirements:**

The following requirements apply if traffic control through a signalized intersection occurs:

* When a signal remains on or flashing, only a UTO can flag through an intersection.
* When a signal is turned off entirely, flaggers may be used to flag through the intersection.

In general flaggers cannot override the signals programming but may be used 200' from an active intersection to control the flow of vehicles through the active signal.

SECTION 651 – TURF ESTABLISHMENT

651.01 DESCRIPTION. **After the first sentence, add:**

All greenbelt areas disturbed by excavation and/or construction activities of the Contractor shall be restored to their original conditions or better.

651.06 SEED AND AMENDMENTS. **Under (a) Hand or Mechanical Seeding, (1) Seed, replace the first sentence with:**

 Seed shall be broadcast at a rate of 5 lbs/1,000 square feet, unless otherwise specified in the plans or contract documents.

SECTION 653 – EROSION PREVENTION AND SEDIMENT CONTROL

653.03 EPSC PLAN. **After the first paragraph (b) Submittals, add:**

The contractor is required to submit a City of Burlington Erosion Prevention and Sediment Control (EPSC) permit and implement the practices laid out therein to minimize discharge of sediment from the site. City permitting is now digital and can be found at https://burlingtonvt.viewpointcloud.com/.

**After the last paragraph, add the following:**

c) At minimum, all construction activities shall conform to the Vermont Department of Environmental Conservation’s *The Low Risk Site Handbook for Erosion Prevention and Sediment Control*

SECTION 656 – PLANTING TREES, SHRUBS, AND VINES

Section 656.02 MATERIALS. **After the last paragraph, add:**

For design, or if tree species are not specified on the Plans, refer to the Species List in Chapter 5 – Street Ecology of the Great Streets BTV Design Standards (<https://www.burlingtonvt.gov/DPW/GreatStreetsStandards>) and confirm tree species with the City Arborist.

Section 656.06 LAYOUT. **After the first sentence add:** Only plant one row of trees per each side of street.

Section 656.08 SETTING PLANTS. **Replace the second paragraph with the following:**

The City reserves the right to inspect trees prior to planting, either at the nursery or at the contractors holding yard. All Plants shall be moved with the root ball intact, using mechanical methods if needed. Remove all burlap, wire baskets, nails, etc. from the root ball. If the root ball has been badly cracked or broken, the plant shall be rejected for use. Set tree plumb with top of root flare at top of soil profile, this may require removal of soil from root ball if root flare is covered. Do not bury the root flare.

**After section (f) add:**

(g) Soils

Place Tree on 85% maximum compacted Setting Mound made of 755.01 Landscape Backfill, assuming native soil or other backfill material is not appropriate.

If suitable soils exist nearby, these may be accessed to provide required soil volumes. Suitable soils shall comply with 755.01 Landscape Backfill or approved equal.

Provide the appropriate volume of soil for each tree based on the requirements specified in the Species List in Chapter 5 – Street Ecology of the Great Streets BTV Design Standards. Unless otherwise approved by the City Engineer, the required soil volume is 600 cubic feet for small species trees and 1000 cubic feet for medium and canopy species trees. Note that the tree species in Great Streets BTV are categorized based on their size as a mature tree, rather than their size at the time of planting as specified in the Table 656.02A TREE SIZES.

Soil depth minimum is 3’ with variations allowable at building/ utility conflicts as approved by the City Engineer.

656.09 ESTABLISHMENT AND MAINTENANCE. **Delete the third paragraph and replace with the following:**

The Resident Engineer, Contractor, and City Representative shall inspect the plantings prior to final acceptance of the project. If any dead or dying plants are identified, these plants shall be replaced at the contractor’s expense.

656.11 TREE PROTECTION. **After the last paragraph, add:**

The City Arborist shall be made aware of street tree locations that may be affected by the Work. The City Arborist will be available at the pre-bid conference and in the field as required.

a) Contractor shall be liable for any damage to affected trees due to construction. Replacement cost of trees requiring removal due to damage sustained through the work covered under this contract will be determined by the value as listed in the City’s current tree inventory. The contractor will be responsible for this replacement cost.

b) Should the Contractor believe that construction will damage any tree regardless of precautions; the Contractor shall not work in that area and shall immediately notify the Resident Engineer in writing.

c) Reference Section 659 Exposing of Roots for Street Trees for required methods and payment for exposing of roots for cutting.

656.13 BASIS OF PAYMENT. **Delete Part (b) and replace with the following:**

(b) The remaining 20% of the Contract Unit Price shall be paid after the plantings have been inspected and accepted by the Resident Engineer and the municipality.

**Add the following Section:**

SECTION 659 – EXPOSING OF ROOTS FOR STREET TREES

659.01 DESCRIPTION. The work in this section shall consist of the removal of dirt and materials from the roots of street trees adjacent to the work.

659.02 EQUIPMENT. Hand digging or use of pneumatic devices such as the AirSpade CGP system will be used to expose roots for cutting if roots are visible after the existing sidewalk panels have been removed. These methods will be used for the excavation of dirt, soil and organic matter within 8 feet of the base of the tree.

659.03 GENERAL REQUIREMENTS. The Cutting of roots greater than 1 inch in diameter will be completed with the use of a hand pruning saw or reciprocating saw to ensure a clean cut.

Replacement cost of trees requiring removal due to damage sustained through the work covered under this contract will be determined by the value as listed in the City’s current tree inventory. The contractor will be responsible for this replacement cost.

The Contractor shall coordinate and verify locations of work with the City Arborist and Resident Engineer.

659.04 METHOD OF MEASUREMENT. The quantity of Exposing of Roots for Street Trees to be measured for payment will be the number of trees which required the exposing of roots to be completed in the method described in this Section.

659.05 BASIS OF PAYMENT. The accepted quantity of Exposing of Roots for Street Trees will be paid for at the contract unit price per each tree. Payment will be full compensation for the excavation of materials per the methods described in this section, cutting of roots, removal, transporting, handling and disposal of materials.

Payment will be made under:

 Pay Item Pay Unit

659.11 Exposing of Roots for Street Trees EA

SECTION 675 – TRAFFIC SIGNS

675.06 SIGN POSTS.

**After the last paragraph, add:**

All sign posts shall be square tube sign posts unless otherwise approved by the City Engineer.

675.07 TRAFFIC SIGNS.

**After the first sentence, add:**

Per the MUTCD, signs should be vertically mounted at right angles to the direction of, and facing, the traffic that they are intended to serve, unless otherwise approved by the City Engineer.

END OF SECTION 600

**DIVISION 700**

**MATERIALS**

SECTION 755 – LANDSCAPING AND EPSC MATERIALS

755.04 SEED.

**Replace the first sentence of the first paragraph with:**

Seed shall be furnished in new, clean, sealed, and properly labeled containers.

**After the last paragraph, add:**

(c) Unless otherwise shown in the Plans, seed shall be L.D. Oliver Seed Co., "Burlington Public Works Special Mix" with the following analysis, or an approved equal:

 30% Shortstop Turf-type Tall Fescue 90% Germination

 20% Jasper Red Fescue 90% Germination

 20% Creeping Red Fescue 85+% Germination

 20% Fiesta II Perennial Rye Grass 90% Germination

 10% Washington Kentucky Blue Grass 85% Germination

END OF SECTION 700

**DIVISION 800**

**CITY OF BURLINGTON PROVISIONS**

SECTION 801 – DRIVEWAY APRONS

801.01 DESCRIPTION. The work in this section shall consist of both removing and replacing driveway aprons in their entirety in-kind, unless otherwise specified in the contract or by the Engineer; or modified where the transition between the new finished surface and the existing drive will be more severe than the existing conditions.

801.02 MATERIALS. The following are types of driveway apron replacement or adjustment types:

Replace with Concrete: Work shall include the removal, proper disposal of, and replacement of entire concrete driveway apron with concrete.

Adjust Concrete: Work shall consist of sawcutting a 12-inch-wide section of concrete in a straight line parallel with the longitudinal direction of the street. Existing concrete shall be removed, properly disposed of, and replaced with concrete.

Concrete to Asphalt: Work shall include the removal, proper disposal of, and replacement of entire concrete driveway apron with asphalt.

Replace with Asphalt: Work shall include the removal, proper disposal of, and replacement of entire asphalt driveway apron with asphalt.

Adjust Asphalt: Work shall consist of sawcutting a 12-inch-wide section of asphalt in a straight line parallel with the longitudinal direction of the street. Existing asphalt shall be removed, properly disposed of, and replaced with asphalt.

Replace Concrete Drop Curb: Work shall consist of removing existing drop curb within the limits designated, properly disposing of, and reforming/pouring of new concrete dropped curb.

Adjust Concrete Drop Curb: Work shall consist of adjusting the existing concrete curb either lower or higher than existing conditions. Should the curb need to be lowered it shall be saw cut with a wet saw such that a polished surface is created. Water from work shall be cleaned from site and not allowed to enter the City’s collection system.

Materials and installation shall meet the requirements of SECTION 406 – BITUMINOUS CONCRETE PAVEMENT and SECTION 541 – STRUCTURAL CONCRETE.

801.03 METHOD OF MEASUREMENT. The quantity of material to be measured for payment will be the number of square feet of the type specified for use in the complete and accepted work, as determined by the limits designated in the plans.

801.04 BASIS OF PAYMENT. The measured quantity of material will be paid for at the Contract Unit Price per square foot for the type specified. Payment shall be full compensation for sawcutting, removing, hauling, and disposing of existing material, furnishing, mixing, hauling, and placing the new material specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

 Pay Item Pay Unit

800.10 Replace with Concrete Square Foot

800.20 Adjust Concrete Square Foot

800.30 Concrete to Asphalt Square Foot

800.40 Replace with Asphalt Square Foot

800.50 Adjust Asphalt Square Foot

800.60 Replace Concrete Drop Curb Linear Foot

800.70 Adjust Concrete Drop Curb Linear Foot

SECTION 820 – TRAFFIC CALMING

820.01 DESCRIPTION. The work in this section shall of installing traffic calming features within the roadway as outlined in the specification and shown in the details in the Contract Documents.

820.02 MATERIALS. Materials used for the following items shall meet the requirements of the VTrans materials indicated on the plans.

820.03 GENERAL CONSTRUCTION. Construction practices used for the following items shall meet the requirements of the VTrans items indicated on the plans.

Raised Textured Median: Work shall include saw cutting the perimeter of the feature and grinding of the finished asphalt surface to a maximum depth of 1”, and installation of raised, handformed asphalt. The top surface of the newly formed asphalt shall receive a brick pattern imprinted and yellow border lines as detailed.

Textured Crosswalk: Work shall include imprinting newly rolled hot asphalt with brick inlay pattern. The edges of the crosswalk should have durable 12” white tape inlayed and rolled into the hot asphalt per the manufacturer’s specification. Once asphalt has cooled completely the colored portion of the crosswalk shall be painted.

Raised Rumble Strip: Work shall include saw cutting the perimeter of the feature and grinding of the finished asphalt surface to a maximum depth of 1”, and installation of raised, hand-formed asphalt. The top surface of the newly formed asphalt shall receive an inlay brick pattern as detailed, and then painted when cooled.

12’ Speed Hump: Work shall include saw cutting the perimeter of the feature and grinding of the finished asphalt surface within the limits of the speed bump, and installation of raised, handformed asphalt as per the detail. Once cooled pavement marking shall be applied/painted.

20’ Speed Table: Work shall include saw cutting the perimeter of the feature and grinding of the finished asphalt surface within the limits of the speed bump, and installation of raised, handformed asphalt as per the detail. Once cooled pavement marking shall be applied/painted.

820.03 METHOD OF MEASUREMENT & PAYMENT. All work, tools, materials, and labor associated with the individual pay items shall be considered incidental to the specified pay item. Materials used to construct the items paid in this section are not separately quantified under individual pay items in the Bid Tab.

Payment will be made under:

 Pay Item Pay Unit

820.10 Raised Textured Median Linear Foot

820.20 Textured Crosswalks Linear Foot

820.30 Raised Rumble Strips Linear Foot

820.40 12’ Speed Hump Linear Foot

820.40 20’ Speed Table Linear Foot

SECTION 830 - STRUCTURE ADJUSTMENT

830.01 DESCRIPTION. This work shall consist of rehabilitation, adjustment to grade or Changing Elevation of frames and covers for drop inlets, catch basins, storm or sanitary sewer manholes, and water gate valve boxes as required to accommodate paving and/or reclamation activities and reconstruction of deteriorated walls of brick structures as required.

Contract Plans, Appendices, and General and Special Conditions, DIVISION 100 General Provisions, and other Technical Specification Sections, apply to this Section.

830.02 MATERIALS. Materials shall meet the following requirements:

(a) Frames & Grates. Existing frames and grates, or new frames and grates as provided by the Contractor, shall be re‑installed at each location.

(b) Water Gate Valve Boxes. Existing water boxes, or new water boxes as provided by the Contractor, shall be re-installed at each location.

(c) Mortar, Type II shall be composed of 1-part cement and 2-part sand, and mixed with sufficient water to form a plastic composition. The cement, sand and water shall meet the following requirements:

(1) Cement: Air entraining Portland cement conforming to the requirements of AASHTO M85, Type I‑A or II‑A.

(2) Sand: Washed natural sand consisting of clean, hard durable grains, uniformly graded from coarse to fine meeting the following gradation:

Sieve % By Weight Passing Square Mesh Sieves

Designation (Total Sample) (Sand Portion)

2 inches 100

1-1/2 inches 90‑100

1/2 inch 70‑90

No. 4 60‑100 100

No. 100 0‑30

No. 200 0‑12

(3) Water: Processed water from a state approved distribution system.

(d) Clay or Shale Brick shall conform to the requirements of AASHTO M 91, Grade MS.

(e) Concrete or Composite Rings shall be or approved equal to Cretex Pro-Rings.

830.03 FRAME AND COVER GRADE ADJUSTMENT.

(a) Condition No. 1 - Pavement Reclamation Area

(1) Existing frames and covers, as marked by the Inspector or Engineer, shall be excavated and removed, and the drop inlet, catch basin, or manhole structure sufficiently and carefully dismantled to allow for a minimum 12 inches clear below the existing roadway elevation for reclaiming the roadway. A steel plate of sufficient size and strength to support area traffic loadings shall be placed over the structure opening in such a manner as to prevent materials from falling into the structure. The excavated area shall then be hot-mix patched as required to prevent scattering of backfill material by passing vehicles. Ties and measurements to relocate each structure shall be the responsibility of the Contractor.

(2) Frames and covers to be reused shall be thoroughly cleaned of mortar and aggregate and safely stored by the Contractor. Should any frame or cover become broken through carelessness of the Contractor or his employees or subcontractors, it shall be replaced at his expense. Should any existing frames or covers prove to be defective, new units will be supplied and installation by the Contractor.

(3) Catch basin frames and grates that do not meet the current City standard shall be replaced with standard frame and grate, which shall be provided by the Contractor at Contractors expense. Transportation of frames and grates and the adjustment thereof shall be included in pay item 830.07 as work incidental to those adjustments.

(4) At the completion of Pavement Reclamation & Bituminous Binder Course Placement activities, each structure shall be re-excavated, the steel plate shall be removed, and the existing frame and cover shall be re-installed using composite or precast risers and shall be set by the Contractor according to the Contract Plans; or if no wearing course is planned in this Contract, at finished grade of top course. The Contractor shall not begin paving sections until all structures in that section are at proper grade. Should the area reclaimed be scheduled for base course paving only, the frames and covers shall be raised to final base course elevation prior to paving.

(5) Drop inlets, catch basins and manholes shall be raised by using precast concrete grade rings or composite grade rings. Raising of a structure using brick, will not be allowed unless directed by the Resident Engineer for specific cases.

(b) Condition No. 2 - Water Gate Valve Box Adjustments - Pavement Reclamation Areas

(1) The existing gate box and cover as marked by the Inspector shall be lowered to a minimum depth of 12 inch clear from the top of existing pavement. The opening shall be covered in a sufficient manner to prevent debris from getting into the gate valve box. The excavated area shall then be backfilled with compacted granular material and hot-mix patch as required to prevent scattering of backfill material by passing vehicles. Ties and measurements to relocate each structure shall be the responsibility of the Contractor.

(2) Should any water gate valve boxes or covers become broken or stolen through the carelessness of the Contractor, it shall be replaced at his expense. Should any existing water gate valve boxes or covers prove to be defective, new units will be supplied and installed by the Contractor.

(3) At the completion of Pavement Reclamation and Bituminous Binder Course Placement activities, the Contractor shall relocate the water gate valve box and adjust to base or final course grade as indicated by the Inspector. Material shall be compacted around water gate valve box and 6 inches of asphalt placed in 2 inch lifts. Refer to water gate valve box detail.

(4) The Contractor shall be responsible for making all adjustments to water valves immediately prior to, or during final and top course paving. Streets where water valve boxes have not been prepped for paving prior to start of work, or approved by the Resident Engineer to be done during paving activities, shall be rejected.

(5) The Contractor shall use the old water valve covers until final paving is complete. Once paving is complete the Contractor shall be responsible for removing and replacing them with the new covers as provided by the Contractor. The existing covers shall become the property of the City and delivered to 645 Pine Street unless otherwise directed.

(c) Condition No. 3 – Mill & Fill

 (1) Catch basins, drop inlets shall be lowered and adjusted to meet standard details.

 (2) Manholes shall be trimmed around edges. No adjustment unless directed by Resident Engineer. If manhole needs to be adjusted, it shall be paid as a catch basin – mill & fill.

 (3) Water valves shall be trimmed around edges and adjusted with riser rings if necessary during final paving. Riser rings will be supplied by the Contractor.

(d) Condition No. 4 - Pavement Shim & Bituminous Overlay Areas

(1) At the completion of Pavement Shim activities, the existing frames and covers as marked by the Inspector shall be excavated and removed, and the drop inlet, catch basin, or manhole structure sufficiently and carefully dismantled to allow for final grade adjustment using brick and mortar.

(2) Each frame and cover unit shall be reinstalled using composite or precast risers and shall be set by the Contractor according to the Contract Plans. Catch basins shall be set allowing for a crown of 1/4 inch per foot so that storm water will drain to the catch basin without ponding. Each incident of ponding shall be corrected by the Contractor at his expense.

(3) Catch basin frames and grates that do not meet the current City standard shall be replaced with standard frame and grate, which shall be provided and installed by the Contractor. The transportation of frames and grates and the adjustment thereof shall be included in pay item 830.07 as work incidental to those adjustments.

The Contractor shall not begin paving sections until all structures in that section are at proper grade. It is the Contractor's responsibility to set the structure grade and pavement both flush to the structure and providing drainage to the catch basins without ponding. Each incident of ponding shall be corrected by the Contractor at his expense.

(4) Frames and covers to be reused shall be thoroughly cleans of mortar and aggregate prior to reinstallation. Should any frame or cover become broken through carelessness on the part of the Contractor, it shall be replaced at his expense. Should any existing frames or covers prove to be defective, new units will be supplied and installed by the Contractor.

 (d) General: Reclaim areas, overlay and shim areas

All water boxes in these work areas shall have the covers removed, be inspected by the Contractor and Public Works Inspectors and cleaned out, if necessary, shall be by time and materials. If the nut is not accessible, the location of the water box will promptly be given to the Engineer.

(e) Partial: Reclaim areas, overlay and shim areas

Work under this category shall be structures identified where the City has a project that is being completed ahead of paving. This could be a waterline replacement, catch basin, or manhole rehabilitation. In any of those cases City crews will complete their work and leave the new infrastructure such that it is ready for the paving type that is specified per the contract documents. It will be the Contractor’s responsibility to complete the work of raising the structure that will be left in a suitable condition by the City, and complete the work as specified in this section.

830.04 STRUCTURE WALL RECONSTRUCTION.

Upon completion of the Contractor's removal of structure frames and covers as described in subsection 830.03, each drop inlet, catch basin, or manhole shall be examined by the Inspector or Engineer. If in the opinion of the Inspector or Engineer the structure walls warrant full or partial reconstruction, the Contractor shall dismantle that portion of the walls marked for removal, and shall re‑construct them using precast concrete unless otherwise directed by Resident Engineer. Should brick and mortar be allowed, it shall be in a structural format to match the existing brickwork prior to re‑installation of the frame and cover. Existing structurally sound walls that are damaged through the negligence of the Contractor during excavation shall be reconstructed by the Contractor at no cost to the City.

830.05 RESTORATION OF EXISTING CONDITIONS.

All areas disturbed by the activities of the Contractor shall, in the estimation of the Engineer, be restored to their original condition or better. Excavated areas around the structures in pavement shall be backfilled with compacted granular subbase material to a depth matching the existing subbase, and the pavement shall be restored using Bituminous Concrete Pavement. 1/2-inch aggregate shall be used, placed and compacted in maximum 2 inch lifts.

Contractor shall clean structures of all debris and materials accumulated as a result of construction activities. Special attention shall be given to grate lifting holes, top of covers, edges, joints, rims, and undersides to insure a solid, smooth fit into the frame.

830.06 METHOD OF MEASUREMENT.

The quantity to be measured for payment for Frame and Cover Grade Adjustment and water gate valve box adjustment at their contract unit prices will be the number of units adjusted to grade, complete in place for each condition as accepted by the Engineer or Inspector.

The Inspector or Engineer and Contractor are to come to an agreement as to which structures, i.e., catch basin, manhole (storm/sewer), lamp holes shall be rebuilt.

830.07 BASIS OF PAYMENT.

Accepted quantities of Frame and Cover Adjustment and water gate valve box adjustment will be paid for at the contract unit price for each unit adjusted, which price shall include reconstruction required for adjustment of frames and covers as described in subsection 830.03.

Payment of Structure Wall Reconstruction or Rehabilitation will be on a time and materials basis. Only those walls previously approved and marked for reconstruction by the Inspector or Engineer will be eligible for payment under this item. Walls removed without prior approval and marking by the Inspector or Engineer shall be rebuilt by the Contractor at no cost to the City.

Measurement and payment for catch basin frame and grate shall be paid as a set, and are to be quantified and paid separate of any catch basin adjustment under the item number provided.

Measurement and payment for manhole frame and cover shall be paid as a set, and are to be quantified and paid separate of any manhole adjustment under the item number provided.

Payment at Contract Unit Prices shall be full compensation for all necessary cleaning of the interior of the unit to determine the extent of the work; for excavating, cutting of pavement, and backfilling; for removing deteriorated materials and designated materials; for furnishing, transporting, handling, and/or placing all materials, including mortar, concrete block, brick, steel plates and reinforcing steel, granular backfill, hot‑mix patch, concrete, concrete risers, top sections, steps, frames, grates, covers, coatings, pipe stubs, weep holes and underdrain ends required for reconstructing the unit as directed by the Engineer; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Excavation associated with the rehabilitation or changing elevation of existing drop inlets, catch basins, and manholes will not be paid for separately, but will be considered incidental to the Contract.

Cleaning of structures shall include vactoring all structures; drop inlets, catch basins and manholes, following completion of construction activities. Structures shall be cleaned of all material with in structure not just material believed to have accumulated under this project. Proper disposal of material removed from manholes will be required and considered an incidental cost to that item. Removing latent material from the rims and covers as outlined in 830.05.

Payment will be made under:

Pay Item Pay Unit

830.10 Catch Basin Adjustment - Reclaim Each

830.11 Catch Basin Adjustment – Mill/Fill Each

830.12 Catch Basin Adjustment – Partial Each

830.13 Frame and Grate for Catch Basin Each

830.20 Manhole Adjustment – Reclaim Each

830.21 Manhole Adjustment – Mill/Fill Each

830.22 Manhole Adjustment – Partial Each

830.23 Frame and Cover for Manhole Each

830.30 Water Valve Adjustment – Reclaim Each

830.31 Water Valve Adjustment – Mill/Fill Each

830.31 Water Valve Adjustment – Partial Each

830.40 Cleaning of Structure Each

END OF SECTION 800

**CITY OF BURLINGTON PROVISIONS**

**AUTHORITY TO CLOSE STREETS TO PARKING.** Under Section 20-63, City of Burlington Codes and Ordinances, the contractor under this contract may temporarily close streets to parking.

The following general conditions shall be met:

1. In locations where parking is unmetered standard "No Parking" paper signs - (furnished by Owner, installed and maintained by the Contractor). In locations where parking is metered the Contractor shall be required to obtain meter bags from DPW at no charge for the bag fee, however the Contractor is responsible for paying any fees for lost or damaged bags/locks. In addition, Contractor will be responsible for all meter bag fees for bags used fifteen (15) days past the completion of work on the street where bags were permitted.
2. Signs should be posted a minimum of one week ahead of the start of work for first work on the street, subsequent signage shall meet the conditions required by the Burlington Police Department listed in part e of this Section.
3. Posted in conspicuous locations on streets where contract Work is to be performed. One or both sides of the street may be posted if the work warrants such action as determined by the contractor. "No Parking" signs shall be free standing on Contractor furnished stakes. Under no conditions will signs be affixed to utility poles, street signs or mail boxes.
4. Signs shall be in place no later than 4:00 PM on the day preceding work to start, including holidays and weekends, and Police, Fire Departments, Green Mountain Transit (GMT), and Chittenden County Regional Planning Organization (CCRPO) traffic alerts shall be notified of the area.
5. The Contractor is required to contact Burlington Parking Services by email no later than 6:00 PM on the day preceding work, or of posting with dates and times for the No Parking posting. Failure to notify Parking Services by the time listed will eliminate the feasibility of ticketing and towing violating cars under the City’s parking restrictions. Notification shall be sent to Jackie Esperti (jesperti@burlingtonvt.gov) or their designated representative.
6. Prohibited parking will remain in effect until said signs are removed by the Contractor. This shall be as soon as work is completed.
7. The signs shall state the date on which parking is prohibited, the time at which prohibited parking commences, and a note that says that prohibited parking shall remain in effect until said signs are removed.
8. Uniformed Traffic Officers (UTO) will be require at all traffic signals affected by work even if signal and lane operations work in ‘flash’.

**STREET TREES.** The City Arborist will be aware of street tree locations that may be affected by the Work. The City Arborist will be available at the pre-bid conference and in the field as required.

a) Contractor shall be liable for any damage to affected trees due to construction. Replacement cost of trees requiring removal due to damage sustained through the work covered under this contract will be determined by the value as listed in the City’s current tree inventory. The contractor will be responsible for this replacement cost.

b) Should the Contractor believe that construction will damage any tree regardless of precautions; the Contractor shall not work in that area and shall immediately notify the Resident Engineer in writing.

c) Reference City of Burlington, Vermont 2023 Engineering Specifications Item 659.05 Exposing of Roots For Street Trees for required methods and payment for exposing of roots for cutting.

**RESTORATION OF EXISTING SURFACES**. All existing street pavements, driveway aprons, and greenbelt areas disturbed by excavation and/or construction activities of the Contractor shall be restored to their original conditions or better. Street pavements shall be restored to existing asphalt thickness or as designated in the Contract Plans, whichever is greater. Driveway aprons shall be regraded and finished to match the grades of the new curb cut opening and promote proper drainage or surface runoff. Greenbelt areas shall be regraded to match the grades of the curbing using excavation and/or earth borrow as required and a minimum 4-inch layer of topsoil. Top soil shall consist of uniform natural sandy loam, free from lumps, clods, sods, stones larger than 3/4 inch in any dimension, sticks, wood, cinders, concrete or any foreign or undesirable materials. It shall be natural and fertile soils possessing the characteristics of good soil which produce heavy growth of crops, grass or other vegetation and shall be obtained from natural, well-drained areas. It shall be free of sub-soil.

a) Acidity range from pH 5.0 to pH 6.0 inclusive. Disturbed areas shall be seeded and mulched to provide a vigorous growth of grasses to match the surrounding terrain. This growth of grasses is subject to the three (3) year guarantee period. Seed shall be fresh, clean seed of the latest crop, which meets the standards of the Federal Seed Act including percent pure seed, percent germination and percent weed content listed below. All seed shall be furnished in sealed standard containers of vendor with each container showing vendor name, weight percent of each grass seed, percent pure seed, percent germination, percent weed content, date of seed crop, and date of test. Seed shall be L.D. Oliver Seed Co., "Burlington Public Works Special Mix" with the following analysis, or an approved equal:

 30% Shortstop Turf-type Tall Fescue 90% Germination

 20% Jasper Red Fescue 90% Germination

 20% Creeping Red Fescue 85+% Germination

 20% Fiesta II Perennial Rye Grass 90% Germination

b) Broadcast seed at 5 lbs./1,000 square feet.

c) All such work must conform to the "Vermont Standards & Specifications for Erosion Prevention & Sediment Control, 2020”, and as amended and all earthen material associated with, or disturbed by, the project shall be retained on the subject property. Bare earthen material shall immediately be stabilized with erosion control netting and with topsoil, seed and mulch to establish vegetative cover.

**WORKING HOURS**. Working hours for this contract shall be 7am-7pm Monday through Friday, and 7am-5pm on Saturday. Work on Sundays and Holidays must be submitted to the Owner in writing or during a meeting a minimum of 48 hours prior to the date being requested. Work hour limitations include running/warming up of stationary construction equipment outside of the designated or approved work hours that exceed the Noise Ordinance limits for Quiet Hours as set forth in the City Ordinances.

**WINTER SHUTDOWN.** Contractors shall refer to VTrans Standard Specifications for Construction Section 108.09 & 104.04A for complete seasonal shutdown requirements.

1. No on-site material or equipment storage will be permitted.
2. The contractor shall not enter a winter shutdown with a partially completed sidewalk section. If the contractor fails to achieve substantial completion of any work, the following requirements shall apply:
	* 1. At minimum, roadway surfaces and paved residential driveways must be paved over with either a base course or temporary asphalt. Under no circumstances shall roadway surfaces be left unpaved throughout a winter shutdown.
		2. At minimum, sidewalk surfaces or temporary walkways shall be covered with concrete or temporary pavement. Gravel will not be permitted. All pedestrian access routes shall be five feet wide. Longitudinal slopes, cross slopes, and ramps shall be PROWAG/ADA compliant.
		3. All surfaces shall be graded and leveled to adequately drain stormwater and eliminate the potential for ponded water to freeze and create hazards for vehicles and pedestrians.
		4. Covers and grates for underground structures shall be flush with surfaces.
		5. Roadways, sidewalks, and curbs shall be left in a condition suitable for plows and other maintenance operations and vehicles. The contractor will be responsible for surfaces and structures left unsuitable for regular maintenance operations. These responsibilities include but are not limited to plowing, snow removal, salting, sanding, cleaning, grading, leveling, and anything else needed to ensure the safety and functionality of these facilities.
		6. The contractor shall avoid leaving pedestrian crossing locations incomplete over the course of a winter shutdown. For example, if sidewalk ramps are installed, the contractor shall ensure that the required signage and markings are installed as well. These situations may require installation of temporary markings.
		7. Conflicting or inapplicable signage shall be removed or covered over the course of a shutdown. Adequate markings and signage shall be installed.
		8. The City shall not be held responsible for damage to installed materials resulting from unsuitable conditions.
		9. Costs associated with meeting these requirements, including but not limited to preparation; labor and materials; installation, maintenance, and removal of materials; inspections; administration; material storage; transportation fees; and all other incurred expenses are the sole responsibility of the contractor.
3. The following requirements for winter stabilization and maintenance shall apply:
4. If turf is not seeded by October 15, the contractor may use winter rye, at no cost to the City, to establish temporary vegetation for a winter shutdown period.

ii) Areas which have not been vegetated either permanently or with winter rye will require wood chips or hay mulch, which shall be monitored and maintained throughout the winter season.

iii) Silt fence shall be installed and maintained downgrade from areas where vegetation has not been established.

iv) Periodic inspections are required at least once per month when the job site is inactive or there is no active earthwork. Inspections shall be performed within 24 hours of a significant (1” or more) rain event, or at the request of the City. Inspections shall be documented in writing and provided to the City and Resident Engineer. Inspection reports shall include the inspection date, description of site conditions, photographs, and any corrective action required.

v) The contractor shall refer to and follow the State of Vermont Low Risk Handbook for Erosion Prevention and Sediment Control for additional requirements.

1. Labor and materials (including installation and removal), storage, administration, and all other costs incurred for a winter shutdown shall be considered incidental to Item 635.11, Mobilization/Demobilization.
2. The contractor will be required to attend an on-site pre-shutdown construction meeting and inspection prior to a winter shutdown with the resident engineer, and City officials. The contractor will also be required to attend a preconstruction check-in prior to re-mobilizing in the Spring.

**HAZARDOUS MATERIALS.**

1. If at any time during construction the presence of unanticipated hazardous materials at or proximate to a construction site is detected, the construction CONTRACTOR shall cease work in the affected area and perform the following immediately:
2. Notify the OWNER verbally and in writing. The OWNER is responsible for notification of the Waste Management Division of the Agency of Natural Resources.

**THE HAZARDOUS MATERIALS SPILLS AND EMERGENCY REPORTING PHONE NUMBER IS Toll Free 1-800-641-5005.**

1. Take all action necessary and appropriate for the protection and safety of the public and persons at or about the site, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying OWNERs and users of adjacent sites and utilities.
2. Actions at the construction site following completion of these steps shall be at the direction of the Waste Management Division. Nothing in this Article shall be construed to require the CONSULTANT and/or the CONTRACTOR to perform work for which adequate compensation has not been contracted for other than to insure that basic measures necessary to protect the health and welfare of workers, residents and abutters are immediately adopted.
3. At construction sites where the presence of contaminated or hazardous materials are suspected to exist and provisions have been made in the Contract Documents for their management, the requirements in the Contract Documents will determine the appropriate actions of the CONTRACTOR. In any event, discovery of contaminated soils require the immediate notification of the OWNER. If sites other than the suspected areas previously delineated in the Contract Documents are discovered, Item 1 above shall apply.

**HISTORIC PRESERVATION.**

1. If at any time during construction, the presence of possible human remains are discovered at or proximate to a construction site, the CONTRACTOR shall cease work in the affected area and immediately contact the local medical examiner or law enforcement official in addition to notifying the OWNER or OWNER’s representative. The CONTRACTOR shall take all action necessary and appropriate for the protection and safety of the public and the site.
2. Notify the OWNER verbally and in writing. The OWNER is responsible for notification of the Agency of Natural Resources and FED Construction Project Owner
3. If at any time during construction, the presence of unanticipated historic and archeological resources are detected at or proximate to a construction site, the construction CONTRACTOR shall cease work in the affected area, take all action necessary and appropriate for the protection and safety of the public and the site, and inform the following immediately:
4. Notify the OWNER verbally and in writing. The OWNER is responsible for notification of the Agency of Natural Resources.
5. Notify the Vermont Division of Historic Preservation at: **(802) 828-3050 landline or (802) 477-2517 cell Or (802) 828-3048 landline or (802) 310-0289 cell**
6. Actions at the construction site following completion of these steps shall be at the direction of the local medical examiner, law enforcement agent or Historic Preservation Division as appropriate. Nothing in this Article shall be construed to require the CONSULTANT and/or the CONTRACTOR to perform work for which adequate compensation has not been contracted for other than to insure that basic measures necessary to protect the safety and welfare of the workers and the site.

**DRIVEWAY APRON AND CURB CUTS.**

Refer to the Vermont Agency of Transportation, “Access Management Program Guidelines” and “Standards for Residential and Commercial Driveways, Standard B-71” with the following exceptions:

Table 1: Driveway Curb Cut Widths

|  |  |
| --- | --- |
| Use | City Standard |
| Single Family home and Small apartment complex (<10 trips/Peak Hour) | Maximum of 2’ wider than DPI approved Driveway up to 20’ |
| Commercial Properties(Single Unit Vehicles<5 Trip/Peak hour) | 20’ Min, 30’ Max |

Variances on curb cut widths are dependent upon City Engineer’s approval. Curb cuts must occur within the road frontage of the property. No more than two curb cuts shall be permitted per property. For new driveways, one curb cut is allowed per property unless otherwise approved by the City Engineer.

Curb cuts must be updated to comply with current standards upon any redevelopment of property, curb replacement, or sidewalk replacement by City or property owner. At the time that such work is happening, the property shall not have more than two accesses.

Driveway Aprons shall not be gravel unless otherwise approved by the City Engineer. Refer to the City’s Comprehensive Development Ordinance for additional driveways requirements.

**AS-BUILT DRAWINGS.**

As-Built Drawings shall meet the following requirements:

1. The following as-built requirements apply to all new and existing streets where the contractor is completing Infrastructure work. Payment for this item shall be incidental to the contract. Based on the scale of the project, the City Engineer may decide to omit certain as –built requirements.
2. Files shall be submitted to the Municipal Project Manager in a .dxf (Drawing Exchange File) format, AutoCAD drawing (.dwg) format, ESRI File Geodatabase Feature Classes or ArcView Shapefile format (.shp). Digital files should be projected in VT StatePlane Ft, NAD83 (Horizontal) and NVD88 (vertical). Data files must be compatible with the City’s GIS software.
3. Plans shall also be submitted as PDF files. PDF files shall show a plan view map of the entire project area. PDF files shall have specific labels showing pre-existing and newly installed infrastructure. Labels shall note if underground pre-existing infrastructure has been removed or abandoned in-place per City requirements. Labels shall include the method of abandonment where relevant. Labels shall state the material and diameter of all pre-existing and new infrastructure.
4. Applicable entities impacted by the contract work and their data layer properties shall be noted to the following:
	1. Water Main entities shall be created on a “wMain” layer.
	2. Water Service Lines shall be created on a “wServiceLine” layer.
	3. Water System Valves shall be created on a “wSystemValve” layer.
	4. Curb Stop Valves shall be created on a “wCurbStopValve” layer.
	5. Corp Stops shall be created on a “wCorpStop” layer.
	6. Fire Hydrants shall be created on a “wHydrant” layer.
	7. Fittings (including caps, tees, taps, etc.) shall be created on a “wFittings” layer.
	8. Water Mains abandoned in place shall be created on a “wAbandonedMain” layer
	9. Water Services abandoned in place shall be created on a “wAbandonedServiceLine” layer.
	10. Water System Valves abandoned in place shall be created on a “wAbandonedWaterValve” layer.
	11. Manholes shall be created on a “Manhole” layer.
	12. Catch Basins shall be created on an “Inlet” layer.
	13. Sanitary Sewer/Combined Sewer/Stormwater Lines shall be created on a “Gravity Main” layer.
	14. Pressurized Sanitary Sewer Lines shall be created on a “Pressurized Main” layer.
	15. Curb shall be created on a “Curb” layer.
	16. Sidewalk shall be created on a “Sidewalk” layer. Multi-use path?
	17. Curb Ramps shall be created on a “Curb Ramp” layer.
	18. Street Pavement shall be created on a “Street” layer.
	19. Pavement Markings shall be created on a “Pavement Marking” layer.
	20. Signs shall be created on a “Sign” layer.
	21. Electrical shall be created on an “Electrical” layer.
	22. Telecom shall be created on a “Telecom” layer.
	23. Gas shall be created on a “Gas” layer.
	24. Driveways shall be created on a “Driveway” layer.
	25. Permanent Easements shall be created on a “Permanent Easement” layer.
	26. Temporary Easements shall be created on a “Temporary Easement” layer.
	27. Planters shall be created on a “Planter” layer.
	28. Striping shall be created on a “Striping” layer.
	29. Landscaping shall be created on a “Landscaping” layer.
	30. Property Boundaries shall be created on a “Property Boundary” layer.
	31. Miscellaneous lines, points, and text annotations should be placed on unique layers different from ones referenced above.
5. The City will provide a copy of a blank geodatabase consisting of City standard fields and domains as a template.
6. All Lines representing water mains, water service lines, hydrant lateral lines, and fire services shall have continuous linework snapped to endpoints (i.e. fittings, valves, or hydrants). All Lines representing gravity mains shall have continuous linework snapped to endpoints (i.e. manholes, inlets, cleanouts, or outfalls). Any requirements for roadway? Curvature points?
7. The contractor shall correspond with the Municipal Project Manager to address any questions on the details of submissions.
8. Record drawings shall be provided by the contractor for all infrastructure installed or impacted under this contract. The following data shall be collected with survey grade equipment and shall be provided to the Municipal Project Manager in an acceptable format that is coordinated directly with the City:
	1. Water Fittings (bends, caps, taps, etc., include size)
	2. Water Hydrants
	3. Water Valves (active and abandoned)
	4. Water Curb Stops
	5. Water Corporation Stops
	6. Water Lines (material size, depth of bury to top of pipe, active versus abandoned)
	7. Sanitary Sewer/Combined Sewer/Stormwater Lines (material and size)
	8. Sanitary Sewer/Combined Sewer/Stormwater Manholes (size and invert elevations)
	9. Stormwater Catch Basins and other structures including Tankage
	10. Curb
	11. Sidewalk
	12. Curb Ramps
	13. Street Pavement
	14. Pavement Markings
	15. Signs
	16. Electrical
	17. Telecom
	18. Gas
	19. Driveways
	20. Permanent Easements
	21. Temporary Easements
	22. Planters
	23. Striping
	24. Landscaping
	25. Property Boundaries
	26. Any additional roadway or utility features laid out in the Contract.
9. Any sewer or water infrastructure altered in the project shall be located with GPS and available to the City within 48 hours of completion of construction.
10. Record drawings and As-Built documents shall be submitted to the City no later than sixty days of the completion of the project.
11. If any new Right of Way is deeded to the City, record drawings shall also contain a stamped and signed statement by a licensed land surveyor that all property corner markers and roadway monuments have been set in accordance with the accepted property plat.

**RIGHT OF WAY ACCEPTANCE.**

In this section, “Owner” means the entity seeking to convey right-of-way to the City and any consultants, contractors, or third parties acting on their behalf.

Right of Way Acceptance Procedure

**The following procedure shall be applicable to the City accepting rights-of-way for new developments or existing roads.**  It is the responsibility of the Owner to meet all requirements of this procedure.

1. A pre-construction (new development) or initial consultation (existing road) meeting shall take place with the Owner, a Department of Public Works representative, and any other entities who may be impacted (utility owners, etc). Contact the Department of Public Works Excavation Inspector by calling 802-863-9094 to schedule a pre-construction meeting.
2. A survey map depicting the roadway shall be completed by a licensed surveyor and recorded with the City.
3. All pins/concrete markers/other monumentation in and along the roadway must be installed before acceptance of the roadway and no later than the date of the offer of dedication.
4. Construction Documentation and Inspection
	1. For new developments, the complete inspection file, including all construction documentation (field notes, daily logs, material testing, pressure tests, bacti tests, etc), will be made available at the point of dedication and City acceptance.
	2. For existing roads, the following should be provided:
		1. Test pits, in a frequency and spacing agreed upon by the City Engineer, to show the condition, material, and thickness of pavement and subbase,
		2. If the sewer or collection system is privately owned, CCTV footage should be provided to document condition,
		3. If water utility is not City owned, provide material, size, and condition of water main,
		4. Documentation that street lighting and layout complies with BED Lighting Policy.
5. The Owner of the roadway shall secure an Owner’s policy of title insurance in favor of the City of Burlington.
6. The Owner will produce all waivers of lien from their design engineers, contractors, and material suppliers utilized in the development of the roadway seeking to be dedicated to the City.
7. The Owner of the roadway shall certify that all permits and all acceptances for construction of the road have been secured and that the roadway and any water, storm, or sewer lines situated within the roadway have been constructed in accordance with such permits/acceptances.
8. All City stakeholders, including but not limited to Burlington Electric Department, DPW Water Resources, Department of Parks, Recreation and Waterfront, and the Burlington Fire Department will participate in review of the final plans/plats to ensure that any necessary easements are in place and facilities are developed to a standard they are prepared to accept.
9. The Warranty Deed transferring the roadway to the City shall contain a meets and bounds description of the roadway and reference to the recorded survey map.
10. As-built drawings and documentation shall be provided in accordance with the City of Burlington Engineering Specifications.

For both new developments and existing roads, after the documentation outlined in this procedure is provided to the City, the City Engineer shall determine if it is acceptable for Public Works to recommend to the City Council that the City accept the right-of-way. No right-of-way shall be accepted until it is approved by the City Council at the recommendation of the City Engineer. The new right-of-way must be added to the Vermont Agency of Transportation Town Highway Map by DPW.

Conveyance of an accepted right-of-way shall occur within one year of its acceptance by City Council to be considered valid, otherwise the entities seeking to convey right-of-way must re-evaluate conditions and seek reauthorization based on the most current City Standards.

Right of Way Acceptance Conditions

The following conditions shall be met for right-of-way to be accepted, unless otherwise approved by the City Engineer.

**Work to Conform**

All materials, design, and workmanship must meet nationally accepted standards and practices along with the City of Burlington Engineering Standards and any other applicable standards or guidance of the City of Burlington.

During the progress of construction and upon completion, all work must conform to these standards and the plans permitted by the City of Burlington. Field revisions necessitated by the conditions of the site must be approved by the Design/Project Engineer and accepted by the City Engineer prior to acceptance of the completed work. The work shall be performed in conformance with current standard engineering practices and principles.

**Protection and Repair to Existing Utilities**

The Special Provision “NOTICE TO BIDDERS – UTILITIES” shall apply to the Owner, with the additional conditions:

The Public Works Department shall be contacted seventy-two (72) hours prior to any scheduled work within the limits of the public Right-of-Way.

Whenever culverts, sewers, drains, manholes, catch basin connections, water mains, electric conduits, telephone conduits, utility poles, overhead lines or other existing facilities are encountered, they shall be protected and firmly supported by the Contractor at his/her own expense, by methods approved by the Design/Project Engineer. Until excavation is backfilled and the existing structures are made secure, injury to any such structures caused by or resulting from the Owner’s Operations, shall be repaired at the Owner’s expense within a time period that will not place an unreasonable burden on the users. The authority having charge of any particular underground structure shall be notified promptly of injury to its structure. Pipes or other underground structures encountered in excavating or trenching shall be permanently supported by methods acceptable to the Public Works Department for municipal utilities and the utility owner.

**Reconstruction of Existing Utilities**

In no case shall the Owner move, change or repair any water main, sewer main, electric conduit, telephone conduit, utility pole, anchor, or any underground cables, conduits or structures without permission of the City Engineer and the utility owner, and until they are satisfied that adequate warning to the users has been provided. The Owner shall be responsible for the work and for providing notice to users before interrupting service. Unless specifically provided for by written agreement, reconstruction, both overhead and underground, of the utilities shall be at the Owner’s expense.

**Permits-General**

It shall be the Owner’s responsibility to obtain all federal, state, local or utility company permits necessary for the construction of the project prior to initiation of construction. The Owner is also responsible for maintaining these permits in force during the length of the contract and for taking all required actions to comply with the content of the permits. All permits shall be readily available on site at all times.

**Maintenance**

Projects are generally split into phases with approval from the DRB for each phase. To avoid conflicts over reductions in payment and questions over responsibility for winter maintenance during construction, the following procedure is established:

The City may provide winter snow removal and maintenance services during the first winter of the roadway construction phase only if prior acceptance is given and if the base course of asphalt has been constructed and Snow Plow Agreement has been accepted. If only the sub-base gravel course has been constructed, the Owner shall be responsible for plowing and salting/sanding on all unpaved streets.

**Liability Insurance Coverage**

In the event that the City is being asked to clear ice and snow in advance of the City’s acceptance of the roadway the Owner/Developer of the roadway shall secure a Liability Insurance policy with at least $2,000,000 in aggregate coverage. This insurance policy shall name the City as the additional insured and be in effect up until the date of acceptance.

**Supervisor on the Job Site**

The Owner shall be responsible for ensuring that there is a supervisor or responsible individual with the authority to make decisions for the Owner under his/her direct employ on the job site at all times that construction is underway, whether or not the construction is being accomplished by a subcontractor hired by a general contractor.

**Contact List**

Owner will maintain and make available to the City a contact list for the project.

**Construction Meetings**

Regularly scheduled construction meetings shall occur and City Engineering staff and Utilities shall be given adequate notice to attend.

**Resident Engineer**

The Owner shall hire a Resident Engineer to inspect the work to ensure the work is built according to the permitted and approved design. A daily log of construction activities, testing and field inspections to properly document the work is being completed in accordance with the approved plan set. Inspection Documentation will be made available to the City for their review throughout the process of construction.

**Water Division-Water Distribution System Installation**

Public Works Water Division reserves the first right of refusal to make connections and install the water distribution and hydrant system. If it is agreed a private contractor will be performing the work then a member of the water distribution crew must be on site to ensure work is done in a manner that meets City Standards and ensures sanitary connections to our water supply system.

**BED Inspection Personnel**

BED will require an inspector on site to verify proper installation of our duct banks, pads, hand holes, lights, conduits and all electrical Equipment/Infrastructure.

**PRIVATE STREETS.**

When new public ways, as defined in zoning application, are constructed, an independent third party shall certify that the means and methods of construction and materials adhere to City Engineering Standards. This shall be submitted to the City Engineer prior to the Certificate of Occupancy being issued.

In general, building permits shall not be requested for streets which cannot have a base course of asphalt on them prior to winter. It is recommended that the top course of asphalt not be laid during the first construction season as construction settlement or frost damage historically shows up the following spring. By postponing the top course, corrections can be made at less cost to the Developer. It should be noted however, heavy truck traffic may damage the base course pavement prior to paving the top course. To alleviate this problem, the base course shall be a minimum 2-½” thick if allowed to sit through the winter or construction equipment should be kept off the paved base course until the top course is applied and has been accepted by the Public Works Department.