

INVITATION FOR BIDS

City of Burlington, Vermont

Department of Parks, Recreation and Waterfront



Oakledge Universally Accessible Playground Project

Issued: May 25th, 2022

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INVITATION FOR BIDS

The City of Burlington Department of Parks, Recreation and Waterfront (“City”) is seeking bids for the Oakledge Universally Accessible Playground Project. Bids from pre-qualified contractors will be accepted until **1:00 p.m. on June 15th, 2022**, electronically to Jon Adams-Kollitz for construction of the project hereinafter described. Bid opening will occur immediately after the bid submittal deadline via zoom webinar. The time of receiving and opening bids may be postponed due to emergencies or unforeseen conditions.

Submitted BIDS are due electronically ONLY and shall be contain in the email subject line: ***“Oakledge Universally Accessible Playground”***.

Each BID must be accompanied by a scan of a certified check payable to the City of Burlington for five percent (5%) of the total amount of the BID. A BID bond may be used in lieu of a certified check.

This contract is subject to the Burlington Pre-Qualification of Construction Contractors, the Burlington Livable Wage Ordinance, the Burlington Union Deterrence Ordinance, and the Burlington Outsourcing Ordinance. No bid will be accepted without signed certificates of compliance with listed ordinances and a filled-out Pre-Qualification of Construction Contractors Application.

LOCATION: The Project is located on the south side of the lower pavilion at Oakledge Park in the City of Burlington, Vermont.

TYPE OF CONSTRUCTION: This project involves the construction of an universally accessible playground, paths and parking area, including significant cut and fill, removal of the existing pavement, removal of existing sod, addition of subbase, installation of various paving materials, installation of several pieces of play equipment, and incidental construction items.

CONTRACT START DATE: Expected the week of July 1st, 2022.

CONTRACT COMPLETION DATE: The Contract shall be completed on or before **November 20, 2022**. Work continued after **November 20, 2022** shall be subject to accrue liquidated damages as set forth by the GENERAL and SPECIAL PROVISIONS.

COST OF PLANS: Electronic plans are available free of charge on the City of Burlington’s RFP website <http://www.burlingtonvt.gov/RFP> or per request to the Municipal Project Manager (MPM, Jon Adams-Kollitz) by email request or phone:

Jon Adams-Kollitz, Parks Project Coordinator, 802-233-1168

jadamskollitz@burlingtonvt.gov

ENGINEERS ESTIMATE: The Engineers Estimate of the base bid for this Proposal is between \$500,000 - \$700,000.

PLANS, SPECIFICATIONS AND BID DOCUMENTS ARE ONLY AVAILABLE ELECTRONICALLY FROM THE MUNICIPAL PROJECT MANAGER.

PRE-BID ZOOM CONFERENCE: A pre-bid conference will be held via Zoom on Wednesday, June 1 at 1:00 p.m. Bidders can join the Zoom conference via this link:

When: June 1 (Wednesday), 2022 at 1:00 PM Eastern Time (US and Canada)

Topic: Oakledge Universally Accessible Playground Project

Please click the link below to join the webinar:

BPRW 2 is inviting you to a scheduled Zoom meeting.

Time: Jun 1, 2022 01:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/89667474928?pwd=Y3FjaWhaeVBjOEszY0EvSWxFcnpNZz09>

Meeting ID: 896 6747 4928

Passcode: 568094

One tap mobile

+19292056099,,89667474928#,,,,*568094# US (New York)

+13017158592,,89667474928#,,,,*568094# US (Washington DC)

Dial by your location

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+1 301 715 8592 US (Washington DC)

+1 312 626 6799 US (Chicago)

+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

Meeting ID: 896 6747 4928

Passcode: 568094

Find your local number: <https://us02web.zoom.us/u/kbL9eW7VBd>

BID OPENING ZOOM CONFERENCE: A bid opening conference will be held via Zoom on June 15th, 2022 at 1:00 p.m. Bidders can join the Zoom conference via this link:

Topic: Oakledge UA Playground Bid Opening

Time: Jun 15, 2022 01:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/82837191308>

Meeting ID: 828 3719 1308

One tap mobile

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+1 253 215 8782 US (Tacoma)

Meeting ID: 828 3719 1308

Find your local number: <https://us02web.zoom.us/j/kzLqseBzG>

STANDARD SPECIFICATIONS: The construction work performed by the selected contractor is subject to CSI MasterFormat.

QUESTIONS, REVISIONS, & ADDENDUM: During the advertisement phase of this project all questions shall be addressed solely to the MPM.

All questions must be submitted by Wednesday, June 8, 2022 @1pm. Questions received after this time may not be answered. Any revisions, addendums and answers to questions received by the due date for questions will be sent to bidders who received this Invitation via email. In addition, revisions will be posted on the City's RFP web page <http://burlingtonvt.gov/RFP/>. It is the responsibility of the bidder to ensure that a valid email is submitted to the plan distributor to the contact information above. It is recommended that bidders submit secondary contact information. The bidder shall acknowledge receipt of all addenda in the bid form. Failure to acknowledge the receipt of addenda will result in disqualification of the bid. The bidder shall acknowledge receipt of all addenda in the bid form.

PREQUALIFICATION OF CONTRACTORS: All bidders on this project shall be prequalified by the City of Burlington.

For City of Burlington, prequalification shall be submitted by interested Bidders a minimum of 5 days before the Bid Due Date unless they are already qualified with the City of Burlington under a prior project. A Prequalification Application is included with these Bid Documents. Please contact the MPM for questions.

WEEKLY CONSTRUCTION PROGRESS MEETINGS: The general contractor foreman shall attend weekly construction progress meetings with City representatives. The design team and construction subcontractors shall be involved in these meetings as necessary and requested. The general contractor shall prepare an updated construction schedule documenting the upcoming construction activities. The City shall be responsible for securing a meeting location and preparing all meeting materials, notes, and action items.

INSTRUCTIONS TO BIDDERS

OAKLEDGE UNIVERSALLY ACCESSIBLE PLAYGROUND PROJECT

1. Bid Preparation and Submission

- a Bidders are expected to examine the specifications, drawings, all instructions and, the construction site. Failure to do so will be at the bidder's risk.
- b All bids must be submitted on the forms provided by the municipality. Bidders shall furnish all the information required by the solicitation. Bids must be signed and the bidders name typed or printed and scanned on the bid sheet and each continuation sheet which requires the entry of information by the bidder. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of the agent's authority. (Bidders should retain a copy of their bid for their own records.)
- c All bid documents shall be electronically submitted with the subject: "OAKLEDGE UNVIERSALLY ACCESSIBLE PLAYGROUND PROJECT," the Invitation for Bids (IFB) number (if applicable), the Project and any other identifying number, the bidder's name, and the date and time for receipt of bids.
- d This solicitation requires bidding on all items, failure to do so will disqualify the bid.
- e Unless expressly authorized elsewhere in this solicitation, alternate bids will not be considered.
- f Unless expressly authorized elsewhere in this solicitation, bids submitted by facsimile (fax) machines, or manually via mail or drop off will not be considered.
- g Prices in the Bid Proposal Form must be typed in or printed and scanned in both words and figures indicating the unit price for each respective bid item. The bid total shall also be entered in words and figures.
- h In case of a discrepancy between a unit price written in words and one entered in figures, the price written in words shall govern.
- i In the event of a discrepancy between a unit price and the calculated extension, the product based on the unit price bid and the mathematically correct summation of the products shall govern.
- j In case of discrepancy between the bid total written in words and that entered as a figure, the adjusted figure shall govern.
- k Bidders must be on the Plan Holders list as managed by the project manager; failure to do so will disqualify the bid.

- l. The estimated quantities are not guaranteed and can be adjusted based on the provisions and the specifications of the contract documents as needed during the project, but are given as a bases for the comparison of the bids.

2. Explanation and Interpretation to Prospective Bidders

- a. Any prospective bidder desiring an explanation or interpretation of the solicitation, specification, drawings, etc., must request it electronically by the date listed for questions in the Invitation for Bids. The only oral clarifications that will be provided will be those clearly related to solicitation procedures, i.e., not substantive technical information. No other oral explanation or interpretation will be provided, except for at the Pre-Bid Conference Call. Any information given to a prospective bidder concerning this solicitation will be furnished promptly to all other prospective bidders as a written addendum to the solicitation, if that information is necessary in submitting bids, or if lack of it would be prejudicial to other prospective bidders.
- b. Any information obtained by, or provided to, a bidder other than by formal addendum to the solicitation shall not constitute a change to the solicitation.

3. Addendum to Invitation for Bids

- a. If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.
- b. Bidders shall acknowledge receipt of any addendum to this solicitation by identifying the addendum number and date on the bid form. Bids which fail to acknowledge the bidder's receipt of any addendum will result in the rejection of the bid if the addendum (addenda) contained information which substantively changed the municipality's requirements.
- c. Addenda will be on file with the Municipality at least 5 days before the bid opening.

4. Responsibility of Prospective Contractor

- a. Contractors shall also be pre-qualified with the City of Burlington. Applications for pre-qualification are included in the appendix documents and shall be submitted 5 working days prior to the bid opening. Pre-qualification applications for this project shall be submitted to the MPM.
- b. Contractors shall provide a 5-year work history with the BID.
- c. The Method of Measurement and Basis of Payment for all contract items shall follow the CSI MasterFormat, unless modified in these Contract Documents.
- d. If a bidder submits a unit bid price of zero for a contract bid item, the bid will be declared informal.

- e. A bidder may submit a unit bid price that is obviously below the cost of the item. If the Municipality awards and enters into a contract with a Bidder that has submitted a unit bid price that is obviously below cost, the contractor shall be obligated to perform the work under such item as indicated in the contract documents and/or as directed by the Engineer.
- f. When Optional Bid Items are indicated in the proposal bidders shall bid on only one pay item in each group of options, leaving the other pay items in the group without a bid price. If a bidder enters more than one-unit price bid in a group of options, only the lowest total price will be considered as the basis of calculation for determining the low bidder and used in the contract.
- g. When “Alternate Bid Items” are indicated in the Proposal bidders must bid on all pay items in each set of “Alternate Bid Items”. Failure to bid on all of the “Alternate Bid Items” in the proposal may result in rejection of the bid.
- h. Contractor shall carry consistent unit pricing for item numbers that appear in both the base bid and ADD alternates where the ADD alternate work is performed concurrently with work in the base bid. Should a discrepancy exist between the unit cost of the two items, the value in the base bid shall be used when determining the contract amount in the Notice of Award. The exception to consistent unit pricing between the Base Bid and Add Alternates is any LUMP SUM items may have unique unit pricing.
- i. When it is indicated in the contract documents that payment or costs 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 price bid for all other contract items.
- j. When the Bid Proposal Form for a contract contains one or more pay items which have a specified quantity and a unit price and total price entered, the Municipality has set a unit price in the event that such item is used. If such item is determined to be needed by the Engineer, the work will be performed by the contractor according to the contract documents at the unit price listed.

5. Errors and/or Inconsistencies in Contract Documents

- a. By submitting a bid, a prospective bidder/contractor certifies that it shall assert no claim, cause of action, litigation, or defense against the Municipality unless notice was provided to the Municipality 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.

6. Availability of Lands for Work, Etc.

- a. The lands upon which the Work is to be performed, rights of way and easement for access thereto and other lands designated for use by the contractor in performing the Work are identified in the contract documents. All additional lands and access thereto required for temporary construction facilities, construction equipment or storage of materials and

equipment to be incorporated in the work are to be obtained and paid for by the Contractor. Easements for permanent structures or permanent changes in the existing facilities are to be obtained and paid for by the Municipality unless otherwise provided for in the contract documents.

7. Familiarity with Laws, Ordinances and Regulations

- a. 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.
- b. By submitting a bid an entity certifies that it shall forthwith report in writing to the Municipality any provision in the plans, proposal, specifications or proposed contract that the bidder/contractor believes is in conflict with or inconsistent with any Federal, State or local law, ordinance, or regulation.
- c. 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 Municipality of the specific differing conditions immediately upon discovering or encountering the differing site conditions.
- d. An entity further certifies that if it fails to notify the Municipality of any differing site conditions as described above, it shall waive any and all rights that it might have to additional compensation from the Municipality 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.
- e. 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 Municipality in claims, litigation, alternative dispute resolution procedures, or other matters concerning the contract for which the bid is submitted.
- f. Prequalification of Construction Contractors. As defined by SUBPART B - RELATED LAWS, CHAPTER 21, ARTICLE V - Prequalification of Construction Contractors, Sec. 21-67 through Sec. 21-78. For all projects where, total project cost is one hundred thousand dollars (\$100,000.00) or more.
- g. City Livable Wages Ordinance. As defined by SUBPART B - RELATED LAWS, CHAPTER 21, ARTICLE VI - LIVABLE WAGES, Sec. 21-80 through Sec. 21-87. For any contractor that has a service contract(s) 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. Livable wage rates will change as of July 1. Contractor and all subs will need to meet conditions of that change under this contract. Any change in the Livable Wage Rates that is more than \$0.05 increase will be eligible for consideration of a change order to compensate for the revised rates. Any employees paid at a livable wage rate must continue to be paid at the higher of the livable wage rates should the rate change throughout the contract.

- h. City Outsourcing Ordinance. As defined by SUBPART B - RELATED LAWS, CHAPTER 21, ARTICLE VII - OUTSOURCING, Sec. 21-90 through Sec. 21-94. For 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.
- i. City Union Deterrence Ordinance. As defined by SUBPART B - RELATED LAWS, CHAPTER 21, ARTICLE VIII – UNION DETERRENCE, Sec. 21-100 through Sec. 21-103. For 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.
- j. Erosion Prevention and Sediment Control Plan. As defined by CHAPTER 26 WASTEWATER, STORMWATER, AND POLLUTION CONTROL - ARTICLE III. STORMWATER AND EROSION CONTROL, Sec 96-160. Contractor shall be responsible for filing a Small Project Erosion Control Plan and maintaining practices identified in the approved plan.
- k. Excavations and Obstructions. As defined by Chapter 27 STREETS AND SIDEWALKS - ARTICLE II. EXCAVATIONS AND OBSTRUCTIONS, Sec 29-62. The Contactor shall be responsible to obtaining a no-charge permit for all locations identified in the Contract Documents where pavement and excavation is disturbed within the right-of-way.

8. Late Submissions, Modifications, and Withdrawal of Bids

- a. Any bid received at the place designated in the solicitation after the exact time specified for receipt will not be considered.
- b. Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a.) of this provision.
- c. The only acceptable evidence to establish the time of receipt at the Municipality is the time/date stamp of the Municipality on the proposal wrapper, or other documentary evidence of receipt maintained by the municipality.
- d. Bids may be withdrawn by email, at any time before the exact time set for opening of bids: provided that the email is timestamped before the bid opening.

9. Bid Opening

- a All bids received by the date and time specified in the solicitation will be publicly opened via webinar Zoom meeting and total bid amounts read aloud. The time and place of opening will be as specified in the solicitation. Bidders and other interested persons may participate by requesting access from the MPM. In the event of unforeseen circumstances (severe weather, etc.) the Municipality reserves the right to postpone the reading of the bids for that contract. All bids for a contract will be opened at the same time and location at a later date.

10. Rejection of Proposals

- a A Proposal may be declared “Informal” and hence rejected if it shows any alteration of form, omissions, or additions not called for in the proposal, lacks proper signatures, is a conditional bid, has alternate bids unless required in the proposal, has irregularities of any kind, has changes to the printed content, is submitted on a form not furnished by the Municipality, is incomplete, fails to acknowledge receipt of one or more addendums, or includes a clause in which the bidder reserves a right to accept or reject the contract award.
- b A proposal may be rejected at the time of bid opening or following analysis to confirm the proposal.
- c If the bids received in response to this solicitation exceed the municipality’s available funding for the proposed work the municipality may reject the bid(s).
- d The Municipality may reject all bids when deemed to be in the City’s best interest.
- e The Municipality may reject an otherwise lowest bid when it is determined that another bid is more advantageous to the City.
- f The Municipality may reject a bid not accompanied by any required bid security or by other data required by the bid documents.
- g The Municipality may reject a bid which is in any way incomplete, irregular, amplified or qualified or otherwise not in compliance with bid documents in all material respects or reasonable interpretation thereof.
- h The Municipality may reject any or all proposals, waive any or all technicalities, and/or advertise for new proposals if the municipality determines that the best interests of the Municipality, or the awarding authority, will be served.
- i Bids which fail to acknowledge the bidder’s receipt of any addendum will result in the rejection of the bid if the addendum (addenda) contained information which substantively changed the Municipality’s requirements.
- j The Municipality will decide whether any bid prices are unbalanced above or below a reasonable cost analysis value as determined by its MPM. Proposals in which bid prices

are unbalanced, mathematically and/or materially, may be rejected at the sole discretion of the Municipality. For purposes of this subsection “mathematically unbalanced bid” and “materially unbalanced bid” shall have the same meaning as in Title 23 Code of Federal Regulations (CFR) Part 635 – Construction and Maintenance, available for viewing at the following link: <https://www.ecfr.gov/cgi-bin/text-idx?SID=ed963b850d9d1f55928182b321424963&mc=true&node=pt23.1.635&rgn=div5>

- k. Prospective bidders may be disqualified for various reasons including (a) Submission of more than one proposal for the same work by an entity under the same or different names, (b) Evidence of collusion among bidders, or (c) Any other cause for suspension or debarment as detailed in the VTrans’ policy and Procedures on Debarment, Code of Vermont Rules (CVR), Volume 8A, 14 010 004, pages 1-10, available for viewing at the following link: <https://advance.lexis.com/documentpage/?pdmfid=1000516&crd=9eb9f46c-bd0f-4011-85bc-52c75678c36c&title=14+010+004.+Policy+and+Procedures+for+Debarment&populated=false&haschil dren=&level=4&nodepath=%2FROOT%2FAAJ%2FAAJAAB%2FAAJAABAAE%2FAAJAABAAEA AB&nodeid=AAJAABAAEAAB&config=00JAA3YmIxY2M5OC0zYmJjLTQ4ZjMtYjY3Yi02ODZh MTViYWUzMmEKAfBvZENhdGFsb2dfKuGXoJFNHKuKZG9Oqaal&pddocfullpath=%2Fsharedd%2Fdocument%2Fadministrative-codes%2Furn%3AcontentItem%3A5WS0-FPD1-FGRY-B0BN-00008-00&ecomp=h3t7kkk&prid=990be612-8d8b-47d1-a708-b8ab130c9465>
- l. The City reserves the right to reject any or all proposals, to negotiate with one or more parties, or to award the contract in the City’s best interests, including proposed contractor’s schedule. The City reserves the right to re-advertise for additional proposals and to extend the deadline for submission of the proposals.

11. Contract Award

- a. To ensure a high level of construction quality, maximize the playground’s lifespan, and minimize maintenance and repairs to the Oakledge Universally Accessible Playground, the Municipality will use an evaluation matrix to score all proposals submitted within the Oakledge Universally Accessibly Playground Project’s bid process.
- b. The Municipality WILL NOT be required to accept the low bid. The following outlines additional content that will be REQUIRED as part of all bid proposals, including a Qualifications Detail, Technical Proposal, and Cost Proposal.
- c. Qualifications Detail consisting of:
 - 1. Cover letter including statement of understanding & approach to this project;
 - 2. Proposed Project Team Members: A description of the team composition, areas of expertise, and role of each sub-contractor on the team. 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;
 - 3. Specific Project Experience: Descriptions detailing completed, similar or relevant project experience that the applicant has executed. Links to similar or relevant projects are encouraged;

4. 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.
- d. Technical Proposal consisting of:
 1. 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;
 2. A scope of work that includes steps to be taken, including any products or deliverables;
 3. A summary that clearly identifies the percentage of work to be completed by the prime contractor and each sub-contractor;
 4. A proposed schedule that indicates project milestones and overall time for completion;
- e. Cost Proposal consisting of:
 1. Cost proposal to be submitted per the contract documents.

EVALUATION CRITERIA

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

BPRW BID EVALUATION CRITERIA

Project: Oakledge Universally Accessible Playground Project

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

- f. Opened proposals will be considered and submitted bids confirmed on the basis of the summation of the products of the quantities shown in each proposal's Bid Proposal Form multiplied by the unit prices bid. In the event of a discrepancy see clarification of sums under Instruction for Bidders.
- g. Prior to signing a construction contract, the successful bidder must submit a current Certificate of Good Standing from the Vermont Secretary of State's office.

13. Bid Guarantee

- a. All bids must be accompanied by a negotiable bid guarantee which shall not be less than

five percent (5%) of the amount of the bid. The bid guarantee may be a certified check, bank draft, U.S. Government Bonds at par value, or a bid bond secured by a surety company acceptable to the U.S. Government and authorized to do business in the State of Vermont. Certified checks and bank drafts must be made payable to the order of the municipality. The bid guarantee shall insure the execution of the contract and the furnishing of a method of assurance of completion by the successful bidder as required by the solicitation. **Failure to submit a bid guarantee with the bid shall result in rejection of the bid.** Proposal guarantees of the two lowest bidders that have submitted proposals that comply with all the provisions required to render them formal will be retained until the contract and bonds have been signed by all parties. Bid guarantees submitted by the remaining unsuccessful bidders will be returned as soon as practicable after bid opening. Should no award be made within forty-five calendar days following the opening of bids, forty-six if the forty-fifth day is a state holiday, all proposals may be rejected and all guarantees may be returned.

14. Contract Bonds

- a. A successful bidder entering into a contract for any portion of the work included in a proposal shall provide the Municipality sufficient surety in the form of; 1) a labor and materials bond, and 2) a compliance bond, both as required by 19 V.S.A. Section 10(8) and (9).
- b. Each bond shall be in a sum equal to one hundred percent (100%) of the contract awarded.
- c. The labor and materials bond shall guarantee the payment in full of all bills and accounts for materials and labor used in the work as well as other obligations incurred in carrying out the terms of the contract.
- d. The compliance bond shall guarantee the faithful performance and completion of the work to be done under the contract as well as compliance with all provisions of the contract.
- e. The form of the bond shall be that provided by the Municipality, and the surety shall be acceptable to the State. The bonds shall be procured from an insurance company registered and licensed to do business in the State of Vermont.

15. Signing the Contract

- a. The entity to which the Contract has been awarded shall sign the contract documents and return them to the Municipality within 15 calendar days from the date of the Notice of Award. No contract shall be considered effective until it has been fully executed by all parties.
- b. Failure to comply with any of the requirements of these provisions relative to signing the contract or failure to furnish the required surety within fifteen (15) calendar days after notice of award shall be just cause for the annulment of the award or of the contract and/or forfeiture of the proposal guarantee/bid bond. Further, if the award or the contract is annulled, or if the contract is not awarded due to in (action) of the lowest responsible bidder that has submitted a proposal that complies with all the provisions required to make it formal, the proposal guaranty accompanying the proposal shall become the property of the Municipality, not

as a penalty but as liquidated damages.

- c. If the award or the contract is annulled, the Municipality may award the contract to the next lowest responsible bidder that has submitted a proposal that complies with all the provisions required to make it formal or advertise a new request for bids for the contract(s).
- d. Failure by the contractor to sign the contract within the time provided by this Subsection shall not be reason for an extension of the contract completion date.

16. Taxes and Insurance Requirements

- a. The City of Burlington is exempt from the Vermont Sales Tax for all purchases and materials, and will provide a copy of its Exemption Certificate to the Contractor after the bid has been awarded.

17. Prompt Pay Compliance

- a. Vermont's Prompt Pay Statute requires payment from primes to subs within 7 days of primes receiving payment. Vermont State Statutes, Commerce and Trade, T.9§4003 provides: "Notwithstanding any contrary agreement, when a subcontractor has performed in accordance with the provisions of its contract, a contractor shall pay a subcontractor, and each subcontractor shall in turn pay its subcontractors, the full or proportional amount received for each such subcontractor's work and materials based on work completed or service provided under the subcontractor, seven days after receipt of each progress or final payment or seven days after receipt of the subcontractor's invoice, whichever is later."

18. Preconstruction Conference

- a. After award of a contract under this solicitation and prior to the start of work, the successful bidder will be required to attend a preconstruction conference with representatives of the Municipality, its Resident Engineer, and other interested parties convened by the Municipality. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract. The municipality will provide the successful bidder with the date, time and place of the conference. Note: If the specific material testing and certification requirements are not included elsewhere in the contract documents, they will be provided to the contractor at the preconstruction conference.

19. Waste Borrow and Staging Areas

- a. The opening and use of off-site waste, borrow and staging areas shall follow the provisions of Section 105.25 of the VTrans Standard Specifications for Construction, 2018 Edition.
- b. The Contractor and/or property owner shall obtain all necessary permits and clearances prior to using off site waste, borrow or staging areas. In addition, all off site waste, borrow and staging areas must be reviewed and approved by the VTrans Environmental Section prior to use. Application should be made at least 21 calendar days prior to planned utilization.

20. Disadvantaged Business Enterprise (DBE) Requirements

- a. There are no mandatory Contract goals for DBE compliance on this project. Bidders are advised, however, that a list of Subcontractors and approximate Contract Values will be required as part of the fully executed Contract for the successful Bidder as a means of evaluating DBE participation.

21. Indemnification

The CONTRACTOR will indemnify and hold harmless the OWNER, the ENGINEER, and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom, and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

In any and all claims against the OWNER, or the ENGINEER, or one or more of their agents or employees, by an employee of the CONTRACTOR, or SUBCONTRACTOR, or anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

22. Contract Change Orders

All changes affecting the Project's construction cost, length of time, or modifications of the terms or conditions of the CONTRACT, must be authorized by means of a written CONTRACT Change Order which is mutually agreed to by the OWNER and CONTRACTOR. The CONTRACT Change Order will include extra WORK, WORK for which quantities have been altered from those shown in the BID Schedule, as well as decreases or increases in the quantities of installed units which are different from those shown in the BID Schedule because of final measurements. All changes must be recorded on a CONTRACT Change Order (which form is part of these CONTRACT Documents) and fully executed before they can be included in a partial payment estimate. Changes for WORK, quantities, and/or conditions will include any respective time adjustment, if justified. Time adjustments will require an updated Project Schedule with the Change Order.

When the Contract sum is, in whole or in part, based on unit prices, the OWNER reserves the right to increase or decrease a unit price quantity as may be deemed reasonable or necessary in order to complete the WORK contemplated by this CONTRACTOR. Overhead and Profit (OHP) will not be included in a unit quantity Change Order.

The unit price of an item of Unit Price Work shall be subject to re-evaluation and

adjustment to determine a mutually acceptable unit price as follows.

The unit price may be re-evaluated and adjusted under the following conditions:

- a. If the variation in the quantity of a particular item of Unit Price Work performed by CONTRACTOR differs by more than 25% from the estimated quantity of such item indicated in the Agreement
- b. If there is no corresponding adjustment with respect to any other item of Work; and
- c. If CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof; or if OWNER believes that the quantity variation entitles OWNER to an adjustment in the unit price.

Either OWNER or CONTRACTOR may make a claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

In addition, there may be added an amount to be agreed upon to cover the cost of general overhead and profit (OHP). The markup for OHP by the General CONTRACTOR may not exceed 10% if the General CONTRACTOR executes the WORK. If a SUBCONTRACTOR executes the WORK, the SUBCONTRACTOR's OHP may not exceed 10% of the cost of the actual WORK, and the General CONTRACTOR may not apply for more than a 5% markup for OHP on the actual WORK (not including the SUBCONTRACTOR's OHP).

In the event that a unit cost cannot be agreed upon, or when Extra Work is requested at the direction of the Owner or Engineer the following shall be used to determine said unit cost. Any additional costs for Public Liability Insurance and Property Damage Insurance that are required in the Contract will be allowed and reimbursed at the actual cost to the Contractor.

- a. Labor. For all machine or equipment operators, other workers, and supervisors in direct charge of the specific operation, the Contractor shall receive the actual wages agreed upon before beginning the work and were paid to the workers performing the work, to which shall be added an amount equal to **10** percent for profit. If the Contractor elects to use employee(s) more skilled than required to perform the extra work, the Agency reserves the right to allow compensation for said employee(s) to be capped at 125% of the applicable Davis-Bacon wage rate of the base skill level required to perform the work.

Workers Compensation Insurance, Unemployment Compensation Insurance, and Social Security charges on labor items as paid by the Contractor will be allowed. Other employee insurances (health, disability, e.g.) being paid by the Contractor just prior to the work being ordered will also be allowed, provided the Contractor submits an applicable notarized insurance rate schedule from its insurance agent. The Contractor shall submit an Agency form indicating all applicable insurances and overhead items for each employee involved in the extra work.

The Contractor will be allowed an additional **10%** of the actual wages paid to the employee as compensation for administration charges and any other additional costs. Additional cost or charge for the Superintendent shall not be allowed.

- b. Materials. The Contractor shall receive the actual cost including freight charges (both as submitted on original receipted bills) for all materials furnished and used. **Ten** percent shall be added thereto for overhead, profit and any other costs incurred in supplying the materials. Vermont sales tax shall not be included.
- c. Equipment. The Contractor will be reimbursed as described below.

Equipment that is used shall be specifically described by year, manufacturer, model number, and any other information required to identify the appropriate hourly rate in the Rental Rate Blue Book published by Equipment Watch (“Blue Book”). In the event the Contractor elects to use equipment of a higher rental value than equipment suitable for the work, payment will be made at the rate applicable to suitable equipment.

- i. Contractor Owned Equipment.

- 1. Ownership Costs. The Contractor will be reimbursed for its ownership costs for self-owned equipment at the rates agreed to before the work begins. These rates shall be on an hourly basis and shall not exceed the monthly ownership rates listed in the current Blue Book divided by 176. The rates will be adjusted for depreciation as computed and published in the Blue Book rate adjustment tables, but will not be adjusted as recommended on the

Blue Book regional adjustment maps. The rates for ownership costs will be total reimbursement to the Contractor for all non-operating costs of the equipment, including depreciation, insurance, taxes, interest, storage, overhead, repairs, and profit. The maximum duration for reimbursement in a day shall not exceed eight hours unless the equipment actually is operated for more than eight hours on a particular day, in which case the rate shall be paid for all hours the equipment actually worked on that day.

- 2. Operating Costs. The rates for operating costs include fuel, lubricants, other operating expendables, and preventative and field maintenance. The Contractor will be reimbursed the amount derived as the product of the number of hours of actual use multiplied by the Blue Book estimated operating cost per hour. Operating costs do not apply to equipment idle time. Operating costs do not include the operators’ wages. Except as otherwise provided, the rates to be used for computation shall be those in effect at the time the force account work is performed as reflected in the applicable publication of the Blue Book.

3. In the event that an ownership cost rate and/or an operating cost rate is not established in the Blue Book for a particular piece of equipment, the Engineer shall establish a rate(s) for that piece of equipment consistent with its costs and expected life. The Contractor shall make no charge for small tools that are considered as having a replacement value of less than \$500.
- ii. Rented Equipment. In the event the Contractor does not own a specific type of equipment and must rent, the Contractor will be reimbursed the actual cost for the equipment, as submitted by invoice, for the time that the equipment is used to accomplish the work. Vermont sales tax shall not be included. The Agency reserves the right to limit the hourly rate to the maximum amount allowed by Blue Book in the event that the prime contractor is a subsidiary of, or has a close affiliation to, the firm supplying the rented equipment.
- iii. Maximum Amount Payable. The maximum amount of reimbursement for the ownership cost of Contractor owned equipment or the rental cost of rented equipment is limited to the original purchase price of the equipment.
- iv. Equipment Downtime. No rental cost or operating cost will be paid for downtime for either rented equipment or Contractor owned equipment.
- v. Transportation Costs. The Contractor will be paid for the reasonable documented cost of transporting both Contractor owned and rented equipment to the work location and back to its original location or a new location if the cost is less.
- d. Subcontracted Work. The Contractor shall receive the actual cost, as submitted on original receipted bills, for all extra and force account work subcontracted to others. **10** percent shall be added thereto for overhead, profit and any other costs incurred to perform the subcontracted work. However, the Agency reserves the right to use the force account procedures as depicted previously in this subsection in the event that the cost of reimbursable subcontracted work is deemed excessive. The compensation as herein provided shall be received by the Contractor as payment in full for Extra Work done on a force account basis. The Contractor's representative and the Engineer shall compare records of Extra Work on a force account basis at the end of each day. Copies of these records shall be made on Agency forms provided for this purpose and shall be signed by both the Engineer and Contractor's representative. All requests for compensation for Extra Work done on a force account basis, including original receipted bills to verify cost and freight charges for all materials, shall be submitted to the Agency as soon as possible; however, if the required request, invoices, and other documentation are not filed before 90 days have lapsed following final acceptance of the project, the costs associated with such Extra and force account work shall not be reimbursable.

23. Contract Documents

Bidders are reminded to check the contents of this proposal against the table of contents. Documents listed under the Table of Contents are effective for this contract. In the event that you suspect or determine the Bid Documents are incomplete, notify the MPM.

CITY OF BURLINGTON
DRAFT CONSTRUCTION CONTRACT

This Construction Contract (“Contract”) is entered into by and between the City of Burlington, Vermont (“the City”), and [_____] (“Contractor”), a Vermont corporation located at [_____]

Contractor and the City agree to the terms and conditions of this Contract.

1. DEFINITIONS

The following terms shall be construed and interpreted as follows:

- A. “Contract Documents”** means all the documents identified in Section 4 (Scope of Work) of this Contract.
- B. “Effective Date”** means the date on which this Contract is approved and signed by the City, as shown on the signature page.
- C. “Party”** means the City or Contractor and “Parties” means the City and Contractor.
- D. “Project”** means the Oakledge Universally Accessible Playground Project.
- E. “Work”** means the services described in Section 5 (Payment for Services) of this Contract, along with the specifications contained in the Contract Documents as defined in Section 4 (Scope of Work) below.

2. RECITALS

- A. Authority.** Each Party represents and warrants to the other that the execution and delivery of this Contract and the performance of such Party’s obligations have been duly authorized.
- B. Consideration.** The Parties acknowledge that the mutual promises and covenants contained herein and other good and valuable consideration are sufficient and adequate to support this Contract.
- C. Purpose.** The City seeks to employ the Contractor to perform work to construct a new universally accessible playground at Oakledge Park, including surrounding paths, playground surfacing, installation of play equipment, and the addition of a new universally accessible parking area.

3. EFFECTIVE DATE & TERM

- A. Effective Date.** This Contract shall not be valid or enforceable until the Effective Date. The City shall not be bound by any provision of this Contract before the Effective Date

and shall have no obligation to pay Contractor for any performance or expense incurred before the Effective Date or after the expiration or termination of this Contract.

- B. Term.** This Contract and the Parties' respective performance shall commence on the Effective Date and expire on [_____] or upon the satisfaction of the City, unless sooner terminated as provided herein.

4. SCOPE OF WORK

The Contractor shall perform the services listed in Attachments A (Request for Proposals) and B (Contractor's Response to Request for Proposals).

5. PAYMENT FOR SERVICES

- A. Amount.** The City shall pay the Contractor for completion of the Work in accordance with Attachment B (Contractor's Response to Request for Proposals) [or as follows:_____].

Contractor agrees to accept this payment as full compensation for performance of all services and expenses incurred under this Contract.

- B. Payment Schedule.** The City shall pay the Contractor in the manner and at such times as set forth in the Contract Documents [or as follows: _____]. The City seeks to make payment within thirty days of receipt of an invoice and any backup documentation requested under subsection D (Invoice) below.
- C. Maximum Limiting Amount.** The total amount that may be paid to the Contractor for all services and expenses under this Contract shall not exceed the maximum limiting amount of \$[_____]. The City shall not be liable to Contractor for any amount exceeding the maximum limiting amount without duly authorized written approval.
- D. Invoice.** Contractor shall submit one copy of each invoice, including rates and a detailed breakdown by task for each individual providing services, and backup documentation for any equipment or other expenses to the following:

[Name, address, phone, email]

The City reserves the right to request supplemental information prior to payment. Contractor shall not be entitled to payment under this Contract without providing sufficient backup documentation satisfactory to the City.

6. SECTION & ATTACHMENT HEADINGS

The article and attachment headings and throughout this Contract are for the convenience of City and Contractor and are not intended nor shall they be used to construe the intent of this

Contract or any part hereof, or to modify, amplify, or aid in the interpretation or construction of any of the provisions hereof.

7. CONTRACT DOCUMENTS & ORDER OF PRECEDENT

- A. Contract Documents.** The Contract Documents are hereby adopted, incorporated by reference, and made part of this Contract. The intention of the Contract Documents is to establish the necessary terms, conditions, labor, materials, equipment, and other items necessary for the proper execution and completion of the Work to ensure the intended results.

The following documents constitute the Contract Documents:

Attachment A: Request for Proposals dated [_____]

Attachment B: Contractor's Response to Request for Proposals dated [_____]

Attachment C: Burlington Standard Contract Conditions for Construction Contractors

Attachment D: Burlington Livable Wage Ordinance Certification

Attachment E: Burlington Outsourcing Ordinance Certification

Attachment F: Burlington Union Deterrence Ordinance Certification

Attachment G: Contractor's Certificate of Insurance

- B. Order of Precedent.** To the extent a conflict or inconsistency exists between the Contract Documents, or provisions therein, then the Contract takes precedent. Any Invitation for Bids, Additional Contract Provisions, and the City Ordinance Certifications shall prevail over any inconsistency with the Contractor's Scope of Work and Cost Proposal.

8. [Reserved]

— Signatures follow on the next page —

SIGNATURE

Persons signing for the Parties hereby swear and affirm that they are authorized to act on behalf of their respective Party and acknowledge that the other Party is relying on their representations to that effect.

Contractor
[Name of Contractor]

By: _____
Name & Signature

Date: _____

City of Burlington
[Department]

By: _____
[Name]
[Title]

Date: _____

OAKLEDGE UNIVERSALLY ACCESSIBLE PLAYGROUND SPECIFICATIONS

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DIVISION 01:

01 22 00	Supplementary Unit Prices
01 23 00	Alternates
01 56 39	Temporary Tree and Plant Protection
01 71 13	Mobilization and Demobilization

DIVISION 26: ELECTRICAL

26 00 00	Electrical
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DIVISION 31: EARTHWORK

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DIVISION 32: EXTERIOR IMPROVEMENTS

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- END OF SECTION 00 01 10 -
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SECTION 00 41 13: BASE BID

PART 1 - GENERAL

1.1 BASE BID

- A. The Base Bid shall include the full compensation for furnishing equipment, materials and labor required to complete the listed project work in the following list:

Item No.	Item	Unit	Unit Price	Amount	Total Price
01 56 39.01	TEMPORARY TREE AND PLANT PROTECTION	LS		1	
01 71 13.01	MOBILIZATION AND DEMOBILIZATION	LS		1	
26 00 00.01	ELECTRICAL	LS		1	
31 10 00.01	MISC. SITE PREPARATION	LS		1	
31 10 00.02	TOPSOIL STRIPPED FOR REUSE	CY		1,055	
31 20 00.01	EXCAVATION	CY		415	
31 20 00.02	ORDINARY FILL	CY		290	
31 20 00.03	GRAVEL BASE	CY		505	
31 20 00.04	GRAVEL SUBBASE	CY		125	
31 20 00.05	WASHED STONE	CY		145	
32 12 16.01	BITUMINOUS CONCRETE	TON		135	
32 12 43.01	PERMEABLE PAVING	SF		2,340	

Item No.	Item	Unit	Unit Price	Amount	Total Price
32 13 13.01	C-I-P CONCRETE WALK	SF		8,955	

32 18 16.01	P-I-P PLAY SURFACE: 2" THICK	SF		1,600	
32 18 16.02	P-I-P PLAY SURFACE 4" THICK	SF		915	
32 18 16.03	P-I-P PLAY SURFACE 2" THICK OVER RIGID BASE	SF		300	
32 18 16.04	FIBAR SURFACE	SF		3,575	

32 33 00.01	BOLLARD	EA		14	
32 33 00.02	BOLLARD SIGN	EA		10	
32 33 00.03	TABLE SEATING	EA		2	
32 33 00.04	BACKED BENCH	EA		5	
32 33 00.05	BACKLESS BENCH	EA		2	
32 33 00.06	SAND PLAY	EA		1	
32 33 00.07	STAGE	LS		1	
32 33 00.08	PARK BOULDER	EA		10	
32 33 00.09	PARK STONE	EA		17	
32 33 00.10	PARK STONE WITH LIGHTING	EA		11	
32 33 00.11	DETECTABLE WARNING PLATE	EA		53	

Item No.	Item	Unit	Unit Price	Amount	Total Price
32 33 00.12	CULVERT INLET GRATE	EA		4	
32 33 00.13	4" PERFORATED PVC PIPE	LF		60	
32 33 00.14	PRECAST CONCRETE CURB	LF		575	
32 33 00.15	METAL EDGE	LF		685	
32 33 00.16	GEOTEXTILE	SY		250	
32 17 23.17	PAVEMENT MARKINGS	SF		320	

32 33 01.01	INSTALLATION OF CITY FURNISHED EQUIPMENT	LS		1	
32 33 01.02	WHALE DRUM	EA		1	
32 33 01.03	GRAB RAIL AT EXISING SWAY FUN	EA		1	
32 33 01.04	GRAB RAIL AT STAGE	EA		1	
32 33 01.05	EMBANKMENT SLIDE	EA		1	
32 33 01.06	ROPE CLIMB	EA		1	

32 91 15.01	AMENDED ON-SITE PLANTING SOIL	CY		1,055	
32 91 15.02	IMPORTED PLANTING SOIL	CY		350	

Item No.	Item	Unit	Unit Price	Amount	Total Price
32 92 00.01	LAWN SEEDING	SY		3,170	
32 92 00.02	LOW-MOW SEEDING	SY		1,450	
32 92 00.03	RAIN GARDEN SEEDING	SY		900	
32 92 00.04	EROSION CONTROL MAT	SY		410	

32 93 00.01	TREE – 10'-12' HT	EA		2	
32 93 00.02	TREE – 2-2.5" CAL.	EA		10	
32 93 00.03	TREE – 3-3.5" CAL.	EA		3	
32 93 00.04	TREE – 4-4.5" CAL.	EA		2	
32 93 00.05	CONTAINER PLANT: 1 GALLON	EA		376	
32 93 00.06	CONTAINER PLANT: 1 QUART	EA		138	
32 93 00.07	PLUG PLANT	EA		2,440	
32 93 00.08	WOOD MULCH	CY		20	
32 93 00.09	PLANT MAINTENANCE & GUARANTEE (12 MONTH)	LS		1	

33 40 00.01	STORM DRAINAGE SYSTEM	LS		1	
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1.2 BASE BID

Total Base Bid in Numbers:

Total Base Bid in Words:

- END OF SECTION 00 41 13 -
BASE BID

SECTION 01 22 00: SUPPLEMENTARY UNIT PRICES

PART 1 - GENERAL

1.1 SUPPLEMENTARY UNIT PRICES

- A. Supplementary Unit Price shall be full compensation for furnishing equipment, materials and labor required to complete the item of work beyond that included in the Base Bid.

Item No.	Item	Unit	Unit Price
31 10 00.03	STUMP REMOVAL	EA	
31 10 00.04	TREE REMOVAL: small <12" DBH	EA	
31 10 00.05	TREE REMOVAL: medium 12-24" DBH	EA	
31 10 00.06	TREE REMOVAL: large >24" DBH	EA	
31 20 00.06	ROCK REMOVAL	CY	
31 20 00.07	CRUSHED STONE	CY	
31 20 00.08	SAND	CY	
32 13 13.02	MISC. C.I.P. CONCRETE	CY	

**- END OF SECTION 001 22 00 -
SUPPLEMENTARY UNIT PRICES**

SECTION 01 23 00: ALTERNATES

PART 1 - GENERAL

1.1 ADD ALTERNATE

A. Work description:

1. Change 'Plug' size plants included in the Rain Garden Planting to 'Quart' size container plants.

Item No.	Item	Unit	Unit Price	Amount	Total Price
32 23 00.06	CONTAINER PLANT: 1 QUART	EA		2,440	

1.2 ADD ALTERNATE

Total Add Alternate Bid in Numbers:

Total Add Alternate Bid in Words:

**- END OF SECTION 01 23 00-
ALTERNATES**

SECTION 01 56 39: TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. General protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

1.2 DEFINITIONS

- A. Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and defined beyond the drip line unless otherwise indicated.

1.3 PREINSTALLATION MEETING

- A. A site walk must be done with City Arborist and Contractor prior to any work being performed.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Tree Pruning Schedule: Written schedule detailing scope and extent of requested pruning of trees to remain that interfere with or are affected by construction. All trees will be reviewed by City Arborist. No trees will be pruned without authorization of City Arborist.

1.5 INFORMATIONAL SUBMITTALS

- A. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- B. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.
- C. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1.6 QUALITY ASSURANCE

- A. Arborist Qualifications: Certified Arborist as certified by ISA, licensed arborist in jurisdiction where Project is located, current member of ASCA, or registered Consulting Arborist as designated by ASCA.

1.7 FIELD CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Moving or parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, and ignition sources, and smoking* within or near protection zones and organic mulch. *As indicated as a general requirement, no smoking is allowed on the job site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Backfill Soil: Planting soil of suitable moisture content and granular texture for placing around tree; free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.
 - 1. Planting Soil: Planting soil as specified in Section 329113 "Soil Preparation"
- B. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of one of the following:
 - 1. Type: Wood and bark chips
- C. Protection-Zone Fencing: Fencing fixed in position and as shown in the 'Tree Protection Detail' on the drawings or approved equal.
- D. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

3.2 PREPARATION

- A. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- B. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated. Do not exceed indicated thickness of mulch.
 - 1. Apply 2-inch uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within 3 inches of tree trunks.

3.3 PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones in a manner that will prevent people from easily entering protected areas except by entrance gates.
- B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by City's representative.
- C. Maintain protection zones free of weeds and trash.
- D. Maintain protection-zone fencing and signage in good condition as acceptable to City's representative and remove when construction operations are complete and equipment has been removed from the site.

3.4 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 02200 Earthworks or otherwise indicated.
- B. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut roots without permission from THE CITY. Notify City's representative and send picture to verify condition. THE CITY will give written notice to proceed once cutting is approved.
- C. Do not allow exposed roots to dry out before placing permanent backfill.

3.5 ROOT PRUNING

- A. Prune tree roots that are affected by temporary and permanent construction. Prune roots as follows:
 - 1. Do not prune roots without permission from THE CITY. City Arborist will evaluate requirement for root pruning. THE CITY will give written notice to proceed once pruning is approved.
 - 2. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 - 4. Cover exposed roots with burlap and water regularly.
 - 5. Backfill as soon as possible according to requirements in Section 312000 "Earth Moving."
- B. Root Pruning at Edge of Protection Zone: Prune tree roots by cleanly cutting all roots to the depth of the required excavation.
- C. Root Pruning within Protection Zone: Clear and excavate by hand or with air spade to the depth of the required excavation to minimize damage to tree root systems. If excavating by hand, use narrow-tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.

3.6 CROWN PRUNING

- A. Prune branches that are affected by temporary and permanent construction. Prune branches as directed by arborist.
 - 1. Prune to remove only[injured,] broken, dying, or dead branches unless otherwise indicated. Do not prune for shape unless otherwise indicated.
 - 2. Do not remove or reduce living branches to compensate for root loss caused by damaging or cutting root system.
 - 3. Pruning Standards: Prune trees according to ANSI A300 (Part 1).
- B. Cut branches with sharp pruning instruments; do not break or chop.
- C. Do not paint or apply sealants to wounds.
- D. Chip removed branches and dispose of off-site.

3.7 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

- C. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with backfill soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off City's property.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. TEMPORARY TREE AND PLANT PROTECTION will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
01.56.39.01	TEMPORARY TREE AND PLANT PROTECTION	LUMP SUM (LS)

- END OF SECTION 01 56 39 -
TEMPORARY TREE AND PLANT PROTECTION

SECTION 01 71 13: MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. The mobilization and demobilization of equipment, personnel, material, supplies, etc. to and from the Work site; the installation and removal of temporary facilities, the furnishing, deploying and repositioning of traffic management devices throughout the course of the project, including MUTCD compliant construction signs, cones, drums, etc.

PART 2 - PRODUCTS

- A. Not Used

PART 3 - EXECUTION

- A. Not Used

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. MOBILIZATION AND DEMOBILIZATION will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
01 71 13.01	MOBILIZATION AND DEMOBILIZATION	LUMP SUM (LS)

- END OF SECTION 01 71 13 -
MOBILIZATION AND DEMOBILIZATION

SECTION 26 00 00: ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Electrical scope as shown on the Drawings.

PART 2 - PRODUCTS

2.1 As shown on Sheets:

- A. E 1-0 Lighting Plan
- B. E 1-1 Lighting Details

PART 3 - EXECUTION

3.1 As shown on Sheets:

- A. E 1-0 Lighting Plan
- B. E 1-1 Lighting Details

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. ELECTRICAL will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
26 00 00.01	ELECTRICAL	LUMP SUM (LS)

- END OF SECTION 26 00 00 -
ELECTRICAL

SECTION 31 10 00: SITE PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Site protection & access
 - 2. Temporary erosion & sedimentation control.
 - 3. Protecting existing trees & plants to remain.
 - 4. Removing existing trees & plants.
 - 5. Clearing & grubbing.
 - 6. Stripping topsoil.
 - 7. Existing utilities.
 - 8. Existing site elements.
 - 9. Survey layout.

1.2 PREINSTALLATION MEETING

- A. A site walk must be done with the City's Representative and Contractor prior to any work being performed to determine:
 - 1. Temporary construction fencing & sign location
 - 2. Temporary erosion & sediment control measures & location
 - 3. Temporary tree and plant protection fencing
 - 4. Trees & plants to be removed
 - 5. Storage areas

1.3 MATERIAL OWNERSHIP

- A. Except for materials indicated to be stockpiled or otherwise remain City's property, cleared materials shall become Contractor's property and shall be removed from Project site. THE CITY has the right of first refusal for all items identified to be removed and disposed.

1.4 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from City's Representative and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed trafficways if required by City or authorities having jurisdiction.
- B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on site or deliver to the CITY's maintenance yard at no additional cost to the City. Any additional items deemed to be salvaged to also be delivered to the maintenance yard at no additional cost to the City.
- C. Utility Locator Service: Notify DIGSAFE (1-888-344-7233 / 1-888-DIG-SAFE), before proceeding with site clearing.
- D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.
- E. Tree- and Plant-Protection Zones: Protect according to requirements in Section 01 56 39 "Temporary Tree and Plant Protection."

PART 2 - PRODUCTS

2.1 Not Used

PART 3 - EXECUTION

3.1 SITE PROTECTION & ACCESS

- A. NO ACCESS to the Job Site shall be allowed on or through abutting private properties. Access shall be along the public right-of-ways in designated areas.
- B. Access to the park and facilities that is not under construction, must remain open at all times. Notify THE CITY in advance of any work that may limit access to facilities. THE CITY will give written notice to proceed once time of work is approved.
1. Provide public access to Phase 1 Installation, as feasible. Coordinate with City's Representative.
- C. Vehicles should only be parked on designated parking areas within the project site.
- D. All rules and regulations governing the respective utilities shall be observed in executing all work under this Section. All work shall be executed in such a manner as to prevent any damage to existing streets, curbs, paving, service utility lines and structures, drainage lines and structures, plantings scheduled to remain, and adjoining property. Monuments and benchmarks shall be carefully maintained and, if disturbed or destroyed, replaced as directed.
- E. The Contractor shall assume full responsibility for damages caused by his Subcontractor's equipment and personnel to the existing grounds as well as adjoining private property.

- F. The work of this Section shall be performed in such a manner as to cause no interference with access by the Subcontractors or other Contractors to all portions of the site as is necessary for the normal conduct of their work. The Contractor shall obtain approval for subsurface construction from DIGSAFE (1-888-344-7233 / 1-888-DIG-SAFE) and all necessary parties and the City before proceeding within the Contract limits.
- G. The Contractor shall take adequate precautions to protect all walks, roads, streets, curbs, pavements, trees and planting, on or off the premises, and shall repair and replace or otherwise make good, as directed by the City's Representative, any damage so caused.
- H. Temporary Construction Fencing
 - 1. Prior to any excavation work the Contractor shall provide temporary construction fencing as required to completely protect the work area and injury to persons or property.
 - 2. The Contractor shall furnish and install temporary fencing as approved by THE CITY.

3.2 TEMPORARY EROSION & SEDIMENTATION CONTROL

- A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.3 TEMPORARY TREE & PLANT PROTECTION

- A. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- B. Protect trees and plants remaining on-site according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- C. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations according to requirements in Section 015639 "Temporary Tree and Plant Protection."

3.4 CLEARING & GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
 - 1. Grind down stumps and remove roots larger than 3 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.

2. Use only hand methods or air spade for grubbing within protection zones.

- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

- A. Strip topsoil to depth (6) inches in a manner to prevent intermingling with underlying subsoil or other waste materials.
- B. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

3.6 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
 1. Arrange with utility companies to shut off indicated utilities.
- B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by City or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 1. Notify the City's Representative not less than two days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without the City's Representative written permission.

3.7 EXISTING SITE ELEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off City's property.
- B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities. Do not interfere with other Project work.

3.9 SURVEY LAYOUT

- A. The Contractor shall use the alignments shown on the plans to establish the layout of all proposed features and shall perform field adjustments as ordered by the City's Representative or The City.
- B. The Surveyor shall lay out the essential or necessary grades and locations of site furnishings, footings, pavements, utilities, structures and other proposed elements. The surveyor shall verify the location of any existing spikes, stakes, pipes, drill holes, etc. and shall be responsible for their accuracy. Proposed features shall be located in relation to dimensions shown on the drawings and as adjusted by the City's Representative.
- C. The Contractor shall inform the City's Representative and The City when the general layout is completed and shall not begin excavation until the City's Representative approves the various alignments. Any discrepancies encountered in field conditions shall be reported to the City's Representative and The City immediately and shall be adjusted as directed.
- D. The Contractor shall be responsible for maintaining the correct vertical and horizontal alignment of all elements, which responsibility shall not be waived by the City's Representative's approval of basic layout and stakeout.
- E. The Contractor is responsible for meeting the following ADA construction tolerances:
 - 1. Final graded surface of all pedestrian pavement areas is to comply to Federal ADA accessibility regulations with a maximum allowed running slope of less than 5% and a maximum allowed cross slope of less than 2%. The Contractor shall be responsible for demonstrating adherence to these regulations at the time of final acceptance and prior to contract completion and final payment.
 - 2. Final graded surfaces of all vehicular pavement areas designated for ADA accessibility on the contract drawings are to comply to Federal ADA accessibility regulations with a maximum allowed running slope of less than 5% and maximum allowed cross slope of less than 2%.
 - 3. All paved surfaces are to have a minimum of 1% cross slope on all finished surfaces, which should be pitched to drain as shown on the Drawings.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAVEMENT

- A. SITE PREPARATION will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
31 10 00.01	MISC. SITE PREPARATION	LUMP SUM (LS)
31 10 00.02	TOPSOIL STRIPPED FOR REUSE	CUBIC YARDS (CY)

- END OF SECTION 31 10 00 -
SITE PREPARATION

SECTION 31 20 00: EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Excavating, filling, backfilling and grading as required for the construction of site work.
 - 2. Stripping and removal of existing topsoil and subsoil in construction areas.
 - 3. Providing, furnishing, placing and compacting of all fill and backfill materials.
 - 4. Protecting all existing structures, utilities, pavements, planting and other site improvements from damage due to construction.
 - 5. Performing all dewatering necessary to maintain excavated areas free from water from any source.
 - 6. Properly terminating, capping and plugging all abandoned utility lines.
 - 7. Removing and disposing of all unsuitable and surplus excavated materials from the site
 - 8. If rock is encountered, excavating the material so that the site improvements can be installed.

1.2 DEFINITIONS

- A. Excavation Classifications:
 - 1. General Excavation: All excavation on-site including but not limited to:
 - a. Excavation of Unsuitable Material
 - b. Excavation for Pavements
 - c. Trench Excavation for Pipes and Conduit

General excavation includes off-site disposal of all unsuitable materials not otherwise used on-site.

 - 2. Excavation: Removal of "unclassified" material encountered above subgrade elevations and to lines and dimensions indicated or required to accommodate new construction, regardless of character of materials and obstructions encountered and shall be understood to include shale, boulders, earth, hardpan, fill, foundations, pavements, curbs, utilities, debris and rubble. "Rock" as classified below will be measured and paid for as a supplemental unit price.
- B. Rock Classifications:
 - a. Open Rock Excavation: shall be classified as 3 cy in size or larger.
 - b. Trench Rock Excavation: shall be classified as rock 1 cy in size or larger.
 - c. Ledge: shall be classified as solid, continuous rock mass, unable to be removed without mechanical measures, and larger than the size/location conditions stated herein.

- C. Finished grade: Required final grade elevations as indicated on the Drawings. Spot elevations govern over proposed contours. Uniformly slope project site areas between proposed finished grades or between proposed and existing grades.
- D. Subgrade: Required surface of natural soil, borrow fill or compacted fill. This surface is immediately beneath proposed topsoil, concrete and bituminous base course, or other surfacing material.
- E. Unsuitable Material: Existing fills, organic or other deleterious material encountered within the pavement areas and zone of influence of site structures.
- F. Trench: The word trench means excavations having vertical sides the depth of which exceeds the width, made for utility excavations and the like.
- G. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.3 SUBMITTALS

- A. Product data and Sieve Analysis for all soil materials to be used from off-site and from on-site sources, including but not limited to the following:
 - 1. Gravel Bedding and Base Course
 - 2. Crushed Stone
 - 3. Washed Stone
 - 4. Ordinary fill
 - 5. Sand Fill
- B. Test reports: Submit test reports for each soil material at least 10 working days before the anticipated date of use on-site.
 - 1. Gradations: Including semi-log plot with “envelopes” of specification limits shown.
 - 2. Moisture content (optimum and field).
 - 3. Densities (maximum laboratory and in-place).
- C. A 50 lb. sample of each on-site or off-site material proposed for use when so requested by the City's Geotechnical Consultant.
 - 1. Deliver samples to office of the City's Geotechnical Consultant, as directed.
- D. Do not bring soil materials to the site without approval by the City's Representative. Submit to the City's Representative for review at least three weeks prior to use the following information:
 - 1. Location of the borrow site.
 - 2. Present and past usage of the source site if not a commercial borrow pit.

1.4 QUALITY CONTROL

- A. The City may retain a Geotechnical Consultant to perform on-site observation during construction operations. The services of the City's Geotechnical Consultant may include, but not be limited to the following:

1. Observation during excavation and dewatering within controlled fill areas.
 2. Observation during backfilling and compacting operations within controlled fill areas and other areas as appropriate.
 3. Observation and assessment of bearing surfaces (subgrades).
- B. The City's Geotechnical Consultant's presence does not include supervision or direction of work by the Contractor, his employees, or agents. Neither the presence of the City's Geotechnical Consultant nor any observations performed by him, nor any notice or failure to give notice, shall excuse the Contractor from deficiencies in the construction.
- C. The City reserves the right to modify the City's Geotechnical Consultant services.
- D. Test soils shall be in accordance with the following:
- Property ASTM Test Method
1. Particle-Size Analysis D 422
 2. Soil Density (In place) D 1556 or D2922
 3. Moisture-Density D 1557
- E. Excavation and Handling of On-Site Soils: Coordinate disposal activities as required to complete the work described in this Section. Legally dispose of unsuitable excavated materials requiring special handling.
1. Contractor is responsible for sampling and testing materials to assess the disposal requirements.
 2. Contractor is responsible for the disposal of materials which require off-site transportation

1.5 SEQUENCING AND SCHEDULING

- A. As construction proceeds, notify the City's Representative prior to start of earthwork operations which require observation.
- B. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.
- C. Do not commence earth-moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.

PART 2 - PRODUCTS

2.1 SOURCE OF MATERIALS

- A. Obtain material from required on-site excavation where suitable material is available.

2.2 FILL MATERIALS

- A. On-site material for use as compacted fill consisting of natural, inorganic, granular soil, taken from areas of excavation after stripping of topsoil and removal of unsuitable material.
1. Excavate soil materials to be used as fill or backfill, based on information submitted by the Contractor to the City's Representative, in accordance with current environmental practice in the State of Vermont.
 2. Materials may be rejected for use based on the results of the evaluation. Remove offsite materials which are rejected for use at the Contractor's expense.
- B. Material containing organic matter, topsoil, organic silt or peat is unsuitable for use as fill or backfill in paved areas or backfills for structures or utilities. Topsoil may be reused in landscape areas as the upper layer for planting, provided it is screened and amended to meet the requirements specified in 32 91 15 Soil Preparation.
- C. Fill material shall be free from ice and snow, rocks with a diameter greater than 2/3 of the loose lift thickness, and foreign matter, such as construction debris, trash, wood, roots, leaves, sod, and organic matter.
- D. Grade fill material within the specified limits. Determine gradation of materials in accordance with ASTM D422.
1. Ordinary Fill: Material free from frozen soil, roots, sod, rubbish and other deleterious or organic matter, graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
6"	100
# 4	30-95
# 200	0-30

2. Gravel Bedding and Base Course: Hard, durable sand and gravel, crushed quarry rock or crushed gravel, from off-site sources shall be free from ice and snow, roots, sod, rubbish, and other deleterious or organic matter and graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
3"	100
1/2"	50-85
# 4	40-75
# 10	30-60
# 40	10-35
# 100	5-20
# 200	2-8

3. Crushed Stone: Durable, crushed stone or gravel from off-site sources shall be free from ice and snow, sand, clay, loam, or other deleterious material and uniformly graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
1"	100
3/4"	90-100
1/2"	10-50
3/8"	0-20
# 4	0-5

4. Washed Stone: Durable, processed stone from off-site sources shall be free from ice and snow, sand, clay, loam, or other deleterious material and graded within the following limits:

Washed Stone Base under Permeable Surfaces:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
1"	90 – 100
5/8"	50 – 80
1/4"	30 – 50
# 4	15 – 35
# 8	10 – 30
# 30	3 – 5
# 200	0 – 3

5. Sand Fill: Sand, graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
# 4	100
# 200	0-8

2.3 PLASTIC MARKING TAPE

- A. Material: Acid and alkali resistant polyethylene film, 6 in. wide, with a minimum thickness of 0.004 in., minimum strength of 1750 psi lengthwise and 1500 psi crosswise with an elongation factor of 350 percent. Imprint tape with a continuous inscription identifying the specific utility or service.
- B. Tape Colors:
1. Utility or Service Color
 2. Gravity sewer and storm drain Green
 3. Gas Main Yellow
 - 4.

PART 3 - EXECUTION

3.1 DRAINAGE AND DEWATERING

- A. Provide adequate pumping and drainage facilities to keep excavated areas sufficiently dry from groundwater and/or surface runoff so as not to adversely affect construction procedures or cause excessive disturbance of underlying natural ground or excavation bottom.
- B. Grade and ditch the site as necessary to direct surface runoff away from open excavations, subgrade surfaces and adjacent property. Maintain drainage at all times.
- C. Dispose of water from trenches and excavations in such a manner as will not cause injury to public health or to public or private property. Do not cause erosion or siltation due to methods of disposal of pumped effluent, and conform to requirements of Section 311100 Erosion and Sediment Control.
- D. Do not place fills, pour concrete, or install piping and appurtenances in excavations containing free water.
- E. Provide sufficient pumping equipment, in good working order, to remove free water.
- F. Where, in the opinion of the City's Geotechnical Consultant, pumping of excavations is not effective in maintaining a dry firm subgrade, employ other dewatering methods acceptable to the City's Geotechnical Consultant. This may include the use of well points, or deep well dewatering, or a combination of these and other methods.

3.2 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Execute the Work in such a manner as to prevent damage to adjacent property and other property and existing improvements such as, but not limited to, buildings, streets, curbs, paving, utility lines and structures, monuments, bench marks and other public and private property. Protect existing structures and foundations from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. In case of any damage or injury caused in the performance of the work, make good such damage or injury to the satisfaction of, and without additional cost to the City. Repair or replace existing roads, sidewalks, and curbs damaged during the project work to their original condition at the completion of operations. Replace existing benchmarks, monuments, and other reference points which are disturbed or destroyed.

3.3 PROTECTION OF EXISTING LANDSCAPE

- A. Exercise care to preserve the natural landscape and conduct construction operations so as to prevent destruction, scarring, or defacing of the natural surroundings in the vicinity of the Work.
 - 1. Except where clearing is required for permanent works, protect trees, shrubbery, and vegetation from damage which may be caused by the Contractor's construction operations. Protect existing trees to remain from damage with fencing or other means acceptable to the City's Representative.
 - 2. Move crews and equipment within the right-of-way and over routes provided for access to the work in a manner which prevents damage to property. Where unnecessary destruction, scarring, damage, or defacing occurs as a result of the Contractor's operations, repair, replant, reseed, or otherwise correct the damage at no expense to the City.

3.4 SHORING

- A. Open excavations in general should have side slopes conforming to applicable OSHA standards. Provide shoring and/or bracing at the Contractor's expense and designed by a Professional City's Representative.
- B. Provide shoring and/or bracing at excavations as required to assure safety against collapse of earth at the sides of excavations; as required for support of adjacent structures, streets or utilities; or as required to comply with Federal, State, and local regulations codes or ordinances.
- C. Carefully remove all shoring and bracing not ordered left in place in such a manner as to not endanger the construction of other structures, utilities or property whether public or private. Immediately refill all voids left after withdrawal of shoring with sand and rammed with tools especially adapted to that purpose or otherwise compacted as directed to achieve the required density.

3.5 GENERAL EXCAVATION

- A. Brace, underpin and support structures, pipes, pavement, earth, and other property liable to damage from excavation operations as required to prevent damage and movement.
- B. As excavation approaches underground utilities and structures, excavate using hand tools. Such manual excavation is incidental to normal excavation and no special payment will be made.
- C. Carry excavation for pipe and other items far enough below underside of item to accommodate bedding material.
- D. Fill excavations which extend below indicated or specified levels ("over-excavation") to those levels with compacted Granular Fill or Crushed Stone.
- E. If bearing surface of subgrade which is to receive fill, structure, concrete, or other construction becomes softened, disturbed, or unstable, remove unsuitable material down to a firm bearing surface and replace with suitable compacted material. Protect Subgrade from further disturbance until construction item is placed. Do not excavate wider than required to set, brace, and remove forms for concrete, install structures, piping, or perform other necessary work unless otherwise specified. Width of trench at 12 in. above top of pipe or conduit is not greater than the sum of outside diameter of the pipe or the conduit plus 2 ft. (pipe O.D. + 2 ft.). Slope sides of trench above this level, at an angle 45 degrees or less from vertical, from this level to grade. In materials where sloping walls are not stable, brace trench walls to prevent sloughing and collapse.
- F. Frost: Do not excavate to full indicated depth when freezing temperatures may be expected unless concrete can be poured immediately after the excavation has been completed. Protect the excavation from frost if placement of concrete is delayed. Where concrete is exposed to freezing temperatures, protect to prevent frost penetration into the soil below.

3.6 EXCAVATION OF UNSUITABLE MATERIAL

- A. General: Excavate all unsuitable material to firm natural ground within the zone of influence of structures in the manner specified below and in the Contract Drawings.
- B. Follow a construction procedure which permits visual identification of firm natural ground. In the event that groundwater is encountered, the City's Representative may require that the size of the open excavation be

limited to that which can be handled by the Contractor's chosen method of dewatering and which will allow visual observation of the bottom and backfilling in the dry.

3.7 EXCAVATION FOR PAVEMENTS

- A. Remove existing topsoil, subsoil and fills from below proposed pavement to proposed subgrade. Proofroll the subgrade with at least 10 passes of a self-propelled vibratory roller with a drum weight of not less than 10,000 pounds. If soft or unstable areas are detected during proofing, overexcavate and replace with controlled compacted gravel base as necessary.
- B. Cut surface under pavements to comply with cross-sections, required base course layers, elevations and grades as indicated.
- C. Excavate surface under pavements to comply with cross-sections, elevations and grades as indicated.
- D. Remove abandoned utility pipes located within 18-inches of pavement base course elevations. Cap the ends of abandoned utility pipes left in-place.

3.8 TRENCH EXCAVATION FOR PIPES AND CONDUIT

- A. Excavate trenches to uniform width, sufficient to provide working room and a minimum of 12 inches of clearance on both sides of pipe or conduit.
- B. Excavate trenches and conduit to depth indicated or required to establish indicated slope and invert elevations and to support bottom of pipe or conduit on undisturbed soil.
 - 1. For pipes or conduit less than 6 inches in nominal size, and for flat-bottomed, multipleduct conduit units, do not excavate beyond indicated depths. Hand-excavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.
- C. For pipes and equipment 6 inches or larger in nominal size, shape bottom of trench to fit bottom of pipe for 90 degrees (bottom 1/4 of the circumference). Fill depressions with tamped sand backfill. At each pipe joint, dig bell holes to relieve pipe bell of loads ensure continuous bearing of pipe barrel on bearing surface. pipe and fittings, to install in the prepared trench and to test the line prior to backfilling.

3.9 ROCK EXCAVATION

- A. If the Contractor finds rock during excavation, the work shall be stopped to investigate whether the site improvements can be reworked to avoid the rock. If not, the excavation of the rock shall be at the supplemental unit price for rock excavation. Rock excavation is defined as rock, shale, hardpan rock, boulders or other material unsatisfactory for subgrades. It shall be excavated to a minimum depth of 6 inches or to such depths as the City may direct below the templated surface of the subgrade of the designated grades. Once the rock is excavated, the areas shall be refilled with suitable selected materials as specified. No blasting or use of explosives is permitted without the permission and on-site supervision of the City's Representative.

3.10 USE OF FILL MATERIALS

- A. Ordinary Fill: Fill in landscaped areas and below pavement to an elevation below specified base course.

- B. Gravel Bedding and Base Course: Base course fill under pavements and from top of ordinary fill to base of pavement section.
- C. Crushed Stone: Fill placed in a wet environment.
- D. Washed Stone: Fill below permeable surfaces.
- E. Sand Fill: Fill around utility pipes, bedding material and as indicated on the Drawings.
- F. On-site material may be used as fill, provided it meets the required specification for intended use and is maintained at suitable moisture content to allow the specified compaction.

3.11 COMPACTION, BACKFILL AND FILL

- A. Proofrolling: Prior to placement of the initial fill layer proofroll the exposed natural ground, by making 2-4 passes with a vibratory drum roller with a minimum drum weight of 10,000 pounds.
- B. Backfill excavations below finished grade. Remove temporary planking, timbering, forms, debris, and refuse before backfill is placed.
- C. Backfill after the City's Geotechnical Consultant has observed and approved operations. Give prompt notice that the work is ready for observation, and allow sufficient time for making necessary observations.
- D. In order to prevent lateral movement, exercise care in placing backfill adjacent to foundation walls, retaining walls, utility lines and other structures. Backfill on opposite sides of structures at approximately the same elevation to prevent unbalanced earth pressure. During backfilling, the difference in elevation of backfill on opposite sides of the structure shall not exceed 24 inches, except as noted. Where backfill of buried wall is only on one side, only hand-operated roller or plate compactors shall be used within a lateral distance of 5 feet of back of wall for walls less than 15 feet high and within 10 feet of back of wall for walls more than 15 feet high.
- E. Except as otherwise noted, tolerance of top surface of completed backfill shall be +2 inches from true grade indicated, and variations from indicated tolerance shall approximately compensate within each 100 square feet area.
- F. Compact Subgrade and backfill of indicated areas or structures as specified in the following table. Allow the City's Geotechnical Consultant sufficient time to make necessary observations and tests. Base the degree of compaction upon a maximum dry density as determined in accordance with ASTM D-1557.

COMPACTION TABLE

<u>Areas</u>	<u>Minimum Degree of Compaction</u>
1. Pavement base courses	95%
2. Below pavement subbase and base courses	90%
3. Trench backfill	90%
4. Ordinary fill within the top two feet (2') of grade in grass areas	90%
5. In grass areas below two feet (2') from grade	85%

Reference is made to the following table for layer thickness, equipment, and number of passes. These are minimum standards only and in no way relieve the contractor of his obligation to achieve the above stated degree of compaction by whatever additional effort is necessary.

	<u>Maximum Stone Size</u>		<u>Maximum Loose Lift Thickness</u>		<u>Minimum Number of Passes</u>	
	BELOW STRUCTURES AND PAVEMENT	LESS CRITICAL AREAS	BELOW STRUCTURES AND PAVEMENT	LESS CRITICAL AREAS	BELOW STRUCTURES AND PAVEMENT	LESS CRITICAL AREAS
Hand-operate vibratory plate or light roller in confined areas	4"	5"	6"	8"	4	4
Hand-operated vibratory drum rollers weighing at least 1,000# in confined areas	6"	8"	10"	12"	4	4
Light vibratory drum roller <i>minimum minimum weight dynapac at drum force 8,000# 10,000#</i>	8"	12"	12"	18"	4	4
Medium vibratory drum roller <i>minimum minimum weight dynapac at drum force 10,000# 20,000#</i>	8"	12"	12"	24"	6	6

Place fill in horizontal layers. Where the horizontal layer meets a rising slope, key the layer into the slope by cutting a bench into the slope during the spreading of each lift.

- G. Apply compaction requirements to the material directly below the indicated supported item (base course or structure), and to all material above the undisturbed earth and enclosed by the following planes:
 - 1. Horizontal plane at the elevation of the bottom of the supported item (base course or structure), within a perimeter line located 2 feet beyond the exterior face or edge of item.
 - 2. Flat sloping planes extending from the perimeter line downward and outward at 45 degree angle with the horizontal, to where the planes intersect undisturbed earth. Where zones of higher and lower percentages of compaction overlap, that of the higher percentage applies.
- H. Backfilling of utility trenches.
 - 1. After pipes and joints have been inspected and approved by the City's Representative, carefully place and tamp bearing material in 6 inch layers around the pipe for uniform bearing.
 - 2. Install marker tape as specified.
 - 3. Place backfill in 6 inch lifts and compact to the required density.
 - 4. Refer to the Sections describing utility installations for special backfill requirements.
- I. Preparation of subgrade in paved area.
 - 1. Shape Subgrade to line, grade and cross section, and proof-compact with a minimum 6 passes of a vibratory drum roller (with a minimum static drum weight of 10,000 pounds, capable of at least 20,000 pounds of dynamic force). Excavate any weak or soft spots identified during proof-rolling and replace with compacted granular fill. Include plowing, discing, and any moistening or aerating required to obtain specified.
 - 2. Bring low areas resulting from removal of unsatisfactory material or excavation of Work up to required grade with Granular Fill, and shape the entire Subgrade to line, grade and cross section, and compact as specified.
 - 3. 3. After compaction the surface of the subgrade for paved areas shall not show deviation greater than 1 inch when tested with a 10 foot straightedge applied both parallel and at right angles to the centerline of the area.
 - 4. 4. The elevation of the finished subgrade shall not vary more than 1 inch from the established grade and cross section.
- J. Base courses.
 - 1. Base course consists of placing base material, in layers of specified thickness, over subgrade to support bituminous concrete. See other Division One sections for paving specifications.
 - 2. During construction, maintain lines and grades including crown and cross-slope of base course.
 - 3. Place shoulders along edges of base course to prevent lateral movement. Construct shoulders of gravel base material, placed in such quantity to compact to the thickness of each base course layer. Compact and roll at least a 2 foot width of shoulder simultaneously with compacting and rolling of each layer of base course.
 - 4. Place base course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting base material during placement operations.
 - 5. When a compacted base course is shown to be 6 inches or less, place material in a single layer. When shown to be more than 6 inches thick, place material in equal layers, except no single layer shall be more than 6 inches or less than 3 inches in thickness when compacted.
 - 6. The elevation of the finish base course shall not vary more than 3/4 inch under a 10 foot straightedge.
- K. Do not place fill over frozen soil. Remove frozen soil prior to the placement of fill.

3.12 MOISTURE CONTROL OF FILL

- A. Uniformly distribute moisture content as practicable within each lift, and adjust as necessary to obtain the specified compaction.
- B. Moisture condition material which does not contain sufficient moisture to be compacted to the specified densities by methods approved by the City's Geotechnical Consultant.
- C. Dry material containing excess moisture to a proper moisture content for compaction before placing and compacting. Remove and replace excessively moist soils or scarify by use of plows, discs, or other approved methods, and air-dry to meet the above requirements. If the fill can not be dried within 48 hours of placement, remove and replace with drier fill.
- D. Materials which are within the moisture requirements specified above, but which display pronounced elasticity or deformation under the action of earthmoving and compaction equipment, shall be reduced to Optimum Moisture Content, or below, and recompacted to secure stability.
- E. In the event that exposed subgrades and fills become inundated remove excess water prior to placement of fills or paving activities.
- F. Protect fill areas by grading to drain and providing a smooth surface that will readily shed water. Grade the surface of the areas in such a manner as to prevent ponding of surface runoff in areas to receive compacted fill.

3.13 GRADING AND FINE GRADING

- A. Uniformly grade areas within limits of grading under this Section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.
- B. Grade areas to drain away from structures and cross pitch paths to prevent ponding and icing. Finished surfaces free from irregular surface changes, and as follows:
 - 1. Paved areas: Shape surface of areas under paved surfaces to line, grade and cross section, with finished surface not more than 0.10 foot above or below required subgrade elevations.
- C. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.
- D. Complete the grading operations after utilities have been installed, site improvements included under this Contract have been completed and all rubbish, materials and debris have been properly disposed of.
- E. Do all cutting, filling, reshaping, regrading and recompacting as necessary to meet the requirements of the Drawings and this Section of the specifications. Maintain subgrades at the levels specified until turned over to subsequent construction. Bring to required subgrade levels any areas where settlement, erosion or other grade changes occur.

3.14 MAINTENANCE

- A. Protect newly graded areas from traffic and erosion, and keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

- B. Where completed areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, re-shape, and compact to required density prior to further construction.
- C. Maintain ditches and drains along the subgrade so they drain effectively at all times.
- D. Storage or stockpiling of materials on the finished subgrade will not be permitted.

3.15 DISPOSAL OF UNSUITABLE AND SURPLUS EXCAVATED MATERIALS

- A. Remove excess excavated materials, including unacceptable excavated material, trash and debris, and legally dispose of it off the project site.
- B. Hazardous materials, as defined by Vermont Department of Environmental Conservation (VT DEC), shall be legally disposed of off-site.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. EARTH MOVING will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. In the case ROCK REMOVAL is required, it will be paid under Item 31 20 00.06 in Section 01 22 00 SUPPLEMENTARY UNIT PRICES.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
31 20 00.01	EXCAVATION	CUBIC YARD (CY)
31 20 00.02	ORDINARY FILL	CUBIC YARD (CY)
31 20 00.03	GRAVEL BASE	CUBIC YARD (CY)
31 20 00.04	GRAVEL SUBBASE	CUBIC YARD (CY)
31 20 00.05	WASHED STONE	CUBIC YARD (CY)

- END OF SECTION 31 20 00 -
EARTH MOVING

SECTION 32 12 16: BITUMINOUS CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Bituminous concrete paving.
 - 2. Bituminous concrete overlay.
 - 3. Cold milling of existing bituminous concrete pavement.
 - 4. Bituminous concrete patching.
- C. Related Requirements:
 - 1. Section 312000 "Earth Moving" for subgrade preparation, fill material, separation geotextiles, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.
 - 2. Vermont Agency of Transportation (VTrans). "Standard Specifications for Construction", latest edition.
 - 3. ASSHTO: American Association of State Highway and Transportation Officials, latest edition.
 - 4. ASTM International: American Society for Testing and Materials International, latest edition.

1.2 ACTION SUBMITTALS

- A. Hot-mix asphalt designs.

1.3 INFORMATIONAL SUBMITTALS

- A. Material Certificates:
 - 1. Aggregates.
 - 2. Asphalt binder.
 - 3. Tack coat.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements Section 406 – Bituminous Concrete Pavement of Vermont Agency of Transportation (VTrans).

PART 2 - PRODUCTS

2.1 BITUMINOUS CONCRETE PAVEMENT

- A. Bituminous Concrete Pavement shall be Hot Mix Asphalt (HMA) conforming to the relevant provisions of the Section 406 – Bituminous Concrete Pavement of Vermont Agency of Transportation (VTrans).
 - 1. Binder Course: Superpave Intermediate Course – 12.5 (SSC-12.5)
 - 2. Wearing Course: Superpave Surface Course – 9.5 (SSC-9.5)
 - 3. Tack Coat shall be either of the following:
 - a. Anionic Emulsified Asphalt conforming to the requirements of AASHTO M 140. Anionic emulsion used for tack coat shall be grade RS-1h.
 - b. Cationic Emulsified Asphalt conform to the requirements of AASHTO M 208. Cationic asphalt emulsion used for tack coat shall be grade CRS-1h.

2.2 BASE MATERIALS

- A. Compacted Gravel Base as specified in Section “EARTH MOVING”.

PART 3 - EXECUTION

3.1 COLD MILLING

- A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.
 - 1. Mill to a depth as indicate on the Drawings.
 - 2. Patch surface depressions deeper than 1 inch (25 mm) after milling, before wearing course is laid.

3.2 PATCHING

- A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches (300 mm) into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

- B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseal concrete pieces firmly.
 - 1. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.
- C. Tack Coat: Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).
 - 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- D. Placing Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

3.3 SURFACE PREPARATION

- A. Ensure that prepared subgrade is ready to receive paving. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces.
- B. Herbicide Treatment: Apply herbicide in accordance with manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
 - 1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.
- C. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).
 - 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.4 HOT-MIX ASPHALT PLACEMENT

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
 - 1. Place hot-mix asphalt base course and binder course in number of lifts and thicknesses indicated.
 - 2. Place hot-mix asphalt surface course in single lift.
 - 3. Spread mix at a minimum temperature of 250 deg F (121 deg C).
 - 4. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

- B. Place paving in consecutive strips not less than 10 feet (3 m) wide unless infill edge strips of a lesser width are required.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.5 JOINTS

- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
 - 1. Clean contact surfaces and apply tack coat to joints.
 - 2. Offset longitudinal joints, in successive courses, a minimum of 6 inches (150 mm).
 - 3. Offset transverse joints, in successive courses, a minimum of 24 inches (600 mm).
 - 4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method in accordance with AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."

3.6 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
 - 1. Complete compaction before mix temperature cools to 185 deg F (85 deg C).
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
 - 1. Average Density, Rice Test Method: 92 percent of reference maximum theoretical density in accordance with ASTM D2041/D2041M, but not less than 90 percent or greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- G. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.7 INSTALLATION TOLERANCES

- A. Pavement Thickness: Compact each course to produce thickness indicated within the following tolerances:
 - 1. Base Course and Binder Course: Plus or minus 1/2 inch (13 mm).
 - 2. Surface Course: Plus 1/4 inch (6 mm), no minus.
- B. Pavement Surface Smoothness: Compact each course to produce surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:
 - 1. Base Course and Binder Course: 1/4 inch (6 mm)
 - 2. Surface Course: 1/8 inch (3 mm)
 - 3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch (6 mm).

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Replace and compact hot-mix asphalt where core tests were taken.
- C. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAVEMENT

- A. BITUMONOUS CONCRETE will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. GRAVEL BASE will be paid under Item 31 20 00.04.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 12 16.01	BITUMINOUS CONCRETE	TON

- END OF SECTION 32 12 16 -
BITUMINOUS CONCRETE

SECTION 32 12 43: POROUS FLEXBLE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Permeable Paving

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Color Sample
- C. Field Sample, Mock-up:
 - 1. 5'x5' panel

1.3 CLOSEOUT SUBMITTALS

- A. Maintenance Data.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. Mockups: Build mockups to verify selections made under Sample submittals and to set quality standards for materials and execution.
 - 1. Build mockups for permeable paving including accessories.
 - a. Size: 60 inches by 60 inches.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERMEABLE PAVING

- A. Permeable Paving shall be Flexi-Pave as provided by Environmental Paving Solutions, LLC, 6701, Thompson Road, Syracuse, New York 13211, 315-472-6902 or approved equal.
- B. Color to be selected from the following per sample review:
 - 1. Irish Ebony
 - 2. Pewter
 - 3. Peppermill
 - 4. Mossy Slate
 - 5. Coal Mine
- C. Metal Edge as specified in Section – Site Improvements.
- D. Washed Stone Base as specified in Section – Earth Moving.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install material per manufacturer's specifications.

3.2 PROTECTION

- A. Protect all installed paving surfaces from damage resulting from subsequent construction activity on the site.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. PERMEABLE PAVING will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. WASHED STONE BASE will be paid under Item 31 20 00.05.
- C. METAL EDGE will paid under Item 32 33 00.15.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 12 43.01	PERMEABLE PAVING	SQUARE FOOT (SF)

- END OF SECTION 32 12 43 -
POROUS FLEXBLE PAVING

SECTION 32 13 13: CONCRETE IMPROVEMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Cast-in-Place paving, bases, pads, foundations and footings.
- C. Related Requirements:
 - 1. American Concrete Institute (ACI)
 - 2. American Society for Testing and Materials (ASTM)
 - 3. Concrete Reinforcing Steel Institute (CRSI)
 - 4. CRSI - Manual of Standard Practice.
 - 5. AASHTO: American Association of State Highway and Transportation Officials
 - 6. Vermont Agency of Transportation (VTTrans): 2018 Standard Specifications for Construction
 - 7. The Americans with Disabilities Act (ADA)

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of product, ingredient, or admixture requiring color selection.
- C. Design Mixtures: For each concrete improvements mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. DESIGN OF CONCRETE MIX shall be certified by independent testing laboratory. Statement of materials constituting design of mixes (as required by referenced standards) shall be submitted for City's Representative's approval.
 - a. Concrete mix design shall include the following information:
 - 1) Proportions of cement, fine and coarse aggregate, and water.
 - 2) Water-cement ratio, design strength, slump, and air content.
 - 3) Type of cement and aggregates.
 - 4) Type and dosage of admixtures.
 - 5) Special requirements for pumping.
 - 6) Range of ambient temperature and humidity for which the design is valid.

- 7) Special characteristics of mix which require precautions in mixing, placing, finishing, or curing methods to achieve finished product specified.

2. No concrete shall be delivered to job site until City's Representative has approved design mixes.

D. Shop Drawings:

1. C.I.P. Paving Joint Layout

1.3 PRECONSTRUCTION TESTING

- A. STANDARD TEST CYLINDERS to determine the compressive strength of the concrete as mixed for the work shall be made by the Contractor in the presence of the City's Representative at the site. In addition to furnishing the concrete for the test specimens, the Contractor shall furnish approved cylindrical molds (6" x 12") and assist in sampling, fabricating, protecting and curing the specimens. A test cylinder may be ordered from each day's concrete. The Contractor shall include the cost of test cylinders under his base bid.

PART 2 - PRODUCTS

2.01 FORMS

- A. Cylindrical Forms: Sonotube Fibre Forms, wax-impregnated strippable forms manufactured by Sonoco Products Company, General Products Division or approved equal, or ABS or PVC plastic reusable forms.
- B. Forms for Exposed Finish: Plywood, metal, metal-framed plywood faced, or other acceptable panel materials. Plywood shall be APA Ref. 1 B-B (Concrete Form), Class I Exterior Grade plywood or B-B or A-C Class I high density overlay concrete form plywood. Formwork materials shall produce smooth, continuous, straight and level surfaces.
- C. Forms for Unexposed Finish: Plywood, lumber or metal, with lumber dressed on at least two edges and one side.
- D. Form Ties: Provide prefabricated, adjustable length galvanized steel snap-off ties, with brackets, cones, come docks and other accessories.
- E. Form Coatings: Commercial formulation compounds that will not bond with, stain or adversely affect concrete.
- F. Forms shall be true to line and free from warp, and shall be of sufficient strength, when staked, to resist the pressure of the concrete without springing. Formwork shall be designed so that sections may be fastened together to prevent vertical or horizontal movement of ends.

2.02 CONCRETE MIX

- A. Concrete: air-entrained type, conforming to ASTM C 94. One copy of Certificate of Delivery required by ASTM C 94 shall be delivered to City's Representative immediately upon arrival of each load of concrete at site.
- B. Unless otherwise indicated on Drawings, minimum 28-day compressive strength shall be 4,000 psi.
- C. Concrete slump shall be no less than 2 in. nor greater than 4 in., determined in accordance with ASTM C 143.
- D. Air content by volume shall be 3 to 6%, and shall be tested in accordance with ASTM C 231. "Relative durability factor" of concrete containing air-entrainment admixture shall be at least 90.
- E. Concrete shall contain a water reducing agent to minimize water-cement ratio of mix, at specified slump.
- F. No calcium chloride or admixtures containing calcium chloride shall be added to Concrete. No admixtures other than those specified shall be used in concrete without specific written permission of City's Representative.
- G. No additional water, except for amount indicated by design mix shall be added to concrete without prior permission of City's Representative.
- H. No concrete shall be placed by pumping methods without prior written approval of City's Representative. Should Contractor be allowed to place concrete by pumping methods, pumping procedures, mix design of concrete, and other precautions shall be in accordance with ACI 304 and subject to review by City's Representative.

2.03 REINFORCING

- A. Steel reinforcing bars shall conform to ASTM A 615.
 - 1. Bars employed as reinforcement shall be deformed type.
 - 2. Bars employed as dowels where indicated on the Drawings shall be hot-rolled plain rounds.
 - 3. Unless otherwise indicated on the Drawings, reinforcing bars shall be Grade 60.
- B. Welded wire fabric reinforcement shall conform to applicable requirements of ASTM A185. Furnish fabric reinforcement in flat sheets. Fabric reinforcement in rolls will not be permitted.

2.04 CEMENT

- A. Cement: approved brand of American manufactured Portland cement, conforming to ASTM C 150, Type I or II. "Submit manufacturer's name and type of cement for City's Representative's approval.

- B. Only one color of cement, all from same manufacturer, shall be used for work.
- C. Do not use Type III cement without City's Representative's approval.

2.05 ADMIXTURES

- A. Except as otherwise specified, use of concrete admixtures shall conform to ACI 212.
- B. Admixtures employed shall be produced and serviced by established, reputable manufacturer and used in compliance with manufacturer's recommendations.
- C. Air entraining agent shall conform to ASTM C 260 and shall be "Daravair" or "Darex AEA", manufactured by W.R. Grace & Company; "Airmix" or "Perma-Air", manufactured by The Euclid Chemical Co.; "MB-WR", manufactured by Master Builder's Co., or an approved equal product.
 - 1. When a high range water reducing (HRWR) admixture is used, air-entraining admixture shall be a neutralized vinsol resin solution.
 - 2. When requested by the City's Representative, furnish certification attesting to compliance with these specifications.
- D. Water reducing agent: conform to ASTM C 494, Type A and shall contain no more than 0.05% chloride ions. Water reducing agent: "WRDA with Hycol", manufactured by W.R. Grace & Company; "Eucon WR-75" manufactured by The Euclid Chemical Co.; "Pozzolith 200N", manufactured by Master Builders's Co., or approved equal product.
 - 1. Water reducing agent: manufactured by same manufacturer as air-entraining agent.
- E. Water reducing agent-retarder: conform to ASTM C 494, Type D and be "Daratard-40", manufactured by W.R. Grace & Company, or an approved equal product.
- F. Fly ash: conform to ASTM C 618, equal to TPA, manufactured by the Trinity Division of General Portland Inc., may be used in non-City's Representativeurally exposed concrete. Carbon content shall not exceed 3% by volume.
 - 1. Submit certification attesting to the carbon content and compliance with ASTM C 618.
 - 2. Maximum replacement of cement with fly ash shall be 15% by weight.
- G. Superplasticizers: Where permitted by City's Representative and where indicated in approved concrete design mix, a high-range water-reducing (HRWR) admixture (superplasticizers) complying with ASTM C 494, Type F or Type G, and containing more than 0.05% chloride ions, may be used subject to the following requirements:
 - 1. When a high range water-reducing admixture is used, the air-entraining admixture shall be a neutralized vinsol resin solution.

2. Concrete shall arrive at the jobsite having a slump conforming to the requirements specified in Paragraph 2.01. HRWR shall be added after the concrete has been thoroughly mixed and the desired initial slump has been achieved.
3. Water to cement ratio shall not exceed 5.0 gal/cwt (0.42 weight basis).
4. Pretesting of the concrete shall be performed under guidance of admixture manufacturer's representative to determine dosage, addition times, and compatibility with other admixtures and mixture constituents.
5. HRWR shall be added at job site and shall be dispensed to truck mixer using automatic dispensing equipment which accurately measured dosage.
6. Slump after addition of HRWR to concrete shall be no greater than is necessary for proper placement and compaction and shall in no case exceed 7 in.
7. Air tests shall be run on admixed concrete as placed, and air content shall be within specified limits.
8. HRWR admixture: "Melment", manufactured by American Admixtures Corp., Chicago, IL; "WRDA-19", manufactured by W. R. Grace & Co.; "Daracem 100", manufactured by W.R. Grace & Co.; "Eucon 37", manufactured by The Euclid Chemical Co.; "Sikament", manufactured by Sika Chemical Co., or approved equal.
9. Dosage as determined by mix design.

2.06 AGGREGATE

- A. Except as otherwise noted, aggregate shall conform to ASTM C 33.
- B. Maximum size aggregate for sections 16 in. or greater in thickness shall be 1-1/2 in. Maximum size aggregate for sections less than 16 in. thick shall be 3/4-in.
- C. Maximum size of aggregate shall in no case exceed that permitted by ACI 318.

2.07 WATER

- A. Water shall conform to ASTM C 94, Section 4.1.3.

2.08 GROUT

- A. Grout shall be mixed in the proportions of one part Portland cement to two parts sand, by volume. Only sufficient water shall be used to enable grout to barely hold its shape when squeezed into a ball in the hand. Sand for grout shall be ASTM C 33 Fine Aggregate.
- B. Nonshrink grout shall be pre-mixed non-shrinking, high strength grout. Compressive strength in 28 days shall be 5,000 psi minimum, but in no case less than the specified strength of the adjacent concrete. Manufacturer shall provide evidence that the material meets the requirements of the COE CRD-C 621 (558). Grout permanently exposed to view shall be nonoxidizing; metallic grout may be used in other locations.
 1. Nonshrink grout shall be one of the following, or approved equal:

Manufacturer	Product
Gifford-Hill CO	Supreme
Master Builders Co.	Embeco
U.S. Grout Corporation	Five Star Grout

2.09 CURING MATERIALS

- A. Curing shall be by moist curing. Refer to curing procedures in this specification.

- B. Curing paper shall be a non-staining, fiber reinforced laminated kraft bituminous product conforming to ASTM C 171. Four mil polyethylene sheeting may be substituted for curing paper.
- C. Curing, Sealing, and Hardening of Interior Concrete Floors/Slabs not Scheduled to receive Finish Floor Material: All Portland cement concrete floors/slabs and aprons in buildings not scheduled to receive applied finishes such as vinyl composition floor tile, shall be cured, sealed and hardened by two applications of "Ashford Formula", manufactured by Curecrete Chemical Company, Inc., Springville, UT 84663-0551; or approved equal. Apply after wet cure is completed.

2.10 BONDING AGENT

- A. Bonding agent for adhering fresh concrete to old shall be Sika Armatec 110, three component, water-based epoxy resin/ portland cement bonding agent, manufactured by Sika Corporation, Lyndhurst, NJ 07071, or approved equal.

2.11 EXPANSION JOINTS

- A. Expansion joints shall be 1/2 in. wide and shall be filled with preformed joint filler.
- B. Expansion joint filler shall be a preformed, non-bituminous type joint filler conforming to ASTM D 1752, Type II, Sealtight Cork Expansion Joint Filler, manufactured by W.R. Meadows, Inc., or approved equal.
 - 1. Joint filler shall be one piece for the full depth and width of the joint.
 - 2. Use of multiple pieces of lesser dimensions to make up the required depth and width of the joint will not be permitted.

PART 3 - EXECUTION

3.01 SUITABILITY OF SUBGRADE

- A. Aggregate subbase to receive concrete slab-on-grade shall be inspected to ensure material is suitable to receive concrete, including compaction. Subgrade unacceptable shall be brought to the attention of City's Representative.

3.02 PREPARATION OF SUBGRADE

- A. Subgrade shall be compacted as required to bring top 6 inches of subgrade material immediately below the concrete to a density of not less than 95% at optimum moisture content as determined by ASTM D 1557. Subgrade compaction shall extend for a distance of at least one foot beyond edge of concrete.
 - 1. Existing subgrade material which will not readily compact shall be removed and replaced with satisfactory materials. Additional materials needed to bring subgrade to line and grade and to replace unsuitable material removed shall conform to Section— Earth Moving.

3.03 REINFORCING

- A. Before being placed in position, thoroughly clean reinforcing of loose mill and rust scale, dirt, ice, and other foreign material which may reduce bond between concrete and reinforcing. Where there is delay in placing concrete after reinforcement is in place, bars shall be reinspected and cleaned.
- B. Bars showing cracks after bending shall be discarded.
- C. Unless otherwise indicated on Drawings, extend reinforcing within 2 in. of formwork and expansion joints. Reinforcing shall continue through control joints. Adjacent sheets of fabric reinforcing shall lap 6 in.
- D. After forms have been coated with form release agent, but before concrete is placed, reinforcing steel and anchors shall be securely wired in the exact position called for, and shall be maintained in that position until concrete is placed and compacted. Chair bars and supports shall be provided in a number and arrangement satisfactory to City's Representative.

3.04 CONCRETE PLACEMENT

- A. Before placing concrete, forms and space to be occupied by concrete shall be thoroughly cleaned, and reinforcing steel and embedded metal shall be free from dirt, oil, mill scale, loose rust, paint, and other material which might tend to reduce bond.
- B. Existing concrete, earth, and other water-permeable material against which new concrete is to be placed shall be thoroughly damp when concrete is placed. There shall be no free water on surface.
- C. Concrete, which has set or partially set before placing shall not be employed. Retempering of concrete will not be permitted.
- D. Segregation of concrete shall be prevented during handling; should segregation occur, concrete shall be remixed before it is placed. Concrete shall be placed in the forms in horizontal layers not over one to two feet thick. Concrete shall not be allowed to drop freely more than 4 ft. If free drop to point of placement must exceed 4 ft., obtain approval of City's Representative for proposed method of depositing concrete. Concrete shall not be required to flow over distances greater than 3 ft. in any direction in forms or ground, unless otherwise permitted by City's Representative.
- E. Concrete shall be thoroughly spaded, and tamped, and vibrated to secure a solid and homogeneous mass, thoroughly worked around reinforcement and into comers of forms.
 - 1. Apply vibration at point of deposit and in area of freshly placed concrete. Vibrate enough to accomplish thorough compaction and complete embedment of reinforcement and fixtures. Supplement vibration by hand spading in comers and angles of forms to prevent honeycombing.
- F. When joining fresh concrete to concrete which has attained full set, latter shall be cleaned of foreign matter, and mortar scum and laitance shall be removed by chipping and washing. Clean, roughened base surface shall be saturated with water, but shall have no free water on surface. A coat of 1:1 cement-sand grout, approximately 1/8 in. thick, shall be well scrubbed into thoroughly dampened concrete base. New concrete shall be placed immediately, before grout has dried or set.
- G. Concrete surfaces which act as a seat for structural members (other than those resting on grout) shall be troweled to an extremely flat and level surface. If necessary, such surfaces shall be ground off to achieve the required flatness and level.

3.05 EMBEDDED METALS

- A. Posts, sleeves, and similar embedded items will be provided, delivered to the site, under other sections of the specification, for installation under this section.
- B. Where edge angles, etc., have nuts welded on to receive machine screws, the threads of the nuts shall be protected from concrete, and the concrete shall be excluded from the space to be occupied by the screw, by use of wood plugs or other effective means.

3.06 FINISHING VERTICAL CONCRETE

- A. Exposed vertical surfaces shall be formed to produce a "smooth form finish", as defined in ACI 301. Concrete which is exposed to view on exterior of finished structures shall receive smooth rubbed finish, in accordance with ACI 301 and as follows:
 - 1. To permit satisfactory finishing, forms shall be removed from vertical faces of concrete as early as is possible without damaging surface. Immediately after stripping forms, fins or projections left by forms shall be chipped off, and surfaces rubbed smooth.
 - 2. Voids and faults shall be patched. Voids, etc., shall be cleaned out, roughened, thoroughly wetted, coated with neat cement paste, and filled with mortar of cement and sand in same proportions, materials, and color as used in concrete. Surface of the patch shall be flush with the surrounding surface after finishing operations are complete. Surface shall be kept continuously damp until patches are firm enough to be rubbed without damage.
 - 3. Rubbing shall be performed while the surface is wet using carborundum or cement sand brick, to achieve a smooth, uniform, even textured finish. Blend patched and chipped areas to match appearance of rest of surface. No cement wash or plastering will be permitted, and no mortar shall be used except as required above.
- B. Rubbed Finish: After removal of forms, patching and repairing, and while concrete is still green, spread slurry consisting of 1 part portland cement concrete and 1-1/2 part damp, loose sand by volume, over pre-dampened surface. Apply using burlap pads or sponge rubber floats. Remove surplus materials, then rub with clean burlap. Water fog completed surfaces for 7 days min.
- C. As-Formed Finish: Remove fins by stoning, otherwise leave texture imparted by forms.
- D. Vertical surfaces of concrete which will be concealed in finished structure shall be formed to produce a "rough form finish", as defined in ACI 301.

3.07 FINISHING HORIZONTAL CONCRETE

- A. Screed off and wood-float concrete slabs and pads to smooth surface, true to line and grade, and free of hollows and bumps. Surface shall be dense, smooth, and at exact level and slope required.
- B. Horizontal surfaces of concrete which will be exposed shall be given a light broomed finish, with direction of grooves in concrete surface perpendicular to length of concrete slab or pad. After concrete has set sufficiently to prevent coarse aggregate from being dislodged from surface, but before it has completely set, brooms shall be drawn across it to produce a pattern of small parallel grooves. Broomed surface shall be uniform, with no smooth, unduly rough, or porous spots, or other irregularities. Coarse aggregate shall not be dislodged by brooming operation.
- C. Where finishing is performed before end of curing period, concrete shall not be permitted to dry out, and kept continuously moist from time of placing until end of curing period, or until curing membrane is applied.

3.08 FILLING HOLES

- A. Holes resulting from removal of bolts or tie rods that are not a part of decorative layout of set back cones at wall face shall be solidly filled with cement grout. Holes passing entirely through concrete members shall be filled from inside face, with a plunger-type grease gun or other device that will force mortar through to outside face, holding a canvas sack at exterior surface to assure complete filling. Holes, which do not pass entirely through, shall be filled, using tools, which will permit the opening to be packed thoroughly full. Excess mortar at faces of filled holes shall be struck off flush, with a canvas sack.

3.09 CURING

- A. It is essential concrete be kept continuously damp from time of placement until end of specified curing period. It is equally essential water not be added to surface during floating and troweling operations, and not earlier than 24 hours after concrete placement. Between finishing operations surface shall be protected from

rapid drying by a covering of waterproofing paper. Surface shall be damp when covering is placed over it, and shall be kept damp by means of fog spray of water, applied to prevent drying, but not sooner than 24 hours after placing concrete. None of the water so applied shall be troweled or floated into surface.

- B. Concrete surfaces, not otherwise specified, shall be cured by being kept wet with clean water for a period of not less than seven days after placing. Each day the forms are left in place, and kept wet enough to prevent the opening of joints in the forms and the drying out of the concrete, will be counted as one day of curing.
- C. Concrete surfaces shall be cured by completely covering with curing paper.
 - 1. Concrete shall be completely covered with paper with seams lapped at least 2 in. and sealed with tape. Concrete surface shall not be moistened within 24 hours of placing concrete. During curing period surface shall be checked frequently, and sprayed with water or curing compound to prevent drying, but not earlier than 24 hours after placing concrete.
 - 2. Concrete surfaces to receive paint, waterproofing, damproofing, thin-set adhesives and coatings, and similar applied materials, which require bond and adhesion to concrete surfaces, shall be cured using curing paper. The use of curing compounds on these surfaces will not be permitted.
 - 3. Unless otherwise directed by City's Representative, curing period shall be seven days, minimum.

3.10 COLD WEATHER CONCRETING

- A. Materials for concrete shall be heated when concrete is mixed, placed, or cured when the mean daily temperature is below 40 degrees F, or is expected to fall to below 40 degrees F, within 72 hours, and concrete after placing shall be protected by covering, heat, or both.
- B. Details of handling and protecting of concrete during freezing weather shall be subject to approval and direction of City's Representative. Procedures shall be in accordance with provisions of ACI 306.
- C. Protect concrete from damage and reduced strength or performance due to weather extremes during mixing, placing and curing. Unless adequate protection is provided, concrete shall not be placed during rain, sleet or snow.
- D. Carefully review phasing requirements and determine scope of cold-weather concreting required.

3.11 HOT WEATHER CONCRETING

- A. Concrete just placed shall be protected from direct rays of the sun and forms and reinforcement just prior to placing shall be sprinkled with cold water. Every effort shall be made to minimize delays resulting in excessive mixing of concrete after arrival on job.
- B. During periods of excessively hot weather (95 degree F, or above) ingredients in concrete shall be cooled and cold mixing water shall be used to maintain temperature of concrete at permissible levels in accordance with provisions of ACI 305. Concrete with a temperature above 95 degrees F, when ready for placement will not be acceptable, and will be rejected.
- C. Temperature records shall be maintained throughout the period of hot weather giving air temperature, general weather conditions (calm, windy, clear, cloudy, etc.) and relative humidity. Records shall include checks on temperature of concrete as delivered and after placing in forms. Data should be correlated with progress of work so that conditions surrounding construction of structure can be ascertained.

3.12 BRACING AND SUPPORTS

- A. Concrete members shall be adequately and safely supported and braced until permanent supports and braces (by whomever supplied) are installed.

3.13 REMOVING FORMS AND SUPPORTS

- A. Except as otherwise specifically authorized by City's Representative, forms shall not be removed until concrete has aged for at least three days or following number of day-degrees, whichever is greater.

Location	Day-Degrees*
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Beams and Slabs	500
Walls and Vertical Surfaces	100

* The term day-degrees represents the product of number of days elapsed since time of concrete placement and average daily air temperature at surface of concrete. For example, five days at a daily average temperature of 60 deg. F. equals 300 day-degrees.

1. Form removal by methods other than day-degree method will not be permitted.

3.14 BONDING AGENT

- A. Surface: clean, sound, and saturated surface dry but free of standing water. Remove dust, laitance, grease, curing compounds impregnations, waxes, and other foreign matter.
- B. Sandblast existing concrete, or use other mechanical means to achieve surface preparation required by bonding agent manufacturer prior to application of bonding agent.
- C. Apply bonding agent in strict accordance with manufacturer's printed instructions.

3.15 EXPANSION JOINT

- A. Expansion joint: 1/2 in. wide, clean, dry, and free of loose material, dirt, oil and grease, and formed in concrete to width with preformed joint filler in place. Joint filler shall extend full length of expansion joint.
 1. Depth of filler shall extend to full thickness of concrete in vertical surfaces and in concealed horizontal surfaces.
 2. Depth of filler in exposed horizontal surfaces shall form a 1/2 in. deep sealant recess below finished surface.

3.16 CONTROL JOINTS

- A. Control joints in slab as indicated on Drawings shall be sawn by using a diamond blade concrete power saw. Joints shall be made as soon as possible after concrete is finished and when the surface is stiff enough to support the weight of workmen without damage to the slab. Saw shall cut into slab at least 1 in., but in no case less than 25% of slab depth. Cuts shall be clean, straight and uniform.
- B. Saw cut shall be made accurately to dimensions, line, and spacing indicated.

3.17 PATCHING FORMED SURFACES OF EXPOSED CONCRETE

- A. After forms have been removed, inspect concrete surfaces and patch pour joints, voids, stone pockets, other defective areas and tie holes before concrete is thoroughly dry. Chip away defective areas to depth of not less than 1 in. with edges perpendicular to surface. Wet areas to be patched and space at least 6 in. wide entirely surrounding it, to prevent absorption of water from patching mortar. Do not patch concrete in freezing weather.
- B. Apply chemical bonding agent to surface in accordance with manufacturer's printed instructions, followed immediately by patching mortar. Make patch of same proportions used for concrete except omit coarse aggregate. Add only enough water consistent with requirements for handling and placing.
- C. Thoroughly compact mortar into place and screed off; leave patch slightly higher than surrounding surface. Leave undisturbed for one to two hours to permit initial shrinkage before final finishing. Finish patch to match texture and color of adjoining surface. Completely fill tie holes left by withdrawal of rods and hole left by removal of end of ties. For holes passing entirely through wall, force mortar through with plunger type grease gun. Cure all patches.

3.18 REPAIR AND PROTECTION

- A. Remove and replace concrete improvements that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by City's Representative.
- B. Protect concrete improvements from damage. Exclude traffic from improvements for at least 14 days after placement. When construction traffic is permitted, maintain improvements as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete improvements free of stains, discoloration, dirt, and other foreign material. Sweep improvements not more than two days before date scheduled for Substantial Completion inspections.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. CONCRETE IMPROVEMENTS will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. GRAVEL BASE will be paid under Item 31 20 00.03.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 13 13.01	C.I.P. CONCRETE WALK	SQUARE FOOT (SF)

- END OF SECTION 32 13 13 -
CONCRETE IMPROVEMENTS

SECTION 32 18 16: PLAYGROUND PROTECTIVE SURFACING

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
- C. Related Requirements:
 - 1. Poured-In-Place (P-I-P) Play Surface
 - 2. Fibar Surface

1.2 DEFINITIONS

- A. Critical Height: Standard measure of shock attenuation according to ASTM F2223; same as "critical fall height" in ASTM F1292. According to ASTM F1292, this approximates "the maximum fall height from which a life-threatening head injury would not be expected to occur."
- B. Use Zone: the surface under and around the play equipment onto which a child accidentally falling from or exiting from the play equipment would be expected to land.
- C. SBR: Styrene-butadiene rubber.
- D. Unitary Surfacing: A protective surfacing of one or more material components bound together to form a continuous surface; same as "unitary system" in ASTM F2223.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For each type of protective surfacing.
 - 1. Include plans, sections, placement details, and attachment to substrates.
 - 2. Include accessories and edge terminations.
 - 3. Include patterns made by varying colors of surfacing.
 - 4. Include critical fall heights and use zones for equipment and structures specified in Section 323301 "Play Equipment" coordinated with the critical heights for protective surfacing.
- C. Samples for Initial Selection: For each type of exposed finish.
 - 1. Include 6 color samples of each matrix.

D. Samples for Verification: For each type of protective surfacing and exposed finish.

1. Include Samples of accessories to verify color and finish selection.
2. Unitary, Seamless Surfacing: Minimum 6 by 6 inches.
3. Loose-Fill Surfacing: Minimum 1 quart.
4. Edging: 6 inches long by full width and cross section.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and testing agency.
- B. Product Certificates: For each type of unitary surfacing product.
- C. Material Certificates: For each type of loose-fill surfacing.
- D. Sample Warranty: For manufacturer's special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For playground protective surfacing to include in maintenance manuals.
- B. "Installed Surface Performance Test" Report.
- C. Warranty Certificates.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Seamless Surfacing:
 2. Edging Units: 3 full-size units.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. Mockups: Build mockups to verify selections made under Sample submittals and to set quality standards for materials and execution.
 1. Build mockups for protective surfacing including accessories.

- a. Size: 48 inches by 48 inches.
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Testing: Perform "Installed Surface Performance Test" as defined under section FIELD QUALITY CONTROL.

1.8 WARRANTY

- A. Special Warranty: Manufacturer and Installer agree to repair or replace components of protective surfacing that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
 - a. Reduction in impact attenuation as measured by reduction of critical fall height.
 - b. Deterioration of protective surfacing and other materials beyond normal weathering.
 - c. Warranty Period: 10 years from date of Final Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Impact Attenuation: Critical fall height tested according to ASTM F1292.
- B. Accessibility Standard: Minimum surfacing performance according to ASTM F1951.

2.2 POURED-IN-PLACE (P-I-P) PLAY SURFACE

- A. P-I-P Play Surface shall be "PlayBound Poured-In-Place" by Surface America, Inc. PO Box 157, Williamsville, NY, 14231, 800-999-0555 or Approved Equal.
- B. Colors:
1. 'Field A' Matrix: to match the existing Play Surface installed in Phase 1, 2018, confirmed with sample:
 - a. 60% Black, 20% Light Grey, 20% Pearl
 2. 'Field B' Matrix: to coordinate with play equipment powdercoat finish (RAL 1028 Melon Yellow). Confirm with samples based on the following mix variations:
 - a. 50% Orange, 20% Terra Cotta, 20% Yellow, 10% Pearl
 - b. 50% Orange, 15% Terra Cotta, 15% Yellow, 10% Light Grey, 10% Pearl
 - c. 75% Orange, 25% Terra Cotta

- C. Material shall have a wearing course composed of Aliphatic (NON-AROMATIC), 100% solids, moisture-cured polyurethane binder and either EPDM rubber granules (a man-made rubber containing minimum of 30% EPDM) or manufactured thermoplastic virgin rubber pebbles. It shall not contain hazardous substances, such as toluene, lead, or mercury compounds or cadmium coloring pigments.
- D. Material shall also have a base course composed of MDI, 100% solids, moisture cured Polyurethane binder and either black recycled SBR rubber fibers or recycled black ground EPDM rubber granules. It shall not contain hazardous substances, such as toluene, lead, or mercury compounds or cadmium coloring pigments.
- E. The finished surface shall be slip-resistant; supply ASTM-E-303 slip characteristic test results.
- F. Material shall be ignition-resistant; supply passing ASTM-D 2859 test results.
- G. Material in the thicknesses to be installed shall pass the required fall-height impact tests for the play equipment as installed, as detailed in ASTM 1292 and all other applicable standards.
 - 1. Use-zone Overall Thickness: Not less than as required for critical heights as required within the use zone of play equipment.
 - 2. General Overall Thickness: All surfacing outside the use-zones shall be the minimum thickness as recommend by the supplier.
- H. Material shall be water-permeable, and wear and weather-resistant. Sealants shall be low odor and non-yellowing. Wearing course sealants to be aliphatic only; no aromatic solvents.
- I. Base Material for flat surfaces: Washed Stone Base as specified in Section – Earth Moving.
- J. Base Material for slopes surfaces: Rigid Base as shown in the Drawings – either C.I.P. Concrete or Bituminous Concrete as specified in in their respective Sections, over Compacted Gravel as specified in Section – Earth Moving.
- K. Metal Edge as specified in Section – Site Improvements.

2.3 FIBAR SURFACE

- A. Engineered Wood Fiber shall be “Fibar” by Fibar Playground Surfaces · 80 Business Park Drive · Armonk NY 10504 · (800) 342-2721 · info@Fibar.com or Approved Equal.
- B. Material shall not contain bark, leaves, twigs, or foreign or toxic materials and is in accordance with ASTM F1292 impact tests, ASTM F2075 for purity and quality, and ASTM F1951 for accessibility.
- C. Uncompressed Material Depth: Not less than as indicated on Drawings
- D. Filter Fabric as recommended by Fibar Playground Surfaces or approved equal.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare substrates to receive surfacing products according to protective surfacing manufacturer's written instructions.
 - 1. Repair: Fill holes and depressions in unsatisfactory surfaces with leveling and patching material.
 - 2. Terminal Edges: Saw cut [concrete] [asphalt] for terminal edges of protective surfacing.

3.2 INSTALLATION OF SEAMLESS SURFACING

- A. Mix and apply components of seamless surfacing according to manufacturer's written instructions to produce uniform, monolithic, and impact-attenuating protective surfacing of required overall thickness.
 - 1. Substrate Primer: Apply over prepared substrate at manufacturer's standard spreading rate for type of substrate.
 - 2. Poured Cushioning Layer: Spread evenly over primed substrate in one continuous operation, with a minimum of cold joints.
 - 3. Intercoat Primer: Over cured cushioning layer, apply primer at manufacturer's standard spreading rate.
 - 4. Wearing Layer: Spread over primed base course in one continuous operation and, except where color changes, with no cold joints.
 - 5. Edge Treatment: As indicated on Drawings.

3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests.
- B. Perform the following test:
 - 1. Perform "Installed Surface Performance Test" according to ASTM F1292 Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment: for each protective surfacing type and thickness in each playground area.
- C. Playground protective surfacing will be considered defective and will be replaced at no additional cost to the City if it does not pass tests.
- D. Prepare test reports.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. PLAYGROUND PROTECTIVE SURFACING will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. RIGID BASE will be paid under Item listed below as required for installation.
- C. WASHED STONE BASE will be paid under Item 31 20 00.05.
- D. METAL EDGE will paid under Item 32 33 00.15.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 18 16.01	P-I-P PLAY SURFACE: 2" THICK	SQAUARE FOOT (SF)
32 18 16.02	P-I-P PLAY SURFACE: 4" THICK	SQAUARE FOOT (SF)
32 18 16.03	P-I-P PLAY SURFACE: 2" THICK OVER RIGID BASE	SQAUARE FOOT (SF)
32 18 16.04	FIBAR SURFACE	SQAUARE FOOT (SF)

- END OF SECTION 32 18 16 -
PLAYGROUND PROTECTIVE SURFACING

SECTION 32 33 00: SITE IMPROVEMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Bollard and Bollard Sign
 - 2. Furniture:
 - a. Table Seating
 - b. backed Bench
 - c. Backless Bench
 - d. Sand Play
 - 3. Stage
 - 4. Park Boulder, Stone and Stone with Lighting
 - 5. Detectable Warning Plate
 - 6. Culvert Inlet Grate
 - 7. Perforated PVC Pipe
 - 8. Precast Concrete Curb
 - 9. Metal Edge
 - 10. Geotextile
 - 11. Pavement Markings

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product, provide manufacturer's data showing installation and limitations in use. Supply Certificates of Compliance for all materials required for fabrication and installation, certifying that each material item complies with, or exceeds, specific requirements.
- B. Shop drawings:
 - 1. Bollard and Bollard Sign
 - 2. Furniture – Table Seating, Backed Bench, Backless Bench, Sand Play
 - 3. Stage
 - 4. Park Stones with Lighting
 - 5. Precast Concrete Edge Unit Layout
 - 6. Pavement Markings Layout
- C. Samples:
 - 1. For each exposed product and for each color & texture specified.

1.3 CLOSEOUT SUBMITTALS

- A. Product Warranty.
- B. Maintenance data.

PART 2 - PRODUCTS

2.1 BOLLARD and BOLLARD SIGN

- A. Furnish and install as shown on the Drawings.
- B. Timber: Black Locust as supplied by Robi Decking, 1005 Rundell Street, Winston-Salem, NC 27105, (336) 365-2850 (www.robidecking.com) or approved equal.
- C. Metal Finish: Powdercoat - RAL 1028, Melon Yellow
- D. Parking Signs as regulated by MUTCD
 - 1. Accessible Reserved Parking Sign
 - 2. Van Accessible Reserved Parking Sign
- E. Playground Safety Signs
 - 1. Artwork provided by City's Representative

2.2 FURNITURE

- A. Furnish and install as shown on the Drawings.
 - 1. Table Seating
 - 2. Backed Bench
 - 3. Backless Bench
 - 4. Sand Play
- B. Timber: Black Locust as supplied by Robi Decking, 1005 Rundell Street, Winston-Salem, NC 27105, (336) 365-2850 (www.robidecking.com) or approved equal.
- C. Metal Finish: Powdercoat - RAL 1028, Melon Yellow

2.3 STAGE

- A. Furnish and install as shown on the Drawings.
- B. Decking: Black Locust as supplied by Robi Decking, 1005 Rundell Street, Winston-Salem, NC 27105, (336) 365-2850 (www.robidecking.com) or approved equal.

- C. Framing: Pressure Treated Southern Yellow Pine

2.4 PARK BOULDER, STONE and STONE WITH LIGHTING

- A. Park Boulder and Stone are existing and shall be salvaged from Oakledge Park per the direction of the City's Representative.
 - 1. Boulders roughly 5'x5'x5'
 - 2. Stones: roughly 2'x2'x2'
- B. Clean thoroughly prior to reinstallation; remove all loose dirt, mortar, pavements, and other materials.
- C. Park Stones with Lighting shall be as indicated on the Drawings.
 - 1. On-site stone cutting to be performed by VT Concrete Cutting & Concrete Solutions, 8 Mill Street, Barre, VT 05641, (80) 476-6666 (www.vtconcretecutting.com) or approved equal.

2.5 DETECTABLE WARNING PLATE

- A. Duralast Detectable Warning Plate as supplied by EJ Group Inc, 1125 Pearl Street, Brockton, MA 02301, 508-586-3130 (<https://www.ejco.com>) or approved equal.
 - 1. Model: 00700721 24"x 30" Duralast Detectable Warning Plate
 - 2. Color: Yellow

2.6 CULVERT INLET GRATE

- A. Furnish and install as shown on the Drawings.
- B. Metal Finish: Powdercoat - RAL 1028, Melon Yellow

2.7 PERFORATED PVC PIPE

- A. 4" Perforated PVC Pipe.

2.8 PRECAST CONCRETE EDGE

- A. Furnish & install precast curbing as manufactured by Shea Concrete Products (www.sheaconcrete.com) 160 Old Turnpike Rd, Nottingham, NH 03290, 603-942-5668, sales@sheaconcrete.com or approved equal.
- B. Straight and radial units are to be of standard stock.

2.9 METAL EDGE

1. AsphaltEdge by Permaloc, 1 (800) 356-9660 or approved equal.
2. Size: as required by pavement section dimension
3. Mill Finish
4. Spiral steel spike, 3/8" x 10", 12" on center

2.10 GEOTEXTILE

- A. Soil Separator by CARRIFF by Midland, NC, 3500 Fieldstone Trace, Midland, NC 28107, (704) 888-3330 or approved equal.

2.11 PAVEMENT MARKINGS

- A. White Pavement Markings
 1. Conform to the relevant provisions of the Vermont Agency of Transportation (VTrans).
 2. Markings layout shall be as indicated on the drawings.

2.12 BASE COURSE

- A. Gravel Base as specified Section 31 20 00 Earth Moving.

2.13 CONCRETE FOOTINGS

- A. Concrete for the footings will be cast in place cement concrete as specified in Section 321313 Concrete Improvements.

2.14 NON-SHRINK GROUT

- A. Non-shrink grout for all site furnishing base plates, footing settings and anchor bolts shall conform to requirements of ASTM C11077, Grade B or C. Unless otherwise indicated, requirements for consistency, working time and temperature range shall be determined by the Contractor to suit working conditions.

2.15 SEALANTS

- A. Sealants for application on site furnishings as specified shall be polyurethane-based, one component, elastomeric sealants complying with Fed. Spec. TT-S-00230C, Class A Type 1 for horizontal use and Type 2 for vertical use. Color to be selected by the City's representative. Sealants shall be self-leveling, pourable type for horizontal use and non-sag, gun-grade type for vertical use.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Install furnishings per manufacturer's written installation instructions unless more stringent requirements are indicated on the Drawings. Complete field assembly of site furnishings where required.
- B. When shop drawings are required, install in accordance and as approved.
- C. Install furnishings level, plumb, true, to the lines and grades indicated on the Drawings.
- D. Shim all bolt connections as necessary and secure bolts. Exposed bolts shall be clipped and painted black.
- E. Contractor shall handle, pack, and ship items in such a manner as to minimize damage to the finish. Upon arrival at job site it is the Contractor's responsibility to take equal precautions. Since some surface damage may occur, suitable touch-up material shall be readily available to repair any damage immediately.
- F. The Contractor shall be responsible for timing the delivery of all items so as to minimize on-site storage time prior to installation. All stored materials and items must be protected from weather, careless handling and vandalism.
- G. Granular base and backfill for shall be installed per drawings and in conformance with the construction methods of Section 312000 Earth Moving.
- H. Cast-in-place concrete base and footings shall be installed per manufacturer's written installation instructions unless more stringent requirements are indicated on the Drawings and in conformance with the requirements of Section 321313 Concrete Improvements.
- I. Non-shrink grout for site furnishings base plates and anchor bolts shall be installed following the manufacturer's instruction and recommendations for the particular application.
- J. Sealant for shall be placed following the manufacturer's instruction and recommendations for the particular application. Place sealant from one side only to avoid trapping air. Work or flow sealant into place, filling all cavities. Shut down nearby equipment which may cause vibration. Finished sealant surface shall not be recessed and shall not allow for ponding of water.

3.2 PARK BOULDERS & STONES

- A. Stones and Boulders shall be placed and stacked in such a way as to provide the required clearances, widths, and openings while remaining stable and free of rocking or movement.
- B. Stones in paved areas shall rest on subbase material below paving. Install Stone prior to installing pavement.
- C. Stones and Boulders shall be placed as directed by the City's representative.

3.3 PAVEMENT MARKINGS

- A. Verify that pavement-marking substrate is dry and in suitable condition to begin pavement marking in accordance with manufacturer's written instructions.
- B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.
- C. Do not apply pavement-marking paint until layout, colors, and placement have been verified with City's Representative.
- D. Allow asphalt paving or concrete surfaces to age for the manufacturer's minimum requirements before starting pavement marking.
- E. Sweep and clean surface to eliminate loose material and dust.
- F. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum recommended thickness.
 - 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to asphalt paving or concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.
- G. Protect pavement markings from damage and wear during remainder of construction period.
- H. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.4 CLEAN UP

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from installations.
- B. Upon completion of work, remove tools and equipment. Provide site clear, clean, and free of debris and scrap material resulting from work and legally dispose of.
- C. Sweep pavement and wash free of stains, discolorations, dirt, and other foreign material immediately prior to final acceptance.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. SITE FURNISHINGS will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. CONCRETE FOOTINGS & BASES will be paid under each Item listed below as required for installation.
- C. GRAVEL BASE will be paid under each Item listed below as required for installation.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 33 00.01	BOLLARD	EACH (EA)
32 33 00.02	BOLLARD SIGN	EACH (EA)
32 33 00.03	TABLE SEATING	EACH (EA)
32 33 00.04	BACKED BENCH	EACH (EA)
32 33 00.05	BACKLESS BENCH	EACH (EA)
32 33 00.06	SAND PLAY	EACH (EA)
32 33 00.07	STAGE	LUMP SUM (LS)
32 33 00.08	PARK BOULDER	EACH (EA)
32 33 00.09	PARK STONE	EACH (EA)
32 33 00.10	PARK STONE WITH LIGHTING	EACH (EA)
32 33 00.11	DETECTABLE WARNING PLATE	EACH (EA)
32 33 00.12	CULVERT INLET GRATE	EACH (EA)
32 33 00.13	4" PERFORATED PVC PIPE	LINEAR FOOT (LF)
32 33 00.14	PRECAST CONCRETE CURB	LINEAR FOOT (LF)
32 33 00.15	METAL EDGE	LINEAR FOOT (LF)
32 33 00.16	GEOTEXTILE	SQUARE YARD (SY)
32 33 00.17	PAVEMENT MARKINGS	SQUARE FOOT (SF)

- END OF SECTION 32 33 00 -
SITE FURNISHINGS

SECTION 32 33 01: PLAY EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Installation of equipment furnished by the City:
 - a. Spinner
 - b. Talking Tubes
 - c. Chime
 - d. Cajon Drums
 - 2. Furnish and installation of equipment:
 - a. Whale Drum
 - b. Grab Rail at Existing Sway Fun
 - c. Grab Bar at Stage
 - d. Embankment Slide
 - e. Rope Climb

1.2 DEFINITIONS

- A. Definitions in ASTM F1487 apply to Work of this Section.
- B. CPSC: Consumer Product Safety Commission Guidelines for Playground Safety, latest edition.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product, provide manufacturer's data showing installation and limitations in use. Supply Certificates of Compliance for all materials required for fabrication and installation, certifying that each material item complies with, or exceeds, specific requirements.
- B. Shop Drawings: For each type of playground equipment.
 - 1. Include plans, elevations, sections, and attachment details:
 - a. Whale Drum
 - b. Grab Rail at Existing Sway Fun
 - c. Grab Bar at Stage

- d. Embankment Slide
 - e. Rope Climb
- 2. Include fall heights and use zones for playground equipment, coordinated with the critical-height values of protective surfacing specified in Section 321816 "Protective Playground Surfacing."
- C. Samples: For each exposed product and for each color and texture specified.

1.4 CLOSEOUT SUBMITTALS

- A. Equipment Warranty.
- B. Maintenance data.
- C. CPSI Inspection Report.

1.5 QUALITY ASSURANCE

- A. Playground equipment design, layout, and installation shall comply with the following standards and guidelines as applicable.
 - 1. CPSC - Consumer Product Safety Commission Guidelines for Playground Safety, latest edition.
 - 2. ASTM - American Society for Testing and Materials, Designation: F 1487, Standard Consumer Safety Performance Specification
- B. Testing: Engage Certified Playground Safety Inspector to ensure ASTM and CPSC compliance as defined under section FIELD QUALITY CONTROL.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Safety Standard: Provide playground equipment according to ASTM F1487 and CPSC Guidelines.

2.2 PLAYGROUND EQUIPMENT

- A. *Install the following play equipment as locally represented by Goric, 464 Common St #148, Belmont, MA 02478, 617-744-1037, (www.goric.com) or approved equal:
 - 1. Spinner: Integration Carousel
 - 2. Talking Tubes
 - 3. Chimes: Emperor Chimes
 - 4. Cajon Drums

***Please note that the furnishing of Goric play equipment is NOT-IN-CONTRACT and will be delivered to the site by the City. It is the responsibility of the Contractor to inspect the equipment and notify the City immediately of any defects or missing parts.**

- B. Furnish and install the following play equipment as fabricated by Elemental Design, Union, ME, (207) 785-2212, (www.elementaldesign.me) or approved equal:
1. [42" SHD Whale Drum](#)
 - a. (4) attached mallets
 - b. Metal powdercoat: RAL 1028, Melon Yellow
- C. Furnish and install the following play equipment as fabricated by Custom Fabrication Incorporated, 2903 NY Route 7, P.O. Box 431 Harpursville, NY 13787, 800-922-0070 (www.customfabricationinc.com) or approved equal:
- a. Grab Rail at Existing Sway Fun
 - b. Grab Bar at Stage
 - c. Embankment Slide
 - d. Rope Climb
2. Timber: Black Locust as supplied by Robi Decking, 1005 Rundell Street, Winston-Salem, NC 27105, (336) 365-2850 (www.robidecking.com) or approved equal.
 3. Polystone: Roechling Engineering Plastics as provided by Curbell Plastics Inc., 7 Cobham Drive, Orchard Park, NY 14127, 1-800-553-0335 (<https://www.roechling.com/>) or approved equal.
 4. Metal Finish: Powdercoat - RAL 1028, Melon Yellow

2.3 BASE COURSE

- A. Gravel Base as specified Section 31 20 00 Earth Moving.

2.4 CONCRETE FOOTINGS

- A. Concrete for the footings will be cast in place cement concrete as specified in Section 32 13 13 Concrete Improvements.

2.5 NON-SHRINK GROUT

- A. Non-shrink grout for all site furnishing base plates, footing settings and anchor bolts shall conform to requirements of ASTM C11077, Grade B or C. Unless otherwise indicated, requirements for consistency, working time and temperature range shall be determined by the Contractor to suit working conditions.

2.6 SEALANTS

- A. Sealants for application on site furnishings as specified shall be polyurethane-based, one component, elastomeric sealants complying with Fed. Spec. TT-S-00230C, Class A Type 1 for horizontal use and Type 2 for vertical use. Color to be selected by the City's representative. Sealants shall be self-leveling, pourable type for horizontal use and non-sag, gun-grade type for vertical use.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's written installation instructions for each equipment type unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.
 - 1. Maximum Equipment Height: Coordinate installed fall heights of equipment with finished elevations and critical-height values of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.
- B. Install equipment level, plumb, true, to the lines and grades indicated on the Drawings.
- C. Shim all bolt connections as necessary and secure bolts. Exposed bolts shall be clipped and painted black.
- D. Contractor shall handle, pack, and ship items in such a manner as to minimize damage to the finish. Upon arrival at job site it is the Contractor's responsibility to take equal precautions. Since some surface damage may occur, suitable touch-up material shall be readily available to repair any damage immediately.
- E. The Contractor shall be responsible for timing the delivery of all items so as to minimize on-site storage time prior to installation. All stored materials and items must be protected from weather, careless handling and vandalism.
- F. Granular base and backfill for shall be installed per drawings and in conformance with the construction methods of Section 312000 Earth Moving.
- G. Cast-in-place concrete base and footings shall be installed per manufacturer's written installation instructions unless more stringent requirements are indicated on the Drawings and in conformance with the requirements of Section 321313 Concrete Improvements.
- H. Non-shrink grout for site furnishings base plates and anchor bolts shall be installed following the manufacturer's instruction and recommendations for the particular application.
- I. Sealant for shall be placed following the manufacturer's instruction and recommendations for the particular application. Place sealant from one side only to avoid trapping air. Work or flow sealant into place, filling all cavities. Shut down nearby equipment which may cause vibration. Finished sealant surface shall not be recessed and shall not allow for ponding of water.

3.2 CLEAN UP

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from installations.
- B. Upon completion of work, remove tools and equipment. Provide site clear, clean, and free of debris and scrap material resulting from work and legally dispose of.

- C. Sweep pavement and wash free of stains, discolorations, dirt, and other foreign material immediately prior to final acceptance.

3.3 FIELD QUALITY CONTROL

- A. The Contractor is responsible for securing a Certified Playground Safety Inspector to ensure ASTM and CPSC compliance.
- B. Playground equipment items will be considered defective and will be replaced at no additional cost to the City if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. PLAY EQUIPMENT will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. CONCRETE FOOTINGS & BASES will be paid under each Item listed below as required for installation.
- C. GRAVEL BASE will be paid under each Item listed below as required for installation.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 33 01.01	INSTALLATION OF CITY FURNISHED EQUIPMENT	LUMP SUM (LS)
32 33 01.02	WHALE DRUM	EACH (EA)
32 33 01.03	GRAB RAIL AT EXISTING SWAY FUN	EACH (EA)
32 33 01.04	GRAB BAR AT STAGE	EACH (EA)
32 33 01.05	EMBANKMENT SLIDE	EACH (EA)
32 33 01.06	ROPE CLIMB	EACH (EA)

- END OF SECTION 32 33 01 -
PLAY EQUIPMENT

SECTION 32 91 15: SOIL PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Planting soils specified according to performance requirements of the mixes.
- C. Related Requirements:
 - 1. Section 31 10 00 "Site Clearing" for topsoil stripping and stockpiling.

1.2 DEFINITIONS

- A. CEC: Cation exchange capacity.
- B. Duff Layer: A surface layer of soil, typical of forested areas, that is composed of mostly decayed leaves, twigs, and detritus.
- C. Imported Soil: Soil that is transported to Project site for use.
- D. Manufactured Soil: Soil produced by blending soils, sand, stabilized organic soil amendments, and other materials to produce planting soil.
- E. Organic Matter: The total of organic materials in soil exclusive of undecayed plant and animal tissues, their partial decomposition products, and the soil biomass; also called "humus" or "soil organic matter."
- F. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified as specified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- G. RCRA Metals: Hazardous metals identified by the EPA under the Resource Conservation and Recovery Act.
- H. SSSA: Soil Science Society of America.
- I. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- J. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- K. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil"; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- L. USCC: U.S. Composting Council.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include sieve analyses for aggregate materials.
 - 2. Material Certificates: For each type of imported soil, soil amendment and fertilizer before delivery to the site, according to the following:
 - a. Manufacturer's qualified testing agency's certified analysis of standard products.
 - b. Analysis of fertilizers, by a qualified testing agency, made according to AAPFCO methods for testing and labeling and according to AAPFCO's SUIP #25.
 - c. Analysis of nonstandard materials, by a qualified testing agency, made according to SSSA methods, where applicable.
- B. Samples: For each bulk-supplied material, 1-gal. volume of each in sealed containers labeled with content, source, and date obtained. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of composition, color, and texture.

1.4 INFORMATIONAL SUBMITTALS

- A. Preconstruction Test Reports: For preconstruction soil analyses specified in "Preconstruction Testing" Article.
- B. Field quality-control reports.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent, state-operated, or university-operated laboratory; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.
 - 1. Laboratories: Subject to compliance with requirements, provide testing by the following or approved equal:
 - a. University of Vermont Soil Testing: https://pss.uvm.edu/ag_testing/?Page=soils.html

1.6 PRECONSTRUCTION TESTING

- A. Preconstruction Soil Analyses: For each unamended soil type, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.
 - 1. Have testing agency identify and label samples and test reports according to sample collection and labeling requirements.

1.7 SOIL-SAMPLING REQUIREMENTS

- A. General: Extract soil samples according to requirements in this article.
- B. Sample Collection and Labeling: Have samples taken and labeled by Contractor in presence of Architect under the direction of the testing agency.
 - 1. Number and Location of Samples: Minimum of three where directed by Architect for each soil to be used or amended for landscaping purposes.

2. Procedures and Depth of Samples: As directed by Architect.
3. Division of Samples: Split each sample into two, equal parts. Send half to the testing agency and half to City for its records.
4. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.

1.8 TESTING REQUIREMENTS

- A. General: Perform tests on soil samples according to requirements in this article.
- B. Physical Testing:
 1. Soil Texture: Soil-particle, size-distribution analysis by one of the following methods according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods":
 - a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
 - b. Hydrometer Method: Report percentages of sand, silt, and clay.
 2. Bulk Density: Analysis according to core method and clod method of SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
 3. Total Porosity: Calculate using particle density and bulk density according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
 4. Water Retention: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
 5. Saturated Hydraulic Conductivity: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods"; at 85 percent compaction according to ASTM D698 (Standard Proctor).
- C. Chemical Testing:
 1. CEC: Analysis by sodium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
 2. Clay Mineralogy: Analysis and estimated percentage of expandable clay minerals using CEC by ammonium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
 3. Metals Hazardous to Human Health: Test for presence and quantities of RCRA metals including aluminum, arsenic, barium, copper, cadmium, chromium, cobalt, lead, lithium, and vanadium. If RCRA metals are present, include recommendations for corrective action.
 4. Phytotoxicity: Test for plant-available concentrations of phytotoxic minerals including aluminum, arsenic, barium, cadmium, chlorides, chromium, cobalt, copper, lead, lithium, mercury, nickel, selenium, silver, sodium, strontium, tin, titanium, vanadium, and zinc.
- D. Fertility Testing: Soil fertility analysis according to standard laboratory protocol including the following:
 1. Percentage of organic matter.
 2. CEC, calcium percent of CEC, and magnesium percent of CEC.
 3. Soil reaction (acidity/alkalinity pH value).
 4. Buffered acidity or alkalinity.
 5. Nitrogen ppm.
 6. Phosphorous ppm.
 7. Potassium ppm.
 8. Manganese ppm.
 9. Manganese-availability ppm.
 10. Zinc ppm.
 11. Zinc availability ppm.
 12. Copper ppm.
 13. Sodium ppm **and sodium absorption ratio.**

14. Soluble-salts ppm.
 15. Presence and quantities of problem materials including salts and metals cited in the Standard protocol. If such problem materials are present, provide additional recommendations for corrective action.
 16. Other deleterious materials, including their characteristics and content of each.
- E. Organic-Matter Content: Analysis using loss-by-ignition method according to SSSA's "Methods of Soil Analysis - Part 3-Chemical Methods."
- F. Recommendations: Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated to produce satisfactory planting soil suitable for healthy, viable plants indicated. Include, at a minimum, recommendations for nitrogen, phosphorous, and potassium fertilization, and for micronutrients.
1. Fertilizers and Soil Amendment Rates: State recommendations in weight per 1000 sq. ft. for 12-inch depth of soil.
 2. Soil Reaction: State the recommended liming rates for raising pH or sulfur for lowering pH according to the buffered acidity or buffered alkalinity in weight per 1000 sq. ft. for 12-inch depth of soil.

PART 2 - PRODUCTS

2.1 PLANTING SOILS SPECIFIED ACCORDING TO PERFORMANCE REQUIREMENTS

- A. Planting-Soil Type: Existing, on-site surface soil, with the duff layer, if any, retained and stockpiled on-site; modified to produce viable planting soil. Using preconstruction soil analyses and materials specified in other articles of this Section, amend existing, on-site surface soil to become planting soil complying with the following requirements:
1. Particle Size Distribution by USDA Textures: Classified as 'sandy loam' according to USDA textures.
 2. Fragment Size Distribution:

U.S. Sieve No.	Percent Passing by Weight	
	Max	Min
4	100	97
10	95	90
40	85	60
100	60	38
200	35	22
0.002mm	5	0
 3. Percentage of Organic Matter: Between 5% and 8% percent by weight.
 4. Soil Reaction: 5.5 pH minimum to 8.0 CEC maximum
 5. Soluble-Salt Content: Less than 4 dS/m measured by electrical conductivity.
- B. Planting-Soil Type: Manufactured soil, consisting of manufacturer's basic sandy loam according to USDA textures, blended in a manufacturing facility with sand, stabilized organic soil amendments, and other materials as specified in other articles of this Section to produce viable planting soil.
1. Basic Properties: Manufactured soil shall not contain the following:

- a. Unacceptable Materials: Concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
- b. Unsuitable Materials: Stones, roots, plants, sod, clay lumps, and pockets of coarse sand that exceed a combined maximum of 5 percent by dry weight of the manufactured soil.
- c. Large Materials: Stones, clods, roots, clay lumps, and pockets of coarse sand exceeding 1 inch in any dimension.

2. Fragment Size Distribution:

U.S. Sieve	Percent Passing by Weight	
No.	Max	Min
4	100	97
10	95	90
40	85	60
100	60	38
200	35	22
0.002mm	5	0

3. Percentage of Organic Matter: Between 5% and 8% percent by weight.
4. Soil Reaction: 5.5 pH minimum to 8.0 CEC maximum
5. Soluble-Salt Content: Less than 4 dS/m measured by electrical conductivity.

2.2 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent.
- B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent elemental sulfur, with a minimum of 99 percent passing through a No. 6 sieve and a maximum of 10 percent passing through a No. 40 sieve.
- C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- D. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through a No. 50 sieve.
- E. Sand: Clean, washed, natural or manufactured, free of toxic materials, and according to ASTM C33/C33M.

2.3 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:
 1. Reaction: pH of 5.5 to 8.
 2. Soluble-Salt Concentration: Less than 4 dS/m.
 3. Moisture Content: 35 to 55 percent by weight.
 4. Organic-Matter Content: not less than 40 percent of dry weight.

2.4 FERTILIZERS

- A. Fertilizers shall consist of only composted organic material.

- B. Superphosphates shall not be used.

PART 3 - EXECUTION

3.1 GENERAL

- A. Place planting soil and fertilizers according to requirements in other Specification Sections.
- B. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.

3.2 PREPARATION OF UNAMENDED, ON-SITE SOIL BEFORE AMENDING

- A. Excavation: Excavate soil from designated area(s) to a depth of 12 inches and stockpile until amended.
- B. Unacceptable Materials: Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
- C. Unsuitable Materials: Clean soil to contain a combined maximum of 8 percent by dry weight of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.
- D. Screening: Pass unamended soil through a 2-inch sieve to remove large materials.

3.3 PLACING AND MIXING PLANTING SOIL OVER EXPOSED SUBGRADE

- A. General: Apply and mix unamended soil with amendments on-site to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Subgrade Preparation: Till subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off City's property.
- C. Mixing: Spread unamended soil to total depth of 12 inches but not less than required to meet finish grades after mixing with amendments and natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.
 - 1. Amendments: Apply soil amendments and fertilizer, if required, evenly on surface, and thoroughly blend them with unamended soil to produce planting soil.
 - a. Mix lime and sulfur with dry soil before mixing fertilizer.
 - b. Mix fertilizer with planting soil no more than seven days before planting.
 - 2. Lifts: Apply and mix unamended soil and amendments in lifts not exceeding 12 inches in loose depth for material compacted by compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.
- D. Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D698.
- E. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.4 PLACING MANUFACTURED PLANTING SOIL OVER EXPOSED SUBGRADE

- A. General: Apply manufactured soil on-site in its final, blended condition. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Subgrade Preparation: Till subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off City's property.
- C. Application: Spread planting soil to total depth 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.
 - 1. Lifts: Apply and mix unamended soil and amendments in lifts not exceeding 12 inches in loose depth for material compacted by compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.
- D. Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D698.
- E. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.5 BLENDING PLANTING SOIL IN PLACE

- A. General: Mix amendments with in-place, unamended soil to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Preparation: Till unamended, existing soil in planting areas to a minimum depth of 12 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off City's property.
- C. Mixing: Spread unamended soil to total depth of 12 inches but not less than required to meet finish grades after mixing with amendments and natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.
 - 1. Amendments: Apply soil amendments and fertilizer, if required, evenly on surface, and thoroughly blend them with unamended soil to produce planting soil.
 - a. Mix lime and sulfur with dry soil before mixing fertilizer.
 - b. Mix fertilizer with planting soil no more than seven days before planting.
 - 2. Lifts: Apply and mix unamended soil and amendments in lifts not exceeding 12 inches in loose depth for material compacted by compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.
- D. Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D698.

3.6 Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades APPLYING COMPOST TO SURFACE OF PLANTING SOIL

- A. Application: Apply compost component of planting-soil mix 4 inches of compost to surface of in-place planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Finish Grading: Grade surface to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.7 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests.
- B. Perform the following tests:
 - 1. Compaction: Test planting-soil compaction after placing each lift and at completion using a densitometer or soil-compaction meter calibrated to a reference test value based on laboratory testing according to ASTM D698. Space tests at no less than one for each 1000 sq. ft. of in-place soil or part thereof.
 - 2. Performance Testing: For each amended planting-soil type, demonstrating compliance with specified performance requirements. Perform testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.
- C. Soil will be considered defective and will be replaced at no additional cost to the City if it does not pass tests.
- D. Prepare test reports.
- E. Label each sample and test report with the date, location keyed to a site plan or other location system, visible conditions when and where sample was taken, and sampling depth.

3.8 PROTECTION AND CLEANING

- A. Protection Zone: Identify protection zones according to Section 015639 "Temporary Tree and Plant Protection."
- B. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Vehicle traffic.
 - 4. Foot traffic.
 - 5. Erection of sheds or structures.
 - 6. Impoundment of water.
 - 7. Excavation or other digging unless otherwise indicated.
- C. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off City's property unless otherwise indicated.
 - 1. Dispose of excess subsoil and unsuitable materials on-site where directed by City.

PART 4 - METHOD OF MEASUREMENT & BASIS OF PAYMENT

4.1 SOIL PREPARATION will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.

4.2 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
32 91 15.01	AMENDED ON-SITE PLANTING SOIL	CUBIC YARDS (CY)
32 91 15.02	IMPORTED PLANTING SOIL	CUBIC YARDS (CY)

- END OF SECTION 32 91 15 -
SOIL PREPARATION

SECTION 32 92 00: SEEDING

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Lawn seeding.
 - 2. Low-Mow Seeding
 - 3. Rain Garden seeding.

1.2 DEFINITIONS

- A. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. No pesticides shall be used unless authorized in writing by the City.
- B. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation".

1.3 ACTION SUBMITTALS

- A. Product certificates.
 - 1. Certification of each seed mixture.
 - 2. Erosion control mat.
- B. Samples: Mulch.
- C. Maintenance Schedule: As required under Maintenance & Guarantee Period.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by the City for maintenance of seeded areas during a calendar year.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.
 - 1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

2. Pesticide Applicator: State licensed, commercial.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer.

1.7 MAINTENANCE AND GUARANTEE

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

- a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by City.
- b. Structural failures including plantings falling or blowing over.

2. Maintenance and Guarantee Period: From date of the Letter of Installation Acceptance.

- a. All Planting: 12 months

PART 2 - PRODUCTS

2.1 SEED

- A. Contractor shall furnish the City's representative with the dealer's certificate of the mixture composition for review and approval before seeding operations begin. Seed mixture shall be fresh, clean, new crop seed of the previous year's crop, mixed off site by the seed dealer. Weed seed content shall not exceed 1% by weight. The seed shall be furnished and delivered in the proportion specified below in new, clean, sealed and properly labeled containers. All seed shall comply with State and Federal seed laws; seed that has become wet, moldy or otherwise damaged will be rejected.

B. LAWN SEEDING

1. Seed Mix:

- a. Fescue Seed Mix for Non-Irrigated Lawns: Sow at twenty (20) lbs per 1,000 square feet of the following Scott's seed varieties thoroughly mixed.

Botanical Name/Proportion Common Name	By Weight Minimum	Germination Minimum	Purity Minimum
Festuca arundinacea Tall Fescue 'Silverstar'	60%	97%	90%
Poa pratensis Kentucky Bluegrass	(30%)	85%	90%
(3) Named Varieties:			
'Avalanche'	10%	85%	90%
'Thermal Blue'	10%	85%	90%
'Courtyard'	10%	85%	90%
Lolium perenne Perennial Ryegrass 'Inspire'	10%	90%	90%

C. LOW-MOW SEEDING

1. Seed Mix:

- a. New England Wetland Plant Seed Mixes (413-548-800): Sow at 35 lb/acre | 1250 sq ft/lb of the following seed varieties thoroughly mixed:

1) Roadside Matrix Upland Seed Mix

Virginia Wild Rye (*Elymus virginicus*), Little Bluestem (*Schizachyrium scoparium*), Red Fescue (*Festuca rubra*), Big Bluestem (*Andropogon gerardii*), Indian Grass (*Sorghastrum nutans*), Switch Grass (*Panicum virgatum*), Partridge Pea (*Chamaecrista fasciculata*), Butterfly Milkweed (*Asclepias tuberosa*), Panicleleaf Tick Trefoil (*Desmodium paniculatum*), Beard Tongue (*Penstemon digitalis*), Black Eyed Susan (*Rudbeckia hirta*), Hollow-Stem Joe Pye Weed (*Eupatorium fistulosum*/Eutrochium fistulosum) Grey Dogwood (*Cornus racemosa*), Silky Dogwood (*Cornus amomum*), Staghorn Sumac (*Rhus typhina*)

D. RAIN GARDEN SEEDING

1. Seed Mixes:

- a. New England Wetland Plant Seed Mixes (413-548-800): Sow at 35 lb/acre | 1250 sq ft/lb of the following seed varieties thoroughly mixed:

1) Wetland Seed Mix

Fox Sedge (*Carex vulpinoidea*), Lurid Sedge (*Carex lurida*), Blunt Broom Sedge (*Carex scoparia*), Blue Vervain (*Verbena hastata*), Fowl Bluegrass (*Poa palustris*), Hop Sedge (*Carex lupulina*), Green Bulrush (*Scirpus atrovirens*), Creeping Spike Rush (*Eleocharis palustris*), Fringed Sedge (*Carex crinita*), Soft Rush (*Juncus effusus*), Spotted Joe Pye Weed (*Eupatorium maculatum*), Rattlesnake Grass (*Glyceria canadensis*), Swamp aster (*Aster puniceus*), Blueflag (*Iris versicolor*), Swamp Milkweed (*Asclepias incarnata*), Square stemmed Monkey Flower (*Mimulus ringens*)

2) Erosion Control/Restoration Mix For Detention Basins and Moist Sites

Riverbank Wild Rye (*Elymus riparius*), Creeping Red Fescue (*Festuca rubra*), Little Bluestem (*Schizachyrium scoparium*), Big Bluestem (*Andropogon gerardii*), Switch Grass (*Panicum virgatum*), Upland Bentgrass (*Agrostis perennans*), Nodding Bur Marigold (*Bidens cernua*), Hollow-Stem Joe Pye Weed (*Eupatorium fistulosum*/Eutrochium fistulosum), New England Aster (*Aster novae-angliae*), Boneset (*Eupatorium perfoliatum*), Blue Vervain (*Verbena hastata*), Soft Rush (*Juncus effusus*), Wool Grass (*Scirpus cyperinus*)

- b. Vermont Department of Transportation Pollinator Mix: Sow at 40 lbs. PLS/acre (1.0 lb./1,000 sq. ft) with 30 lbs./acre (0.7 lb./1,000 sq. ft) of a nurse crop., of the following, thoroughly mixed:

LATIN NAME	COMMON NAME	CULTIVAR/ ECOTYPE	% OF MIX	PLS QTY (LB. PLS)
AGROSTIS PERENNANS	AUTUMN BENTGRASS,	APB (NY)	6.0	0.060
ANDROPOGON GERARDII	BIG BLUESTEM	APB (NY)	25.2	0.252
ASCLEPIAS SYRIACA	COMMON MILKWEED	ANY	0.5	0.005
ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	PA	0.8	0.008
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	MADISON OR PA	25.0	0.250
MONARDA FISTULOSA	WILD BERGAMOT	FIG (PA)	0.6	0.006
PANICUM CLANDESTINUM	DEERTONGUE	TIOGA	20.0	0.200
RUDBECKIA HIRTA BLACK	EYED SUSAN	ANY	1.5	0.015
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	ANY	20.0	0.200
SOLIDAGO JUNCEA EARLY	GOLDENROD	PA	0.2	0.002
SOLIDAGO RUGOSA	WRINKLE LEAF GOLDENROD	PA	0.2	0.002
TOTAL			100%	1 LB.

2.2 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. (0.45 kg/92.9 sq. m of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.3 EROSION CONTROL MAT

- 1. "Nedia KoirMat™ 400" by Nedia Enterprises, Inc. nedia.com (888) 725-6999 or approved equal.
- 2. Install per manufacturer's instructions.

2.4 HYDROMULCH

- A. Straw Mulch in "Mulch" Paragraph below may be required in areas where seeded turf is subject to wind or water erosion.
- B. Hydromulch used in hydroseed mixture or separately sprayed, to cover specific seeded areas, shall be fiber processed from whole wood chips manufactured specifically for standard hydraulic mulching equipment. Fiber shall not be produced from recycled material such as sawdust, paper, or cardboard.
- C. Moisture content of hydromulch shall not exceed 10%, plus or minus 3% as defined by the pulp and paper industry standards. Fiber shall have a water holding capacity of not less than 900 grams water per 100 grams fiber.
- D. The hydromulch shall be of such character that the fiber will be dispersed into a uniform slurry when mixed with water. It shall be nontoxic to plant life or animal life.
- E. The hydromulch shall contain a green dye to allow for easy visual metering during application but shall be noninjurious to plant growth.
- F. The hydromulch shall not contain a tackifier.

2.5 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Sphagnum Peat Mulch: Partially decomposed sphagnum peat moss, finely divided or of granular texture, and with a pH range of 3.4 to 4.8.
- C. Muck Peat Mulch: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent, and containing no sand.
- D. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch (25-mm) sieve; soluble salt content of [2 to 5] decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings.

2.6 PESTICIDES

- A. Use of pesticides must be approved in writing by the City's Representative.
- B. Pesticides will only be allowed as needed and must be approved in writing by the City's Representative and approved by the EPA.
- C. Pesticides will only be permitted for its intended use and approved by the EPA. and applied by appropriately licensed personnel according to manufacturer's recommendations.
- D. Select compatible products and provide each material from a single.
- E. Treatments must be applied by a trained personnel according to manufacturer's instructions.

PART 3 - EXECUTION

3.1 SEED AREA PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil according to Section "SOIL PREPARATION."
- B. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.2 SCHEDULE FOR SEEDING

- A. Seeding seasons shall be those indicated below.
 - 1. Spring
 - a. Seeding with Grasses & Forbes: May 1- June 15
 - 2. Fall
 - a. Grasses & Forbes: August 15-October 15
 - b. Grasses & Forbes: Dormant Seeding 'after first frost'
- B. Seeding outside of season shall occur only with permission of the City's Representative and may result in the requirement for re-preparing of seed bed and reseeding the following season until specifications requirements are met. Acceptance will not be given to seed outside of season until all the requirements of the specifications have been fulfilled and the seeded areas have met all grow-in requirements. Out-of-season seeding during hot weather will require shade mulching with netted hay-type erosion control fabric.
- C. If a planting occurs in fall and a dormant seeding is applied after the first frost, a cover crop of rye grass will be seeded at time of planting to provide a cover crop prior to spring seed germination

3.3 LAWN SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h).
 - 1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

2. Do not use wet seed or seed that is moldy or otherwise damaged.
 3. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a total rate of [2 lb/1000 sq. ft. (0.9 kg/92.9 sq. m)] [3 to 4 lb/1000 sq. ft. (1.4 to 1.8 kg/92.9 sq. m)] [5 to 8 lb/1000 sq. ft. (2.3 to 3.6 kg/92.9 sq. m)] .
- C. Rake seed lightly into top 1/8 inch (3 mm) of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of [2 tons/acre (42 kg/92.9 sq. m)] to form a continuous blanket [1-1/2 inches (38 mm)] in loose thickness over seeded areas.
1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
- E. Protect seeded areas from hot, dry weather or drying winds by applying [compost mulch] [peat mulch] [planting soil] within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of [3/16 inch (4.8 mm)] , and roll surface smooth.

3.4 LOW-MOW and RAIN GARDEN SEEDING

- A. Apply mix by hydro-seeding, by mechanical spreader, or on small sites it can be spread by hand.
- B. Lightly rake, or roll to ensure proper soil seed contact.
- C. Seed Protection:
1. Disturbed Steep Slope Areas: cover with erosion control blanket. Soak the blanket.
 2. Disturbed Flat Areas: mulch with straw cover.
- D. Best results are obtained with a Spring or late Summer seeding. Late Spring through Mid-Summer seeding will benefit from a light mulching of weed-free straw to conserve moisture.
- E. If conditions are drier than usual, watering will be required.
- F. Fertilization is not required unless the soils are particularly infertile.
- G. Preparation of a clean weed free seed bed is necessary for optimal results.

3.5 SEED MAINTENANCE

- A. Lawn Areas
1. General: Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable lawn. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.
 2. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings.
- B. Low-Mow and Rain Garden Areas
1. General: Maintain and establish by watering, fertilizing, weeding, replanting, and performing other operations as required to establish healthy, viable growth. Roll, regrade, and replant bare or eroded areas as required. Provide materials and installation the same as those used in the original installation.

3.6 MAINTENANCE AND GUARANTEE PERIOD

- A. The Contractor shall maintain and guarantee the seeded areas for:
 - 1. (12) months after Installation Acceptance.
- B. Once all work required for the installation of seeding is complete, submit a written request to the City's Representative at least 10 calendar days before the anticipated date of inspection. Upon the City's Representative's review of work and finds it complete and in accordance with Drawings and Specifications, the City's Representative will issue the Letter of Installation Acceptance, at which time project begins the Maintenance & Guaranteed Period.
- C. During the Maintenance & Guarantee period, make monthly inspections of plant material during April through November to document condition of plants and to provide remedial measures. Continue maintenance as specified. Submit inspection reports to the City's Representative.
- D. The Contractor shall weed, re-seed, lime, apply disease or insect controls, water as required to meet the requirements indicated above, and maintain repaired or refurbished seeded areas in the manner required and methods indicated above until seeding establishes.

3.7 FINAL ACCEPTANCE

- A. At the end of the Maintenance & Guarantee Period, submit a written request to the City's Representative to inspect all guaranteed work for final acceptance at least 10 calendar days before the anticipated date for final inspection. Upon the City's Representative's review of work and finds it complete and in accordance with Drawings and Specifications, the City's Representative will issue the Letter of Final Acceptance, at which time project becomes responsibility of City.
- B. The City's Representative shall inspect work with Contractor present. At time of inspection if, in the City's Representative's opinion, a substantial amount of planting, materials or workmanship is deficient, Contractor's responsibility for maintenance of all work shall be extended until plant replacements are made or other deficiencies are corrected.
 - 1. All seeded areas shall display a uniform, dense and tightly knitted stand of grass with no weeds present and no bare spots greater than three (3) inches in diameter over greater than 5% of the overall seeded area. At least 95% of the seeding established shall be permanent grass or seeded wildflower species.
 - a. All areas and parts of areas which, in the opinion of the City's Representative, fail to show a uniform stand of grass, for any reason whatsoever, shall be reseeded by a method approved by the City's Representative and during an approved season. Reseeding shall be repeated until all areas are covered with a satisfactory growth of grass. All reseeding, together with necessary re-grading, soil amendment and erosion control, shall be done at the expense of the Contractor
- C. A written report, or "punch list," issued by the City's Representative shall indicate to Contractor remedial items to be corrected before Final Acceptance is given.
- D. There will be no acceptance 'in parts' for planting work. All items on the punch list shall be completed to the satisfaction of the City's Representative and the City.
- E. Inspection request and procedure shall be repeated when remedial items are completed. Date of Final Acceptance of completed remedial work shall establish end of the Maintenance & Guarantee Period, at which time project becomes responsibility of the City.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. SEEDING will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. PLANTING SOIL will be paid under Items 32 91 15.01 and 32 91 15.02.
- C. MAINTENANCE & GUARENTEE will be paid under Item 32 93 00.08.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 92 00.01	LAWN SEEDING	SQUARE YARDS (SY)
32 92 00.02	LOW-MOW SEEDING	SQUARE YARDS (SY)
32 92 00.03	RAIN GARDEN SEEDING	SQUARE YARDS (SY)
32 92 00.04	EROSION CONTROL MAT	SQUARE YARDS (SY)

**- END OF SECTION 32 92 00 -
SEEDING**

SECTION 32 93 00: PLANTING

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials as required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Planting.
- C. References and Standards
 - 1. The following references are used herein and shall mean:
 - a. AAN: American Association of Nurserymen "American Standard for Nursery Stock," ANSI Z60.1, latest edition.
 - b. AJCHN: American Joint Committee on Horticultural Nomenclature. "Standardized Plant Names," latest edition.
 - c. AOAC: Association of Official Agricultural Chemists.
 - d. TCIA: Tree Care Industry Association, Pruning Standards: "Standards for Pruning Shade Trees," and "Standards for Pesticide Application Operations" latest editions, NAA, P.O. Box 1094, Meeting Place Mall, Route 101, Amherst, NH 03031.
 - e. USDA: United States Department of Agriculture, Agricultural Research Service, "USDA Plant Hardiness Zone Map," Miscellaneous Publication No. 1475, latest edition.
 - f. ASTM International: American Society of Testing Materials International.
 - g. AASHTO: American Association of State Highway and Transportation Officials.
 - h. USEPA: United States Environmental Protection Agency

1.2 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation".
- C. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. No pesticides shall be used unless authorized in writing by the City.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: Mulch.
- C. Plant Material Certificate: verifying nursery and source of plant material.
- D. Tagging and planting schedule: Proposed dates for tagging plants at nurseries, and for planting each type of planting, with consideration for fall-hazard species, work coordination, etc.
- E. Maintenance Schedule: As required under Maintenance & Guarantee Period.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by City for maintenance of plants during a calendar year.

1.5 QUALITY ASSURANCE

- A. Plants, trees and shrubs materials must comply with specified requirements set by AJCHN and AAN and grown within the same USDA hardiness zone as project planting.
- B. To the extent possible, provide plant material species or variety from a single source.
- C. No substitutions will be permitted without prior written approval by the City's representative.
- D. If required, only herbicides, pre-emergents, fertilizers, fungicides, and pesticides reviewed and approved by the City's Representative and permitted for use shall be used, and applied by appropriately licensed personnel according to manufacturer's recommendations.
- E. Select compatible products where options are provided, provide each material from a single source and only with review and approval of college and City's Representative.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver bare-root stock plants within [24 hours] of digging. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting. Transport in covered, temperature-controlled vehicles, and keep plants cool and protected from sun and wind at all times.
- B. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- C. Handle planting stock by root ball.
- D. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F (16 to 18 deg C) until planting.
- E. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1.7 MAINTENANCE AND GUARANTEE

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by City.
 - b. Structural failures including plantings falling or blowing over.
 - 2. Maintenance and Guarantee Period: From date of the Letter of Installation Acceptance.
 - a. All Planting: 12 months

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

- A. Provide quality, size, genus, species, and variety of trees indicated, complying with applicable requirements of AJCHN and AAN. No substitutions will be permitted without prior written approval by the City's representative. All plants shall be nursery grown, not collected from natural vegetated areas.
- B. The City's representative, accompanied by the Contractor, will tag plants at their place of growth, after pre-tagging by Contractor. At least one (1) month prior to the expected planting date, request in writing that the City's representative schedule tagging trip(s). The City's representative's time and expenses spent to locate plant material shall be paid for by Contractor only if the City's representative is sent to a site where satisfactory plant materials are not located and to nurseries not located in Massachusetts. No plant material tagged by the City's representative shall be delivered to the site of Work without these tags.
- C. The City's representative's selection shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the Work. Contractor shall pay cost of replacement of materials rejected by the City's representative at the site.
- D. Each tree shall be labeled with securely attached, waterproof tag bearing legible designation of botanical and common name according to AJCHN.
- E. Only plant stock obtained from and grown between latitudes 40-49 degrees north and USDA hardiness Zones 1 through 5, will be accepted.
- F. Plants shall be in accordance with AAN as a minimum requirement for acceptance. Plants shall be typical of their species or variety, have a normal habit of growth, and meet the size and form requirements indicated by the City's representative. The trunk of each tree shall be a single trunk growing from a single intact crown of roots. Trees indicated as "multi-stemmed" in the Plant List shall have three (3) stems, typical.
- G. Measure trees according to AAN with branches and trunks or canes in their normal position. Take caliper measurements six (6) inches above ground for trees up to 4-inch caliper size, and 12 inches above ground for larger sizes.
- H. The height of trees (measured from the crown of the roots to the tip of the top branch) shall be not less than the minimum size directed by the City's representative or as required by AAN based upon caliper size designated. Lateral branching of deciduous trees is to begin at no less than seven (7) feet height.
- I. Trees of a larger size may be used if acceptable to the City's representative with a proportionate increase in size of roots or balls. Do not cut root balls to size of smaller plants to fit limited planting area. Do not prune to obtain required sizes.

- J. Trunks shall be free from sunscald, frost cracks, or wounds resulting from abrasions, fire, or other causes. No tree shall have evidence of ever having had basal suckers. The plants must be in a moist vigorous condition, free from dead wood, bruises or other root, bark or branch injuries.
- K. Trees shall not be pruned in preparation for transplanting. No wounds from previous pruning shall be present having a diameter exceeding two (2) inches; such wounds shall show vigorous scar tissue on all edges.
- L. All plant parts shall be moist and show active cambium when cut. Plants shall be sound, healthy, and vigorous, well-branched and densely foliated when in leaf. They shall be certified by the grower as free of disease, insect pests, eggs or larvae.
- M. Balled and burlapped plants shall be moved with root systems as solid units with balls of earth firmly wrapped with untreated natural eight-ounce burlap, firmly held in place by a stout cord or wire. Plants prepared with plastic or other non-biodegradable wrappings will not be accepted except when directed by the City's representative to be container grown. All plastic products must be removed before planting is accepted. Diameter and depth of the balls of earth on balled and burlapped plants must be sufficient to encompass the fibrous root feeding system necessary for healthy development of plant, according to AAN standards. Top of root ball shall be actual finish grade of tree as grown in nursery; excess soil shall be removed from top of ball prior to delivery. No plant will be accepted when ball of earth surrounding its roots has been cracked or broken prior to or during process of planting or after burlap, staves, ropes, container, or platform required in connection with its transplanting have been removed.
- N. Trees delivered by truck and plants requiring storage on site shall be properly wrapped and covered during delivery to prevent drying of branches, leaves, or buds. Plant root balls shall be firmly bound, unbroken, and reasonably moist to indicate watering prior to delivery and during storage, and tree trunks shall be free from fresh scars and damage in handling.
- O. Tree species designated as "Fall Hazard", such as Birch and Maples, shall not be substituted with species that are appropriate for fall planting, but shall be planted in the spring, regardless of other project schedules.

2.2 FERTILIZERS

- A. Planting Tablets: Tightly compressed chip-type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.
 - 1. Size: 5-gram tablets.
 - 2. Nutrient Composition: 20 percent nitrogen, 10 percent phosphorous, and 5 percent potassium, by weight plus micronutrients.

2.3 MULCH

- A. Organic Mulch: Wood and bark chips

2.4 TREE-WATERING DEVICES

- A. Slow-Release Watering Device: Standard product manufactured for drip irrigation of plants and emptying its water contents over an extended time period manufactured from UV-light-stabilized nylon-reinforced polyethylene sheet, PVC, or HDPE plastic.

2.5 PESTICIDES

- A. Use of pesticides must be approved in writing by the City's Representative.

- B. Pesticides will only be allowed as needed and must be approved in writing by the City's Representative and approved by the EPA.
- C. Pesticides will only be permitted for its intended use and approved by the EPA. and applied by appropriately licensed personnel according to manufacturer's recommendations.
- D. Select compatible products and provide each material from a single.
- E. Treatments must be applied by a trained personnel according to manufacturer's instructions.

PART 3 - EXECUTION

3.1 PLANTING AREA ESTABLISHMENT

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."
- B. Before planting, obtain City's representative's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.2 TEST PITS FOR DRAINAGE

- A. Notify the City's representative of five representative tree pits to be tested at least ten days in advance of the testing day. A representative of the City's representative shall be present during all percolation testing. Locate areas where tree planting will occur as shown on the Drawings. Test existing drainage capacity, percolation, of subsoil that shall exist at time of planting in a minimum of five sample tree pits. Tree pits shall be representative of the different tree planting areas of project site. The test shall be conducted by filling representative pits with a minimum of fifty gallons of water within a ten-minute period.
- B. Prepare a report indicating pits tested, numbered pit locations on a site plan, time it took for pits to drain after filling, and submit the result to the City's representative with analysis. If water has not completely drained from pit within two hours, an underdrainage system shall be designed by the Contractor, submitted to the City's representative for approval, and installed by the Contractor for trees in areas where drainage failed. Plant elevations may have to be adjusted, locations changed, or underdrainage lines installed to compensate for drainage problems at no additional cost.

3.3 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits.
 - 1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
 - 2. Excavate approximately three times as wide as ball diameter.
 - 3. Excavate at least 12 inches (300 mm) wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
 - 4. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
- B. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated.

3.4 SCHEDULE FOR PLANTING

- A. Locate plant material sources and ensure that plants are shipped in timely fashion for installation. All trees shall be planted during the same planting season they are dug. Balled and burlapped and potted plant materials from cold storage shall be rejected.
- B. Planting seasons shall be those indicated below. Plants planted out-of-season shall receive special attention as directed. Out-of-season planting and or transplanting shall be at Contractor's risk and expense.
 - 1. Spring
 - a. Deciduous materials: March 21 - May 1
 - b. Evergreen Materials: April 15 - June 1
 - 2. Fall
 - a. Deciduous materials: October 1 - December 1
 - b. Evergreen Materials: August 15 - October 15
 - c. Bulbs: October 1 – November 30
- C. No planting shall be done in frozen or muddy ground or when snow covers ground, or soil is otherwise in an unsatisfactory condition for planting.
- D. Summer digging of trees shall not be permitted for any reason. Contractor shall schedule his work and coordinate his schedule for planting, so that summer digging and substitutions of species that are fall hazards (fall digging/planting) does not occur.
- E. Refer to the Drawings for Fall Hazard Species, such as certain Oaks, Maples, Birch, etc: These species must be planted in the spring and substitutions shall not be permitted without approval of the City's representative.
- F. Evergreens planted in April or July-August, or out of season shall be sprayed with anti-desiccant twice during the guarantee period, once at planting and once in mid-winter.

3.5 PLANTING

- A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Set each plant plumb and in center of planting pit or trench with root flare 2 inches (50 mm) above adjacent finish grades.
 - 1. Backfill: Planting soil For trees, use excavated soil for backfill.
 - 2. Balled and Burlapped Stock: After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 - 3. Balled and Potted and Container-Grown Stock: Carefully remove root ball from container without damaging root ball or plant.
 - 4. Fabric Bag-Grown Stock: Carefully remove root ball from fabric bag without damaging root ball or plant. Do not use planting stock if root ball is cracked or broken before or during planting operation.

5. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 6. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.6 TREE AND SHRUB PRUNNING

- A. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Prune, thin, and shape trees, shrubs, and vines as directed by City's representative.
- C. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by City's representative, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.
- D. Do not apply pruning paint to wounds.

3.7 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.

3.8 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
- B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
- D. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with City's operations and others in proximity to the Work. Notify City before each application is performed.
- E. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- F. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

3.9 MAINTENANCE AND GUARANTEE PERIOD

- A. The Contractor shall maintain and guarantee the planted areas for:
 - 1. (12) months after Installation Acceptance.
- B. Once all work required for the installation of planting is complete, submit a written request to the City's Representative at least 10 calendar days before the anticipated date of inspection. Upon the City's Representative's review of work and finds it complete and in accordance with Drawings and Specifications, the City's Representative will issue the Letter of Installation Acceptance, at which time project begins the Maintenance & Guaranteed Period.
- C. During the Maintenance & Guarantee Period, make monthly inspections of plant material during April through November to document condition of plants and to provide remedial measures. Continue maintenance as specified. Submit inspection reports to the City's Representative.

3.10 FINAL ACCEPTANCE

- A. At the end of the Maintenance & Guarantee Period, submit a written request to the City's Representative to inspect all guaranteed work for final acceptance at least 10 calendar days before the anticipated date for final inspection. Upon the City's Representative's review of work and finds it complete and in accordance with Drawings and Specifications, the City's Representative will issue the Letter of Final Acceptance, at which time project becomes responsibility of City.
- B. The City's Representative shall inspect work with Contractor present. At time of inspection if, in the City's Representative's opinion, a substantial amount of planting, materials or workmanship is deficient, Contractor's responsibility for maintenance of all work shall be extended until plant replacements are made or other deficiencies are corrected.
 - 1. Dead plants and plants with less than 85% live wood noted in inspections shall be replaced with new plants of same size and species within one (1) month or in first month of next growing season, whichever comes first, as permitted by specifications. Replacement plants shall be installed according to the Drawings and Specifications
- C. A written report, or "punch list," issued by the City's Representative shall indicate to Contractor remedial items to be corrected before Final Acceptance is given.
- D. There will be no acceptance 'in parts' for planting work. All items on the punch list shall be completed to the satisfaction of the City's Representative and the City.
- E. Inspection request and procedure shall be repeated when remedial items are completed. Date of Final Acceptance of completed remedial work shall establish end of the Maintenance & Guarantee Period, at which time project becomes responsibility of the City.

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAYMENT

- A. PLANTING will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner.
- B. PLANTING SOIL will be paid under Items 32 91 15.01 and 32 91 15.02.

4.2 PAYMENT ITEMS

ITEM NO.	ITEM	UNIT
32 93 00.01	TREE – 10'-12' HT	EACH (EA)
32 93 00.02	TREE – 2-2.5" CAL.	EACH (EA)
32 93 00.03	TREE – 3-3.5" CAL.	EACH (EA)
32 93 00.04	TREE – 4-4.5" CAL.	EACH (EA)
32 93 00.05	CONTAINER PLANT:1 GALLON	EACH (EA)
32 93 00.06	CONTAINER PLANT:1 QUART	EACH (EA)
32 93 00.07	PLUG PLANT	EACH (EA)
32 93 00.08	WOOD MULCH	CUBIC YARDS (CY)
32 93 00.09	PLANT MAINTENANCE & GUARENTEE - 12 MONTH	LUMP SUM (LS)

**- END OF SECTION 32 93 00 –
PLANTING**

SECTION 33 40 00: STORM DRAINAGE SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. The work to be done under these Items shall be in conformance with the relevant provisions of the Contract, the Drawings and specified herein. Provide all labor, equipment, implements and materials required to perform the work.
- B. To be included, but not limited to the following:
 - 1. Storm Drainage scope as shown on the Drawings.

PART 2 - PRODUCTS

2.1 As shown on Sheets:

- A. C1.02 STORMWATER LAYOUT
- B. C1.03 DRAINAGE PROFILE
- C. C1.04 STORMWATER DETAILS

PART 3 - EXECUTION

3.1 As shown on Sheets:

- A. C1.02 STORMWATER LAYOUT
- B. C1.03 DRAINAGE PROFILE
- C. C1.04 STORMWATER DETAILS

PART 4 - COMPENSATION

4.1 METHOD OF MEASUREMENT & BASIS OF PAVEMENT

- A. STORM DRAINAGE SYSTEM will be measured as listed below, complete in place, as indicated on the Drawings and in the Specifications, including remedial work, if any, during construction. Work of this Section will be paid for at the respective contract unit prices at the quantities indicated and will be full compensation for all labor, materials, equipment and miscellaneous items necessary to complete the Work in a satisfactory manner

4.2 PAYMENT ITEMS

<u>ITEM NO.</u>	<u>ITEM</u>	<u>UNIT</u>
33 40 00.01	STORM DRAINAGE SYSTEM	LUMP SUM (LS)

- END OF SECTION 33 40 00 -
STORM DRAINAGE SYSTEM

MIKE'S BORING & CORING LLC.

P.O. Box 75
East Barre, VT 05649

To: Max Madalinski
Parks Project Coordinator
City of Burlington, Dept. of Parks and Recreation
645 Pine Street
Burlington, VT 05401

Date	5-2-19 to 5-6-19
Job Name/Site	Oakledge Park/Burlington, VT
Job Number	19032
Crew	Mike and Shawn
Inspector	

HOLE #	OFFSET	STATIC LEVEL	SOILS	AUGER REFUSAL (Feet)	DEPTH (Feet)
P-1	N/A	N/A	0'-6" Top soil 6"-4'6" Brown fine sand and silt, some clay 4'6"-5' Red/brown fine sand and stones (till)		5'
P-2	N/A	N/A	0'-6" Top soil 6"-1'2" Brown fine sand and silt	1'2"	1'2"
P-3	N/A	N/A	0'-6" Top soil 6"-4'6" Red/brown fine sand and silt, some clay and stones (till)	4'6"	4'6"
P-4	N/A	N/A	0'-6" Top soil 6"-5' Brown fine sand and silt, some clay 4'6"-5' Red/brown fine sand, silt and some clay and stones (till)		5'

TOTAL FOOTAGE 15'8"

AUGERS USED: Solid

BID PROPOSAL FORM

OAKLEDGE UNIVERSALLY ACESIBLE PLAYGROUND PROJECT

Proposal of _____ (hereinafter called Bidder), organized and existing under the laws of the State of Vermont doing business as

(a corporation, a partnership, of an individual)

To the City of Burlington, Vermont (hereinafter called Owner)

The Bidder represents that this bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation. The bidder has not directly or indirectly induced or solicited any other bidder to submit a false bid. Bidder has not solicited or induced any person, firm or corporation to refrain from bidding and the bidder has not sought by collusion to obtain for himself any advantage over any other bidder or Owner.

It is essential that all forms that require signature as part of the final Bid Submission be filled out and signed or the Bid itself will be invalid:

- ☐ Burlington's Livable Wages Ordinance Form - Appendix K
- ☐ Burlington's Union Deterrence Ordinance Form – Appendix K
- ☐ Burlington's Outsourcing Ordinance Form – Appendix K
- ☐ City of Burlington Contractor Prequalification – Appendix N

The undersigned bidder proposed and agrees, if this bid is accepted, to enter into an agreement with Owner to furnish all materials and to complete all work as specified or indicated in the Contract Documents for the contract price and within the contract time indicated in this bid and in accordance with the Contract Documents.

Bidder hereby agrees to commence Work under this contract on the date of issuance of the Notice to Proceed and that the Final Completion date for this contract is November 20, 2020.

Bidder acknowledges receipt of the following Addenda:

Bidder agrees to perform all the Work described in the Contract Documents for the following schedule of prices.

Unqualified bids will not be accepted. The Total Base Bid is the basis for contract award. All unit prices for the same item description shall be the same unit cost, no matter whether the quantities are in the Base Bid or Add Alternates. The City shall determine whether to include the Add Alternates in the contract based on final bid results and local funding limits.

SECTION 00 41 13: BASE BID

PART 1 - GENERAL

1.1 BASE BID

- A. The Base Bid shall include the full compensation for furnishing equipment, materials and labor required to complete the listed project work in the following list:

Item No.	Item	Unit	Unit Price	Amount	Total Price
01 56 39.01	TEMPORARY TREE AND PLANT PROTECTION	LS		1	
01 71 13.01	MOBILIZATION AND DEMOBILIZATION	LS		1	
26 00 00.01	ELECTRICAL	LS		1	
31 10 00.01	MISC. SITE PREPARATION	LS		1	
31 10 00.02	TOPSOIL STRIPPED FOR REUSE	CY		1,055	
31 20 00.01	EXCAVATION	CY		415	
31 20 00.02	ORDINARY FILL	CY		290	
31 20 00.03	GRAVEL BASE	CY		505	
31 20 00.04	GRAVEL SUBBASE	CY		125	
31 20 00.05	WASHED STONE	CY		145	
32 12 16.01	BITUMINOUS CONCRETE	TON		135	
32 12 43.01	PERMEABLE PAVING	SF		2,340	

Item No.	Item	Unit	Unit Price	Amount	Total Price
32 13 13.01	C-I-P CONCRETE WALK	SF		8,955	

32 18 16.01	P-I-P PLAY SURFACE: 2" THICK	SF		1,600	
32 18 16.02	P-I-P PLAY SURFACE 4" THICK	SF		915	
32 18 16.03	P-I-P PLAY SURFACE 2" THICK OVER RIGID BASE	SF		300	
32 18 16.04	FIBAR SURFACE	SF		3,575	

32 33 00.01	BOLLARD	EA		14	
32 33 00.02	BOLLARD SIGN	EA		10	
32 33 00.03	TABLE SEATING	EA		2	
32 33 00.04	BACKED BENCH	EA		5	
32 33 00.05	BACKLESS BENCH	EA		2	
32 33 00.06	SAND PLAY	EA		1	
32 33 00.07	STAGE	LS		1	
32 33 00.08	PARK BOULDER	EA		10	
32 33 00.09	PARK STONE	EA		17	
32 33 00.10	PARK STONE WITH LIGHTING	EA		11	
32 33 00.11	DETECTABLE WARNING PLATE	EA		53	

Item No.	Item	Unit	Unit Price	Amount	Total Price
32 33 00.12	CULVERT INLET GRATE	EA		4	
32 33 00.13	4" PERFORATED PVC PIPE	LF		60	
32 33 00.14	PRECAST CONCRETE CURB	LF		575	
32 33 00.15	METAL EDGE	LF		685	
32 33 00.16	GEOTEXTILE	SY		250	
32 17 23.17	PAVEMENT MARKINGS	SF		320	

32 33 01.01	INSTALLATION OF CITY FURNISHED EQUIPMENT	LS		1	
32 33 01.02	WHALE DRUM	EA		1	
32 33 01.03	GRAB RAIL AT EXISING SWAY FUN	EA		1	
32 33 01.04	GRAB RAIL AT STAGE	EA		1	
32 33 01.05	EMBANKMENT SLIDE	EA		1	
32 33 01.06	ROPE CLIMB	EA		1	

32 91 15.01	AMENDED ON-SITE PLANTING SOIL	CY		1,055	
32 91 15.02	IMPORTED PLANTING SOIL	CY		350	

Item No.	Item	Unit	Unit Price	Amount	Total Price
32 92 00.01	LAWN SEEDING	SY		3,170	
32 92 00.02	LOW-MOW SEEDING	SY		1,450	
32 92 00.03	RAIN GARDEN SEEDING	SY		900	
32 92 00.04	EROSION CONTROL MAT	SY		410	

32 93 00.01	TREE – 10'-12' HT	EA		2	
32 93 00.02	TREE – 2-2.5" CAL.	EA		10	
32 93 00.03	TREE – 3-3.5" CAL.	EA		3	
32 93 00.04	TREE – 4-4.5" CAL.	EA		2	
32 93 00.05	CONTAINER PLANT: 1 GALLON	EA		376	
32 93 00.06	CONTAINER PLANT: 1 QUART	EA		138	
32 93 00.07	PLUG PLANT	EA		2,440	
32 93 00.08	WOOD MULCH	CY		20	
32 93 00.09	PLANT MAINTENANCE & GUARANTEE (12 MONTH)	LS		1	

33 40 00.01	STORM DRAINAGE SYSTEM	LS		1	
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1.2 BASE BID

Total Base Bid in Numbers:

Total Base Bid in Words:

- END OF SECTION 00 41 13 -
BASE BID

SECTION 01 22 00: SUPPLEMENTARY UNIT PRICES

PART 1 - GENERAL

1.1 SUPPLEMENTARY UNIT PRICES

- A. Supplementary Unit Price shall be full compensation for furnishing equipment, materials and labor required to complete the item of work beyond that included in the Base Bid.

Item No.	Item	Unit	Unit Price
31 10 00.03	STUMP REMOVAL	EA	
31 10 00.04	TREE REMOVAL: small <12" DBH	EA	
31 10 00.05	TREE REMOVAL: medium 12-24" DBH	EA	
31 10 00.06	TREE REMOVAL: large >24" DBH	EA	
31 20 00.06	ROCK REMOVAL	CY	
31 20 00.07	CRUSHED STONE	CY	
31 20 00.08	SAND	CY	
32 13 13.02	MISC. C.I.P. CONCRETE	CY	

**- END OF SECTION 001 22 00 -
SUPPLEMENTARY UNIT PRICES**

SECTION 01 23 00: ALTERNATES

PART 1 - GENERAL

1.1 ADD ALTERNATE

A. Work description:

1. Change 'Plug' size plants included in the Rain Garden Planting to 'Quart' size container plants.

Item No.	Item	Unit	Unit Price	Amount	Total Price
32 23 00.06	CONTAINER PLANT: 1 QUART	EA		2,440	

1.2 ADD ALTERNATE

Total Add Alternate Bid in Numbers:

Total Add Alternate Bid in Words:

**- END OF SECTION 01 23 00-
ALTERNATES**

OAKLEDGE UNIVERSALLY ACCESSIBLE PLAYGROUND PROJECT

LS = lump sum

EA = each

SY = square yard

SF = square feet

CWT = hundredweight

GAL = gallon

HR = hour

LU = lump unit

CY = cubic yard

LF = linear foot

TON = ton

MGAL = thousand gallons

LB = pound

MFBM = thousand feet, board measure

The lowest responsive and responsible bidder will be determined by the Total Base Bid. The above unit prices shall include all labor, materials, removal, overhead, profit, insurance, etc. to cover the finished work of the several kinds called for on the drawings and specifications.

THE ABOVE PROPOSAL IS HEREBY RESPECTFULLY SUBMITTED BY:

Contractor

By

Title

Business Address

City

State

Date

ATTEST

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APPENDICES

APPENDIX A: Notice of Award

APPENDIX B: Notice to Proceed

APPENDIX C: Performance Bond

APPENDIX D: Payment Bond

APPENDIX E: Application for Payment

APPENDIX F: Change Orders

APPENDIX G: General Contractors or Subcontractors Release and Waiver of Liens

APPENDIX H: Certificate of Substantial Completion

APPENDIX I: Certificate for Final Completion of Work

APPENDIX J: Burlington Ordinances Language

APPENDIX K: Burlington Ordinances Forms

APPENDIX L: General Special Provision (1-13-2021)

APPENDIX M: Supplemental Safety Performance Standards for Public Health Emergencies

APPENDIX N: Prequalification of Contractors Application – City of Burlington

APPENDIX O: 2020 – City of Burlington Holidays

APPENDIX P: EPSC Requirements and Small Project Application

APPENDIX Q: Contract Plans

APPENDIX R: Permits

APPENDIX A
NOTICE OF AWARD

TO: _____

Project Description: _____

The Owner has considered the Bid submitted by you for the above described Work in response to its Advertisement for Bids dated _____, 20____, and Information for Bidders. You are hereby notified that your Bid has been accepted for items in the amount of \$ _____.

You are required by the Information for Bidders to execute the Agreement and furnish the required Contractor's Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date of the Notice of Award.

If you fail to execute said Agreement and to furnish said Bonds within then (10) days from the date of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid as abandoned and as forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of the Notice of Award to the Owner. Dated this _____ day of _____, 20____.

OWNER: _____ City of Burlington _____

BY: _____

TITLE: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by:

_____ this
_____ day of _____, 20____.

OWNER: _____

BY: _____

TITLE: _____

APPENDIX B
NOTICE TO PROCEED

TO: _____

DATE: _____ (CONTRACTOR)

ADDRESS: _____

CONTRACT: _____

PROJECT: _____

OWNER'S CONTRACT NO. _____

You are notified that the Contract Times under the above contract will commence to run on _____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Agreement, the date of Final Completion is _____ and the date of readiness for final payment is _____.

In addition, before you may start any Work at the Site, you must _____.

OWNER: _____ City of Burlington _____

BY (NAME/SIGNATURE): _____

TITLE: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:

OWNER: _____ Date: _____

BY (Name/Signature): _____

TITLE: _____

APPENDIX C
Performance Bond

KNOW ALL PEOPLE BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, (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 Owner)

645 Pine Street, Suite A; Burlington, VT 05401 (Address of Owner)

hereinafter called Owner, in the 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, 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
Owner, dated the _____ day of _____, 20____,
a copy of which is hereto attached and made a part hereof for the construction of:

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 Owner, with or without notice to the Surety and during
the one year guaranty period, and if they shall satisfy all claims and demands incurred under such contract,
and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer
by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the
Owner 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 no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts
(No.) each one of which shall be deemed an original, this the

_____ day of _____, 20_____.

ATTEST:

[Principal]

[Principal Secretary]

(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 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.

APPENDIX D
Payment Bond

KNOW ALL PEOPLE BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, (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 Owner)

645 Pine Street, Suite A; Burlington, VT 05401
(Address of Owner)

Hereinafter called Owner, in the 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, 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
Owner, dated the ____ day of _____, 20____, a copy of
which is hereto attached and made a part hereof for the construction of:

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 all insurance premiums on said Work, and
for all labor performed in such Work whether by Subcontractor or otherwise, then this obligation shall be
void; otherwise to remain in 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 no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

In Witness Whereof, this instrument is executed in counterparts,
(No.)

each one of which shall be deemed an original, this the _____ day of ____, 20__.

ATTEST:

Principal _____ (Principal Secretary)

(SEAL) By: _____(s)

_____ Address: _____

Witness as to Principal

Address _____

_____ Surety

ATTEST:

_____ By: _____
Witness as to Surety Attorney-in-Fact

Address _____ Address _____

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

IMPORTANT: Surety companies executing Bond 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.

APPENDIX E
Application for Payment

To: _____(OWNER)

From: _____(CONTRACTOR)

Contract: _____

Project: _____

OWNER's Contract No. _____

For WORK accomplished through the date of: _____ Invoice No. _____

- | | | |
|----|--|-----------------|
| 1. | Original Contract Price: | \$ _____ |
| 2. | Net change by Change Orders and Written Amendments (+ or-) | \$ _____ |
| 3. | Current Contract Price (1 plus 2): | \$ _____ |
| 4. | Total completed and stored to date: | \$ _____ |
| 5. | Less previous Applications for Payment: | \$ _____ |
| 6. | DUE THIS APPLICATION (4 MINUS 5): | \$ _____ |

Accompanying Documentation: 1. Schedule of values and percent complete.

2. _____

APPENDIX F
Change Orders

CHANGE ORDER NO. _____ Date: _____

Project No.: _____ Project Title: _____

Contract No.: _____ Agreement Date: _____

Contract Title: _____ Original Price: _____

Owner: _____ Contractor: _____

The following changes are hereby made to the Contract Documents:

Description: _____

Justifications: _____

Change to Contract Price: \$ _____

Original Contract Price: \$ _____

Current Contract Price adjusted by previous Change Order: \$ _____

The Contract Price due to this Change Order will be (increased) (decreased) by: \$ _____

New Adjusted Contract Price: \$ _____

Change to Contract Time: _____

The Contract Time will be (increased) (decreased) by _____ Calendar days. The date
for completion of all work will be _____ (Date).

The attached Contractor's Revised Project Schedule reflects increases or decreases in the Contract Time as authorized by this Change Order. Stipulated price and time adjustment include all costs and time associated with the above described change. Contractor waives all rights for additional compensation or time extension for said change. Contractor and Owner agree that the price(s) and time adjustment(s) stated above are equitable and acceptable to both parties.

REQUESTED BY: _____

SIGNATURES/APPROVALS

Recommended By: _____ (Project Manager)

Accepted By: _____ (Contractor)

Ordered By: _____ (Owner)

APPENDIX G

General Contractors or Subcontractors Release and Waiver of Liens

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 wit:

Burlington Bike Path Rehabilitation Phase 3a – City of Burlington, VT
(Project Name and Owner)

_____, 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: _____

Title: _____

(Witness)

APPENDIX H
Certificate of Substantial Completion

Owner'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: _____
(Owner)

And To: _____
(Contractor)

Date of Substantial Completion: _____

The Work performed under this contract has been inspected by authorized representatives of the Owner, 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 Approved by:

Authorized Representative

Date

Owner

Authorized Representative

Date

The Contractor accepts the above Certificate of Substantial Completion.

Contractor

Authorized Representative

Date

Exceptions as to Guarantees

and Warranties: Attachments:

APPENDIX I
Certificate for 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 OWNER

I, as representative of the OWNER, accept the above Final Certifications and authorize Final Payment in the amount of

\$ _____.

OWNER: _____

Date: _____

Authorized Representative: _____

Title: _____

APPENDIX J

Burlington Ordinances Language

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.

(Ord. of 11-19-01; Ord. of 10-21-13)

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)

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.

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.

APPENDIX K

Burlington Ordinances Forms

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: _____

Subscribed and sworn to before me:

Date _____

Subscribed and sworn to before me: _____
Notary

Certification of Compliance with the City of Burlington's
Union Deterrence Ordinance

I, _____, on behalf of _____
(Contractor) and in connection with _____ (City
contract/project/grant), 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 _____, 20__.

By: _____
Duly Authorized Agent

APPENDIX L

Standard Contract Conditions (rev. 01.13.2021)

**ATTACHMENT C:
BURLINGTON STANDARD CONTRACT CONDITIONS
FOR CONSTRUCTION CONTRACTORS**

1. DEFINITIONS:

- A. The “Contract” shall mean the Contract between Consultant and the City to which these conditions apply and includes this Attachment C.
- B. The “Consultant” shall mean _____.
- C. The “City” shall mean the City of Burlington, Vermont or any of its departments.
- D. The “Effective Date” shall mean the date on which the Contract becomes effective according to its terms, or if no effective date is stated, the date that all parties to it have signed.
- E. The “Parties” shall mean the parties to this Contract.
- F. The “Work” shall mean the services being provided by the Consultant, as provided in the Contract.

2. 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.

3. 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. 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 Contract. The insurance policies shall provide that insurance coverage cannot be canceled or revised without thirty (30) days prior notice to the City. If this Contract extends to more than one year, evidence of continuing coverage must be submitted to the City on an annual basis. Copies of any insurance policies may be required. Each policy (with the exception of professional liability and worker’s compensation) shall name the City as an additional insured for the possible liabilities resulting from the Contractor’s actions or omissions. 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: (i) all subcontractors must comply with the same insurance requirements as the Contractor; (ii) all coverage shall include adequate protection for activities involving hazardous materials; and (iii) all work activities related to the Contract 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.

- A. General Liability And Property Damage: With respect to all operations performed by the Contractor, subcontractors, agents or workers, it is the Contractor’s responsibility to ensure

that general liability insurance coverage, on an occurrence form, provides all major divisions of coverage including, but not limited to:

1. Premises Operations
2. Independent Contractors' Protective
3. Products and Completed Operations
4. Personal Injury Liability
5. Medical Expenses

Coverage limits shall not be less than:

- | | | |
|----|-------------------------------|-------------|
| 1. | General Aggregate | \$2,000,000 |
| 2. | Products-Completed/Operations | \$2,000,000 |
| 3. | Personal & Advertising Injury | \$1,000,000 |
| 4. | Each Occurrence | \$1,000,000 |
| 5. | Damage to Rented Premises | \$ 250,000 |
| 6. | Med. Expense (Any one person) | \$ 5,000 |

B. 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 subcontractors carry the same workers' compensation insurance for all work performed by them under this contract. Minimum limits for Employer's Liability:

1. Bodily Injury by Accident: \$500,000 each accident
2. Bodily Injury by Disease: \$500,000 policy limit,
\$500,000 each employee

C. 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 Contract. Each policy shall provide coverage with a limit not less than: \$1,000,000 - Combined Single Limit for each occurrence.

D. Umbrella Liability:

1. \$1,000,000 Each Event Limit
2. \$1,000,000 General Aggregate Limit

- 4. CONFLICT OF INTEREST:** The Contractor shall disclose in writing to the City any actual or potential conflicts of interest or any appearance of a conflict of interest by the Contractor, its employees or agents, or its subcontractors, if any.
- 5. PERSONNEL REQUIREMENTS AND CONDITIONS:** A Contractor shall employ only qualified personnel with 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

Contract.

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

1. Any City employees who are directly involved with the awarding, administration, monitoring, or performance of the Contract or any project(s) that are the subjects of the Contract.
2. Any City employees 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 bona fide employee working solely for the Contractor) to solicit or secure this Contract, and that no company or person has been paid or has a contract with the Contractor to be paid, other than a bona fide 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 Contract. For breach or violation of this warranty, the City shall have the right to annul the Contract, without liability to the City, and to regain all costs incurred by the City in the performance of the Contract.

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

6. **PERFORMANCE:** Consultant warrants that performance of Work will conform to the requirements of this Contract. Contractor shall use that degree of ordinary care and reasonable diligence that an experienced and qualified provider of similar services would use acting in like circumstances and experience in such matters and in accordance with the standards, practices and procedures established by Contractor for its own business.
7. **RESPONSIBILITY FOR SUPERVISION:** The Contractor shall assume primary responsibility for general supervision of Contractor employees and any 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 Contract. The Contractor shall be responsible to the City for all acts or omissions of its subcontractors and any other person performing work under this Contract.
8. **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 the Contract, as well as any preparatory work, work-in-progress, or completed work at a field site.

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.

- 9. UTILITIES & ACCESS:** 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 and will enter into 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.

The City shall provide the land and/or construction easements for the land upon which the Work under this Contract is to be done, and will, so far as is convenient, permit the Contractor to use as much of the land as is required for the erection of temporary construction facilities and storage of materials, together with the right of access to same, but beyond this, the Contractor shall provide at the Contractor's cost and expense any additional land required.

10. PROTECTION OF PROPERTY:

- A. In General:** Contractor shall avoid damage, as a result of its operations, to trees, plant life, existing sidewalks, curbs, streets, alleys, pavements, utilities, adjoining property, the work of other contractors, and the property of the City and others. Contractor shall, at its own expense, repair any damage to any property caused by Contractor's operations.
- B. Underpinning and Shoring:** Contractor shall become familiar with the requirements of local and state laws applicable to underpinning, shoring and other work affecting adjoining property, and wherever required by law Contractor shall shore up, brace, underpin, secure and protect as may be necessary all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be affected in any way by the excavations or other operations connected with the work to be performed under this Contract.
- C. Damage to Utilities:** Contractor shall be responsible for all damage to any utility equipment or structures caused by its acts or omissions to act, whether negligent or otherwise, and shall leave the utility equipment or structures in as good condition as they were in prior to the commencement of operations under this contract. However, any utility equipment or structures damaged as a result of any act, or omission to act, of the contractor may, at the option of the city department, utility company, or other party owning or operating the utility equipment or structures damaged, be repaired by the city department, utility company, or other party, and in that event, the cost of repairs shall be borne by Contractor.

- 11. PUBLIC RELATIONS:** Throughout the performance of the Contract, 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 19 V.S.A. § 35 and §.503, to accomplish the work under the Contract. The Contractor agrees that any work will be done with minimum damage to the property and disturbance to the owner. 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.

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

13. APPEARANCES:

- A. Hearings and Conferences:** The Contractor shall provide services required by the City and necessary for furtherance of any work covered under the Contract. These 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 Contract.

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 Contract.

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 Contract.

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

- B. Appearance as Witness:** If and when required by the City, the Contractor, or an appropriate representative, shall prepare and appear for any litigation concerning any relevant project or related contract, on behalf of the City. The Contractor shall be equitably paid, to the extent permitted by law, for such services and for any reasonable expenses incurred in relation thereto, in accordance with the Contract.

- 14. RESPONSIBILITY OF COST:** The Contractor shall furnish and pay the cost, including taxes (except tax-exempt entities) and all applicable fees, of all the necessary materials and shall furnish and pay for full time on-site superintendence during any construction activity, labor, tools, equipment, and transportation. The Contractor shall perform all the Work required for the construction of all items listed and itemized under Attachment A (Request for Proposals) and Attachment B (Contractor's Response to Request for Proposals) and in strict accordance with the Contract Documents and any amendments thereto and any approved supplemental plans and specifications. The Contractor agrees to pay all claims for labor,

materials, services and supplies and agrees to allow no such charge, including no mechanic's lien, to be fixed on the property of the City.

- 15. 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 Contract. When applicable, for the type of payment specified in the Contract, a progress report shall summarize actual costs and any earned portion of fixed fee. All payments will be made in reliance upon the accuracy of all representations made by the Contractor, whether in invoices, progress reports, emails, or other proof of work.

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

When applicable, for the type of payment specified in the Contract, 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 by documentation to substantiate their charges.

No approval given or payment made under the Contract shall be conclusive evidence of the performance of the Contract, either wholly or in part, 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 fee specified in the Contract.

- 16. DUTY TO INFORM CITY OF CONTRACT DOCUMENT ERRORS:** If Contractor knows, or has reasonable cause to believe, that a clearly identifiable error or omission exists in the Contract Documents, including but not limited to unit prices and rate calculations, Contractor shall immediately give the City written notice thereof. Contractor shall not cause or permit any Work to be conducted which may relate to the error or omission without first receiving written notice by the City that City representatives understand the possible error or omission and have approved of modifications to the Contract Documents or that Contractor may proceed without any modification being made to Contract Documents.

- 17. NON-APPROPRIATION:** The obligations of the City under this Contract are subject to annual appropriation by the Burlington City Council. If no funds or insufficient funds are appropriated or budgeted to support continuation of payments due under this Contract, the Contract shall terminate automatically on the first day of the fiscal year for which funds have not been appropriated. The Parties understand and agree that the obligations of the City to make payments under this Contract shall constitute a current expense of the City and shall not be construed to be a debt or a pledge of the credit 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 Mayor and City Council of the City. The City shall deliver written notice to Contractor as soon as practicable of any non-appropriation, and Contractor shall not be entitled to

any payment or compensation of any kind for work performed after the City has delivered written notice of non-appropriation.

18. CHANGE ORDERS & AMENDMENTS: No changes or amendments to the Contract shall be effective unless documented in writing and signed by authorized representatives of the City and the Contractor. All changes affecting the Project's construction cost, length of time, or modifications of the terms or conditions of the Contract, must be authorized by means of a written Contract Change Order which is mutually agreed to by the City and Contractor. The Contract Change Order will include extra Work, Work for which quantities have been altered from those shown in the Bid Schedule, as well as decreases or increases in the quantities of installed units from those shown in the Bid Schedule because of final measurements. All changes must be recorded on a Contract Change Order (which form is part of these Contract Documents) and fully executed before they can be included in a partial payment estimate. Changes for Work, quantities, and/or conditions will include any respective time adjustment, if justified. Time adjustments will require an updated Project Schedule with the Change Order.

19. 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 Contract. The Contractor may request an extension of time for such delays or hindrances, if any.

Time extensions may 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.

The City may suspend the work or any portion thereof for a period of not more than ninety (90) days at its discretion or such further time as agreed by the Contractor. The Contractor will be allowed an extension of contract time directly attributable to any suspension.

20. PUBLIC HEALTH EMERGENCY:

A. Compliance with Mandates and Guidance: The Contractor is advised that public health emergencies—meaning public health emergencies, as declared by the City, the State of Vermont, or the Federal Government—may introduce significant uncertainty into the project. The Contractor must comply with all local, state, federal orders, directives, regulations, guidance, advisories during a public health emergency. Contractor shall adhere to the below provisions and consider public health emergencies as it develops project schedules and advances the Work.

B. Creation of Public Health Emergency Plan: For any work performed on-site at a City location, the Contractor shall create a public health emergency plan acceptable to the City. The Contractor shall be responsible for following this plan and ensuring that the project or site is stable and in a safe and maintainable condition.

a. **Public Health Emergency Plan:** The Public Health Emergency Plan will contain:

- i. Measures to manage risk and mitigate potential impacts to the health and safety of the public, the City and Contractor's workers;
- ii. Explicit reference to any health and safety performance standards and mandates provided by the City, the State of Vermont, the Federal government, or other relevant governmental entities;
- iii. A schedule for possible updates to the plan as standards and mandates change; and
- iv. Means to adjust the schedule and sequence of work should the emergency change in nature or duration.

b. Review and Acceptance of Plan:

- i. Contractor must provide the plan to the City by the Effective Date of this Contract or by one (1) week prior to the commencement of on-site activities, whichever is later.
- ii. The City shall have sole discretion to require changes to the plan.
- iii. The City may revisit the plan at any time to verify compliance with obligations that arise under a state of emergency.

C. Enforcement & Stoppage of Work: Contractor fails to comply with either 1) the approved public health emergency plan, or 2) any local, state, federal orders, directives, regulations, guidance, or advisories during a public health emergency, the City may stop Work under the Contract until such failure is corrected. Such failure to comply shall constitute a breach of the Contract.

Upon stoppage of work, the City may allow Work to resume, at a time determined by the City, under this Contract if such failure to comply is adequately corrected. The City shall have sole discretion in determining if Contractor has adequately corrected its failure to comply with the above.

If Contractor's breach of Contract has not been cured within seven (7) days after notice to stop Work from the City, then City may terminate this Contract, at its discretion.

D. City Liability Relating to Potential Delays: If a public health emergency is declared, the City will not be responsible for any delays related to the sequence of operations or any expenses or losses incurred as a result of any delays. Any delays related to a public health emergency will be excusable, but will not be compensable.

21. FORCE MAJEURE: Neither Party to this Contract shall be liable to the other for any failure or delay of performance of any obligation under this Contract to the extent the failure or delay is caused by acts of God, public health emergencies, epidemics, acts of the public enemy, acts of superior governmental authority, weather conditions, riots, rebellion, sabotage, or any other circumstances for which it is not responsible or which is not under its control ("Force Majeure"). To assert Force Majeure, the nonperforming party must prove

that a) it made all reasonable efforts to remove, eliminate, or minimize the cause of delay or damage, b) diligently pursued performance of its obligations, c) substantially fulfilled all obligations that could be fulfilled, and d) timely notified the other part of the likelihood or actual occurrence of a Force Majeure event. If any such causes for delay are of such magnitude as to prevent the complete performance of the Contract within two (2) years of the originally scheduled completion date, either Party may by written notice request to amend or terminate the Contract. The suspension of any obligations under this section shall not cause the term of this Contract to be extended and shall not affect any rights accrued under this Contract prior to the occurrence of the Force Majeure. The Party giving notice of the Force Majeure shall also give notice of its cessation.

22. PAYMENT FOR EXTRA WORK, ADDITIONAL SERVICES OR CHANGES: The City may, in writing, require or agree to changes, or additions to or deletions from the originally contemplated 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:

1. 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.
2. Rate Schedule. By unit prices designated in the Contract, or by unit prices covered under any subsequent contracts.
3. 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 for payment shall be valid unless so ordered.

The Contractor agrees to maintain complete and accurate records of all change work, in a form satisfactory to the City. 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 Contract. When changes are so ordered, no additional work shall be performed by the Contractor until a Contract amendment has been fully executed, unless written notice to proceed is issued by the City. Any claim for extension of time that 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.

23. FAILURE TO COMPLY WITH TIME SCHEDULE: If the City is dissatisfied because of slow progress or incompetence in the performance of the Work in accordance with the schedule for completion of the various aspects of construction, the City shall give the Contractor written notice in which the City shall specify in detail the cause of dissatisfaction. Should the Contractor fail or refuse to remedy the matters complained of within five days after the written

notice is received by the Contractor, the City shall have the right to take control of the Work and either make good the deficiencies of the Contractor itself or direct the activities of the Contractor in doing so, employing such additional help as the City deems advisable. In such events, the City shall be entitled to collect from the Contractor any expenses in completing the Work. In addition, the City may withhold from the amount payable to the Contractor an amount approximately equal to any interest lost or charges incurred by the City for each calendar day that the Contractor is in default after the time of completion stipulated in the Contract Documents.

- 24. RETURN OF MATERIALS:** Contractor agrees that at the expiration or termination of this Contract, it shall return to City all materials provided to it during its engagement on behalf of City.
- 25. ACCEPTANCE OF FINAL PAYMENT; RELEASE:** Contractor's acceptance of the final payment shall be a release in full of all claims against the City or its agents arising out of or by reason of the Work. Any payment, however, final or otherwise, shall not release the Contractor or its sureties from any obligations under the Contract Documents or any performance or payment bond.
- 26. 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 Contractor, hereafter referred to as "instruments of professional service", shall become the property of the City as they are prepared and/or developed in the course of the Contract. The Contractor agrees to allow the City access to all "instruments of professional service" at any time. The Contractor shall not copyright any material originating under the Contract without prior written approval of the City. No publications or publicity of the work, in part or in total, shall be made without the express written agreement of the City, except that Contractor may in general terms use previously developed instruments of professional service to describe its abilities for a project in promotional materials.
- 27. PROPRIETARY RIGHTS:** The Parties under the Contract hereby mutually agree that, if patentable discoveries or inventions should result from work performed by the Contractor under the Contract, 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 an irrevocable, nonexclusive, non-transferable, and royalty-free license to the manufacture, use, and disposition of any discovery or invention that may be developed as a part of the Work under the Contract.
- 28. PUBLIC RECORDS:** The Contractor understands that any and all records related to and acquired by the City, whether electronic, paper, or otherwise recorded, are subject to the Vermont Public Records Act and that the determination of how those records must be handled is solely within the purview of City. The Contractor shall identify all records that it considers to be trade secrets as that term is defined by subsection 317(c)(9) of the Vermont Public Records Act and shall also identify all other records it considers to be exempt under the Act. It is not sufficient to merely state generally that the record 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.

29. RECORDS RETENTION AND ACCESS: The Contractor agrees to retain, in its files, and to produce to the City—within the time periods requested—all books, documents, electronic data media (EDM), accounting records, and other records produced or acquired by the Contractor in the performance of this Contract which are related to the City, at any time during this Contract and for a period of at least three (3) years after its completion or termination. In addition, if any audit, claim, or litigation is commenced before the expiration of that three (3) year period, the records shall be retained until all related audits, claims, or litigation are resolved. The Contractor further agrees that the City shall have access to all the above information for the purpose of review and audit during the Contract period and any time within the aforementioned retention period. Copies of all of the above referenced information shall be provided to the City, if requested, in the format in which the records were obtained, created, or maintained, such that their original use and purpose can be achieved. Contractor, subcontractors, or their representatives performing work related to the Contract, are responsible to ensure that all data and information created or stored on EDM is secure and can be duplicated and used if the EDM mechanism is subjected to power outage, obsolescence, or damage.

30. WARRANTY: In addition to any warranty provided by the manufacturer or distributor, Contractor guarantees the Work performed, and all materials or equipment furnished, to be free from defects in material and workmanship for a minimum period of one (1) year from the date of the City's acceptance of completion. The Contractor's warranty is not intended and shall not be interpreted as a limitation upon the City's rights or a waiver of manufacturer and distributor warranties, any subcontractor warranties, or any other warranties provided in connection with the Work.

Contractor, at its own expense, shall make any repairs, or replacement necessary to correct these defects to the satisfaction of the City.

This warranty of material and workmanship applies only:

1. To the property only as long as it remains in the possession of the City.
2. To the Work that has not been subject to accident, misuse, or abuse by someone other than the Contractor.
3. To the Work that has not been modified, altered, defaced, or had repairs made or attempted by someone other than the Contractor.
4. If the Contractor is immediately notified in writing within ten (10) days of first knowledge of the defect by the City.

5. If the Contractor is given the first opportunity to make any repairs, replacements, or corrections to the defective construction at no cost to the City within a reasonable period of time.

Under no circumstances shall Contractor be liable by virtue of this warranty or otherwise for damage to any person or property whatsoever for any special, indirect, secondary or consequential damages of any nature however arising out of the use or inability to use because of the construction defect.

If the Contractor is unable, after receipt of two (2) written notices given to Contractor by the City, to successfully repair or replace the labor, equipment, or materials within six (6) months of the second notice, then the District's repair and replace warranty shall be deemed to have failed and the City's rights and remedies shall not be limited by the provisions of this section.

31. CONTRACT DISPUTES: In the event of a dispute between the parties to this Contract, each party will continue to perform its obligations unless the Contract is terminated in accordance with these terms.

32. SETTLEMENTS OF MISUNDERSTANDINGS: To avoid misunderstandings and litigation, it is mutually agreed by all Parties that the Director shall act as referee on all questions arising under the terms of the Contract and that the decision of the Director in such cases shall be binding upon both Parties.

33. CITY'S OPTION TO TERMINATE: The Contract may be terminated in accordance with the following provisions, which are not exclusive:

A. Termination for Convenience: At any time prior to completion of services specified under the Contract, the City may terminate the Contract for any reason by submitting written notice via certified or registered mail to the Contractor, not less than fifteen (15) days prior to the termination date, 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 and costs of materials obtained in preparation for Work but not yet installed or delivered, 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.

B. Termination for Cause:

- i. Breach: Contractor shall be in default if Contractor fails in any manner to fully perform and carry out each and all conditions of this Contract, including, but

not limited to, Contractor's failure to begin or to prosecute the Work in a timely manner or to make progress as to endanger performance of this Contract; failure to supply a sufficient number of properly skilled employees or a sufficient quantity of materials of proper quality; failure to perform the Work unsatisfactorily as determined by the City; failure to neglect or refuse to remove materials; or in the event of a breach of warranty with respect to any materials, workmanship, or performance guaranty. Contractor will not be in default for any excusable delays as provided in Sections 18-20.

The City may give Contractor written notice of such default. If Contractor does not cure such default or provide a plan to cure such default which is acceptable to the City within the time permitted by the City, then the City may terminate this contract for cause.

- ii. Dishonest Conduct: If Contractor engages in any dishonest conduct related to the performance or administration of this Contract then the City may immediately terminate this contract.
- iii. Cover: In the event the City terminates this contract as provided in this section, the City may procure, upon such terms and in such manner as the City may deem appropriate, services similar in scope and level of effort to those so terminated, and Contractor shall be liable to the City for all of its costs and damages, including, but not limited to, any excess costs for such services, interest, or other charges the City incurs to cover.
- iv. Rights and Remedies Not Exclusive: The rights and remedies of the City provided in this section shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

34. GENERAL COMPLIANCE WITH LAWS: The Contractor and any subcontractor approved under this Contract 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).

- a. **FEDERAL-AID CONSTRUCTION WORK.** The successful Contractor will comply with the provisions of the Davis-Bacon Act (40 U.S.C. §§ 276a to 276a 7), the Copeland Act (40 U.S.C. § 276c and 18 U.S.C. § 874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 327-333), regarding labor standards for federally assisted construction sub agreements.

35. SAFETY REQUIREMENTS: The Contractor shall comply with all pertinent provisions of the Occupational Safety and Health Administration (OSHA) and any VOSHA (Vermont OSHA) Safety and Health requirements, including the provision and use of appropriate safety equipment and practices.

The Contractor, and not the City, shall be responsible for the safety, efficiency, and adequacy of Contractor's or its subcontractors' plant, appliances, equipment, vehicles, and methods, and for any damages, which may result from their failure or their improper construction, maintenance or operation.

36. CIVIL RIGHTS AND EQUAL EMPLOYMENT OPPORTUNITY: During performance of the Contract, the Contractor will not discriminate against any employee or applicant for employment because of religious affiliation, race, color, national origin, place of birth, ancestry, age, sex, sexual orientation, gender identity, marital status, veteran status, disability, HIV positive status, crime victim status, or genetic information. Contractor, and any subcontractors, shall comply with any Federal, State, or local law, statute, regulation, executive order, or rule that applies to it or the services to be provided under this contract concerning equal employment, fair employment practices, affirmative action, or prohibitions on discrimination or harassment in employment.

37. CHILD SUPPORT PAYMENTS: By signing the Contract, the Contractor certifies, as of the date of signing the Contract, that the Contractor (a) is 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 Child Support 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.

38. TAX REQUIREMENTS: By signing the Contract, the Contractor certifies, as required by law under 32 VSA, Section 3113, that under the pains and penalties of perjury, the Contractor 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 Contract.

39. INDEMNIFICATION:

A. Indemnification by Contractor: Except for the gross negligence or willful misconduct by the City, or any of its boards, officers, agents, employees, assigns and successors in interest, contractor undertakes and agrees to defend, indemnify and hold harmless the City and any of its boards, officers, agents, employees, assigns, and Successors in Interest from and against all suits and causes of action, claims, losses, demands and expenses, including, but not limited to, attorney's fees (both in house and outside counsel) and cost of litigation (including all actual litigation costs incurred by the City, including but not limited to, costs of experts and consultants), damages or liability of any nature whatsoever, for death or injury to any person, including Contractor's employees and agents, or damage or destruction of any property of either party hereto or of third parties, arising in any manner by reason of the negligent acts, errors, omissions or willful misconduct incident to the performance of this Contract by Contractor or its subcontractors of any tier.

- B. Notice of Claims & City's Right to Participate: If the City, its officers, agents, or employees are notified of any claims asserted against it to which this indemnification provision may apply, the City shall immediately thereafter notify the Contractor in writing that a claim to which the indemnification provision may apply has been filed. Contractor shall immediately retain counsel and otherwise provide a complete defense against the entire claim or suit. The City retains the right to participate, at its own expense, in the defense of any claim, and to approve all proposed settlements of claims to which this provision applies.
- C. City's Rights and Remedies: Rights and remedies available to the City under this provision are cumulative of those provided for elsewhere in this Contract and those allowed under the laws of the United States and the State of Vermont.
- D. No Indemnification by City: Under no conditions shall the City be obligated to indemnify the Contractor or any third party, nor shall the City be otherwise liable for expenses or reimbursement including attorney's fees, collection costs, or other costs of the Contractor or any third party.

40. NO GIFTS OR GRATUITIES: The Contractor shall not make any payment or gift or donation of substantial value to any elected official, officer, employee, or agent of the City during the term of this Contract.

41. ASSIGNMENT: Contractor shall not sublet or assign this Work, or any part of it, without the written consent of the City. If any subcontractor is approved, Contractor shall be responsible and liable for all acts or omissions of that subcontractor for any Work performed. If any subcontractor is approved, Contractor shall be responsible to ensure that the subcontractor is paid as agreed and that no lien is placed on any City property.

42. TRANSFERS, SUBLETTING, ASSIGNMENTS, ETC: Contractor shall not assign, sublet, or transfer any interest in the work, covered by this Contract, without prior written consent of the City and further, if any subcontractor 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 subcontractor's contract 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 subcontractor as specified in the insurance requirements section of this Contract.

The services of the Contractor, to be performed under the Contract, shall not be transferred without written authorization of the City. Any authorized sub-contracts shall contain all of the same provisions contained in and attached to the original Contract with the City.

43. CONTINUING OBLIGATIONS: The Contractor agrees that if because of death, disability, or other occurrences, it becomes impossible to effectively perform its services in compliance with the Contract, neither the Contractor nor its surviving members shall be relieved of their obligations to complete the Contract unless the City agrees to terminate the Contract because it

determines that the Contractor is unable to satisfactorily execute the Contract.

44. INTERPRETATION & IMPLEMENTATION: Provisions of the Contract shall be interpreted and implemented in a manner consistent with each other and using procedures that will achieve the intent of both Parties.

45. ARM'S LENGTH: This Contract has been negotiated at arm's length, and any ambiguity in any of its terms or provisions shall be interpreted in accordance with the intent of the Parties and not against or in favor of either the City or Contractor.

46. RELATIONSHIP: The Contractor is an independent contractor and shall act in an independent capacity and not as officers or employees of the City. 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. The Contractor shall provide its own tools, materials, or equipment. The Parties agree that neither the Contractor nor its principal(s) or employees are entitled to any employee benefits from the City. Contractor understands and agrees that it and its principal(s) or employees have no right to claim any benefits under the Burlington Employee Retirement System, the City's worker's compensation benefits, health insurance, dental insurance, life insurance, or any other employee benefit plan offered by the 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 the City will not withhold or pay for Social Security, Medicare, or other taxes or benefits or be responsible for any unemployment benefits.

47. CHOICE OF LAW: Vermont law, and rules and regulations issued pursuant thereto, shall be applied in the interpretation, execution, and enforcement of this Contract. Any provision included or incorporated herein by reference which conflicts with said laws, rules, and regulations shall be null and void. Any provision rendered null and void by operation of this provision shall not invalidate the remainder of this Contract to the extent capable of execution.

48. JURISDICTION: All suits or actions related to this Contract shall be filed and proceedings held in the State of Vermont.

49. BINDING EFFECT AND CONTINUITY: This Contract shall be binding upon and shall inure to the benefit of the Parties, their respective heirs, successors, representatives, and assigns. If a dispute arises between the Parties, each Party will continue to perform its obligations under this Contract during the resolution of the dispute, until the Contract is terminated in accordance with its terms.

50. SEVERABILITY: The invalidity or unenforceability of any provision of this Contract or the Contract Documents shall not affect the validity or enforceability of any other provision, which shall remain in full force and effect, provided that the Parties can continue to perform their obligations under this Contract in accordance with the intent of this Contract.

- 51. ENTIRE CONTRACT & AGREEMENT:** This Contract, including the Contract Documents, constitutes the entire Contract, agreement, and understanding of the Parties with respect to the subject matter of this Contract. Prior or contemporaneous additions, deletions, or other changes to this Contract shall not have any force or effect whatsoever, unless embodied herein.
- 52. 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 Contract.
- 53. NO THIRD PARTY BENEFICIARIES:** This Contract does not and is not intended to confer any rights or remedies upon any person or entity other than the Parties. Enforcement of this Contract and all rights and obligations hereunder are reserved solely to the Parties. Any services or benefits which third parties receive as a result of this Contract are incidental to this Contract, and do not create any rights for such third parties.
- 54. WAIVER:** A Party's failure or delay in exercising any right, power, or privilege under this Contract, whether explicit or by lack of enforcement, shall not operate as a waiver, nor shall any single or partial exercise of any right, power, or privilege preclude any other or further exercise of such right, power, or privilege.

APPENDIX M

Department of Parks, Recreation and Waterfront Supplemental Safety Performance Standards for Public Health Emergencies.

1. The Contractor shall abide by any Centers for Disease Control (CDC), World Health Organization (WHO), Vermont Department of Health, VOSHA, and OSHA recommendations or requirements for ensuring public and personal health and safety in regards to Novel Coronavirus (COVID-19). If guidance from the organizations listed above is not met, the City maintains the right to stop any construction work at Contractor's sole expense as needed to ensure the health and safety of the public and workers. The Contractor is responsible for abiding by the most current federal and state standards such as, but not limited to, the following health and safety precautions:
 - a. Adhering to Social Distancing practicing between all individuals, including team members and members of the public, whenever possible.
 - b. Limiting occupancy in any vehicles to ensure adequate space between passengers and where possible limiting to one occupant per vehicle.
 - c. Regularly cleaning and disinfecting shared surfaces, equipment, and shared vehicles in accordance with guidelines from the organizations listed above.
 - d. Providing hand washing abilities for field crews and inspectors,, including adequate soap or alcohol-based hand sanitizer.
 - e. Providing adequate Personal Protective Equipment for crew.
 - f. Ensuring any Portalets provided for the project are adequately able to be locked, cleaned, and stocked with alcohol-based hand sanitizer and/or sink with adequate soap.
 - g. Ensuring any employees who have come in direct contact with someone who has tested positive for COVID-19 are instructed to remain off the work site for 14 days.
 - h. Ensuring any sick employee (Contractor or Subcontractor employed) is instructed to stay home for a minimum of 72 hours until free from any symptoms and without use of any medications.
 - i. If COVID-19 testing is positive, said employee must remain off the job until determined to be fully recovered and no longer contagious. Additionally, any employees in direct contact with said positively tested employee shall be instructed to self-isolate for 14 calendar days.
 - i. Maintaining an accurate and current call sheet for all field based employees so employees may be adequately notified of updates and infections.
2. The safety precautions outlined above should be followed as long as they remain in accordance with the most current guidance from the CDC and other organizations listed in this provision.

Should City, State, or Federal orders be issued to stop work as a result of COVID-19, or the selected Bidder need to request a hold or delay of work due to COVID-19 related illness within the crew, contract extensions will be granted and excusable. Reductions in the Scope of Work may be considered and approved by the Owner if COVID-19 related delays arise for completing the work.

The Contractor and Subcontractors will be required to submit the company health and safety policy that addresses the minimums within this provision. The policy shall be reviewed and approved by the Owner prior to commencing work.

APPENDIX N
Prequalification of Contractors Application – City of Burlington

City of Burlington



Pre-Qualification of Construction Contractors Application

Project Name: _____

Bid Due Date: _____

TO BE FILLED OUT BY CITY OF BURLINGTON ONLY:

Date Received: _____

Date Checked: _____

Checked By: _____

Available for Electronic Mailing

Check List for Required Items:

- ☐ One copy of the questionnaire completed in its entirety.
- ☐ Questionnaire must be completely executed and properly sworn to before a Notary Public.
- ☐ Financial Statements which are compiled, reviewed, or fully-audited must be prepared and certified by an Independent Certified Public Accountant (CPA).
- ☐ Verification of OSHA statement and reported events with the establishment search feature at:
<https://www.osha.gov/oshstats/>
- ☐ State of Vermont Pre-Qualified approved work type documentation, if applicable

Pre-Qualification of Construction Contractors Application

This is an application for pre-qualification of construction contractors for the City of Burlington under Chapter 21 of the Code of Ordinances. The purpose of the application is to solicit information necessary to determine whether a contractor applying for work on a government funded project is a responsible contractor.

1. Policy

It is the policy of the City of Burlington to let contracts for city construction projects only to contractors and subcontractors that demonstrate that they are responsible contractors.

2. Responsible Contractor

Responsible contractors are those contractors and subcontractors who have demonstrated to the city that they are financially responsible, have experience suggesting that they have the ability to perform government projects responsibly, have demonstrated that they are responsible employers, and have demonstrated that they have fair subcontractor relations, or that they perform all work with their own forces.

3. Minimum Contract Amount

This pre-qualification requirement applies to any construction contract by a department, board or council of the City, or those construction projects financed by tax exempt bonds issued by the Burlington Community Development Corporation, in which the total project cost is \$100,000 or more.

4. Contracting Authority

This application is to be delivered to the contracting authority under the schedule determined by that authority as part of the bidding process. The contracting authority is the department, board or council, agency, or entity that is sponsoring the contract on behalf of a government funded project.

5. Proprietary Information

All information submitted by contractors and subcontractors in connection with a pre-qualification application shall be considered proprietary information. The City shall not release the information except as may be required by the Access to Public Records Law, or by court order.

6. Subcontract Work

The pre-qualification requirement does not apply to subcontractors where the total value of the work to be performed is less than \$7,500.

Instructions for Filing the Questionnaire, Financial Statement and Other General Information For Contractors

1. Preparation of Statement:

One copy of the questionnaire is required by the City. It must be completely executed and properly sworn to before a Notary Public. Financial Statements which are compiled, reviewed, or fully-audited must be prepared and certified by an Independent Certified Public Accountant (CPA). A Certified Public Accountant is considered on who, in Vermont, is registered by the State of Vermont Board of Public Accountancy as a CPA. For other states, the City will consider a CPA whose registration qualifications in their state equal those established in Vermont. This questionnaire must be submitted at least five (5) working days before the date of opening bids in order to ensure consideration for pre-qualification for a particular bid opening.

2. Notification of Action Taken:

The City will send in writing to the applicant a notification of its decision. Questionnaires will be considered in the order received and acted upon at all times as promptly as circumstances permit. Contractors duly pre-qualified will be appraised in writing of both the amount and type of work on which they will be eligible to bid.

3. Duration of Pre-Qualification:

The duration of any pre-qualification will not exceed one (1) year and will expire annually three (3) months subsequent to the closing date of the contractors fiscal year, as evidenced in their financial statement.

4. Revision of Pre-Qualification Rating:

Requests for revision of pre-qualification rating will be considered at any time provided credentials showing increased assets, equipment or ability to perform work are submitted. These must be submitted at least five (5) working days prior to a bid opening to receive consideration for that bid opening. Contractors shall also report any substantial increase in liabilities that occurs during the pre-qualification period.

5. Request for Plans, Specifications and Proposal Form:

Contractors having been duly pre-qualified will receive notices from time to time inviting submission of proposals for the contracts to be let on specified dates. A Contractor desiring to receive plans, proposal and specifications for any contract may obtain them upon written request only, utilizing the special form entitled A Standard Form B Request for Proposal and/or Plans. This form is furnished to all pre-qualified contractors by the City and this form must show the status of all work under contract or otherwise executed by the Contractor, both inside and outside the State of Vermont, as of the date of request.

**PRE-QUALIFICATION OF
CONSTRUCTION CONTRACTORS
APPLICATION**

Submitted by _____

Corporation ☐ Partnership ☐ Individual ☐ Other ☐

Mailing Address _____

Location Address _____

Telephone Number _____ Federal ID Number _____

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made.

Notary Signature

Authorized Signature

Date

Date

Experience Questionnaire

How many years has your organization been in business as a general contractor under your resent business name? _____ Under other names? (List)

How many years experience in construction work has your organization had, (a) As a general Contractor, (b) As a Sub-Contractor: _____

Has your organization, or any officer, partner, director or principal individual thereof ever admitted to or been convicted of any criminal violation, including but not limited to discrimination, anti-trust or labor violations, other than traffic offences; or been convicted of or is currently being sued for any civil antitrust violation or other civil suit involving fraud; or been debarred from performing work on any contract?

If so, give full details, including the name of any individual involved and the court and docket number of any civil or criminal actions:

Date of reinstatement _____

2. Is your organization currently debarred from performing work on any contract? YES / NO

If yes, by whom? _____

Date of reinstatement: _____

3. Has your organization ever been denied pre-qualification? YES / NO

If so, by whom and for what reason? _____

4. Have you ever failed to complete any work awarded to you? YES / NO

If so, where and why? _____

5. Has any officer, director or partner of your organization ever been an officer or partner of some other organization that failed to complete a construction contract? YES / NO

If so, state the name of individual, other organization and reason therefore:

6. Has any officer, director or partner of your organization ever failed to complete a construction contract handled in his own name? YES / NO
- _____
- _____
- If so, state name of individual, name of owner and reason therefore: YES / NO
- _____
- _____
7. Has the organization been cited in the past three (3) years for violations of OSHA? YES / NO
- If so, please explain:
- _____
- _____
8. Has the organization currently any outstanding legal action against it by a subcontractor on a current or former job? YES / NO
- If so, please explain:
- _____
- _____
9. List all parents, subsidiaries, affiliates or divisions of your firm, and any related parties included in disclosures in your most recent financial statements or the notes thereto:
- _____
- _____
10. List any of your officers, shareholders or directors that are affiliated with any other contractor and/or supplier:
- _____
- _____
11. Identify all persons having final bidding authority and/or the Chief Estimator:
- _____
- _____
12. Give names and complete addresses of three (3) major material suppliers and/or subcontractors with whom your firm has done business in the past 3 years:
- _____
- _____
- _____
13. List the names and addresses of the following:

Bank:

Amount of Letter of Credit:

Bonding Co. and limit (Please specify per project and aggregate limits):

Bonding Agent:

Liability Insurance:

Name of Carrier:

Limits of Liability:

Worker's Compensation:

Name of Carrier:

14. Does the organization have a company safety program, such as, YES / NO
a currently approved VOSHA plan in place?

If so, briefly describe:

15. List the average wages and benefits paid by the organization over the past year for the skills, trades and job classifications intended to be employed for the contract (s) under consideration in this pre-qualification:

<u>Job Title</u>	<u>Hourly wages</u>	<u>Health Insurance</u>
<u>CARPENTER</u>		
<u>ELECTRICIAN</u>		
<u>PAINTERS</u>		
<u>PIPEFITTERS</u>		
<u>PLUMBERS</u>		
<u>ROOFERS</u>		
<u>POWER EQUIPMENT OPERATORS</u>		
<u>TRUCKER DRIVERS</u>		
<u>LABORERS</u>		
<u>OTHERS</u>		

16. List specific projects which your organization has completed in the last five years (Attach additional sheet if required):

<u>Contract Amount</u>	<u>Type of Work</u>	<u>% of Subcontract</u>	<u>When Completed</u>	<u>Location</u>	<u>Name, Address and Telephone of Owner</u>

17. List all field supervisory personnel and indicate their construction experience:

<u>Name</u>	<u>Present Position or Office</u>	<u>No. of Years With this Firm</u>	<u>Construction Experience</u>	<u>Magnitude and Type of Work</u>	<u>In what Capacity</u>

18. Is your firm pre-qualified by the State of Vermont?

YES / NO

If so, please state rating and type of work qualified to perform:

RATING

TYPE OF WORK

Experience and Work Preference

In the following tabulation indicate the various types of work in which you are experienced and for which you desire to be qualified:

Bridge Construction	_____	Bridge Rehabilitation	_____
Railroad Signals	_____	Roads Culverts	_____
Building Construction	_____	Building Demolition	_____
Surface Rehabilitation	_____	Maintenance	_____
Tank Removal/Replacement	_____	Foundation	_____
Guard Rail, Fencing & Signs	_____	Hazardous Material Removal	_____
Construction &	_____	Landscaping	_____
Rehabilitation	_____	Pavement Markings	_____
Traffic Signals & Lighting	_____	Water & Sewer	_____
Road Construction	_____	Other (as specified)	_____

19. Financial Capability.

The City reserves the right to request additional information if necessary to establish financial capability.

APPENDIX O
City of Burlington Holidays 2022

HUMAN RESOURCES DEPARTMENT
CITY OF BURLINGTON

200 Church Street, Suite 102, Burlington, VT 05401

Phone: (802) 865-7145

Fax (802) 864-1777

Vermont Relay: 7-1-1 or 800-253-0191



CITY OF BURLINGTON HOLIDAYS 2022

New Year's Day (observed)	Friday, December 31, 2021 (<i>actual date, Saturday, January 1st</i>)
Martin Luther King, Jr. Day	Monday, January 17, 2022
Presidents' Day	Monday, February 21, 2022
Town Meeting Day	Tuesday, March 1, 2022
Memorial Day	Monday, May 30, 2022
Independence Day	Monday, July 4, 2022
Bennington Battle Day	Tuesday, August 16, 2022
Labor Day	Monday, September 5, 2022
Indigenous Peoples' Day	Monday, October 10, 2022
Veterans Day	Friday, November 11, 2022
Thanksgiving Day	Thursday, November 24, 2022
Christmas Day (observed)	Monday, December 26 th , 2022 (<i>actual date, Sunday, December 25</i>)

IN ADDITION:

- One Floating Holiday Per Fiscal Year.
- The day after Thanksgiving shall be a Limited Service Day. A Limited Service Day shall be defined as a day that all City offices are open and all City services are provided. Department Heads shall ensure minimum staffing is available to carry out necessary functions. Employees required to work a Limited Service Day shall be entitled to another day off, which shall be taken during the fiscal year in which it is earned or it will be forfeited.

The City of Burlington will not tolerate unlawful harassment or discrimination on the basis of political or religious affiliation, race, color, national origin, place of birth, ancestry, age, sex, sexual orientation, gender identity, marital status, veteran status, disability, HIV positive status, crime victim status or genetic information. The City is also committed to providing proper access to services, facilities, and employment opportunities. For accessibility information or alternative formats, please contact Human Resources Department at (802) 540-2505.



APPENDIX P
Contract Plans

The Contract Plans are included as a separate attachment.

APPENDIX Q

Permits



LAND USE PERMIT AMENDMENT

State of Vermont
Natural Resources Board
District 4 Environmental Commission
111 West Street
Essex Junction, VT 05452
<https://nrb.vermont.gov/>

[phone] 802-879-5614

CASE NO: 4C0051-3

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

LAWS/REGULATIONS INVOLVED

10 V.S.A. §§ 6001 - 6111 (Act 250)

The District 4 Environmental Commission hereby issues Land Use Permit Amendment #4C0051-3, pursuant to the authority vested in it by 10 V.S.A. §§ 6001-6111. This permit amendment applies to the lands identified in Book 205, Page 239; and Book 361, Page 776, of the land records of the City of Burlington, Vermont, as the subject of deeds to the City of Burlington.

This permit specifically authorizes the rehabilitation of the existing multi-use path through Oakledge Park and construction of a new universally accessible playground, path connections, 8 new universally accessible parking spaces, ADA compliant beach access, restroom improvements, landscaping, and lighting upgrades. The project is located on Flynn Avenue in Burlington, Vermont.

Jurisdiction attaches because the Project constitutes a material change to a permitted development or subdivision, and thus requires a permit amendment pursuant to Act 250 Rule 34.

1. The Permittee, and its assigns and successors in interest, is obligated by this permit to complete, operate and maintain the project as approved by the District 4 Environmental Commission (the "Commission") in accordance with the following conditions.
2. The project shall be completed, operated and maintained in accordance with the conditions of this permit and the permit application, plans, and exhibits on file with the Commission and other material representations.

The approved plans are:

"Site Plan for Oakledge Park," dated 12/13/20 (Exhibit #004);
Sheet 18 - "Landscape Layout Plan," dated 4/12/21 (Exhibit #010);
Sheet 26 - "Planting Plan," dated 4/12/21 (Exhibit #012);
Sheet 1 - "VWP Impact Exhibit," dated 5/18/21 (Exhibit #013a);
Sheet 41 - "EPSC Narrative (Sheet 1 of 2)," dated 4/13/21 (Exhibit #014);
Sheet 42 - "EPSC Narrative (Sheet 2 of 2)," dated 4/13/21 (Exhibit #015);
Sheet 43 - "EPSC Details," dated 4/13/21 (Exhibit #016);
Sheet 44 - "EPSC Plans (Sheet 1 of 5)," dated 4/13/21 (Exhibit #017);
Sheet 45 - "EPSC Plans (Sheet 2 of 5)," dated 4/13/21 (Exhibit #018);
Sheet 46 - "EPSC Plans (Sheet 3 of 5)," dated 4/13/21 (Exhibit #019);
Sheet 47 - "EPSC Plans (Sheet 4 of 5)," dated 4/13/21 (Exhibit #020);
Sheet 48 - "EPSC Plans (Sheet 5 of 5)," dated 4/13/21 (Exhibit #021);
Sheet 18 - "Landscape Layout Plan," dated 5/12/21 (Exhibit #024a);
Sheet 20 - "Landscape Layout Plan," dated 4/12/21 (Exhibit #025);
Sheet 32 - "Traffic Sign Summary Sheet," dated 4/13/21 (Exhibit #026);
Sheet 33 - "Sign Detail Sheet," dated 4/13/21 (Exhibit #027);
"Signage for Playground," dated 4/1/21 (Exhibit #028);
Sheet 31 - "Landscape Lighting Plan," dated 5/12/21 (Exhibit #030a);
Sheet 31 - "Lighting Details," dated 4/12/21 (Exhibit #031);
Sheet L1-1 - "Playground Lighting Plan," dated 4/1/21 (Exhibit #032);
Sheet 27 - "Planting Plan," dated 4/9/21 (Exhibit #033);
Sheet 27 - "Landscape Plan," dated 4/12/21 (Exhibit #034);
Sheet L 1-1 - "Materials Plan," dated 8/4/17, last revision 11/20 (Exhibit #035);
Sheet 13 - "Plan and Profile (Sheet 1 of 5)," dated 4/13/21 (Exhibit #037);
Sheet 14 - "Plan and Profile (Sheet 2 of 5)," dated 4/13/21 (Exhibit #038);
Sheet 15 - "Plan and Profile (Sheet 3 of 5)," dated 4/13/21 (Exhibit #039);
Sheet 16 - "Plan and Profile (Sheet 4 of 5)," dated 4/13/21 (Exhibit #040);
Sheet 17 - "Plan and Profile (Sheet 5 of 5)," dated 5/18/21 (Exhibit #041a);

- Sheet 5 - "Typical Sections (1 of 2)," dated 4/13/21 (Exhibit #045);
- Sheet 6 - "Typical Sections (2 of 2)," dated 4/13/21 (Exhibit #046);
- Sheet 21 - "Grading Plan," dated 5/12/21 (Exhibit #047a);
- Sheet L 3-1 - "Grading & Drainage Plan," dated 8/4/17, last revision 11/20 (Exhibit #048);
- "Illustrative Plan," dated 8/4/17, last revision 11/20 (Exhibit #050);
- Sheet 49 - "EPSC Plans (Sheet 5 of 5)," dated 5/18/21 (Exhibit #064);
- Sheet 27 - "Planting Plan," dated 5/12/21 (Exhibit #065); and
- Sheet 27B - "Riparian Planting Plan," dated 5/12/21 (Exhibit #066).
3. All conditions of Land Use Permit #4C0051 and amendments are in full force and effect except as further amended herein.
 4. The Permittee shall comply with all of the conditions of the following Agency of Natural Resources Permits:
 - a. Authorization of Notice of Intent (NOI #7213-9020.5) under Construction General Permit 3-9020 issued on May 18, 2021 by the ANR Watershed Management Division;
 - b. Authorization to Discharge Stormwater #7213-9050 under General Permit 3-9050 (3-Acre General Permit), issued on July 15, 2021 by the ANR Watershed Management Division; and
 - c. Individual Wetland Permit #202-453 issued on June 29, 2021 by the ANR Watershed Management Division.
 5. Any nonmaterial changes to the permits listed in the preceding condition shall be automatically incorporated herein upon issuance by the Agency of Natural Resources.
 6. Representatives of the State of Vermont shall have access to the property covered by this permit, at reasonable times, for the purpose of ascertaining compliance with Vermont environmental and health statutes and regulations and with this permit.
 7. A copy of this permit and plans shall be on the site at all times throughout the construction process.
 8. No change shall be made to the design, operation or use of this project without a permit amendment issued by the Commission or a jurisdictional opinion from the District Coordinator that a permit is not required.
 9. Pursuant to 10 V.S.A. § 8005(c), the Commission or the Natural Resources Board may at any time require that the permit holder file an affidavit certifying that the project is in compliance with the terms of this permit.

10. The conditions of this permit and the land uses permitted herein shall run with the land and are binding upon and enforceable against the Permittee and their successors and assigns.
11. The Permittee shall apply and maintain water and/or other agents approved by the Watershed Management Division in the Project's Erosion Prevention and Control Plan on all roadways or disturbed areas within the project during construction and until pavement and/or vegetation is fully established to control dust.
12. No new floor drains shall be installed without first obtaining a permit or submitting other necessary documentation, as required by the Vermont Department of Environmental Conservation.
13. The Permittee and all subsequent owners or lessees shall install and maintain only low-flow plumbing fixtures in any buildings. Any failed water conservation measures shall be promptly replaced with products of equal or better performance.
14. The Permittee shall comply with Exhibits #001b, 014-021, and 047a-048 (Revised Schedule B; EPSC Narratives and Plans (8); Pause Place Grading; and Playground Grading) for erosion prevention and sediment control. The Permittee shall prevent the transport of any sediment beyond that area necessary for construction approved herein. All erosion prevention and sediment control devices shall be periodically cleaned, replaced, and maintained until vegetation is permanently established on all slopes and disturbed areas.
15. All mulch, siltation dams, water bars and other temporary devices shall be installed immediately upon grading and shall be maintained until all roads are permanently surfaced and all permanent vegetation is established on all slopes and disturbed areas. Topsoil stockpiles shall have the exposed earth completely mulched and have siltation checks around the base.
16. All areas of disturbance must have temporary or permanent stabilization within 14 days of the initial disturbance. After this time, any disturbance in the area must be stabilized at the end of each workday. The following exceptions apply: i) Stabilization is not required if work is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours. ii) Stabilization is not required if the work is occurring in a self-contained excavation (i.e., no outlet) with a depth of 2 feet or greater (e.g., house foundation excavation, utility trenches).
17. All disturbed areas of the site shall be stabilized, seeded, and mulched immediately upon completion of final grading. All disturbed areas not involved in winter construction shall be mulched and seeded before October 15. Between the periods of October 15 to April 15, all earth disturbing work shall conform with the "Requirements for Winter Construction" standards and specifications of the Vermont Department of

Environmental Conservation's *Low Risk Site Handbook for Erosion Prevention and Sediment Control* (February 2020).

18. Prior to construction of the approved work, the Permittee shall: a) clearly delineate the construction limits with flagging or snow fencing; b) place diversion ditches on the uphill limits of the construction area; and c) place temporary siltation controls on the downhill limits of construction.
19. Starting at the commencement of construction, a Professional Engineer or other soil erosion expert approved in writing by the District Commission shall inspect the site at least once per week and at critical times until the project is completed to ensure that the erosion prevention and sediment control plans are being followed. He or she shall certify by submitting a monthly site inspection report to the Commission that all erosion prevention and sediment controls are in place as specified and approved herein, properly maintained, and effective. Any corrective measures noted by the Professional Engineer shall be implemented immediately.
20. In addition to conformance with all erosion prevention and sediment control conditions, the Permittee shall not cause, permit or allow the discharge of waste material into any surface waters. Compliance with the requirements of this condition does not absolve the Permittee from compliance with 10 V.S.A. (§§ 1250-1284) Chapter 47, Vermont's Water Pollution Control Law.
21. The Permittee shall implement the Riparian Planting Plan (Exhibit #066) as part of project construction. Except for the existing and proposed improvements and vegetation management activities described in the Riparian Planting Plan, the Permittee shall maintain an undisturbed, naturally vegetated riparian buffer zone along the stream immediately north of the beach access. The riparian buffer zone shall be measured inland, perpendicular to, and horizontally 50 feet from the top-of-bank or, in areas where a wetland is contiguous to the stream, from the upland edge of the delineated wetland, and extend to the water's edge at base flow conditions. The term "undisturbed" means no activities that may cause or contribute to ground or vegetation disturbance, or soil compaction, including but not limited to construction; earth-moving activities; storage of materials; tree trimming or canopy removal; tree, shrub or groundcover removal; plowing or disposal of snow; grazing; and mowing. Exhibit #061a (May 26, 2021 ANR Supplemental Comments).
22. Any extracted stumps shall be disposed of on-site above the seasonal high water table and not in any wetland, or at a state-certified stump and inert waste disposal facility, so as to prevent groundwater pollution.
23. The Permittee and all assigns and successors in interest shall continually maintain the landscaping as approved in Exhibits #033-035, 065 and 066 (Planting Plans – Austin Drive; Planting Plans- Upper Parking Lot; Playground Landscaping Plan; Planting Plans

- Flynn Intersection; and Riparian Planting Plan) by replacing any dead or diseased plantings within the season or as soon as possible after the ground thaws, whichever is sooner.
24. Prior to any site work, the Permittee shall install and maintain temporary fencing along the tree line and around trees to be retained as depicted on Exhibits #033-035, 065 and 066.
 25. The Permittee shall collect sand under the proposed beach access to a depth of approximately three to six inches prior to construction and shall temporarily stockpile the collected sand during construction. After construction, the Permittee shall redistribute stockpiled sand adjacent to the beach access. Exhibit #061a (May 26, 2021 ANR Supplemental Comments).
 26. The installation of exterior light fixtures is limited to those approved in Exhibits #029-032 (BPRW Lighting Standards; Greenway Lighting Plans (2); and Playground Lighting Plan) and shall be mounted no higher than 14 feet above grade level. All exterior lighting shall be installed or shielded in such a manner as to conceal light sources and reflector surfaces from view beyond the perimeter of the area to be illuminated.
 27. The installation of exterior signage is limited to those approved in Exhibits #023-028 (BPRW Signage Standards; Greenway Signage Plans (4); and Playground Signage Plan). The Permittee shall not erect additional exterior signage without prior written approval from the District Coordinator or the Commission, whichever is appropriate under the Act 250 Rules. Signage includes banners, flags, and other advertising displays, excepting temporary real estate marketing signs and temporary Grand Opening signs.
 28. The Permittee shall provide each prospective purchaser of any interest in this Project a copy of the Land Use Permit Amendment before any written contract of sale is entered into.
 29. Pursuant to 10 V.S.A. § 6090(b)(1), this permit amendment is hereby issued for an indefinite term, as long as there is compliance with the conditions herein. Notwithstanding any other provision herein, this permit shall expire three years from the date of issuance if the Permittee has not commenced construction and made substantial progress toward completion within the three-year period in accordance with 10 V.S.A. § 6091(b).
 30. All site work and construction shall be completed in accordance with the approved plans by **October 1, 2024**, unless an extension of this date is approved in writing by the Commission. Such requests to extend must be filed prior to the deadline and approval may be granted without a public hearing.
 31. Failure to comply with any condition herein may be grounds for permit revocation pursuant to 10 V.S.A. sec. 6027(g).

Dated this 16th day of July, 2021.

By /s/Thomas A. Little
Thomas A. Little, Chair
District 4 Commission

Members participating in this decision:
Monique Gilbert
Pam Loranger

Any party may file a motion to alter with the District Commission within 15 days from the date of this decision, pursuant to Act 250 Rule 31(A).

Any appeal of this decision must be filed with the Superior Court, Environmental Division within 30 days of the date the decision was issued, pursuant to 10 V.S.A. Chapter 220. The Notice of Appeal must comply with the Vermont Rules for Environmental Court Proceedings. The appellant must file with the Notice of Appeal the relevant entry fee required by 32 V.S.A. § 1431.

The appellant must also serve a copy of the Notice of Appeal on the Natural Resources Board, 10 Baldwin Street, Montpelier, VT 05633-3201, and on other parties in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings.

Decisions on minor applications may be appealed only if a hearing was held by the district commission. Please note that there are certain limitations on the right to appeal, including appeals from Administrative Amendments and interlocutory appeals. See 10 V.S.A. § 8504(k), 3 V.S.A. § 815, and Vermont Rule of Appellate Procedure 5.

For additional information on filing appeals, see the Court's website at:
<http://www.vermontjudiciary.org/GTC/environmental/default.aspx> or call (802) 951-1740. The Court's mailing address is: Vermont Superior Court, Environmental Division, 32 Cherry Street, 2nd Floor, Suite 303, Burlington, VT 05401.

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Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Davis 3
Montpelier, VT 05620-3522

Agency of Natural Resources
[phone] 802-828-1115

5/18/2021

Dear Permittee(s),

The Notice of Intent for the discharge of stormwater runoff from Moderate Risk Construction Activity under Construction General Permit (CGP) 3-9020 (March 19, 2020) has been authorized. You will need the following documents to maintain compliance with this authorization. Enclosed with this cover letter is your **Authorization to Discharge under General Permit 3-9020** and a copy of the **Notice of Authorization** that you must post at your construction site. In addition, any additional Owners and Operators that were not identified on the Notice of Intent at the time of application must file a **Notice of Addition of Co-Permittee**. See below for more details on these and other permit requirements.

1. **Authorization to Discharge under General Permit 3-9020**

The authorization for Moderate Risk Construction Activity is valid for five years from the date of the authorization. If the project will proceed past the expiration date, you must reapply for coverage under this or another construction stormwater permit before that time. If the project is completed or is sold before that time, you may terminate the authorization by submitting a Notice of Termination, subject to Subpart 7.4 of CGP 3-9020. Any proposed project changes must be first evaluated in accordance with the terms, conditions, and eligibility provisions set forth in Part 5 of CGP 3-9020.

2. **Notice of Authorization for Posting**

The Notice of Authorization, which details the authorization and conditions you selected in completing Appendix A to the CGP, must be posted in a location visible to the public in accordance with Subpart 3.6 of the CGP.

3. **Notice of Addition of Co-Permittee**

This form must be submitted for every additional Owner and/or Operator who joins the project, in accordance with Subpart 7.3 of the CGP. Use ANR Online to file all Notice of Additions. ANR Online can be accessed using the following link: <https://anronline.vermont.gov>. Instructions on creating an account are available on the main page.

4. **Turbidity Monitoring Guidance**

Construction General Permit 3-9020 requires the designation of an On-Site Plan Coordinator to oversee and monitor Erosion Prevention and Sediment Control (EPSC) Plan implementation and to also inspect and monitor discharges from Moderate Risk construction sites for turbidity. Parts 4 and 6 of CGP 3-9020 detail these requirements.

5. **On-Site Plan Coordinator Manual**

This [manual](#) provides a summary of the inspection and record-keeping requirements for your project, a copy of the permit, as well as all forms that might be needed throughout the project. This manual can be provided to the On-Site Plan Coordinator to ensure compliance with the authorization under the Construction General Permit 3-9020 and related inspection, monitoring, and record-keeping requirements. Records must be available for review by DEC representatives during site inspections.

The CGP, copies of pertinent forms, and an electronic version of the Low Risk Site Handbook for Erosion Prevention and Sediment Control are available on the [Stormwater Program](#) website. If you have any questions related to your authorization, please contact the Environmental Analyst in the [Stormwater District](#) where your project is located.

Sincerely,
Stormwater Management Program

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**VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AUTHORIZATION TO DISCHARGE UNDER
GENERAL PERMIT 3-9020**

A determination has been made that the applicant(s) (here in after "permittee"):

City of Burlington
645 Pine Street, Suite B
Burlington, VT 05401

meets the criteria necessary for inclusion under General Permit 3-9020 for moderate risk construction activities. Subject to the conditions and eligibility provisions of General Permit 3-9020, the permittee is authorized to discharge stormwater to Lake Champlain from the following construction activities: Work to be performed includes removal of the existing path pavement; the widening and repaving of the path; relocating a portion of the path; installation of pavement markings, signs, and concrete sidewalk ramps; the reconfiguration of the path at the Flynn Avenue intersection, and other incidental items The project is located at Oakledge Park, Burlington, Vermont in Burlington, Vermont.

1. **Effective Date and Expiration Date of this Authorization:** This authorization to discharge shall become effective on May 18, 2021 and shall continue until May 17, 2026. The permittee shall reapply for coverage at least 60 days prior to expiration if the project has not achieved final stabilization or if construction activities are expected after the date of expiration.

2. **Compliance with General Permit 3-9020 and this Authorization:** The permittee shall comply with this authorization and all the terms, conditions, and eligibility provisions of General Permit 3-9020. The completed Notice of Intent (NOI) and Appendix A completed for this project are incorporated by reference into this authorization and are included in the terms of this authorization. These terms include:
 - **Implementation of the authorized site-specific Erosion Prevention and Sediment Control (EPSC) Plan** as prepared by: VHB, Inc.
 - Sheet 1, "Title Sheet", dated 04/05/2021, last revised 04/02/2021;
 - Sheet 2, "Conventional Symbolology Legend Sheet", dated 04/05/2021, last revised 12/02/2019;
 - Sheet 3, "EPSC Narrative (Sheet 1 of 2)", dated 04/02/2021, last revised 04/05/2021;
 - Sheet 4, "EPSC Narrative (Sheet 2 of 2)", dated 04/02/2021, last revised 04/05/2021;
 - Sheet 5, "EPSC Details Sheet", dated 04/05/2021, last revised 03/30/2021;
 - Sheet 6, "EPSC Exist. Conditions Plan Sheet (1 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 7, "EPSC Exist. Conditions Plan Sheet (2 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 8, "EPSC Exist. Conditions Plan Sheet (3 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 9, "EPSC Exist. Conditions Plan Sheet (4 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 10, "EPSC Exist. Conditions Plan Sheet (5 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 11, "EPSC Plan Sheet (1 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 12, "EPSC Plan Sheet (2 of 5)", dated 04/05/2021, last revised 04/30/2021;
 - Sheet 13, "EPSC Plan Sheet (3 of 5)", dated 04/05/2021, last revised 04/30/2021;
 - Sheet 14, "EPSC Plan Sheet (4 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 15, "EPSC Plan Sheet (5 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 16, "EPSC Final Conditions Plan Sheet (1 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 17, "EPSC Final Conditions Plan Sheet (2 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 18, "EPSC Final Conditions Plan Sheet (3 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 19, "EPSC Final Conditions Plan Sheet (4 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 20, "EPSC Final Conditions Plan Sheet (5 of 5)", dated 04/05/2021, last revised 04/05/2021; and all supporting information.

- All areas of disturbance must have temporary or final stabilization within 14 days of the initial disturbance. After this time, disturbed areas must be temporarily or permanently stabilized in advance of any runoff producing event. A runoff producing event is an event that produces runoff from the construction site. The following exception to the above stabilization requirements apply:
 - Temporary stabilization is not required if work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches). Areas of a construction site that drain to sediment basins are not considered eligible for this exemption and the exemption applies only to the excavated area itself.
- The total authorized disturbance is 4.23 acre(s).
- No more than 2 acres of land may be disturbed at any one time.
- Inspections shall be conducted at least once every (7) calendar days and within twenty-four (24) hours of the end of a storm event resulting in discharge of stormwater from construction site.
- If visibly discolored stormwater runs off the construction site or discharges to waters of the State, the permittee shall take immediate corrective action to inspect and maintain existing best management practices (BMPs), and to install supplemental BMPs necessary to minimize and prevent the discharge.
- If, after completing corrective action, there continues to be a discharge of discolored stormwater from the construction site to waters of the State, the permittee shall notify DEC by submitting a Discharge Report within 24 hours of discovering the discharge.
- The On-site Plan Coordinator shall have a copy of the approved EPSC Plan and all amendments available at a central location on-site for the use of all those identified as having responsibilities under this authorization whenever they are on the construction site. If an on-site location is unavailable to store the EPSC Plan when no personnel are present, notice of the EPSC plan's location shall be posted near the main entrance at the construction site.

3. Transferability and Addition of Co-Permittee: This authorization to discharge is not transferable to any person, nor may any person be added as a permittee, except in compliance with General Permit 3-9020 including submission of a complete Notice of Transfer or Notice of Addition of Co-Permittee.
4. Following receipt of authorization under General Permit 3-9020, additional Owner(s) and Operator(s) not identified on the Notice of Intent at the time of application shall be added as a co-permittee by filing a Notice of Addition of Co-Permittee with the Secretary. The co-permittee shall be subject to all terms and conditions of the permittee's authorization and Construction General Permit 3-9020.

5. Right to Appeal:

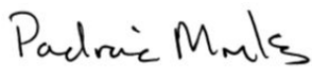
(A) Pursuant to 10 V.S.A. Chapter 220, any appeal of this permit, except for appeal of a renewable energy plant as described in (B), must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The notice of appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the notice of appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings.

(B) If this permit relates to a renewable energy plant for which a certificate of public good is required under 30 V.S.A. § 248, any appeal of this decision must be filed with the Vermont Public Utility Commission pursuant to 10 V.S.A. § 8506. This section does not apply to a facility that is subject to 10 V.S.A. § 1004 (dams before the Federal Energy Regulatory Commission), 10 V.S.A. § 1006 (certification of hydroelectric projects), or 10 V.S.A. Chapter 43 (dams). Any appeal under this section must be filed with the clerk of the Public Utility Commission within 30 days of the date of this decision; the appellant must file with the clerk an

original and six copies of its appeal. The appellant shall provide notice of the filing of an appeal in accordance with 10 V.S.A. § 8504(c)(2) and shall also serve a copy of the notice of appeal on the Vermont Public Service Department. For further information, see the Rules and General Orders of the Public Utility Commission.

Dated May 18, 2021

Peter Walke, Commissioner
Department of Environmental Conservation

By: 

Padraic Monks, Stormwater Program Manager

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

**Permittee Directions for Posting:**

This notice shall be placed near the construction entrance at a location visible to the public. If displaying near the main entrance is infeasible, the notice shall be posted in a local public building such as the town hall or public library. For linear projects, the notice shall be posted at a publicly accessible location near the active part of the construction project (e.g., where a pipeline project crosses a public road).

Project Name:	Burlington Bike Path Phase 3B South
Permittee Name(s):	City of Burlington
NOI Number:	7213-9020.5
Date of Authorization:	May 18, 2021
Date of Expiration:	May 17, 2026
The project listed above has received authorization under General Permit 3-9020 to discharge stormwater from the following construction activities:	
Work to be performed includes removal of the existing path pavement; the widening and repaving of the path; relocating a portion of the path; installation of pavement markings, signs, and concrete sidewalk ramps; the reconfiguration of the path at the Flynn Avenue intersection, and other incidental items	

This authorization includes the following requirements:

- Implementation of the authorized site-specific Erosion Prevention and Sediment Control (EPSC) Plan as prepared by: VHB, Inc.
 - Sheet 1, "Title Sheet", dated 04/05/2021, last revised 04/02/2021;
 - Sheet 2, "Conventional Symbolology Legend Sheet", dated 04/05/2021, last revised 12/02/2019;
 - Sheet 3, "EPSC Narrative (Sheet 1 of 2)", dated 04/02/2021, last revised 04/05/2021;
 - Sheet 4, "EPSC Narrative (Sheet 2 of 2)", dated 04/02/2021, last revised 04/05/2021;
 - Sheet 5, "EPSC Details Sheet", dated 04/05/2021, last revised 03/30/2021;
 - Sheet 6, "EPSC Exist. Conditions Plan Sheet (1 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 7, "EPSC Exist. Conditions Plan Sheet (2 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 8, "EPSC Exist. Conditions Plan Sheet (3 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 9, "EPSC Exist. Conditions Plan Sheet (4 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 10, "EPSC Exist. Conditions Plan Sheet (5 of 5)", dated 04/05/2021, last revised 02/25/2021;
 - Sheet 11, "EPSC Plan Sheet (1 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 12, "EPSC Plan Sheet (2 of 5)", dated 04/05/2021, last revised 04/30/2021;
 - Sheet 13, "EPSC Plan Sheet (3 of 5)", dated 04/05/2021, last revised 04/30/2021;
 - Sheet 14, "EPSC Plan Sheet (4 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 15, "EPSC Plan Sheet (5 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 16, "EPSC Final Conditions Plan Sheet (1 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 17, "EPSC Final Conditions Plan Sheet (2 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 18, "EPSC Final Conditions Plan Sheet (3 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 19, "EPSC Final Conditions Plan Sheet (4 of 5)", dated 04/05/2021, last revised 04/05/2021;
 - Sheet 20, "EPSC Final Conditions Plan Sheet (5 of 5)", dated 04/05/2021, last revised 04/05/2021; and all supporting information.
- All areas of disturbance must have temporary or final stabilization within 14 days of the initial disturbance. After this time, disturbed areas must be temporarily or permanently stabilized in advance of any runoff producing event. A runoff producing event is an event that produces runoff from the construction site. The following exception to the above stabilization requirements apply:
 - Temporary stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of two feet or greater (e.g. house foundation excavation, utility trenches). Areas of a construction site that drain to sediment basins are not considered eligible for this exemption and the exemption applies only to the excavated area itself.
- The total authorized disturbance is 4.23 acre(s).
- No more than 2 acres of land may be disturbed at any one time.
- Inspections shall be conducted at least once every (7) calendar days and daily during the winter construction period

(October 15 through April 15), for all areas that have been disturbed and are not yet finally stabilized. In addition:

- If visibly discolored stormwater runs off the construction site or discharges to waters of the State, the permittee shall take immediate corrective action to inspect and maintain existing best management practices (BMPs), and to install supplemental BMPs necessary to minimize and prevent the discharge.
- If, after completing corrective action, there continues to be a discharge of sediment from the construction site to waters of the State, the permittee shall notify DEC by submitting a Discharge Report within 24 hours of discovering the discharge.
 - The On-site Plan Coordinator shall have a copy of the approved EPSC Plan and all amendments available at a central location on-site for the use of all those identified as having responsibilities under this authorization whenever they are on the construction site. If an on-site location is unavailable to store the EPSC Plan when no personnel are present, notice of the EPSC plan's location shall be posted near the main entrance at the construction site.
- The permittee shall comply with all inspection, maintenance, corrective action, record keeping, and reporting requirements, and all other terms, conditions, and eligibility provisions, including those conditions related to project changes, as set forth in General Permit 3-9020 and this authorization.

To request information on this authorization, or to report compliance concerns, please contact:

Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Davis 3
Montpelier, VT 05620

<https://dec.vermont.gov/watershed>