



**Request for Proposals  
North & East Wastewater Treatment Plant  
Fire Alarm Systems Upgrade**

**Department of Public Works Water Resources Division  
53 Lavalley Lane  
Burlington, VT 05401**

**Date of Issuance:**  
October 20, 2021

**Non-Mandatory Pre-Proposal Site Visit:**  
November 3, 2021

**Due Date:**  
November 10, 2021

**Contact:**  
Michael V. Schramm, PE  
Project Manager  
Water Resources Division  
Department of Public Works  
[mschramm@burlingtonvt.gov](mailto:mschramm@burlingtonvt.gov)

**Request for Proposals (“RFP”)  
North & East Wastewater Treatment Plant  
Fire Alarm Systems Upgrade**

Department of Public Works Water Resources Division  
53 Lavalley Lane  
Burlington, VT 05401

**I. OVERVIEW AND BACKGROUND**

The City of Burlington (“City”) is seeking proposals from qualified contracting firms for “design-build” services relating to the upgrade of the existing North Wastewater Treatment Plant (“WWTP”) and East WWTP Fire Alarm Systems. Design–build is a project delivery system used to deliver a project in which the design and construction services are contracted by a single entity. Qualified firms will possess technical expertise, management and staffing capabilities, references, and related prior experience to complete the projects described in this Request for Proposals (“RFP”). Responding firms will also be required to demonstrate professional services which include, but not limited to, design, installation, start-up and testing of new intelligent reporting, microprocessor-controlled fire detection and notification systems in accordance with the attached technical specification (Exhibit A. Specification Section 13850 – Fire Alarm System) and all applicable local, State and Federal regulations. The selected Contractor shall have 105 contract days to complete the project.

The Burlington Department of Public Works – Water Resources Division (“DPW-WRD”) is seeking proposals for the upgrade of the existing fire alarm systems at the North WWTP, located at 3074 North Avenue and the East WWTP, located at 267 Riverside Avenue. The existing fire alarm system at the North WWTP was manufactured by FCI and has been in service since approximately 1992. The existing fire alarm system at the East WWTP was manufactured by Simplex and has been in service since approximately 1992. Both existing fire alarm systems have reached the end of their reliable service life. The City is seeking to replace the existing fire alarm systems to provide for ongoing, reliable, and contemporary fire alarm protection at the critical treatment facilities (including all applicable buildings and structures at each facility). Both the North WWTP and East WWTP fire alarm systems shall be upgraded with Gamewell-FCI S3 Series Small Addressable Fire Alarm System in accordance with the attached technical specification (Exhibit A. Specification Section 13850 – Fire Alarm System).

Specifically, the City is seeking a qualified firm with the following expertise:

1. Capacity, knowledge, experience and ability to design and install new fire detection and notification systems.
2. Experience in successful implementation of providing design-build services for fire alarm systems.
3. Experience in successful installation, start-up and testing of fire alarm systems.

Prequalification of Construction Contractors applies to this project per City Ordinance. **Contractors are required to have a completed application (Exhibit I) submitted prior to the proposal due date.**

## **II. SCOPE OF WORK**

The City is seeking proposals from qualified firms to provide and perform the following services:

### **(1) Design.**

- a) Review the number and location of existing Fire Alarm System devices and confirm that such quantity and locations are compliant with all applicable governing regulations. Note previously classified hazardous locations, as identified on the legacy Design Drawings (Exhibit B. North WWTP – Existing Electrical Drawings and Exhibit C. East WWTP – Existing Electrical Drawings).
- b) Identify all changes in the number and location of Fire Alarm System devices that are required to achieve a fully compliant Fire Alarm System.
- c) Furnish, install and/or relocate any Fire Alarm System devices to achieve a fully compliant Fire Alarm System including, but not limited to, fire alarm pulls to achieve American Disability Act (ADA) compliance (see Exhibit D. North WWTP – Existing Fire Alarm System Device Tabulation and Exhibit E. East WWTP – Existing Fire Alarm System Device Tabulation).
- d) Review the requirement for fire alarm and detection system devices in the basement of the valve house at the North WWTP. Upgrade or eliminate system devices as appropriate.
- e) Select specific replacement Fire Alarm System devices including, but not limited to; detectors, modules, switches, pull stations, horns and strobes. A listing of acceptable devices is provided within the referenced technical specification (Exhibit A. Specification Section 13850 – Fire Alarm System).
- f) Confirm that all selected devices are appropriate for the intended installed purpose and shall result in a fully compliant Fire Alarm System.
- g) Identify and complete all necessary project permitting requirements through the Burlington Fire Marshall's Office. DPW-WR will pay all applicable permit fees. Per Vermont Fire and Building Safety Code requirements, the minimum qualification for stamped/approved submittals is a NICET Level 3 fire alarm designer.
- h) Provide carbon monoxide (CO) detection at both North & East WWTPs. Coordinate with City and Fire Marshall's Office to determine location and extent of CO detection at both facilities.

- (2) Procurement and installation.** Procurement and installation of the complete Fire Alarm System upgrades and all necessary appurtenances. This includes, but not limited to; mobilization, demobilization, dismantling, insurance, overhead, profit, bonds, storage, phasing of work, delivery, taxes, installation, documentation, record keeping, invoicing and management.

- (3) **Startup & Testing.** Provide all necessary equipment startup, testing and commissioning services to ensure that the project operates as intended. Provide service of competent, factory-trained technician authorized by manufacturer to technically supervise and participate during pre-testing and acceptance testing of upgraded systems.
- (4) **Bonds.** Contractor shall provide payment/performance bonds for the project.
- (5) **Warranty.** Provide comprehensive one (1) year warranty on all project work from date of final acceptance by City. Provide additional one (1) year warranty on any and all repair work provided during the original one (1) year project warranty period. Documentation of warranty shall be provided by the Contractor in hardcopy on company letterhead to the City at the time of Project Substantial Completion.
- (6) **Coordination.** Coordinate as necessary with the Authority Having Jurisdiction over the Fire Alarm System upgrades on all relevant design, procurement, installation and testing issues.

### **III. RESPONSE FORMAT**

- (1) **Proposal Format.** Qualified firms interested in being considered for this project must submit a proposal that reflects their ability to provide the requested services. All proposals should be clear, concise, and allow the City to efficiently evaluate the qualifications of the submitting firm. All proposals must be submitted electronically and contain the following components:
  - 1) Both non-price and price proposal components.
  - 2) A letter of interest signed by the contact representative for the participating firm with the name, physical address, email address and telephone number of the submitting firm with a subject line titled: "North & East WWTP Fire Alarm Systems Upgrade Proposal"
- (2) **Non-Price Proposal (Statement of Qualifications) Requirements.** The non-price proposal submittal should contain a narrative that best represents the respondent firm's qualifications to provide the identified technical services to meet the City's goals to upgrade the Fire Alarm Systems at the North & East WWTPs through a formal design-build process. The non-price proposal submittal **must** include:
  - 1) A detailed statement of qualifications of the participating firm including related prior experience.
  - 2) A list of the individuals who would be assigned to provide the services, and a description of the expected duties, technical capacity and experience of those individuals who will be involved with the project.
  - 3) Examples of the firm's experience on a minimum of three (3) similar design-build projects with reference contact information provided for each (please include contact name, physical address, email address and phone number). Note the specific proposed

team members who worked on the identified projects. Any previous work for the City of Burlington should be identified. Similarly, respondent firms that are registered Gamewell-FCI Elite distributors and/or installers should identify such.

- 4) A draft timeline for completing project design, permitting, installation, startup and testing. Including a general description of the firm's ability to provide the skills required for the work.

**(3) Price Proposal Requirements.** A table identifying proposed labor-hours and associated labor rates, proposed equipment costs including all necessary appurtenances to provide the City with fully compliant Fire Alarm Systems at the North & East WWTPs (including all applicable buildings and structures at each facility), and all other costs including overhead, profit, insurance, etc. shall be provided. The price proposal shall be included within a separate section of the overall proposal document and shall follow the non-price proposal section.

A non-mandatory pre-proposal site visit to the City's North & East WWTPs will be held at **10:00AM on November 3, 2021**. Site visit attendees will meet at the North WWTP, located at 3074 North Avenue to start, followed by a walkthrough of the East WWTP (267 Riverside Avenue).

#### **IV. CONTRACTOR SELECTION**

During the evaluation process, the City reserves the right, where it may serve the City's best interest, to request additional information or clarifications. The City reserves the exclusive right to select or reject a firm that it deems to be in its best interest to do so. The award of this project will not be based on the price proposal alone. The City will award the project to the most advantageous proposal from a responsible and responsive offeror taking into consideration both the non-price and price proposals provided. The City reserve the right to accept the proposal of the City's choosing, which may or may not be the lowest price. All proposals shall be in full compliance with all applicable requirements of Federal, State and local laws. The City reserves the right to further negotiate the price proposal.

No proposal will be considered accepted until all necessary City authorizations, including those required by Board of Finance and City Council if necessary, have been received and an agreement is executed by both parties.

#### **V. SUBMISSIONS**

**(1) Pre-Proposal Site Visit.** A non-mandatory pre-proposal site visit to the City's North & East WWTPs will be held at **10:00AM on November 3, 2021**. Site visit attendees will meet at the North WWTP, located at 3074 North Avenue to start, followed by a walkthrough of the East WWTP (267 Riverside Avenue).

**(2) Deadline for Receipt of Proposals.** Proposals must be received by the point of contact no later than **3:00PM on November 10, 2021**. Late replies will not be accepted under

any circumstances. Proposals (non-price and price proposal components) must be submitted by **e-mail** in a common PDF file with pages numbered to:

Michael V. Schramm, PE  
Project Manager  
Water Resources Division  
mschramm@burlingtonvt.gov

The subject line of the e-mail should state: “North & East WWTP Fire Alarm Systems Upgrade Proposal”. It is the responsibility of the participating firm to ensure that the point of contact has received a complete proposal by the required deadline. Proposals should be a maximum of ten (10) pages.

**(3) Questions.** Questions and requests for clarification relating to this Request for Proposal may be made to:

Michael V. Schramm, PE  
Project Manager  
Water Resources Division  
mschramm@burlingtonvt.gov

Only e-mail communications will be accepted. All questions and requests for clarification must be received by **11:00AM on November 4, 2021**. Answers will be posted via addendum online at the RFP site (<https://www.burlingtonvt.gov/RFP>).

## **VI. CONTRACTING**

The Contractor, prior to being awarded a contract, shall apply for registration with the Vermont Secretary of State's Office to do business in the State of Vermont, if not already so registered. The registration form may be obtained from the Vermont Secretary of State, 128 State Street, Montpelier, VT 05633-1101, PH: 802-828-2363, Toll-free: 800-439-8683; Vermont Relay Service – 711; web site: <https://www.sec.state.vt.us/>. The contract will not be executed until the Contractor is registered with the Secretary of State's Office. The successful Contractor will be expected to execute sub-agreements for each sub-Contractor named in the proposal upon award of this contract.

Prior to beginning any work, the Contractor shall obtain Insurance Coverage in accordance with the Burlington Contractor Conditions (Exhibit G). The certificate of insurance coverage shall be documented on forms acceptable to the City.

Prequalification of Construction Contractors applies to this project per City Ordinance. **Contractors are required to have a completed application (Exhibit I) submitted prior to the proposal due date.**

If the award of the contract aggrieves any firms, they must appeal in writing to the City. The appeal must be post-marked within seven (7) calendar days following the date of written notice to award the contract.

## **VII. AGREEMENT REQUIREMENTS**

The selected Contractor will be required to execute a contract with the City on the terms and conditions required by the City, including but not limited to those in the Burlington Contractor Conditions (Exhibit G) and the attached Draft Agreement (Exhibit F).

## **VIII. LIMITATIONS OF LIABILITY**

The City assumes no responsibility or liability for costs incurred by parties responding to this Request for Proposals, or responding to any further requests for interviews, additional data, etc., prior to the issuance of the contract.

## **IX. COSTS ASSOCIATED WITH PROPOSAL**

Any costs incurred by any person or entity in preparing, submitting, or presenting a proposal are the sole responsibility of that person or entity. The City will not reimburse any person or entity for any costs incurred.

## **X. INDEMNIFICATION**

Any party responding to this Request for Proposals is acting in an independent capacity and not as an officer or employee of the City. Any party responding to this Request for Proposals will be required to indemnify, defend, and hold harmless the City, its officers, and employees from all liability and any claims, suits, expenses, losses, judgments, and damages arising as a result of the responding party's acts and/or omissions in or related to the submission of the response.

## **XI. REJECTION OF PROPOSALS**

The City reserves the right to reject any or all proposals, to negotiate with one or more parties, or to award the contract to the proposal the City deems will meet its best interests, even if that proposal is not the lowest bid. The City reserves the right to re-advertise for additional proposals and to extend the deadline for submission of the proposals. This Request for Proposals in no way obligates the City to award a contract.

## **XII. OWNERSHIP OF DOCUMENTS**

Any materials submitted to the City in response to this Request for Proposals shall become the property of the City unless another arrangement is made by written agreement between the City and the responding party. The responding party may retain copies of the original documents.

## **XIII. DUTY TO INFORM CITY OF BID DOCUMENT ERRORS**

If a bidder knows, suspects, or has reasonable cause to believe, that an error or omission exists in any of the bid documents, including but not limited to unit prices and rate calculations, the bidder shall immediately give the City written notice thereof. Contractors shall not cause or permit any work to be conducted that may relate to the error or omission without first receiving written

acknowledgment from the City that City representatives understand the possible error or omission and have approved the requested modifications to the bid or contract documents or that the Contractor may proceed without any modification being made to the bid or contract documents.

#### **XIV. PUBLIC RECORDS**

Any and all records submitted to the City, whether electronic, paper, or otherwise recorded, are subject to the Vermont Public Records Act. The determination of how those records must be handled is solely within the purview of City. All records the responding party considers to be trade secrets, as that term is defined by subsection 317(c)(9) of the Vermont Public Records Act, or that the responding party otherwise seeks to have the City consider as exempt must be identified clearly and specifically at the time of submission. It is not sufficient to merely state generally that a proposal is proprietary, contains a trade secret, or is otherwise exempt. Particular records, pages, and sections 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.

#### **XV. PUBLIC HEALTH EMERGENCIES**

Bidders are advised that public health emergencies, as declared by the City, the State of Vermont, or the Federal Government, including the current pandemic of Novel Coronavirus (COVID-19), may introduce significant uncertainty into the project, including disruption of timelines or revised practices. Contractors shall consider public health emergencies as they develop project schedules and advance the work.

For any work performed on-site at a City location, the City may require a public health emergency plan be submitted by the Contractor. This plan will contain:

- 1) Measures to manage risk and ensure that potential impacts to safety and mobility are mitigated in accordance with health and safety standards and guidelines proposed by local, state, and federal agencies (see attached Standard Contract Conditions);
- 2) A schedule for possible updates to the plan in advance of the start of work (see attached Standard Contract Conditions); and
- 3) Means to adjust the schedule and sequence of work should the emergency change in nature or duration.

The City will have sole discretion to approve, deny, or require changes to this plan as a condition of consideration of the bid, will retain the right to inspect all work to ensure compliance with health and safety standards, and may at any time require the Contractor to stop work because of the emergency.

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 public emergencies, including the current pandemic of Novel Coronavirus (COVID-19), will be excusable, but will not be compensable.

**XVI. EXHIBITS:**

NOTE: The attached North & East WWTP drawings are legacy Design Drawings and are not to be considered Record Drawings. The accuracy of the referenced drawings has not been confirmed by the City. The location of existing Fire Alarm System devices shall be verified by the Contractor prior to performing work. The attached North & East WWTP drawings are a subset of the legacy Design Drawings that the City has on file for these two facilities. Interested bidders may review additional North & East WWTP legacy drawings (hardcopy) upon request.

- **Exhibit A. Specification Section 13850 – Fire Alarm System**
- **Exhibit B. North WWTP – Existing Electrical Drawings (400, 401, 402, 403, 405, 406A, 411, 412, 413 and 414)**
- **Exhibit C. East WWTP – Existing Electrical Drawings (400, 401, 405, 406A, 409, 410, 412, 413 and 414)**
- **Exhibit D. North WWTP – Existing Fire Alarm System Device Tabulation**
- **Exhibit E. East WWTP – Existing Fire Alarm System Device Tabulation**
- **Exhibit F. City of Burlington Draft Contractor Contract**
- **Exhibit G. Burlington Standard Contract Conditions for Contractors**
- **Exhibit H. City of Burlington Livable Wage, Outsourcing and Union Deterrence Ordinances with required Compliance Certificates**
- **Exhibit I. City of Burlington Pre-Qualification of Construction Contractors Application**

Note:

1. Exhibit H Ordinance Compliance Certificates shall be required of the selected firms prior to contract execution and do not need to be provided within proposal.
2. Bid documents include this main body of the request for proposals and all exhibits.

\*\*\*\*\* End of Request for Proposals \*\*\*\*\*

**Exhibit A**  
**Specification Section 13850 – Fire Alarm System**

## EXHIBIT A

### **SECTION 13850 FIRE ALARM SYSTEM**

#### **PART 1 GENERAL**

##### **1.0 SCOPE OF WORK**

- A. Upgrade the Fire Alarm Control System at the North Wastewater Treatment Plant (including all applicable buildings and structures), located at 3074 North Avenue and the East Wastewater Treatment Plant (including all applicable buildings and structures), located at 267 Riverside Avenue, including the design, procurement, installation, start-up, testing and warranty of a new intelligent reporting, microprocessor-controlled fire detection and notification system in accordance with all applicable local, State and Federal regulations and as indicated within these Specifications.
- B. Contractor shall be responsible for reviewing the number and location of existing Fire Alarm System devices and shall confirm that such quantity and locations are compliant with all applicable governing regulations. Contractor shall identify any and all changes in the number and location of Fire Alarm System devices that are required to achieve a fully compliant Fire Alarm System.
- C. Contractor shall be responsible for selecting specific replacement Fire Alarm System devices including, but not limited to; detectors, modules, switches, pull stations, horns and strobes. A listing of acceptable devices is provided within these Specifications for the Contractor to consider when selecting specific devices to be used for this Fire Alarm System Upgrade project. Contractor shall be responsible for and confirm that all selected devices are appropriate for the intended installed purpose and shall result in a fully compliant Fire Alarm System.
- D. Contractor shall identify and complete all necessary project permitting requirements through the Burlington Fire Marshall's Office. DPW-WR will pay all applicable permit fees. Per Vermont Fire and Building Safety Code requirements, the minimum qualification for stamped/approved submittals is a NICET Level 3 fire alarm designer.
- E. Contractor shall be responsible for all associated dismantling and phasing of project work.

##### **1.1 SECTION INCLUDES**

- A. Small addressable fire alarm system.

##### **1.2 REFERENCES**

- A. Electrical Industries Association (EIA):
  - 1. RS-232-D – Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange
  - 2. RS-485 – Electrical Characteristics of Generators and Receivers for Use in Balanced Multipoint Systems
- B. National Fire Protection Association (NFPA):

1. NFPA 12 – Standard on Carbon Dioxide Extinguishing Systems.
2. NFPA 13 – Installation of Sprinkler Systems.
3. NFPA 15 – Standard for Water Spray Fixed Systems for Fire Protection.
4. NFPA 16 – Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems.
5. NFPA 16A – Standard for the Installation of Closed Head Foam-Water Sprinkler Systems.
6. NFPA 70 – National Electrical Code (NEC).
7. NFPA 72 – National Fire Alarm Code.
8. NFPA 90A – Standard for the Installation of Air Conditioning and Ventilating Systems.
9. NFPA 101 – Life Safety Code.
10. NFPA 750 – Standard on Water Mist Fire Protection Systems.
11. NFPA 5000 – Building Construction and Safety Code.

- C. Fire Alarm Control Panel Equipment: System shall comply with applicable provisions of the following UL standards and classifications:
1. UL 864 9<sup>th</sup> Edition.
  2. UOJZ, Control Units, System.
  3. SYZV Control Units, Releasing Device.
  4. UOXX, Control Unit Accessories, System.

### **1.3 SYSTEM DESCRIPTION**

- A. A new intelligent reporting, microprocessor-controlled fire detection and notification system shall be installed in accordance with the specifications.
- B. The location and quantity of Fire Alarm System devices depicted on the available Fire Alarm System Riser Diagrams and Floor Plans shall be considered approximate. These Drawings are legacy Design Drawings and are not to be considered Record Drawings. The accuracy of the existing drawings has not been confirmed by the Owner. The location of existing Fire Alarm System devices shall be verified by the Contractor prior to performing work.
- C. Each Signaling Line Circuit (SLC) and Notification Appliance Circuit (NAC): Limited to only 80 percent of its total capacity during initial installation.
- D. Control Panel shall be expandable from 1 to 2 SLC loops as necessary to accommodate future expansion using add-on modules.
- E. Basic Performance:
1. Signaling Line Circuits (SLC) Serving Addressable Devices: Wired Style 6 (Class A).
  2. Initiation Device Circuits (IDC) Serving Non-addressable Devices Connected to Addressable Monitor Modules: Wired Class A (NFPA Style D).
  3. Notification Appliance Circuits (NAC) Serving Strobes and Horns: Wired Class A (NFPA Style Z).
  4. On Style 6 or 7 (Class A) Configurations: Single ground fault or open circuit on Signaling Line Circuit shall not cause system malfunction, loss of operating power, or ability to report alarm.
  5. Alarm Signals Arriving at Control Panel: Not lost following primary power failure until alarm signal is processed and recorded.
  6. Network Node Communications:

- a. System shall have the capability of networking with other Control Panels on single pair of copper wires or fiber optic cables.
  - 7. Signaling Line Circuits (SLC):
    - a. SLC modules shall operate in peer-to-peer fashion with all SLC modules in the Control Panel.
    - b. On loss of an SLC module, each remaining panel shall continue to communicate with remainder of system, including all SLC and control functions
  - 8. NAC Circuits: Arranged such that there is a minimum of 1 audible device per fire alarm zone.
  - 9. Notification Appliance Circuits (NAC), and Control Equipment: Arranged such that loss of any 1 NAC circuit will not cause loss of any other NAC circuit in system.
  - 10. NAC Circuits:
    - a. Electrically supervised for open and short circuit conditions.
    - b. If short circuit exists on NAC circuit, it shall not be possible to activate that circuit.
- F. Basic System Functional Operation: When fire alarm condition is detected and reported by one of the system alarm initiating devices, the following functions shall immediately occur:
- 1. System Alarm LEDs: Flash.
  - 2. Local Piezo-Electric Signal in Control Panel: Sound at a pulse rate.
  - 3. 4.3 inch Color Touchscreen Display: Indicate all information associated with fire alarm condition, including type of alarm point and its location within protected premises.
  - 4. Historical Log: Record information associated with fire alarm control panel condition, along with time and date of occurrence. History Log shall have a capacity for recording up to 4,100 events.
  - 5. System output programs assigned via control-by-event equations to be activated by particular point in alarm shall be executed, and the associated system outputs (alarm notification appliances and/or relays) shall be activated.
    - a. Close Fire Doors
    - b. Shot down air handlers as required by code
    - c. Notify the Central Station or Municipal Tie.
  - 6. Strobes flash synchronized continuously until system is reset.
  - 7. Audible devices sound continuous Temporal pattern until system is reset or silenced.
- G. Fire Alarm System Functionality:
- 1. Provide complete, electrically supervised distributed, Style 7 networked analog/addressable fire alarm and control system, with analog addressable initiating devices.
  - 2. Fire Alarm System:
    - a. Incorporate S3 Series multiprocessor-based control panel SLP motherboard with 4.3 inch color touchscreen annunciator (SLP) and up to 2 loop modules (SLC-PM or SLC95-PM).
  - 3. Each SLC-PM SLC module: Incorporate 1 Signaling Line Circuits (SLC), with capacity to support up to 159 analog addressable detectors and 159 addressable modules per SLC.
  - 4. Each SLC95-PM SLC module: Incorporate 1 Signaling Line Circuits (SLC), with capacity to support up to 126 analog addressable detectors and addressable modules per SLC.
  - 5. Control Panel shall incorporate Boolean control-by-event programming, including as a minimum AND, OR, NOT, XOR and Timer functions.
  - 6. Control Panel shall have the capability to accept firmware upgrades via connection with laptop computer, without requirement of replacing microchips.

7. Control Panel shall have the capability of having an optional DACT (digital alarm communicator transmitter) that can report to single central station monitoring account.
8. Control Panel shall have the capability of storing its entire program, and allow installer to activate only devices that are installed during construction, without further downloading of system.
9. Password Protection: Each system shall be provided with 4 levels of password protection with up to 16 passwords using 6 digits.
10. Control panel shall have an Ethernet port (RJ-45) located on the main control board, which can be used for uploading and downloading programs from a laptop or desktop computer. The Ethernet port can also be used for interface to a Graphic Control System when such a system is specified.

#### **1.4 SUBMITTALS**

- A. Include sufficient information, clearly presented, to allow the Owner to determine compliance with the specifications.
- B. Equipment Submittals:
  1. Cover Page: Indicate the following:
    - a. Project name and address.
    - b. Engineered systems distributor's name and other contact information.
    - c. Installing contractor's name and other contact information.
    - d. Date of equipment submittals. Indicate on revised submittals the original submittal date and revised submittal date.
  2. Table of Contents: Lists each section of equipment submittal.
  3. Scope of Work Narrative: Detail intended scope of work.
  4. Sequence of Operations: Use matrix or written text format, detailing activation of each type of device and associated resulting activation of the following:
    - a. Control panel.
    - b. Annunciator panels.
    - c. Notification appliances.
    - d. Building fire safety functions, including elevator recall, elevator power shutdown, door lock release, door holder release, HVAC unit shutdown, smoke evacuation system activation, and stair pressurization fan activation.
  5. Bill of Material: Indicate for each component of system the following:
    - a. Quantity.
    - b. Model number.
    - c. Description.
  6. SLC Circuit Schedule: Detail address and associated description of each addressable device. Clearly provide information that indicates number of both active and spare addresses.
  7. Battery Calculations: Show load of each of, and total of, components of system along with standby and alarm times that calculations are based on. Show calculated spare capacity and size of intended battery.
- C. Shop Drawings:
  1. Cover Page: Indicate the following:
    - a. Project name and address.
    - b. Engineered systems distributor's name and other contact information.
    - c. Installing contractor's name and other contact information.

- d. Date of equipment submittals. Indicate on revised submittals the original submittal date and revised submittal date.
  - 2. Floor Plans:
    - a. Show equipment and device locations.
    - b. Show wiring information in point-to-point format.
    - c. Show conduit routing, if required by the Authority Having Jurisdiction.
    - d. Contractor may utilize existing Floor Plans for background and identify new work using AutoCAD or PDF Editor.
  - 3. Control Panel: Provide sheet that details exterior and interior views of control panel and clearly shows associated wiring information.
  - 4. Annunciator Panels: Provide sheet that details exterior and interior views of annunciator panels and clearly shows associated wiring information.
- D. Certification: Submit with equipment submittals and shop drawings, letter of certification from major equipment manufacturer, indicating proposed engineered system distributor is an authorized representative of major equipment manufacturer.
- E. Project Record Drawings:
- 1. Submit complete project record drawings within 14 calendar days after acceptance test.
  - 2. Project record drawings shall be similar to shop drawings, but revised to reflect changes made during construction.
  - 3. Contractor may utilize existing Floor Plans for background and identify new work using AutoCAD or PDF Editor.
  - 4. Contractor to provide list of all Fire Alarm System devices with associated addresses in hardcopy and Microsoft Excel format.
- F. Operation and Maintenance Manuals:
- 1. Submit complete operation and maintenance manuals within 14 calendar days after acceptance test.
  - 2. Operation and maintenance manuals shall be similar to equipment submittals, but revised to reflect changes made during construction.
  - 3. Include factory's standard installation and operating instructions.

## 1.5 QUALITY ASSURANCE

- A. Codes and Standards:
- 1. System shall comply with NFPA 72 and all other applicable codes and standards.
- B. To ensure reliability and complete compatibility, all items of fire alarm system, including control panels, power supplies, initiating devices, and notification appliances, shall be listed by Underwriters Laboratories Inc. (UL) and shall bear "UL" label.
- C. Fire Alarm Control Panel Equipment: UL-listed under UL 864 Ninth Edition.
- D. Equipment, Programming, and Installation Supervision:
- 1. Provide services of approved engineered systems distributor of Gamewell-FCI for equipment, programming, and installation supervision.
  - 2. Provide proof of factory training within 14 calendar days of award of the Contract.
- E. Software Modifications:

1. Provide services of Gamewell-FCI factory-trained and authorized technician to perform system software modifications, upgrades, or changes.
2. Provide use of all hardware, software, programming tools, and documentation necessary to modify fire alarm system software on-site.
3. Modification includes addition and deletion of devices, circuits, zones, and changes to system operation and custom label changes for devices or zones.
4. System structure and software shall place no limit on type or extent of software modifications on-site.
5. Modification of software shall not require power-down of system or loss of system fire protection while modifications are being made.

## **1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials from damage during handling and installation.

## **1.7 COORDINATION**

- A. Coordinate the work with other applicable building systems, including, but not limited to, sprinkler, elevator, HVAC, or building security systems.

## **1.8 WARRANTY**

- A. Warranty Period for System Equipment: 1 year from date of final acceptance.
- B. Provide additional one (1) year warranty on any and all repair work provided during the original one (1) year project warranty period.
- C. Documentation of warranty shall be provided by the Contractor in hardcopy on company letterhead to the Owner at the time of Project Substantial Completion.

## **PART 2 PRODUCTS**

### **2.1 MANUFACTURER**

- A. Gamewell-FCI, Honeywell Fire Systems, 12 Clintonville Road, Northford, Connecticut 06472. Phone (203) 484-7161. Fax (203) 484-7118. Website: [www.gamewell-fci.com](http://www.gamewell-fci.com).
- B. References to manufacturer's model numbers and other information is intended to establish minimum standards of performance, function, and quality. Equivalent equipment from Gamewell may be substituted for the specified equipment, as long as minimum standards are met. No other manufacturers, other than Gamewell-FCI, FCI, and Gamewell will be considered for use on this project.

- C. Substitute equipment proposed as equal to equipment specified shall meet or exceed requirements of this section. For equipment other than Gamewell-FCI S3 Series Small Addressable Fire Alarm System, provide proof that such substitute equipment equals or exceeds features, functions, performance, and quality of specified equipment. This proof shall be provided by submission of a copy of specification with each copy of the submittals that has had each paragraph marked as either compliant or non-compliant along with a letter from engineering manager or product manager at factory that certifies information presented as either compliant or non-compliant including a detailed explanation of each paragraph identified as non-compliant. In order to ensure that the Owner is provided with a system that incorporates required survivability features, this letter shall also specifically certify that the system is capable of complying with the test requirements of this section.

## **2.2 FIRE ALARM SYSTEM**

- A. Fire Alarm System: Gamewell-FCI S3 Series Small Addressable Fire Alarm System.

## **2.3 CONTROL PANEL HARDWARE**

- A. Intelligent Small Addressable Panel (SLP): Supply user interface, including 4.3 inch touch-screen display. Control Panel shall consist of the following units and components:
1. System Cabinet (SLP-BB) or Cabinet with associated inner door (S3BB-BB/S3BB-RB).
  2. Power Supply Module (FLPS-7) with batteries.
  3. SLP Motherboard (SLP-MB).
  4. 4.3 inch color touch screen display (LCD-SLP).
  5. SLC Modules (SLC-PM or SLC95-PM) up to 2 per control panel.
  6. Optional DACT (DACT-E3).
  7. Optional Auxiliary Switch Module (ASM-16).
- B. System Cabinet:
1. Surface or semi-flush mounted with texture finish.
  2. Consist of back box and black door (SLP-BB) or back box, inner door, black or red outer door (S3BB-BB/S3BB-RB)
  3. Houses 1 FLPS-7 Power Supply Module, 1 SLP-MB assemblies, 1 or 2 SLC-PM/SLC95-PM SLC modules and other optional modules as specified.
  4. Construction: Display-front steel construction with lockout (SLP-BB) or Dead-front steel construction with inner door to conceal internal circuitry and wiring (S3BB-BB/S3BB-RB).
  5. Wiring: Terminated on removable terminal blocks to allow field servicing of modules without disrupting system wiring.
- C. Control Panel Backboard
1. Backboard shall be  $\frac{3}{4}$ " poplar or maple sanded cabinet grade plywood with beveled edges and painted in a color selected by the Owner.
- D. Power Supply Module (FLPS-7): Use latest technologies to provide power to the Control Panel and incorporate the following features:
1. Power-saving switching technology using no step-down transformers.
  2. 7-amp continuous-rated output to supply up to all power necessary under normal and emergency conditions.
  3. Integral battery charger with capacity to charge up to 55 amp-hour batteries while under full load.

- E. Batteries:
  - 1. Sufficient capacity to provide power for entire system upon loss of normal AC power as required by the Authority Having Jurisdiction.
  
- F. 4.3 inch Color Touch Screen Display Module (LCD-SLP):
  - 1. Color Touch Screen Display: RS-485 based textual annunciator with capability of being mounted locally or remotely. Provides audible and visual annunciation of all alarms and trouble signals. Provide dedicated LEDs for:
    - a. AC: Green.
    - b. Fire Alarm: Red.
    - c. Hazard: Blue.
    - d. Supervisory: Yellow.
    - e. Trouble: Yellow.
    - f. Silenced: Yellow.
  - 2. 4.3 inch Color Touch Screen Display: Provide status of all analog/addressable sensors, monitor and control modules. Display shall be liquid crystal type (LCD), clearly visible in dark and under all light conditions.
  - 3. Panel shall contain 3 functional keys:
    - a. Menu.
    - b. Fire Drill.
    - c. System Reset.
  - 4. Panel shall contain 5 custom programmable function buttons for:
    - a. Alarm Acknowledge.
    - b. Trouble Acknowledge.
    - c. System Silence.
    - d. Fan Reset.
    - e. Lamp Test.
    - f. Other functions like output bypass, device enable/disable, device on/off.
  - 5. Systems that do not have a minimum of 200 characters (4 lines of 40 characters) are not acceptable.
  
- G. Intelligent Small Addressable Panel (SLP): System shall be of multiprocessor design to allow maximum flexibility of capabilities and operation. Shall be capable of mounting in stand-alone enclosure as specified.
  - 1. Field Programmable: System shall be capable of being programmed by Field Configuration Program (FCP), allowing programming to be downloaded via portable computer.
  - 2. Ethernet Output: Ethernet port shall be provided to accept downloaded program from portable computer, connect to FocalPoint Graphical Workstation, or provide 80-column readout of all alarms, troubles, location descriptions, time, and date. Communication shall operate at 10/100 speeds.
  - 3. RS-232C Serial Output: Supervised RS-232C serial port shall be provided to operate remote printers and/or video terminals, accept downloaded program from portable computer, or provide 80-column readout of all alarms, troubles, location descriptions, time, and date. Communication shall be standard ASCII code operating from 1,200 to 115,200 baud rate.
  - 4. RS-485 Serial Output: Each SLP shall incorporate RS-485 bus via ribbon harness for connection of modules inside same cabinet, and via 4-wire quick connector for connection of modules up to 3,000 feet from cabinet. Each SLP's RS-485 bus shall support up to 16

- ASM-16 auxiliary switch modules, 16 LCD-SLP main annunciators, 6 LCD-E3 remote annunciators, and 5 LCD-7100 remote annunciators.
5. Peer-to-Peer Panel Configuration: All Intelligent Small Addressable Panels shall incorporate own programming, log functions, Central Processor Unit, and control-by-event (CBE) programming. If any loop driver becomes disabled, each remaining loop driver shall continue to communicate with remainder of network and maintain normal operation.
  6. Control-by-Event (CBE) Program: SLP shall be capable of programming using Boolean logic including AND, OR, NOT, XOR and TIMING functions to provide complete programming flexibility.
  7. Alarm Verification: Smoke detector alarm verification shall be standard option while allowing other devices such as manual stations and sprinkler flow to create immediate alarm. This feature shall be selectable for smoke sensors that are installed in environments prone to nuisance or unwanted alarms.
  8. Alarm Signals: All alarm signals shall be automatically latched or "locked in" at control panel until operated device is returned to normal and control panel is manually reset. When used for sprinkler flow, "SLNC" button may be bypassed, if required by the Authority Having Jurisdiction.
  9. Electrically Supervised:
    - a. Each SLC and NAC circuit shall be electrically supervised for opens, shorts, and ground faults. Occurrence of fault shall activate system trouble circuitry, but shall not interfere with proper operation of other circuits.
    - b. Yellow "TROUBLE" LED shall light and system audible sounder shall steadily sound when trouble is detected in system. Failure of power, open or short circuits on SLC or NAC circuits, disarrangement in system wiring, failure of microprocessor or any identification module, or system ground faults shall activate this trouble circuit. Trouble signal shall be acknowledged by operating "TRBL ACK" button. This shall silence sounder. If subsequent trouble conditions occur, trouble circuitry shall resound. During alarm, all trouble signals shall be suppressed with exception of lighting yellow "TROUBLE" LED.
  10. Drift Compensation – Analog Smoke Sensors: System software shall automatically adjust each analog smoke sensor approximately once each week for changes in sensitivity due to effects of component aging or environment, including dust. Each sensor shall maintain its actual sensitivity under adverse conditions to respond to alarm conditions while ignoring factors which generally contribute to nuisance alarms. System trouble circuitry shall activate, display units that requires maintenance.
  11. Analog Smoke Sensor Test: System software shall automatically test each analog smoke sensor a minimum of 3 times daily. Test shall be recognized functional test of each photocell (analog photoelectric sensors) and ionization chamber (analog ionization sensors) as required annually by NFPA 72. Failure of sensor shall activate system trouble circuitry, display "Test Failed" indication, and identify individual device that failed.
  12. Off-Premises Connection:
    - a. Fire Alarm System: Connect via existing radio box to Central Station.
  13. Positive Alarm Sequence (PAS): The system control panel shall be capable of setting any detector or sensor into Positive Alarm Sequence mode. Positive Alarm Sequence will operate in the following manner. Any alarms received from a device will activate an alarm at the control panel but will not execute any output functions (e.g. turning on the strobes or fire horns). The operator has 30 seconds to "acknowledge" the event or the system will activate a general alarm and sound all the fire horn and strobes. If the operator does acknowledge the vent within 30 seconds, the panel will start a timer for 180 seconds (3 minutes) in which time the operator must find the device in alarm and reset the device.

- If the operator has not performed a reset within 180 seconds or a second device reports an alarm, the system will immediately sound the general alarm.
14. Radio Box: Fire department shall be consulted regarding authorized radio boxes serving municipality. Fire alarm system shall transmit alarm, supervisory, and trouble signals with alarm having priority over supervisory and trouble signals.
  15. Network Annunciator Option: Each LCD-SLP and associated display shall provide option of being configured as network annunciator. Options for annunciation shall default as regional annunciator with capability of selecting global annunciation to provide system-wide protection and Acknowledge, Silence, and Reset capabilities.
  16. Redundant History Log: Each SLP shall contain full 4100 event history log supporting local and network functions. If a main processor or network node is lost the entire log shall be accessible at any other Loop Interface board. This shall be demonstrated by removing power followed by extraction of history log from any loop driver location
  17. LEDs Indicator and Outputs: Each SLP Intelligent Small Addressable Panel shall incorporate as a minimum the following diagnostic LED indicators:
    - a. Power: Green.
    - b. Alarm: Red.
    - c. Supervisory: Yellow.
    - d. General Trouble: Yellow.
    - e. Ground Fault: Yellow.
    - f. Hazard: Blue.
    - g. Municipal: Yellow.
    - h. NAC1: Yellow.
    - i. NAC2: Yellow.
    - j. NAC3: Yellow.
    - k. NAC4: Yellow.
  18. Auxiliary Power Outputs: Each SLP Intelligent Small Addressable Panel shall provide the following supply outputs:
    - a. 24 VDC non-resettable, 1 amp. maximum, power limited.
    - b. 24 VDC resettable, 1 amp. maximum, power limited.
  19. Microprocessor: Intelligent Small Addressable Panel shall incorporate 32-bit RISC processor. Isolated "watchdog" circuit shall monitor microprocessor and upon failure shall activate system trouble circuits on display. Microprocessor shall access system program for all control-by-event (CBE) functions. System program shall not be lost upon failure of both primary and secondary power. Programming shall support Boolean logic including AND, OR, NOT, XOR, TIME DELAY functions for maximum flexibility.
  20. Auto Programming: System shall provide for all SLC devices on any SLC loop to be pre-programmed into system. Upon activation of auto programming, only devices that are present shall activate. This allows for system to be commissioned in phases without need of additional downloads.
  21. Environmental Drift Compensation: System shall provide for setting Environmental Drift Compensation by device. When detector accumulates dust in chamber and reaches unacceptable level but yet still below allowed limit, control panel shall indicate maintenance alert warning. When detector accumulates dust in chamber above allowed limit, control panel shall indicate maintenance urgent warning.
  22. NON-FIRE Alarm Module Reporting: Non-reporting type ID shall be available for use for energy management or other non-fire situations. NON-FIRE point operation shall not affect control panel operation nor shall it display message at panel LDC. Activation of NON-FIRE point shall activate control by event logic, but shall not cause indication on control panel.

23. 1-Man Walk Test:
  - a. System shall provide both basic and advanced walk test for testing entire fire alarm system. Basic walk test shall allow single operator to run audible tests on panel. All logic equation automation shall be suspended during test and while annunciators can be enabled for test, all shall default to disabled state. During advanced walk test, field-supplied output point programming shall react to input stimuli, such as CBE and logic equations. When points are activated in advanced test mode, each initiating event shall latch input. Advanced test shall be audible and shall be used for pull station verification, magnet activated tests on input devices, input and output device, and wiring operation/verification.
  - b. Shall Automatically generate professionally formatted NFPA 72, NFPA 10, or Joint Commission Reports such as (GW-eVance Inspection Manager) A second technician will not be required at the fire panel during testing.
  - c. Test feature is intended to provide for certain random spot testing of system and is not intended to comply with requirements of testing fire alarm systems in accordance with NFPA 72, as it is impossible to test all functions and verify items such as annunciation with only 1 person.
24. Signaling Line Circuits: Each SLC-PM/SLC95-PM module shall provide communication with analog/addressable (initiation/control) devices via 2 signaling line circuits. Each signaling line circuit shall be capable of being wired Class B, Style 4 or Class A, Style 6. Circuits shall be capable of operating in NFPA Style 7 configuration when equipped with isolator modules between each module type device and isolator sensor bases. Unique 40-character identifier shall be available for each device.
  - a. SLC-PM shall communicate with a maximum of 159 analog sensors and 159 addressable monitor/control devices. Devices shall be of the Velociti series with capability to poll 10 devices at a time with a maximum polling time of 2 seconds when both SLCs are fully loaded.
  - b. SLC95-PM shall communicate with a maximum of 126 analog sensors and addressable monitor/control devices. Devices shall be of the Apollo series with capability to poll 1 device at a time with a maximum polling time of 3 seconds when both SLCs are fully loaded.
25. Notification Appliance Circuits: 4 Class B or 2 Class A independent NAC circuits shall be provided on the SLP panel, polarized and rated at 2 amperes DC per circuit, 4 amperes max from all circuits. Each NAC individually over-current protected and supervised for opens, grounds, and short circuits. They shall be capable of being wired Class B, Style Y or Class A, Style Z.
26. Alarm Dry Contacts: Provide alarm dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system alarm occurs.
27. Supervisory Dry Contacts: Provide supervisory dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system supervisory condition occurs.
28. Trouble Dry Contacts: Provide trouble dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system trouble occurs.
29. Sounder Synchronization: The panel shall be capable of synchronizing the sounders bases with the fire horns for improved clarity. Synchronization shall be accomplished via the SLC loop.

#### **2.4 SYSTEM PERIPHERALS –Velociti Series Addressable Devices**

System Devices could include, but not be limited to, the following:

- A. SLC-PM Addressable Devices – General:

1. Provide address-setting means using rotary-decimal switches.
2. Use simple to install and maintain decade-type (numbered 0 to 15) address switches by using standard screwdriver to rotate 2 dials on device to set address. Devices which use binary address set via dipswitch packages, handheld device programmer, or other special tools for setting device address shall not be acceptable.
3. Addressable Devices: Analog and addressable. Connect to fire alarm control panel's Signaling Line Circuits.
4. Addressable Detectors: Provide 2 status LEDs. Both LEDs shall flash under normal conditions, indicating detector is operational and in regular communication with control panel, and both LEDs shall be placed into steady illumination by control panel, indicating alarm condition has been detected. If required, flashing mode operation of detector LEDs can be programmed off via fire control panel program.
5. Fire Alarm Control Panel: Permit detector sensitivity adjustment through field programming of system. Sensitivity can be automatically adjusted by panel on time-of-day basis.
6. Using software, detectors shall automatically compensate for dust accumulation and other slow environmental changes that may affect their performance. Detectors shall be listed by UL as meeting calibrated sensitivity test requirements of NFPA 72, Chapter 7.
7. Detectors shall be ceiling-mounted and shall include separate twist-lock base with tamper-proof feature.
8. Following bases and auxiliary functions shall be available:
  - a. Standard base with remote LED output.
  - b. Sounder base rated at 85 dBA minimum.
  - c. Intelligent Addressable Sounder base rated at 75 dBA minimum.
  - d. Form-C relay base rated 30 VDC, 2.0 A.
  - e. Isolator base.
9. Detectors shall provide test means whereby they will simulate alarm condition and report that condition to control panel. Such test shall be initiated at detector itself by activating magnetic switch or initiated remotely on command from control panel.
10. Detectors shall store internal identifying type code that control panel shall use to identify type of device (ION, PHOTO, THERMAL).

**B. Addressable Manual Stations (MS-7AF):**

1. Manual Fire Alarm Stations: Non-code, non-break glass type, equipped with key lock so they may be tested without operating handle.
2. Operated Station: Visually apparent, as operated, at a minimum distance of 100 feet (30.5 m) from front or side.
3. Stations shall be designed so after actual activation, they cannot be restored to normal except by key reset.
4. Manual stations shall be constructed of Lexan with clearly visible operating instructions provided on cover. The word FIRE shall appear on front of stations in raised letters, 1.75 inches (44 mm) or larger.
5. Addressable manual stations shall, on command from control panel, send data to panel representing state of manual switch and addressable communication module status.

**C. Intelligent Thermal Detectors (ATD-RL2F):** Intelligent addressable devices rated at 135 degrees F (58 degrees C) and have rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. Connect via 2 wires to fire alarm control panel signaling line circuit.

- D. Intelligent Photoelectric Smoke Detectors (ASD-PL2F): Use photoelectric (light-scattering) principal to measure smoke density and shall, on command from control panel, send data to panel representing analog level of smoke density.
- E. Intelligent Ionization Smoke Detectors (ASD-IL2F): Use dual-chamber ionization principal to measure products of combustion and shall, on command from control panel, send data to panel representing analog level of products of combustion.
- F. Intelligent Multi-Criteria Acclimating Detectors (MCS-ACCLIMATE2F):
  - 1. Addressable device designed to monitor a minimum of photoelectric and thermal technologies in single-sensing device. Include ability to adapt to its environment by utilizing built-in microprocessor to determine its environment and choose appropriate sensing settings. Allow wide sensitivity window, with no less than 1 to 4 percent per foot obscuration. Utilize advanced electronics that react to slow smoldering fires and thermal properties within single sensing device.
  - 2. Microprocessor: Capable of appropriate sensitivity levels based on environment type it is in, such as office, manufacturing, or kitchen, and then have ability to automatically change setting as environment changes, as when walls are moved or as occupancy changes.
  - 3. Intelligent multi-criteria detection device shall include ability to combine signal of thermal sensor with signal of photoelectric signal to react hastily in event of fire situation. Include inherent ability to distinguish between fire condition and false alarm condition by examining characteristics of thermal and smoke sensing chambers and comparing them to database of actual fire and deceptive phenomena.
- G. Intelligent 4 Element Multi-Criteria Detectors (MCS-4-WARN):
  - 1. The detector shall be comprised of four sensing elements, including a photoelectric (light-scattering) particulate sensor, an electrochemical carbon monoxide (CO) sensor, a daylight-filtered infrared sensor and solid state thermal sensor(s) rated at 135°F (57.2°C). The device shall be able to indicate distinct smoke and heat alarms.
  - 2. The intelligent multi-criteria detection device shall include the ability to combine the signal of the photoelectric signal with other sensing elements in an effort to react quickly in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a nuisance alarm condition. The product design shall be capable of selecting the appropriate sensitivity levels based on the environment type chosen by user in which it is installed (office, manufacturing, kitchen etc.) and then have the ability to automatically change the setting as the environment changes.
  - 3. The detector shall indicate CO trouble conditions including 6 months of sensor life remaining and sensor life has expired. The detector shall indicate a combined signal for any of the following: low chamber trouble, thermistor trouble, CO self test failure, IR self test failure, and freeze warning.
  - 4. The detectors shall provide a test means whereby they will simulate an alarm condition and report that condition to the control panel. Such a test may be initiated at the detector itself (by activating a switch) or initiated remotely on command from the control panel. There are three test methods: functional magnet, smoke entry aerosol, or direct heat method.
- H. Intelligent Fire/Carbon Monoxide Detectors (MCS-COF):
  - 1. The detector shall be comprised of four sensing elements, including a photoelectric (light-scattering) particulate sensor, an electrochemical CO sensor, a daylight-filtered infrared

(IR) sensor and solid state thermal sensor(s) rated at 135°F (57.2°C). The device shall be able to indicate distinct smoke and heat alarms.

2. The advanced multi-criteria detection device shall include the ability to combine the signal of the photoelectric signal with other sensing elements in order to react quickly in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a nuisance alarm condition. The detector shall be capable of selecting the appropriate sensitivity levels based on the environment type (office, manufacturing, kitchen, etc.) in which it is installed, and then have the ability to automatically change the setting as the environment changes.
  3. The CO detector component shall be capable of a functional gas test using a canned test agent to test the functionality of the CO sensing cell.
  4. The detector shall indicate CO trouble conditions, including six months of sensor life remaining and sensor life has expired. The detector shall indicate a combined signal for any of the following: low chamber trouble, thermistor trouble, CO self test failure, IR self test failure, and freeze warning.
  5. The MCS-COF Photo/CO Detector shall be used with the B200S Intelligent Sounder Base. The B200S is a low profile, intelligent sounder base that provides alarm sounder capability. The sounder base shall provide both Temporal 3 and Temporal 4 (CO) tones. Bases that require the use of a separate sounder for Temporal 4 shall not be acceptable.
- I. Intelligent Laser Detectors (ASD-LS): Sensor device designed to use laser diode similar to way photoelectric sensor uses LEDs inside of sensing chamber. Detector design shall allow wide sensitivity window, with no less than 0.2 to 4 percent per foot obscuration. Detector shall be used as indicated in special application clean-room-type environments only.
- J. Intelligent Aspiration Smoke Detector (AAD-8100):
1. The AAD-8100 shall offer Very Early Warning Smoke Detection, Early Warning Smoke Detection and Standard Smoke Detection settings.
  2. It shall be tested and approved for coverage up to 8,000 sq. ft.
  3. The ASD shall have dual source (blue LED and infra-red laser) optical smoke detection for a wide range of fire detection with enhanced immunity to nuisance particulates.
  4. The ASD shall operate in air flows from 0-4000 ft/min (0-1,219 m/min).
  5. PipeIQ software shall provide pipe design, FFAST system configuration, and FFAST system monitoring in a single software program.
  6. The ASD shall allow 5 programmable alarm levels with time delays, including Alert, Action 1, Action 2, Fire 1, and Fire 2.
- K. Intelligent Duct Smoke Detector Base (DNR, DNRW):
1. In-Duct Smoke Detector Housing: Use ASD-PL2F intelligent photoelectric detector, ASD-PL2FR intelligent remote test photoelectric detector or ASD-IL2F intelligent ionization detector, which provides continuous analog monitoring and alarm verification from panel.
  2. When sufficient smoke is sensed, alarm signal is initiated, and appropriate action taken to shut down or change over air handling systems to help prevent rapid distribution of toxic smoke and fire gases throughout areas served by duct system.
  3. Duct Smoke Detectors Mounted Above Ceiling or Otherwise Obstructed from Normal View: Provide with remote alarm indicator.
  4. Each Detector: Install in either supply side or return side duct in accordance with local mechanical code.

- L. Addressable Dry Contact Monitor Modules (AMM-2F):
  1. Provide to connect 1 supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
  2. Mount in standard deep electrical box.
  3. IDC Zone: Suitable for Style B operation.
  
- M. Addressable Dry Contact Monitor Modules (AMM-4F):
  1. Provide to connect 1 supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
  2. Mount in 4-inch (102-mm) square, 2-1/8-inch (54-mm) deep electrical box.
  3. IDC Zone: Suitable for Style D or Style B operation.
  4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
  
- N. Addressable Dry Contact Monitor Modules (AMM-2IF):
  1. Provide to connect 1 supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
  2. Mount in 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box.
  3. IDC Zones: Suitable for Style B operation.
  4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
  
- O. Addressable Two Input and Two Output Modules (AMM-2RIF):
  1. Provide two isolated sets of Form-C contacts, which operate as a single pole double throw switch. The module shall allow the control panel to switch these contacts on command. Module shall have both normally open and normally closed connections available for field wiring. Two input modules shall connect two supervised initiating device circuit (IDC) or zone of conventional alarm initiating devices (any normally open dry contact device) to the fire alarm control panel signaling line circuit (SLC) Loop.
  2. Mount in 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box.
  3. IDC Zones: Suitable for Style B operation.
  4. LEDs: Four LEDs that are controlled by the panel to indicate status of each input and output. Coded signals, transmitted from the panel, can cause the LED to blink, latch on, or latch off. Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
  
- P. Addressable Dry Contact Monitor Modules (MMI-10F):
  1. Provide to connect 10 supervised Style B IDC zones or 5 supervised Style D IDC zones of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
  2. Mount in factory-supplied MBB-2 or MBB-6 enclosure.
  3. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
  
- Q. 2-Wire Detector Monitor Modules (AMM-4SF):
  1. Provided to connect 1 supervised IDC zone of conventional 2-wire smoke detectors or alarm initiating devices (any N.O. dry contact device).
  2. Mount in 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box or to optional surface-mounted back box.
  3. IDC Zone: Wired for Class A or B (Style D or Style B) operation.

4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
- R. 2-Wire Detector Monitor Modules (MMI-6SF):
1. Provided to connect 6 supervised Class B IDC or 3 supervised Class A IDC zones of conventional 2-wire smoke detectors or alarm initiating devices (any N.O. dry contact device).
  2. Mount in factory-supplied MBB-2 or MBB-6 enclosure.
  3. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
- S. Addressable Control Modules (AOM-2SF):
1. Provide to supervise and control operation of 1 conventional NAC of compatible, 24-VDC powered, polarized audio/visual notification appliances or UL-listed polarized relays for fan shutdown and other auxiliary control functions.
  2. Mount in standard 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box or to surface-mounted back box.
  3. Control Module NAC: Wire for Style Z or Style Y (Class A/B) with up to 1 amp of inductive signal or 2 amps of resistive signal operation. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.
  4. Audio/Visual Power: Provide by separate supervised power circuit from main fire alarm control panel or from supervised, UL-listed remote power supply.
- T. Addressable Control Modules (MMO-6SF):
1. Provide to supervise and control operation of 6 Class B or 3 Class A conventional NAC of compatible, 24-VDC powered, polarized audio/visual notification appliances or UL-listed polarized relays for fan shutdown and other auxiliary control functions.
  2. Mount in factory-supplied MBB-2 or MBB-6 enclosure.
  3. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
  4. Control module NAC: Wire for Style Z or Style Y (Class A/B) with up to 1 amp of inductive signal or 2 amps of resistive signal operation. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.
  5. Audio/Visual Power: Provide by separate supervised power circuit from main fire alarm control panel or from supervised, UL-listed remote power supply.
- U. Addressable Relay Modules (AOM-2RF):
1. Provide two isolated sets of Form-C contacts, which operate as a double pole double throw switch. The module shall allow the control panel to switch these contacts on command. The module shall not provide supervision for the notification appliance circuit (NAC). Module shall have both normally open and normally closed connections available for field wiring.
  2. Available for HVAC control and other building functions. Relay shall have 2 Form C sets of contacts that operate in tandem and are rated for a minimum of 2.0 amps resistive or 1.0 amps inductive. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.

3. Mount in standard 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box or to surface-mounted back box.
4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

V. Addressable Relay Modules (MMO-6RF):

1. Provide six isolated sets of Form-C contacts, which operate as a double-pole double-throw switch. The module shall allow the control panel to switch these contacts on command. The module shall not provide supervision for the notification appliance circuit (NAC). Module shall have both normally open and normally closed connections available for field wiring.
2. Available for HVAC control and other building functions. Relay shall be Form C and rated for a minimum of 2.0 amps resistive or 1.0 amps inductive. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.
3. Mount in factory-supplied MBB-2 or MBB-6 enclosure.
4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

W. Isolator Modules (M500X):

1. Provide to automatically isolate wire-to-wire short circuits on SLC Class A or Class B branch. Isolator module shall limit number of modules or detectors that may be rendered inoperative by short-circuit fault on SLC loop segment or branch. At least 1 isolator module shall be provided for each floor or protected zone of building. No more than 25 devices shall be connected to 1 isolator module.
2. If wire-to-wire short occurs, isolator module shall automatically open-circuit (disconnect) SLC. When short-circuit condition is corrected, isolator module shall automatically reconnect isolated section.
3. Does not require address-setting, and its operations shall be totally automatic. Not necessary to replace or reset isolator module after normal operation.
4. Mount in standard 4-inch (101.6-mm) deep electrical box or in surface-mounted back box.
5. Single LED: Flash to indicate isolator is operational and illuminate steadily to indicate short-circuit condition has been detected and isolated.

X. Conventional Heat Detectors:

1. Combination rate-of-rise and fixed temperature rated at 135 degrees F (57.2 degrees C) for areas where ambient temperatures does not exceed 100 degrees F (37.7 degrees C), and 200 degrees F (93.3 degrees C) for areas where temperature does not exceed 150 degrees F (65.5 degrees C).
2. Low profile, ceiling-mount type with positive indication of activation.
3. Rate-of-Rise Element: Air chamber, flexible metal diaphragm, and factory-calibrated, moisture-proof, trouble-free vent, and operate when rate of temperature rise exceeds 15 degrees F (9.4 degrees C) per minute.
4. Fixed-Temperature Element: Fusible-alloy retainer and actuator shaft.
5. Smooth Ceiling Rating: 2,500 square feet (762 m<sup>2</sup>).

Y. Conventional Photoelectric Area Smoke Detectors:

1. 24-VDC, 2-wire, ceiling-mounted, light-scattering type using LEDs light source.
2. Each Detector: Remote LEDs output and built-in test switch.
3. Provide on twist-lock base.

4. Perform calibrated sensitivity and performance test on detector without need for generation of smoke. Test method shall test all detector circuits.
5. Visual Indication of Alarm: Provide by dual-latching LEDs on detector, seen from ground level over 360 degrees. LEDs shall flash every 10 seconds, indicating power is applied to detector.
6. Detector shall not go into alarm or trouble when exposed to air velocities of up to 3,000 feet (914.4 m) per minute.
7. Detector Screen and Cover Assembly: Easily removable for field cleaning of detector chamber.
8. Field-Wire Connections: Made to base through use of clamping plate and screw.

Z. Conventional Ionization-Type Smoke Detectors:

1. 2-wire, 24-VDC type using dual uni-polar chamber.
2. Each Detector: Remote LEDs output and built-in test switch.
3. Provide on twist-lock base.
4. Perform calibration sensitivity and performance test on detector without need for generation of smoke.
5. Visual Indication of Alarm: Provide by dual-latching LEDs over 360 degrees, on detector, seen from ground level. LEDs shall flash every 10 seconds, indicating power is applied to detector.
6. Detector shall not go into alarm or trouble when exposed to air velocities of up to 1,200 feet (365.76 m) per minute.
7. Detector Screen and Cover Assembly: Easily removable for field cleaning of detector chamber.
8. Field-Wire Connections: Made to base through use of clamping plate and screw.

AA. Addressable Projected Beam Detectors (ABD-2F, ABD-RT2F):

1. Single-ended, reflective design.
2. Six user-selectable sensitivity levels.
3. Operates in a range from 16 feet to 328 feet.
4. Temperature Range of Device: Minus 22 degrees F to 131 degrees F.
5. Beam Detector: Automatic gain control to compensate for gradual signal deterioration from dirt accumulation on lenses.
6. UL Listed.
7. Ability to be tested using calibrated test filters or magnet-activated remote test station.

BB. Sprinkler Waterflow Switches (provided and installed by the sprinkler contractor):

1. Integral, mechanical, non-coded, non-accumulative retard type.
2. Alarm transmission delay time conveniently adjustable from 0 to 60 seconds. Initial settings shall be 30 to 45 seconds.
3. Single manufacturer and series.
4. Where possible, locate waterflow switches a minimum of 1 foot from fitting which changes direction of flow and a minimum of 3 feet from valve.
5. Waterflow switches shall be provided and connected under this section but installed by the mechanical contractor.

CC. Sprinkler and Standpipe Valve Supervisory Switches (provided and installed by the sprinkler contractor):

1. Each sprinkler system water supply control valve riser, zone control valve, and standpipe system riser control valve shall be equipped with supervisory switch. Standpipe hose valves, test valves, and drain valves shall not be equipped with supervisory switches.
2. PIV (Post Indicator Valve) or Main Gate Valves: Equip with supervisory switch.
3. Mount not to interfere with normal operation of valve and adjust to operate within 2 revolutions toward closed position of valve control, or when stem has moved no more than one-fifth of distance from normal position.
4. Contain in weatherproof aluminum housing, which shall provide 3/4-inch (19-mm) conduit entrance and incorporate necessary facilities for attachment to valves.
5. Switch Housing Finish: Red baked enamel.
6. Entire Installed Assembly: Tamper proof and arranged to cause switch operation if housing cover is removed or if unit is removed from mounting.
7. Valve supervisory switches shall be provided and connected under this section and installed by mechanical contractor.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Examine areas and surfaces to receive fire alarm system.
  1. Notify Owner of conditions that would adversely affect installation or subsequent use.
  2. Do not begin installation until unacceptable conditions are corrected.

### **3.2 DISMANTLING**

- A. Dismantling requires, but is not limited to, the selective removal and subsequent offsite disposal of existing fire alarm system components as required to accommodate new construction.
- B. Prior to commencement of work, provide Owner with detailed sequence of dismantling and removal work to ensure uninterrupted operation of existing Fire Alarm System. Contractor shall provide temporary services during interruptions to existing utilities, as acceptable to the Authority Having Jurisdiction.
- C. Perform selective dismantling work in a systematic manner. Use such methods as required to complete work indicated and required to accommodate new work in accordance with dismantling schedule and governing regulations.
- D. The Owner has right of first refusal for all salvageable items removed from the Project. Contractor shall remove debris, rubbish and other materials resulting from dismantling operations, including all items that the Owner does not wish to retain, from the project site. Transport and legally dispose of materials offsite.

### **3.3 INSTALLATION**

- A. Install fire alarm system in accordance with NFPA 72, NFPA 70, state and local codes, manufacturer's instructions, and as indicated on the Shop Drawing Floor Plans designed by the Contractor and approved by the Authority Having Jurisdiction.

- B. Conceal conduit, junction boxes, and conduit supports and hangers in finished areas. Conceal or expose conduit, junction boxes, and conduit supports and hangers in unfinished areas.
- C. Do not install smoke detectors before system programming and test period. If construction is ongoing during this period, take measures to protect smoke detectors from contamination and physical damage.
- D. Flush-mount fire detection and alarm system devices, control panels, and remote annunciators in finished areas. Flush-mount or surface-mount fire detection and alarm system devices, control panels, and remote annunciators in unfinished areas.
- E. Ensure manual stations are suitable for surface mounting or semi-flush mounting. Install not less than 42 inches, not more than 48 inches, above finished floor measured to operating handle, and as considered acceptable by the Authority Having Jurisdiction.

### **3.4 FIELD QUALITY CONTROL**

- A. **Manufacturer's Field Services:** Provide service of competent, factory-trained technician authorized by manufacturer to technically supervise and participate during pre-testing and acceptance testing of system.
- B. **Testing:**
  - 1. Conduct complete visual inspection of control panel connections and test wiring for short circuits, ground faults, continuity, and insulation before energizing cables and wires.
  - 2. Close each sprinkler system control valve and verify proper supervisory alarm at Control Panel.
  - 3. Verify activation of flow switches.
  - 4. Open initiating device circuits and verify that trouble signal actuates.
  - 5. Open signaling line circuits and verify that trouble signal actuates.
  - 6. Open and short notification appliance circuits and verify that trouble signal actuates.
  - 7. Ground initiating device circuits and verify response of trouble signals.
  - 8. Ground signaling line circuits and verify response of trouble signals.
  - 9. Ground notification appliance circuits and verify response of trouble signals.
  - 10. Check installation, supervision, and operation of intelligent smoke detectors.
  - 11. Introduce on system each of the alarm conditions that system is required to detect. Verify proper receipt and proper processing of signal at Control Panel and correct activation of control points.
  - 12. Consult manufacturer's manual to determine proper testing procedures when system is equipped with optional features. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality, and similar.
- C. **Acceptance Testing:**
  - 1. Before installation shall be considered completed and acceptable by the Authority Having Jurisdiction, a complete test using as a minimum, the following scenarios shall be performed and witnessed by representative approved by Authority Having Jurisdiction. Monitoring company and/or fire department shall be notified before final test in accordance with local requirements.

2. Contractor's job foreman, in presence of representative of manufacturer, representative of Owner, and fire department shall operate every installed device to verify proper operation and correct annunciation at control panel.
3. Open signaling line circuits and notification appliance circuits in at least 2 locations to verify presence of supervision.
4. When testing has been completed to satisfaction of both Contractor's job foreman and representatives of manufacturer and Owner, a notarized letter co-signed by each attesting to satisfactory completion of said testing shall be forwarded to Owner and fire department.
5. Leave fire alarm system in proper working order and, without additional expense to Owner, replace defective materials and equipment provided within 1 year (365 days) from date of final acceptance by the Owner. Provide additional 1 year (365 days) warranty on any and all repair work provided during the original 1 year (365 days) project warranty period.

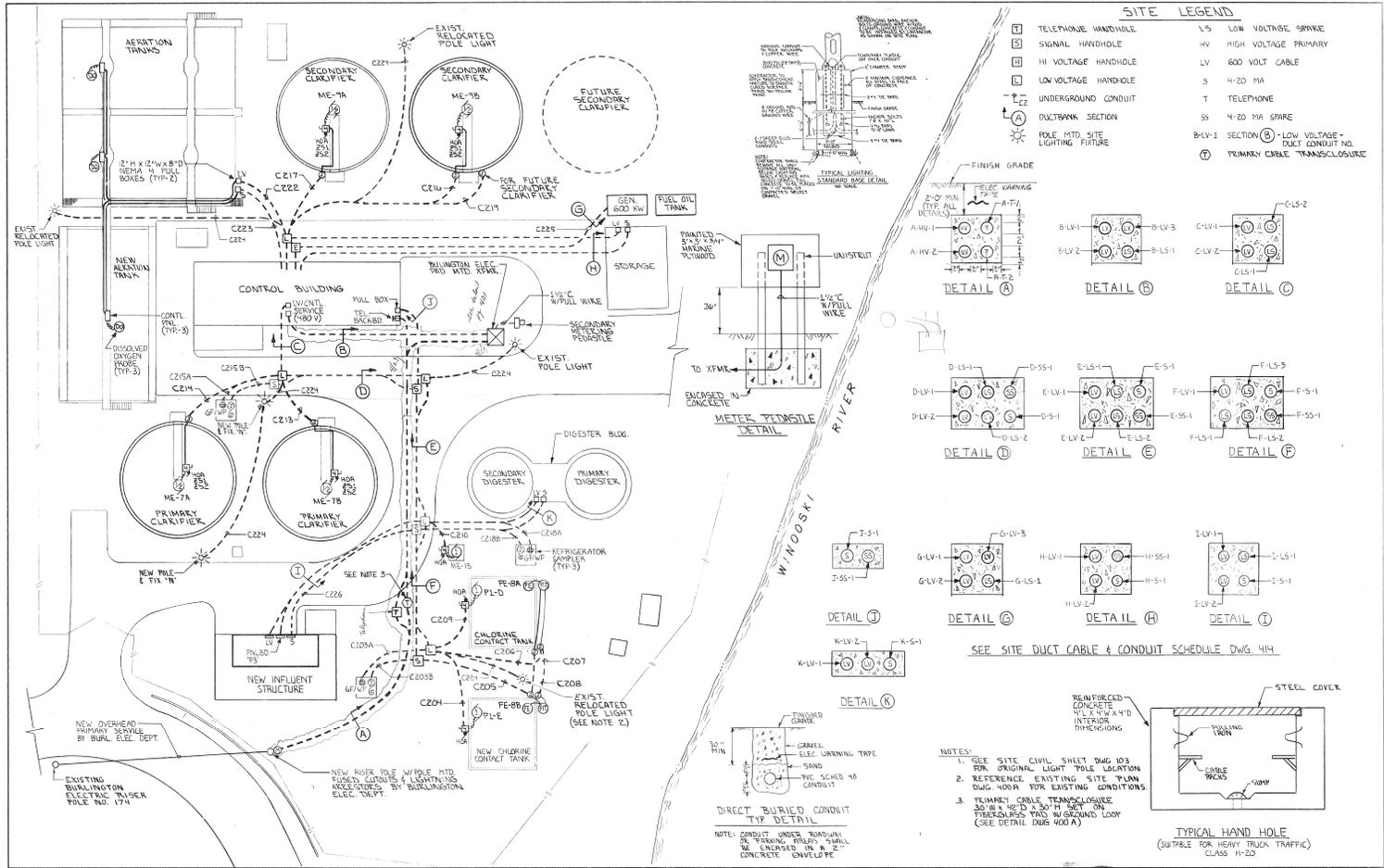
### **3.5 DEMONSTRATION**

- A. Provide instruction as required for operating fire alarm system.
- B. Provide hands-on demonstrations of operation of fire alarm system components and functions.

**END OF SECTION**

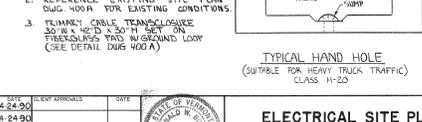
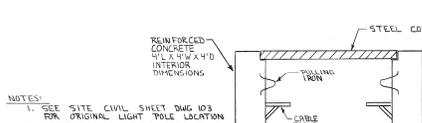
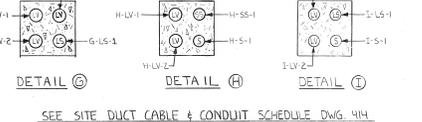
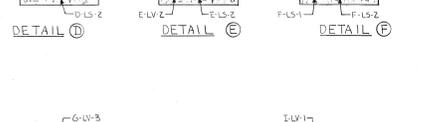
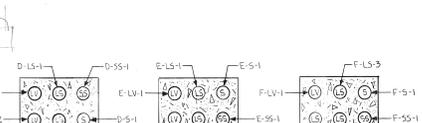
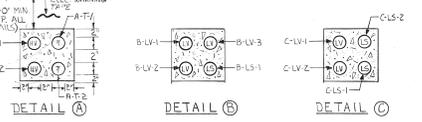
**Exhibit B**  
**North WWTP – Existing Electrical Drawings**

<b>Drawing No.</b>	<b>Drawing Title</b>
400	Electrical Site Plan
401	Legends, Schedules & Details
402	Modifications to Control Bld BSMT Power Lighting Plan
403	Modifications to Control Bld 1st Floor Power Plan
405	Modifications to Control Bld 2nd Floor Lighting/Power Plan
406A	New Influent Structure Lighting and Power Plan
411	Schedules & Details
412	Cable & Conduit Schedule
413	Cable & Conduit Schedule
414	Diagrams & Details



### SITE LEGEND

Ⓛ	LOW VOLTAGE HANDHOLE	L/S	LOW VOLTAGE PRIMARY
Ⓜ	SIGNAL HANDHOLE	HV	HIGH VOLTAGE PRIMARY
Ⓢ	HI VOLTAGE HANDHOLE	LV	600 VOLT CABLE
Ⓛ	LOW VOLTAGE HANDHOLE	4-20	4-20 MA
—	UNDERGROUND CONDUIT	T	TELEPHONE
Ⓢ	DUCTBANK SECTION	SS	4-20 MA SPIRE
☀	POLE MTD SITE LIGHTING FIXTURE	B-LV-1	SECTION (B) - LOW VOLTAGE - DUCT CONDUIT NO.
Ⓜ	TRUNKING	Ⓜ	TRUNKING CABLE TRANSCLOSURE



NO.	DATE	REVISION	NO.	DATE	REVISION
1	1/14/24	ISSUED FOR CONSTRUCTION			
2	1/15/24	ISSUED FOR APPROVAL			
3	1/16/24	ISSUED FOR APPROVALS & REVIEW			

CITY OF BURLINGTON  
WASTEWATER TREATMENT FACILITIES  
NORTH PLANT UPGRADE  
BURLINGTON  
VERMONT

**WESTON**  
ENGINEERS ARCHITECTS

DRAWN	R.W.B.	DATE	4-24-90
CHKD	K.D.B.	DATE	4-24-90
APPROVED	R.W.B.	DATE	4-24-90



### ELECTRICAL SITE PLAN

SCALE	M.G.S.	DATE	4-24-90	DWG NO.	400	REV	1
	1" = 20'	DATE	3302-02-02	SHT	1	OF	1

### LEGEND

	FLUORESCENT LIGHTING FIXTURE A= FIXTURE TYPE B= CONTROLLING SWITCH 2= C.T. NO. 2
	EXIT LIGHT
	WALL MTD. LIGHTING FIXTURE
	QUADRUPLEX RECEPTACLE
	DUPLEX RECEPTACLE 2= CKT. NO. 2 GF= GROUND FAULT W/P WEATHERPROOF
	DUPLEX RECEPTACLE W/ISOLATED GROUND
	SINGLE POLE SWITCH 3= THREE WAY 2= TWO POLE A= CONTROL FIXTURE
	120/208V RECEPTACLE 30-30 AMP
	EXPOSED CONDUIT 3/4" CONDUIT, 2= 1/2 AWG, 1= 1/2 AWG GROUND
	LIQUID TIGHT FLEXIBLE CONDUIT
	UNDERGROUND CONDUIT HOMERUN TO PANELBOARD "P", C.T. NO. 3 3/4", 2= 1/2", 1= 1/2 GND UNLESS OTHERWISE NOTED
	DISCONNECT SWITCH; NEMA 4 RATING, 30 AMP
	FIELD MOUNTED MOTOR STARTER W/HOA CONTROL STATION (SEE CONTROL DESIGNATIONS)
	JUNCTION BOX W/10' PATHAL (3/4", 2= 1/2", 1= 1/2 GND)
	PANELBOARD "P"
	END OF LINE RESISTOR
	RADIO MASTER BOX
	FIRE ALARM CONTROL PANEL
	FIRE ALARM PULL STATION
	FIRE ALARM HORN / LIGHT
	HEAT DETECTOR 1/2" FIXED TEMP. / RATE OF RISE
	SMOKE DETECTOR
	TELEPHONE OUTLET, W-WALL MTD.
	MOTOR 2 HORSEPOWER
	TWO SPEED, TWO WINDING MOTOR
	POWER FACTOR CORRECTION CAPACITOR
	HOT WATER HEATER
	JUNCTION BOX
	ELECTRIC UNIT HEATER, 5 KW RATING
	VIBRATION SENSOR
	CONTACTOR

### LEGEND (CONT.)

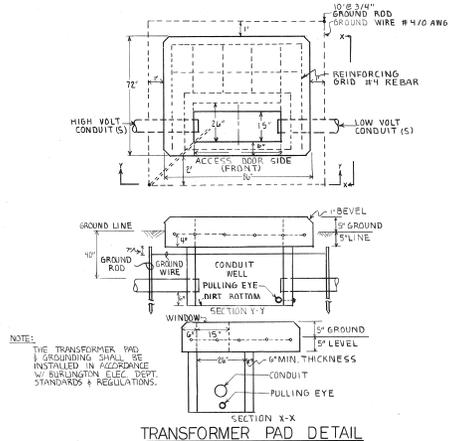
	FULL VOLTAGE NON-REVERSING MOTOR STARTER NEMA SIZE 1 2= 2 A.C. CONTACTS	RVR= REDUCED VOLT AUTO XPRP 0% TAP	TSW= TWO SPEED TWO WINDING
	START/STOP MAINTAINED CONTACTS		
	RUN TIME METER		
	24 HOUR CYCLE TIMER		
	HAND-OFF-AUTO FORWARD REVERSE STOP TORQUE SWITCH 1= ALARM, 2= SHUTDOWN		
	STOP FUSE		
	RED PILOT LIGHT		
	GREEN PILOT LIGHT		
	AMBER PILOT LIGHT		
	TIME DELAY RELAY		
	ALARM RESET SWITCH		
	OFF/LOW/HIGH/STOP		
	CONTROL STATION (SEE ABOVE FOR DESIGNATIONS)		
	TRANSFORMER	⊕	AMMETER
	DISCONNECT SWITCH, 30 AMP	⊖	VOLTMETER
	AMMETER SWITCH	⊕	POTENTIOMETER
	VOLT METER SWITCH	⊕	CAPACITOR
	FLOAT SWITCH	⊕	NO Ⓛ
	LEVEL ELEMENT	⊕	DE
	FLOW INDICATOR TRANSMITTER	⊕	2
	MOTORIZED VALVE	⊕	⊕
	MAGNETIC FLOW METER	⊕	⊕
	PHASE FAILURE RELAY	⊕	⊕
	DISAGLED OXYGEN PROBE	⊕	⊕
	START (MAINTAINED)	⊕	⊕
	STOP (MAINTAINED)	⊕	⊕
	VARIABLE FREQUENCY DRIVE (EVEN BY INSTRUMENTATION)	⊕	⊕
	CKT BREAKER 100 AMP FRAME 70 AMP TRIP	⊕	⊕
	MOTOR CIRCUIT PROTECTOR, 30 AMP RATING	⊕	⊕
	FUSED CONTROL TRANSFORMER ⊕-300 TIME DELAY RELAY ALT. 0-300 SECONDS		
	MOTOR CONTACTOR		
	TIMING RELAY		
	CONTROL RELAY		
	TIMED CONTACT		NOTE - NORMALLY OPEN TIMED TO CLOSE
	TORQUE SWITCH		
	RUN TIME METER		

### CONTROL SCHEMATIC LEGEND

### FIXTURE SCHEDULE

A	FLUORESCENT FIXTURE 1 @ 34 LAMPS BASKETED ACRYLIC W/MP AROUND LENS 120 V OPERATION MEENE CAT. NO. STD 210 OR APPROVED EQUAL
B	2 X 4" SURFACE MTD. FLUORESCENT FIXTURE W/4 B 34 W LAMPS 120 V OPERATION MEENE CAT. NO. NRT25V44ND OR APPROVED EQUAL
C	TRENDANT MTD. INCANDESCENT FIXTURE W/4 B 34 W LAMPS 120 V OPERATION FIXTURE W/20 W LAMP APPLETON CAT. NO. AP2050 OR APPROVED EQUAL
D	SURFACE MTD. FIXTURE W/ 100 W MERCURY VAPOR LAMP 90 V OPERATION KENALL CAT. NO. 5701 OR APPROVED EQUAL
E	INCANDESCENT EXIT LIGHT, WHITE W/RED LETTERS 120 V NORM. OPERATION LITHONIA CAT. NO. EPJR 120V OR APPROVED EQUAL
F	COMBINATION FAN/LIGHT, ROUND W/ALUMINUM GRILLE 100 V LAMP NUTONE CAT. NO. 8663M OR APPROVED EQUAL
G	WALL MTD. FIXTURE W/100 W M.H. LAMP 120 V OPERATION W/PHOTOCELL OR APPROVED EQUAL DEVINE LIGHTING CAT. NO. ANP 100 MH 1R1 EQUAL
H	2 X 2" SURFACE MTD. FLUORESCENT FIXTURE W/2 X 40 WIT U LAMPS 120 V OPERATION MEENE CAT. NO. NRT25V4U4 OR APPROVED EQUAL
J	RECESSED DOWNLIGHT W/100 W M.H. LAMP 120 V OPERATION ILL. LISTED FOR DAMP LOCATIONS LITHONIA CAT. NO. AN100M4R OR APPROVED EQUAL
K	WALL MTD. FLOODLIGHT W/175 W M.H. LAMP 120 V OPERATION W/PHOTOCELL OR APPROVED EQUAL MCGRAW-EDISON CAT. NO. RE211475FAL BRACKET #FA160
L	WALL MTD. INCANDESCENT FIXTURE W/100 W LAMP WHITE GLASS GLOBE 120 V OPERATION PROGRESS CAT. NO. 130351E OR APPROVED EQUAL
M	CEILING MTD. FIXTURE W/2-7W PL7 LAMPS NON-DESTRUCTIBLE 120 V OPERATION PROGRESS CAT. NO. 137575 OR APPROVED EQUAL
N	POLE MTD. FIXTURE W/ 40 W M.H. LAMP QUAD-TIP BALLAST INTEGRAL PHOTOCELL 2-5 POLE CHUCK #MM5 OR W/ 40 W M.H. LAMP QUAD-TIP BALLAST TOILET #T177 L2F BR 514 EQUALS

NOTE:  
1. FLUORESCENT  
FIXTURES SHALL  
HAVE ENERGY  
SAVING BALLASTS.



TRANSFORMER PAD DETAIL

### LEGEND SCHEDULES & DETAILS

1	ISSUED FOR CONSTRUCTION								
2	ISSUED FOR APPROVAL								
A	ISSUED FOR APPROVALS & REVIEWS								
NO.	DATE/APP.	REVISION	NO.	DATE/APP.	REVISION	NO.	DATE/APP.	REVISION	NO.

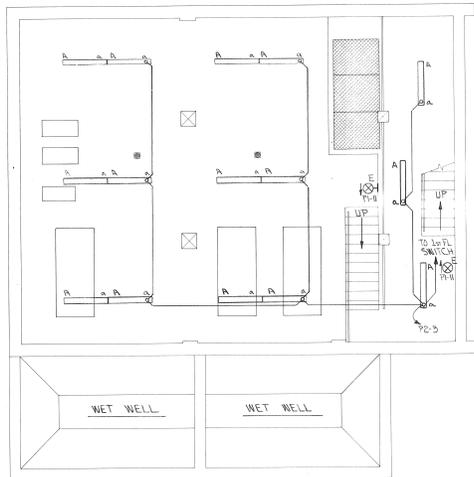
CITY OF BURLINGTON  
WASTEWATER TREATMENT FACILITIES  
NORTH PLANT UPGRADE  
BURLINGTON VERMONT

**WESTON**  
DESIGN/ENGINEERS

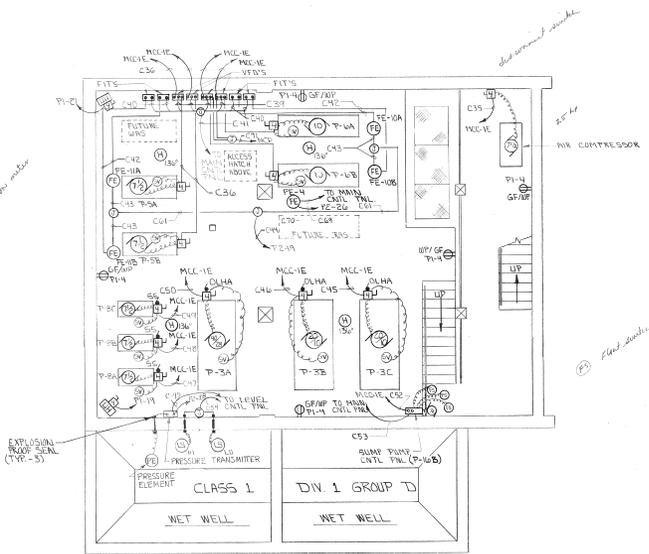
CHECKED	R.W.B.	4-24-90	DESIGN APPROVALS	DATE
DESIGNED	K.D.B.	4-24-90		
PROJECT				
DESIGNED	R.W.B.	4-24-90		
DESIGNED				



ISSUED	K.D.B.	DATE	4-24-90	DRAW NO.	
DATE					
	NONE		3302-02-02	SHEET	401



LIGHTING PLAN



POWER PLAN

NO.	DATE	BY	REVISION
L 3/94			ISSUED FOR CONSTRUCTION
E 5/94			ISSUED FOR APPROVAL
A 7/94			ISSUED FOR APPROVALS & REVIEW

CITY OF BURLINGTON  
WASTEWATER TREATMENT FACILITIES  
NORTH PLANT UPGRADE  
BURLINGTON, VERMONT

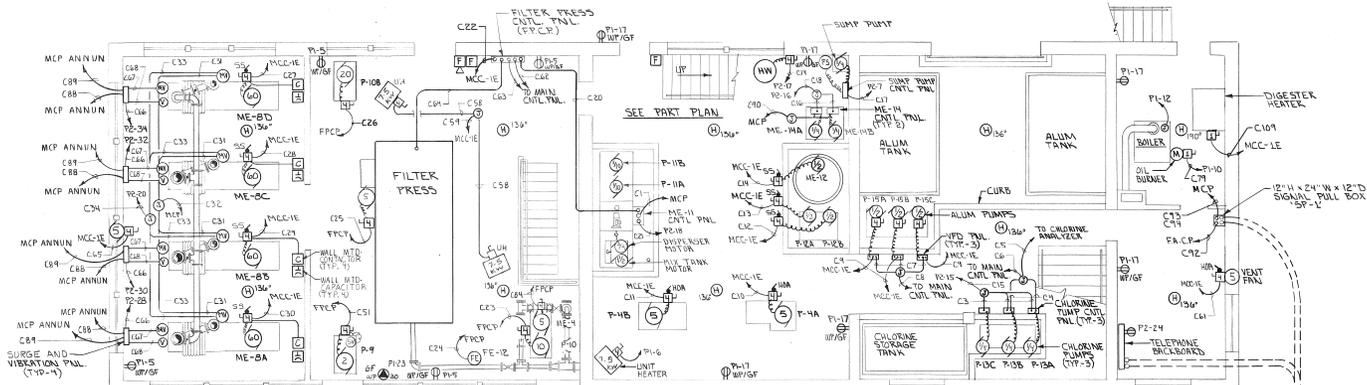
**WESTON**  
ENGINEERS/ARCHITECTS

DESIGNED: R.W.B. 4-24-90  
CHECKED: K.O.B. 4-24-90  
DRAWN: [blank]  
APPROVED: R.W.B. 4-24-90

CHECKED	R.W.B.	4-24-90	DATE
DESIGN	K.O.B.	4-24-90	
DRAWN	[blank]		
APPROVED	R.W.B.	4-24-90	

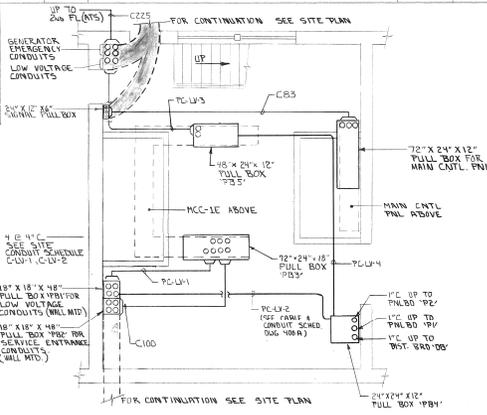


MODIFICATIONS TO CONTROL BUILDING BSMT POWER LIGHTING PLAN			
DESIGNER	M.G.G.	DATE	4-24-90
DRAWN	[blank]	SCALE	1/4" = 1'-0"
CHECKED	[blank]	DATE	3/30/02-02-02
PROJECT NO.	402	SHEET NO.	1



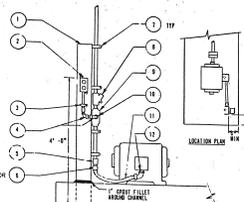
WET WELL

NOTE: CONDUITS RUN IN FINISHED AREAS SHALL BE CONCEALED.



PART PLAN  
SCALE: 1/4" = 1'-0"

MOTOR AND CONTROL STATION INSTALLATION - OVERHEAD FEED



CHANNEL INSTALLATION  
NOTE: SEE DRAWING 1-11 FOR CHANNEL PLATE. FROM HERE THE CHANNEL IS TO BE FLOOR FINISH TO PROVIDE THE MOTOR PROTECTION.

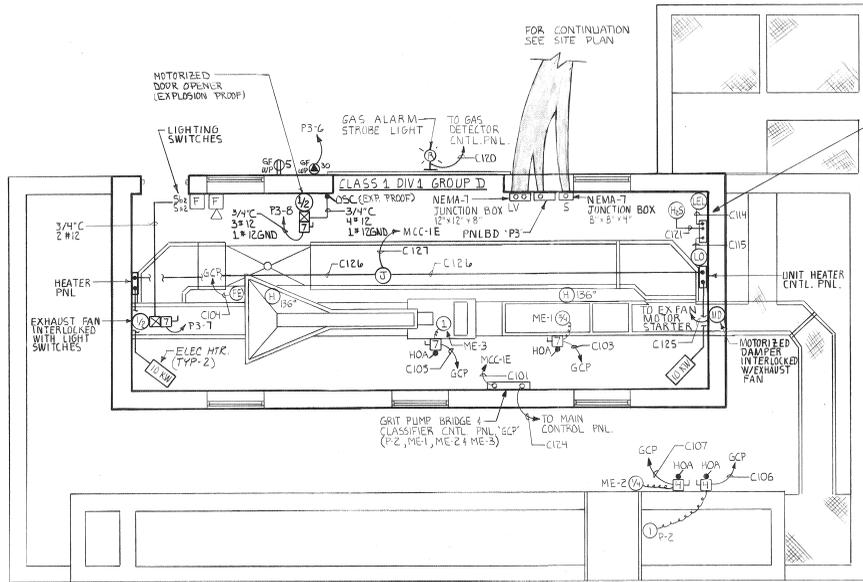
NOTE: ALL PERFORMING IN THE CHANNEL WE WITH 1/2" x 4" P. WEAR WELD CAP BEARS.

NOTE: ALL SIZES & COLORS TO 1/4" ABOVE FINISH FLOOR DECK.

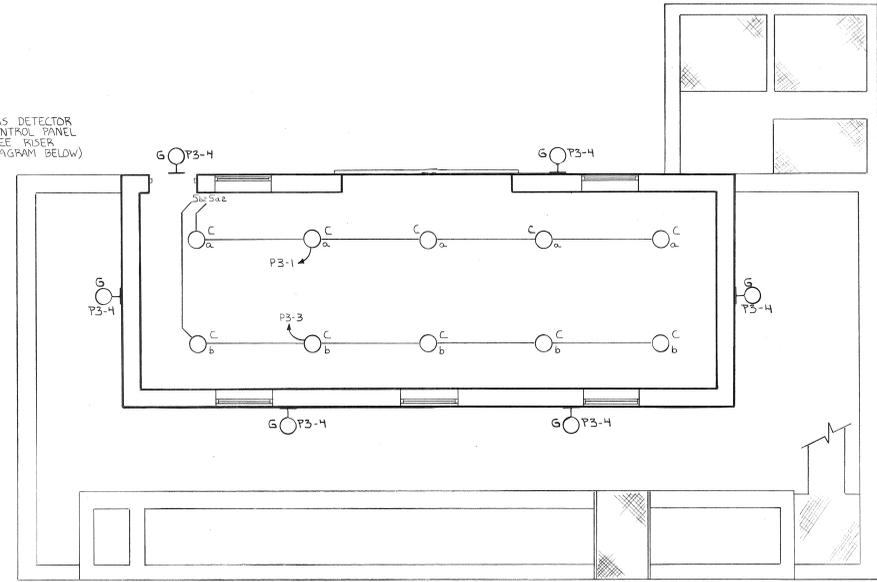
ITEM	DESCRIPTION	QTY	UNIT	DESCRIPTION	QTY	UNIT
1	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
2	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
3	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
4	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
5	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
6	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
7	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
8	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
9	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
10	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
11	CHANNEL IRON	1	EA	6' CHANNEL	1	EA
12	CHANNEL IRON	1	EA	6' CHANNEL	1	EA

CITY OF BURLINGTON WASTEWATER TREATMENT FACILITIES NORTH PLANT UPGRADE BURLINGTON VERMONT				ORDERED R. W. B.	DATE 4-24-90	DESIGN APPROVALS	DATE			<b>MODIFICATIONS TO CONTROL BUILDING 1ST FL. POWER PLAN</b>	
1	ISSUED FOR CONSTRUCTION			DESIGNER K. D. B.	DATE 4-24-90			SCALE 1/4" = 1'-0"	REVISED FOR	DATE	SHEET NO. <b>403</b> OF <b>2</b>
2	ISSUED FOR APPROVAL			APPROVED R. W. B.	DATE 4-24-90						
3	ISSUED FOR APPROVALS & REVIEW										
NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION	BURLINGTON	MANAGERS	DESIGNERS/ENGINEERS	VELOCITY



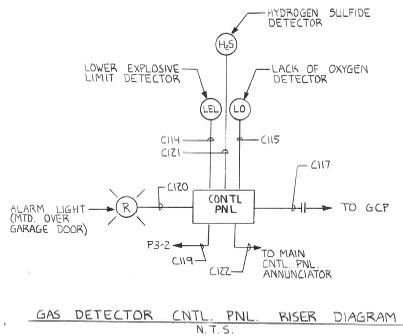


POWER PLAN



LIGHTING PLAN

NOTE: ALL ELECTRIC EQUIPMENT & FIRE ALARM EQUIPMENT SHALL BE RATED FOR CLASS 1, DIV 1, GROUP D AREAS.



GAS DETECTOR CNTL. PNL. RISER DIAGRAM  
N.T.S.

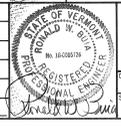
NOTE  
WORK THIS DRAWING WITH DRAWINGS 200A, 201A, 308A, AND 501A  
CONTRACTOR DESIGN/BUILD

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
1	1/14		ISSUED FOR CONSTRUCTION				
2	3/14		ISSUED FOR APPROVAL				
3	7/14		ISSUED FOR APPROVALS < REVIEW				

CITY OF BURLINGTON  
WASTEWATER TREATMENT FACILITIES  
NORTH PLANT UPGRADE  
BURLINGTON VERMONT

WESTON  
DESIGNERS/CONSULTANTS

CHECKED	R. W. B.	4-24-90	CLIENT APPROVALS	DATE
DES. ENG.	K. D. B.	4-24-90		
PROJ. ENG.				
PROJ. MGR.				
APPROVED	R. W. B.	4-24-90	ISSUED FOR	DATE
APPROVED				



NEW INFLUENT STRUCTURE LIGHTING & POWER PLAN			
DRAWN	M.G.G.	DATE	4-24-90
SCALE	1/4" = 1'-0"	DWG. NO.	3302-02-02
		DWG. NO.	406A
		SHT.	OF

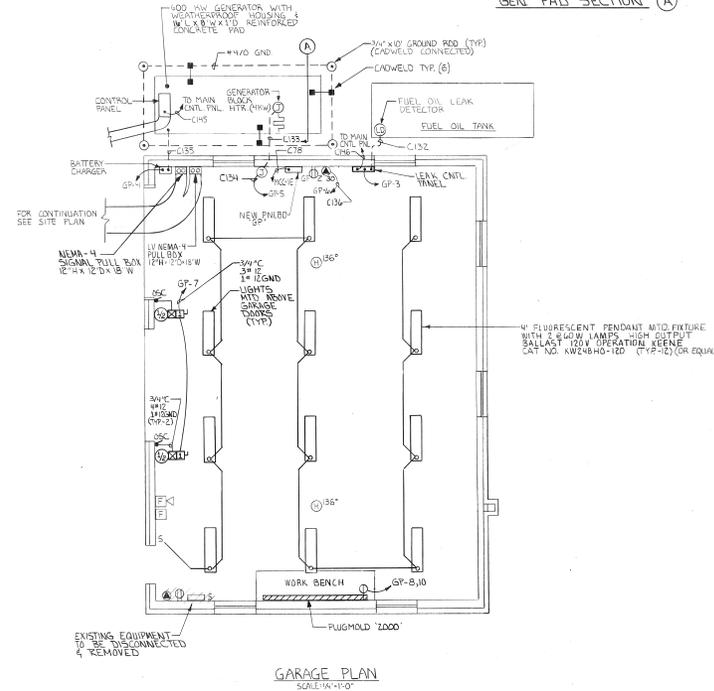
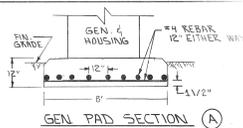
PNLBD 'P1'		CONTROL BLDG.		120/208 V, 3 $\phi$ , 4W		100 AMP N.L.O.	
CKT NO	BSK/CKT SIZE	LOAD	LOAD	BSK/CKT SIZE	NO.	BSK/CKT SIZE	NO.
1	20	LUNCH ROOM RECPTS	ELECTRIC RM RECPTS	20	2	20	2
3	20	LUNCH ROOM RECPTS	PUMP ROOM RECPTS	20	4	20	4
5	20	FIRST FLOOR RECPTS	FIRST FLOOR UNIT MTR	20	6	20	6
7	20	OD PROBES	SITE LTG.	20	8	20	8
9	20	FLOOD LTG.		20	10	20	10
11	20	EXIT LTG.		20	12	20	12
13	20	WET WELL LEVEL CNTRL PNL	OIL BURNER	20	15	20	15
15	20	SPARE		20	17	20	17
17	20	FIRST FLOOR RECPTS		20	19	20	19
19	20	BSMT UNIT MTR	BOILER CONTROLS	20	21	20	21
21	20	BSMT UNIT MTR	CHUK LIFT	20	23	20	23
23	20	Bldg SPECIAL RECP.	SNOW MELTING PANEL	20	25	20	25
25	20	SPARE	CHLORINE TANK FITS	20	27	20	27
27	20	SPARE	SPARE	20	29	20	29
29	20	SPARE	SPARE	20	31	20	31
31	20	SPACE	SPACE	20	33	20	33

PNLBD 'P2'		CONTROL BLDG.		120/208 V, 3 $\phi$ , 4W		225 AMP M.C.B.	
CKT NO	BSK/CKT SIZE	LOAD	LOAD	BSK/CKT SIZE	NO.	BSK/CKT SIZE	NO.
1	20	2nd FLOOR LTG	LAB ROOM PUGMOLD	20	2	20	2
3	20	INT. PUMP RM LTG	LAB ROOM PUGMOLD	20	4	20	4
5	20	1st FLOOR LTG	LAB ROOM PUGMOLD	20	6	20	6
7	20	1st FLOOR LTG	LAB ROOM PUGMOLD	20	8	20	8
9	20	1st FLOOR LTG	LAB RM EX. WOOD	20	10	20	10
11	20	CHLORINE ANALYZER	2nd FLOOR RECPTS	20	12	20	12
13	20	1st FLOOR LTG	1st FLOOR LTD	20	14	20	14
15	20	CHLORINE PUMP CNTRL PNL	ME-14	20	16	20	16
17	20	N.W.M.	ME-11 CNTRL PNL	20	18	20	18
19	20	FE	MOTORIZED VALVES	20	20	20	20
21	20	FACP	DUBBLER CNTRL PNL	20	22	20	22
23	50	SNOW MELTING MATS	FE-4	20	24	20	24
25	20	SPARE	SEWAGE & VIB. PNL	20	26	20	26
27	20	SPARE	SEWAGE & VIB. PNL	20	28	20	28
29	20	SPARE	SEWAGE & VIB. PNL	20	30	20	30
31	20	SPARE	SEWAGE & VIB. PNL	20	32	20	32
33	20	SPARE	SEWAGE & VIB. PNL	20	34	20	34
35	20	SPARE	2nd FLOOR LTG	20	36	20	36
37	20	SPARE	1st FLOOR LIGHTING	20	38	20	38
39	20	SPARE	PRESSURE TRANSDUCER	20	40	20	40
41	20	SPARE	SPARE	20	42	20	42

PNLBD 'P3'		EXPLOSION PROOF		HEADWORKS	
120/208 V, 3 $\phi$ , 4W		CLASS I DIV I GROUP D		50 AMP M.C.B.	
CKT NO	BSK/CKT SIZE	LOAD	LOAD	BSK/CKT SIZE	NO.
1	20	LIGHTING	GAS DETECTOR PNL	20	2
3	20	LIGHTING	OUTSIDE LTG.	20	4
5	20	RECEPTACLES	SPECIALTY RECP	30	6
7	20	EXHAUST FAN		20	8
9	20	SPARE	MOTORIZED DOOR	20	10
11	20	SPACE		20	12

PNLBD 'GP'		GARAGE		100 AMP M.C.B.	
CKT NO	BSK/CKT SIZE	LOAD	LOAD	BSK/CKT SIZE	NO.
1	20	LIGHTING	RECEPTACLE	20	2
3	20	LEAK CONTROL PNL	BATTERY CHARGER	20	4
5	20	GEN BLOCK HTR.	SPECIAL PURPOSE RECP	30	6
7	20	MOTORIZED DOORS	PLUGMOLD '2000'	20	8
9	20	SPARE		20	10
11	20	SPARE		15	12
13	20	SPARE		17	14
15	20	SPARE		20	16
17	20	SPARE		20	18
19	20	SPARE		20	20
21	20	SPARE		20	22
23	20	SPARE		20	24
25	20	SPARE		20	26
27	20	SPARE		20	28
29	20	SPARE		20	30
31	20	SPARE		20	32
33	20	SPARE		20	34
35	20	SPARE		20	36
37	20	SPARE		20	38
39	20	SPARE		20	40
41	20	SPARE		20	42

PNLBD 'P4'		EXPLOSION PROOF		DIGESTER BLDG.			
120/208 V, 3 $\phi$ , 4W		CLASS I DIV I GROUP D		50A M.C.B.			
CKT NO	BSK/CKT SIZE	LOAD	LOAD	BSK/CKT SIZE	NO.		
1	20	LIGHTING	EXIST	FLOW RECORDER	EXIST	20	2
3	20	RECP CKT	EXIST	CONTROL CKT	EXIST	20	4
5	20	SPARE		SPARE		20	6
7	20	SPARE		SPARE		20	8



CITY OF BURLINGTON WASTEWATER TREATMENT FACILITIES NORTH PLANT UPGRADE BURLINGTON VERMONT				CHECKED: R.W.B. 4-24-90 DES. ENR.: K.D.B. 4-24-90 PROJ. NO.: APPROVED: R.W.B. 4-24-90 DESIGNED FOR:	DATE: 4-24-90 SHEET: NONE DATE: 3302-02-02 SHEET: 411	SCALE: 1/4"=1'-0" CITY OF BURLINGTON VERMONT 1 INCH = 10 FEET	<b>SCHEDULES &amp; DETAILS</b> DATE: 4-24-90 SHEET: NONE DATE: 3302-02-02 SHEET: 411
--	--	--	--	---	--	--	--

EQUIPMENT NO.	CONTR. DATE	WIRE CANTY/TYPE	GROUNDING (WY/TYPE)	FROM	VIA	TO	REMARKS	NO.	CONTR. DATE	WIRE CANTY/TYPE	GROUNDING (WY/TYPE)	FROM	VIA	TO	REMARKS				
																CONTR. DATE	CONTR. DATE	CONTR. DATE	CONTR. DATE
C2	1	3/4	1	12		ME-11 CASTL PNL		406	1	1/4	3	6	1	8	P-38 INT. LIFT PUMP	MCC-IE	POWER		
C3	1	3/4	3	TPS		J-BOX											CONTROL		
C13	1	3/4	2	12	12	CHLORINE PUMP CNTL PNL NO 13 A,B,C		C47	1	3/4	3	12	1	12	P-8A PLANT WATER PUMP	MCC-IE	POWER		
C4	1	3/4	2	TPS		CHLORINE PUMP CNTL PNL NO 13 A,B											CONTROL		
C5	1	3/4	2	TPS		J-BOX		C48	1	3/4	3	12	1	12	P-8B PLANT WATER PUMP	MCC-IE	POWER		
C6	1	3/4	2	TPS		J-BOX											CONTROL		
C7	1	3/4	1	TPS		CHLORINE ANALYZER		C49	1	3/4	3	12	1	12	P-8C PLANT WATER PUMP	MCC-IE	POWER		
C8	1	3/4	3	TPS		ALUM PUMP VFD NO. 15 A,B,C											CONTROL		
C9	1	3/4	3	12	12	ALUM PUMP VFD PNL NOS. 15 A,B,C		C50	1	1/4	3	6	1	8	P-3A INT. LIFT PUMP	MCC-IE	POWER		
C10	1	3/4	3	12	12	R-4A SLUDGE PUMP											CONTROL		
								C51	1	3/4	3	12	1	12	P-7 PRESS WASH WATER PUMP	F P-CP	POWER		
C11	1	3/4	3	12	12	P-4B SLUDGE PUMP		C52	1	3/4	3	12	1	12	SUMP PUMP CONTROL PNL	MCC-IE	POWER		
																	CONTROL		
C12	1	3/4	3	12	12	P-12A SODIUM FEED PUMP		C53	1	3/4	1	TPS					MAIN CONTROL PNL		
								C54	1	3/4	1	TPS						SIGNAL	
C13	1	3/4	3	12	12	P-12B SODIUM FEED PUMP		C55	1	14	12						CONTROL		
								C56	1	3/4	2	12	1	12	BUBBLER CONTROL PNL	MCC-IE	POWER		
C14	1	3/4	3	12	12	ME-12 SODIUM MIXER		C57	1	3/4	2	12	1	12	CHLORINE ANALYZER	PNLBD 'P2'	POWER		
								C58	1	3/4	3	12	1	12	TK-555 XM. VTR.	PNLBD 'P2'	POWER		
								C59	1	3/4	4	12	1	12	J-BOX	MCC-IE	POWER		
C15	1	3/4	2	12	12	J-BOX		C60	1	3/4	3	12	1	12	EXHAUST FAN	MCC-IE	POWER		
C16	1	3/4	2	12	12	ME-11 CONTROL PNL (TYPR)		C61	1	3/4	3	12	1	12	EXHAUST FAN	MCC-IE	POWER		
C17	1	3/4	2	12	12	SUMP PUMP CONTROL		C62	1	3/4	8	12	1	12	FILTER PRESS CNTL PNL	MAIN CONTROL PNL	CONTROL		
C18	1	3/4	2	12	12	J-BOX		C63	1	3/4	3	TPS					SIGNAL		
								C64	1	1	30	12					CONTROL		
C19	1	3/4	2	12	12	HOT WATER HTB		C65	1	3/4	3	12	1	12	EXHAUST FAN	MCC-IE	POWER		
C20	1	3/4	1	TPS		ME-11 CONTROL PNL		C66	1	3/4	2	12	1	12	SEWAGE ELEVATOR PNL	PNLBD 'P2'	POWER		
C21	1	3/4	2	12	12	ME-11 CONTROL PNL		C67	1	3/4	2	12	1	12	MOTORIZED VALVE	SEWAGE ELEVATOR CNTL PNL	POWER		
C22	1	1	3	4	10	PRESS. FEED PUMP CONTROL PNL		C68	1	3/4	4	12					SEWAGE ELEVATOR CNTL PNL		
								C69	1	3/4	1	12	1	12	VIBRATOR	PANEL BOARD 'P2'	POWER		
C23	1	3/4	3	8	10	PIC-A PRESS FEED PUMP		C70	1	3/4	1	TPS					MAIN CONTROL PANEL		
C24	1	3/4	1	TPS		FLOW ELEMENT		C71	1	3/4	10	12					CONTROL		
								C72	1	3/4	4	TPS						SIGNAL	
C25	1	3/4	2	12	12	TRACTION DRIVE MOTOR		C73	2	3	3	3SD	1	4				EXIST. MCC MAIN BAR.	
C26	1	3/4	2	10	10	P-10S PRESS LAKE PUMP		C74											
C27	1	1/4	3	3	8	ME-10 AERATION BLOWER													
								C75	1	1/2	3	2/0	1					480-120/208V XFMR (112.5 KVA)	
C28	1	1/4	3	3	8	ME-10C AERATION BLOWER		C76	1	2	1/2	4	600	1	3			480-120/208V XFMR (112.5 KVA)	
								C77	1	1/2	4	3	1	8				PNLBD 'Y1'	
C29	1	1/4	3	3	8	ME-10B AERATION BLOWER		C78	1	2	4	1/0	1	8				PNLBD 'GP'	
								C79	1	3/4	3	10	1	12				BOILER OIL BURNER	
C30	1	1/4	3	3	8	ME-0A AERATION BLOWER		C80	1	1	4	8	1	10				PNLBD 'P3'	
								C81	1	1/2	1	3/0							DUCT BANK
C81	1	3/4	1	TPS		MV-MOTORIZED VALVE BLOWER PIPING		C82											
C82	1	3/4	4	TPS		J-BOX													
C83	1	3/4	2	12	12	MV-MOTORIZED VALVE BLOWER PIPING													
C34	1	3/4	2	12	12	J-BOX		C83	1	2									
C35	1	3/4	3	12	12	AIR COMPRESSOR													
C36	1	3/4	3	10	10	W-1S RAS PUMP VFD NOS. P5A,B; P6 A,B													
C37	1	3/4	3	10	10	P5A & P6B RAS PUMPS													
C38	1	3/4	3	10	10	P5A & P5D WAS PUMPS		C85	1	2	4	1/0	1	6				PNLBD 'P2'	
C39	1	3/4	1	TPS		W-1S RAS PUMP VFD NOS. P5A,B; P6 A,B		C86	1	1	4	1	8					PNLBD 'P4' DIGESTER BLDG	
C40	1	3/4	2	TPS		F.I.T.		C87	1	2	12							MCC-IE	
C41	1	3/4	30	TPS		J-BOX		C88	1	3/4	2	12						SURGE & VIBR. PNL	
C42	1	3/4	2	TPS		J-BOX		C89	1	3/4	1	TPS						SURGE & VIBR. PNL	
C43	1	3/4	2	12	12	F.E.		C90	1	3/4	4	12						ME-14 CNTL PNL'S.	
C44	1	3/4	2	12	12	F.E.		C91	1	3/4	4	12						RAS PUMPS VFD'S	
C45	1	3/4	2	12	12	F.E.		C92	1	3/4	8	12						SIGNAL PULL BOX 'SP-1'	
C46	1	3/4	2	12	12	F-BOX		C93	1	2	4	TPS						SIGNAL PULL BOX 'SP-1'	
C47	1	1/4	3	6	1	P-3C INT. LIFT PUMP		C94	1	2								WET WELL PRESSURE ELEMENT	
								C95	1	3/4	6	TPS							LEVEL CONTROL PANEL
								C96	1	3/4	6	TPS							MAIN CONTROL PANEL

**CITY OF BURLINGTON**  
**WASTEWATER TREATMENT FACILITIES**  
**NORTH PLANT UPGRADE**  
**BURLINGTON VERMONT**

**WESTON**  
 ENGINEERS/CONSULTANTS

DESIGNED	R.W.B.	4-24-90	DATE	
DESIGNED	K.D.B.	4-24-90	DATE	
PROJECT ENG.				
DESIGNED	R.W.B.	4-24-90	DATE	
DESIGNED				

**CABLE & CONDUIT SCHEDULE**

NO.	D.S.S.	DATE	4-24-90	REV. NO.	412	NO.	1
NO.	D.S.S.	DATE	3302-02-02	REV.		NO.	1

CONDUIT NO	CONDUIT SIZE	WIRE QTY	GROUND SIZE	FROM	VIA	TO	REMARKS
C000	3/4	4	1/0	750 KVA 7RD MTD XFMR	DUCT BANK	MCC-1E MAIN BKR	SPARK
C001	1	4	1/0				SPARK
C002	2	4	3/10	RUN ELEC RISER POLE	DUCT BANK	750 KVA 7RD MTD XFMR	SPARK
C003	1	3/4	3/12	MET BAR SCREEN		CONTROL PNL 'GCP'	POWER
C004	1	3/4	4/12	FLOW SWITCH		CONTROL PNL 'GCP'	POWER
C005	1	3/4	3/12	ME-3 GRIT CLASSIFIER		CONTROL PNL 'GCP'	POWER
C006	1	3/4	3/12	P-2 GRIT PUMP		CONTROL PNL 'GCP'	POWER
C007	1	3/4	2/12	ME-2 GRIT BRIDGE		CONTROL PNL 'GCP'	POWER
C008							
C009	1	3/4	3/12	CONTR. PNL 'GCP'	DUCT BANK	MCC-1E	POWER
C009	1	3/4	3/10	DIGESTER HEATER (LOC IN BLDG 7A)		MCC-1E	POWER
C100							
C101							
C102							
C103							
C104							
C105							
C106							
C107							
C108							
C109							
C110							
C111							
C112							
C113							
C114	1	3/4	1 TPS	LEL SENSOR		GAS DETECTOR CONTROL PNL	SIGNAL
C115	1	3/4	1 TPS	LO SENSOR		GAS DETECTOR CONTROL PNL	SIGNAL
C116							
C117	1	3/4	2/12	GAS DETECTOR CONTROL PNL		CONTROL PNL 'GCP'	SHUNT TRIP
C118							
C119	1	3/4	2/12	GAS DETECTOR CONTROL PNL		PNLBD 'P2'	POWER
C120	1	3/4	2/12	GAS DETECTOR CONTROL PNL		ALARM LIGHT	POWER
C121	1	3/4	1 TPS	H <sub>2</sub> S DETECTOR		GAS DETECTOR CNTL PNL	SIGNAL
C122	1	3/4	2/12	MAIN CONTROL CNTL PNL	DUCT BANK	MAIN CONTROL PNL	SIGNAL
C123							
C124	1	3/4	4/12	GCP	DUCT BANK	MAIN CONTROL PNL & ANNUNCIATOR	SIGNAL
C125	1	3/4	2/12	MOTORIZED DAMPER		INFLUENT BLDG EXH FAN	INTERLOCK
C126	1	3/4	3/8	ELEC HEAT JIB		ELEC HEATER	POWER
C127	1	1	3/8	MCC-1E	DUCT BANK	INFLUENT BLDG ELEC HEAT JIB	POWER
C128							
C129							
C130							
C131							
C132	1	1	1 TPS	LIQUID DETECTOR		LEAK CONTROL PNL	SIGNAL
C133	1	1	3/12	GEN BLOCK HTA		J-BOX	POWER
C134	1	1	3/12	J-BOX		PNLBD 'GCP'	POWER
C135	1	1	2/12	GEN BATTERY		BATTERY CHARGER	POWER
C136	1	3/4	3/10	30 AMP 120/208V RECEPTACLE		PNLBD 'GCP'	POWER
C137							
C138							
C139							
C140							
C141							
C142							
C143							
C144							
C145	1	1	6/12	GENERATOR CONTROL PANEL	DUCT BANK	MAIN CONTROL PANEL	SIGNAL
C146	1	1	4/12	LEAK CONTROL PANEL	DUCT BANK	MAIN CONTROL PANEL	SIGNAL
C147							

CONDUIT NO	CONDUIT SIZE	WIRE QTY	GROUND SIZE	FROM	VIA	TO	REMARKS
C200	1	2	1/0	INFLUENT BUILDING	DUCT BANK	PNLBD 'P3'	POWER
C201	1	2	3/10	INFLUENT BUILDING	DUCT BANK	MAIN CNTL PNL	CONTROL
C202	1	1	3/10	REF. SAMPLER	DUCT BANK	PNLBD 'P2'	POWER
C203	1	1	3/10	REF. SAMPLER	DUCT BANK	MAIN CNTL PNL	SIGNAL
C204	1	1	3/10	REF. SAMPLER	DUCT BANK	MAIN CNTL PNL	SIGNAL
C205	1	1	2 TPS	CHLORINE TANK J-BOX	DUCT BANK	MAIN CNTL PNL	SIGNAL
C206	1	1	4/12	CHLORINE TANK J-BOX	DUCT BANK	PNLBD 'P2'	POWER
C207	1	1	2/12	CHLORINE TANK J-BOX	DUCT BANK	CHLORINE TANK J-BOX	POWER
C208	1	1	1 TPS	CHLORINE TANK J-BOX		CHLORINE TANK J-BOX	SIGNAL
C209	1	1	3/10	CHLORINE SAMPLE PUMP	DUCT BANK	MCC-1E	POWER
C210							
C210	1	1	3/10	CHLORINE MIXER (ME-13)	DUCT BANK	MCC-1E	POWER
C211							
C211	1	1	3/12				CONTROL
C212	1	1	2/12	DIGESTER BLDG.	DUCT BANK	MCC-1E	POWER
C213							
C213	1	1	4/14	DIGESTER BLDG. FIRE ALARM	DUCT BANK	MAIN F.A.C.P.	SIGNAL
C214							
C214	1	1	3/10	PRIMARY CLARIFIER (ME-7B)		MCC-1E	POWER
C215	1	1	7/12	PRIMARY CLARIFIER (ME-7B)		MCC-1E	CONTROL
C216	1	1	3/10	PRIMARY CLARIFIER (ME-7A)		MCC-1E	POWER
C217	1	1	7/12	PRIMARY CLARIFIER (ME-7A)		MCC-1E	CONTROL
C218	1	1	3/10	REF. SAMPLER	DUCT BANK	PNLBD 'P2'	POWER
C219	1	1	1 TPS	REF. SAMPLER	DUCT BANK	MAIN CNTL PNL	SIGNAL
C220	1	1	3/10	SECONDARY CLARIFIER (ME-7B)		MCC-1E	POWER
C221	1	1	7/12	SECONDARY CLARIFIER (ME-7B)		MCC-1E	CONTROL
C222	1	1	3/10	REF. SAMPLER	DUCT BANK	PNLBD 'P2'	POWER
C223	1	1	1 TPS	REF. SAMPLER	DUCT BANK	MAIN CNTL PNL	SIGNAL
C224	1	1	3/10	FUTURE SECONDARY CLARIFIER		MCC-1E	POWER
C225	1	1	7/12	FUTURE SECONDARY CLARIFIER		MCC-1E	CONTROL
C226							
C226	1	4	10/12	DIGESTER BLDG. W-PULLBOX	DUCT BANK	MCC-1E	SPARK
C227	1	2	10/12	LV PULL BOX (NERATION TANK)		PNLBD 'PY CRT 7'	POWER
C228	1	2	9 TPS	SIGNAL PULL BOX (NERATION TANK)		MAIN CONTROL PNL & ANNUNCIATOR	SIGNAL
C229	1	2	3/10	RELOCATED SITE LTS TIE & FIXTURE		PNLBD 'PY CRT 8'	POWER
C230	3	4	3/10	EMERGENCY GENERATOR	DUCT BANK	EMERGENCY GENERATOR	EMERG. PWR.
C231	1	1	8/12	EMERGENCY GENERATOR	DUCT BANK	AUTOMATIC TRANSFER SWITCH	CONTROL
C232	1	2	4/14	HEADWORKS BUILDING	DUCT BANK	HEADWORKS BUILDING	FIRE ALARM
C233	1	2	4/14	HEADWORKS BUILDING	DUCT BANK	HEADWORKS BUILDING	SPARK
C234	1	1	6 TPS	DIGESTER BLDG. SIGNAL PULLBOX	DUCT BANK	MAIN CNTL PNL	SPARK
C235							
C235	1	3/4	3/10	MCC-1E	DUCT BANK	DIGESTER MIXER NO 1	POWER
C236							
C236	1	3/4	3/10	MCC-1E	DUCT BANK	DIGESTER MIXER NO 2	POWER
C237							
C237	1	3/4	4/12	MCC-1E			CONTROL

DATE	ISSUED FOR APPROVAL	REVISION	NO	DATE	REVISION	DATE	ISSUED FOR APPROVALS & REVIEW

**CITY OF BURLINGTON**  
WASTEWATER TREATMENT FACILITIES  
NORTH PLANT UPGRADE  
BURLINGTON VERMONT

**WESTON**  
CONSULTANTS

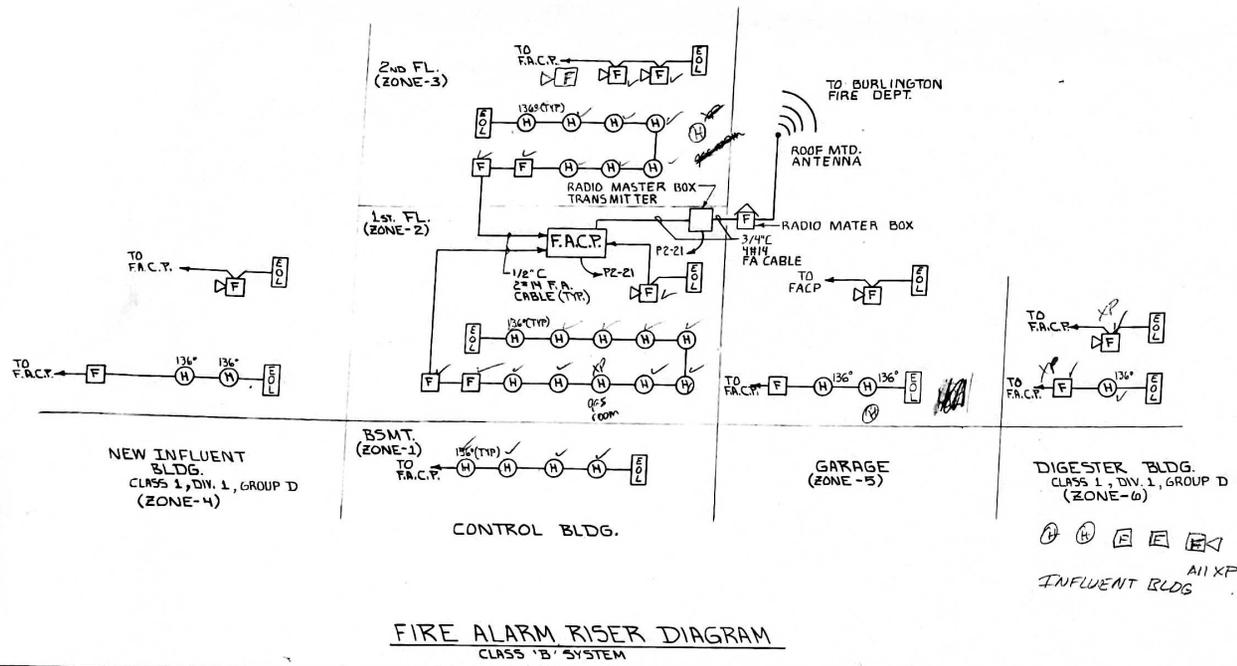
DESIGNED	RWB	4-24-90
REVISION	KDB	4-24-90
PROJECT		
APPROVED	RWB	4-24-90

**CABLE & CONDUIT SCHEDULE**

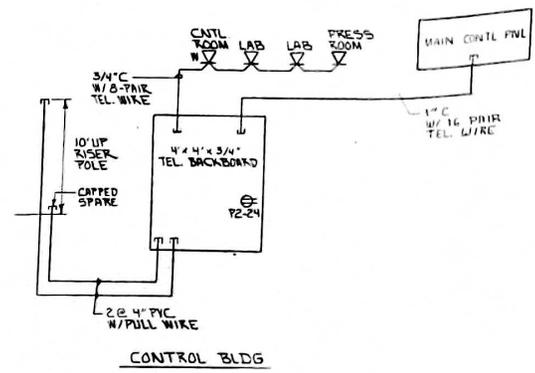
DATE	ISSUED FOR APPROVALS	DATE	ISSUED FOR APPROVALS



SCALE	D.S.S.	DATE	4-24-90	REV	413
DATE	NONE	DATE	3/302-02-02	REV	



FIRE ALARM RISER DIAGRAM  
CLASS 'B' SYSTEM



TELEPHONE RISER DIAGRAM

SITE DUCT CABLE & CONDUIT SCHEDULE

DUCT CONDUIT NO.	CONDUIT SIZE	CONDUIT RUNS INCLUDED IN DUCT RUN*	DUCT CONDUIT NO.	CONDUIT SIZE	CONDUIT RUNS INCLUDED IN DUCT RUN*	DUCT CONDUIT NO.	CONDUIT SIZE	CONDUIT RUNS INCLUDED IN DUCT RUN*
A-HV-1	4"	C102	D-LS-1	4"	SPARE	G-LV-1	4"	3 @ 500 MCM, 1" 1/0 GND
A-HV-2	4"	PULL WIRE (SPARE)	D-LS-2	4"	SPARE	G-LV-2	4"	3 @ 500 MCM, 1" 1/0 GND
A-T-1	4"	PULL WIRE	D-SS-1	4"	SPARE	G-LV-3	4"	3 @ 500 MCM, 1" 1/0 GND
A-T-2	4"	PULL WIRE (SPARE)	D-S-1	4"	C215B	G-LS-1	4"	3 #12 CONTROL
B-LV-1	4"	L100	E-LV-1	4"	C203A C204 C206 C209 C224 C86 C230 C231	H-LV-1	4"	C145 C78
B-LV-2	4"	C100	E-LV-2	4"	C211 C218A C210 C221	H-LV-2	4"	PULL WIRE (SPARE)
B-LV-3	4"	C100	E-LS-1	4"	SPARE	H-S-1	4"	C146, (4#14 FA)
B-LS-1	4"	PULL WIRE (SPARE)	E-LS-2	4"	SPARE	H-SS-1	4"	PULL WIRE (SPARE)
C-LV-1	4"	C203A C204 C206 C209 C224 C86 C280 C231	E-S-1	4"	C203B C205 C226 C212 C228	I-LV-1	2"	C127 C101 C122 C124
C-LV-2	4"	C211 C215A C218A C221 C224	E-SS-1	4"	SPARE	I-LV-2	2"	C201
C-LS-1	4"	SPARE W/PULL WIRE	F-LV-1	4"	C203A C204 C206 C209 C224	I-S-1	2"	C226
C-LS-2	4"	SPARE W/PULL WIRE	F-LS-1	4"	SPARE	I-LS-1	2"	SPARE W/PULL WIRE
D-LV-1	4"	C203A C204 C206 C209 C209 C86 C230 C231	F-LS-2	4"	SPARE	J-S-1	4"	C203B C205 C226 C216B C212 C218
D-LV-2	4"	C211 C218A C221 C224	F-LS-3	4"	SPARE	J-SS-1	4"	SPARE
			F-S-1	4"	C203B C205	K-LV-1	4"	C86 C230 C231
			F-SS-1	4"	SPARE	K-LV-2	4"	C221
						K-S-1	2"	C212 C228

\*THE DUCT CONDUIT SHALL ONLY CONTAIN THE WIRES INCLUDED IN THE INTERVAL CABLE & CONDUIT RUN NOT THE CONDUIT ITSELF. (SEE CABLE & CONDUIT SCHEDULES DWGS. 412 & 413)

ISSUED FOR CONSTRUCTION	NO.	DATE	APPN.	REVISION	BURLINGTON	<p>CITY OF BURLINGTON WASTEWATER TREATMENT FACILITIES NORTH PLANT UPGRADE BURLINGTON VERMONT</p> <p><b>WESTON</b> MANAGERS DESIGNERS/CONSULTANTS</p>	CHECKED	R.W.B.	DATE	4-24-90	CLIENT APPROVALS	DATE	
							DES. ENG.	K.D.B.	DATE	4-24-90			
							PROJ. ENG.						
							PROJ. MGR.						
APPROVED	R.W.B.	DATE	4-24-90	ISSUED FOR		DATE							

DIAGRAMS & DETAILS

D.S.S. 4-24-90

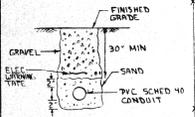
414

**Exhibit C**  
**East WWTP – Existing Electrical Drawings**

<b>Drawing No.</b>	<b>Drawing Title</b>
400	Electrical Site Plan
401	Legends, Schedules & Details
405	Modifications to Control Building Power Plan
406A	New Influent Structure Lighting & Power Plan
409	Pump Room Power & Lighting Plan
410	Valve House Power & Lighting Plan
412	Schedules
413	Cable & Conduit Schedule
414	Cable & Conduit Schedule

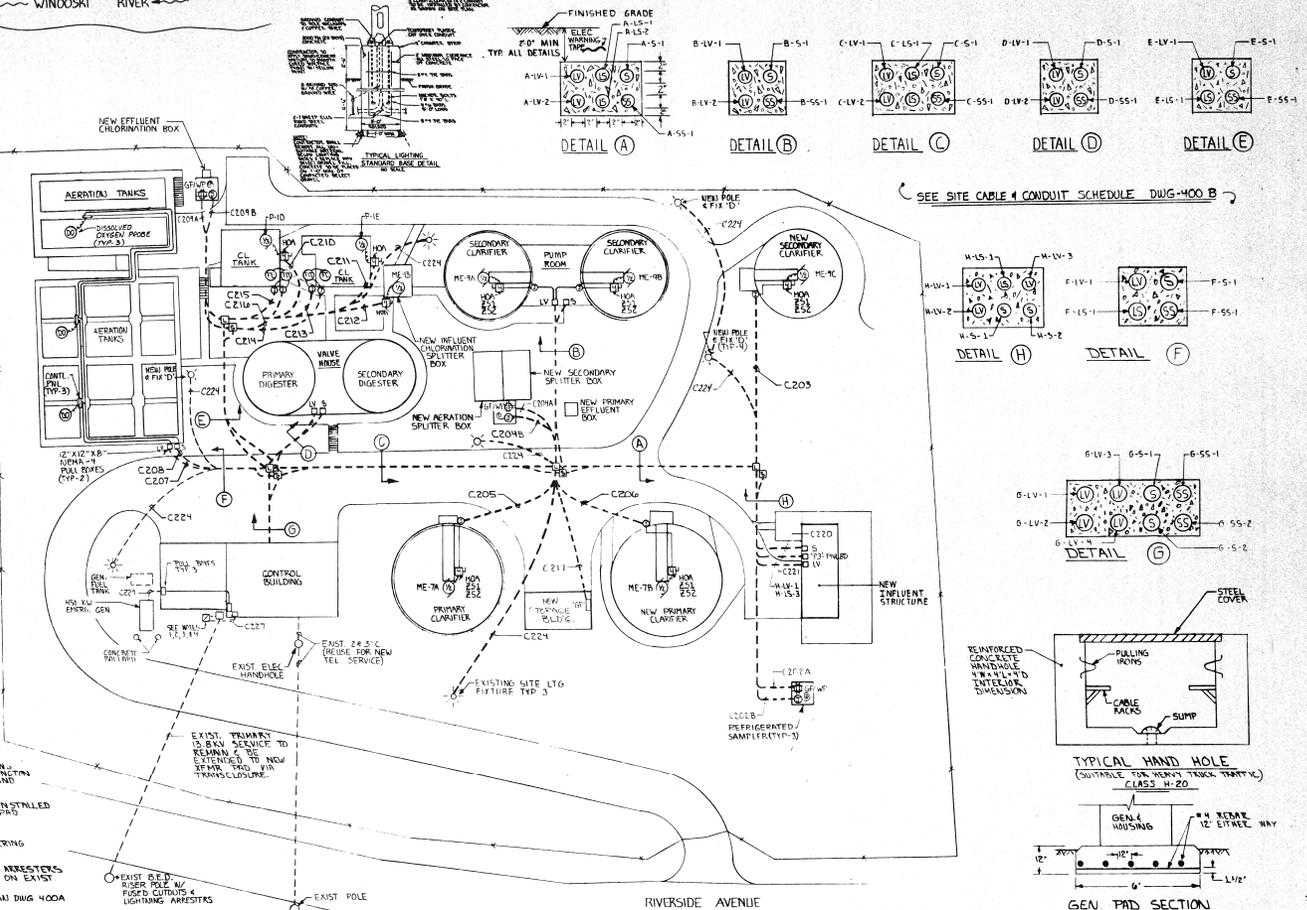
**LEGEND**

- HV - HIGH VOLTAGE PRIMARY
- LV - 400 VOLT CABLE LOW VOLTAGE
- LS - LOW VOLTAGE SPARE
- S - 4/20 MA SIGNAL
- SS - 4/20 MA SIGNAL SPARE
- T - TELEPHONE
- A1-V1 SECTION 1 LOW VOLT DUCT CABLEWAY (SEE DWG 400) ALL DUCTBANK SECTIONS
- ☐ TELEPHONE HANDHOLE
- ⊞ SIGNAL HANDHOLE
- ⊞ HV VOLTAGE HANDHOLE
- ⊞ LV VOLTAGE HANDHOLE
- ⊞ UNDERGROUND CONDUIT
- ⊞ DUCTBANK SECTION
- ☀ POLE MOUNT SITE LIGHTING FIXTURE

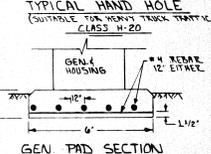
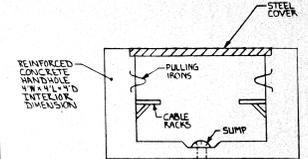
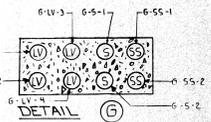
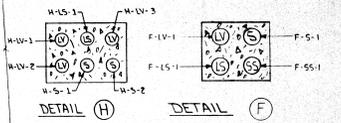
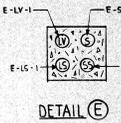
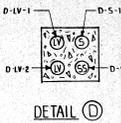
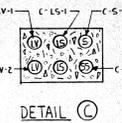
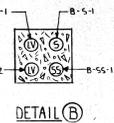
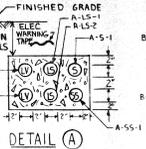


**NOTE:** CONDUIT UNDER REMAINING PAVING AREA SHALL BE ENCASED IN 4" THICK CONCRETE ENVELOPE

- NOTES:**
1. TELEPHONE & INSTALL NEW TRANSFORMER PAD & GROUNDING. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH ELEC. DEPT. STANDARDS AND REGULATIONS.
  2. NEW TELE. PDS SHALL BE INSTALLED NEAREST TO TRANS. CLOSURE PAD (FORMERLY C-207E, TELE. PAD).
  3. EXISTING SECONDARY METERING SHALL BE REMOVED.
  4. FUSED CUTOUPS & LIGHTING ARRESTERS SHALL BE WORK INSTALLED ON EXIST. SERVICE POLE BY D E D.
  5. REFER TO EXIST. ELEC. SITE PLAN DWG 400A FOR EXISTING CONDITIONS.



SEE SITE CABLE & CONDUIT SCHEDULE DWG-400 B



CITY OF BURLINGTON  
WASTEWATER TREATMENT FACILITIES  
EAST PLANT UPGRADE  
BURLINGTON VERMONT

**WESTON**  
ENGINEERS ARCHITECTS

DESIGNED BY	R.W.B.	DATE	4-24-90	CHECKED BY	K.D.B.	DATE	4-24-90
DRAWN BY				APPROVED BY	R.W.B.	DATE	4-24-90
PROJECT NO.				ISSUED FOR			
DATE				DESIGNED FOR			

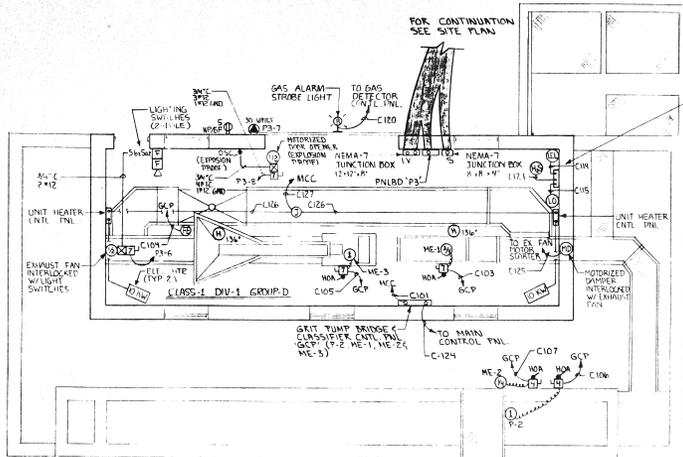


<b>ELECTRICAL SITE PLAN</b>			
D.S.S.	4-24-90	REV. NO.	400
SCALE	1" = 20'	DATE	3/302-02-02

NO.	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	BY
1		ISSUED FOR CONSTRUCTION				
2		ISSUED FOR APPROVAL				
3		ISSUED FOR APPROVALS & REVIEW				

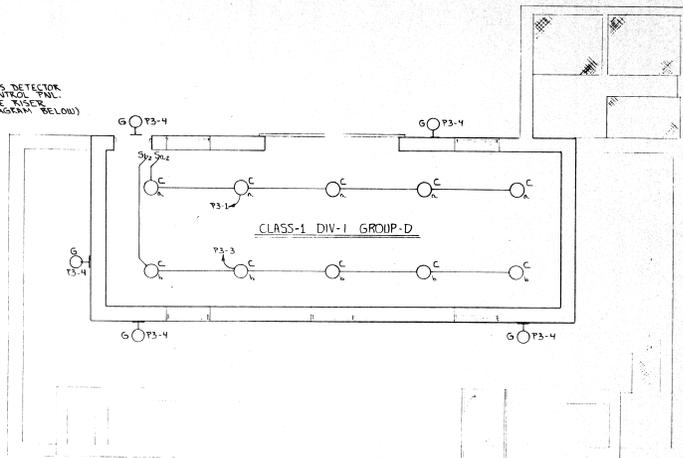




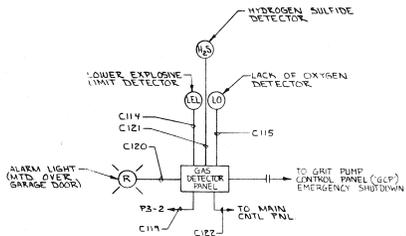


POWER PLAN

GAS DETECTOR CONTROL PANEL (SEE INVERTER DIAGRAM BELOW)



LIGHTING PLAN



GAS DETECTOR CNTL PNL RISER DIAGRAM  
N.T.S.

NOTE: ALL ELECTRIC EQUIPMENT & FIRE ALARM EQUIPMENT SHALL BE RATED FOR CLASS 1 DIV 1 GROUP D AREAS.

NO.	DATE	APP.	ISSUED FOR APPROVALS & REVIEW	REVISION	NO.	DATE	APP.	REVISION
1			ISSUED FOR CONSTRUCTION					
2			ISSUED FOR APPROVAL					
3			ISSUED FOR APPROVALS & REVIEW					

CITY OF BURLINGTON  
WASTEWATER TREATMENT FACILITIES  
EAST PLANT UPGRADE  
BURLINGTON VERMONT

**WESTON**  
DESIGNERS/CONSULTANTS

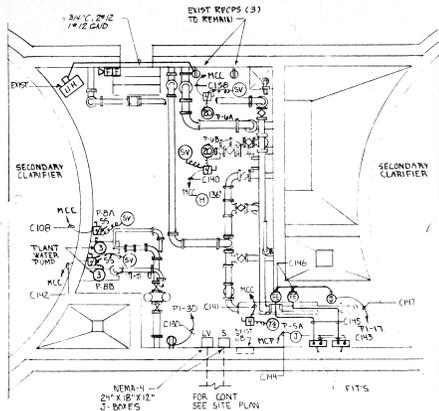
CHECKED	DATE	BY	CLIENT APPROVALS	DATE
R.W.B.	4-24-90	SEY		
R.D.B.	4-24-90			
DESIGNED				
DRAWN				
CHECKED				
APPROVED	R.W.B.	4-24-90		
DESIGNED				

CONTRACTOR DESIGN/BUILD  
WORK THIS DRAWING WITH DRAWINGS 200A, 201A, 202A AND SPEC'S.

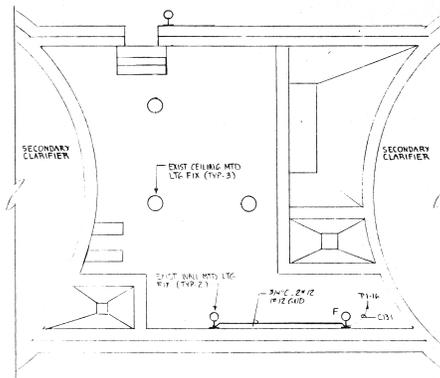
NEW INFLUENT STRUCTURE  
LIGHTING & POWER PLAN

SCALE: 1/4" = 1'-0"    SHEET: 406A





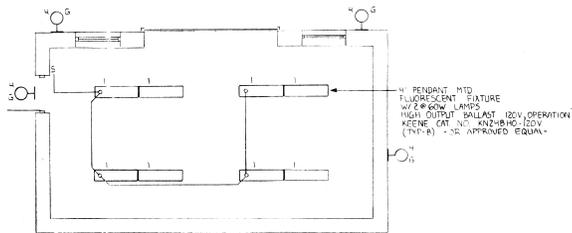
POWER PLAN  
SCALE 1/4" = 1'-0"



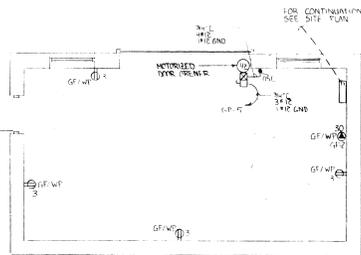
LIGHTING PLAN  
SCALE 1/4" = 1'-0"

NOTES:

1. THE EXISTING CEILING & WALL MTD LIGHTING FIXTURES W/ASSOCIATED CONDUIT, WIRE, SWITCHES ETC. SHALL REMAIN. CONTRACTOR SHALL CLEAN & REPAIR THE LIGHTING FIXTURES.
2. RE-FEED EXISTING LIGHTING WITH Ckt. NO. P1-16.
3. THE THREE (3) EXIST. RECP'S SHALL REMAIN & SHALL BE RE-FEED WITH Ckt. NO. P1-50.
4. THE EXISTING LITE RECP SHALL REMAIN & BE RE-FEED TO THE NEW RECP Ckt. P1-80.
5. THE EXIST. WALL MTD. JD. SHALL BE CLOSED. WIRE REMOVED AND CONDUIT SEALED AFTER THE PUMP ROOM REPAIRS. EQUIPMENT HAS BEEN RE-INSTALLED AS SHOWN ON THE DRAWG.
6. THE CONTRACTOR SHALL INSPECT ALL WIRING CONNECTIONS ETC. TO ASSURE THAT EXTERMINALS IS IN GOOD CONDITION. DAMAGED WIRING OR CONNECTIONS OR DEVICES SHALL BE REPAIRS OR REPLACED & LEFT IN BEST COND. PRACTICE CONDITION.
7. THE CONTRACTOR SHALL VISIT THIS SITE, PRIOR TO THE SUBMISSION OF THE BID TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.



STORAGE BUILDING LIGHTING PLAN  
SCALE 1/4" = 1'-0"



STORAGE BUILDING POWER PLAN  
SCALE 1/4" = 1'-0"

NO.	DATE	ISSUED FOR APPROVALS & REVIEW	REVISION	NO.	DATE	ISSUED FOR APPROVALS & REVIEW	REVISION
1	1/2/00	ISSUED FOR CONSTRUCTION					
2	1/2/00	ISSUED FOR APPROVAL					
3	1/2/00	ISSUED FOR APPROVALS & REVIEW					

CITY OF BURLINGTON WASTEWATER TREATMENT FACILITIES EAST PLANT UPGRADE BURLINGTON VERMONT			
CHECKED	RWB	DATE	BY/ENT APPROVALS
DESIGN	KDB	4-24-99	
PROJECT	KDB	4-24-99	
DESIGNED			
APPROVED	RWB	2-24-00	
REVISION			



**PUMP ROOM  
POWER & LIGHTING PLAN**

SCALE: 1/4" = 1'-0"      DATE: 3-30-02-02

PROJECT NO: 409      SHEET NO: 1



BURLINGTON      MAINTENANCE      DISINTEGRATION      VERMONT

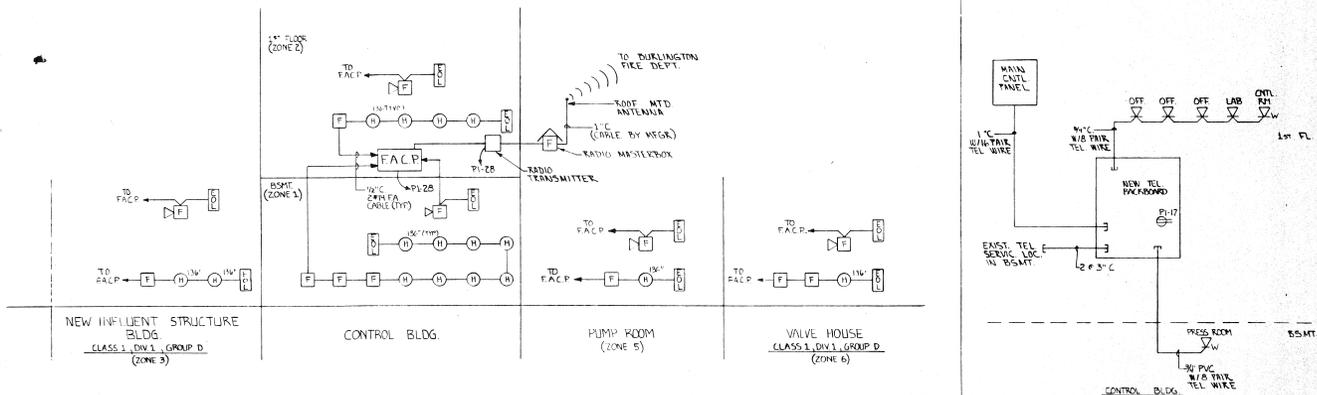


PNLBD 'P1'		CONTROL BLDG	
120/208V 3Ø 4W	225 MLD		
CR. NO.	LOAD	LOAD	BRK. CMT. SIDE NO.
1 20	LAB RM. RECP	PLUGMOLD	20 2
3 20	LAB RM. PLUGMOLD	PLUGMOLD	20 4
5 30	CHLORINE PUMPS	ALUM PUMPS	20 6
7 20	BASEMENT RECTS	ME-II CNTL. PNL.	20 8
9 20	BASEMENT RECTS	MAIN CNTL RM RECS	20 10
11 20	LAB RM RECS	OFFICE RECS	20 12
13 20	ANALYZER RM RECS	DRYER	20 14
15 20	WASHER		--
17 20	PUMP ROOM FLOW DEVICES	CLARIFIER BLDG RECS	20 16
19 20	FURNACE	MOTORIZED VALVES	20 18
--		CHLORINE PUMPS	20 20
--		LAB RM EX HOOD	20 22
21 30	HOT WATER HEATER	SAMPLE RM EX FAN	20 24
--		CHLORINE ANALYZER	20 26
--		F.A.C.P.	20 28
23 20	CIRCULATION PUMPS	CLARIFIER BLD RECS	20 30
--		GEN. BLOCK MTR.	20 32
--			--
25 30	SPECIAL RECP		--
--		LAB RM. PLUGMOLD	20 34
27 20	SPARE	SPARE	20 36

PNLBD 'P2'		CONTROL BLDG	
120/208V 3Ø 4W	150 MLD		
CR. NO.	LOAD	LOAD	BRK. CMT. SIDE NO.
1 20	SEWAGE VIBR. PNL	MAIN FLOOR LTG	20 2
3 20	SEWAGE VIBR. PNL	MAIN FLOOR LTG	20 4
5 10	SEWAGE VIBR. PNL	BASEMENT LTG	20 6
7 10	SEWAGE VIBR. PNL	BASEMENT LTG	20 8
9 20	EXIT LIGHTS	PUMP RM. EXHAUST FAN	20 10
11 20	DO PROBES	EXTERIOR LTG	20 12
13 20	REFRIG. / SAMPLER	SITE LTG	20 14
15 20	REFRIG. / SAMPLER		--
17 20	REFRIG. / SAMPLER		--
19 20	BASEMENT LTG	MAIN FLOOR LTG	20 16
21 20	GEN. BATTERY CHARGER	LEAK CONTROL PNL.	20 18
23 20	BLOWER RM EX FAN	FLOW METER	20 20
--		SNOW DETECTOR PNL	20 22
--		HEATING PAD	50 24
25 20	CHLORINE TANK FITS		--
27 20	SPARE		--
29 20	SPARE	SPARE	20 26
--			--
31 20	SPARE	SPARE	20 28
--			--
--		SPARE	20 30

PNLBD 'P3'		EXPLOSION PROOF CLASS I DIV 2 GROUP D		INFLUENT BLDG	
120/208V 3Ø 4W	150 MLD			14-POLE	50A MCB
CR. NO.	LOAD	LOAD	BRK. CMT. SIDE NO.		
1 20	LTG.	GAS DETECTOR PNL	20 2		
3 20	LTG.	LTG.	20 4		
5 20	RECEPTACLE	EXHAUST FAN	20 6		
7 30	SPECIAL RECEPTACLE	MOTORIZED DOOR	20 8		
--			--		
9 20	SPARE		20 10		
--		SPARE	20 12		
--			--		
--			--		

PNLBD 'GP'		STORAGE BLDG	
120/208V 3Ø 4W	150 MLD		
CR. NO.	LOAD	LOAD	BRK. CMT. SIDE NO.
1 20	LIGHTING	SPECIALTY RECEPTACLE	30 2
3 10	RECEPTABLES		--
5 20	MOTORIZED DOOR	OUTSIDE LTG	20 4
--		SPARE	20 6
--			--
7 20	SPARE		--
1 20			--



NO.	DATE	REVISION
1		ISSUED FOR CONSTRUCTION
2		ISSUED FOR APPROVAL
3		ISSUED FOR APPROVALS & REVIEW

CITY OF BURLINGTON WASTEWATER TREATMENT FACILITIES EAST PLANT UPGRADE BURLINGTON VERMONT			
DESIGNED BY	R.W.B.	4-24-90	CHECK APPROVALS
DESIGNED BY	K.D.B.	4-24-90	
DESIGNED BY	R.W.B.	4-24-90	

**SCHEDULES**

DATE	A.E.M.	DATE	4-24-90	NO. NO.	412	REV. NO.	1
DATE	NONE	DATE	3/302-02-02	NO.			



CONDUIT NO.	CONDUIT DATE/TYPE	WIRE DATE/TYPE	GROUND DATE/TYPE	FROM	VIA	TO	REMARKS
C1	1 3/4	2 1/2	1 1/2	CHLORINE PUMP CNTL PANELS		J-BOX	POWER
C2	1 3/4	2 1/2	1 1/2	J-BOX		PNLBD 'P'	POWER
C3	1 3/4	2 1/2	1 1/2	CHLORINE PUMP CNTL PANELS		J-BOX	POWER
C4	1 3/4	2 1/2	1 1/2	J-BOX		MAIN CNTL PANEL	SIGNAL
C5	1 3/4	2 1/2	1 1/2	J-BOX		CHLORINE ANALYZER	SIGNAL
C6	1 3/4	2 1/2	1 1/2	ME-HA1B CNTL PANEL		J-BOX	POWER
C7	1 3/4	2 1/2	1 1/2	J-BOX		PNLBD 'P'	POWER
C8	1 1	2 1/4	1 1/4	ME-HI CNTL PANEL		PNLBD 'P'	POWER
C9	1 3/4	1 1/2	1 1/2	ME-HI CNTL PANEL		PRESS FEED PUMP CNTL PANEL	SIGNAL
C10	1 3/4	1 1/2	1 1/2	ULTRASONIC FLOW METER		MAIN CNTL PNL	SIGNAL
C11	1 3/4	3 1/2	1 1/2	TRACTION DRIVE MOTOR		PRESS FEED PUMP CNTL PANEL	POWER
C12	1 3/4	3 1/2	1 1/2	BSMT UNIT HEATER J-BOX		MCC	RESERVE
C13	1 3/4	3 1/2	1 1/2	P-12A SODIUM FEED PUMP		MCC	POWER
C14	1 3/4	3 1/2	1 1/2	P-12B SODIUM FEED PUMP		MCC	CONTROL
C15	1 3/4	3 1/2	1 1/2	ME-12 SODIUM MIXER		MCC	POWER
C16	1 1/4	3 1/2	1 1/2	ME-12 SODIUM MIXER		MCC	CONTROL
C17	1 1/4	3 3 1/2	1 1/2	ME-18A AERATION BLOWER		MCC	POWER
C18	1 1/4	3 3 1/2	1 1/2	ME-18C AERATION BLOWER		MCC	POWER
C19	1 1/4	3 3 1/2	1 1/2	ME-18D AERATION BLOWER		MCC	POWER
C20	1 3/4	2 1/2	1 1/2	MV MOTORIZED VALVE BLOWER PIPING		J-BOX	POWER
C21	1 3/4	2 1/2	1 1/2	J-BOX		PNLBD 'P'	POWER
C22	1 3/4	1 1/2	1 1/2	MV MOTORIZED VALVE BLOWER PIPING		J-BOX	SIGNAL
C23	1 3/4	4 1/2	1 1/2	J-BOX		MAIN CNTL PANEL	SIGNAL
C24	1 3/4	3 1/2	1 1/2	BASINMENT UNIT MTR'S		J-BOX	POWER
C25	1 1/2	3 1/2	1 1/2	FILTER PRESS CNTL PNL		MCC	POWER
C26	1 3/4	3 1/2	1 1/2	ALUM PUMPS P-15A1B		MCC	POWER
C27	1 3/4	1 1/2	1 1/2	ALUM PUMPS P-15A1B		J-BOX	SIGNAL
C28	1 3/4	2 1/2	1 1/2	J-BOX		MAIN CNTL PNL	SIGNAL
C29	1 3/4	8 1/2	1 1/2	FILTER PRESS CNTL PNL		MAIN CNTL PNL	CONTROL
C30	1 3/4	3 1/2	1 1/2	FILTER PRESS CNTL PNL		MAIN CNTL PNL	SIGNAL
C31	1 3/4	3 1/2	1 1/2	AIR COMPRESSOR		MCC	POWER
C32	1 3/4	2 1/2	1 1/2	CHLORINE PUMP CNTL PNL'S		J-BOX	POWER
C33	1 3/4	2 1/2	1 1/2	J-BOX		PNLBD 'P'	POWER
C34	1 3/4	2 1/2	1 1/2	CHLORINE PUMP CNTL PNL'S		J-BOX	SIGNAL
C35	1 3/4	3 1/2	1 1/2	J-BOX		CHLORINE ANALYZER	SIGNAL
C36	1 3/4	3 1/2	1 1/2	J-BOX		MAIN CNTL PNL	SIGNAL
C37	1 3/4	3 1/2	1 1/2	PRESS WASH BOOSTER PUMP P-4		PRESS FEED CONTROL PANEL	POWER
C38	1 3/4	3 1/2	1 1/2	PRESS WASH PUMP ME-B		PRESS FEED CONTROL PANEL	POWER
C39	1 3/4	1 1/2	1 1/2	FLOW ELEMENT FE-12		PRESS FEED CONTROL PANEL	POWER
C40	1 3/4	2 1/2	1 1/2	FLOW ELEMENT FE-12		PRESS FEED CONTROL PANEL	POWER
C41	1 3/4	3 1/2	1 1/2	ELEC WATER MTR.		PNLBD 'P'	POWER
C42	1 3/4	3 1/2	1 1/2	EXISTING MOTOR STARTER (CIRC PUMPS)		PNLBD 'P'	POWER
C43	1 3/4	10 1/2	1 1/2	CHLORINE ANALYZER		MAIN CONTROL PANEL	CONTROL
C44	1 3/4	4 1/2	1 1/2	CHLORINE ANALYZER		MAIN CONTROL PANEL	SIGNAL
C45	1 2	30 1/2	1 1/2	MCC		MAIN CONTROL PANEL ANNUNCIATOR	SIGNAL
C46	1 1/4	50 1/2	1 1/2	MCC		MAIN CONTROL PANEL	SIGNAL

CONDUIT NO.	CONDUIT DATE/TYPE	WIRE DATE/TYPE	GROUND DATE/TYPE	FROM	VIA	TO	REMARKS
C47	1 3/4	4 1/2	1 1/2	SURGE & VIBRATION PANEL		MOTORIZED VALVE	POWER
C48	1 3/4	4 1/2	1 1/2	SURGE & VIBRATION PANEL		VIBRATOR	CONTROL
C49	1 3/4	2 1/2	1 1/2	SURGE & VIBRATION PANEL		PNLBD 'P'	POWER
C50	1 3/4	2 1/2	1 1/2	SURGE & VIBRATION PANEL		MAIN CONTROL PANEL ANNUNCIATOR	SIGNAL
C51	1 3/4	1 1/2	1 1/2	SURGE & VIBRATION PANEL		MAIN CONTROL PANEL ANNUNCIATOR	SIGNAL
C52	1 3/4	2 1/2	1 1/2	ME-HI CNTL PNL		MAIN CONTROL PANEL	SIGNAL
C53	1 1/2	30 1/2	1 1/2	MCC		MAIN CONTROL PANEL	SIGNAL
C54	1 2	3 1/2	1 1/2	115.5 KVIA KEHR		MAIN CONTROL PANEL	SIGNAL
C55	1 4	4 1/2	1 1/2	DIST BRD 'DB'		MCC	POWER
C56	1 3	4 1/2	1 1/2	PNLBD 'P'		115.5 KVIA KEHR	POWER
C57	1 1/2	4 1/2	1 1/2	PNLBD 'P3'		DIST BRD 'DB'	POWER
C58	1 1	4 1/2	1 1/2	PNLBD 'P3'		DIST BRD 'DB'	POWER
C59	1 2	4 1/2	1 1/2	PNLBD 'P4'		DIST BRD 'DB'	POWER
C60	1 3/4	3 1/2	1 1/2	RAS PUMP 'VFD'		MAIN CNTL PNL	SIGNAL
C61	1 3/4	3 1/2	1 1/2	RAS PUMP 'VFD'		MAIN CNTL PNL	SIGNAL
C62	3/4	3 1/2	1 1/2	RAS PUMP 'VFD'		MAIN CNTL PNL	SIGNAL
C63	1 5	3 1/2	1 1/2	EXISTING 200V MCC		TEMP. POWER	TEMP. POWER
C64	1 2	3 1/2	1 1/2	TEMP ISO RIA KEHR		MCC	TEMP. POWER
C65	1 1/2	1 1/2	1 1/2	MCC-GROUND BUS		MAIN WATER SERVICE	BLDG. GND.
C66	1 3/4	1 1/2	1 1/2	LEAN CONTROL PANEL		MAIN CONTROL PANEL	SIGNAL
C67	1 3/4	3 1/2	1 1/2	NEW FURNACE		PNLBD 'P'	POWER
C68	1 1/2	14 1/2	1 1/2	MCC CONTROL BOX 'PB4'		PLCP	SITE FA WIRING

ISSUED FOR CONSTRUCTION	DATE	BY	
ISSUED FOR APPROVAL	DATE	BY	
ISSUED FOR APPROVALS & REVIEW	DATE	BY	
REVISION	NO.	DATE	BY

CITY OF BURLINGTON  
WASTEWATER TREATMENT FACILITIES  
EAST PLANT UPGRADE  
BURLINGTON VERMONT



REVISED	R.W.B.	DATE	4-24-90
REVISED	K.D.B.	DATE	4-24-90
REVISED		DATE	
REVISED	R.W.B.	DATE	4-24-90
REVISED		DATE	



**CABLE & CONDUIT SCHEDULE**

DATE	D.S.S.	DATE	4-24-90	REV. NO.	413
DATE	NONE	DATE	33-02-02	BY	

CONDUIT NO.	CONDUIT TYPE	WIRE COUNT	GROUND WIRE SIZE	DATE	FROM	VIA	TO	REMARKS
C001	1	4	3 12	1 12	CONTROL PNL 'GCP'	DUCT BANK	MCC	POWER
C002								
C003	1	4	3 12	1 12	ME-1 BAR SCREEN	CONTROL PNL 'GCP'		POWER
C004	1	4	4 12		FS FLOW SENSOR	CONTROL PNL 'GCP'		SIGNAL
C005	1	4	3 12	1 12	ME-3 GRIT CLASSIFIER	CONTROL PNL 'GCP'		POWER
C006	1	4	3 12	1 12	P-2 GRIT PUMP	CONTROL PNL 'GCP'		POWER
C007	1	4	2 12	1 12	ME-2 GRIT BRIDGE	CONTROL PNL 'GCP'		POWER
C008	1	4	3 10	1 12	PLANT WATER PUMP P-BA	DUCT BANK	MCC	POWER
C009	1	4	3 10	1 12	PRIMARY SLUDGE PUMP P-4A	DUCT BANK	MCC	POWER
C010								CONTROL
C011								POWER
C012								CONTROL
C013								POWER
C014	1	4	1 TFS		LEL SENSOR	GAS DETECTOR CONTROL PNL		SIGNAL
C015	1	4	1 TFS		LO SENSOR	GAS DETECTOR CONTROL PNL		SIGNAL
C016								
C017	1	4	2 12		GAS DETECTOR CONTROL PNL	CONTROL PNL 'GCP'		SHARDI TRIP
C018								
C019	1	4	2 12	1 12	GAS DETECTOR CONTROL PNL	PNLBD 'PS'		POWER
C020	1	4	2 12	1 12	GAS DETECTOR CONTROL PNL	ALARM LIGHT		POWER
C021	1	4	1 TFS		H <sub>2</sub> S DETECTOR	GAS DETECTOR CONTROL PNL		SIGNAL
C022	1	4	2 12		GAS DETECTOR CONTROL PNL	DUCT BANK	MAIN CONTROL PNL ANNUNCIATOR	SIGNAL
C023								
C024	1	4	4 12		GCP	DUCT BANK	MAIN CONTROL PNL	SIGNAL
C025	1	4	2 12		MOTORIZED DAMPER		EXHAUST FAN	CONTACT
C026	1	4	3 8	1 10	UNIT HTR. (10 KW)	DUCT BANK	J-BOX	POWER
C027	1	4	3 8	1 10	J-BOX	DUCT BANK	MCC	POWER
C028	1	4	5 0	1 12	DIGESTER MIXER NO.1	DUCT BANK	MCC	POWER
C029								CONTROL
C030	1	4	2 10	1 12	PUMP RM. RECEPTACLES	DUCT BANK	PNLBD 'PI'	POWER
C031	1	4	2 10	1 12	PUMP RM. LIGHTING	DUCT BANK	PNLBD 'PI'	FLUORESC
C032	1	4	3 10	1 12	DIGESTER MIXER NO.2	DUCT BANK	MCC	POWER
C033								CONTROL
C034								
C035								
C036								
C037								
C038								
C039								
C040	1	4	3 2	1 6	RAS PUMP P-6A	DUCT BANK	MCC	POWER
C041	1	4	3 10	1 12	GRINDER ME-4	DUCT BANK	MCC	POWER
C042	1	4	3 2	1 6	W/S PUMP P-6B	DUCT BANK	MCC	POWER
C043	1	4	3 10	1 12	W/S PUMP P-5A			POWER
C044	1	4	3 10	1 12	PLANT WATER PUMP P-BA	DUCT BANK	MCC	POWER
C045								CONTROL
C046	1	4	1 TFS		PUMP ROOM FITS	J-BOX		SIGNAL
C047	1	4	2 TFS		J-BOX	MAIN CONTROL PNL		SIGNAL
C048	1	4	1 TFS		PUMP ROOM F.E.	FIT		SIGNAL
C049	1	4	2 12	1 12	PUMP ROOM F.E.	J-BOX		POWER
C050	1	4	2 12	1 12	J-BOX	PNLBD 'PI'		POWER
C051	1	4	3 10	1 12	PRESS FEED PUMP P-10A	DUCT BANK	MCC	POWER
C052	1	4	3 10	1 12	PHOSPH. SLUDGE PUMP P-4B			POWER
C053								CONTROL
C054	1	4	3 10	1 12	SLUDGE LIQUOR PUMP			POWER
C055								CONTROL

CONDUIT NO.	CONDUIT TYPE	WIRE COUNT	GROUND WIRE SIZE	DATE	FROM	VIA	TO	REMARKS
C200								
C201								
C202	1	1	2 10	1 12	REFRIGERATED SAMPLER	DUCT BANK	PNLBD 'P2' CKT NO.13	POWER
C203	1	1	1 TFS		REFRIGERATED SAMPLER	DUCT BANK	MAIN CONTROL PANEL	SIGNAL
C204	1	1	3 10	1 12	NEW SECONDARY CLARIFIER			POWER
C205								CONTROL
C206	1	1	2 10	1 12	REFRIGERATED SAMPLER	DUCT BANK	PNLBD 'P2' CKT. NO.15	POWER
C207	1	1	1 TFS		REFRIGERATED SAMPLER	DUCT BANK	MAIN CONTROL PANEL	SIGNAL
C208	1	1	3 10	1 12	PRIMARY CLARIFIER (ME-7A)			POWER
C209								CONTROL
C210	1	1	3 10	1 12	NEW PRIMARY CLARIFIER (ME-7B)			POWER
C211								CONTROL
C212	1	2	2 12	1 12	LV PULL BOX (AERATION TANK)	DUCT BANK	PNLBD 'P2' CKT. II	POWER
C213	1	2	1 TFS		SIGNAL PULL BOX (AERATION TANK)	DUCT BANK	MAIN CONTROL PNL	SIGNAL
C214	1	1	2 10	1 12	REFRIGERATED SAMPLER	DUCT BANK	PNLBD 'P2' CKT. NO.17	POWER
C215	1	1	1 TFS		REFRIGERATED SAMPLER	DUCT BANK	MAIN CONTROL PANEL	SIGNAL
C216	1	1	3 10	1 12	CHLORINE SAMPLE PUMP	DUCT BANK	MCC	POWER
C217								CONTROL
C218	1	1	3 10	1 12	CHLORINE SAMPLE PUMP 'E'	DUCT BANK	MCC	POWER
C219								CONTROL
C220	1	1	3 10	1 12	CHLORINE MIXER (ME-13)	DUCT BANK	MCC	POWER
C221								CONTROL
C222	1	2	11 14		INFLUENT BLDG	DUCT BANK	F. A. C. P.	FIRE ALARM
C223	1	2	11 6	1 8	PNLBD 'PS'	DUCT BANK	DISTRIBUTION BOARD 'DB'	POWER
C224								
C225	1	1	3 10	1 12	EXISTING SITE LTB FIXTURE		PNLBD 'P2', CAT NO.14	POWER
C226	1	1	3 10	1 12	ME-9A		MCC	POWER
C227	1	1	8 12		ME-9A		MCC	CONTROL
C228	1	1	3 10	1 12	ME-10		MCC	POWER
C229	1	1	8 12		ME-10		MCC	CONTROL
C230	2	4	6 600	2 *10	13A0 HTD 500KVA XFMR	PULL BOX	MCC MAIN BAR	SERVICE
C231	1	4	6 600	2 *10	13A0 HTD 500KVA XFMR	PULL BOX	MCC MAIN BAR	SPACE
C232	2	4	6 600	2 *10	EMERGENCY GENERATOR	PULL BOX	AUTO XFER SWITCH	EMERG SERVICE
C233	1	4	6 600	2 *10	EMERGENCY GENERATOR	PULL BOX	AUTO XFER SWITCH	SPACE
C234								
C235								
C236								
C237								
C238								
C239	1	1	10 12		EMERGENCY GENERATOR		MCC - AUTO XFER SWITCH	CONTROL
C240	1	1	3 12	1 12	GENERATOR BLOCK HEATER		PNLBD 'P1' CKT 32	POWER
C241	1	1	1 TFS		OIL LEAK DETECTOR		LEAK DETECTOR CNTL PNL	SIGNAL
C242	1	1	2 12	1 12	GENERATOR BATTERY CHARGER		GENERATOR BATTERY	POWER

1	ISSUED FOR CONSTRUCTION
2	ISSUED FOR APPROVAL
3	ISSUED FOR APPROVALS & REVIEW

CITY OF BURLINGTON  
WASTEWATER TREATMENT FACILITIES  
EAST PLANT UPGRADE  
BURLINGTON VERMONT

DESIGNED	R.W.B.	DATE	4-23-90
CHECKED	K.D.B.	DATE	4-24-90
APPROVED	R.W.B.	DATE	4-24-90

ISSUED FOR APPROVALS & REVIEW

DATE: 4-24-90

SCALE: 1/4" = 1'

PROJECT: 3302-02-02

REVISED: 1



**CABLE & CONDUIT SCHEDULE**

**Exhibit D**  
**North WWTP – Existing Fire Alarm System Device Tabulation**

BURLINGTON WATER RESOURCES

**EXHIBIT D**

North Wastewater Treatment Plant - 3074 North Ave  
 EXISTING FIRE ALARM SYSTEM DEVICE TABULATION

LOCATION	CURRENT ZONE	FLOOR	CEILING HEIGHT (FT)	# OF HEAT DET.	# OF SMOKE DET.	# OF HORN/STROBES	# OF PULL STATIONS	PULL STATION HEIGHT (IN)
Breakroom	3	2nd	8	1				
Lab	3	2nd	8	1	1			
Hallway	3	2nd	8/12.5	1			2	48
Bathroom	3	2nd	8	1		1		
Office	3	2nd	8	1				
Closet	3	2nd	8	1				
MCC	3	2nd	10	2		1		
Furnace	2	1st	10	1				
Shop/CL2	2	1st	10	2				
Piston Pump Rm	2	1st	10	2			1	48
Chemical Room	2	1st	13	2		1	1	48
Blower Room	2	1st	13	2				
Basement	1	Basement	15	4				
Compressor Rm (explosion rated area)	2	1st	10	2				
Digester (explosion rated area)	5	N/A	9	1		1	1	53
Headworks (explosion rated area)	4	N/A	10	2		1	2	
Garage	6	N/A	10	3		1	1	50

**NOTES:**

1. The above table identifies the approximate quantity of existing Fire Alarm System devices. Contractor shall identify all changes in the number and location of Fire Alarm System devices that are required to achieve a fully compliant Fire Alarm System. Contractor shall furnish and install all required devices including any identified additional devices and/or devices that need to be relocated.
2. Pull Station Height is approximate distance (inches) between floor and top of pull station.

**Exhibit E**  
**East WWTP – Existing Fire Alarm System Device Tabulation**

BURLINGTON WATER RESOURCES

**EXHIBIT E**

East Wastewater Treatment Plant - 267 Riverside Ave  
 EXISTING FIRE ALARM SYSTEM DEVICE TABULATION

LOCATION	CURRENT ZONE	FLOOR	CEILING HEIGHT (FT)	# OF HEAT DET.	# OF SMOKE DET.	# OF HORN/STROBES	# OF PULL STATIONS	PULL STATION HEIGHT (IN)
Locker Rm/ Kitchen	1	Top	8	1				
Breakroom	1	Top	8				1	48
Hall	1	Top	8		1	1		
Bathroom	1	Top	8		1			
Lab	1	Top	8	1				
MCC	1	Top	8		1			
Furnace	2	Lower	12	1				
Polymer	2	Lower	12	1				
Garage	2	Lower	12	2		1	1	51
Blower	2	Lower	9	2				
CL2	2	Lower	12	1			1	52
Compressor (explosion rated area)	2	Lower	12	1			1	51
Digester (explosion rated area)	5?	Digester	18	1		1	2	51/34
Headworks (explosion rated area)	3?	Headworks	10	2		1	2	48/51
Clarifier room	4?	Clarifier RM	12	1		1	1	81

**NOTES:**

1. The above table identifies the approximate quantity of existing Fire Alarm System devices. Contractor shall identify all changes in the number and location of Fire Alarm System devices that are required to achieve a fully compliant Fire Alarm System. Contractor shall furnish and install all required devices including any identified additional devices and/or devices that need to be relocated.
2. Pull Station Height is approximate distance (inches) between floor and top of pull station.

**Exhibit F**  
**City of Burlington Draft Contractor Contract**

**CITY OF BURLINGTON**  
**DRAFT CONTRACTOR CONTRACT**

This Contractor 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 North & East Wastewater Treatment Plant (WWTP) Fire Alarm Upgrade 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 upgrade the Fire Alarm System at the North & East WWTP to a new intelligent reporting, microprocessor-controlled fire detection and notification system in accordance with all applicable local, State and Federal regulations and as indicated within the referenced technical specifications Section 13850 – Fire Alarm System.

**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 \_\_\_\_\_ 2022 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).

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

- B. Payment Schedule.** The City shall pay the Contractor in the manner and at such times as set forth in the Contract Documents. 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:

Steve Roy, PE  
Senior Water Resources Engineer  
Burlington Public Works - Water  
234 Penny Lane  
Burlington, VT 05401  
SRoy@burlingtonvt.gov

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 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 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 take 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: \_\_\_\_\_

Date: \_\_\_\_\_

**City of Burlington**  
**Department of Public Works**

By: \_\_\_\_\_  
Chapin Spencer  
Director of Public Works

**Exhibit G**  
**Burlington Standard Contract Conditions for Contractors**

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

**1. DEFINITIONS:**

- A. The “Contract” shall mean the Contract between Contractor and the City to which these conditions apply and includes this Attachment C.
- B. The “Contractor” 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 Contractor, 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](http://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 sub-contractors 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, sub-contractors, 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'/Consultants' 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 sub-contractors 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. Professional Liability Insurance:**

1. General: The Consultant/Contractor shall carry appropriate professional liability insurance covering errors and omissions made during their performance of contractual duties with the following minimum limits:
  - (a) \$3,000,000 - Annual Aggregate
  - (b) \$2,000,000 - Per Occurrence
2. Deductibles: The Contractor is responsible for any and all deductibles.
3. Coverage: Prior to performing any work, the Contractor shall provide evidence of professional liability insurance coverage defined under this section. In addition, the Contractor shall maintain continuous professional liability coverage for the period of the Contract and for a period of five years following substantial completion of construction.

**D. 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.

**E. Valuable Papers And Records Insurance:** The Contractor shall carry valuable papers insurance in a form and amount sufficient to ensure the restoration or replacement of any plans, drawings, field notes, or other information or data relating to the work, whether supplied by the City or developed by the Contractor, sub-contractor, worker, or agent, in the event of loss, impairment, or destruction. Such coverage shall remain in force until the final plans as well as all related materials have been delivered by the Contractor to, and accepted by, the City. Unless otherwise provided, Valuable Papers and Records Insurance shall provide coverage on an “individual occurrence” basis with limits in the amount of one hundred and fifty thousand dollars (\$150,000) when the insured items are in the Contractor’s possession, and in the amount of forty thousand dollars (\$40,000) regardless of the physical location of the insured items.

**F. 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 sub-contractors, if any.

**5. PLANS, RECORDS, AND AVAILABLE DATA:** The City agrees to make available, at no charge, for the Contractor’s use all available data related to the Contract including any preliminary plans, maps, drawings, photographs, reports, traffic data, calculations, EDM, valuable papers, topographic survey, utility location plats, or any other pertinent public records.

**6. PERSONNEL REQUIREMENTS AND CONDITIONS:** The Contractor shall employ only qualified personnel with appropriate and valid licensure, to the extent a license is required for the work performed. 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 person so involved within one (1) year of termination of employment with the

City.

The Contractor warrants that no company or person has been employed or retained, other than a 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 as determined by the City, in the due and proper performance of Contractor's duties, or for neglecting or refusing to comply with the requirements of the Contract.

7. **PERFORMANCE:** Contractor 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.
8. **DESIGN STANDARDS:** Unless otherwise specifically provided for in the Contract, or directed in writing, Contractor services, studies or designs, that include or make reference to plans, specifications, special provisions, computations, estimates, or other data shall be in conformance with applicable City, state, and federal specifications, manuals, codes or regulations, including supplements to or revisions thereof, adopted prior to or during the duration of this Contract. In case of any conflict with the guidelines referenced, the Contractor is responsible to identify and follow any course of direction provided by the City.
9. **RESPONSIBILITY FOR SUPERVISION:** The Contractor shall assume primary responsibility for general supervision of Contractor employees and their sub-Contractors 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 sub-contractors and any other person performing work under this Contract.
10. **UTILITIES:** Whenever a facility or component of a private, public, or cooperatively-owned utility will be affected by any proposed construction, the Contractor will counsel with the City, plus achieve any necessary contacts and discussions with the affected owners, regarding any requirement necessary for revisions of facilities or existing installations, both above and below ground. Any such installations must be completely and accurately exhibited on any detail sheets or plans. The Contractor shall inform the City, in writing, of any such contacts and the results thereof.
11. **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, where applicable.

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.

- 12. REVIEWS AND ACCEPTANCES:** All preliminary and detailed designs, plans, specifications, estimates or other documents prepared by the Contractor, shall be subject to review and endorsement by the City.

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

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

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

- 13. PUBLIC RELATIONS:** Whenever it is necessary to perform work in the field, particularly with respect to reconnaissance, the Contractor will endeavor to maintain good relations with the public and any affected property owners. Personnel employed by or representing the Contractor shall conduct themselves with propriety. The Contractor agrees to inform property owners and/or tenants, in a timely manner, if there is need for entering upon private property as an agent of the City, in accordance with 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 land 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.

- 14. 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.

**15. 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.

**16. 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. 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. When applicable, for the type of payment specified in the Contract, the progress report shall summarize actual costs and any earned portion of fixed fee.

All invoices and correspondence shall indicate the applicable project name, project number and the 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 with 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 thereof, and no payment shall be construed to be acceptance of defective work or improper materials.

The City agrees to pay the Contractor and the Contractor agrees to accept, as full compensation, for performance of all services rendered and expenses incurred, the fee specified in the Contract.

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

- 17. 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.
- 18. 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.
- 19. CHANGES AND AMENDMENTS:** No changes or amendments to the Work of the Contract shall be effective unless documented in writing and signed by authorized representatives of the City and the Contractor.
- 20. EXTENSION OF TIME:** The Contractor agrees to prosecute the work continuously and diligently and no charges or claims for damages shall be made by the Contractor for delays or hindrances, from any cause whatsoever, during the progress of any portion of services specified in the Contract. Such delays or hindrances, if any, may be compensated for by an extension of time for such reasonable period as the City may decide. Time extensions shall be granted by amendment, only for excusable delays, such as delays beyond the control of the Contractor and without the fault or negligence of the Contractor.
- 21. 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.

**22. 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.

**23. PAYMENT FOR EXTRA WORK, ADDITIONAL SERVICES OR CHANGES:** The City may, in writing, and without invalidating the Contract, require changes resulting from revision or abandonment of work already performed by the Contractor or changes in the scope of work.

The value of such changes, to the extent not reflected in other payments to the Contractor, shall be incorporated in an amendment and be determined by mutual agreement. Any adjustments of this nature shall be executed under the appropriate fee established in the Contract, based on the adjusted quantity of work.

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, in a form satisfactory to the City for all time devoted directly to same by Contractor employees. The City reserves the right to audit the records of the Contractor related to any extra work or additional services. Any such services rendered shall be subject, in all other respects, to the terms of the 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.

**24. 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.

- 25. 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.
- 26. 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 their sureties from any obligations under the Contract Documents or any performance or payment bond.
- 27. 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 during execution 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.
- 28. PROPRIETARY RIGHTS:** The Parties under the Contract hereby mutually agree that, if patentable discoveries or inventions should result from work performed by the Contractors 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.
- 29. 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.
- 30. 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 anytime 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, sub-Contractors, 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.

**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 [Head of Department] shall act as referee on all questions arising under the terms of the Contract and that the decision of the [Head of Department] 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 19-21.

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. Proceedings for Relief of Debtors: If a federal or state proceeding for relief of debtors is undertaken by or against Contractor, or if Contractor makes an assignment for the benefit of creditors, then the City may immediately terminate this contract.
- iii. 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.
- iv. 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.
- v. 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 sub-contractor 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).

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. If, for any reason, a provision in the Contract is unenforceable or invalid, that provision shall be deemed severed from the Contract, and the remaining provisions shall be carried out with the same force and effect as if the severed provisions had never been a part of the Contract.

**35. 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 sub-contractors, 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.

**36. 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.

**37. 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, that 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.

**38. INDEMNIFICATION:**

**A. Indemnification by Contractor:** Except for the active negligence or willful misconduct of 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 Contractors), 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 sub-contractors 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.

**39. 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.

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

**41. TRANSFERS, SUBLETTING, ETC:** The 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 sub-contractor participates in any work involving additional services, the estimated extent and cost of the contemplated work must receive prior written consent of the City. The approval or consent to assign or sublet any portion of the work, shall in no way relieve the Contractor of responsibility for the performance of that portion of the work so transferred. The form of the sub-contractor's 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 sub-contractor 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.

**42. 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.

**43. 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.

**44. 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.

**45. 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.

**46. 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.

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

**48. 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.

**49. SEVERABILITY:** The invalidity or unenforceability of any provision of this Contract, 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.

**50. ENTIRE CONTRACT & AGREEMENT:** This Contract 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.

**51. APPENDICES:** The City may attach to these conditions 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.

**52. 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.

**53. 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.

**Exhibit H**  
**City of Burlington Livable Wage, Outsourcing and**  
**Union Deterrence Ordinances with required Compliance Certificates**

## ARTICLE VI. LIVABLE WAGES<sup>1</sup>

### 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 fifteen dollars and thirty-five cents (\$15.35) 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 sixteen dollars and seventy-four cents (\$16.74) 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)

# Burlington's Livable Wage Ordinance

## \$15.64

### WHEN

employer offers employer assisted health insurance

## \$16.66

### WHEN

employer *does not* offer employer assisted health insurance

**and 12 days of paid time off per year\***

\*for full time employees

## MORE INFORMATION:

### Which workplaces are covered?

Any employer that gets paid at least \$15,000 by the City of Burlington for services rendered in a 12-month period are covered.

Employers that have a collective bargaining agreement with their employees are exempt.

### What should employees covered by the Livable Wage Ordinance expect?

Livable wages, 12 days paid time off per year for vacation, illness or personal time (pro-rated for part time employees), and adherence to other applicable state and federal laws.

You have the right to file a complaint if you believe your rights under this ordinance have been violated. Employers found to be in violation of the Livable Wage Ordinance may have to pay back wages and fines, and may be at risk of losing contracts with the City of Burlington, depending on the severity of the violation.

## To file a complaint, contact:

Livable Wage Monitor

Call (802) 865-7000, option 1 or

Email:

[livablewage@burlingtonvt.org](mailto:livablewage@burlingtonvt.org)



Livable Wage July 2021 – June 2022

Effective July 1, 2021

Certification of Compliance with the City of Burlington's Livable Wage Ordinance

I, \_\_\_\_\_, on behalf of \_\_\_\_\_ ("the Contractor") in connection with a contract for \_\_\_\_\_ services that we provide to the City, hereby certify under oath that the Contractor (and any subcontractors under this contract) is and will remain in compliance with the City of Burlington's Livable Wage Ordinance, B.C.O. 21-80 et seq., and that

(1) as a condition of entering into this contract or grant, we confirm that all covered employees as defined by Burlington's Livable Wage Ordinance (including the covered employees of subcontractors) shall be paid a livable wage (as determined, or adjusted, annually by the City of Burlington's chief administrative officer) and provided appropriate time off for the term of the contract;

(2) a notice regarding the applicability of the Livable Wage Ordinance shall be posted in the workplace(s) or other location(s) where covered employees work;

(3) we will provide verification of an employee's compensation, produce payroll or health insurance enrollment records or provide other relevant documentation (including that of any subcontractor), as deemed necessary by the chief administrative officer, within ten (10) business days from receipt of a request by the City;

(4) we will cooperate in any investigation conducted by the City of Burlington's City Attorney's office pursuant to this ordinance; and

(5) we will not retaliate (nor allow any subcontractor to retaliate) against an employee or other person because an employee has exercised rights or the person has cooperated in an investigation conducted pursuant to this ordinance.

Date \_\_\_\_\_ By: Contractor \_\_\_\_\_

Subscribed and sworn to before me:

Date \_\_\_\_\_ Notary \_\_\_\_\_

## 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.**

---

Certification of Compliance with the City of Burlington's Outsourcing Ordinance

I, \_\_\_\_\_, on behalf of  
\_\_\_\_\_  
\_\_\_\_\_ (Contractor) and in connection with the  
\_\_\_\_\_  
\_\_\_\_\_ [project], hereby certify under oath that (1) Contractor shall comply with the City of  
Burlington's Outsourcing Ordinance (Ordinance §§ 21-90 – 21-93); (2) as a condition of entering  
into this contract or grant, Contractor confirms that the services provided under the above-  
referenced contract will be performed in the United States or Canada.

Dated at \_\_\_\_\_, Vermont this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

By: \_\_\_\_\_  
Duly Authorized Agent

Subscribed and sworn to before me: \_\_\_\_\_  
Notary

## 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.**

---

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

**Exhibit I**  
**City of Burlington Pre-Qualification of Construction Contractors Application**

# City of Burlington



## Pre-Qualification of Construction Contractors Application

Date Received: \_\_\_\_\_

Date Checked: \_\_\_\_\_

Available for Electronic Mailing

## **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. If the Contractor has not been approved to be prequalified as of the date of the bid opening, this questionnaire must be submitted before the date of opening bids, or with the Contractor's Bid, 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 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:

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Name and Title of Authorized Agent

\_\_\_\_\_  
Date

**Experience Questionnaire**

How many years has your organization been in business as a general contractor under your present 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 by the City of Burlington?

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?  
If so, please explain: YES / NO

---

---

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, a currently approved VOSHA plan in place?

YES/ NO

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>TRUCK 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.