HUMBER

The Humber College Institute of Applied Technology & Advanced Learning
Capital Development and Facilities Management Division

Contractor Handbook

DRAFT Revision R8
April 4, 2018

WE ARE HUMBER

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Appendices

Section A: General

1. PURPOSE OF THIS DOCUMENT:

1.1 The primary purpose of this '**Contractor Handbook'** is to ensure that Contractors who attend on the properties of The Humber College Institute of Technology and Advanced Learning (the "College" or "Humber") in the employ of the Capital Development and Facilities Management Division are aware of and committed to meeting or exceeding all of the safety obligations under the *Occupational Health and Safety Act* and all applicable *Regulations*, including specifically the *Construction Regulations*.

1.1.1 Additionally, all Contractors are independent operators and assume responsibility for the actions of their employees, agents and subcontractors, and are to ensure that all policies and procedures of the College are followed related to health and safety, human rights (accommodation), environmental protection and any applicable governing legislation. The actions of the Contractor, its agents or subcontractors shall not compromise the health and safety of students, staff, faculty, guests, visitors or other contractors on College premises.

1.2 A *Contractor* is a person or business that undertakes a contract for services, or provides materials or services within the College setting, but is not an employee of the College. All Contractors shall ensure full compliance with the *Occupational Health & Safety Act* and with this document and the directions of the College or its "designate". All Contractors undertaking all or part of a project, as defined under the *Occupational Health & Safety Act*, shall be considered "Constructors" under the *Act*, and shall meet all requirements thereunder, unless the College expressly assumes the role of "Constructor" in writing.

1.3 This document is not intended to replace the safety training and supervision required to ensure safe performance of work. Each Contractor and its employees, agents or subcontractors is responsible for ensuring that their staff receive the necessary training and supervision in order to complete their work on any and all College premises in a safe and effective manner. All staff shall be made aware of the contents of this document.

1.4 It is the responsibility of the Capital Development/Facilities Management Office or "designate" to ensure that a copy of this document is received by each and every Contractor upon award of any contract. Any and all associated signatures and/or required College permits are to be provided by the Contractor to the College "designate" prior to the commencement of any work on any College premises.

1.5 No work shall commence on College property until the Contractor, its agents and subcontractors have reviewed this 'Contractor Handbook' and the attached **Contractor Workplace Electrical Safety Program Acknowledgement (Appendix K.3)** and **Statement of Understanding** (**Appendix L**) have been executed by a principal of the Contractor's company/corporation and returned to the College "designate".

1.6 **Definition:** *The Capital Development/Facilities Management Office or "**designate**" would normally be the College (or Consultant) employee assigned internal project management responsibility for the work taking place, unless specified otherwise.*

1.7 The Contractor must notify the Capital Development/Facilities Management Office or ""designate"" before any work is started and specific clearance is obtained.

a. The Contractor is responsible for reviewing this document and any relevant College Occupational Health and Safety requirements with all subcontractors it brings on site, and agrees to review this document with the individual in charge of each employee, agent or subcontractor group prior to the commencement of any work by the employee, agent or subcontractor.

b. Work stoppages as a result of the Contractor's failure to abide by the terms of this document will be at the sole cost of the Contractor.

Section B: Occupant and Workplace Health and Safety

1. OCCUPATIONAL HEALTH & SAFETY: (See 'Occupational Health & Safety Policy', Appendix A)

1.1 The health and safety of all individuals on College premises is to be a primary consideration in all decisions made by the Contractor, its agents and subcontractors.

1.2 The Contractor shall be in compliance with the *Occupational Health and Safety Act (OHSA)* and all applicable *Regulations*, including specifically the *Construction Regulations*. The Contractor further recognizes that where the Contractor is a "Constructor" under the *OHSA* it shall comply with all the requirements, duties and obligations of a "Constructor" pursuant to the *OHSA*.

1.3 The intent of the *Occupational Health and Safety Act* is to have **one** person with overall authority for health and safety matters on a project. This person is the **"**Constructor" of the project.

Section 1 of the Act defines "Constructor" as "a person who undertakes a project for an owner and includes an owner who undertakes all or part of a project by himself or by more than one employer". The dictionary definition for "undertake" is "make oneself responsible for", which means a "Constructor" is a person who is responsible for a project. The definition of "employer" in section 1 of the Act includes contractors and subcontractors. "Project" is also defined in section 1 of the Act.

1.3.1 The "Constructor" is the party with the greatest degree of control over health and safety at the entire project and is ultimately responsible for the health and safety of all workers. The constructor must ensure that all the employers and workers on the project comply with the Act and its regulations.

1.4 A Contractor shall in all cases be the "Constructor" unless the College **expressly** assumes the role as "Constructor" to the Contractor **in writing**. For reference, the Contractor shall be the "Constructor" and will accept the responsibility and duties of a ""Constructor"" when:

a. Planning the proposed project or construction;

b. Exercising control over contractors and subcontractors, including engaging, releasing or discharging contractors and subcontractors;

c. Setting and maintaining a project budget;

d. Determining the manner and methods of work as per the contract specifications and the directions of the Capital Development/Facilities Management Office;

e. Providing ongoing supervision on the project;

f. Compensating all agents and subcontractors employed by the Contractor in completion of the contract.

1.5 When the College hires only one employer (Contractor) to do all the work on a project, then that contractor is undertaking the work and is the Constructor.

1.6 The "Constructor" has a number of duties under the *OHSA* and every "Constructor" who performs work at the College must sign the '**Statement of Understanding' (Appendix L)** indicating that they have a good working knowledge of the *OHSA* (and the associated *Regulations*), and safe work practices for a construction site.

1.6.1 Section 23 of the *Occupational Health and Safety Act [OHSA]* requires a "Constructor" to ensure that:

The measures and procedures prescribed by the *Occupational Health and Safety Act* and all applicable *Regulations*, including specifically the *Construction Regulations*,

a. are carried out on a construction project;

b. Every employer and every worker performing work on the project complies with the *OHSA* and the regulations;

c. The health and safety of workers on the construction project are protected.

1.6.2 "Constructors" contracted by the College must:

a. Register with the Ontario Ministry of Labour on the prescribed forms (as applicable) before undertaking a project [e.g. **Registration of Constructors and Employers Engaged in Construction Form - 1000 & Notice of Project - Form 1075**];

b. Affix notices on site;

c. Appoint a competent supervisor and assistant, one of whom must supervise any and all work at all times, inspect machinery and equipment at the site weekly or more frequently as necessary, and ensure that equipment and other facilities and structures at the project do not endanger any person;

d. Abide by the specific procedures that have been established at or near the work site for the operation of the College facilities. Contracting firm supervisors/managers will ensure that their workers are made aware of area rules for departments in which they are working, and ensure enforcement of these rules at all times. Where there are any concerns over conflicting safety procedures or the safety of any College employee as a result of the "Constructor's" requirement, the "Constructor" will cease work and will confer immediately with the Capital Development/Facilities Management Office or "designate".

1.7 It is understood that these duties do not cover all situations; therefore, it is essential that the "Constructor" cooperate with the Capital Development/Facilities Management Office or "designate". The "Constructor" must report regularly on the plans and progress of all construction.

1.8 The Contractor must ensure that there are no safety hazards created for College students, staff, faculty, guests, visitors or other subcontractors, as a result of the construction, and if concerns are raised by the College as to safety hazards created by the construction project, the College will request that the "Constructor" stop work until such time as the risk is assessed and, if necessary, removed.

1.9 The "Constructor's" work may be inspected by the Capital Development/Facilities Management Office or "designate", to oversee quality control and to examine what work is being performed, but it must be recognized that it is the role of the "Constructor" to determine how any work will be performed.

2.0 The Contractor will post a copy of this '**Contractor Handbook'** document at the College work site in a location visible and accessible to all workers. A copy of this document is to be provided by the "Constructor" to all its supervisory personnel and also provided to any of its agents or subcontractors.

2. COLLEGE FIRE ALARMS/CRITICAL INJURIES/EMERGENCIES:

911

2.1 The health and safety of students, employees, contractors and visitors, as well as the protection of the property and environment are integral to the College's operations. Proper planning will ensure a timely and appropriate response to emergencies and critical incidents in compliance with applicable laws, legal codes of practice and industry standards.

2.2 Inform both the Department of Public Safety (Security) at **416-675-8500** and the Capital Development/Facilities Management Office or "designate" of all accidents and injuries immediately. In the case of a critical injury or fatality, the Contractor should follow emergency procedures as noted above and as outlined in the *OSHA* and *Construction Regulations*, including immediate notification of the **Ministry of Labour.**

2.3 In the event of a critical injury or fatality as defined by *OHSA, under no circumstances shall the scene of such an injury be altered, except to:*

a. Save life or relieve human suffering;
b. Maintain an essential public service;
c. Prevent unnecessary damage to equipment or other property.

2.4 When making an emergency call from anywhere on College premises, take the following action:

a. Dial 911 immediately.

b. If using an internal (College) telephone, the Department of Public Safety (Security) will be automatically notified and connected into your call as a third party in order to provide assistance as appropriate and direct emergency responders to the incident/emergency location.

c. If using a non-internal phone (e.g. cell phone), the Department of Public Safety should be notified of the incident/emergency ASAP, or preferably, simultaneously, by calling 416-675-8500 so that they may provide assistance as appropriate and direct emergency responders.

d. When contacting 911 (and the Department of Public Safety):
   - ✓ Provide your name (and Company name as appropriate).
   - ✓ Provide your exact location.
   - ✓ Provide the exact location of the incident/emergency (e.g. North Campus, Building A, Room A116)
   - ✓ Describe the nature of the emergency in as much detail as possible.

2.5 The Contractor shall follow all instructions from the Department of Public Safety (Security) as related to any campus-wide on-site emergency situations, including fire, floods, campus lock-downs, etc. This would include all instructions broadcast via the Public Address Systems.

2.5.1. For large scale construction projects (e.g. new buildings), the Contractor shall have in place a detailed emergency evacuation plan, a copy of which shall be issued to the Capital Development/Facilities Management Office or "designate".

3. FIRE ALARMS WITHIN THE CONSTRUCTION SITE:

3.1 **Fire Alarms:**

Fire alarms may be activated and an audible tone will be heard, fire doors will close, the ventilation system will be shut down and voice messages will announce fire instructions. All contractors and servicepersons will listen to the alarm announcement and may continue work if the fire is not located in the immediate fire area. Normal duties may be resumed when once advised to do so by the Department of Public Safety (Security) through the Public Address System.

3.2 **Internal Renovations:**

a. If it is necessary to conduct renovations with any life safety systems disabled, by-passed or disregarded, the contractor is responsible to follow the **Life Safety Systems Interference Policy** and **Procedure** as per Section 25 above and submit a **Life Safety Systems Interference Permit** form.

b. While any life safety device/system is affected, the contractor is responsible for maintaining a fire watch in the applicable fire zone and therefore may not leave that area unoccupied.

c. In the event of a fire in that area, the contractor will follow these **S-A-V-E** procedures:

Save: Save at-risk individuals.

Alarm: Utilize pull stations. Call **911** If calling from a non-internal (College) phone, also notify the Department of Public Safety at **416-675-8500** immediately so that they may direct emergency responders to the correct location. The Department of Public Safety (Security) will initiate appropriate protocols e.g. activate the North Campus Public Address System.

Ventilation: Close doors, windows, remove flammable materials where possible.

Extinguish: Extinguish fires if appropriate with extinguisher or water hose.

3.3 **New Construction**

If a fire does occur on the project site, the contractor will follow these procedures:

Utilize pull stations if available. Call **911** If calling from a non-internal (College) phone, also notify the Department of Public Safety at **416-675-8500** immediately so that they may direct emergency responders to the correct location. The Department of Public Safety (Security) will initiate appropriate protocols e.g. activate the North Campus Public Address System.

4. ACCESS TO FIRE EXTINGUISHING EQUIPMENT AND EXITS:

4.1 The Contractor must provide and maintain free access at all times from the street to fire hydrants and to outside connections for standpipes or other fire extinguishing equipment whether permanent or temporary. The Contractor must not place material or construction equipment within three (3) metres of hydrants or connections, nor between hydrants or connections and the centre of the street.

4.2 The Contractor must maintain free access at all times to control valves, fire hoses or fire lines within buildings, portable extinguishers and fire pull stations.

4.3 Where exits are permanently or temporarily disabled, the Contractor must ensure alternate exit routes are clearly defined, meet applicable codes and are well-marked with signage.

5. WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM [WHMIS]:

5.1 The Contractor, their employees, agents and subcontractors shall be trained in *WHMIS* and comply with *WHMIS* and be able to submit proof of training if so requested by the College.

5.2 The WHMIS regulation has recently changed, effective July 2016, and includes a multi-year phase in. The Contractor must ensure that if hazardous products with the new labels and safety data sheets are brought into the worksite, that their employees, agents and subcontractors are trained on the new WHMIS 2015 requirements in addition to the original WHMIS 1998 requirements.

5.3 The Contractor shall have *Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDSs)* at its site office for all materials of all trades being used on the site. The Capital Development/Facilities Management Office shall be supplied with the *MSDSs or SDSs* prior to the presence and use of the material(s) onsite.

5.4 All *WHMIS* controlled products used on College premises shall have the appropriate labelling (supplier or workplace provided) affixed at all times. The Contractor is responsible to ensure that such labelling remains legible throughout the course of their work.

6. ASBESTOS: (See 'Asbestos Management Policy', Appendix D.)

6.1 Every attempt will be made by the College to notify Contractors of asbestos that may be encountered in the course of any project, in accordance with the **Asbestos Management Policy [Appendix D]**. All Contractors, must ensure that their employees, agents or subcontractors who, during their normal duties may be exposed to, or accidentally disturb asbestos-containing materials, are properly informed/trained regarding the potential hazard.

6.2 Working with asbestos can be dangerous. Inhaling asbestos fibre can cause various types of lung disease. Smoking increases the risk of lung cancer from asbestos exposure.

6.3 Ontario Regulation 278/05, Regulation Respecting Asbestos on Construction Projects and in Building and Repair Operations, applies to all maintenance and/or renovation work that may disturb asbestos containing materials. Any contractors, and their employees, agents, or subcontractors will follow these regulations and any and all asbestos containing waste shall be packaged and disposed of in accordance with Ministry of Environment requirements.

6.4 No asbestos containing materials shall be disturbed without the prior notification of the Capital Development and Facilities Management Office or "designate". Any suspected exposure/disturbance shall be immediately reported to the Capital Development/Facilities Management Office or "designate".

6.5 The College has identified the presence of various friable and non-friable asbestos-containing materials in various college premises. Every attempt has been made to either remove or encapsulate such material. Contractors are advised to review inventory reports outlining the location, type and amounts of such material prior to starting alterations to existing premises. These inventories with accompanying floor plans will be made available through the Capital Development/ Facilities Planning Office or "designate. The College Asbestos Management Plan is available for viewing on-line at http://www.humber.ca/policies under General Administration, Facilities and Property.

7. GENERAL HEALTH AND SAFETY RULES: (See 'Smoking Policy', Appendix B)

7.1 **Safety Rules:** Obey all operating area's safety rules. If in doubt, request an explanation of the area safety rules from the Capital Development/Facilities Management Office or "designate" before entering a particular area.

7.2 **Personal Protective Equipment:** Approved personal protective equipment is required on all work sites as per the *Occupational Health and Safety Act* and *Construction Regulations*. This may include, but is not limited to: safety eyewear, face shields, safety footwear, protective gloves, hard hats, hearing protection, respiratory equipment and falls protection equipment.

7.3 **Smoking:** Smoking is not permitted on the College premises except in permitted exterior areas a minimum of 9 metres from any entry per the posted by-law signage. [Note that some exterior areas are specifically designated as non-smoking and are clearly signed.]

7.4 **Hazardous Material Spills:** Any uncontrolled release of hazardous materials is considered a spill. Contractors are responsible for all hazardous materials clean-up and removal. Contain and clean up any spills immediately in an appropriate manner and using the proper materials. Dispose of materials per *Section 17 (Environmental Protection)* in compliance with all applicable environmental legislation, bylaws, standards and codes and in consultation with the College. The Contractor shall notify the Capital Development/Facilities Management Office or "designate" immediately of any spills involving chemicals, solvents, oils, biologicals, or other potentially harmful substances.

7.4.1 **Spills Action Centre 1-800-268-6060:** The Ministry of Environment has established a 24-hour emergency telephone to handle reports of spills in the environment.

7.5 **Blocking Open Doors:** Do not block doors, passageways, firefighting or safety equipment and electrical panels. Do not prop/wedge open doors to mechanical/electrical/IT (communications) or utility rooms. Maintain perimeter security and building environments by not propping or wedging open exterior doors.

7.6 **Forbidden Activity:** Horseplay, use or possession of intoxicants, drugs, firearms or other weapons, or photographing of staff, guests or students without their express permission on College premises is strictly forbidden and will result in immediate and permanent removal from the site. It is strictly the Contractor's responsibility to ensure that its employees, agents or subcontractors are not under the influence of alcohol or any controlled substances while on College premises. Theft or willful damage to College property is strictly forbidden.

7.7. **First Aid Stations:** The Contractor shall ensure that first aid stations are in place in accordance with the *Workplace Safety and Insurance Act (WSIA)* and *First Aid Regulation* in the event of illness or injury.

7.8 **Compressed Air**: Compressed air can cause fatal injuries. Most compressed air lines carry a pressure up to 100 psi. When using compressed air for cleaning, never direct it towards yourself or another person. Safety glasses with approved side shields, long sleeves buttoned at the wrist or gloves are the minimum protection required when using compressed air for cleaning purposes. Never use compressed air for cleaning a person's body or clothing.

7.9 **MOL Orders**: In the event that the Ministry of Labour issues a contractor or subcontractor an order of violation under the *Occupational Health and Safety Act*, the Contractor will provide a written copy of the order to the Capital Development/Facilities Management Office or "designate" within 24 hours.

7.10 **Safety Meetings**: The Contractor will provide copies of the Contractor's regular safety meetings to the Capital Development/Facilities Management Office or "designate".

7.11 Use caution when driving vehicles on College property. Obey all traffic signs and posted speed limits (generally 25 kph). Do not leave engines idling when parked.

7.12 **Minimum Age of Workers**: All Contractors, their employees, agents or subcontractors on College premises must be a minimum of 18 years of age.

7.13 **Construction Barriers:** The Contractor shall erect impermeable barriers, rope off, barricade or otherwise demarcate all work areas as appropriate, such that there will be no danger of exposure to work site hazards by building occupants, or contamination of adjacent areas by construction dust, debris or hazardous materials. Appropriate signage shall be installed restricting access to said work areas.

7.14 **Work Site Cleanliness:** Occupied areas of building affected by the work (construction) will be kept clean and orderly at all times and shall be left in, or restored to, an "as found' condition after each shift, and/or upon completion of work. The Contractor is responsible to ensure that all work areas are vacuum-cleaned and/or wiped down to the satisfaction of the Capital Development/Facilities Management Office or "designate".

7.15 **Drilling/Excavation:** Precautions are to be taken before the drilling/penetration of/excavation of existing construction or sites to ensure that any building services (e.g. conduits, gas/water lines, etc.) are not interrupted or that workers or building occupants are exposed to unsafe conditions.

7.16 **Confined Spaces:** If work involves accessing a confined space as defined under the Confined Spaces Regulation, Contractors and their employees, agents or subcontractors will be required to have a confined space entry program that meets or exceeds the requirements of the College's program.

7.17 **Working at Heights:** The Contractor will ensure that all employees, agents or subcontractors who will be working at heights (e.g. ladders, scaffolding, rooftop, raised equipment) have received working at heights training, and have a fall protection plan in place.

8. HOT WORK PERMITS: (See 'Hot Work Permit', Appendix F.)

8.1 When a work operation requires the use of an open flame or there is the potential of hot sparks during activities such as welding, grinding or metal cutting, a **Hot Work Permit** must be obtained from the Capital Development/Facilities Management Office or "designate" three (3) business days prior to commencement of such work and posted by the contractor in the area of the work.

8.2 The Contractor must consider the following issues when requesting a 'Hot Work Permit':

- Type and size of fire extinguisher(s) required
- Shielding for arc welding
- Any special considerations unique to project
- Ventilation required
- Isolation of any life safety systems/devices zones
- Isolation of air intakes/exchangers
- Requirement for Fire Watch
- Combustibility of adjacent materials
- Possibility of toxic fumes
- Wind direction (if relevant)
- Locations of Fire Alarm Pull Stations

8.2.2 Hot Work Permits must be completed with all pertinent information and submitted to Capital Development/Facilities Management Office or "designate" (Project Manager) for review. The "designate" or Project Manager will submit the Permit to Plant Services to investigate whether any life safety systems require disabling and for approval. Work is to be coordinated with Plant Services and the Contractor and Plant Services will keep the "designate" (Project Manager) informed of work progress and/or any issues.

9. STORAGE OF SOLVENTS, PAINTS, OILS, GASES AND GASOLINE:

9.1 When not in use, solvents, paints and oils must be stored in a separate enclosed fire-proof locked container. Place a fire extinguisher adjacent to the container. The Contractor shall not store gasoline or any volatile liquids or gases (e.g. propane) in the College building.

9.2 Propane tanks and other pressurized tanks shall be capped when not in use and cleaned and/or stored outside of the building in a protected area designated by Capital Development/Facilities Management Office or "designate". All such tanks shall be properly secured in an upright position.

9.3 Storage of any work site materials shall not be in College corridors or rooms unless as assigned by the Capital Development/Facilities Management Office.

10. TEMPORARY WIRING:

10.1 Inspect and protect temporary wiring, drop cords or temporary extension cables frequently for defective insulation or connections and correct/repair immediately. Remove temporary wiring after completion of job. All wiring must be in accordance with *Building Codes*, the *Ontario Electrical Safety Code* and safety requirements.

11. CAPPING OFF ABANDONED WATER PIPING:

11.1 When capping off unused or abandoned water lines, in order to minimize the potential of bacterial contamination of water supplies, water lines shall only be capped off directly adjacent to active, free-flowing water lines.

12. OVERLOADING:

12.1 Contractors are responsible for ensuring that all precautions are taken to prevent overloading of any part of the structure/temporary structures, false work, elevators or scaffolding during operations. If doubt exists, obtain approval from the appropriate inspector from the *Ministry of Labour*, or other appropriate agency.

13. POWDER ACTIVATED FASTENERS:

13.1 Powder activated fasteners shall not be used on any portion of the work unless prior approval for a specific use is obtained from the Capital Development/Facilities Management Office or "designate".

14. ELEVATORS:

14.1 As per the *Elevating Devices Act*, contractors are not permitted access to College elevator control rooms. Furthermore, no person shall construct, install, alter, repair, maintain or test an elevating device or part thereof except in accordance with this *Act*.

a. No person shall enter any machine room at the College other than a *Technical Standards and Safety Authority (TSSA)* elevator inspector or a licensed elevator mechanic for the purposes of inspections, tests, repairs, maintenance or alterations, unless authorized to do so by *TSSA* and accompanied by a licensed elevator mechanic.

b. Authorization to enter any elevator machine room will be made through the Capital Development/Facilities Management Office or "designate".

15. FIRE SEPARATION INTEGRITY MAINTENANCE:

15.1 When work requires that holes are to be drilled, or openings cut, through an existing fire separation, any breach must be patched with a fire stop material, approved by the local building authority having jurisdiction, to maintain the fire rating of the separation at all times.

16. LIFE SAFETY SYSTEMS INTERFERENCE AND INTERRUPTION OF UTILITIES: (See 'Life Safety Systems Interference Procedure', Appendix G, 'Life Safety Systems Interference Permit', Appendix H, 'Interruption of Utilities Permit', Appendix J.)

16.1 A Contractor must complete and submit a '**Life Safety Systems Interference Permit' (Appendix H)** request to the Capital Development/Facilities Management Office or "designate" a minimum of 3 business days in advance of work requiring any life safety device/system to be disabled or disregarded.

16.2 A Contractor must complete and submit an **Interruption of Utilities Permit (Appendix J)** request to the Capital Development/Facilities Management Office or "designate" a minimum of three business days in advance of work requiring the temporary interruption of any building or site service.

Section C: Additional Contractor Obligations

1. WORKPLACE VIOLENCE OR HARASSMENT: (See 'Human Rights Policy', Appendix C.)

1.1 The College has a zero tolerance practice for violence or harassment in the workplace, including all acts or threats of verbal or physical behaviour that are or could be perceived as harassing or violent. Please note that at a minimum, the Contractor, its agents and subcontractors is to meet the standards as set out in the **'Human Rights Policy' (Appendix C).**

1.1.1 The use of violence or the threat of violence against any person on College premises will result in immediate and permanent removal from the site and/or prosecution

1.2 If the situation is violent in nature and police intervention is warranted:

- Dial 911 immediately.
- If using an internal (College) telephone, the Department of Public Safety (Security) will be automatically notified and connected into your call as a third party in order to provide assistance as appropriate and direct emergency responders to the incident/emergency location.
- If using a non-internal phone (e.g. cell phone), the Department of Public Safety should be notified of the incident/emergency ASAP, or preferably, simultaneously, by calling 416-675-8500 so that they may provide assistance as appropriate and direct emergency responders.
- When contacting 911 (and the Department of Public Safety):
  - ✓ Provide your name (and Company name as appropriate).
  - ✓ Provide your exact location.
  - ✓ Provide the exact location of the incident (e.g. North Campus, Building A, Room A116)
  - ✓ Describe the nature of the emergency in as much detail as possible.

1.2.1 If any act occurs that is harassing in nature, the Department of Public Safety (Security) shall be notified immediately at 416-675-8500.

1.3 **Inappropriate clothing** (e.g. T-shirts with offensive graphics or language) shall not be worn on College premises. Similarly, all workers shall be appropriately dressed respectfully for public exposure in a culturally diverse environment, e.g. no bare torsos, no extreme cut-off shorts, no exposed buttocks/underwear, no exposed tattoos that may be considered offensive, etc.

1.4 Socially inappropriate public behaviour (offensive language, swearing, racial slurs, sexual advances, etc.) will not be tolerated.

2. MEDIA RELATIONS:

2.1 All Media inquiries about the College are coordinated through the College Communications Department. Contractors are not to provide information to the Media concerning the College or its activities unless previously arranged for, and approved by the Communications Department.

3. TOOLS AND EQUIPMENT:

3.1 All equipment and tools required to complete the Contract shall be provided by the Contractor. The College will not provide the Contractor with any tools or equipment whatsoever.

3.2 All tools and equipment must be used and stored in a safe manner and maintained in a safe working condition.

3.3 All tools and equipment (and personal belongings) are not to be left in non-secure locations. Lost or stolen items will not be the responsibility of the College.

3.4 Contractor tools shall be stored in locked job boxes belonging to the Contractor and placed in an area designated by the Capital Development/Facilities Management Office.

4. ALTERATIONS TO EXISTING WORK: (See 'Interruption of Utilities Permit', Appendix J & 'Workplace Electrical Safety Program', Appendix K)

4.1 **Material Re-Use**: Where materials are to be removed for re-use or where existing finishes are to be cut and later made good, qualified tradesmen skilled in the handling of each particular material shall be employed.

4.2 **Damage:** Damage to the existing building components or contents due to construction work shall be made good at the cost of the Contractor. New work within the existing building shall conform to requirements or applicable trade sections.

4.2.2 Should the Contractor damage any College equipment or service in the course of their work, no repairs shall take place without the approval of the Capital Development/Facilities Management Office or "designate".

4.3 **Affected Services:** All services affected by work shall be cut off and properly capped or diverted. Interruption of services to or within existing buildings shall not take place without prior consultation with the Capital Development/Facilities Management Office or "designate" and the issuance of an '**Interruption of Utilities Permit'**.

4.4 **Lock-Out Procedures:** Proper lock-out procedures must be followed whenever there is a potential hazard as per the '**Humber Capital Development & Facilities Management Workplace Electrical Safety Program' (Appendix K).** The Contractor must notify the Capital Development/Facilities Management department or "designate" a minimum of three business days in advance of any requirement for locking out or tagging out, or isolation of hazardous energy sources.

4.5 **Electrical Safety:** The Contractor is required to follow the procedures outlined in the '**Humber Capital Development & Facilities Management Workplace Electrical Safety Program' (Appendix K)** as a minimum standard.

4.6 **Testing Involving Radiation:** Any non-destructive testing of a building, facility or service that requires the use of x-ray or gamma radiation emitting devices, must be done in conformance of federal, provincial and other governing legislation, policies or procedures, including those of the Canadian Nuclear Commission.

5. ENVIRONMENTAL PROTECTION AND SUSTAINABILITY:

5.1 The College has committed to reflecting sustainability principles in our planning and decision-making. It has developed a Sustainability Plan which outlines the organization's goals. All Contractors are to follow their responsibilities as indicated in the following clauses.

5.2 The College has developed the environmental guidelines for Contractors noted below in order to support the following sustainability vision:

"Humber is committed to ethical and environmental standards that are consistent with our values to preserve our collective future by embracing the social, ecological, and economic impact of our decisions. Consistent with our values, Humber will minimize undue risk and adverse environmental impacts on human health and the natural environment. In doing so, Humber shall as a minimum, comply with, or when possible exceed, all legal and other requirements to which the College subscribes, through the

application of sustainable development principles (balancing environmental, economic, and social and health considerations). We will strive for continual improvement in our environmental performance through pollution prevention, and optimization of energy efficiency in our everyday activities, and implementation of innovative strategies that promote a healthy environment. We will accomplish this by setting and reviewing environmental objectives and targets on a regular basis. We will be responsive and sensitive to any legitimate environment-related community concerns".

5.3 **Contractor's Responsibilities:**

While the Contractor is working on College premises, the Contractor shall work within the above vision and shall practice due diligence in environmental practices. Additionally, the Contractor shall have the following responsibilities:

a. Prior to commencement of work, prepare and submit a solid waste management reduction work plan to the Capital Development/Facilities Management Office or "designate". This plan shall demonstrate how the construction of the project shall generate the least amount of waste possible by planning and ordering carefully, maximizing recycling of all recyclable materials (including but not limited to lighting, carpet, doors and washroom fixtures and fittings, wood, metal, furniture, concrete, bricks, asphalt, pavement, PVC, cardboard, etc.) and proper and legal disposal of any hazardous materials. Storage and handling recommendations shall be followed to reduce the amount of damaged goods.

b. Develop a waste management team to educate employees, agents and subcontractors to ensure that the plan is followed and communicated.

c. The Contractor shall make all efforts to recycle within their site offices as part of their plan.

d. The Contractor shall make arrangements for recycling of construction materials. Segregate demolished and unused construction materials. Recycle off-site utilizing a certified waste management company. (Contact numbers generally contained within contract documents). All associated costs shall be borne by the Contractor. Contractors are not permitted to use any College bins for their recycling or waste materials.

e. Provide clearly labeled recycling bins. Post a list or signage of acceptable and non-acceptable materials for the recycling bins and communicate same to all workers.

f. On a monthly basis, or for smaller projects as determined in advance with the Capital Development/Facilities Management Office or "designate", the Contractor shall submit documentation indicating the weight of all waste produced and the percentage of waste diverted from landfill due to recycling. In a format acceptable to the College, the Contractor shall produce documentation recording the materials diverted from landfill, the quantity diverted, the reuse/recycling method, the handling procedure and the end market. Weight receipt/tickets from facilities receiving materials for College records are also required.

g. Take precautions to ensure that contaminated groundwater is not permitted to flow into nearby waterways or storm sewers. A plan shall be reviewed and approved by the Capital Development/Facilities Management Office or "designate" prior to start of any work.

h. Dispose of **hazardous materials**, including but not limited to chemicals, oils, solvents, excess paint, sealants, batteries, nickel cadmium batteries from portable power tools, asbestos etc., legally and appropriately utilizing a licensed hazardous waste management company.

i. Contractors are to make their own arrangements and pay for all associated costs and provide documentation of said disposal for the College's project records. Some contacts at College-approved facilities can be obtained from Purchasing Services or may be specifically outlined in contract documentation.

j. Store materials in a manner such that damage and waste will be minimized.

k. Conserve energy where possible. Lights shall be turned off when rooms are left unoccupied.

l. Keep all windows closed where possible when working in enclosed spaces if building heating or cooling systems are operational.

m. Conserve water. Do not let taps or hoses run between tasks during work.

n. Branches and trees from site clearing shall be chipped to create landscaping mulch and removed from the site unless otherwise directed by the Capital Development/Facilities Management Office or "designate".

o. Larger pieces of leftover lumber (6' or more in length) can be donated to Habitat for Humanity.

p. Drywall should be purchased in optimal dimensions to minimize cut-off waste. All unused and waste drywall shall be recycled.

q. During construction, separate metals for recycling, including copper piping, wire and flashing, aluminum siding, flashing and guttering, iron and steel banding from bundles, nails and fasteners, galvanized flashing and roofing, and rebar, lead chimney flashing, etc. Lead and other metals shall be kept out of landfills as they could leach into groundwater.

6. GENERAL INSTRUCTIONS:

a. **Food and Drinks:** Food and drinks are not to be consumed within construction sites unless an area is set aside by the Contractor specifically for that purpose and approved by the Capital Development/Facilities Management Office or "designate". All food waste is to be properly disposed of on a daily basis.

b. **Use of Non-Public Areas:** The Contractor's employees must not go into any non-public area of the College other than that where they are working. Workers utilizing vending machines, cafeteria and toilet facilities (if not provided on the work site) must abide by all posted signs, keep to marked aisles and take the most direct route. Specific details regarding worker traffic will be discussed with and approved by the Capital Development/Facilities Management Office or "designate" prior to work start on each contract.

c. **Dust and Dirt Control:** Work site mud, drywall dust or other debris shall not be tracked off of the work site. The Contractor must diligently apply appropriate dust/dirt control measures, e.g. walk-off mats, sticky pads and wash floors as necessary to keep surrounding areas clean.

d. **Disruption of Utilities**: If it is necessary to disrupt any College services for construction or installation purposes, a minimum three (3) business day's prior notice must be given in accordance with this document or at the direction of the Capital Development/Facilities Management Office or "designate" (See **'Interruption of Utilities Permit', Appendix J**).

e. **Keep Corridors Clear:** Corridors, walkways and doorways must be kept clear of vehicles, work materials and debris at all times.

f. **Door Propping:** Exterior doors and doors to electrical/mechanical/utility rooms and IT (communications) closets are NOT to be propped or wedged open.

g. **Storage in Utility Areas:** Storage of job site materials in electrical/mechanical/utility rooms, and IT closets or similar is strictly forbidden.

h. **Personal Electronics:** Use of personal electronics (e.g. i-Pods/MP3 players and other personal entertainment systems with headphones or ear buds) is not permitted on work sites. 'Boom Boxes', radios and other sound systems that may negatively impact the delivery of College services and/or disrupt College employee or Contractor productivity or safety are not permitted.

i. **Use of College Equipment:** College telephones (except in case of emergency), computer equipment, photocopiers, office equipment, etc. are not to be used by the Contractor or its employees, agents or subcontractors.

j. **Clean Work Sites:** Contractors are required to maintain working areas in a reasonably clean and tidy condition, as set out herein and in accordance with Health and Safety requirements pursuant to the *OHSA* and its *Regulations*. This includes ensuring that: nails in lumber must be removed or clinched, material must be safely and neatly piled or stacked and sites must be cleaned up daily. The Contractor must take care to ensure that College building occupants are not exposed to hazards during any construction. The Contractor is responsible for providing all required cleaning equipment and supplies.

k. **Cleaning at Contract Completion:** On completion of the contract, the work site must be cleared and cleaned to the satisfaction of the Capital Development/Facilities Management Office or "designate". Contractors are expected to arrange for and remove their own refuse and arrange for and recycle materials, both at their cost as per the Environmental Protection procedures outlined in Section 17.

l. **Obey Signage**: All posted signs must be observed.

m. **Waste Management:** Waste management procedures (e.g. location of waste bins, bin cover requirements for dust and/or hazardous material control, etc.) must be determined with the Capital Development/Facilities Management Office or "designate" prior to work start.

Section D: Project Start-Up; Contractor 'On-Boarding'

1. LIABILITY INSURANCE/WORKPLACE SAFETY INSURANCE BOARD:

1.1 The Contractor must maintain general liability insurance coverage for any one occurrence or claim of at least $5,000,000 (or as outlined in the Tender/RFP/RFQ documents), and automobile liability coverage in an amount not less than $3,000,000 as will fully protect both the College and itself from any and all claims resulting during the performance of, or as a result of the work being performed.

1.1.1 Contractors are advised that specific unique project requirements [e.g. insurance coverage limits] may be contained in RFPs or contract documentation and shall take precedence over **Article 1.1** above. Questions or clarifications regarding this document should be directed to the Humber College Capital Development/Facilities Management Office or "designate" or as otherwise indicated (e.g. Purchasing Services).

1.2 The Contractor shall provide a "Clearance Certificate" from the *Workplace Safety Insurance Board of Ontario (WSIB)* or other proof satisfactory to the College, stating that the Contractor has complied with the requirements of the *Workplace Safety and Insurance Act* and has an account in good standing with *WSIB* as of the date of the certificate/proof. The information must include rate, class numbers, and the company's *WSIB* number. This information will be required on a monthly basis with submission of progress draw payments.

1.3 The Contractor agrees to maintain the required liability insurance coverage and *Workplace Safety and Insurance (WSIB)* coverage in good standing for the duration of the contract and shall fully indemnify the College for any and all costs or claims arising as a result of any claim brought against the College in connection with the Contractor's performance of the contract.

1.4 The Contractor shall ensure that all agents or subcontractors hired by the Contractor comply with the terms of this document and all College policies, including the requirement for liability insurance and *Workplace Safety and Insurance Board* (*WSIB)* coverage and all requirements under the *Workplace Safety and Insurance Act (WSIA).*

2. PERMITS, FEES AND REGULATORY REQUIREMENTS:

2.1 Building and related permits, if required, must be clearly posted prior to commencement of any work at the College. The Contractor shall post a copy of the Permit(s) at the entrance to the job site, with copies retained by the Contractor and the original(s) shall be retained by the Capital Development/Facilities Management Office or "designate".

2.2 All work shall be executed, and all materials shall conform to and be inspected in strict accordance with all the laws, rules and regulatory requirements of the local, provincial and/or any other authorities having jurisdiction.

2.3 Each Contractor may be required to obtain all necessary permits and notices, pay all fees in order that the work may be carried out and shall furnish any certificates necessary as evidence that the work installed conforms with the laws and regulations of all authorities having jurisdiction before final payment certificates are approved. Any contractor performing electrical work must obtain an inspection/registration work order number, within 24 hours of commencing work on site. When work has been completed, the Contractor is required to obtain a "Certificate of Inspection" from the appropriate inspection agency and submit this with the progress draw for payment.

2.4 All changes and alterations required by an authorized inspector of any authority having jurisdiction shall be carried out without charge or expense to the College.

2.5 All equipment supplied must have approval of the National Fire Protection Association, Canadian Standards Association and Underwriters Laboratories Canada, Ontario Electrical Safety Code, Technical Standards and Safety Authority (TSSA) and any other authorities having jurisdiction.

3. CAPITAL PROJECT RESPONSIBILITY: (See 'Capital Project Checklist', Appendix E.)

3.1 The Contractor will review the '**Capital Project Checklist'** in detail with the Capital Development/Facilities Management Office or "designate" upon award of the contract and prior to commencement of any work.

4. WORKER IDENTIFICATION, ACCESS CARDS AND KEYS:

4.1 All persons providing service on-site at the College must, at a minimum, have some form of employer issued photo identification and/or proof of employment by the Contractor or his subcontractor(s) immediately available to present should Security personnel, staff members or other authority request to view identification. Those individuals who cannot present such identification will be asked to leave the College property immediately.

4.2 All persons providing service on-site at the College should, where practical, be wearing clothing/ uniforms that are easily identified with the Contractor, its employees, agents or subcontractors, e.g. clothing with a company logo. Such clothing should be reasonably clean and free of dust and in generally good repair. All clothing on work sites shall comply with the *Occupational Health and Safety Act* (and associated *Regulations*).

4.3 Outside persons, contractors, tradespersons, servicepersons, consultants or others who are at the College to do work on only a daily or less than 7 day basis will not be issued College identification badges. They will however, need to be identified by name, company and location/type of work to the Capital Development/Facilities Management Office or "designate" in order to inform the Department of Public Safety (Security) of their expected presence on site.

4.3.1 Outside persons, contractors, tradespersons, servicepersons, consultants or others who are expected to be on College sites greater than one week (7 days) may receive a personalized access card upon request via the Capital Development/Facilities Management Office or "designate". This will require photographs of each individual to be taken at either of the following College sites during regular business hours:

- Lakeshore Campus: ITS Service Delivery Desk, Building A, Room A212; or
- North Campus: ITS Service Delivery Desk, Building NX, Room NX210

4.3.2 The Department of Public Safety (Security) will be informed about such individual(s) obtaining cards by the Capital Development/Facilities Management Office or "designate".

4.3.3. The Contractor shall inform the Department of Public Safety @ **416-675-8500** when any individual holding an access card has left the work site. Access cards will be disabled once any Contractor's employee is no longer working on the project (for whatever reason) and all access cards must be returned to the College on completion/termination of a contract/project.

4.4 **Contractor Key Access:**

The College controls the issuing, use and retrieval of keys and access cards to provide a safe and secure environment. Keys may be made available at the discretion of the Department of Public Safety, and must be arranged for prior to arrival on College property to begin any work.

4.5 **Day-to-Day Key Issue**:

a. Keys can be issued by the Department of Public Safety (Security) but must be returned at the end of each working day.

b. Prior to the release of any keys, a government-issued photo identification card (preferably Driver's License) will be required to be left with Security and returned only when the keys are returned.

c. Keys will be issued from the following locations only:

- North Campus: Campus Security Desk, Building NX, Ground Floor
- Lakeshore Campus East: Campus Security Desk, Building M

d. Keys issued by the College are the sole responsibility of the Contractor and their employees, agents and subcontractors. Loss of master key rings could result in major re-keying charges to the Contractor in the order of $200K or more. There will be a minimum charge per single lost key of $20 and a minimum charge of $150 for each lock/cylinder that is required to be changed due to lost key(s).

4.6 **Long Term Key Issue:**

a. Contractors will be required to fill out a **Key Request Form** available through Public Safety and submit it to the Department of Public Safety (Security);

b. The Contractor's representative will sign for any key(s) at the appropriate Campus Security location once keys are available (government-issued photo ID is required);

c. The Contractor's representative shall return any keys to the same Campus Security location at the end of the term of the contract or face replacement charges.

d. Keys issued by Humber are the sole responsibility of the Contractor and their employees, agents and subcontractors. Loss of master key rings could result in major re-keying charges to the Contractor in the order of $200K or more. There will be a minimum charge per single lost key of $20 and a minimum charge of $150 for each lock/cylinder that is required to be changed due to lost key(s).

e. Access to secured areas and IT closets may be made by contacting the Department of Public Safety (Security); however, prior authorization must be obtained by Public Safety staff from the Capital Development/Facilities Management Office or "designate" or appropriate authority such as Information Technology Services.

f. Keys to the Contractor's site, storage, offices and marshalling yards must clearly tagged and given to the Department of Public Safety (Security) in case of fire or emergency.

4.5 **High Security Areas to be Kept Locked:**

All mechanical/electrical/utility rooms and IT closets are locked and **must remain locked at all times**. No doors are to be propped/wedged open. The Contractor will pay for all associated damage to doors, frames, hinges, closers, door operators caused by such propping/wedging open.

5. CONTRACTOR DELIVERIES, EQUIPMENT AND MATERIAL STAGING AREAS:

a. The use of College elevators for the delivery of project materials must be pre-approved by the Capital Development/Facilities Management Office or "designate". Where permission has been granted to a Contractor to use an elevator, the Contractor shall be responsible for providing protection to the cab and shall be responsible for repairing any damage caused during the use of the elevator. The repair must receive prior approval from the Capital Development/Facilities Management Office or "designate" and meet all existing College standards.

b. Outdoor staging areas, as designated by the College, must be enclosed with protective fencing and have an appropriate access gate. The Department of Public Safety (Security) must have clearly tagged keys to the gate to access the site in case of an emergency.

c. Access points for Contractor deliveries will be determined prior to the start of any work in consultation with the Capital Development/Facilities Management Office or "designate".

d. If any exterior roads, sidewalks or grass areas will be used as part of the construction work site, consult with the Capital Development/Facilities Management Office or "designate". If work will take place on public roads, follow all traffic safety requirements outlined in the OHSA and Construction Regulations.

6. CONTRACTOR PARKING:

6.1 There is **no reserved or free parking** for Contractors, their employees, agents or subcontractors. All Contractors, and any of their employees, agents and subcontractors, are **required to pay** for parking. These costs will not be billed as an extra to any project. Parking is not allowed anywhere on the College property other than in parking lots, except for delivery or pick up of materials, tools or equipment. Vehicles making deliveries or pick-ups greater than 30 minutes are subject to parking fines, unless prior arrangements are made with the Department of Public Safety via the Capital Works/Facilities Management Office or "designate". **Fire routes** and restricted, emergency, accessible and other designated parking areas must be respected at all times. Any vehicles parked illegally will be tagged and/or towed at the owner's expense.

6.2 Contractors shall be required to obtain parking permits for their vehicles. These will be obtained through the Department of Public Safety (Security) at designated staffed parking control booths. The Contractor, their employees, agents or subcontractors will be directed to park in designated areas only.

6.2 All parking rules and regulations of the College and the City of Toronto bylaws must be adhered to. Failure to comply with these regulations may result in vehicles being tagged and/or towed at the owner's expense.

6.3 Any violations issued are under the auspices of the City of Toronto and as such, any appeals shall be between the violator and the City of Toronto, not the College.

6.4 Contractors shall not park on City streets adjacent to any College premises.

Section E: Project Close-Out

1. AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE MANUALS:

1.1 The Contractor shall submit to the Capital Development/Facilities Management Office (unless specified otherwise in contracts under close-out documentation):

- One (1) hard copy and one (1) soft copy in PDF format of Operating, Maintenance and Repair Manuals for all supplied equipment and their components
- One (1) hard copy and one (1) soft copy in AutoCAD format of all as-built contract drawings.

1. WARRANTIES:

2.1 The Contractor shall submit to the Capital Development/Facilities Management Office, as part of the maintenance manuals, all specific warranties, extended warranties and free manufacturer extended warranties as apply to each individual section. The warranty period(s) shall commence on the date of **substantial completion** of the project, and be valid for the full duration specified. Warranties, operating and source manuals and requested drawings are to be sent to the Capital Development/Facilities Management Office prior to Final Payment Certification.

2. DEMONSTRATION OF SYSTEMS:

3.1 The Contractor shall provide training to the College's Maintenance and Operations personnel, during regular work hours, on the care, operation and maintenance of all equipment and systems as specified in the applicable sections of the contract documentation. (Please note that training sessions may be recorded at the College's discretion for any future training purposes.)

3. RETURN OF KEYS, ACCESS CARDS AND PARKING PERMITS:

4.1 All keys, access cards and parking permits in possession of the Contractor, its agents or subcontractors must be returned to the Department of Public Safety at the following locations:

- North Campus: Campus Security Desk, Building NX, Ground Floor
- Lakeshore Campus East: Campus Security Desk, Building M

4. DAMAGE TO EXISTING FACILITIES, SERVICES, LANDSCAPING OR CONTENTS:

5.1 Damage to existing building components, services, landscaping or contents due to construction work shall be made good at the cost of the Contractor unless otherwise specified. Restoration work is to be completed by skilled tradesworkers specializing in the area of work to be performed.

5.2 Specifically, all damage to doors, frames, door closures, door operators, etc. and any associated hardware/security devices resulting from adjacent construction activity shall be made good at the cost of the Contractor.

5.3 Specifically, interior furnishings and equipment (e.g. chairs, desks, file cabinets, computers) that have been used by tradesworkers in the performance of the construction in place of proper equipment (e.g. step ladders) or damaged due to improper protection measures being taken (e.g. drop cloths) shall be replaced at the cost of the Contractor.

5. CONSTRUCTION SITE CLEAN-UP:

6.1 On completion of the contract, the work site must be cleared and cleaned to the satisfaction of the Capital Development/Facilities Management Office or "designate". Contractors are expected to arrange for and remove their own refuse, hazardous material and arrange for and recycle materials, at **their cost** as per the Environmental Protection procedures outlined in '**Section C'**.

HUMBER

Appendix A

Occupational Health and Safety Policy

Effective Date: July 2, 2013 (Refer to www.humber.ca/policies/ for the most current version.)

Purpose/Rationale:

The Humber College Institute of Technology & Advanced Learning and the University of Guelph-Humber (hereafter referred to as "Humber") are committed to providing a safe and healthy working and learning environment to all members of the Humber community. It is the goal of Humber and its employees to construct every structure plan every activity and perform all tasks in a manner that minimizes risks, promotes the health, safety and wellbeing of all individuals, and prevents occupational injuries or illnesses.

Scope:

Health and safety is a joint responsibility shared by all members of the Humber community. This policy applies to all employees, students, visitors and contractors of Humber College and the University of Guelph-Humber.

Policy:

1. Humber will maintain and promote a safe and healthy working and learning environment by implementing health and safety programs and procedures that meet or exceed the requirements of the Occupational Health and Safety Act and its Regulations, and other applicable legislation and codes.
2. Humber administrators, supervisors and other individuals who are responsible for directing the work of others are responsible for the health and safety of all individuals under their direction and the workplaces under their charge. They must implement all the necessary measures and programs to eliminate or control potential health and safety hazards associated with the activities under their supervision. They must ensure that their employees are provided with health and safety training and education appropriate to their job requirements.
3. All employees, contractors, tenants, students and visitors shall comply with all relevant legislation and all Humber policies and procedures regarding health and safety.
4. Every employee shall use safe work practices on all assignments, as governed by Humber policies and procedures. It is the responsibility of every employee to report unsafe conditions and workplace injuries to their supervisors.
5. Humber, in consultation with the Joint Health and Safety Committee, shall ensure that all other policies and operating procedures meet the goals of this Policy.

References:

- Occupational Health and Safety Act of Ontario, and its Regulations
- Humber Workplace Violence Prevention Policy, Human Rights Policy and Human Rights Complaint Resolution Procedure

Smoking Policy

Effective Date: April 2, 2009 (Refer to www.humber.ca/policies/ for the most current version.)

Purpose/Rationale:

To promote a smoke free learning and working environment for the college community in accordance with the *Smoke-Free Ontario Act, 1994* .

Scope:

This policy applies to every student, employee, leasehold tenant, contractor, visitor and other person, at all times, while on College property.

Definitions:

College Property: Any real property, including grounds and buildings, structures and facilities, which are owned or leased, or used under the aegis of the College. This includes any vehicle used by the College, and all College Residences.

Enclosed Public Space: The inside of any place, building or structure or vehicle or conveyance or a part of any of them that is covered by a roof and to which the public is ordinarily invited or permitted access, either expressly or by implication, whether or not a fee is charged for entry.

Policy:

1. Smoking is prohibited in any Enclosed Public Space or any Enclosed Workplace including:
   - Inside any College building, structure or facility, or any part of them, including the Student Residences;
   - In any college vehicle, and / or;
   - Under any structure or facility, or any part of them, covered by a roof or other structure providing an overhead covering, including an awning, overhang etc., and more than two walls.
2. Smoking will not be permitted at any outdoor location within a radial distance of 9 meters from any doorway, entrance, or exit from any College building with the exception of designated outdoor smoking areas.
3. Non-smoking signs will be placed at all entrances identifying the policy.
4. Members of the Humber community are expected to ask smokers to comply with the policy. It is not expected that any staff, faculty or students place themselves in jeopardy, and may contact Public Safety if feeling unsure about enforcing this policy.
5. Those that do not comply with this policy may be subject to disciplinary actions.

References:

- Smoke-Free Ontario Act, 1994
- Occupational Health and Safety Act, 1990
- Humber Occupational Health and Safety Policy

Human Rights Policy

Effective Date: July 2, 2013 (Refer to www.humber.ca/policies/ for the most current version.)

Purpose/Rationale:

The Humber College Institute of Technology & Advanced Learning and the University of Guelph-Humber (hereafter referred to as "Humber" or "the College") has the right, as well as the legal and moral responsibility, to ensure that all its members are treated fairly, equitably, and respectfully, in order to provide a learning, living and working environment that is free from discrimination and harassment. This policy outlines Humber's position related to acceptable and unacceptable behavior with respect to human rights and the responsibilities of the College, students and employees.

Scope:

This Policy applies to all members of the College community. This includes employees and students at Humber College and University of Guelph-Humber; members of Humber's Board of Governors; members of standing and ad hoc committees established by these institutions; members of societies and associations which have a direct relationship to or are under the authority of these institutions; contractors; service providers; researchers; and visitors, including invitees, guests or persons who have no ongoing connection to the institution but are on campus.

Visitors to any College campus will be subject to complaints if they engage in prohibited conduct. The College will take appropriate actions and apply appropriate remedies (e.g. barring them from campus) if harassment or discrimination is found. Such visitors may also be able to initiate a complaint under this policy.

The Policy includes coverage of incidents that occur both on and off campus, which affect the Humber workplace, living and study environment. This may include College-related social functions, in the course of work or academic placements, off-campus field trips, or work or academic related travel.

Definitions:

See Policy 'Appendix A' http://www.humber.ca/policies/human-rights-policy#appendix-a

Policy:

1. General

1.1 The College's working, living and learning environments will be maintained free from discrimination and harassment as prohibited by the Ontario Human Rights Code and from personal or psychological harassment as defined in this policy.

1.2 Every employee and student has a right to equitable treatment without discrimination with respect to employment, services, goods, facilities, accommodation and membership in vocational associations in accordance with the provisions of the Ontario Human Rights Code.

1.3 The College will enforce the right of its members to equitable treatment without discrimination or harassment contrary to this policy. The College may sanction any member of the College community whose behaviour violates this policy.

1.4 All College community members have the right to express legitimate concerns about human rights violations that they are experiencing in their work, residence or education at Humber College without fear of reprisal. Anyone who attempts reprisal or threatens reprisal against a person who initiates a complaint or participates in proceedings under this Policy may be subject to disciplinary action.

1.5 All College community members have the right to file a Human Rights Complaint with Humber College within six months of the occurrence of the event(s).

1.6 The College recognizes that any accusation in a complaint is a serious matter that can cause considerable stress and grief to the person who is the subject of the complaint. Accusations must be founded in serious concerns. Anyone who makes a complaint in bad faith will be subject to disciplinary action under this Policy.

1.7 The College President or designate may take action which diverges from procedures associated with this policy when they are of the view that:

1.7.1 The safety of College community members is at risk; or,

1.7.2 That a violation is deemed to be so serious that it is imperative that immediate action be taken; or

1.7.3 Other action is necessary to ensure that the College meets its legal obligations.

1.8 Although the College's Human Rights Complaint Resolution Procedure (CRP) is written in the language of an individual complaint, group complaints may be brought under this Policy.

1.9 The Director for the Centre of Human Rights, Equity & Diversity (DHR) is available to provide information, in confidence, to all College community members on the application and scope of the CRP and to clarify all options available for resolving issues.

1.10 The complainant may withdraw the complaint at any point along this procedure.

1.11 In the event that a complainant decides not to pursue their complaint through the process described in this policy, the College may determine, nevertheless, that the matter should be pursued and, if necessary, addressed. In this event, the College will determine the process it will use to pursue the matter.

1.12 The final decision about whether a violation of human rights has occurred will be based upon a review of the evidence provided by the parties, gathered by the investigator and assessed on the standard of balance of probabilities. (See 'Definitions').

1.13 All Contractual Relationships entered into by the College are governed by a standard contract compliance clause which states that contractors must comply with this policy, including co-operating in investigations. Breach of this clause may result in penalties or cancellation of the contract.

2. Freedom of Speech

2.1 Humber students, staff, and faculty represent the broad spectrum, diversity, and richness of our society. Students learn best in an environment that encourages critical thinking, inquiry, and dialogue. Faculty and students have the right to discuss and to debate culturally sensitive and controversial ideas and issues relevant to the curriculum, in an open and safe manner. Furthermore, subject to the limits legitimately imposed in a free and democratic society, they are free to present arguments, to express their views, and to dissent from the opinion of the majority without fear of reprisal. In this environment, faculty members are required to exercise sound professional judgment and conduct, and intellectual integrity. Discussions, arguments, and disagreements, when conducted at the College in an open, responsible and respectful manner, do not constitute harassment and discrimination but are part of the search for truth and knowledge, and the development of mutual respect and genuine regard.

2.2 The persistent or vexatious use of denigrating, demeaning or abusive comments or actions which have the effect of threatening, intimidating, demeaning or harming an individual or group, or is otherwise in excess of the reasonable limits on freedom of speech in a free and democratic society is unacceptable and cannot be justified by an appeal to "freedom of speech". In purpose the College has the right, as well as the legal and moral responsibility, to ensure that all its members are treated fairly, equitably, and respectfully, in order to provide learning, living and working environment that is free from discrimination and harassment.

3. Faculty-Student Relationship

3.1 The integrity of the faculty-student relationship is a key foundation of Humber College's educational mission. This relationship confers significant trust in the faculty member, who, in turn, assumes authority and accountability as an educator, evaluator, coach and mentor. The unequal institutional power intrinsic to this relationship increases the vulnerability of the student, i.e. any individual under the academic supervision of faculty, and the potential for coercion. The pedagogical relationship between faculty member and student must be protected from influences or activities that can interfere with learning consistent with the goals and ideals of the College. All such relationship jeopardizes the integrity of the educational process. Whenever a faculty member is responsible for academic supervision of a student, a personal relationship between them of a romantic or sexual nature, even if consensual, is inappropriate.

3.2 Any sexual or romantic relations between a teacher and a student during the period of the teacher/student relationship are prohibited. The prohibition extends to sexual relations between a student and all others who have supervisory academic responsibility for that student.

3.3 All complaints of sexual harassment will lead to a formal investigation. Faculty members found in violation of this prohibition will be terminated.

4. Employer and Employee Responsibilities

4.1 The College will take reasonable steps to ensure that the workplace, living and learning environments it provides are free from harassment and discrimination. These will include informing and educating members of the College community about discrimination and harassment.

4.2 Members of the College community have the following responsibilities:

- to foster a climate of understanding and mutual respect for the dignity and rights of each individual;
- to familiarize themselves with Humber's policies, procedures and practices and exhibit the appropriate behaviour for dealing with human rights;
- to prevent, report and discourage discrimination and harassment by others;
- to participate in ongoing professional development education and training that may enhance their ability to act in an anti-discriminatory manner.

4.3 College community members are liable for any discriminatory acts that they commit.

4.4 Members of the College community are encouraged, when possible, to resolve issues directly with the person who is the subject of their concern. If local resolution is not possible or unsuccessful, the complainant should follow the Human Rights Complaints Resolution Procedure.

4.5 Given the sensitive nature of a complaint, all parties concerned will make every attempt throughout the resolution of the complaint to respect the confidential nature of the information received to the fullest extent possible, including its legal obligations under the Ontario Human Rights Code, 1962 and The Freedom of Information and Protection of Privacy Act, 1990. Note: **Confidentiality** does not mean **anonymity**. A fundamental principle of fairness is that the respondent must be informed of who has made the allegations in both informal and formal stages. In addition, proper investigation of a complaint may require the disclosure of the identity of the complainant to third parties, including witnesses.

4.6 The College is responsible for the costs of administering this Policy and processing complaints. The College is not responsible for any legal costs incurred personally by the complainant or the respondent.

References:

- The Ontario Human Rights Code, 1962; The Freedom of Information and Protection of Privacy Act, 1990
- The Canadian Charter of Rights and Freedom, 1982

Related College Procedures:

- Human Rights Complaint Resolution Procedures

Asbestos Management Policy

Effective Date: June 25, 2012 (Refer to www.humber.ca/policies/ for the most current version.)

Purpose/Rationale:

The Humber College Institute of Technology & Advanced Learning (hereafter referred to as "Humber" or "the College") is committed to providing a safe and healthy environment to its employees, students, leasehold tenants, contractors, and visitors. Humber will ensure that an effective Asbestos Management Program is in place to actively manage and rigorously control all asbestos-containing materials in College buildings and all activities which may disturb such materials.

Scope:

This applies to all Humber buildings and structures, and to all employees, students, leasehold tenants, contractors, and visitors on Humber premises.

Definitions:

Type 1, Type 2 and Type 3 Asbestos: As defined under the Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations (O.Reg. 278/05), there are three classifications of operations generally based on the asbestos hazard presented by the work. The three levels are based on an assessment of the risk of exposure:

- Type 1 Asbestos: low risk
- Type 2 Asbestos: medium risk
- Type 3 Asbestos: high risk

Full definitions are outlined in the Humber College Asbestos Management Program, Sect. 5 (not included here).

Policy:

1. The Director of Facilities Management is responsible for the establishment and maintenance of an Asbestos Management Program, consistent with the Occupational Health and Safety Act, 1990 and the Asbestos Regulation (O. Reg. 278/05), and in consultation with Health and Safety Services and Humber's Joint Occupational Health and Safety Committee.
2. The College will maintain an asbestos inventory of all asbestos-containing materials within College buildings, and will conduct annual inspections in accordance with O.Reg. 278/05, as outlined in the Asbestos Management Plan.
3. All employees and contractors, who during their normal duties may be exposed, or accidentally disturb asbestos-containing materials, are to be properly informed/trained.
4. All employees who work with asbestos-containing materials and those who supervise or manage projects involving the disturbance of asbestos-containing materials must be trained in the hazardous properties of asbestos and the applicable procedures to follow to ensure safety to all.
5. Type 1 and 2 asbestos work must be conducted by trained and experienced Humber employees or asbestos abatement contractors following procedures outlined in the Humber's Asbestos Management Program.
6. Type 3 asbestos projects must be conducted only by trained and qualified contractors engaged by the College and not by Humber employees.

.

References:

- Occupational Health and Safety Act Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations (O. Reg. 278/05)
- Humber College Asbestos Management Program
- Humber Occupational Health and Safety Policy

Appendices:

N/A

Capital Project Checklist

[Please Print]

Appendix E

Company Name:		**Date:** / / / (YYMMDD)	
Site Supervisor:		**Site Super Alternate:**	
Cell Phone:		**Cell Phone:**	
Humber Designate:		**Project No.:**	
Location of Work:	**Campus:**	**Building:**	**Room No.:**
Description of Work:			

	Documents Issued By Humber and Form(s) Signed	**Applicable Yes**	**Applicable No**	**Rec'd √**
1	Contractor Guidelines, Policies & Procedures	X		
2	Contractor Statement of Understanding	X		
3	Contractor Workplace Electrical Safety Program Acknowledgement	X		
4	Workplace Electrical Safety Program	X		
5	Contractor Workplace Electrical Safety Program	X		
6	Hot Work Permit			
7	Life Safety Systems By-Pass Disregard Permit			
8	Interruption of Utilities Permit			
9	Hazardous Substance Report			
10	Other (1):			
11	☐ Parking Permits ☐ Key Request Forms ☐ Access Cards			

	Required Documents Received From Contractor		**Applicable Yes**	**Applicable No**	**Rec'd √**
12	WSIB Current Clearance(s)	[by Purchasing Services]	X		
13	Proof of Liability Insurance Coverage(s)	[by Purchasing Services]	X		
14	Emergency Contact Information		X		
15	Material Safety (MSDS)/ Safety Data (SDS) Sheets for Controlled Substances		X		
16	Registration of Contractors & Constructors Engaged in Construction [MOL 1000]				
17	Notice of Project [MOL 0175]				
18	Performance Bond				
19	Other (2):				
20	Other (3):				

	Required Approvals Received from Regulatory Bodies			**Applicable Yes**	**Applicable No**	**Rec'd √**
21	Site Plan Approval					
22	Demolition Permit					
23	Foundation Permit					
24	Building Permit					
25	Occupancy Clearance					
26	ESA					
27	MoE					
28	GTAA					
29	Other (4): e.g. MTO					
30	Other (5):					
	Approvals Responsibility	**College/ Consult**	**Contract**			

Hot Work Permit

[Please Print]

Appendix F

NOTE: A MINIMUM 3 BUSINESS DAYS' NOTICE IS REQUIRED Project Ref. No. (If Available) _____

Date:_____/_____/_____ (YY/MM/DD) Person Requesting Permit: _____

Contractor: _____ Subcontractor (if different)_____

Contact Phone Number: _____ E-mail: _____

Campus: _____ Building: _____ Room Number: __ _____

Description of Work _____

Start Time: _____ Date:_____/_____/_____ (YY/MM/DD) and Estimated Duration:_____

The Contractor's supervisor must inspect the proposed work area and check the precautions taken to prevent fire. The appropriate life safety devices have been de-activated through the Plant Services Department (See ***Life Safety Systems Interference Permit***). **The above location has been examined and the precautions noted below (☒) have been taken to prevent fire:**

General Precautions:

- ☐ Sprinklers and/or fire hoses are in service
- ☐ Cutting and welding equipment is in good repair
- ☐ Area supervisors/managers have been notified
- ☐ Appropriate fire extinguisher(s) on the work site

Precautions Within 15 M of Work:

- ☐ Floors swept clean of combustibles
- ☐ Combustible floors wetted down and covered with damp sand or metal or fireproof sheets
- ☐ No combustible materials or flammable liquids
- ☐ Combustibles and flammable liquids protected with fireproof tarpaulins or metal shield
- ☐ All wall and floor openings covered
- ☐ Fireproof tarpaulins suspended beneath work to collect sparks

Work on Walls or Ceilings:

- ☐ Construction noncombustible are without combustible covering or insulation
- ☐ Combustibles moved away

Work on Enclosed Equipment: (tanks, containers, ducts, dust collectors, etc.)

- ☐ Precautions to be provided during, and for 60 minutes after, operation
- ☐ Worker supplied with appropriate extinguishers or small hose
- ☐ Worker trained in use of equipment and in sounding alarms

☐ **I have personally examined the above area and certify that the checked precautions have been taken.**

Signed: _____

[Name] [Contractor/Employee Signature] [Phone No. if Different from Above]

Authorization to Proceed

Permit Expires: _____/_____/_____ (YY/MM/DD) **Work Approved to Proceed:**_____

[Signature of Humber Designate]

Time Work Started:_____ AM/PM **Time Work Completed:**_____ AM/PM

I hereby certify that the work area and all adjacent areas to which spark and heat might have spread (such as floors above and below and on opposite side of walls) were inspected for at least 60 minutes after the work was completed and were found to be safe.

_____

[Name] [Contractor/Employee Signature] [Phone No. if Different from Above]

After Work Completion & Sign-Off Return Permit to the Capital Development/Facilities Management Office or Designate

Proposed Life Safety Systems Interference Policy

Effective Date: In Process (Refer to www.humber.ca/policies/ for the most current version.)

Purpose/Rationale:

All Humber College Institute of Technology & Advanced Learning and the University of Guelph-Humber (hereafter referred to as "Humber" or "the College") locations/campuses are protected by fire and life safety systems for the benefit of all building occupants. It is essential, should these systems be rendered non-operational in any location for any reason, that such instances be communicated and closely monitored, and that alternate systems be put in place to ensure the ongoing safety of all occupants.

Scope:

This applies to all Humber locations and buildings, and to all employees, students, leasehold tenants, contractors, service personnel, and visitors on any Humber premises.

Definitions:

Life Safety Systems:

Life safety systems are comprised of any wiring, components, equipment, or communications devices comprising an integral part of building and/or occupant fire or fire alarm notification systems or firefighting/suppression equipment, including, but not limited to, public address systems, smoke and heat detectors, fire pull stations, cooking fire suppression systems, sprinkler systems, fire hose cabinets, blocking of access to same, etc.

Policy:

Under no circumstances will employees, leasehold tenants, contractors, or service personnel engage in any work on Humber premises affecting the full and complete operation of any life safety systems without:

1. The prior knowledge of a person or persons in authority from the Capital Development and Facilities Management Office and the Department of Public Safety (Security);
2. Obtaining authorization to interfere with any life safety system or device from those authorities a minimum of three (3) business days in advance;
3. Following the detailed Life Safety Systems Procedure associated with this policy.

References:

- Capital Development & Facilities Management Contractor, Guidelines, Policies & Procedures

Related Procedure(s):

- Life Safety Systems Interference Procedure

Proposed Life Safety Systems Interference Procedure

Effective Date: In Process (Refer to www.humber.ca/policies/ for the most current version.)

Purpose:

The purpose of this procedure is to outline operational processes for employees, leasehold tenants, contractors, and service personnel should life safety systems at College campuses/premises be rendered non-operational to allow maintenance, renovation or new construction activities to take place without activating a fire alarm response or necessitating a building evacuation. Such instances must be communicated and closely monitored, and alternate systems put in place to ensure the ongoing safety of all occupants.

Definitions:

Disregard: Indicates when there is no monitoring of the fire alarm systems for the College campus/premises by the College fire monitoring service, and the Toronto Fire Service will not respond to the site if there is an alarm.

By-Pass: Indicates when the entire fire alarm system for the College campus/premises is off-line.

Disabling of 'Point(s)': Indicates when a specific device such as a smoke or heat sensor, or fire alarm pull station etc., is individually disabled. (This would be the most common occurrence for maintenance service or smaller renovation projects.)

Competent Person:
A person who:

- Is qualified because of knowledge, training and experience to organize the work and its performance
- Is familiar with the OHSA and its regulations that apply to the work, and
- Has knowledge of any potential or actual danger to health or safety in the workplace.

Fire Watch:
A qualified person or persons physically conducting inspections for any occurrence of fire during times when fixed fire protection systems are intentionally taken out of operation.

Procedures:

1. Employees, contractors, service personnel or leasehold tenants must complete and submit a *Life Safety Systems Interference Permit* form to the Capital Development/Facilities Management Office or "designate" (as appropriate) a minimum of three (3) business days in advance of work requiring any life safety system/devices to be deactivated or disregarded.

2. Employees, contractors, service personnel or leasehold tenants must also complete and submit (where appropriate) a *Utilities Interruption Permit* form or *Hot Work Permit* to the Capital Development/Facilities Management Office or "designate" (as appropriate) a minimum of three (3) business days in advance of work requiring the temporary interruption of any building or site service affecting the correct operation of any life safety system/device.

3. No service, maintenance, renovation or construction activities affecting full operation of College life safety systems/devices will proceed without adherence to these procedures. No work is to proceed without confirmation by either Plant Services or the Department of Public Safety to the person or

persons performing the work that fixed fire protection systems have been taken out of service as appropriate.

4. Contractors, service personnel or leasehold tenants failing to submit the appropriate form(s) as required and obtaining prior authorization for work to proceed will be responsible for any and all costs ($1230 as of 2016) imposed on the College by the Toronto Fire Service for their unnecessary response to any College premises.

5. Work scope dependent, different degrees of life safety interference may be anticipated, but will not be initiated prior to the person or persons performing the work requiring such interference presenting themselves on the premises, with the appropriate approvals, ready to perform the work:

   a. *Disregard*: The Department of Public Safety is responsible for initiating a disregard only as per the submitted authorization form(s) generated by the Capital Development/Facilities Management Office or "designate".

   b. *By-Pass*: The Plant Services Department is responsible for this process and will initiate only as per the submitted authorization form(s) generated by the Capital Development/Facilities Management Office or "designate". The system must also be placed on *disregard* by Public Safety.

   c. *Disabling of Points*: The Plant Services Department is responsible for this process and will initiate only as per the submitted authorization form(s) generated by the Capital Development/Facilities Management Office or "designate".

   d. All instances of fixed fire protection systems taken out of service shall be recorded by the appropriate Plant Services and Public Safety individual as appropriate on the "***Life Safety Systems Interference Permit"*** provided by the person or persons performing work affecting those systems.

   e. Completion, distribution of and communication around the use of the ***"Life Safety Systems Interference Permit"*** by contractors is outlined in the attached appendix "***Life Safety Systems Interference Permit 'Contractor' Process"***.

7. Contractors, service personnel or leasehold tenants will perform all work as per the details of the submitted form(s) only.

   a. Either within, or outside of, normal business hours and prior to commencing work, the person or persons performing the work affecting fixed fire protection systems will inform the Department of Public Safety of their arrival on site and advise of their intent to commence work by:

   - **North Campus:** Utilizing the wall-mounted telephone adjacent to NX101 to contact Department of Public Safety personnel in the Security Operations Control Centre (SOCC).
   - **Lakeshore Campus East:** Presenting themselves to Department of Public Safety personnel at the Building M Security Office, 21 Colonel Samuel Smith Park Drive.
   - **Lakeshore Campus West:** Presenting themselves to Department of Public Safety personnel at the Building A Security Office, Room A174.

   b. Under no circumstances will Public Safety make any modifications to the monitoring of fire protection systems at the request of any staff member or contractor without the duly executed authorized permits.

   c. In all cases individuals presenting themselves to perform any work must be prepared to provide a hard copy of the appropriate authorized ***"Life Safety Systems Interference Permit"*** and any associated permits ('Interruption of Utilities Permit and/or Hot Works Permit') the name of their College "designate", location of their work, name of their company or employer, personal photo identification and emergency contacts.

d. Should individuals presenting themselves to perform any work who have not made prior arrangements as required (sufficient notice and authorization permit) or who are unable to provide the details or identification required as above, they shall be denied access to the premises.

8. Whenever fixed fire protection systems are intentionally taken out of service, a *competent person* will be present on the work site to conduct a *fire watch*.

a. This inspection will be conducted by a *competent person* a minimum of once every hour during the entire period that the protection systems are out of service.

b. If hot work is being performed on the work site, a *competent person* will be in attendance during the entire operation and until a final inspection has been conducted appropriate to the type and location of the work (e.g. concealed spaces are to be re-examined an hour after work completion).

c. Should the fixed fire protection systems be out of service for an extended period or outside of normal working hours, an extended *fire watch* must be arranged through the College Department of Public Safety (Security).

d. In all cases staff and/or contractors will complete a "***Fire Watch Patrol Log*"** attached as an appendix, to be submitted to the Capital Development/Facilities Management Office or "designate" as soon as possible following each *fire watch*.

e. Contractors are responsible for any and all costs associated with a *fire watch.*

References:

- Capital Development & Facilities Management Contractor Guidelines, Policies & Procedures
- Life Safety Systems Interference Permit
- Interruption of Utilities Permit
- Hot Works Permit

Appendices:

- Fire Watch Patrol Log
- Life Safety System Interference Permit 'Contractor' Process

Life Safety Systems (Fire Alarm) Status Matrix

	Fire Alarm Status		
	Disregard	**By-Pass[1]**	**Disable[2]**
Monitoring (By 3rd Party)	Yes	No	No
Fire Department Notification	No	No	No
Annunciator (Plant Services/Public Safety)	Yes	Limited[3]	No
Tones (Alarm) /Fan Shut Down	Yes	No	No
Fire Watch	No[4]	N/A[5]	Yes[6]

1 **ONLY** performed by SIEMENS, e.g. annual inspections highest risk condition [least common occurrence]
2 Specific devices only e.g. smoke detector, FA pull stations [most common occurrence]
3 Silent Alarm, Fire Computer Only [Plant Services & Public Safety]
4 Public Safety Dispatched to investigate alarm & call Fire Department if required
5 **ONLY** short term, controlled situation monitored by SIEMENS
6 Public Safety to call Fire Department

Fire Watch Patrol Log

[Please Print]

Date: [YY/MM/DD]	Project Ref. No (If Available)
Start Time:	Brief Description of Work:
Estimated Duration:	
Contractor:	
Fire Watch is being conducted by:	Location:
☐ Contractor	Campus:
☐ Humber Staff	Building:
☐ Public Safety	Room No.

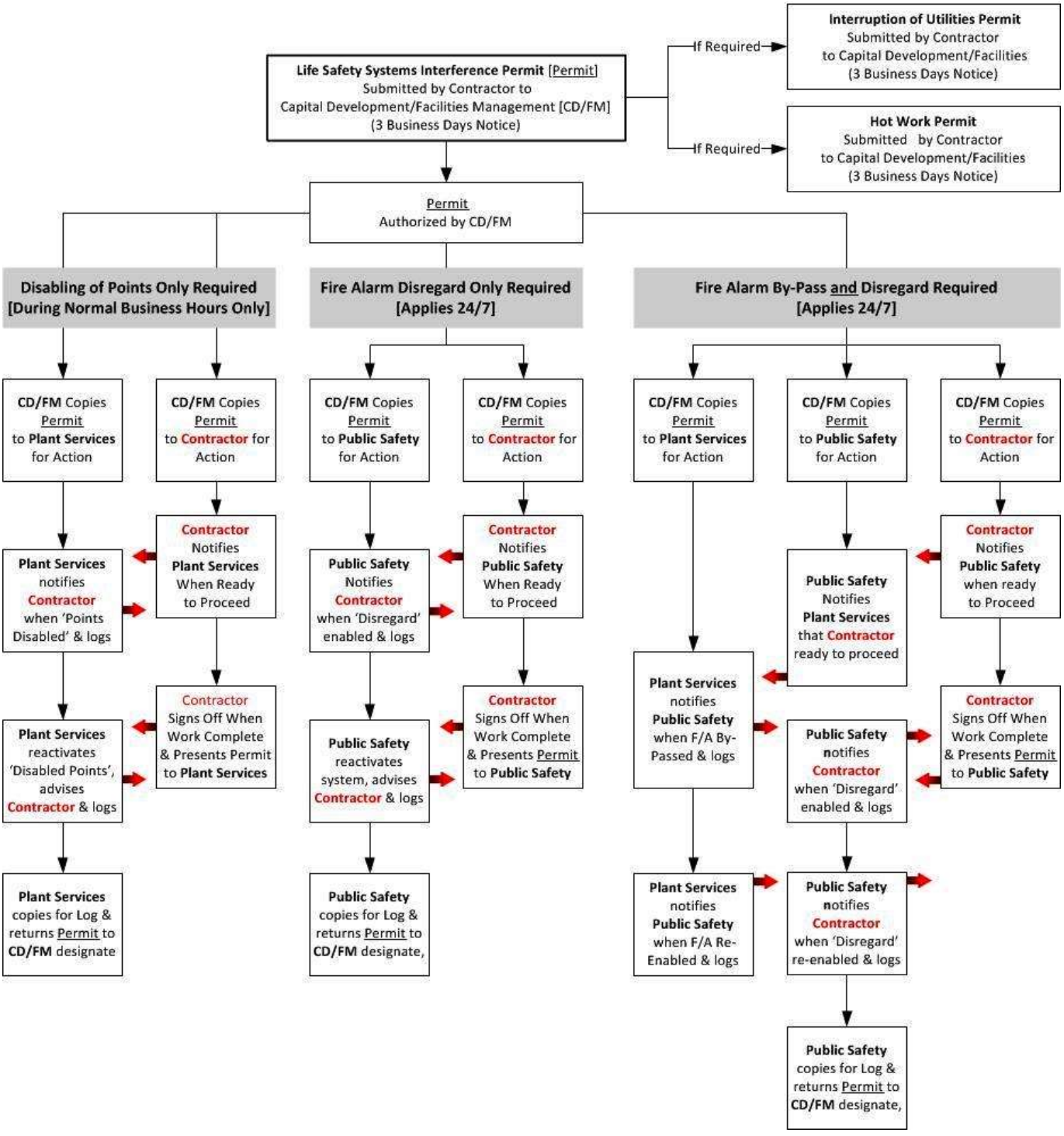
Time:	Name:	Initial:

Capital Development & Facilities Management – Fire Watch Patrol Log 2016 05 18

At Work Completion Return a Copy of This Log to the Capital Development & Facilities Management Office or Designate

Life Safety Systems Interference Procedure

Life Safety Systems Interference Form 'Contractor' Process



Life Safety Systems Interference Permit

[Please Print]

Appendix H

NOTE: A MINIMUM 3 BUSINESS DAYS' NOTICE IS REQUIRED Project Ref. No (If Available) _____

Date: _____/_____/_____[YY/MM/DD] Person Requesting: _____

Contractor: _____ Person Performing Work: _____

Contact Phone No. _____ E-mail: _____

Campus:_____ Building: _____ Room Number: _____

Start Time: _____ Date:_____/_____/_____ (YY/MM/DD) and Estimated Duration:_____hrs.

Description of Work _____ _____

Area Affected (per Plant Services) _____

Scope of Interference:

- ☐ Heat or Smoke Detector
- ☐ Fire Alarm Pull Station
- ☐ Fire Hose Cabinet
- ☐ Fire Suppression System
- ☐ Fire Pumps
- ☐ Sprinkler System
- ☐ Public Address System
- ☐ Other (Describe)
- ☐ Other (Describe)
- ☐ Other (Describe)

- ☐ **Hot Work Permit Required?**
- ☐ Disabling of Points Only Required
- ☐ Fire Alarm Disregard Required
- ☐ Fire Alarm By-Pass Required

- ☐ **Interruption of Utilities Permit Required?**

Who is conducting Fire Watch?

- ☐ Contractor
- ☐ Public Safety

For College Use Only

Note: Do Not Initiate Any Changes to Fire Protection Systems Until Person(s) on Site to Perform Work

Plant Services

Deactivation:
Date: / / Time: AM/PM Initial: Logged: ☐

Reactivation:
Date: / / Time: AM/PM Initial: Logged: ☐

Public Safety

Deactivation:
Date: / / Time: AM/PM Initial: Logged: ☐

Reactivation:
Date: / / Time: AM/PM Initial: Logged: ☐

Authorization to Proceed

Permit Expires: _____/_____/_____ (YY/MM/DD) **Work Approved to Proceed:** _____
[College Designate Signature]

Note: After Work Completion Sign-Off Below & Return This Permit to the Department of Public Safety (Security)

Time Work Started: _____ AM/PM **Time Work Completed:** _____ AM/PM

[Name] [Contractor/Employee Signature] [Phone No.(If different from Above)]

Interruption of Utilities Permit

[Please Print]

Appendix J

NOTE: A MINIMUM 3 BUSINESS DAYS' NOTICE IS REQUIRED Project Ref. No (If Available) _____

Date: _____/_____/_____[YY/MM/DD] Person Requesting Permit: _____

Contractor: _____ Subcontractor (if different) _____

Contact Phone No. _____ E-mail: _____

Campus:_____ Building: _____ Room Number: _____

Description of Work _____ _____

_____

[What are you disabling & who will it affect?]

Start Time: _____ Date:_____/_____/_____ (YY/MM/DD) and Estimated Duration:_____

Interruption of the following services will take place (Mark all that apply ☒) :

- ☐ Water
- ☐ Sewage
- ☐ Natural Gas (or other specified fuel)
- ☐ Electricity
- ☐ Fire Alarm (*Life Safety Systems By-Pass/Disregard Permit* is required)
- ☐ Telephone Service (power to)
- ☐ LAN Connectivity (power to)
- ☐ Internet Connectivity (power to)
- ☐ Chilled Water
- ☐ Heating
- ☐ Cooling
- ☐ Ventilation/Exhaust
- ☐ Essential Equipment (Specify) _____
- ☐ Other (Specify) _____

Precautions: The Contractor supervisor must inspect the proposed work area and check the precautions taken to prevent fire. If necessary, the deactivate life safety devices/fire alarms via the **Life Safety System By-Pass/Disregard Form**.

General Precautions:

- ☐ Area supervisors/managers have been notified
- ☐ Appropriate fire extinguishing equipment is on scene if water service is interrupted.
- ☐ Fire exiting (if modified) has been clearly marked.
- ☐ Excavations/work areas have been properly isolated and marked.
- ☐ Electrical equipment has been properly tagged as appropriate.

I have personally examined the above area and certify that the checked precautions have been taken.

Signed:_____

[Name] [Contractor/Employee Signature]

Authorization to Proceed

Permit Expires: Date:_____/_____/____ (YY/MM/DD) **Work Approved to Proceed**:_____

[Humber College Designate]

Time Work Started:_____ AM/PM **Time Work Completed**:_____ AM/PM

_____

[Name] [Contractor/Employee Signature] [Phone No. if Different From Above]

After Work Completion & Sign-Off Return Permit to the Capital Development/Facilities Management Office or Designate

Workplace Electrical Safety Program

1. Intent:

This program establishes minimum standards to prevent hazardous electrical exposures to personnel and ensure compliance with regulatory requirements applicable to electrical systems. Working on equipment in a de-energized state is **required** unless de-energizing is infeasible. Work that is infeasible in a de-energized state is limited to voltage and current measurements, troubleshooting and diagnostic testing that cannot be performed unless the electrical conductor or circuit part is energized.

Humber College recognizes that working on energized electrical conductors or circuit parts is necessary to complete troubleshooting, testing and diagnostics. Exposure to electrical energy is hazardous and can result in death, serious injury, and damage to equipment. An electrical hazard is a dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast. To ensure the safety of employees this program must be followed any time an employee works on energized electrical equipment. Specifically, electrical systems and equipment operating between 50 – 600 volts AC phase-to-phase, or greater than 50 volts DC.

Electrical systems and equipment operating at potentials greater than 750 volts AC phase-to-phase are considered as high voltage, and are not covered in this program. In addition, only a specifically trained High Voltage Electrical Contractor employee shall perform any work, including testing or troubleshooting on machines or equipment with voltages above 750 volts AC. This requires specialized training and evaluation.

2. Principles:

The guiding principles of this Electrical Safety Program are:

a. The Target is Zero Electrical Incidents.
b. Safety is a Value.
c. Every Incident is Preventable.
d. Protect all Workers.
e. Encourage Safe Work Practices.
f. Plan Every Job.
g. Identify all Hazards.
h. Minimize Hazards.
i. Anticipate Unexpected Results.
j. Assess Workers Abilities (e.g. Qualified and Competent).
k. Invest in Employee Training.
l. Use Procedures as Tools.
m. Use the Right Tool for Every Job.
n. Electric Shock and Arc Flash Hazards Must Be Avoided.
o. All Electrical Incidents Shall be Reported and Investigated.
p. Isolate Circuits and Equipment. De-energize is Always the Preferred Choice.
q. Test – Before – Touch.
r. Audit these Principles and this Program on a minimum 3 year cycle.
s. Perform Arc Flash Hazard Analysis and Labeling on all applicable existing Electrical systems and new electrical system installations.

3. Safe Electrical Installations (Internal):

It is required that new electrical installations meet the requirements of the applicable codes adopted by the authority having jurisdiction, including the Canadian Electrical Code (CEC) Part 1 and Ontario Electrical Safety Code. The completed installation must be inspected and tested to prove its safety.

There is also an obligation to ensure that components supplied for use in the installation are safe, and to warn the user should any hazardous defect be discovered in any of them. When specifying the equipment for the installation, ensured that it is suitable for the intended purpose and relevant standards are used. It is required that only electrical equipment approved by a certification body recognized by the Standards Council of Canada (e.g. CSA, ULc., ETLc., etc.) be procured and installed at the Humber College facilities.

When about to perform electrical work, the assumption made in this Electrical Safety Program is that the electrical installations are safe, electrical equipment is certified and installed to the applicable installation code, permit requirements are met, inspections have been conducted.

4. Electrical Hazard Identification, Assessment and Risk Control:

4.1 Electrical Hazards:

In addition to workplace hazards such as confined space entry, working at heights, and fires/explosions, OH&S regulations specify that employers must protect employees from electrical hazards. The two main electrical hazards are Shock and Arc Flash with associated Arc Blast.

All hazards, including electrical hazards, must be taken into account when planning work and completing a Job Safety Analysis.

When completing a Job Safety Analysis related to arc flash and shock, a risk related assessment must be made related to the specific energized electrical work or operating task. In all cases the risk of exposure to an abnormal condition that could lead to the initiation of an arc flash event may be low, medium, or high risk. Normally energized electrical equipment is safe to operate, if abnormal conditions occur or are created an increased probability of an Arc Flash event actually occurring will result. Examples of abnormal conditions that could lead to the initiation of an arc flash event (e.g. compromising the gap between energized electrical conductors or the insulation on conductors or parts being compromised leading to a compromising in the gap) include, but may not be limited to: human interaction, equipment failure resulting from incorrect maintenance or operating practices, following wrong procedures for switching, isolation and grounding, panel covers removed, safety inter-locks bypassed, using incorrect tool for the task, infant mortality, changes in operating characteristics, loose connections, insulation failure, voltage spikes, and interaction of rodents.

This Electrical Safety Program provides tools based on consensus based Standards for Workplace Electrical Safety, specific requirements for Electrical Hazard Analysis and, Establishing an Electrical Safe Work Condition. The first priority is to do all electrical work in a de-energized state.

4.2 Shock:

Electric shock is direct contact (or being in close proximity) with exposed energized electrical conductors or circuit parts that causes the flow of electrical current through the body due to a potential difference (e.g. step or touch potential per the definitions provided in the *Definitions*). The severity of the shock is determined by the amount of electrical current, the total time that it flows through the body, and where it flows through the body. Fatality (e.g. electrocution) can be the result of shock current magnitudes of about 50 mA or more. Burns to the skin are also another result of an electrical shock.

A shock hazard must be considered at any voltage equal to or greater than 50 V as defined in CSA Z462-2012. Note also that shock hazards exist for both AC and DC voltage/current.

4.3 Arc Flash:

Electrical equipment that faults due to an abnormal condition and creates an arc flash, can expose a worker to extreme heat causing severe burns. Arc flashes are created when the insulating air gap between exposed energized conductors or circuit parts is compromised, and current flows through the air between two or more conductors, or conductors to ground (e.g. the air is ionized and becomes a conductor).

Some secondary hazards related to an arc flash are:

a. Fire.
b. Toxic smoke inhalation from vaporized copper.
c. Sound pressure that could damage hearing.
d. High intensity UV/IR light that may damage eyesight.
e. Flying shrapnel and molten metal that may cause injury.

Figure 1 provides a graphic representation of an arc flash and the primary hazard of exposure to heat and the secondary hazards:

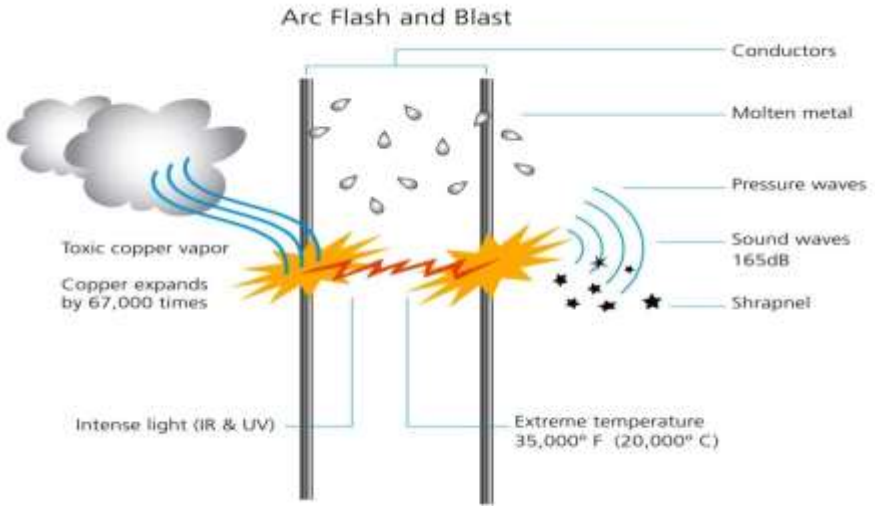


Figure 1
Arc Flash Graphic

An arc flash can be caused by a number of abnormal conditions including, but not limited to:

a. Accidental touching and human error.
b. Animals.
c. Dust and impurities or corrosion on or within the conductors.
d. Condensation of water on the surface of insulating material.
e. Over-voltages across narrow gaps.
f. Insulation breakdown.
g. Loose connections.
h. Infant mortality.
i. Poor maintenance of equipment (includes testing equipment).
j. Poorly designed or incorrect equipment.
k. Improper work procedures, etc.

4.4 Arc Blast:

An arc blast is associated with the release of tremendous pressure as a result of arcing fault current. Dangers associated with an arc blast event are high air pressures, sound and shrapnel. The high pressures can easily exceed hundreds or even thousands of pounds per square foot, knocking workers off ladders, breaking bones, rupturing ear-drums, and collapsing lungs. The sounds associated with these pressures can exceed 165 dB. In addition, material and molten metal is expelled away from the arc at speeds exceeding 1,120 kilometers per hour (700 MPH), fast enough for shrapnel to completely penetrate the human body.

4.5 Hazard Control:

Hazard Control is any method or methods used to prevent or reduce a worker's exposure to electrical hazards. This includes work practice controls through shock approach boundaries and the arc flash protection boundary, the application of Electrical Specific PPE, Tools & Equipment, and other engineering controls.

4.6 Shock Approach Boundaries:

When completing a shock hazard analysis, CSA Z462, Table I is used to determine the three shock approach boundaries (Limited, Restricted and Prohibited).

In Figure 2 a graphical representation is provided for the three shock approach boundaries. The relationship of the Arc Flash Protection Boundary is also indicated. The Arc Flash Protection Boundary can be outside or inside the Limited Approach Boundary.

The following conditions apply for Qualified Electrical Workers as defined by CSA Z462:

a. **Limited Approach Boundary for Shock** - Minimum Humber College facility PPE requirements.
b. **Restricted Approach Boundary for Shock** - Qualified and competent for the job, Electrical Specific PPE, Tools & Equipment. Authorized Work Plan, and no ingress to Prohibited Approach Boundary.
c. **Prohibited Approach Boundary for Shock** - All the requirements for Restricted Approach Boundary apply. In addition: contact work justification, specialized training, and approved risk analysis.

4.7 Boundaries for Arc Flash and Shock - Approach Limits:

Figure 2

Approach Boundaries for Shock, Qualified Electrical Worker vs. Unqualified Electrical Worker

4.8 Arc Flash Boundary:

Where an arc flash hazard exists, the Arc Flash Boundary (AFB) is an approach limit at a distance from the prospective arc source within which a person could receive a 2nd Degree Burn in the event of an electrical arc flash occurring due to abnormal conditions. The incident energy level for the onset of a 2nd Degree Burn is 1.2 cal/cm^2. When a Qualified Electrical Worker (QEW) encroaches inside this distance, appropriate Electrical Specific PPE is required to protect the worker from the arc flash hazard.

5. Establishing Electrically Safe Work Conditions:

5.1 Minimum Safe Work Practices:

All electrical equipment should be considered energized until it is proven de-energized (e.g. tested for absence of voltage - "TEST-BEFORE-TOUCH").

5.2 Ensuring an Electrical Safe Work Condition:

No person shall begin work on de-energized parts until this verification has been completed.

Humber College expects its employees and contractors to follow the minimum safe work practices found in CSA Z462 which include the following:

a. Conducting an arc flash hazard and shock hazard analysis for energized electrical work.
b. Communicating and implementing appropriate training as required to ensure how to complete and interpret the results of arc flash and shock hazard analysis; that it is understood and appropriate control measures are utilized to limit risk.
c. Establishing an Arc Flash Boundary and utilizing Shock Approach Boundaries.
d. Ensuring Electrical Specific PPE, Tools & Equipment that meets CSA/ASTM/ANSI standards is specified, used, maintained and worn appropriate to the risk level.

5.3 General Requirements for Energized Electrical Work:

To perform energized electrical work tasks, the following principles as preventive and protective control measures to protect personnel from hazards of electricity shall be followed:

a. Plan the work, and then work the plan.
b. Do not rush when planning or carrying out the electrical work.
c. All near misses and electrical incidents (e.g. arc flash and shock) shall be reported immediately. These incidents shall be fully investigated, lessons learned recorded, and recommendations implemented.
d. No worker shall begin any electrical work until he/she fully understands the instructions received and in no circumstances should that person exceed or abstain from following those instructions. Should any person consider that the instructions given cannot be carried out safely, that person shall refer the matter immediately to an appropriate supervisor.
e. No worker shall interfere with ground connections, locks, tags, danger or warning signs, safety barriers, flags or other safety devices.
f. Stand away from the front and to the hinged side of a circuit breaker or disconnect switch when opening or closing it.
g. Only use tools that are properly insulated and approved.
h. Test every circuit, every conductor, every time before you touch. Use the **TEST-BEFORE-TOUCH** procedure.
i. Do not work on any electrical conductors or circuit parts where the area is damp or wet until the area is cleaned and dried.
j. Fixed or portable Class A Ground Fault Circuit Interrupters (GFCI) shall be used for all portable tools used outdoors.

k. Prior to using any extension cords, they shall be visually inspected for damage, such as, cracked insulation, broken plug, signs of burns etc. All damaged cords shall be tagged as "Damaged - Do Not Use" and be repaired by a Qualified Electrical Worker or discarded.

l. Be aware of the potential for DC shock and arc flash (e.g. from battery systems)

m. All portable ladders used must be made of non-conductive materials.

n. Conductive articles (e.g. clothing or jewelry) are not permitted to be worn while conducting electrical work.

o. If lighting is not adequate to perform work tasks safely, temporary work task lighting must be used.

p. Adequate work space must be provided around electrical equipment to conduct work tasks safely.

q. There must be sufficient space provided around electrical equipment and work areas for unobstructed access and egress in emergency situations.

r. Temporary power equipment must be installed to minimum safe installation standards, including grounding of temporary generators.

s. Electrical work shall not be performed if the worker is impaired due to illness, fatigue, or other causes.

t. Appropriate precautions shall be taken if an electrical work task is completed in a confined space.

u. During the execution of a task, if any changes are noticed from the planned procedures then immediately stop the task, think and analyze, assess the risk, mitigate the risk, and then resume work.

5.4 Establishing Electrically Safe Work Conditions:

An electrically safe work condition is achieved when performed in accordance with the procedures of CSA Z462, and verified by the following process:

a. Determine all possible sources of electrical supply to the specific equipment. Check applicable up-to-date single line drawings, diagrams and identification tags.

b. After properly interrupting the load current, open the disconnecting device(s) for each source.

c. Where it is possible, visually verify that all blades of the disconnecting devices are fully open or draw out type circuit breakers are withdrawn to the fully disconnected position.

d. Apply lock-out devices in accordance with Humber College Lock-out Procedures.

e. Use an adequately rated voltage detector (i.e. Category 3/1000 Volt – Category 4/600 Volt rating) to test each phase conductor or circuit part to verify they are de-energized. Before and after each test, determine that the voltage detector is operating satisfactorily. **TEST-BEFORE-TOUCH**.

Note: Shutting off a control interlock or other device is not considered a disconnecting means. Three or four-way switches are not considered a disconnecting means. Switching off the control switch of a motor is not considered a disconnecting means.

5.5 Operational Checklist for De-Energizing & Re-Energizing Electrical Equipment:

Prior to energizing newly installed electrical equipment, or re-energizing equipment that was made electrically safe for maintenance work task, an operational readiness assessment may be carried out. This would form a part of the Lock-out procedure.

5.6 Operational Checklist for De-Energizing & Re-Energizing Electrical Equipment - Alerting Techniques:

The following alerting techniques are used to warn and protect all persons from hazards which could cause injury due to electric shock, arc flash, or arc blast:

a. Safety signs, safety symbols, or accident prevention tags are used where necessary to warn employees about electrical hazards which may endanger them.

b. Barricades are used in conjunction with safety signs where it is necessary to prevent or limit individual access to work areas where individuals may be exposed to energized electrical conductors or circuit parts. Conductive barricades may not be used where they might cause an electrical contact hazard.

c. If signs and barricades do not provide sufficient warning and protection from electrical hazards, a Safety Attendant/Standby Person is stationed to warn and protect employees from entering the area.

d. If Safety Attendant/Standby Person leaves post, work ceases until signs and barricades are put in place.

e. When energized electrical work tasks are being performed, suitable alerting techniques shall be used to restrict access to the arc flash protection boundary or limited approach boundary for shock.

Figure 3
Sample Detailed Warning
Label for Arc and Shock Flash

Extreme Danger Label

When a detailed label indicates "Extreme Danger", there is no electrical specific PPE available for this incident energy level. Therefore it is imperative that isolation and lock-out and verification be conducted upstream from the location. An emergency shutdown must be coordinated with staff and management as this will have an effect on campus activities. In order to safely replace a blown fuse in an "Extreme Danger" disconnecting means an emergency shutdown must be coordinated.

6. Electrical Incident Emergency Response:

All electrical incidents must be reported as required by the Humber College OH&S Management Policy. In an emergency response situation follow the Humber College Emergency Procedure, Accident Reporting and Investigation Procedure; as well as the First-Aid Procedure. Humber College QEW and supervisors exposed to electrical hazards are to be trained in methods of release of victims from contact with exposed energized electrical conductors or circuit parts. This should include emergency isolation procedures and the use of rescue of sticks if one is available. QEW shall be certified in First-Aid and CPR.

Never attempt to rescue a victim of an incident without de-energizing the electrical system first or suitably protecting the person that would attempt to rescue the victim!

7. Electrical Incident Investigation:

An electrical incident is defined as any of the following:

a. Any incident where a person is injured by an Electrical Shock, Arc Flash, or the associated Arc Blast.

b. Any incident where electrical equipment fails in a manner that did or could have reasonably been expected to injure a person, damage equipment, or result in production loss.

c. A near miss for any of the above.

Incidents that result in injuries requiring medical aid and/or property damage, or interrupt operation with significant loss are to be reported to your supervisor and investigated. Where practicable, evidence should be preserved and the incident site should be left untouched, except for activity necessitated by rescue work or to prevent further injury or damage, until the investigation is carried out. Supervisors and/or managers conduct investigations as per the Humber College Accident Investigation and Report Policy.

All electrical shocks, no matter what voltage level shall be reported.

In addition to the requirements of the Humber College Accident Investigation and Report policy, the following steps for conducting an electrical incident investigation must be followed:

a. Take control of the site to preserve evidence.
b. Ensure that injured persons are cared for.
c. Ensure that no further injury or damage occurs.
d. Interview witnesses and obtain written statements.
e. Take photographs and collect evidence.
f. Examine equipment involved.
g. Fill out the Humber College Incident Investigation Form.
h. Analyze all the available information to determine the root causes following an accepted Root Cause Analysis Process.
i. Determine what corrective action(s) are required to prevent recurrence.
j. Complete the report and email to the "The Health and Safety Manager.
k. Communicate the findings in safety meetings and by displaying on the safety bulletin board.
l. Follow up corrective actions.

Any incident suspected to be of electrical origin where a person or equipment is damaged must be reported. If a worker is injured it must be reported to the Humber College Management immediately!

8. Legislation and Other References:

Legislative, standards or guidelines referenced for this program are:

a. Occupational Health and Safety Act and Regulations for Industrial Establishments.
b. Canadian Electrical Code Part 1 CAN/CSA C22.1.06.
c. Ontario Electrical Safety Code.
d. ASTM F 496 - Rubber insulated gloves.
e. ASTM F 478 - Rubber insulated blankets.
f. ASTM F696-02 Standard Specification for Leather Protectors for Rubber Insulating Gloves and Mittens.
g. ASTM F 1506 -02 Standard Performance Specification for Textile Material for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards.
h. CAN/CSA-Z94.1 Industrial Protective Headwear.
i. CAN/CSA Z460 Control of Hazardous Energy - Lock-out and Other Methods.
j. CAN/CSA Z462 Workplace Electrical Safety Standard.

9. Definitions:

Abnormal Condition-Energized Electrical Equipment	Increases the probability of an arcing fault occurring that becomes an arc flash. Examples include- equipment not CSA approved lack of CEC Part 1 Compliance, doors open or covers removed, loose connections, service aging and poorly maintained equipment, insulation failure.
Accessible	Means where close approach is allowed to electrical equipment because the equipment is not guarded by locked doors, elevation, or other effective means.
Alive (also energized)	Means electrically connected to or having a source of voltage.

Arc Flash Hazard	A dangerous condition associated with the possible release of energy caused by an electric arc.
Arc Flash Hazard Analysis	A study investigating worker's potential exposure to arc flash energy, conducted for the purpose of injury prevention and the determination of safe work practices, arc flash protection boundary, and the appropriate levels of PPE.
Arc Rating	The value attributed to materials that describe their performance to exposure to an electrical arc discharge. The arc rating is expressed in cal/cm^2 and is derived from the determined value of the arc thermal performance Value (ATPV) or energy of breakdown threshold (EBT) (should a material system exhibit a break open response below the ATPV value).
Authorized / Qualified Person (Qualified Electrical Worker)	One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved.
Circuit Breaker	A device designed to open and close a circuit by non-automatic means and to open the circuit automatically on a predetermined overcurrent without damage to itself when properly applied within its ratings.
Control Circuit	The circuit that carries the electric signals directing the performance of a control device, but does not carry the power which the device controls.
Controller	A device or a group of devices for controlling in some predetermined manner the electric power delivered to the apparatus to which it is connected.
Dead (also de-energized)	Means the current-carrying parts of electrical equipment are free from any electrical connection to a source of voltage and from electrical charge and do not have a voltage different from that of the earth.
Dead Front	Without live parts exposed to a person on the operating side of the equipment.
Disconnecting Means	A device, or a group of devices, or other means whereby the conductors of a circuit can be disconnected from their source of supply.
Electrical Equipment	Any apparatus, appliance device, instrument, fitting, fixture, machinery, material, or thing used in or for, or capable of being used in or for, the generation, transformation, transmission, distribution, supply or utilization of electric power or energy.
Electrical Hazard	A dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast.
Electrical Safety	Recognizing hazards associated with the use of electrical energy and taking precautions so that hazards do not cause injury or death.
Electrically Safe Work Condition	A state in which an electrical conductor or circuit part has been disconnected from energized parts, locked out in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.
Exposed (as applied to electrical conductors or circuit parts)	Capable of being inadvertently touched or approached nearer than a safe distance by a person, as applied to electrical conductors or circuit parts that are not suitably guarded, isolated, or insulated.

Flame- Resistant (FR)	The property of a material whereby combustion is prevented, terminated, or inhibited following the application of a flaming, arcing, or non-flaming source of ignition, with or without subsequent removal of the ignition source. Both flame resistant and arc flash resistance can be an inherent property of material, or it can be imparted by a specific treatment applied to the material.
Ground	A connection to earth obtained by a grounding electrode.
Ground Fault	An unintentional, electrically conducting connection between an ungrounded conductor of an electrical circuit and the normally non-current carrying conductors, metallic enclosures, metallic raceways, metallic equipment, or earth.
Guarded	Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers or casings, barriers, rails or screens, or mats or platforms to remove the liability of dangerous contact or approach by persons or objects.
Incident Energy	The amount of energy impressed on a surface, a certain distance from the source, generated during an electrical arc event. One of the units used to measure incident energy is calorie per centimeter squared (cal/cm^2).
Insulated	Separated from other conducting surfaces by a dielectric material or air space having a degree of resistance to the passage of current and to disruptive discharge sufficiently high for the condition of use.
Lock-out	The placement of a lock on an energy-isolating device in accordance with an established procedure, thereby indicating that the energy-isolating device is not to be operated until removal of the lock or in accordance with an established procedure.
Lockout Device	A mechanical means of locking that uses an individually keyed lock to secure an energy-isolating device in a position that prevents energization of a machine, equipment, or a process.
Person in Charge	Is a Manager or Supervisor. Someone having authority over one or more employees doing work on a machine or process, or a person designated by one of the above as the person in charge of the work.
Qualified Electrical Worker - QEW	Please see Authorized/ Qualified Person
Readily Accessible	Capable of being reached quickly for operation, renewal, or inspection, without requiring those to whom ready access is a requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc.
Shock Hazard	A dangerous condition associated with the possible release of energy caused by contact or approach to energized electrical conductors or circuit parts.
Testing / Troubleshooting	Means tracing voltage with an approved tester with appropriately protected probes to diagnose an electrical fault condition where it is not practical to do so with the power off and locked out, and is only performed while wearing the required protective equipment as listed in Table 1 in this program.
Voltage (of a circuit)	The greatest root-mean-square (rms) (effective) difference of potential between any two conductors of the circuit concerned.

Voltage-to-ground The voltage given between any given live ungrounded part and any grounded part in the case of grounded circuits, or the greatest voltage existing in the circuit in the case of ungrounded circuits.

Work on Repair Any physical alteration of electrical equipment such as making or tightening connections, removing or replacing components, etc.

10. Electrical Systems Safe Work Practices:

10.1 General

All personnel shall not work on any electrical equipment, systems or machines above 600 volts, nominal unless specifically trained and authorized to perform the work.

a. Personal Protective equipment and other related safety equipment shall be stored and used in accordance with manufacturer's recommendations. Regular tests and inspections will be required to ensure that any equipment is still fit for purpose and use. (see Appendix B) Equipment can include but is not limited to voltage-rated gloves, Arc Rated flame resistant (ARFR) clothing, hearing protection, face shields, double layer hoods, and eye protection.

b. All arc rated flame resistant clothing shall be laundered and maintained. Employees are not permitted repair or make alterations to any ARFR apparel.

c. Prior to establishing an electrically safe work condition (Lock-out) all qualified persons working within the presumed flash protection boundary of an exposed energized component must be suitably protected with personal protective equipment for that specific hazard/ risk category (Level). Once an electrically safe work condition has been established and verified, electrical personal protective equipment can be removed.

d. Conductive articles of clothing and jewelry (such as watchbands, bracelets, rings, key chains, necklaces, metal frame glasses, etc.) shall not be worn where they present an electrical contact hazard with energized parts.

e. Blind reaching into electrical enclosures is prohibited. Employees must ensure they have enough illumination to perform a job safely.

f. Elevated work on energized electrical systems or equivalent shall be performed in an approved personnel lift.

g. Under no circumstances shall an electrical bus be used to support a ladder.

h. Only fiberglass or wooden ladders shall be used by the Facilities Department.

i. When an employee works in a confined space that contains exposed energized parts, the employee shall use appropriate shields/ barriers/ tools or insulating materials as necessary to avoid inadvertent contact with these parts.

10.2 Contractor Management:

Contractors shall be competent to undertake the tasks for which they are contracted. The Director, Facilities Management, or a "designate", shall:

a. Ensure contractor insurance (General Liability & WSIB Clearance Cert.) requirements as well as qualification and competency records.

b. Ensure all contractors are provided with facility safety orientations.

c. Ensure that contractors are made aware of hazards related to the work they are performing.

d. Identify and provide all information necessary to perform an electrical hazard risk analysis for both shock and arc flash.

e. Ensure that individual electrical contract workers are oriented on site.

10.3 Contractor Responsibilities:

Contractors also have several responsibilities. These include, but may not be limited to the following:

a. Ensure their employees are trained and understand how to assess electrical hazards, apply appropriate control measures and the applicable provisions and procedures provided to them.
b. Ensure their employees are trained to understand and react to all information reported to them by Humber College
c. Contractors must supply their own Electrical Specific PPE, Tools & Equipment.
d. Notify the contractor if any of the above conditions aren't met and if the contractor's employees are witnessed violating the provisions of this Electrical Safety Program.

10.4 Portable Electrical Tools:

Portable electric tools shall be CSA approved and suitable for the intended task, environment and voltage.

- All portable electric tools shall be visually inspected prior to each use and the casing and cords shall be free of apparent electrical shock hazards. Any damaged electric tool shall be immediately removed from service.

11. Humber College Authorized and Qualified Employees:

11.1 General

Only authorized and qualified employees that are licensed electricians and HVAC Technicians will perform the work on testing, troubleshooting, verification or other work near exposed live electrical equipment.

11.2 Specific Responsibilities:

It is the responsibility of any person assigned to test, verify, troubleshoot or otherwise work on any exposed energized electrical equipment to comply with the Workplace Electrical Safety Program. For all other work on electrical equipment the Hazardous Energy Control-Lock-out Program will be followed to ensure the equipment is de-energized.

11.2.1 Manager of Plant Services or Manager of Maintenance and Operations:

a. Allow only qualified employees to perform work on or near exposed live equipment.
b. Ensure suitable personal protective equipment and departmental devices are provided to ensure full compliance with this program.
c. Provide and ensure regular testing of protective gloves in accordance with applicable standards and good industry practices.
d. Ensure training provided to employees required to work on or perform testing, verification or troubleshooting on live exposed electrical equipment on these procedures and maintain documentation of this training.
e. Ensure documentation is maintained of glove assignment and testing.
f. Provide a copy of this Program to all employees required or likely to require them to perform work
g. Ensure energized electrical work practices are followed.
h. Inform employees of known energy sources, voltages and the required protection procedures when assigning work.
i. Apply appropriate corrective action when these work practices are not followed.

11.2.2 Lead Hand/Coordinator/Supervisor or Manager of Maintenance and Operations:

a. Ensure energized electrical work practices are followed.

b. Inform employees of known energy sources, voltages and the required protection procedures when assigning work.

c. Apply appropriate corrective action when these work practices are not followed.

d. Report violations of these procedures to the Manager.

11.2.3 Qualified Electrical Employee:

a. Follow the Workplace Electrical Safety Policy at all times when working on exposed live electrical equipment.

b. Use any personal protective equipment required by this policy.

c. Use only approved meters.

d. Inform the Manager of any problems or concerns related to the procedures immediately.

e. Inspect voltage rated rubber gloves prior to every use.

f. Report any damage or events such as arcs or flash that may affect the performance of meters, gloves or other safety equipment.

g. Sign-off that they have received a copy of the policies and understand it.

h. Apply the Lock-out Program where required in place of this program instead of working on exposed energized equipment.

11.3 Protective Equipment:

11.3.1 General

All Personal Protective Equipment (PPE) has an intended use and must be used as intended. Using PPE outside of the intended use will not afford the protection to employees that this procedure is intended to ensure.

PPE is selected based on the hazard to which employees are exposed. PPE designed to provide protection from electrical shock might not be adequate for protecting people from flash hazards. Similarly, PPE designed for flash protection may not provide protection from electrical shock. Voltage-rated gloves may be used for flash protection only when determined that additional Personal Protective Equipment or safety devices are required for the work to be performed; they may request them and they will be made available to them used with leather protectors.

Prior to doing work every authorized/qualified employee will determine the level of protection to be applied based on the detailed shock and arc flash warning label. In lieu of this method, Table 1 of this document shall be used. If at any time the authorized/qualified employee determines that additional Personal Protective Equipment or safety devices are required for the work to be performed; they may request them and they will be made available to them.

Personal Protective Equipment required shall be determined by the **highest** voltage that the worker is exposed to while doing the work regardless of the voltage of the actual testing location. For example, if working near exposed live equipment of 600 volts, nominal while testing exposed live equipment of 120 volts, the requirements for 600 volts, nominal will apply.

11.3.2 Selection of Personal Protective Equipment (PPE):

PPE will be selected and provided by the Facilities Department with the assistance of the Health and Safety Department. Selection will take into account the expected hazards, voltage levels and conditions of work. Additional factors that will be considered include:

a. Condition and age of the equipment

b. The equipment design

c. The barriers that exist around the equipment

11.3.3 General PPE Inspection and Maintenance:

All PPE used must be inspected in accordance with the manufacturer's instructions and at a minimum at least once before each use. Where specific instructions exist for inspection of PPE in this, or other procedures, they will be complied with by the employee.

Any damaged PPE will not be used. Defective PPE must be tagged defective until repaired or destroyed.

11.4 Shock Protection Equipment:

a. Voltage-rated Gloves:

Voltage-rated gloves (Class "0" Insulated Rubber Gloves) shall be used for electrical shock prevention. Only Type-II gloves, which are ozone-resistant and made of an elastomer or combination of elastomeric compounds, and with a minimum class of "0", will be used. Class "0" gloves are rated to 1,000 volts and are not to be used on any circuit greater than 600 volts.

b. Inspection and Maintenance of Voltage-rated Gloves:

Prior to every use of the voltage-rated gloves, they must be visually inspected for any cuts, punctures, holes or damage that may affect their rating or effectiveness. The voltage-rated gloves must be removed from their protectors for inspection. Leather protectors must be inspected before each use and determined to be free of holes, tears, and contamination. Insides of the leather protector gloves shall also be inspected for sharp or pointed objects that may damage voltage-rated rubber gloves. Cleaning and maintenance of the voltage-rated gloves and leather protectors must be done as instructed by the manufacturer. Only approved powder is recommended for use on voltage-rated rubber products to prevent deterioration of the rubber.

c. Voltage-rated Rubber Glove Testing:

Voltage-rated rubber gloves must be tested to ensure they are still effective on a regular schedule. Every in-service voltage-rated rubber glove and leather protector combination must be tested every 6 months. The testing will be done by a qualified outside vendor in accordance with ASTM F-496 and conducted every 6 months.

Employees issued voltage-rated gloves will be provided with a second pair while the first pair of gloves is out for testing.

Voltage-rated gloves returned from testing will be held in storage until the pair in use requires testing.

d. Voltage-rated Glove Storage:

Voltage-rated gloves shall be stored in a dry cool place not exposed to sunlight or ozone. Voltage-rated gloves will be allowed to take their natural shape while stored. They must be kept inside of protectors or in a bag, box, or container that is designed for and used exclusively for the gloves.

They shall be inserted into their protective container with the fingers pointed upward. Voltage-rated gloves shall not be stored folded, creased, inside out, compressed, or in any manner that will cause stretching or compression.

Voltage-rated gloves must be stored away from exposure to solvents, oils, greases or vapours from these materials.

e. Voltage-rated Glove Protectors:

Leather protectors for voltage rated-rubber gloves must be worn over the rubber gloves for protection from abrasions, cuts or punctures. The leather protectors shall not be used alone for shock protection at any time. Leather protectors are only used with the voltage-rated rubber gloves and are not to be used as general work glove. As much as possible, leather protectors must be kept clean and free of oil, grease or

solvent contamination. Protectors that have been used for other purposes must not be used to protect voltage-rated rubber gloves.

f. Removal from Service:

All voltage-rated rubber products that have been rejected by testing or found to be damaged during inspections shall be defaced, cut up, or otherwise marked and identified to indicate that they are not to be used for electrical service, and then disposed of from the workplace.

g. Safety Footwear:

All employees are required to wear CSA approved safety footwear while working. Employees who may work near live exposed electrical equipment must purchase and wear safety footwear approved by CSA for impact protection with a minimum rating of Class 1 (green tag or green triangle), and displaying the Ohm symbol (Ω) on a tag indicating they have been tested for electrical shock resistance.

h. Arc Flash Protection:

Arc flash protection shall be sufficient to protect the person from the flash hazard. In all conditions, arc flash protection is considered to be the outermost garment.

i. Hand Protection:

Gloves used for flash protection must be long enough to cover body parts such as hands, wrists, and arms that are exposed to the flash hazard. Gloves shall be of sufficient length to cover these parts until they overlap other flash protection, such as the sleeve of a flash-protection garment. The glove must cover any openings in the sleeve, such as the slit for the cuff. Insulated Rubber Gloves with leather protectors provide additional arc flash protection for the hands.

j. Arm Protection:

When flash protection is required for the arms beyond the distances that a glove will provide, a long-sleeve flame retarded shirt, jacket, or coverall is required. Short sleeves or rolled up sleeves are not permitted when working where there is a risk of arc flash. In addition, ensure that for tasks where arms are raised the wrist is protected from arc flash.

k. Eye Protection:

Safety glasses shall be used to protect the eyes from impact injuries due to flying or falling objects. Safety glasses must be CSA approved. Safety glasses must be worn while performing testing, troubleshooting or verification where there is a possibility of arc flash. Safety glasses worn shall be UV and IR Rated.

Face shields may be used to provide additional protection to the face. Face shields are not a replacement for safety glasses and safety glasses must be worn with the face shield. Face shields must not be cracked or broken.

l. Hearing Protection – Ear Plugs:

Hearing protection reduces the blast energy sound level and stops molten metal from entering the ear canal. The minimum requirement is ear canal insert type. Hearing protection must be CSA approved.

m. Flame Resistant Clothing:

All ARFR clothing shall cover associated parts of the body as well as all flammable apparel while allowing movement and visibility. All ARFR clothing shall be maintained in a sanitary and functionally effective condition. Tight fitting clothing shall be avoided. Loose fitting clothing is preferred because it provides additional thermal insulation due to the creation of air spaces beneath the clothing. ARFR clothing shall be inspected before each use. Work clothing or arc flash suits that are contaminated, or damaged to the extent that their protective qualities are impaired, shall not be used. ARFR clothing and any other protective items that become contaminated with grease, oil or flammable liquids or combustible materials

shall not be used. The garments manufacturer's instructions for care and maintenance of the ARFR clothing shall be followed. All ARFR clothing shall be stored in a manner that prevents physical damage; damage from moisture, dust or other deteriorating agents, or contamination from flammable or combustible materials. Clothing made from flammable synthetic materials that melt at temperatures below 315c (600 F), such as acetate, acrylic, nylon, polyester, polyethylene, and spandex, either alone or in blends shall not be worn.

11.5 Tools and Equipment:

11.5.1 General:

The following general directions shall apply to electrical test equipment, special tools, and their accessories:

a. They shall be rated for the circuits and equipment to which they will be connected.
b. They must be used in accordance with the manufacturer recommendations and used as intended.
c. They shall be CSA approved and have a 600 VAC rating or higher or a Category 3 Rating.

11.5.2 Electrical Test Instruments:

Electrical test instruments and all associated test leads, cables, power cords, probes, and connectors shall be visually inspected for external defects or damage by the employee before each use. If visible defects or evidence of damage that might expose an employee to injury are evident, the defective or damaged item shall not be used until any required repairs and tests have been made.

11.5.3 Voltage Testers:

Voltage testers will be based upon the intended use. Different types of voltage testers exist with specific uses and limitations. When testing for the absence or presence of voltage, voltage testers may be used where contact can be made and where contact cannot be made. Each type must comply with the requirements of this section.

A. Contact Voltage Testers – Measuring Voltage and Troubleshooting

The following features are required for multimeters used in measuring voltage and troubleshooting:

a. Slip protection on test probes
b. Self-contained fault protection or limitation devices, such as internal current-limiting fuses or probe current-limiting resistors
c. Voltage/current path from the probes is not routed through the selector switching device
d. Conformation with applicable CSA standards and appropriate voltage ratings
e. All multimeters, voltmeters, clamp-on meters must be at a minimum Category 3/ 1000 Volt - Category 4/ 600 Volt rating

B. Non-Contact Voltage Testers:

Non- contact- proximity testers may be used provided that they are at a minimum Category 3/1000 Volt- Category 4/ 600Volt rating. This type of tester only determines the absence of voltage and not the actual quantity of voltage.

11.5.4 Protection of Meters:

The employee shall maintain electrical test equipment in good working condition in accordance with the manufacturer's instructions. The employee is responsible to ensure that electrical test equipment and associated probes are stored in a manner that will protect them from moisture and dust, and will prevent damage and deterioration.

11.5.5 Special Tools:

Any tools or equipment that may be used in the course of testing, troubleshooting or verification must not be capable of conducting electrical current to the employee if they come into contact with an exposed live conductor.

11.5.6 Fuse-Pullers:

Only devices designed for the purpose of pulling fuses shall be used to remove and install fuses. The fuse-pullers shall be of the appropriate size and style.

12. Barriers and Guarding:

12.1 Purpose:

The purpose of barriers and guarding are to provide insulation and physical separation. Wherever possible barriers and guards will be permanently installed to reduce and eliminate exposure to live electrical equipment. Installation of barriers or guarding requires planning and appropriate risk assessment to avoid creating a hazard.

Physical guarding shall never be placed directly on an energized part or within the prohibited boundary. They are installed to provide a physical restraint to prevent body parts or tools from getting near energized parts.

12.2 Physical Guards:

Physical guards may only be constructed of approved materials and only at the direction of the Maintenance Supervisor. No temporary guard of any material is to be used for any type of insulating or physical barrier without the specific permission of the Manager of Facilities Supervisor.

12.3 Insulation:

Insulating barriers can be made of voltage-rated rubber products, voltage-rated tape, or certain plastics or composites. The material used depends upon the task. Insulating barriers may be placed directly on energized conductors and parts to prevent inadvertent contact with body parts and tools. The barriers must be rated according to ASTM standards for, or above, the circuit voltage involved. An insulating barrier is normally not adequate to restrain significant physical force or to stop a puncture or cut.

13. Training:

Training will be provided to every Qualified Electrical Worker who will be testing, troubleshooting or verifying on exposed energized electrical equipment. Only employees who have successfully completed the training program will be considered qualified to apply the Workplace Electrical Safety Program. Only qualified personnel who have been trained in their use may use electrical test equipment and special tools.

Training in the procedures above will be provided to:

a. Electricians
b. HVAC Technicians
c. Others as determined by Humber College Management

The content of the training will include the:

a. Applicable legislation and codes
b. Hazards likely to be encountered working on energized electrical equipment
c. Safe work practices
d. Use of gloves and other PPE
e. Inspection and maintenance of gloves and other PPE

f. Common errors and misconceptions
g. Correct application and use of meters and tools
h. Limitations of meters and tools
i. Inspection of the meters and tools
j. Understanding of instrument indication or information provided
k. Proper inspection, maintenance and storage of meters and tools

Successful completion of training requires:

a. Full attendance of the course with no interruptions or temporary absences
b. Completion and passing of a comprehension test at the end of the course
c. The Instructor is satisfied the participant has learned and understood the procedures

14. Protective Clothing and Personal Protective Equipment Levels:

Level 0:

Untreated cotton clothing, including a minimum of long sleeves and long pants and safety glasses with side shields. This level provides no appreciable protection from arc flash hazard energy.

Level 1:

Level 1 PPE must provide protection to a minimum of 4 cal/ cm^2 from potential arc flash thermal energy.

a. ARFR (Arc Rated Flame Resistant) long sleeve shirt and ARFR long pants.
b. Safety glasses with side shields and electrically non-conductive frames.
c. Electrically rated safety shoes/boots.
d. Electrically non-conductive hard hat.
e. Arc Rated Face shield.
f. Insulated Rubber Gloves with leather protectors – minimum Class 0 (1000 V rated).

Level 2:

Level 2 PPE must provide protection to a minimum of 8 cal/cm^2 from potential arc flash thermal energy.

a. ARFR long sleeve shirt and ARFR long pants.
b. Safety glasses with side shields and electrically non-conductive frames.
c. Electrically rated safety shoes/boots.
d. Electrically non-conductive hard hat.
e. Arc rated face shield with arc rated sock (balaclava) minimum arc rated 8 cal/cm^2, or flash suit hood.
f. Hearing protection.
g. Insulated Rubber Gloves with leather protectors – minimum Class 0 (1000 V rated).

Level 3:

Level 3 PPE must provide protection to a minimum of 25 cal/cm^2 from potential arc flash thermal energy.

a. ARFR long sleeve shirt and long pants.
b. Safety glasses with side shields and electrically non-conductive frames.
c. Electrically rated safety shoes/boots.
d. Electrically non-conductive hard hat.
e. Arc rated flash suit hood.
f. Hearing protection.
g. Insulated Rubber Gloves with leather protectors – minimum Class 0 (1000 V rated).

Level 4:

Level 4 PPE must provide protection to a minimum of 40 cal/cm^2 potential arc flash thermal energy.

a. Undergarments of non-melting material.
b. ARFR long sleeve shirt and long pants.

c. ARFR suit jacket (multilayer).
d. ARFR suit pants (multilayer).
e. Electrically rated safety shoes/boots.
f. Safety glasses with side shields and electrically non-conductive frames.
g. Electrically non-conductive hard hat.
h. Flash suit hood.
i. Hearing protection.
j. Insulated Rubber Gloves (appropriate voltage rated) with leather protectors.

15. Minimum PPE Requirement for Common Low Voltage Tasks Where a Detailed Flash and Shock Warning Label Does not Exist:

Worker must confirm that circuit is fed from as transformer less than 75 KVA

Panel Boards Rated at 240 V and Below (See Note 1)	
Task to Be Performed	**PPE Level**
Switching or breaker operation with covers on with no exposed, energized parts, excluding wall mounted, covered toggle or similar switches typically used for lighting etc.	0
Circuit breaker or fused switch operation with covers off	0
Work on energized parts, including voltage testing	1
Removal of bolted covers (to expose bare, energized parts)	1

Note (1): Maximum 25 KA short circuit current available, maximum of 0.03 sec fault clearing timer, minimum 18 inches (46 cm) working distance. Potential flash arc boundary 19 inches (48 cm).

Panel Boards, Switches, Motor Control Centres and Switchgear Rated Greater Than 240 V and up to 600 V (See Note 2)	
Task to Be Performed	**PPE Level**
Circuit breaker or fused switch with covers on	0
Circuit breaker or fused switch operation with covers off	1
Work on energized parts, including voltage testing	2
Work on control circuits with energized parts less than 120 V	0
Work on control circuits with energized parts greater than 120 V	2
Insertion and removal of individual starter “buckets” from MCC	4
Removal of bolted covers (to expose bare, energized parts)	2
Application of safety grounds, after voltage test	2
Insertion or removal (racking) circuit breakers from cubicles, doors closed	4
Insertion or removal (racking) circuit breakers from cubicles, doors opened	4

Note (2): Maximum 25 KA short circuit current available, maximum of 0.03 sec fault clearing timer, minimum 18 inches (46 cm) working distance. Potential flash arc boundary 19 inches (48 cm).

Electrical Specific PPE, Tools and Equipment Recommended Care, Use and Maintenance

PPE, Tools or Equipment	Care, Use & Maintenance	Reference Standard
Hard Hat	• Do not paint hard hat as paint can cover up cracks/damage • Do not apply stickers to hard hats • Solvents and other harsh cleaners should be avoided • Use manufacturer's instructions for proper cleaning guidelines • If hard hat has expired remove from use • Replace suspension as per manufacturer's requirements	CSA-Z94.1-05, Industrial Protective Headwear ANSI Z89.1, Requirements for Industrial Head Protection
Safety Glasses & Arc Rated Face Shield or Arc Flash Hood, Hood Lens	• Mild soap or detergent and warm water are the best solution for cleaning safety glasses or lenses • Solvents should not be used • For special lenses such as those with an anti-fog coating, a standard lens cleaner or a solution of mild detergent and warm water may be used • For drying, a soft lint-free cloth is the best choice • To avoid scratches, a dry lens never should be cleaned with a paper towel or untreated paper • Check with manufacturer who may supply cleaning materials for their specific apparatus • Consider anti-fog solutions for winter use	CSA-Z94.3-07, Eye and Face Protectors ANDI Z87.1, American National Standard for Occupational and Educational Eye and Face Protection Devices
Rubber Insulating Line Hose and Covers	• Check for damage • Clean as required	ASTM F 478, Standard Specification for In-Service Care of Insulating Line Hose and Covers
Rubber Insulating Mats	• Check for damage • Clean as required	ASTM D 178, Standard Specification for Rubber Insulating Matting
Rubber Insulating Blankets	• Check for damage • Clean as required	ASTM F 479, In-Service Care of Insulating Blankets

Rubber Insulating Gloves	• Check to ensure rubber insulating gloves are date stamped with last test date and ensure current to within the last 1 year • Check to ensure size is appropriate • Ensure that leather protectors are correct for the associated rubber insulating glove Class, that minimum distance between leather protector cuff and rubber insulating glove cuff is acceptable • Complete an air test by rolling up the glove or using a glove inflator. Listen for any air leaks along the length of the glove • Thoroughly check the inside and outside of the rubber insulating glove both visually and by feeling the surface of the rubber insulating glove for any damage. Look for abrasions, scratches, age cracks, cuts, hard spots, nicks, snags, ozone cracking, puncture, soft spots, tracking, any abnormal irregularity in the gloves which should have a smooth finish • Ensure gloves are stored in manufacturer's recommended storage bag or case. Store flat, do not store folded, creased, inside out or compressed • Store the gloves in storage bag with the glove openings down into the bag • Store the gloves is a cool, dry, and dark location • Do not store near large power generators or other sources of ozone • When stored inside trucks, keep in the storage bag, and away from windows, batteries, heat sources, fuel supplies or container. Glove bags should be hung • Wash the rubber insulating gloves as per manufacturer's requirements in mild soap and warm water not to exceed 71°C (e.g.160°F) • Ensure leather protector gloves are not contaminated or damaged. The leather protectors are required to protect the rubber insulating gloves from damage, and also provide arc flash protection which could be compromised if the leather is damaged or contaminated • Workers are not permitted to have long finger nails while using Rubber Insulating Gloves • Do not wear jewellery on your fingers inside rubber insulating gloves they could damage the glove	

Leather Protectors	• Must be worn over the rubber insulating gloves • Should not be used alone for shock protection • Should not deform the shape of the rubber insulating gloves when worn • If they are used for any other purpose than with the rubber insulating gloves they cannot be re-used with the rubber insulating glove • Keep them clean from oil, grease, chemicals, and similar materials • Cannot be used if they have holes, are torn, are contaminated or other damage	ASTM F 696, Specifications for Leather Protectors for Rubber Insulating Gloves and Mittens
Rubber Insulating Sleeves	• Check for damage • Clean as required	ASTM F 496, Standard Specification for In-Service care of Insulating Gloves and Sleeves
Dielectric Footwear	• Use a protective coating to make the footwear water-resistant • Repair and replace worn or defective footwear • Since an effective retest is not viable and recommended as per standard, dielectric footwear should not be considered as a primary protection against electrical shock	CSA Z195.1-02 Guideline on Selection, Care and Use of Protective Footwear ASTM F 1117, Standard Specification for Dielectric Overshoe Footwear
Arc Rated Clothing	• Launder and repair arc rated (e.g. FR) clothing as per ASTM F 1449/NFPA 2112 • Do not mix arc rated (e.g. FR) garments with items made of other materials in the same wash • Do not use bleaches, fabric softeners or other treatments unless recommended by the manufacturer. Use mild detergent only • Observe manufacturer's recommendation for laundering instructions • The PPE should not be washed in temperatures over 7400 or 165°F • For arc flash suits after washing, dry on low heat and remove immediately. Do not line dry • Care should be taken when putting on an arc flash suit, ensure you zip up all openings, close the Velcro collar and other Velcro straps are secured, and that the arc flash hood flap are lying flat over top of the jacket, do not tuck into the jacket	ASTM F 1449, Standard Guide for Care and Maintenance of Flame Resistant Clothing NFPA 2112, Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire
Insulated and Insulating Hand Tools	• Store insulated hand tools separate from normal tools • Keep tools clean from contamination • Wash with mild soap in warm water • Store in separate tool box, hard case or wrap to protect the tools from damage to insulation • Only use the insulated hand tools for energized electrical work	ASTM F 1505 Standard Specification for Insulated and Insulating Hand Tools

Hot sticks (Live-Line Tools)	• Check for identification tag • Check for sticker for proof of tested current • Clean as per manufacturer's recommendations • Keep free of contamination • Ensure mechanically fit for use • Ensure stored in manufacturer's approved bag or tube	IEEE Standard 978, Guide for In-Service Maintenance and Electrical Testing of Live-Line Tools
Temporary Protective Grounds *(e.g. ground clusters, ground chains)*	• Check for identification tag, and indication of fault current carrying capacity at assumed clearing time • Check for sticker for proof of tested current • Store in protective box • Clean as per manufacturer's recommendations • Keep free of contamination • Ensure clamps are intact and operate • Ensure appropriate hot stick for application is available	ASTM F 855, Standard Specifications for Temporary Protective Grounds to be Used on De-energized Electric Power Lines and Equipment

Electrical Lock-Out Procedure

1. Purpose:

This procedure is to be utilized each time a designated worker may come into contact with energized equipment. Whenever such work is performed, the worker shall isolate and make inoperative (lock-out) all affected equipment.

2. Responsibilities:

The Supervisor shall:

- Develop specific procedures for controlling hazardous energy for each piece of equipment that falls under this procedure;
- Identify College employees requiring training, including re-training;
- Communicate procedures to affected workers or contractors and ensure compliance;
- Monitor the testing of equipment to ensure the effectiveness of the energy controlling measures;
- Provide and maintain any required material e.g. locks, tags, wedges, etc. in order to isolate equipment from energy sources;
- Ensure lock-out documentation is completed and filed for future reference by officials; and
- Take all reasonable precautions necessary to protect the safety of workers as required under the terms of the *Occupational Health and Safety Act, Ontario Electrical Code* and related regulations.

The Worker shall:

- Evaluate hazards of the work to be performed and confirm a zero state of energy has been achieved. Eliminate the possibility of any release of stored energy;
- Ensure the safety of themselves and others by adhering to the lockout procedures;
- Advise their Supervisor of any alterations or changes that would require the addition/change of a lock-out device;
- Advise Supervisor if lock-out device(s) is not available or will not function;
- Participate in mandatory lock-out training. College contract employees are not required to attend training, but are required to adhere to College policies and procedures at all times;
- Workers shall not remove, interfere or disturb any locks or tags that are not their own;
- Report to the Supervisor any hazards that he/she becomes aware of; and
- Work in compliance with the *Occupational Health and Safety Act, Ontario Electrical Code* and related regulations.

3. Training:

All College workers performing maintenance or servicing equipment are required to participate in lock-out training. Supervisors of these employees are also required to attend. The training program will include the following:

- Hazard recognition of energy sources;
- Methods of energy isolation and control;
- Lockout and tagging procedures; and
- Lockout removal procedures.

4. Procedures:

The procedures for lock-out may vary slightly depending on the piece of equipment and its location, but the basic principles will remain. The procedures **are to be used for any work involving electrical, pneumatic, gravitational, hydraulic or stored energy** e.g. springs, pressurized gases, batteries, etc.

a. Review work to be performed to identify equipment requiring lock-out with all affected individuals and/or departments to determine best method of control. This requires knowledge of the system;
b. If the machine or equipment is operating, shut it down using normal stopping procedures. This may require the participation of the operator;
c. Isolate the equipment from its main power source;
d. Lock-out and tag the device with appropriate lock and tags;
e. Relieve any additional stored or residual energy from equipment to ensure zero state of energy exists;
f. Verify that all steps above have been followed; and
g. Prior to work being performed, ensure isolation or de-energizing has been achieved by testing with proven testing equipment. Use test alive, test dead, test alive method.

4. Removal of Lock-out Device:

Prior to the removal of lock-out devices and energy being restored, the following steps are to be followed:

a. Once service has been completed, check the area around the equipment to ensure the area is clear of tools and that guards are re-installed.
b. Ensure no one will be exposed to hazard during start-up.
c. Lock-out device is removed. Note: Removal is performed by individual who attached device only. **This function cannot be delegated**.
d. Restore energy to the equipment.
e. Check for proper operation.

5. Lock-out Device Cannot Be Removed:

In the event that a worker has left the premises without removing his/her lock, the Supervisor (or "designate") shall be notified. The Supervisor will make every attempt reasonable to arrange for the worker to return and remove his/her own lock.

This responsibility cannot be delegated. Should this prove to be unsuccessful, the Supervisor will contact the Director, Facilities Management who will be advised of situation and action taken.

If, after consultation between Supervisor, Director, Facilities Management and any affected staff, it is agreed that the lock can be removed, the Director, Facilities Management will remove the lock. The Supervisor will re-energize equipment.

6. Multiple Shift Lock-out:

In the event the equipment requires a lock-out device over one or more shifts, the second or subsequent worker will replace the previous worker's device with their own. This will take place after the previous worker has provided the next worker with all necessary safety information. In the event the worker does not return to remove his/her lock when the equipment has been locked-out overnight, the same procedure as '**Lock-out Device Cannot Be Removed**' will be followed.

7. Group Lock-out:

When service or maintenance is performed by more than one individual, each person is to apply his/her own lock to a group lock-out device, such as a hasp. Tag shall warn of the hazardous conditions. Equipment will not be re-energized until all individuals have removed their lock.

8. General:

a. Each affected department (or Contractor) Supervisor will maintain a Safety Lock Board.

b. Locks will be numbered and entered into a log book.

c. Locks shall be a key type padlock.

d. Workers will have one key only for his/her lock.

e. Lost locks must be reported to the Supervisor in order that action can be taken to ensure the integrity of the system.

f. Locks will be signed out in the log book before use, and signed in after use.

g. Each worker must sign out his/her own lock.

h. Locks cannot be loaned or transferred to another individual.

i. The lock-out device must indicate the name of the person applying the lock. Tags shall warn of the hazardous conditions should the equipment be energized and shall include warnings such as **Do Not Operate, Do Not Start, Do Not Close**, etc.

For further information regarding this procedure, contact the Director, Facilities Management.

Contractor Workplace Electrical Safety Program Acknowledgement

Appendix K.3

Project Reference No._____

Location: _____

SIGNATURE REQUIRED PRIOR TO START OF ANY WORK

As a condition of our contract to provide services and material to Humber College, I, the undersigned, acknowledge that I have received a copy of the **Humber College Capital Development & Facilities Management Workplace Electrical Safety Program** and agree that this Contractor and/or its employees/agents/subcontractors, will follow all electrical safety practices as outlined in this program as a **minimum** standard while engaged in work at any Humber College sites.

I, _____ representing _____

[Please Print Name of Company Representative] [Please Print Company Name]

I have read the Program document and understand all of the responsibilities of my company and/or any of its employees/agents or subcontractors employed by my company.

_____ _____ _____

[Signature of Company Principal] [Please Print Title of Signing Officer] [Date (YY/MM/DD)]

This form is to be signed and returned to the Capital Development/Facilities Management Office or "designate" prior to the Contractor and/or any of its employees/agents/subcontractors beginning work on the premises.

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Receipt Acknowledgement

_____ _____

[Signature of College Representative] [Date (YY/MM/DD)]

Contractor Statement of Understanding

Appendix L

Project Reference No. (If Available): _____
Location: _____

SIGNATURE REQUIRED PRIOR TO START OF ANY WORK

I, _____representing _____
[Please Print Name of Company Representative] [Please Print Company Name]

have reviewed and understand the **Humber College Capital Development & Facilities Management Contractor Guidelines, Policies and Procedures** document and agree that my company and/or its employees/agents and subcontractors, will abide by the requirements contained therein. We agree that we have a good working knowledge of the *Occupational Health and Safety Act* (and the *Regulations* thereto) and the associated safe work practices required on any construction site.

I understand that non-compliance with any of these guidelines, policies and procedures as described will result in immediate work stoppage. Work will not commence again until a resolution to any such non-compliance has been determined in consultation with the Capital Development/Facilities Management Office or "designate".

I further understand and acknowledge that any additional costs incurred due to such non-compliance with said policies and procedures will be borne solely by my company or its agents/subcontractors.

_____ _____ _____
[Signature of Company Principal] [Please Print Title of Signing Officer] [Date (YY/MM/DD)]

This form is to be signed and returned to the Capital Development/Facilities Management Office or "designate" prior to the Contractor and/or any of its employees/agents/subcontractors beginning work on the premises.

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Receipt Acknowledgement

_____ _____
[Signature of College Representative] [Date (YY/MM/DD)]

Electrical Checklist

Project Name:	Project No.

Project Description:

Campus:	Building:	Room:	Other:

Power:

Circuit Connected to:		
Panel No.:		
Breaker No:		
If joint circuit(s) – describe other circuits & total load:		
Approval:	**Name:**	**Date:**

Network:

Network Connection:		
Hub Room:		
Identification:		
Approval:	**Name:**	**Date:**

Network:

Network Connection:						
Hub Room:	POE installed in closet	Yes	No	WM patched to network port	Yes	No
Identification:	Lighting circuit in network closet installed and is working				Yes	No
Approval:	**Name:**			**Date:**		

Telephone:

Telephone Cable Connection:		
Room:		
Identification:		
Approval:	**Name:**	**Date:**

Verification:

Circuit tested for correct operation?	Yes		No	
Verification label affixed to receptacle/equipment?	Yes		No	
Panel directory updated?	Yes		No	

Technician/Installer:

Company:	Licence No.:
Installed by:	Date:
Checked by:	Date:

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SIGNATURE REQUIRED

Security Camera Checklist

Project Name:	Project No.

Digital Camera:

Model No.:	Manufacturer:
MAC Address:	Serial No.:
Physical Location:	Panel/Circuit:
Network Closet:	Punchdown:

Analog Camera:

Model No.:	
Manufacturer:	
Channel:	
NVR:	
Physical Location:	Panel/Circuit:

Technician/Installer:

	ITS	DPS
Name:		
Company:		
Supervisor:		
Contact Info:		
Date:		

Hardware Install Check List:

Cables:	Clearly label all cables (e.g. Reader/Strike, Rex, DC, Camera)	Yes		No	
Enclosures:	Clearly label all enclosures (e.g. E-1-NX109, E-2 HB101, etc.)	Yes		No	
Electronic Board:	Clearly label all electronic boards (e.g. RIM-1, RIM-2, ISC-1, etc.)	Yes		No	
Reader Board:	Terminate all RIMs	Yes		No	
Networking:	Label all ports &wires connecting to network (switch/ punchdown)	Yes		No	

Sign Off:

Name:	Name:
Contact Info:	Contact Info:
Signature:	Signature:
Date:	Date:

Form Revised 2016 05 04 Bridgeford

SIGNATURE REQUIRED