

Nova Scotia Community College

CONSTRUCTION SAFETY MANUAL

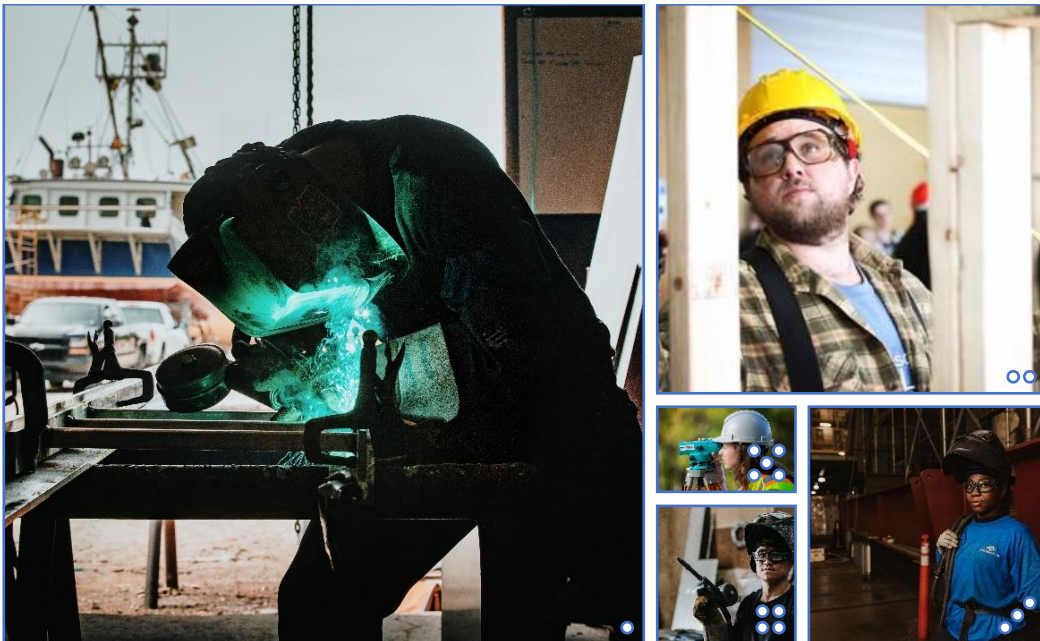


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1.INTRODUCTION

Welcome to the Nova Scotia Community College (NSCC). NSCC is committed to providing a safe and healthy workplace. Safety is one of our cornerstone Values – we are dedicated to ensuring the health and safety of our students and employees. We are committed to working collaboratively to foster a culture of safety, and to improve safety practices, across the organization. Working together with our employees and Contractors we have been able to achieve a very effective safety management system. On the following pages of this document, you will find helpful guidance to help you in meeting our expectations of a truly safe and respectful workplace. Please take time to read the document and familiarize yourself with our philosophy and processes.

As a Contractor for the College, you will be required to perform your work in a safe manner that is compliant with all applicable safety regulations and industry codes of practice. The College, as an employer, must assure all who work for us follow applicable safety rules. We have developed specific requirements for this project to ensure everyone is safe and that regulatory requirements are met.

NSCC has prepared this document to help you comply with our project specific requirements. Keep in mind these requirements are not intended to replace any regulatory requirement or your due diligence.

We welcome you to our team and look forward to sharing responsibility for a safe and healthy project.

Regards,

A handwritten signature in blue ink, appearing to read 'William Strubank', enclosed in a thin black rectangular border.

William Strubank, B.Sc., OH&S
Manager, Occupational Health, Safety and Environmental Services

2.PURPOSE

The NSCC Construction Safety Manual provides a written overview of the policies and procedures with respect to Occupational Health, Safety, and the Environment (OHSE). This manual does not address all OHSE concerns which may arise during completion of work. Nor is this document intended to address or replace the Contractor's duties and requirements with respect to regulatory compliance and best practices. It is the responsibility of the Contractor to operate in compliance with all applicable legislation and regulations that may pertain to its activities. Compliance with this document does not relieve the Contractor from any liability that may result from the Contractor's actions or from failure to act in accordance with applicable legislation. This document may be modified at any time at NSCC's discretion.

3.OCCUPATIONAL HEALTH & SAFETY STATEMENT

College Occupational Health and Safety Statement

Nova Scotia Community College (NSCC) strives to protect its students, employees and entire community from accidents and injury arising from or occurring during the operation of the College, as is reasonably possible.

NSCC promotes a learning and workplace culture where students and employees are supported and encouraged to contribute to health and safety programs.

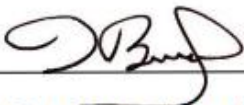
Management is responsible for creating a cooperative environment in which health and safety are top priorities and where all employees are committed to their health and safety responsibilities.

To maintain a healthy and safe workplace, all NSCC employees are to ensure appropriate equipment and practices are in place, relevant training is available to ensure staff members can perform their duties in a healthy and safe manner. Through their actions, employees provide leadership by example.

It is the policy of the College to meet all regulatory requirements and promptly comply with all relevant government directives. NSCC assists and cooperates with organizations and associations dedicated to safety research and education.

In 2022-23, the College will look to any further guidance from the Public Health authorities of both the Provincial and Federal governments regarding COVID-19.

NSCC will continue to evolve and enhance its safety measures to ensure we address and prepare for any new matters that may arise. We will work to maintain a positive safety culture as we continue to foster a healthy and safe environment.



Don Bureaux, President NSCC
School Year 2022-2023

4.DEFINITIONS

Accident/Incident

An occurrence, condition, or situation arising in the course of work that resulted in or could have resulted in injuries, illnesses, damage to health, or fatalities. The terms will sometimes be used interchangeably at NSCC.

ANSI

American National Standards Institute

Confined space

An enclosed or partially enclosed space:

- not designed or intended for regular human occupancy;
- with restricted access or exit; and
- that is or may become hazardous to a person entering it because of its design, construction, location, atmosphere or the materials or substances in it or other conditions.

Contractor

The person or entity identified as such in the Agreement. The term Contractor means the Contractor or the Contractor's authorized representative as designated by the Owner in writing.

Consultant

The person or entity engaged by the Owner and identified in the Agreement. The Consultant is the Architect, the Engineer or the entity licensed to practice in the province or territory of the place of the work. The term Consultant means the Consultant or the Consultant's authorized representative

CSA

Canadian Standards Association

Hot Work

Working with ignition sources near flammable materials is referred to as "hot work."
Examples of hot work include: Welding, grinding, cutting.

NIOSH

National Institute for Occupational Safety & Health

Subcontractor

A person or entity having direct contract with the Contractor to perform a part or parts of the work at the place of the work.

SIP

School Insurance Program

Working at Heights

Any work on, below, or above ground level where there is risk of personal injury through falling and/or a potential risk to people below the work site being injured by falling objects.

5.SAFETY DOCUMENTATION

Prior to starting work, each Construction Manager/General Contractor, and Contractor shall provide the following documents:

1. **Comprehensive Occupational Health and Safety Plan**

- The Occupational Health and Safety Plan shall illustrate the Contractors knowledge and understanding of Safety as it applies to the work being performed.

2. **Completed Hazard Assessment form**

- The Contractor and each Sub Contractor must complete individual hazard assessments.

3. **Sub-Contractor policy**

4. **Completed Contractor Safety Statement (next page) for each applicable:**

- Construction Manager/General Contractor;
- Contractor; and
- Sub-Contractor.

CONTRACTOR SAFETY STATEMENT

To be completed and signed by the Construction Manager/General Contractor/Subcontractor(s)

Project Location: _____

Contractor Name: _____

Address: _____

Telephone: _____

Work Accountability

I, _____ am aware of the possible / potential hazards and have taken all reasonable precautions necessary to control the associated hazards related to this proposed activity. I have orientated my staff on these hazards and necessary control measures and ensured their competency to work in a healthy and safe manner. I have obtained the necessary licenses and permits and have been given the necessary training. I agree to conduct my work in a safe manner and to abide by the requirements of the Nova Scotia Occupational Health and Safety Act and related Regulations. I agree to follow specific safety requirements of NSCC. Furthermore, I agree to ensure our contractors and service providers working on the site will also meet these same commitments.

Signature: _____

Date: _____

Name of Firm: _____

NOTES:

6.COMPANY SAFETY MANUAL

Each Contractor and subcontractor are required to retain an up-to-date copy of their company safety manual. When required by NSCC, the Construction Manager or General Contractor, may need to provide a copy of the Company Safety Manual as part of the post tender package.

The Company Safety Manual should include the following (but not limited to):

1. Safety Policy
2. Hazard Assessment
3. Job Procedures
4. Safe Work Practices
5. Company safety rules
6. Personnel protective equipment requirements
7. Maintenance policy for tools and equipment
8. Training & Communication programs and requirements
9. Inspection and audit tools
10. Investigation procedures for accidents and near misses
11. Emergency Procedures
12. Copy of OHS Legislation and regulations
13. Environmental procedures (if required)
14. WHMIS procedure and copy of all Safety Data Sheet (SDS)'s for materials on site.

7. HAZARD IDENTIFICATION & CONTROL

Construction activities involve a wide variety of hazards, some are common to many sites, while others are unique to a particular job. NSCC requires contractors to effectively control hazards to protect the workers from workplace hazards, help avoid injuries, illness, and incidents.

To effectively control and prevent hazards, employers should:

- Involve workers, who often have the best understanding of the conditions that create hazards and insights into how they can be controlled.
- Identify and evaluate options for controlling hazards, using a "hierarchy of controls."
- Use a hazard control plan to guide the selection and implementation of controls and implement controls according to the plan.
- Develop plans with measures to protect workers during emergencies and non-routine activities.
- Evaluate the effectiveness of existing controls to determine whether they continue to provide protection, or whether different controls may be more effective.

Common construction site hazards that should be addressed in a hazard identification plan include:

- Working at height
- Moving objects
- Slips, trips, and falls
- Exposure to noise
- Exposure to vibration
- Exposure to mould and fungi
- Exposure to lead, silica, wood dust, paints, solvents, and other toxic materials
- Material and manual handling
- Excavation / Trenching
- Asbestos
- Electricity
- Airborne fibers and materials
- Repetitive manual tasks or working in awkward positions
- Working in extremely hot or cold temperatures
- Working with heavy powered equipment
- Working in confined spaces
- Working alone

8. INCIDENTS

It is the Contractor's responsibility to be aware of all dangers or hazards associated with the work performed, the work environment, and to remove and / or control the hazard or danger prior to commencement of work. Where an existing danger or hazard is present, or where the Contractor reasonably believes that an imminent danger or hazard is present, the Contractor has the right to stop work so that the danger or hazard is mitigated, or safe work practices are incorporated.

Any work stoppage due to safety concerns must be reported immediately to the Facilities Management Contact. The Facilities Management Contact is to be advised of the danger or hazard, the corrective action and when the concern has been resolved.

First Aid / Medical Emergencies

All Contractors are responsible to ensure that first aid, emergency medical services and transportation are provided to its employees. Contractors are also required to provide trained first aid personnel, supplies, and equipment as applicable.

NSCC campuses are equipped with first aid resources including trained personnel. Automated External Defibrillators (AED's) are available at all NSCC locations. Please review available resources and assistance with the Facilities Manager. Any aid given does not release the Contractor from its responsibilities of providing emergency assistance to its employees.

Incident Reporting & Investigation

Contractors are required to report all accidents / incidents, regardless of severity to NSCC. All incidents resulting in serious injury or illness, property damage or environmental contamination are to be reported to NSCC immediately. If the nature of the incident requires notifying Nova Scotia Department of Labour, Skills, and Immigration (1-800-952-2687), the Contractor is obligated to make this notification and advise the NSCC Occupational Health Safety & Environmental Services (902-491-7233) or (Safety@NSCC.ca). When appropriate, the incident scene shall be secured until released by the regulatory body or by NSCC. The Contractor is responsible to investigate the incident and provide results of the investigation to NSCC in a reasonable timeframe.

Emergency Evacuation or Lockdown

To ensure personal safety, Contractors are required to post Emergency Response Procedure & Emergency Contacts document at the work site and to be aware of the NSCC emergency evacuation and lockdown procedures for the location of work. Please contact the NSCC Facilities Management contact and review this information prior to start of work.

Spills or Chemical Releases

Contractors shall immediately notify the NSCC Facilities Management contact of any accidental chemical spills or releases. If a release is caused by Contractor personnel, the Contractor shall make every reasonable effort to immediately clean-up incidental spills and contact the NSCC Facilities Management Contact to determine the appropriate method for clean-up and disposal. Each Contractor shall be liable for the costs incurred by any NSCC response to a spill resulting from the Contractor's actions, including, but not limited to, costs of containment, testing, cleanup, and disposal.

EMERGENCY RESPONSE PROCEDURE & CONTACTS

Contractors are required to post emergency procedures and contact information. The posted information must include the following:

**Fire Call
Medical Emergency
Police Emergency**

911 (when using NSCC campus telephones dial 9 first)

Construction Site Address: _____

First Aid Kit(s) Location: _____

SDS Location: _____

**Assembly Point (Muster Station)
Location:** _____

Project Manager: _____

General Contractor: _____

NSCC Facility Manager: _____

NSCC Facility Manger Phone: _____

NSCC Director of Facilities & Eng. Daniel Kelly 902-491-6786

NSCC Manager OHSE Bill Strubank Office: 902-491-7233
Cell: 902-499-0725

NS Labour, Skills & Immigration 1-800-9LABOUR (52-2687)

9.SAFETY MEETINGS AND COMMUNICATION

Meetings

All regular project meetings with NSCC shall have safety included as a standing agenda item.

Toolbox talks shall be organized on a weekly basis regardless of the crew size. The crew supervisor will submit to the Construction Manager/General Contractor a completed report signed by all attendees. Toolbox meetings need not be lengthy, rather highlight specific safety issues, best practices, company rules, or site-specific emergency procedures. The following are some tips to leading effective toolbox meetings:

1. Prepare an agenda prior to the meeting to include items to be discussed;
2. Circulate important information to everyone present;
3. Stress safety rules that is unique to the job;
4. Control the meeting, stick to the safety items;
5. Ask for any problems, ideas, from the employees present; and
6. Keep a record of the meeting

Safety Committee

On Construction sites with more than 20 workers, the site is required to have an effective Safety Committee. Composition and function of the committee shall be as outlined in the Nova Scotia Occupational Health and Safety Act.

Health and Safety Representative

On Construction sites with less than 20 workers, and otherwise not required to have a Safety Committee, the Contractor will appoint a responsible member of the work force as the Health and Safety Representative. The selection of the Representative will be subject to the approval of NSCC, and changes shall be made as requested by NSCC. The Representative shall be responsible for ensuring that all provisions of the Occupational Health and Safety Plan, relevant legislation and industry best practices are implemented.

The Representative shall ensure that all monitoring and testing, as specified and at the direction of NSCC, are conducted. This person shall maintain records of all readings that are taken by the Contractor. The Representative shall report any abnormal or dangerous situations to NSCC, after having implemented emergency measures, as required, and work shall not continue or proceed until the situation is corrected.

10.SAFETY STATION

Each Construction site is required to have a Safety Station in an obvious and accessible location. The purpose of the Safety Station is to serve as an information link to safety regulations, rules, and general information. The secondary purpose of the Safety Station is to provide immediate access to emergency equipment and first aid supplies that may be necessary. The Safety Station must be located where all workers have access to it, the Station is protected from the environment, and ideally near a telephone.

The safety station must include the following:

1. Company Site Specific Safety Plan;
2. Safety Manual;
3. SDS Binder;
4. Copy of NS Occupational Health & Safety Act and applicable Regulations;
5. First Aid Kit;
6. List of First Aid personnel on site and contact info;
7. Forms – Accident, Incident, First Aid, Inspection, Investigation, Hazard Assessment;
8. Emergency Procedures and Contacts;
9. Fire safety equipment;
10. Emergency Eyewash Station; and
11. List of Safety Committee Members (or Name and contact info for Safety Representative).

11. FIRE PROTECTION SYSTEM/SPRINKLERS

Fire protection systems must always remain serviceable. Prior to any work affecting the performance of a fire protection system, a Contractor must notify School Insurance Program (SIP) any time there is an interruption of service.

Fire Extinguishers

Fire extinguishers must always remain accessible and are required on construction vehicles as well as in the construction area. Personnel expected to use fire extinguishers must be trained.

Fire Alarm Systems

Fire alarm systems must always remain serviceable and be inspected regularly to ensure construction activities have not damaged components. Prior to any work affecting performance of a fire alarm system, a Contractor must notify the campus Facilities Manager. The Facilities Manager will notify SIP any time there is an interruption of service.

Water Supply

Water supply must always remain serviceable. Prior to any work affecting performance of a system, a Contractor must notify the campus Facilities Manager. The Facilities Manager will notify the SIP any time there is an interruption of service.

Fire Department Access

Adequate access for fire department personnel and firefighting equipment must be always maintained. Construction equipment, vehicles and storage must not impede quick unobstructed access to any area or building. Building Fire Department Connections must always remain clear. Fire hydrants must not be blocked.

12.SITE CONTROL

All work areas must be appropriately barricaded, and signage must appear where required. Contractors are responsible for providing signs, cones, plastic sheets, guardrails, and other materials to create an effective barricade to isolate the work environment from building occupants or members of the public, and to prevent unauthorized access. Any requirements to block means of egress, fire, life, or other safety equipment must first be approved by NSCC.

Signs and barricades may not be removed until the work is completed, or all hazards are eliminated. Where the work being conducted may create a temporary hazard to the building occupants (e.g., wet floor) the Contractor shall ensure the appropriate signage and / or barriers are posted. The signs / barriers may not be removed until the hazard is eliminated. Where work being conducted could affect the health, well-being, or comfort of the building occupants (e.g., paint fumes) the Contractor shall inform the building occupants through the NSCC Facilities Management contact prior to the start of work.

Vehicles

1. The safe operation of vehicles in and around the construction site is required;
2. Vehicles must be properly maintained;
3. Drivers must be qualified operators;
4. Seat belt use is required;
5. Loads must be secured;
6. Motorized equipment must be provided with back-up alarms;
7. Ground guides are required when backing or operating with loads or in areas with reduced visibility;
8. Fueling will only be performed in a designated exterior area authorized by the Facilities Management Contact;
9. Smoking is not permitted in a refueling area;
10. No person shall be lifted or elevated by a vehicle unless the vehicle lifting device is specifically designed to do so and adequate fall protection measures are taken; and
11. Construction personnel will park in areas assigned by the Campus Facilities Manager.

Yards/Grounds

1. Material storage should be away from locations that block driver visibility. Pile material or stacking of material shall not be near overhead power lines. Material should not be stacked too high to prevent toppling over.
2. Parking of construction and worker vehicle will be in an area that does not impede construction, NSCC operations, or access by emergency vehicles.
3. Fencing and adequate barriers are required to keep construction site secure, prevent unauthorized access, and protect persons from construction activities. Road signs, construction barricades, and construction traffic control devices shall be always in place when necessary.
4. Warning signs shall be prominently placed at all entrances to constructions sites. The signs shall include the minimum language:
 - a) Danger Construction Area
 - b) Hard Hats, Safety Footwear, and Safety Eyewear are Required
 - c) In Case of Emergency Call (Campus and General Contractor numbers)
 - d) Address of Construction site
5. Drainage of construction site shall be considered. Run off shall be properly directed and in cases where there is a potential for environmental concern, proper engineering and containment procedures shall be implemented.
6. Adequate lighting shall be provided.

Buildings

1. All necessary precautions to protect adjacent buildings and occupants from the effects of construction activities must be taken.
2. Adequate barriers and separations must be installed.
3. Lighting shall be provided to adequately illuminate the work area. Temporary lights shall not be suspended by their wire unless lights and wire are designed to do so. Lamps for general illumination shall be protected from breakage. Emergency lighting shall be maintained.
4. Ventilation shall be appropriate to the work area and maintained specific to hazards or conditions. In certain situations, existing ventilation ducts and opening must be sealed to prevent contaminants from entering non-construction spaces.
5. Access & egress routes will remain open and unobstructed.

6. Lunchrooms and rest areas will be identified. Washrooms shall be provided, clean and sanitary with hand washing facilities. Change rooms shall be provided if conditions require change out of PPE prior to leaving work.
7. All floor openings shall be properly protected and guarded to prevent falling.
8. All wall openings from an elevated area shall be properly protected and guarded to prevent falling.

Tools and Equipment

1. Regular inspection & maintenance must be performed.
2. Powder actuated tools will only be operated by competent users. The powder actuated tool, the fastener, and the powder load must comply with the requirements of the latest version of ANSI standard A10.3, "Safety Requirements for Powder-Actuated Fastening Systems".
3. Electrically operated tools must be in good condition. If the tool is not double insulated, the tool must be equipped with a properly grounded plug. Electric tools operating in a wet environment must be protected by a Ground Fault Circuit Interrupter.
4. Tool guards must be in place and operating as to manufacturer's specifications.
5. Electric cords and plugs shall be of three wire type and in good condition. Electric cords shall be run in a safe manner that protects the cord from damage, cuts, and pinches. The cord must not cause tripping hazards.

Housekeeping

1. Maintain a clean and orderly work area.
2. Access to electrical panels, fire extinguishers, safety equipment, emergency showers and eyewash stations, fire hydrants and points of egress are to be kept free and clear of all obstructions unless written permission is obtained from NSCC.
3. Care must be taken to reduce amounts of accumulated waste on construction sites. Remove all non-hazardous solid waste and recyclables at regular intervals throughout the shift and at the end of each shift.
4. Combustible materials shall be stored away from areas where flame producing equipment is operating. Flammable materials will be stored in approved containers and not be permitted to be left open when not in use. Oil or solvent soaked rags and material must be stored in an approved self-closing steel container.
5. Roll off type construction waste containers shall be provided and used to minimize combustible material debris on the construction site and shall be placed a minimum of 10 feet away from buildings.

13. PERSONAL PROTECTIVE EQUIPMENT

Contractors and others in construction areas shall ensure that adequate personal protective equipment (PPE) or devices required for an assigned task are used, based on the nature of the task, the location and conditions of the workplace, and any hazards that may affect the health and safety of persons in the workplace.

1. Hard hats, Safety Boots and Safety Glasses are **mandatory** on all construction sites and when performing any construction related activities;
2. Hearing protection must be available and used (as necessary);
3. NIOSH approved respirators will be used (as necessary) to protect workers from particulate, chemical and biological hazards when those hazards are present;
4. Fall protection systems are required when working from heights;
5. Welding helmets/goggles are required for hot work. Proper shielding must be provided to protect others from arc flash and sparks; and
6. Other PPE may be required as necessary for protection against specific hazards for work being performed.

14. WORKING AT HEIGHTS

It is the Contractors responsibility to determine what specific applications require the use of fall protection controls and equipment. Contractors must also provide proper fall protection equipment for their forces to meet the needs of each specific application in accordance with the Nova Scotia Workplace Health and Safety Regulations. Workers must be provided with adequate training and instructions on all equipment used to perform their work safely.

Supervisors must ensure that fall protection and other working at heights requirements are understood and followed by everyone under their supervision. Workers must wear or use PPE or other devices (as required).

Prior to performing any work at heights, a thorough hazard assessment must be performed. The hazard assessment must address the nature of the work to be performed, identification of potential fall hazards, associated risks, and control measures to mitigate the risks. Controls to mitigate the risks must include emergency response procedures should a fall occur. When required by the Regulations, establish a written fall protection safe-work procedure or safe-work plan.

Fall protection and working alone – NSCC requires a minimum of 2 people to be always present when using travel restraint or fall arrest systems.

Except as provided in the Regulations, fall protection is required if a person is at risk of falling from a work area where the fall distance is 3m or more above the nearest safe surface or water. Fall protection is also required if working at less than 3m and the work area is above a surface or thing that could cause injury to the person on contact that is worse than an injury from landing on a solid, flat surface. If fall protection is required, ensure that at least 1 of the following means of fall protection is used, as appropriate in the circumstances:

1. a guardrail;
2. temporary flooring;
3. a personnel safety net;
4. a travel restraint system; or
5. a fall-arrest system.

Persons erecting, supervising the erection, or using scaffolding must ensure that a scaffold that is required to safely perform work is erected, installed, assembled, used, handled, stored, adjusted, maintained, repaired, inspected, or dismantled in accordance with the latest version of CSA standard CSA Z797, “Code of Practice for Access Scaffold”. The following are prohibited on NSCC sites:

1. wooden pumpjack scaffold poles;
2. wooden carpenter’s brackets; and
3. ladder jack scaffolds.

Contractors must ensure that a scaffold used at a workplace is inspected daily by a competent person or engineer. Communication of scaffold status shall be by a method that ensures potential hazards related to the scaffold are communicated to the users through a visual means such as scaffold tagging, in writing, or verbally by the competent person supervising users. The method of communication must be described in a written procedure and the users must be trained in the procedure. Records of inspection and manufacturer's tabulation must be located on site. No person may use scaffolding unless trained to do so.

All Contractor ladders must be labeled with the Contractor's name. All ladders are to be always maintained in good condition and inspected prior to use. Employees using ladders must do so in a safe and responsible manner and be trained to use ladders in the performance of their work. Any defective ladders are to be tagged as such and removed from site. Per the Occupational Safety General Regulations, ladders must comply with CSA standard Z11, "Portable Ladders" and be either Grade 1 or Grade 2. Grade 3 ladders are defined as 'household grade' by CSA, meant for light use and are not to be used at a workplace. Metal ladders are allowed only when energized equipment is not present in the work area.

Power operated elevating work platform must be operated by qualified competent personnel. Daily equipment inspections will be performed by a competent person and records of inspections must be located on site. Documented hazard assessment must be performed and recorded prior to use of any powered elevating device.

Roof Access

Permission to proceed with work on or at roof level will only be given if the appropriate control measures, identified by hazard assessments, are put in place. Prior to commencement of work, the Facilities Manager and the Contractor will review the scope of work, hazards which may be encountered during the work, and precautions to be taken to ensure that the potential for incidents is eliminated.

15.HOT WORK

An NSCC Hot Work permit is required prior to commencing any work that generates sources of ignition (e.g., heat, spark, flame). In addition to the NSCC hot work permit, contractors are required to establish their own hot work management program to help reduce the risk of starting a fire. The hot work program should include (but is not limited to) the following:

1. Ensure all equipment is in good operating order before work starts;
2. Inspect the work area thoroughly before starting. Look for combustible materials in structures (partitions, walls, ceilings). Sweep clean any combustible materials on floors around the work area. Combustible floors must be kept wet with water or covered with fire resistant blankets or damp sand while work is carried out. Remove any spilled grease, oil, or other combustible liquid. Move all flammable and combustible materials away from the work area. If combustibles cannot be moved, cover them with fire resistant blankets or shields. Protect gas lines and equipment from falling sparks, hot materials, and objects;
3. Use water ONLY if electrical circuits have been de-energized to prevent electrical shock;
4. Block off cracks between floorboards, along baseboards, walls, and under door openings, with a fire-resistant material. Close doors and windows. Cover wall or ceiling surfaces with a fire resistant and heat insulating material to prevent ignition and accumulation of heat. Vacuum away combustible debris from inside ventilation or other service duct openings to prevent ignition. Seal any cracks in ducts. Prevent sparks from entering the duct work. Cover duct openings with a fire-resistant barrier and inspect the ducts after work has concluded;
5. Inspect the area following work to ensure that wall surfaces, studs, wires, or dirt have not heated up;
6. Post a trained fire watcher within the work area during welding, including during breaks, and for at least 60 minutes after work has stopped. Depending on the work done, the area may need to be monitored for longer (up to 3 hours) after the end of the hot work; and
7. Eliminate explosive atmospheres (e.g., vapours or combustible dust) or do not allow hot work to occur. Shut down any process that produces combustible atmospheres, and continuously monitor the area for accumulation of combustible gases before, during, and after hot work.

Hot Work cannot proceed until an NSCC Hot Work Permit has been issued by the Permit Authorizing Individual. The Hot Work Permit system will be administered through the Facilities Manager for the site. The Hot Work Permit will be posted on site during the work.

16.CONFINED SPACES

No person shall enter a confined space until an assessment of potential hazards has been conducted by a competent person. This will include tests for levels of chemical substances which may be present in quantities that pose a hazard, tests to ensure levels of oxygen are between 19.5% and 22.5%, and confirmation that liquids posing drowning hazards or free-flowing solids posing engulfment hazards have been removed.

Examples of confined spaces are tanks, pits, ducts, manholes, vessels, or other confined areas that have restricted access and may present hazards such as a hazardous atmosphere, configuration or shape that could trap the person, electrical hazards, extreme temperature, or potential for engulfment by materials that are inside or may enter the space

The atmosphere within the confined space will be tested for substances that may be present in concentrations above 10% of their lower explosive limit. Under no circumstances should persons enter a confined space with concentrations above 10% LEL without expressed written authorization from the NSCC Occupational Health, Safety & Environmental Services.

Additional tests will be conducted to ensure levels of Carbon Monoxide are below 25 ppm and levels of Hydrogen Sulfide are below 1 ppm.

All tests for Oxygen, LEL, Carbon Monoxide, and Hydrogen Sulfide are to be conducted using direct-read instruments by a user that has been properly trained on the use and limitations of the equipment.

During the hazard identification, consideration should be given to items that may inhibit rescue operations (i.e. - size of opening sufficient to allow safe passage of rescue personnel and emergency equipment).

Persons entering a confined space must have confined space training which includes use of PPE, rescue procedures, identification of hazards while in the confined space and limitations on the type of work that can be performed in the confined space.

Written procedures will be developed to address how the existing and potential hazards will be eliminated or controlled for each confined space. These procedures will address safe work practices for the entrants as well as measures to prevent unauthorized entry into the confined space.

Provision must be made for removal and dilution of all airborne hazardous substances using adequate ventilation.

A competent person will be designated to be the confined space attendant. This person is to remain in the immediate vicinity of the confined space, have a means of communication with a person in the confined space, and have a means of activating the rescue procedure if required.

Written rescue procedures will be developed for each confined space. This will include evacuation when an alarm is activated, or when directed by the confined space attendant. All necessary rescue retrieval equipment must be present before proceeding with entry.

Full body harness (Group E) is to be worn by all persons entering the confined space.

NSCC Confined Space Entry Permit must be used for all entries into potential confined spaces. The Confined Space Entry Permit is available through NSCC Facilities Management and may also be obtained by contacting the Manager NSCC OHSE.

17.ELECTRICAL SAFETY

Protection of workers

No worker shall be permitted to work in proximity of any part of an electric power circuit that the worker may meet unless the worker is protected against shock by de-energizing and grounding or guarding it effectively. No worker may be permitted to work with jack hammers, bars, or other tools that may conduct electricity in areas where the exact location of underground electric power lines is unknown.

All workers shall always follow the NSCC Electrical Safety Program requirements.

Lock-out-Tag-out

Lock and tags are required when working with all energy sources to prevent the unexpected release of energy. Controls that are deactivated during course of work on energized or de-energized equipment shall be locked and tagged. A lockout log must be maintained by each Contractor and communicated to the Facilities Manager.

Overhead Lines

Where overhead lines pose a hazard to persons or equipment, the hazard shall be identified with distinguishable signs. Workers working near overhead power lines shall be trained about the hazards and necessary clearances. If overhead power lines cannot be relocated or isolated, and they present a hazard to persons and machinery, the lines will be properly shielded with appropriate insulating materials.

Underground Installations

Any excavation, trench, or breakthrough of surfaces (such as walls) shall only be completed after all underground services drawings and other relevant service drawings have been reviewed to locate, and if necessary, lockout all potentially affected hazardous energy sources. It is the sole responsibility of the Contractor to identify the locations of all underground services prior to work.

Transformers

All transformers shall be protected from traffic. Proper clearance shall be maintained around transformers. Care shall be taken to protect transformers from accumulating dust and other material that may contribute to overheating.

18. WORKPLACE HAZARDOUS MATERIAL INFORMATION SYSTEM (WHMIS)

Every attempt to use non-hazardous products shall be taken. If hazardous products are necessary, the provisions of the WHMIS 2015 regulations shall be followed. Safety Data Sheets (SDS) are required for every hazardous product.

The General Contractor will provide an SDS for each product brought onto the construction site. The master SDS will be always located on the construction site and available. Each Contractor will maintain an inventory of hazardous products they bring onto the construction site and will maintain an up-to-date compilation of SDS's for hazardous products they have on the site. Supplier labels are required on all containers (workplace labels are required on all temporary-use containers) of product.

Workers must have received WHMIS 2015 general training and training specific to the products they are working with. When working with hazardous products, workers shall take every precaution to protect against fugitive emissions from the product they are working with and to notify others working in the area about the product.

19. PHYSICAL HAZARDS

Noise

To the extent reasonably possible, Contractors must work in a manner that does not create a disruption to the normal course of business in the building. Contractors must bear in mind that NSCC is a teaching organization and have building occupants learning and studying throughout the year. Coordination of work activities between the Contractor and Facilities Management is essential. Contractors shall ensure workers are well protected against hearing hazards by use of hearing protectors.

Dust, Mist, and Fumes

Contractors must ensure that dusts, mists, and fumes are controlled through engineering controls such as local ventilation and air-tight hoardings. Administrative controls (i.e., scheduling when certain work is performed) may be helpful. Please coordinate work with the NSCC Facilities Management group to avoid disruption to either NSCC operations or the construction work activities.

Asbestos

It is possible that asbestos containing materials may be encountered during construction activities in some of our campus buildings. To the extent possible, NSCC has endeavored to identify the locations of existing asbestos materials. This information will be freely provided to contractors prior to work. The contractor shall review any asbestos surveys related to their areas of work prior to start-up. Contractors shall not knowingly disturb asbestos-containing materials unless specifically retained to do so and a safe work plan has been agreed to by NSCC. If asbestos containing materials are unintentionally disturbed in the normal course of work, stop work, and immediately inform the NSCC contact (typically the Facilities Manager or designate).

Lead

Lead is common in a wide range of materials found on construction sites including paints, batteries, glass, and older mortar for stone cladding. Lead presents a potentially serious occupational health hazard when lead containing particulates become airborne. Common tasks that can cause lead exposure include blasting, cutting, burning, welding, soldering, and any process that disturbs the material containing lead.

NSCC will take every reasonable effort to identify lead containing materials. Contractors are responsible to manage the exposure hazard and raise awareness of employees.

Mould

If any suspected mould or mildew is encountered during work, do not disturb the area; contact Facilities Manager to discuss the action plan before proceeding.

Silica Dust

Clay, concrete, and quarry products may contain crystalline silica. Exposure to silica dust may pose a respiratory hazard. Silica dust exposures may lead to lung diseases such as bronchitis and silicosis.

The Contractor shall include consideration of silica dust hazards when performing hazard assessments prior to start-up of work. Controls must be established to minimize exposures to workers and building occupants. These controls may include air-tight barriers, exhaust ventilation, wetting of dusty materials, wet-saws, HEPA-filtered cutting tools, respirators, and administrative procedures. Workers must be educated on the hazards associated with silica dust so they can help protect themselves and those around them.

Temperature

Contractors are to ensure that workers are appropriately protected when working in cold and hot environments.

Contractors must take every reasonable precaution to ensure the building occupants outside the work areas do not suffer from unduly hot or cold conditions because of the construction/maintenance activities.

20. PROJECT STARTUP MEETING CHECKLIST

Mandatory NSCC Facilities & Safety Requirements

BEFORE STARTING ANY CONSTRUCTION ACTIVITIES, CHANGES TO BUILDING SYSTEMS, EQUIPMENT INSTALLATION OR MODIFICATIONS TO PHYSICAL PROPERTY BELONGING TO NSCC A PROJECT PLANNING MEETING MUST BE HELD AND THIS FORM SHALL BE COMPLETED AND SIGNED BY BOTH THE CAMPUS FACILITIES MANAGER (OR DESIGNATE) AND THE CONTRACTOR'S REPRESENTATIVE. CHECK OFF ALL TOPICS REVIEWED/DISCUSSED.

Campus: _____

Facility Manager: _____

Project _____

Project #: _____

Floor / Room: _____

Contractor: _____

Contractor's Representative: _____

Work Start Date: _____

Scheduled Date: _____

Description of Work: _____

Evening and/or Weekend Work Required? (PLEASE CIRCLE) YES NO

Contract Specifications read and understood by Contractor YES NO

| NSCC CONSTRUCTION SAFETY MANUAL DOCUMENTATION | SPECIFIC SAFETY CONSIDERATIONS | |
|------------------------------------------------------------------------|---------------------------------------------------|---------------|
| <input type="checkbox"/> CSNS Certificate of Recognition or Equivalent | <input type="checkbox"/> Roof Access | |
| <input type="checkbox"/> WCB Letter of Good Standing | <input type="checkbox"/> Dust Partitions | |
| <input type="checkbox"/> Contractor Liability Insurance - \$5 Million | <input type="checkbox"/> Security | |
| <input type="checkbox"/> Comprehensive Builder's Risk Coverage | <input type="checkbox"/> Physical & Environmental | |
| | • Asbestos | • Chemicals |
| | • Flammable liquids | • Gas/Fumes |
| | • Noxious dust | • Silica dust |
| <input type="checkbox"/> Contractor's Acknowledgement Form | • Mold | • Temperature |
| | • Noise | • Steam |
| | • Lead | • Other: |
| <input type="checkbox"/> Occupational Health and Safety Plan | <input type="checkbox"/> Barriers/Fencing | |
| <input type="checkbox"/> Hazard Assessment | <input type="checkbox"/> Isolation of Work Area | |

| | |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <input type="checkbox"/> Company Safety Manual – On File/ In Possession | <input type="checkbox"/> Working at Heights, Unprotected Openings, Vertical Drops |
| ISOLATION/INTERRUPTION TO SERVICES | <input type="checkbox"/> Excavation – Utilities Located |
| <input type="checkbox"/> Electrical Services | FIRE SAFETY |
| <input type="checkbox"/> Lockout / Tagout | <input type="checkbox"/> Fire Alarm Systems |
| <input type="checkbox"/> Mechanical Services | <input type="checkbox"/> Fire Protection and Sprinkler System |
| <input type="checkbox"/> Local Exhaust Ventilation | <input type="checkbox"/> Water Supply |
| <input type="checkbox"/> HVAC Systems | OTHER |
| HAZARD SPECIFIC DOCUMENTS | <input type="checkbox"/> Emergency Procedures Reviewed |
| <input type="checkbox"/> Hot Work Permit – if required | <input type="checkbox"/> Security Requirements |
| <input type="checkbox"/> Confined Space Permit – if required | <input type="checkbox"/> PPE Requirements Reviewed |
| <input type="checkbox"/> Other (specify) | |

Acceptance

I/We have read and understood the NSCC Construction Safety Manual and agree to observe all necessary safety precautions. All equipment complies with relevant standards. I understand and agree to comply with the site emergency plan.

Contractor Representative Signature

Date

Facilities Manager Signature

Date

21.CONTRACTOR ACKNOWLEDGEMENT FORM

We _____(Company Name)
acknowledge receipt of the Nova Scotia Community College document “Construction Safety Manual”. We have read this manual and will ensure all persons engaged by us abide by the conditions prescribed throughout the document. By signing this Contractor Acknowledgement form, we are agreeing to apply and enforce the contents as minimum requirements for the safety obligations outlined. In the event of any discrepancies or conflicts between the NSCC Construction Safety Manual and the Nova Scotia Occupational Health and Safety Act and its Regulations, the Act and Regulations shall prevail.

Company Name (Print)

Signature (Contractor/Contractor Representative)

Name (Print)

Title / Position

Date