CONTROLTECH

INSTRUMENTATION + ELECTRICAL

TASK SPECIFIC SAFE WORK PROCEDURES

GRANDE PRAIRIE, AB 780.539.7114 | FOX CREEK, AB 780.622.3495 | PEACE RIVER, AB 780.624.2408 | DAWSON CREEK , BC 250.782.2924

DRIVING

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.
THE MATERIAL IN THIS DOCUMENT DOES NOT TAKE PRECEDENCE OVER APPLICABLE GOVERNMENT LEGISLATION WHICH ALL EMPLOYEES MUST FOLLOW.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Accidents causing bodily harm or fatality • Vehicles in poor condition (S) • Transporting dangerous goods (S) (H) • Reckless drivers (S) • Aggressive drivers (S) • Distracted drivers (S) • Driver fatigue (H) • Mechanical problems /Breakdowns (S) • Sitting for long periods (H) • Road conditions (S) • Working Alone (S)	✓ Vehicle maintenance and inspection program SWP (A) ✓ Defensive driving (A) ✓ Distracted Driving Legislation (A) ✓ TDG training (A) ✓ Two way radios, cell phone use (E) ✓ Pre-Job Hazard assessment SWP (A) ✓ Seat belt use - Policy (E) ✓ Journey Management Plan (A) ✓ Class 1 license (A)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Vehicle	Operator's manual	Must be licensed to operate vehicle

PPE REQUIREMENTS

		
Radio	Hands Free Cell	WHMIS

PRE-OPERATIONAL SAFETY CHECKS

- Circle checks to make sure no objects people around unit, check for damage to unit
- Make sure communication system is available & operational (2 way radio, cell phone)
- Review driving directions or maps before you start driving.

READ THIS FIRST: IMPORTANT INFORMATION

Only designated drivers who carry a valid driver's license for the vehicle they are operating, may drive a company vehicle.
Engine ON…Cell Phone OFF

SAFEWORK PRACTICES

DRIVING

- All motor vehicles shall be properly maintained and operated in a safe manner.
- Drivers must hold a valid operator's license appropriate to the vehicle involved.
- Obey all traffic laws.
- Perform a circle check of the vehicle and area surrounding vehicle before driving.
- Be familiar with vehicle and its capabilities
- Vehicles used for fieldwork must have a first aid kit, flares, warning triangles and fire extinguisher available.
- Seatbelts are mandatory. Vehicle shall not be moved until the driver and all passengers are wearing seat belts.
- Vehicles shall contain only as many passengers as there are seats and seat belts.
- Drive with headlights on at all times.
- Ensure the vehicle has an emergency road kit with blankets, candles, shovel, flashlight and booster cables.
- Never drive under the influence of alcohol or drugs.
- Avoid driving when fatigued.
- Obey Distracted Driving regulations - NO talking on cell phone unless hands free, NO texting, etc.
- Operate vehicle defensively - in a safe and courteous manner.
- Company vehicles will be driven at posted speed limits or slower to ensure speeds consistent with road and weather conditions as well as visibility and traffic density.
- Always watch out for animals.
- Do not pick up hitchhikers or offer rides to strangers
- All vehicle loads shall be tied down or secured in a safe manner. If an item falls off during transit, the driver is expected to stop and safely remove items from the roadway.

Highway Driving

- Follow speed limits and drive at speeds appropriate for road conditions
- Follow at a safe distance from the vehicle ahead, reduce speed
- Approach all intersections with caution
- Respect all users of the road, drive courteously at all times
- Maintain a safe stopping distance
- Obey all traffic regulations and signals, posted traffic signs
- Ensure mirrors are adjusted properly
- Drive defensively
- Drive with caution for all road conditions
- Remain observant to all traffic situations that could occur, including no cell phone usage while driving

City Driving

- Maintain appropriate speed
- Maintain a safe following distance
- Obey all traffic regulations and signals, posted traffic signs, traffic lights
- Maintain a safe stopping distance

- Plan and signal well in advance, double check mirrors

Off Road or on Private Roads

- Maintain appropriate speed for all road conditions (dust, mud, ice, roughness, narrow, steep, etc.)
- Approach all intersections and curves with caution
- Watch closely for animals
- Follow ALL private road rules (including but not limited to speed limits & calling your kms)
- Respect all users of the road, drive courteously at all times
- Maintain a safe stopping distance

Drive defensively

Driving into worksites/locations

- Always check in with site personnel when you arrive
- Ensure you have all your training documentation on your person
- Ensure you have completed site orientation (if applicable)
- Follow site personnel directions while onsite
- Always check out as required
- Follow traffic control requirements for loading & unloading as per directions or orientation indicates

DISTRACTED DRIVING REGULATIONS - ENGINE ON ... CELL PHONE OFF

- Follow distracted driving laws
- **Handheld use of cell phones** and/or texting devices while driving **is prohibited**.
- All cell phone use is prohibited while driving on customer/client property.
- Place cell phone in cubby or purse away from you so you can't reach it when driving. Look at it when you stop.
- Police can charge drivers with careless driving or even dangerous driving (a criminal offence) if they do not pay full attention to the driving task.
- Workers must abide by the "Distracted Driving Laws" that are in effect across Canada. Including but not limited to:
- No handheld electronic device (2-way radios can be used in limited situations – emergency vehicles, pilot vehicles while escorting oversized loads)
- No eating
- No viewing display screens unrelated to driving, such as laptop computers and portable DVD players, is also prohibited while driving.
- No using devices such as GPS systems, stereos, CD and DVD players, radios, cell phones, laptops, PDAs, walkmans and MP3 players
- No reading maps, directions or other material
- No grooming (combing hair, putting on make-up or shaving)
- No eating or drinking
- No taking notes
- No tending to children or pets

REFUELING

- Vehicles shall not be refueled while the engine is running.
- Ground yourself by touching the metal portion of the vehicle before refueling.

- DO NOT operate or have your cell phone turned on while refueling your vehicle. The owner's manual recommends this practice. If you are expecting an urgent call and the phone cannot be switched off, keep the phone in the car. Do not answer a cell phone when fuelling up.
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- Do not re-enter your vehicle while you are fueling it up. Static can build on your clothes and cause an explosion or fire.
- Do not prop the nozzle in the "on" position while refueling.
- Do not leave fuel nozzle unattended while fueling. Ensure precautions to prevent overflow or spillage of the liquid being dispensed.
- Do not overfill the fuel system
- Ensure correct fuel is selected.
- Follow refueling SJP and fueling station safety signs
- Do Not SMOKE while filling the fuel tank or servicing the fuel system
- Ensure there is no open flames in vicinity
- In the event of spillage, immediately apply a non-combustible absorbent material to soak up the spillage
- Do not dispense gasoline or diesel with 7.5 meters of any ignition sources
- Do not use any object or device that is not an integral part of the hose, nozzle and valve assembly to maintain the flow of fuel.
- Never remove the fuel filter cap when the unit is indoors, the fumes are hazardous and a spark could cause a fire or explosion.
- Never mix gasoline, or alcohol with diesel fuel. This may create a fire or explosion hazard, which could result in severe injury or death to worker

BREAKDOWNS

- Follow emergency response procedure
- Call dispatch immediately to report breakdown and arrange for towing or onsite mechanic
- Follow Reflective Triangle Placement SJP - Place reflective triangles behind and ahead of vehicle

WINTER DRIVING

- Follow adverse weather legislation
- Never leave home base if adverse weather is coming or is apparent.
- Drive defensively, slow down
- Leave extra room between you and other vehicles on the road
- Watch ditches for wildlife
- Complete Extreme Weather Driving

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Operator's Manual Distracted driving laws Traffic Safety Legislation National Safety Code **OHS LEGISLATION:** WHMIS	WHMIS - SWP Refueling - SJP Backing up on Location – SJP Cargo Securement - SJP

BACKING UP ON SITE

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RISK LEVEL	HAZARDS	CONTROL MEASURES
HIGH Risk	• Running over objects (S) • Backing into objects/equipment /people (S) (H) • Can't see in mirrors(S) • Twisting to see (H) • Potential damage to vehicle/ equipment (S) • Improper maintenance (S) • Defective equipment (S) • Working around power lines(S)(H)	✓ Driving safe work practices (A) ✓ Vehicle circle check (A) ✓ Pre Job Hazard assessment (A) ✓ Pre-Trip inspection (A) ✓ Back up alarms working (A) ✓ Stop immediately if spotter is out of site (A) ✓ Hand Signal training (A) ✓ Power line training (A) ✓ CSA Approved PPE (P)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
	Safe work procedures Operators Manual	Job Specific Hand Signal training Power line training

PPE REQUIREMENTS

Safety Boots

Hard Hat

High Visibility Vest

NOTE: Landguide should be wearing this PPE

PRE-OPERATIONAL SAFETY CHECKS

- Circle check to make sure no objects people around unit
- Is land guide available

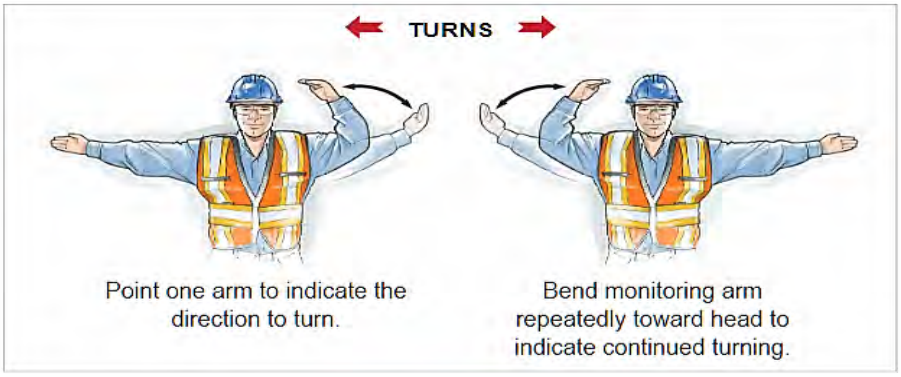
READ THIS FIRST: IMPORTANT INFORMATION

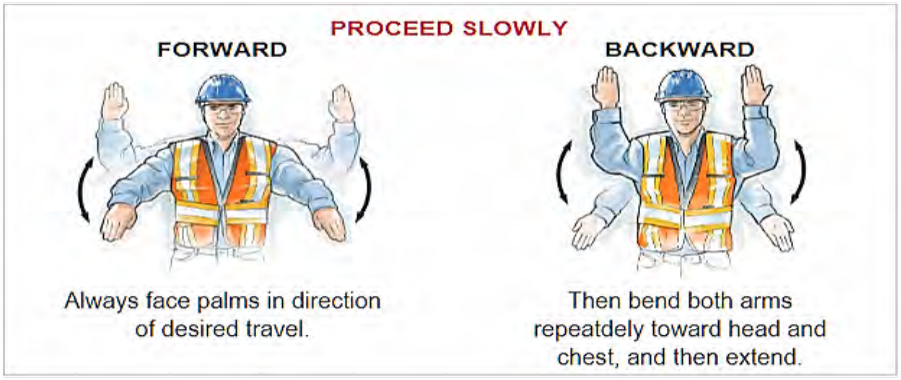
- **Back in only when there is no other option when pull through parking is not available**
- **Use land guide (spotter) when available**

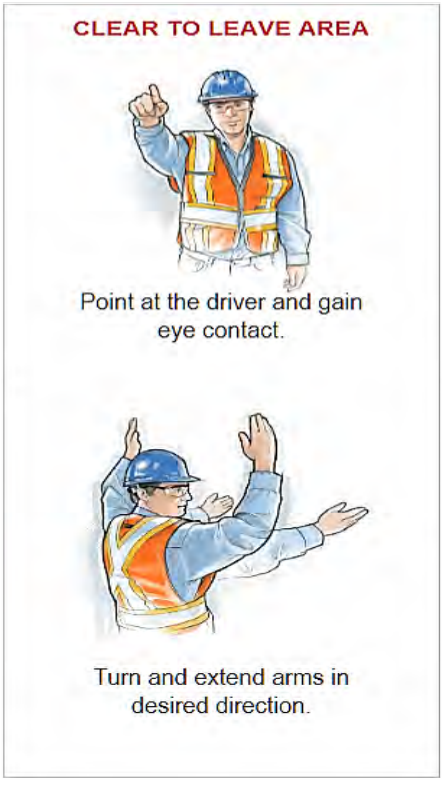
SAFEWORK PRACTICES

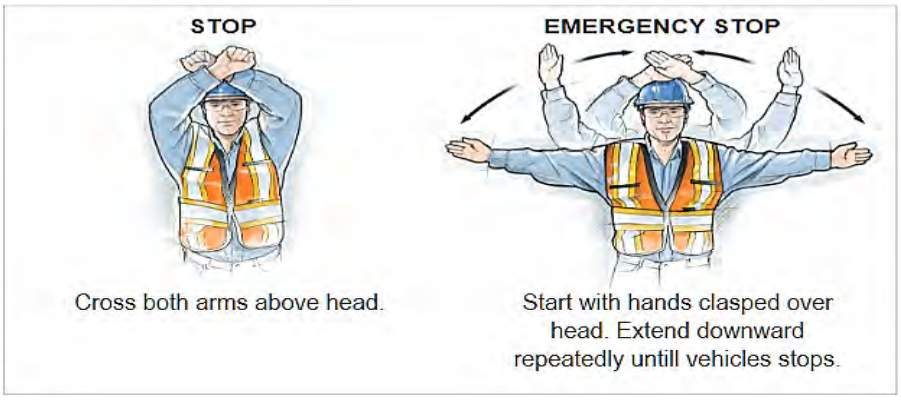
- Know your vehicle's blind spots.
- Always use a land guide (Spotter) when possible
- Spotter should use universal hand signals so the communication between the driver and spotter is clear.
- Visual contact between driver and spotter should be maintained at all times.
- If visual contact is lost, the driver should stop the vehicle immediately to avoid personal injury to the spotter.
- Do a circle check before backing up so you know where your hazards are (people, objects, high voltage lines, trenches, etc.
- Back Slowly
- Make sure your backup alarm is working
- Stop immediately if spotter is out of site
- Ensure you know and follow hand signals of land guide

UNIVERSAL HAND SIGNALS FOR DIRECTING VEHICLES









REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Manufacturer's Instructions **LEGISLATION** Traffic Safety Legislation National Safety Code	Driving safe work practices (A) Hand Signal training (A) Power line training (A)

BASIC OFFICE SAFETY

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Repetitive Motions (H) • MSI Injuries (H) • Vibration (H) • Slips, Trips & Falls (S) • Eye strain (H) • Fatigue (H, S) • Pinch points, paper cuts (S) • Glue poisoning (H)	✓ Furniture proper fitting (E) ✓ proper lighting (E) ✓ Ventilation (E) ✓ proper ladders (E) ✓ SWP (A) ✓ Equipment operation manuals (A)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Office equipment & furniture		Company Safety Rules Job Specific Training

PRE-OPERATIONAL SAFETY CHECKS

Check electrical cords & plugins before using equipment

READ THIS FIRST: IMPORTANT INFORMATION

- Read operation manuals safety tips for equipment

PRACTICE / PROCEDURE

DESK WORK

- Sit with good posture, face your work directly and arrange your work area so the most frequently used items are within easy reach
- Relax your hands occasionally by dangling them loosely from your wrists and shaking them. Force a yawn to relax tight facial muscles
- Look away from paperwork or your monitor periodically to reduce eye strain. Relax your eyes by refocusing them for 15 seconds on a point at least 20 ft. away and then closing them for 15 seconds
- Position your monitor and document at eye level and about an arm's length away
- Ensure proper lighting over desk to lessen

REPETITIVE WORK

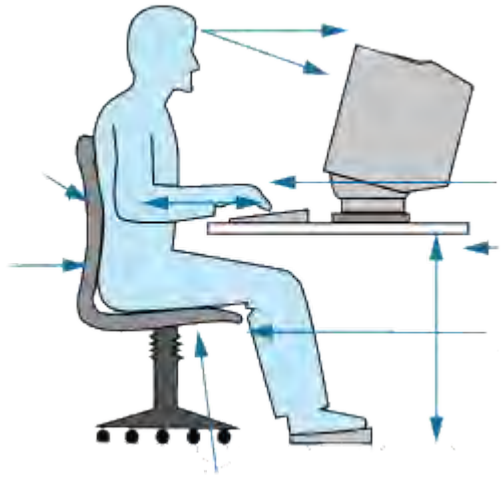
- Move around, vary your work activities, and take frequent rest pauses during your shiftUse good lifting techniques. When possible, modify the work areas so routine lifting from high or low levels is not necessary.
- Ensure proper lighting in work areas
- Plan moves and path of travel when you are going to move something.

OFFICE EQUIPMENT

- Follow Electrical Safety SWP
- Don't stand over copier or fax when in operation as fumes may be released from ink.

FILING & STORAGE

- Keep doors shut when not in use.
- Keep fingers out of the way when shutting drawers.
- Open the bottom drawer when the top drawer is fully open to prevent the cabinet toppling over.
- Do not place any boxes or other obstacles in front of filing cabinets or cupboards.
- Ensure file boxes are stored out of walkways
- Follow lifting & handling SWP when moving file boxes
- Use proper step ladder or foot stool when reaching items that are stored on high shelving.
- Follow ladder safety – SWP
- Handle paper with care as paper cuts can happen usually if handling single sheets
- Use a wet sponge to wet glue on envelops & stamps or use self-sticking stamps and envelops so you don't have to wet them.



Use Computers and Monitors

- Ensure the occupational health and safety guidelines relating to ergonomic workstations are observed.
- Adjust backrest of chair, desktop height, seat height and foot stool for your specific requirements.
- Ensure your eyes are about level with the top edge of the screen and between 45 and 71 centimetres away.
- Adopt appropriate routines and breaks to avoid eye and back strain.
- Ensure adequate ventilation to avoid localized heating.
- Avoid glare and reflection by altering the angle of your screen or by using blinds or curtains or an anti-glare screen.

- Ensure there is no bright light behind the monitor or reflected on the screen.
- Take regular breaks while keyboarding to rest tired muscles. Every half an hour, focus your eyes on a distant object.
- Ensure electrical equipment (including wiring and sockets) is regularly checked and serviced.
- Report damaged or faulty equipment to your supervisor immediately.
- Protect your monitor from dampness or wet weather.
- Follow all instructions and warnings for your system.

- If moving the computer, disconnect the power source by pulling the plug not the cord.
- Do not attempt to repair your computer, monitor or keyboard yourself.

Contact the workplace health and safety officer for advice, assistance and assessment of your workstation.

Use Ergonomic Chairs

- Adjust chair to appropriate height.
- Rest feet comfortably on the floor.
- Adjust backrest to support lower back.
- Change posture if you get uncomfortable.

Use The Keyboard

- Adjust the keyboard to the appropriate height.
- Your shoulders should be relaxed and elbows comfortably at your side at a 90 degree angle.

Use Telephones And Answering Machines

- Read instructions and observe safety precautions.
- Avoid using the phone during an electrical storm.

Use Stapling/Binding Equipment

- Ensure fingers, hair, ties, scarves and jewellery are out of the way.
- Do not attempt to fix the equipment unless you have been trained.
- Read instructions and observe safety precautions.

HOUSEKEEPING
• Ensure area is clean • Boxes & papers stored properly • Garbage cans taken out regularly so no overflow

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES / PROCEDURES
Operator's manual for use of equipment **OCCUPATIONAL HEALTH AND SAFETY:** Ergonomics General Safety	Ladder safety SWP Ergonomics - Lifting & handling SWP Electrical Safety SWP

ELECTRICAL SAFETY

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Electrical shock	✓ Engineering – proper cords and plugins ✓ Administrative –SWP

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Office equipment	Operator's manuals Equipment Instructions	Safe work practices

PPE REQUIREMENTS

PRE-OPERATIONAL SAFETY CHECKS

- Check electrical cords before using equipment
- Check cords and outlets on a regular monthly basis

READ THIS FIRST: IMPORTANT INFORMATION

➢ Read operation manuals safety tips for equipment

SAFE WORK PRACTICES

- Only authorized and qualified electrical workers should install, repair or perform maintenance on commercial electrical equipment.
- Only authorized and qualified electrical workers are permitted to install, repair or perform maintenance on building electrical systems;
- All staff should receive health and safety training appropriate to the work and activities they are engaged in
- Follow the instructions provided by your supervisor or instructor
- Treat all electrical devices as if they are live or energized
- Review procedures and safety rules prior to beginning work. Ensure that you understand the procedures, electrical hazards and what measures are in place to protect you. Follow all safety rules including those for the use of required personal protective equipment
- Review emergency procedures

- Know the location of electrical panels and shut-off switches so that they can be quickly disconnected in the event of an emergency
- Know the locations of safety devices such as first aid kits, fire extinguishers, emergency eye washes and showers, automated external defibrillators
- Ensure equipment, tools and personal protective equipment are in good operating condition. Never use equipment, tools or personal protective equipment that are in disrepair or not properly maintained
- When at all possible, electrical equipment should be de-energized prior to working on it. Lockout procedures should be instituted for de-energizing equipment including appropriate testing protocols to confirm that equipment is in a safe state before being worked on.
- Keep flammable materials away from electrical equipment
- Limit the use of extension cords. Use only for temporary activities. In all other cases, request installation of a new electrical outlet
- Practice good housekeeping. Poor housekeeping is a major factor in many accidents. A cluttered area is likely to be both unsafe and inefficient
- Access to electrical panels should not be blocked or covered by materials. There should be a one metre clearance between electrical panels and any object
- Do not engage in horseplay
- Immediately report unsafe acts or conditions to your supervisor or instructor.

SIGNS OF ELECTRICAL HAZARDS

Following are a number of clues of the presence of electrical hazards associated with the use of electrical equipment.

- Tripped overcurrent protective devices (circuit breakers, fuses and ground fault circuit interrupter);
- Hot to the touch on tools, wires, cords, connections, or junction boxes;
- Dim and flickering lights;
- Sizzles and buzzes or unusual sounds from electrical equipment, apparatus or circuits;
- Odour of hot insulation;
- Mild tingle from contact with case or equipment;
- Worn or frayed insulation around wire or connection; and
- Burn marks or discoloration on receptacle plates or plug prongs.

LOCKOUT/TAGOUT FOR ELECTRICAL WORK

Definitions

- Zero Energy State: When a circuit, device, or system has been secured so that no potential energy exists to harm someone working on it.
- Lock-out/Tag-out works like this: when working on a system in a Zero Energy State, the worker places a personal padlock or combination lock on every energy disconnect device relevant to his or her task on that system. Also, a tag is hung on every one of those locks describing the nature and duration of the work to be done, and who is doing it.

Safe Work Practices

- Disconnect switch devices must be present in a properly designed electrical system to allow for convenient readiness of a Zero Energy State.
- Temporary grounding or shorting wires may be connected to a load being serviced for extra protection to personnel working on that load.
- Always verify that a circuit has been secured in a Zero Energy State with test equipment after "locking it out." Be sure to test your meter before and after checking the circuit to verify that it is working properly.

- When the time comes to actually make contact with the conductor(s) of a supposedly dead power system, do so first with the back of one hand, so that if a shock should occur, the muscle reaction will pull the fingers away from the conductor.

HOUSEKEEPING
• Ensure area is cleaned up • Tools are properly stored away
REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Operator's manual for equipment **OCCUPATIONAL HEALTH AND SAFETY:** General Safety Precautions	

WORKING AND DRIVING IN HIGH TRAFFIC AREAS/SITES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

RISK LEVEL	HAZARDS	CONTROL MEASURES
HIGH Risk	• Running over people (S) • Getting into an accident (S) • Obstruction in the road or view (S) • High speed (S) • Condense spaces (S)	✓ Designated Routes (A) ✓ Road rules and signs(A) ✓ Speed limit (A) ✓ Mirrors ((E) ✓ Horn (E) ✓ Legislation (A)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
	Site Orientation & other required training certificates	License for driving Site Orientation & other required training certificates

PPE REQUIREMENTS

Safety Boots	Hard Hat	Coveralls	Safety Glasses	Hearing Protection	**NOTE:** Hearing protection should be used if using power tools

PRE-OPERATIONAL SAFETY CHECKS

- Hazard Assessment must be completed

READ THIS FIRST: IMPORTANT INFORMATION

➢ **Always be on the alert for moving people & equipment**

SAFEWORK PRACTICES

ON JOBSITE

- Watch for people wearing reflective vest
- Follow the road rules and signs
- Never go in restricted areas (unless directed to do so by traffic controller)
- Follow the speed limit
- Use your mirrors

- Use the horn whenever necessary

- Follow Driving Procedures for site (routes, supervisor or designated traffic control personnel instructions)
- Only drive if you are licensed to do so

DRIVING IN HIGH TRAFFIC AREAS

- Maintain appropriate speed
- Maintain a safe following distance
- Obey all traffic regulations and signals, posted traffic signs, traffic lights
- Maintain a safe stopping distance
- Plan and signal well in advance, double check mirrors

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
• Traffic Safety Laws	Driving

CARGO SECUREMENT

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RISK LEVEL	HAZARDS	CONTROL MEASURES
HIGH Risk	• Cargo falling off unit Crushing (S) • Slipping, Tripping (S) • Sprains, strains (H) • Pinch points (S) • Falling off trailer (S) • Tilting (S) • Runaway (S) • Hit by Straps (S) • Foot Injury (S)	✓ Proper tie-downs for load (E) ✓ Hooks & Deck pins (on trailer) (E) ✓ Special Cargo Compartments (E) ✓ SWP – Commercial Transportation (A) ✓ NSC regulations (A) ✓ Training (A) ✓ CSA Approved PPE (P)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Deck pins, tie-down straps,	Safe work procedures	Job Specific Legislation

PPE REQUIREMENTS

Safety Boots	Hard Hat	High Visibility Vest	Gloves	Safety Glasses

PRE-OPERATIONAL SAFETY CHECKS

- Inspect all tie-downs before using them to secure cargo

READ THIS FIRST: IMPORTANT INFORMATION

Use proper tie-downs for load to be transported.
Follow regulation requirements for tying down the load
Cargo falling off unit can cause serious injury or death to other motorists

SAFEWORK PRACTICES

Cargo must be contained, immobilized or secured so that it may not:

- Leak
- Spill
- Blow
- Fall from vehicle
- Fall through vehicle
- Otherwise become dislodged from vehicle
- Shift upon of within vehicle

GENERAL

- Tarping is only required when transporting items that may blow off
- Make sure the straps are in good shape
- Make sure no one is in the area who can get hit from strap when throwing tie-downs over load
- Make sure you know the proper strap requirements
- Cargo being transported on the highway must remain secured on or within the transporting vehicle
- Always use 3 point contact when getting on and off trailer
- Do not get up on trailer if not needed
- Be very careful if you must go up on the trailer – for tripping hazards, watch your step

Any improperly secured load can result in:

- Loss of life
- Loss of load
- Damage to the cargo
- Damage to the vehicle
- A crash
- Result fines to the driver/carrier
- Vehicle being placed Out of Service

CARGO SECUREMENT SYSTEM

- Must be able to resist a force equal to 80% of cargo weight when vehicle is braking.
- Rear-ward direction occurs when vehicle accelerates, shifts gears while climbing a hill or brakes in reverse, cargo securement must be able to resist force equal to 50% of cargo weight.
- Force in the sideways direction occurs when vehicles is turning, changing lanes or braking while turning, cargo securement must be able to resist a force equal to 50% of cargo weight.
- Force in upward direction occurs when vehicle is traveling over bumps in read or cresting a hill, cargo securement must be able to resist force equal to 20% of cargo weight.

Tie downs that are acceptable for load securement:

- Tie-downs must be designed, construct and maintained so that they can be tightened.
- Each tie-down must be attached and secured so it does not become loose or unfastened while vehicle is in transit.
- Tie-downs must be within rub rails for platform type vehicle to protect tie-down from impact unless load extends to or beyond rub rails.
- Cargo securement - whatever you use must be touching the load in order to be part of the securement.

Minimum Number of tie-downs required:

The cargo securement system used to restrain articles against movement must meet requirements concerning the minimum number of tie downs.

When an article of cargo is not blocked or positioned to prevent movement in the forward direction, the number of tie downs needed depends on the length and weight of the articles.

- One tie-down for articles – 1.52 metres (5 ft.) or less in length, and 500 kilograms (1,100 lbs.) or less in weight
- Two tie-downs if the article is - 1.52 meters (5 ft.) or less in length and more than 500 kilograms (1,100 lbs.) in weight; or Greater than 1.52 meters (5 ft.) but less than 3.04 kilograms (10 ft.) regardless of weight.
- If an article is blocked, braced or immobilized to prevent movement in the forward direction by a header board, bulkhead, other articles that are adequately secured, or other appropriate means, it must be secured by at least one tie down for every 10 ft. of article length and 1 extra tie down for each additional 3.04 kgs. (10 ft. When an article of cargo is not blocked or positioned to prevent movement in the forward direction, and the item is longer than 3.04 kilograms (10 ft.) in length, then it must be secured by two tie-downs for the first 3.04 kilograms (10 ft.) of length, and one additional tie down for every 3.04 kilograms (10 ft.) of length, or fraction thereof, beyond the first 3.04 kilograms (10 ft.)

*If **blocking** is used:*

- Hardwood is recommended
- Free from rot or decay, knots, knotholes and splits.
- Grain should run lengthwise

*General Performance Criteria: **Friction Mats***

To be considered part of a cargo securement system, a friction mat must be marked by its manufacturer with the maximum usable friction resistance (in g's) the mat will provide in restraining cargo against horizontal and lateral movement.

*Conditions in tie downs that are **NOT acceptable** for load securement:*

- Chains containing cracked welds or links
- Chain containing bent, twisted, stretched or collapsed links
- Chain links weakened by gouges, nicks or pits
- Chains incorrectly repaired
- Links obviously worn or showing other visible evidence of loss of strength
- Knots in any portion of the chain, wire rope or webbing
- Spread or disturbed grab hooks
- Cuts, nicks or splits in nylon webbing
- Wire cable with missing strands or wraps
- An anchor point that is weakened or shows loss of strength due to cracks, breads or distortion
- Split lumber that is used as dunnage to prevent movement or distribute the load
- Bungee cords and tarp straps are not suitable for use as tie downs, and are equally unsuited to having an assigned Working Load Limit.
- The absence of a legible marking from the manufacturer indicating the strength of a tie down will cause it to be assigned a default WLL of zero.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES

Manufacturer's Instructions National Safety Code Regulations	Commercial Transportation

REFUELING

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

RISK LEVEL	HAZARDS	CONTROL MEASURES
MEDIUM Risk	• Fire & Explosion (S) • Contact with fuel (absorption through skin) (H) • Spills & overflows (S) • Overcome by vapours/fumes (H)	✓ Pump with auto shutoff (E) ✓ SDS (A) ✓ Spill response kit (A) ✓ Refueling procedures (A) ✓ Turn the engine off(A) ✓ CSA Approved PPE (P)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Fuel pump, vehicle	SDS	WHMIS Job specific training

PPE REQUIREMENTS


Safety Boots


Leather Gloves


Safety goggles


Fire Proof Coveralls

PRE-OPERATIONAL SAFETY CHECKS

- Make sure that the connections are correct
- Make sure that there is an attendant there until you are finish

READ THIS FIRST: IMPORTANT INFORMATION

SAFE JOB PROCEDURES

1. Pull up to pump
2. Turn off your vehicle engine. Put your vehicle in park and/or set the emergency brake. Disable or turn off any auxiliary sources of ignition such as a camper or trailer heater, cooking units, or pilot lights.
3. Do not smoke, light matches or lighters while refuelling at the pump or when using gasoline anywhere else
4. Turn off cell phone and leave in vehicle
5. Do not re-enter your vehicle during refuelling. (If you cannot avoid re-entering your vehicle, discharge any static build-up BEFORE reaching for the nozzle by touching something metal with a bare hand -- such as the vehicle door -- away from the nozzle.

6. Select hose, walk to charging station, enter to confirm choice, then key in P.I.N. , then enter unit #.

7. Once your card is authorized, walk back to pump, remove the nozzle from the holder and turn the pump lever to the ON position.
8. Insert nozzle in tank and squeeze lever to fill. When filling the tank place the fuel nozzle against the side of the filler neck to reduce the chances of static electricity sparks.
9. Stay with the vehicle, holding the nozzle trigger until you have the fuel you need. When topping up slowly regulate flow to avoid overfilling and spillage.
10. When you're finished fuelling, remove nozzle from tank, turn pump lever to OFF position, replace the nozzle on the nozzle holder and replace fuel cap.
11. Return to charging station, reinsert card, wait for receipt (receipt is required for bookkeeping purposes and must be handed into office.

SAFEWORK PRACTICES

VEHICLE

- Vehicles shall not be refueled while the engine is running.
- A cell phone is not to be used while refueling.
- Ground yourself by touching the metal portion of the vehicle before refueling.
- Do not re-enter your vehicle while you are fueling it up. Static can build on your clothes and cause an explosion or fire.
- Do not prop the nozzle in the "on" position while refueling.
- Do not leave fuel nozzle unattended while fueling. Ensure precautions to prevent overflow or spillage of the liquid being dispensed.
- Do not overfill the fuel system
- Ensure correct fuel is selected.
- Follow refueling SJP and fueling station safety signs
- Do Not SMOKE while filling the fuel tank or servicing the fuel system
- Ensure there is no open flames in vicinity
- In the event of spillage, immediately apply a non-combustible absorbent material to soak up the spillage
- Do not dispense gasoline or diesel with 7.5 meters of any ignition sources
- Do not use any object or device that is not an integral part of the hose, nozzle and valve assembly to maintain the flow of fuel.
- Never remove the fuel filter cap when the unit is indoors, the fumes are hazardous and a spark could cause a fire or explosion.
- Never mix gasoline, or alcohol with diesel fuel. This may create a fire or explosion hazard, which could result in severe injury or death to worker

GAS POWERED EQUIPMENT

- Ensure engine is shut off and is cooled down.
- Use proper gloves, clothing and safety glasses, as well as rags and absorbent materials for cleanup. Proper disposal of rags in metal container.
- Have approved fire extinguisher on hand.
- Make sure fuel shut off valve is in off position while fueling.
- Always use funnel or proper spout when pouring fuel.

- Make sure proper fuel is being used, e.g. gas, diesel or proper 2 stroke mix. If unsure, check operator manual or ask appropriate personnel.
- When finished make sure fuel cap is replaced, all spills are cleaned up properly and fuel valve is turned back on.

FILLING PORTABLE CONTAINERS

- When filling portable steel containers with gasoline or marked diesel, ensure grounding cable is attached to the steel container that is to be filled.
- Always put portable gasoline storage containers on the ground to fill them and keep the nozzle in contact

HANDLING DIESEL FUEL & GASOLINE

- Fill tanks in well vented area outside
- Store all decanted diesel outdoors
- Label all decanted containers as per WHMIS
- Extinguish all flames, sparks and cigarettes while using it
- Turn off engine before filling equipment or slip tanks
- Use genuine spill proof gas containers if necessary to transport fuel to a site
- Wash hands thoroughly after handling
- Avoid inhaling fumes
- Clean up spills immediately using spill kit
- Berm around bulk storage facilities

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: WHMIS Fire & Explosion Safety	WHMIS

SURVEYING IN / AROUND GRAVEL PILES & PITS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Steep slopes - Falling, Slipping Tripping (S) • Mobile Equipment Work– being run into or over with equipment (S)	✓ Traffic control plan – SWP (A) ✓ Site Specific Orientation & Training (A) ✓ CSA Approved PPE – (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Surveying Equipment PPE	Operator's Manual for equipment	Site Specific Orientation Job Specific – Surveying

PPE REQUIREMENTS


High Vis Vest


Hearing Protection


Hard Hat


Safety Glasses


Safety Boots


Radio


Hands Free Cell

PRE-OPERATIONAL SAFETY CHECKS

- Inspect equipment before use – do not use defective equipment
- Hazard assessment of area must be completed

READ THIS FIRST: IMPORTANT INFORMATION

➢ **Hazard Assessment is mandatory before beginning work on a gravel pile/pit.**

SAFE JOB PROCEDURE

BEFORE WORK BEGINS

- Request the client to trim the vertical face to a safe slope.
- If unsafe check with supervisor for alternate equipment to measure.
- Under no circumstance will a crew measure in the presence of a vertical / near-vertical cliff or cutaway greater than 1.5 metres - use a total station that does not require a rodperson (i.e., Leica 1103).

SAFE WORK PRACTICE
DURING SURVEYING • Be aware and exercise extreme caution when working in the vicinity of heavy equipment. • If pile has been excavated, avoid vertical embankments (from above and below). • Keep a minimum of 2X the height away from cut. • When climbing pile, ensure that you have stable footing. • If surveying in winter, watch for icy areas/ patches. • Be wary when approaching edges of pit. • Bank may be undercut and may fall away (applies from above and below).
HOUSEKEEPING
• Make sure you put equipment back in proper storage compartments when job is completed • Make sure you don't leave any garbage anywhere on the site. (If you brought it – take it)
REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

USE OF FIRE EXTINGUISHER

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Equipment not maintained – if there is a fire no way to fight it • Untrained workers – don't know how to use fire extinguisher or put themselves in danger because they don't know better. • Can't find extinguisher if needed	✓ Fire extinguisher training (A) ✓ Well maintained extinguishers (E, A) ✓ SJP – fire extinguisher (A) ✓ SWP – Fire & Explosion Hazards (A) ✓ CSA Approved PPE (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Fire extinguisher	Operator's manual Emergency Response Plan	Fire Extinguisher use Emergency Response

PPE REQUIREMENTS

				PPE required with planned fire fighting / fire watch duties			
Gloves	**Safety Glasses**	**Safety Boots**	Fire Proof Coveralls				**Emergency Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

All fire extinguishers must be:

- Fully charged and in operable condition (as per manufacturer specifications)
- Clean and free of defects
- Readily accessible at all times

READ THIS FIRST: IMPORTANT INFORMATION

➢ **You should never put yourself at risk in an attempt to extinguish the fire.**

GENERAL INFORMATION

Fire is a chemical reaction that occurs when a fuel rapidly unites with oxygen in the presence of a heat source, and a flame is produced. Four elements are necessary to produce and support a fire:

- Fuel source (solid - liquid - gas)
- Heat source (a type of energy)
- Oxygen source (gas for ignition and flame support)
- Chemical chain reaction (occurs when fuel, heat and oxygen are united in the proper proportions to create a fire).

If any one of these four elements is eliminated, the fire will go out. There are four ways that a fire can be extinguished:

- Isolate, contain, separate, cover, or remove the fuel source.
- Remove the heat source by applying a cooling agent which absorbs the heat. Water is the most common cooling agent used to remove the heat from the reaction.
- Separate the oxygen from other essentials that make a fire by smothering the fire with a wet blanket, throwing soil or sand on it, or covering it with a chemical foam or water fog.
- Stop the chemical reaction by applying certain chemical substances that break up this chain reaction, such as sodium bicarbonate (baking soda) or potassium bicarbonate ("purple K") or sodium monophosphate (ABC dry chemical).
- Application of these chemicals will result in a reduction of the combustion rate and the fire can be extinguished.

SAFE JOB PROCEDURE

- Warn others in the immediate area. Notify the appropriate emergency response personnel by phone or radio and pull the nearest fire alarm if present.
- If nearby staff have been trained, and it is safe to do so, fight the fire using a portable fire extinguisher. Remember, if in doubt get out.
- Evacuate the premises via the nearest exit and proceed to the nearest Emergency Assembly Area.
- Re-enter only after the Emergency Coordinator has given an ALL CLEAR.

Know how to properly use one:

P. pull the pin

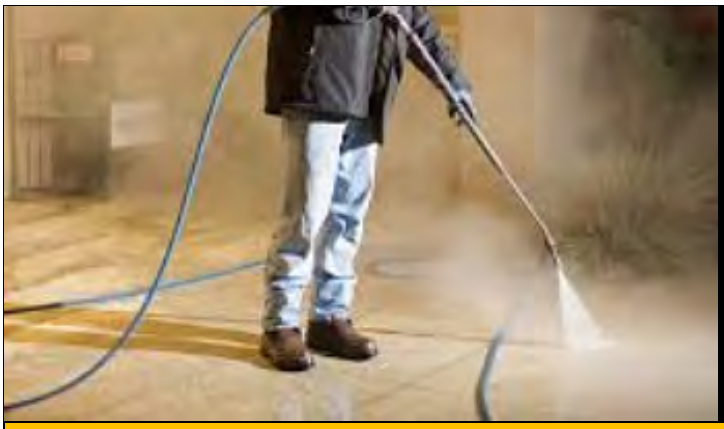
A. aim at the base of the fire

S. squeeze the handle

S. Sweep back and forth at base of fire

SAFE WORK PRACTICES
Always Remember: • Do not let fire spread around you. • Keep a safe distance from the fire. • Once fire extinguisher is emptied, if fire continues, evacuate the scene and wait for the fire department. • Prior to starting to battle the fire, designate someone to call the fire department. Fire fighters are trained to distinguish all types of fires. • Always remember extinguishers are made for small fires, containing it until the Fire Department arrives, can save lives and/or property. • Portable Fire Extinguishers are not designed to fight large or spreading fires. • Fire extinguishers must be recharged after each use. If a fire extinguisher fails to properly put out the fire, get to an exit and proceed to the gathering point for further instructions. You should **never put yourself at risk** in an attempt to extinguish the fire.
HOUSEKEEPING
REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Fire Safety **PROVINCIAL FIRE CODE**	Fire Protection Fire & Explosion Hazards



PRESSURE WASHER

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

RISK LEVEL	HAZARDS	CONTROL MEASURES
LOW Risk	• Inadequate Training (S) • Inadequately trained (S) • Flying debris (S) • Injuries due to awkward positions (H) • Unintended releases of toxic fluid or gases (H) Mechanical problems (S) Fall hazards (H) • Flying Debris (S) • Slips Trips Falls (S) • Pinch Points (S) • Muscle Strain (H) • Hearing Impairment (H)	✓ Give a training on how to use equipment (A) ✓ Wear appropriate CSA approved PPE (P) ✓ Check the equipment before using (A) ✓ Make sure that the area being used is clear (A)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Pressure washer	Chemical cleaner SDS	Job Specific – equipment WHMIS

PPE REQUIREMENTS

				
Safety Boots	Gloves	Hard Hat	Face Shield	Hearing Protection

PRE-OPERATIONAL SAFETY CHECKS

- Inspect equipment before use: Check hoses, fittings, wand, trigger gun, power cord or fuel connections before use - for signs of cracks, ware, and looseness, and replace as required.

READ THIS FIRST: IMPORTANT INFORMATION

NEVER point high pressure spray water directly at yourself or anyone else

SAFE JOB PROCEDURES

1. Set up washer
2. Add chemical cleaning agent
3. Connect water hose
4. Turn on washer
5. Spray item or building to be cleaned
6. Turn off sprayer
7. Put all equipment away

SAFE WORK PRACTICES

- NEVER direct water spray at yourself or anyone else.
- Skin broken with water spray must be reported immediately and medical attention must be sought immediately.
- If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.
- Ensure you have read the operator's manual
- Ensure you have been trained to operate equipment – no one who has not been formally trained is allowed to operate equipment
- Read SDS of Chemical cleaner
- Put on appropriate PPE
- Always follow the complete safety precautions and operating procedures as described by the manufacturer.
- Always ensure you wear the appropriate personal protective equipment including safety glasses at all times.
- Fluids under high pressure from spray or leaks can penetrate the skin, causing an extremely serious injury that could result in amputation or death. Never try to stop or deflect a leak with your hand or body.
- If new couplings are placed on the end of a hose, ensure that the fitting has been properly crimped. Failure to do so can cause blown couplings.
- Never start the washer until you are certain that the quick coupler sleeves are in the locked position.
- Avoid abrasion to the hose by pulling it in sections rather than grabbing one end of the line and pulling the full weight of the line.
- Allow sufficient slack in the hose to accommodate "pulse shortening."
- Do not allow the hose to be bent beyond the manufacturer's specified minimum bend radius. If this limit is exceeded, the hose may burst at the bend.
- A pump malfunction may cause unusually high pressures that in turn, may cause a hose to burst. If a pump malfunction occurs, inspect the hose and all other high pressure fluid handling components.
- Drain the hose after each use. Flush a hose that was used for chemical cleaning according to the manufacturer's instructions.
- Do not wind a hose so tightly that kinks result.
- Do not suspend the wound up hose from a narrow and/or sharp object such as a nail, metal hook, or pin. Ideally, hoses should be stored on a hose reel.
- In winter, do not store a hose in a below-freezing environment as this may cause it to crack when flexed.
- If a hose is stored in cold temperatures, it must be warmed prior to use to avoid cracking.
- Inspect all cords to ensure that they have not been damaged.
- Use only mild detergents with pressure washers.
- Always rinse the injection system with water to prevent corrosion or gumming of the parts.

- Wash at a 30 degree to a 60 degree angle to the work. This will allow the water to splash away from you and the water will wash the dirt away faster and easier.
- If detergents are to be used, use only detergents intended for pressure washers.
- Follow the instructions on detergent container.
- Always use extreme caution when working with water and electricity.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Operator's manual **OHS LEGISLATION:** WHMIS Tools & Equipment	WHMIS

DEFECTIVE TOOLS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Severe injuries (S) • Flying Debris (S) • Electrical Shock (S) • Electrocution (S, H)	✓ Tool inspections (A) ✓ Defective Tool Training (A) ✓ Lockout Tagout –SWP (A) ✓ Electrical Safety – SWP (A) ✓ CSA Approved PPE (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Defective tool bin	Owner's manual Tags -for Tagging out defective tools	Training - Defective Tool Hazards Lockout/Tagout - SWP

PPE REQUIREMENTS

Safety Boots

Gloves

Safety Glasses

PRE-OPERATIONAL SAFETY CHECKS

- Always inspect the tool before you use it. Don't use a defective tool!

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, REPORT TO SUPERVISOR.

Defective tools and equipment can cause serious and painful injuries.
If a tool is defective in some way, DON'T USE IT: Lock or tag it out!
Take the item to the supervisor who will ensure it is properly repaired.

SAFE JOB PROCEDURE

1. Never use a defective tool
2. Double check all tools prior to use
3. Ensure defective tools are repaired
4. Use the right tool for the right job

SAFE WORK PRACTICES

HAND TOOLS

- Don't use hand tools that are defective as they can cause serious injuries if they break during a job.

Be aware of problems like:

- chisels, wedges, and frost pins with mushroomed heads
- split or cracked handles
- chipped or broken drill bits
- wrenches with worn out jaws
- tools which are not complete, such as files without handles
- Hand tools

POWER TOOLS

- Air, gasoline, or electrical power tools require skill and complete attention on the part of the user even when they are in good condition.
- Don't use power tools when they are defective in any way.

Watch for problems like:

- broken or inoperative guards
- insufficient or improper grounding due to damage on double insulated tools
- no ground wire (on plug) or cords of standard tools
- the on/off switch not in good working order
- tool blade is cracked
- the wrong grinder wheel is being used
- the guard has been wedged back on a power saw

HOUSEKEEPING

- Always put tools back in proper storage areas when you are done with them
- Ensure the area is clean & dry

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Hand and Power Tools Lockout Tagout Electrical Safety	Lockout Tagout –SWP Electrical Safety - SWP Hand & Power Tool – SWP

LADDER SAFETY

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	Slips, Trips & Falls (S)	✓ Proper CSA approved ladders – job specific (E) ✓ Ladder Safety– SWP (A) ✓ Manufacturer's Guidelines (A) ✓ Legislation (A) ✓ Job specific training (A)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Office equipment & furniture	Equipment Instructions	Company Safety Rules Job Specific Training

PPE REQUIREMNTS

Boots/shoes with a non-skid sole

PRE-OPERATIONAL SAFETY CHECKS

Inspect ladder for defects before using:

- Check for any defects, such as broken rungs, loose bolts, or split rails. If you find any defects, don't use the ladder. Tag it so others will know that it is damaged.
- Make sure rungs are clean and dry before using the ladder.
- Choose the right type of ladder for the job (for example, a stepladder, an extension ladder, or an orchard ladder). A non-conductive ladder (for example, wood or fiberglass) if there is a possibility of contact with electrical wires

READ THIS FIRST: IMPORTANT INFORMATION

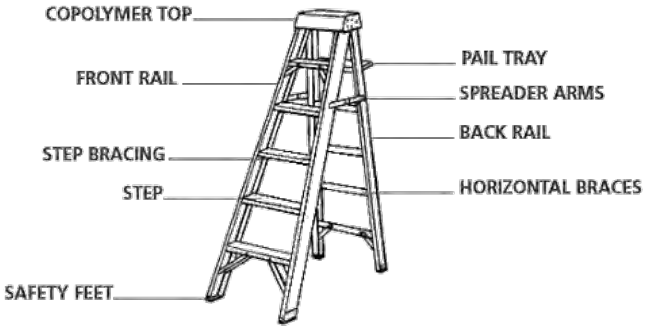
Ladders should not be used if a safer means of accessing an elevated work area is available.

If work cannot be done from a ladder without hazard to a worker, a work platform must be provided.

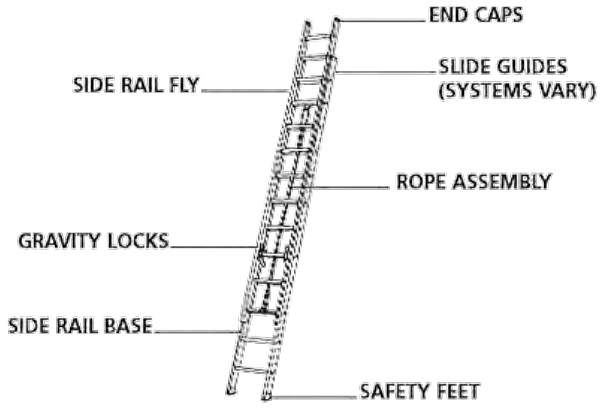
SAFE JOB PROCEDURES

GENERAL USE

1. Inspect ladder for defects – replace ladder if defective
2. Ensure ladder is on firm ground
3. When climbing the ladder, always face it and maintain three-point contact (two hands and one foot, or one hand and two feet).
4. Don't carry heavy or bulky items up or down the ladder.
5. Don't stand on the top two (2) rungs of any ladder.
6. Keep your body between the ladder rails.
7. To move a ladder, get down and then move it.



8. Only use ladders for the intended purpose for which they were designed.
9. A worker must not carry up or down a ladder, heavy or bulky objects or any other objects which may make ascent or descent unsafe.
10. Portable ladders are placed against the top support at a minimum 4 -1 incline. A ladder must be positioned so that the horizontal distance from the base to vertical plane of support is approximately ¼ of the ladder length.
11. Ladders used when servicing energized electrical equipment must be non-conductive.
12. Portable ladders in use are secured against movement and placed on a stable base.
13. No ladder shall be lashed to another ladder to increase its length.
14. Ladders shall not be used in a horizontal position as platforms, runways or scaffolds.
15. Ladders shall not be used by more than one worker at a time.
16. The upper supports of ladders used to access elevated work areas must extend a minimum of one meter above the elevated surface. A ladder must have sufficient length to project approximately 1 m (3 ft.) above the upper landing to which it provides access.
17. The worker shall maintain a three (3)-point grip on the ladder at all times and carry tools/equipment on a belt or hoist up. Do not carry anything in the hands that could cause injury in case of fall.
18. The worker shall face the ladder while ascending or descending.



SAFE WORK PRACTICES

STEP LADDERS

- Step ladders are to be used only on clean and even surfaces.
- No work is to be done from the top two steps of a step ladder, counting the top platform as a rung.
- When in the open position ready for use, the incline of the front step section shall be one (1) horizontal to six (6) vertical.

- The step ladder is only to be used in the fully opened position with the spreader bars locked.
- Tops of step ladders are not to be used as a support for scaffolds.
- Don't overreach while on the ladder. Climb down and move the ladder over to a new position.
- Only CSA Standard ladders will be used.

DO NOT WALK A LADDER WHEN YOU ARE ON IT. GET DOWN AND REPLACE LADDER FROM GROUND LEVEL.

PORTABLE LADDERS

- When setting up a ladder, secure the base and "walk" the ladder up into place.
- The ladder should be set at the proper angle of one (1) horizontal to every four (4) vertical.
- Before using a ladder, make sure it is secured against movement.
- When in position, the ladder should protrude one (1) metre above the intended landing point.
- Workers shall not work from the top two rungs of a ladder.
- Don't overreach while on a ladder. It is easier and safer to climb down and move the ladder over a few feet to a new position.
- Always face the ladder when using it. Grip it firmly and use the three-point contact method when moving up or down.
- The minimum ''overlap on an extension ladder should be one (1) metre unless the manufacturer specifies the overlap.
- Keep both metal and wood ladders, away from electrical sources.

INSPECTION

- Ladders are inspected before use and defective ladders are removed from service. A ladder must be inspected before use on each shift, after any modification and any condition that might endanger workers must be remedied before the equipment is used.
- A ladder found to be broken or defective may not be used until it has been repaired and restored to its original design specifications. Any ladder that has developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."
- Ladder rungs, cleats and steps shall be parallel, level and uniformly spaced.
- Portable ladders shall be CSA certified. Company must ensure that a portable ladder meets the requirements of CSA Standard CAN3-Z11-M81 (R2005), Portable Ladders. The applicable ANSI Standard is also acceptable (managers can refer to the Provincial Occupational Health and Safety (OHS) Code/regulations for details for the province in which they are working).
- Portable single or extension ladders shall be equipped with a non-slip type base or shall be held, tied or otherwise secured to prevent slipping.
- If a ladder is tipped over, it shall be inspected by a competent person for side rail dents or bends, or excessively dented rungs; check all rung to side rail connections; check hardware connections; check rivets for shears.
- Ladders with loose, broken or missing rungs, split side rails or other hazard producing defects shall not be used. Improvised repairs shall not be made.
- All wood parts shall be free from sharp edges and splinters; sound and free from accepted visual inspection from shake, or other irregularities. Wooden ladders must not be painted.
- Keep both metal and wood ladders away from electrical sources

CARE

- Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.
- Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.
- Frayed or badly worn rope shall be replaced. Safety feet and other auxiliary equipment shall be kept in good condition to ensure proper performance.
- Rungs shall be kept free of grease and oil.
- Ladders shall be stored in a well-ventilated area in a manner to prevent sagging and warping.

HOUSEKEEPING
Ladders are to be properly stored away when not in use Make sure rungs are clean and dry before using the ladder.
REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Manufacturer's Instructions **OHS LEGISLATION:** Ladder safety	Ladder Safety - SWP

EQUIPMENT DAILY INSPECTIONS MAINTENANCE & REPAIRS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Equipment Failure (E) • Pinch Points (S) • Shop fumes (H) • Strains and sprains from twisting (H) • Heavy Lifting & pulling (H) • Hand injuries-impact, cuts, scrapes (H) • Eye strain & repetitive motion (H) • Loud noise exposure (H) • Hot Work (H)	✓ Maintenance schedules (A) ✓ Inspections (A) ✓ Repair Records (A) ✓ Proper personal protective equipment (P) ✓ Journeyman Certificate (A) ✓ Training (A) ✓ MSDS available (A) ✓ SWP Hot Work (A) ✓ Shop Ventilation (A) ✓ SWP Jacking Equipment (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Hand & power tools Parts Grease Gun Filtres	SDS Manufacturer's instructions	Journeyman Certificate (A) Job Specific Training

PPE REQUIREMENTS

Safety Boots	**Gloves**	**Safety Glasses**	Hearing Protection		**Radio**

PRE-OPERATIONAL SAFETY CHECKS

- Complete inspections according to manufacturer's recommendations & legislation requirements

READ THIS FIRST: IMPORTANT INFORMATION

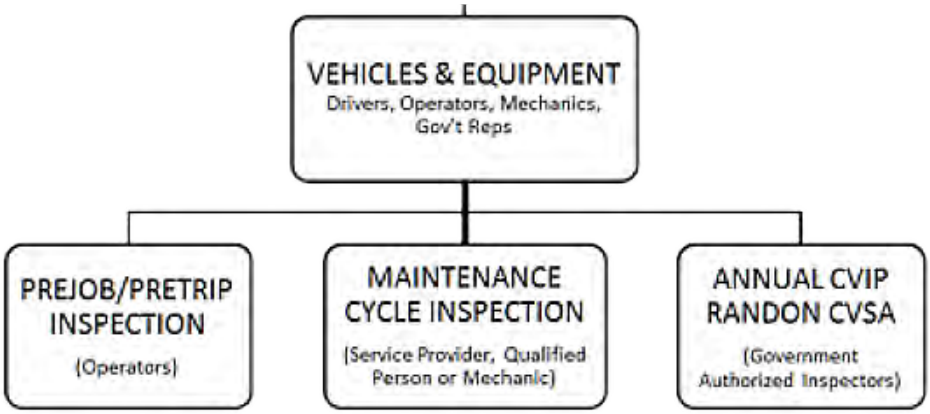
Make sure equipment is shut off before doing maintenance or repairs.

If equipment needs to be turned on for a specific reason you must have a plan and another person present in case of emergency.

SAFE JOB PROCEDURE

DAILY INSPECTION

1. Walk around machine to check for tire damage, vandalism, any loose parts, or any other damage
2. Check engine for:
    a. Any frayed or damaged belts
    b. Any damaged or leaking hoses
    c. Engine mounting bolts are in place, tight and not damaged
3. Check all fluid levels (some fluids may require engine to be on, check manufacturer recommendations)
4. Get into vehicle using 3 point contact method. Check for fire extinguisher and turn on engine
5. Check all gauges.
6. Ensure that:
    a. Oil pressure is normal
    b. Temperature is normal
    c. Hydraulic pressure is normal (if gauge is applicable)
7. Put machine in reverse to ensure back up alarm is working
8. Do another walk around to check all lights
9. Check brakes are working when pulling away to drive
10. Proceed to job
11. Complete the paperwork for the inspections, maintenance & repairs



SAFE WORK PRACTICE

GENERAL SAFE WORK PRACTICES

- Complete inspections according to manufacturer's recommendations & legislation requirements
- Use equipment & tools according to manufacturer's recommendations
- Always wear proper PPE for job being completed
- Stop the engine and disengage power before servicing.

- Lock out equipment by removing the ignition key and by disconnecting the battery cables.
- Always disable the electrical system by disconnecting a battery cable or removing fuses for a circuit when working on the electrical system (e.g., starter motor, radio, wiring, ignition, etc.).
- It is good practice to disable the electrical system when working on or near the safety air bags.
- Know how to work safely with all tools and equipment.
- Guards and Shields on must be intact on all Grinders & Saws

- Attach a "Do Not Operate" tag to the vehicle's control panel with the reason stated (such as 'no brakes').
- Use jacks and hoists to move and handle heavy components.
- Use solvents with a flashpoint above 60°C where possible to reduce the risk of fire.
- Clean up spilled oil, grease, fuel and other slipping and fire hazards immediately.
- Inspect compressed air hoses regularly, and immediately replace any which are cracked, worn or frayed.
- Ensure that air pressure reducers, gauges and moisture/dirt traps are cleaned and functioning.
- Dispose or recycle waste materials in accordance to government regulations.
- Above and underground tanks, pump pits, and similar areas are considered confined spaces and can be dangerous. Only specifically trained individuals are allowed entry. Contact your local jurisdiction for more information.
- Do not run engines inside unless ventilation systems are attached, and the exhaust is vented outside.
- Change oily clothing and launder regularly to prevent skin irritation and dermatitis.
- Use safe lifting techniques when moving heavy parts.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Inspections & Maintenance Hand & Power Tools	Inspections – SWP Maintenance - SWP Hand & Power Tools – SWP

USE OF CHAINSAWS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Damaged or defective equipment (E) • Severe cuts, amputation - moving chain on saw (S) • Falling on saw - tripping falling, amputation (S) • Fire – sparks can start fire(S, E)	✓ Chain saw guard (E) ✓ SWP-chainsaw (A) ✓ Proper CSA approved cut resistant PPE (P) ✓ Saw / Job Specific Training (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Chain saw Proper PPE Fuel	Manufacturer's guidelines – owner's manual Chainsaw Safety Manual for Alberta Chainsaw Safety Manual for British Occupational Health & Safety Legislation	Safe use before using a chainsaw - Proper PPE to be used Correct methods of starting, holding, carrying, or storage and use of the saw as directed by the manufacturer

PPE REQUIREMENTS

							
Hard Hat with Face screen	Ballistic (Kevlar) gloves	Ballistic (Kevlar) chain saw pants – 4300 series	High Vis Vest (reflective stripes)	Kevlar boots with toe protection	Hearing Protection	Whistle	Radio

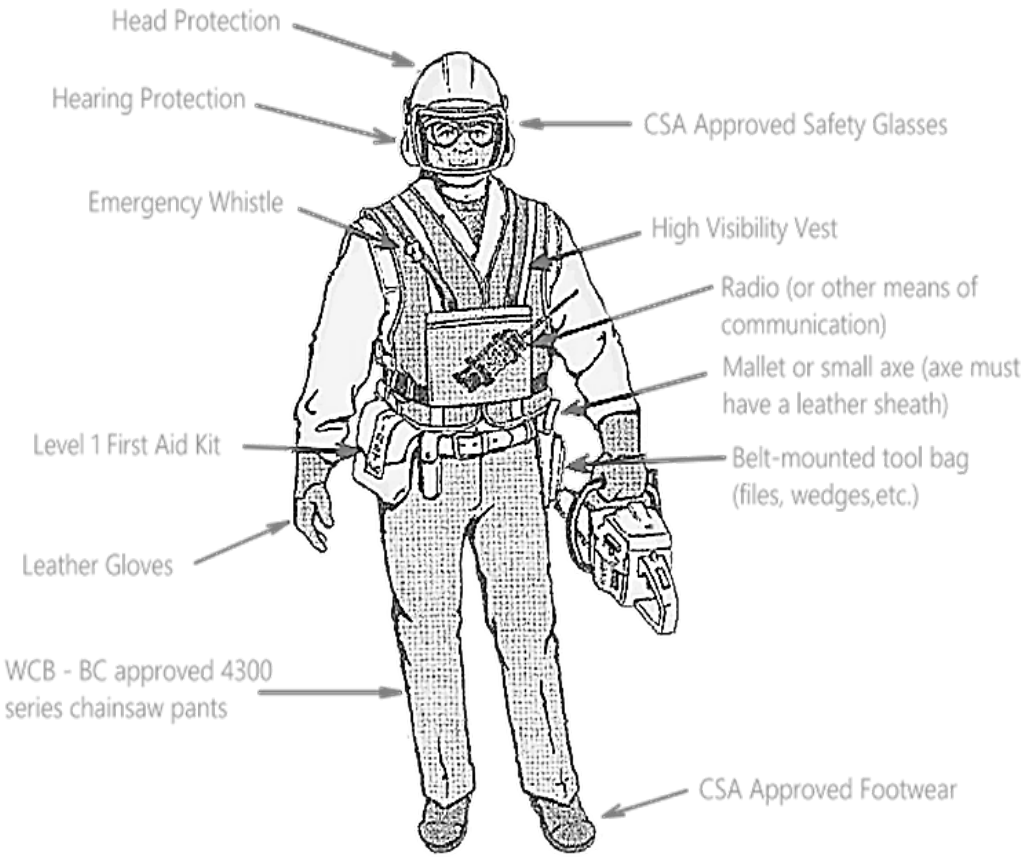
PRE-OPERATIONAL SAFETY CHECKS

- Saw must have all its parts and be inspected prior to operation.
- Ensure that the chain brake is functioning properly and adequately stops the chain.
- Chainsaws will comply with CSA Standards CAN/CSA-Z195-M92 (R2000).

READ THIS FIRST: IMPORTANT INFORMATION

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and report to supervisor.

If assisting a cutter do not go within 3 tree lengths of his working space.
Workers must be trained in its safe use before using a chainsaw. If you haven't been trained do not use the saw.



SAFE JOB PROCEDURES

OPERATING THE SAW

1. Inspect the chainsaw before using
   - Keep the chainsaw properly filed and snug on the bar
   - Ensure the depth gauges are properly filed
   - Chain brake must be in good working order
   - Trigger lock must be working
2. Operating the chainsaw
   - In accordance with training, Legislation & SWP below
3. Carrying the chainsaw
   - Keep the chain bar to the rear
   - Shut the motor off when carrying chainsaw at any distance
   - Maintain a firm but not tense grip with both hands on chainsaw
4. Fueling the chainsaw
   - Fuel in a well- ventilated area
   - Do not refuel while saw is running or hot
   - Store fuel in an approved safety container

- Use a proper spout or funnel for pouring fuel

5. Storage of the chainsaw

USE MANUFACTURER'S RECOMMENDED METHODS FOR PROPER STORAGE OF THE CHAINSAW.

STARTING SAW – GROUND METHOD

1. Place saw on ground, ensure bar and chain are free of debris/obstructions. Make sure no one is within 1.5 m of you
2. Place right foot in rear handle. Ensure your left foot is safely away from chain
3. Grip the front handle firmly with left hand
4. Pull starter handle slowly to engage starter, then use a short, fast pull to start
5. Hold onto starter handle as rope rewinds so as not to damage the starter
6. When saw fires, push choke in. Saw will usually start on next pull
7. Rev the engine briefly to release the throttle catch and let saw idle
8. Do not leave saw unattended while operating

STARTING SAW – METHOD 2

1. Grip front handle in left hand.
2. Hold rear handle between your knees, right leg in front.
3. Pull starter handle slowly to engage starter, then use a short, fast pull to start.
4. Hold onto starter handle as rope rewinds so as not to damage the starter.
5. When saw fires, push choke in. Saw will usually start on next pull. Rev the engine briefly to release the throttle catch and let saw idle. Do not leave saw unattended while operating.

SAFE WORK PRACTICE

GENERAL SAFETY

- Operator must have Proper CSA/OHS approved PPE to be worn (chainsaw pants/Kevlar boots)
- Operator must have a Chainsaw/Powersaw course certificate
- First Aid with transportation endorsement, H2S, WHMIS, TDG
- First Aid pouch/Wedges/Axe
- Maintain a firm grip with both hands on the on the chainsaw.
- Keep your thumb under the handle bar to stop the hand from slipping.
- Never stand directly behind the saw or straddle the saw.
- Do not jerk the saw
- Do Not use for cutting above shoulder height.
- When boring hold the saw firmly against your body. Do not bore unnecessarily
- Know where the tip of the guard is at all times.
- Activate the chain brake often during the work to ensure it is effective & clean out the mechanism of the brake daily.

POWER SAW (CHAINSAW) OPERATION

Keep the saw chain properly filed and snug on the bar. Ensure the depth gauges are properly filed to minimize kickbacks. Adjust your chain only when saw is turned off.

- The chain must be sharp, have the correct tension, and be adequately lubricated.
- When carrying/transporting a chainsaw, the bar guard must be in place and the chainsaw must be shut off. Keep the chain bar to the rear. If you stumble you won't fall on the chain and the dogs and chain won't hang up in the bush

- Keep the chain brake in good working order, do not use if the chain brake is defective or missing. Do not use if the trigger safety lock is defective or missing.
- Shut the motor off when carrying chainsaw at any distance.
- Maintain a firm but not tense grip with both hands on chainsaw.
- Keep your thumb under the handle bar to stop the hand from slipping on to the cases in cases of kickback.
- When pulling the saw out of cuts re repositioning do it smoothly.Do not jerk the saw. Jerking the saw can cause loss of control uncertain footing and possible back, arm or shoulder strain. Start a wedge in the back cut as soon as possible. It will act as a guard if the saw kickbacks and prevent the tree form sitting back. Do not bore unnecessarily. Use the right length bar for the job.
- Remember the tip of the bar causes most kickbacks; know where the tip of the guard is at all times especially when working in large timber or when climbing.
- Hold the saw firmly against your body when using it in the boring position with a slight twist in the bar. This will reduce the possibility of an uncontrolled kickback.
- Never stand directly behind the saw or straddle the saw, work to one side to minimize injury for kickbacks.
- The chain brake should be activated often during the day to ensure that the brake is effective. Clean out the mechanism of the chain saw brake daily.
- Must have chainsaw with working chain brake.
- Must have first aid pouch, wedges and axe.
- Chainsaw files must have handles or protective covers.

DON'T

- Don't wear ripped or torn chainsaw pants
- Don't use defective face shield or earmuffs
- Don't use improper work equipment
- Don't use files with no handle grips
- Don't have anything hanging off of clothing
- Don't wear jewelry
- Don't operate a chain saw that isn't working properly – may cause serious bodily injury
- Don't wear polyester clothing - cotton only

EQUIPMENT REQUIREMENTS

- Well maintained chainsaws properly equipped with the following:
- Fully operational and tested safety brake
- Floating anti-vibration system
- Approved safety link and/or safety raker chain sharpened at proper angle and rakers are at correct guide depth to cutters.
- Non-fall skip chains
- Banana bars must not be used
- Chain and bar covers in place on each machine

HOUSEKEEPING
• Store your saw in a dry location

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES

OHS LEGISLATION: Tools & Machinery – Guarding PPE Lockout/Tagout Chainsaws must comply with CSA standards Z62.1-M-77	PPE - SWP Lockout/Tagout - SWP Equipment Guarding - SWP

CONCRETE NAILS & SCREWS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Flying Debris – eye injury	✓ PPE (P) ✓ Nailing Screwing into concrete – SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Concrete nails		Job specific - mentoring

PPE REQUIREMENTS

Safety Glasses

Gloves

Hard Hat

PRE-OPERATIONAL SAFETY CHECKS

- **When pounding concrete nails into hard asphalt or concrete, hold the nail with a pair of needle nose vise grips or pliers in order to prevent the nail from flying away.**

SAFE WORK PRACTICE

- Concrete nails and screws are the most popular types of fasteners used in securing objects to concrete walls and blocks.
- When working with concrete screws, you need two items to install them correctly.
- A hammer drill is essential to the process, as it is needed to pre-drill a hole for the screw.
- The screw cannot be driven into the concrete and expected to hold. If the area around the concrete chips, the screw can become loose.
- Also important for installing a concrete screw is a concrete anchor. This piece acts as a sleeve that the screw can tighten and press against the concrete to a secure hold.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

SOUR FACILITY GUIDELINES

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RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Overcome by H2S - Death	✓ Personal CSA Approved H2S Gas Monitors (E) ✓ Gas Hazards – SWP (A) ✓ Bump Test Equipment(E) ✓ Bump Test SWP (A) ✓ PPE specific to area/job (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Personal Gas Monitor	Gas monitor instructions Proof of Site Orientation Job specific Instructions - from site personnel Job Permit (as required)	Site Orientation All survey personnel shall possess valid H2S Alive (or equivalent), WHMIS and First Aid Certificates.

PPE REQUIREMENTS

							
Gloves	**Hard Hat**	Coveralls	**Safety Glasses**	**Safety Boots**	High Visibility Vest when working on plant or field roadways.		H2S Monitor

PRE-OPERATIONAL SAFETY CHECKS

- Always bump test your monitor before going on site.
- All survey personnel shall possess valid H2S Alive (or equivalent), WHMIS and First Aid Certificates.

READ THIS FIRST: IMPORTANT INFORMATION

- **When working in these areas of potential H2S, extreme care and caution should be exercised to avoid harmful exposure.**
- Know the emergency response plan for the site
- Check with site personnel for H2S readings

- H2S gas is dangerous because it is colorless, is explosive when mixed with air, dissolves in oil, water, and well fluids and is released when agitated. In low concentrations, the gas smells like rotten eggs; however loss of smell occurs at higher concentrations.

SAFE WORK PRACTICE

- All survey personnel shall have collar length hair or less. If longer, hair must be tied back. All survey personnel shall be clean shaven (i.e., no beards, van dykes, goatees, or manchurias).
- Remove all flame producing materials such as matches and lighters and leave in vehicle along with cell phone.
- Personal monitors should be worn by each crew member. They should be maintained and checked or calibrated regularly at start of job. The operators or safetyman usually have a bottled sample of H2S to test the monitors.
- Use the buddy system to constantly keep in contact with other crew members throughout the worksite.
- Be aware that H2S is heavier than air and may collect in lower lying areas such as pits, berms diked areas, buildings and confined spaces. H2S is also found in wellheads, pipelines, vessels, tanks and common areas where H2S leaks commonly occur in flanges, seals, valves, drains and vent lines.
- The closer your work is to these areas, the greater the risk of exposure to the gas.
- Workers should familiarize themselves with the location of SCBA equipment on plant sites.
- Appropriate signage shall be used when crew is working on or near plant or field roadways.

SAFE JOB PROCEDURE

GUIDELINES WHEN WORKING AROUND ANY SOUR GAS FACILITIES

1. All supervisory personnel shall report to the complex control centre and discuss the work schedule for each phase of the operation.
2. Survey personnel shall be given an on-site orientation by operation plant/field personnel and advised of any plant or field activities that may conflict with the survey operation.
3. Receive safe work permit from control room operator on duty in worksite area.
4. While working in plant, make sure to keep in worksite area only as described in safe work permit and do not wander into other areas as hazards may exist that are not defined in the permit.
5. If access is needed then another permit may be required or verbal permission from the operator on duty.
6. All members to read and understand conditions with all crew members listed. Make sure everyone totally understands the alarm system at worksite as they differ from plant to plant.
7. If possible survey personnel shall exchange radio/mobile frequencies with plant or field facilities so that communication lines are readily available. Contact numbers and frequencies shall be posted at all radios/mobiles. Only intrinsically safe radios are required or allowed in certain plant sites (should be programmable to same frequency as plant site).

EMERGENCY RESPONSE

1. When alarm sounds take appropriate action and proceed to the nearest assigned muster point (depending on the wind direction, as you would want to stay upwind of facility in the event of a leak) for a man count.
2. Do not go back to work until an "All Clear" alarm sounds or an operator in charge gives verbal permission. (At some plant sites, after this alarm sounds a new safe work permit may be required to continue work.)
3. Staying upwind of a facility in event of a leak should help keep you out of danger. If downwind at the time, proceed to higher ground, walk crossing wind direction.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: H2S	H2S – SWP Gas Hazards - SWP

SURVEYING RIVER CROSSINGS / BRIDGE SITES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Falling into water – Drowning(S) • Hypothermia (S) • Being swept away by current (S) • Slipping, Falling down embankments (S)	➢ Surveying River Crossings / Bridge Sites – SWP (A) ➢ CSA approved PPE (P) ➢ Hazard Assessment (A) ➢ Job Plan (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Flashing hazard/warning lights on vehicle to be used while travelling below posted speed limits Rotating/flashing yellow beacon Could require flagger depending on traffic situation Reflective vests Boat/rubber dingy, rope/safety line, repair kit for dingy	Job Plan Operator's Manual for Equipment	Job Specific training - Surveying SWP - Surveying River Crossings / Bridge Sites Valid Canadian Pleasure Craft Operators license

PPE REQUIREMENTS

							
Hard Hat	**Gloves**	**Approved life jacket or personal floatation device (P.F.D.)**	**Rubber Boots, hip or chest waders**	**Safety Glasses**			**Communication device - Radio or cell phone**

PRE-OPERATIONAL SAFETY CHECKS

- A hazard assessment is mandatory before beginning work on river crossing or bridge sites.

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY - REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE
1. Warning highway signs to be installed far in advance of oncoming vehicles to allow ample time for vehicles to slow down or stop. 2. Assess road conditions. 3. Be careful when approaching river embankments, as the area may be steep and slippery especially during wet weather conditions. 4. Be aware of hazardous footing that may possibly cause slipping or tripping especially at river bottom. 5. Ensure you have everything on the bridge survey equipment checklist
SAFE WORK PRACTICE
• Bring extra clothes to replace wet clothes. • Where a boat or an inflatable raft is required, ensure that it is functional and equipped with oars, life jackets, first-aid kit, rope, handheld radios, whistle or air horn, and bailing bucket. • Ensure workers are knowledgeable on how a motorized boat functions. Flaggers may be required. Always refer to the Traffic Accommodation Strategy for the job. • When traveling across the river with a raft, secure raft with rope to an immovable object on each side of the riverbank. If you are walking across, secure yourself with a rope to an immovable object on the riverbank and wear a P.F.D. • In winter conditions, be aware of the uneven thickness of the ice, as the thickness will vary over the modulating current. Make test holes as required to check the thickness of the ice. When walking across a river, use a safety line between workers. • If an A.T.V. or snowmobile is used for transportation of workers and materials, be extra observant for thin ice conditions. • In spring or melting conditions, be aware of falling icicles overhead when working under bridge sites. Ensure workers are wearing hard hats. • Be aware of all other vehicular traffic • Be familiar with job to be surveyed, i.e., drive the entire job limits at least once and identify any obvious hazards and/or obstructions, which you will need to be conscious of while conducting the bridge survey. Take into consideration the reduced lane width on bridges. Possible hazards may include: • sharp horizontal or vertical curves which partially or completely block view of oncoming traffic • major intersections where traffic may be entering or exiting the job site • slippery road • weather conditions • wildlife • Be aware of the hazards of working in extreme cold. Guard against hypothermia, frostbite, etc. • Dress appropriately for weather conditions • Be aware of the fact that motorist visibility may be reduced during poor weather conditions, bright sunshine, and during early morning or late evening hours. • Many motorists are not accustomed to encountering road crews during winter months when many bridge reports are completed. Extra caution and care must be taken to ensure that motorists can see you and are aware of you presence. • When reducing the speed of traffic of the vehicle, always try to pull over to the shoulder when parking, always try to park at an entrance located on the same side of the shoulder. When parking, always try to park at an entrance located on the same side of the direction of travel and located near a sag or past the crest of a vertical curve to allow passing vehicles maximum visibility. • When walking within a travel lane ensure no vehicles are nearby, all PPE is being used, repeatedly check for approaching vehicles.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES

BRIDGE SURVEY EQUIPMENT CHECKLIST

ITEMS	Yes	No	NA	COMMENT
Traffic signs (2 of each)				
Survey Crew Ahead				
Max 50 Passing Workers				
Equipment				
First Aid kit				
2 way radios with chargers				
cell phone				
emergency triangles or flares				
fire extinguisher				
basic tool kit				
Total Station with charger				
axe				
range poles				
truck beacon digital camera				
box tape				
level				
tripod				
rod				
flagging				
mallet				
hatchet				
machete				
blue bar				
iron bars				
flashlights				
Party Chief Kit				
Emergency Response Manual				
Safety Field Reports/ Pre-job Safety Assessment forms				
relevant project information				
computer with inverter				
pens/ pencils/eraser				
staples diary				
telephone list				
map of Alberta				
map of British Columbia				
county maps				
field books/sketch paper				
code book				
checklist				

EXCAVATIONS AND TRENCHING

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A CERTIFIED PROGRAM.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Cave in (S) • Slips, trips, falls (S) • Getting stuck in trench without an escape route (S) • Equipment comes in contact with buildings (E) • Hitting underground services – gas line, electrical line, etc. causing electrocution, asphyxiation – injury, death (S, H)	✓ Proper Equipment for job being completed (E) ✓ Training (A) ✓ Ground Disturbance – SWP (A) ✓ Equipment specific- owner's manuals (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Equipment Specific to job	Owner's manuals Job Plan/Permit	Ground Disturbance Certification

PPE REQUIREMENTS

							
Fall Protection	**Gloves**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**	**Safety Boots**		**Radio**

PRE-OPERATIONAL SAFETY CHECKS

- Inspect all equipment before job begins

READ THIS FIRST: IMPORTANT INFORMATION

Working around mobile equipment is very dangerous keep your distance if on the ground
ALWAYS ensure line locates are completed before job is started (CALL BEFORE YOU DIG)

SAFE WORK PRACTICE

A trench - as an elongated dug out area of ground whose depth exceeds its width at the bottom

An excavation means any dug out area of ground other than a trench, tunnel, underground shaft or an open pit mine.

1. For excavations or trenches greater than 1.5m in depth, ensure that the walls are cut back to reduce the height of the remaining vertical walls to not more than 1.5 m. Walls should be cut back to not less than 45 degrees from the vertical. Otherwise, sheeting and bracing should be used.

2. Check that the excavated materials are kept at least l meter from the edge of the excavation, and the slope of spoil piles is no steeper than 45 degrees to the horizontal.
3. Ensure that the mounding of the spoil pile does not get too excessive as the heavy loading of the pile may cause the trench or excavation walls to slip and cave in, especially in soft materials.
4. The person or persons entering a trench or excavation shall be equipped with the proper Personal Protective Equipment (PPE)
5. Workers shall not enter an excavation or trench that is deemed to be unsafe.
6. Any pipelines or conduits that have been exposed and are crossing the full width of the trench in which the trench is excessively wide shall be properly supported or shored up.
7. Before entering excavations or trenches, ensure the proper signage is in place and secure all hazards around the site.
8. Check the area for possible cave-ins or sliding of materials. Examine the soil type. If silty or sandy material is encountered, then the slopes should be cut at the flatter grade. Also watch for water seepage through the material -an indication that sloughing might occur.
9. Ensure any loose materials are trimmed from the sides of an excavation or trench where a worker will be present.
10. Check that excavations or trenching near a power pole does not reduce the original support provided for the power pole. Otherwise, the power pole should be properly anchored and supported.
11. Ensure that ladders are available for the proper ingress and egress of excavations and trenches (refer to S305: Use of Ladders) and that at least 1 m of the ladder is extending above the ground surface.
12. A worker should have another workman hold the ladder for safe ingress and egress. Otherwise, the ladder should be tied down.
13. A worker shall not descend into an excavation or trench without assigning a top person to watch for hazards above ground.

SAFE JOB PROCEDURES

HOUSEKEEPING

- Make sure the piles of debris are the required distance from the edge of the trench

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

SAFETY GUIDELINES FOR CONTRACTORS AND NON-CN PERSONNEL

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Being hit by a train –causing serious injury or death (S) • Thermal Exposure • Over Exertion – Sprains, strains, exhaustion	✓ Proper training (A) ✓ CSA Approved PPE (P) ✓ Thermal Exposure – SWP (A) ✓ Ergonomics – SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
PPE – specified by CN Tools & Equipment specific to Job being completed.	Safety Guidelines for Contractors and Non-Cn Personnel Proof of Orientation	CN Orientation CN-Risk Management Policy

PPE REQUIREMENTS

							
Safety Boots	**Gloves**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**			**Communication**

IMPORTANT INFORMATION – CONTACT INFORMATION

"Expect the movement of a train, engine, rail car or track unit at any time, on any track, in either direction. Protect yourself and others from the movement of trains, engines, railcars and track units and do not expect them to stop."

If any situation arises which affects the safe movement of trains, CN must be contacted immediately at:

1-800-465-9239.

Alternatively, contact CN's Network Operations Centre in Edmonton at:

1-800-661-3963.

Before any digging is performed on CN property, proper clearance and instructions must be obtained through the Information Technology Command Centre (ITCC Network Management Centre) at:

1-800-661-3687 or 1-800-NO1-FOTS.

In an emergency, any object waved violently by anyone on or near the track is a signal for trains to stop.

Violation of CN's "Risk Management Policy" or contravention of these guidelines may result in the immediate removal of the Contractor or the offending personnel from CN property.

SAFETY GUIDELINES FOR CONTRACTORS AND NON-CN PERSONNEL

1. Take all reasonable measures to ensure the protection of employees, customers, property, and the general public.
2. Address promptly all environmental and safety concerns.
3. Analyze all accidents or incidents resulting in, or having potential for, loss or injury, and take remedial action promptly to prevent recurrence.
4. Require all persons granted access to Company property to comply with applicable Risk Management policies, standards, and procedures.
5. Provide employees with appropriate training to enable them to work safely.
6. Inspect personal protective equipment (PPE), tools and equipment before use to ensure that they are in good working condition.
7. Contractor's employees or subcontractors performing work within the CN right-of-way must familiarize themselves with CN's Contractor Safety Package, complete a Contractor Orientation Course and must be registered on the Contractor Completion Database which can be found at the following website: http://www.contractororientation.com

CN's Risk Management policy is premised on the following:

- to work in a safe manner is a condition of employment/Contract
- all accidents or incidents resulting in loss or injury are preventable
- it is possible to eliminate or safeguard all operating conditions that may result in injury, property damage, or other losses
- employees will be provided with appropriate training to enable them to work safely
- employees and management must work jointly in efforts to promptly resolve and improve safety and health conditions in the workplace

INSTRUCTIONS

1. Before entering upon CN right-of-way, the Contractor must have all documentation properly executed and available for review by CN personnel at the working site. (i.e. Permits, Licenses, Contract Documents, Contractor Safety Approved Sticker and/or Waivers).
2. Periodic briefings must be held at every work site to review the contents of these guidelines and any unique conditions at the site relating to safety.
3. Unless explicitly permitted by CN, no equipment or vehicle may enter upon the operated right-of-way.
4. Unless explicitly permitted by CN, no work shall take place within eight (8) meters or approximately twenty-five (25) feet of the nearest rail except in the presence of a CN Protecting Foreman. The CN Protecting Foreman is concerned only with the safe movement of trains and will not be responsible for the safety of the Contractor, the Contractor's personnel or the Contractor's equipment.
5. Equipment operating within eight (8) meters, or approximately twenty-five (25) feet, of the nearest rail must come to a complete stop prior to the passage of engines, railcars, or track units.

6. No vehicle or heavy equipment may be situated or moved closer than eight (8) meters, or approximately twenty-five (25) feet from the nearest rail unless a CN Protecting Foreman has placed a block on train
7. Hi-rail" equipment shall only be operated on the track by personnel qualified in the latest version of the "Canadian Rail Operating Rules".
8. Horseplay, practical jokes, fighting, or any other activity that may create a hazard will not be tolerated.
9. Contractor's personnel shall immediately abide by instructions from CN personnel.
10. Do not wear red vests or coveralls: these are a signal for CN personnel to stop train.
11. Upon the passage of a train, Contractor's personnel shall stand no closer than six (6) meters, or approximately twenty (20) feet from any switch stand and, if possible, on the opposite side of the track.
12. Contractor's personnel shall not crawl under, climb over or pass through standing railway equipment.
13. Contractor's personnel shall not cross a track within eight (8) meters, or approximately twenty-five (25) feet, of standing railway equipment.
14. CN has many power and/or communication cables buried within the CN right-of-way. The Contractor shall be sure of their location before making any excavation, driving stakes or otherwise penetrating the ground surface.
15. In accordance with CN's safety standards, Contractor's personnel must wear CN required personal protective equipment at all times while on CN right-of-way. Such equipment will include hard hats, safety footwear (protective footwear shall meet or exceed CSA Z195 and/or ANSI 41.1, shall cover and support the ankle and have a defined heel a minimum of 13 mm (1/2 inch) and shall not exceed 25 mm (1 inch), boots must be equipped with laces, which must be laced to the top and tied), safety glasses and reflective apparel. Hearing and respiratory protection and fall arrest equipment shall be worn where signs are posted or when a potential hazard exists.
16. No CN plant, signal, structure, equipment or property of any kind may be tampered with, modified or removed.
17. "Hi-rail" equipment shall only be operated on the track by personnel qualified in the latest version of the "Canadian Rail Operating Rules".
18. Horseplay, practical jokes, fighting or any other activity that may create a hazard will not be tolerated.
19. Contractor's personnel shall immediately abide by instructions from CN personnel.

DRUG AND ALCOHOL POLICY

Contractor's personnel will be bound by the provisions of CN's "Policy to Prevent Workplace Alcohol and Drug Problems" while on CN property. All employees are required to report and remain fit for duty, free of the negative effects of alcohol and other drugs. It is prohibited to be on duty or to be in control of a vehicle or equipment while under the influence of alcohol or other drugs, including the after-effects of such use.

Policy Standards: The Contractor is to ensure that all employees and employees of sub-contractors adhere to the following standards when on CN business or premises:

1. No use, possession, distribution, offering or sale of illegal drugs or drug paraphernalia.
2. No use, possession, distribution, offering or sale of alcohol.
3. Responsible use of prescribed and over-the-counter medications.
4. No trafficking, distribution, offering or sale of prescription medications.

5. Report fit for duty and remains fit for duty.

Policy Violation Procedures: Where a CN representative has reasonable grounds to believe any individual in the employ of the Contractor is on duty in an unfit condition, or where during the preliminary phase of an investigation an individual has been identified as being directly involved in the chain of acts or omissions leading up to an accident or incident:

- The Contractor will be notified.
- The Contractor will be required to conduct the individual(s) to a safe place.
- The Contractor will investigate the situation.
- The Contractor must satisfy CN that there has been no policy breach.
- If a breach of policy has occurred, the individual(s) will not be allowed to return to any position with CN without the written permission of a CN official and will be required to adhere to any conditions regarding their return.

Consequences of Violation: Failure of the Contractor, its employees or sub-contractors to meet these standards will be considered a breach of contract.

Firearms

Firearms (loaded or empty) are not permitted on CN property, except for CN Police officers and other designated persons performing authorized work and when authorized to do so. In all cases, any firearms must be accompanied with a written authorization from the Chief of CN Police and the person should have in his possession all pertinent government permits.

Explosives

No explosives will be permitted on CN property without written CN approval.

Vehicles

Contractor's vehicles on the site must be in safe operating condition. Operators must observe all site speed limits. Unattended vehicles must not be left running unnecessarily. Where they must be left running, the hand brake must be applied. The operator is responsible for the safety of all passengers and the stability of materials being transported.

Smoking in the Workplace

Smoking is not permitted in any CN interior workplace or motor vehicle.

Security

All vehicles will be parked in a pre-determined area and where required, a designated Contractor entrance shall be used.

Contractor's personnel will proceed directly to the Contractor's work location. Contractor's employees must remain at their designated work site and must not wander about the site.

The Contractor shall not permit persons other than the Contractor's personnel to enter the site without the prior written authority of the CN representative.

Emergency Evacuation Procedures

Prior to commencing work, all Contractor's employees must be familiar with the emergency evacuation plan for that work site. The Contractor shall issue written emergency and rescue procedures to the Contractor's personnel and shall post such procedures on the job site.

Unsafe Conditions or Practices

Contractors shall correct or report any unsafe conditions or practices they observe. All such conditions or practices shall be reported to the CN representative at the work site as soon as practical.

Reporting Accidents/Incidents

All accidents/incidents occurring on CN property, that result in or had the potential of causing serious injury, lost work days, vehicle or property damage must be reported to the CN representative within twenty-four (24) hours. All such incidents will be fully investigated by the Contractor.

The Contractor shall subsequently provide a written report to CN (i.e. Company Officer assigned as Liaison to Contractor) within seven (7) days detailing the nature of the incident, the cause(s), regulatory authorities notified, and a specific action plan to prevent recurrence.

Treatment of Injured Personnel (Contractors)

Contractors shall ensure the following is provided for their personnel as required by CN and in accordance with applicable government regulations:

1. Adequate first-aid supplies and equipment.
2. Qualified personnel to render first-aid treatment.

Personal Identification

When not accompanied by a CN representative, Contractor's personnel shall carry an identification card on their person. Such identification card will be issued by the Contractor and will be of standard business card size (3-1/2" X 2"). It will contain the following information:

1. Contractor's name, address and telephone number,
2. CN representative responsible for the job,
3. Employee's full name and personal identification details (e.g. Driver's License No.),
4. Name of Contractor's representative issuing the card.

Such personnel shall also have a CN approved sticker (CN Safety Guidelines for Contractors Sticker) affixed to Contractor's personnel hard hat.

Audio and Visual Recording Equipment

Cameras and audio-visual equipment are not permitted on CN property without prior approval.

Summary

CN requires the full cooperation of the Contractor and the Contractor's employees with these guidelines and all other applicable regulations. Should there be any doubt as to the meaning or interpretation of these guidelines, consult with the CN representative responsible for the worksite.

COMPLIANCE WITH GOVERNMENT REGULATIONS

Contractors shall follow all applicable Federal, Provincial, and Municipal Acts, Regulations, Laws and Codes, including but not limited to those related to the licensing of workers, occupational health and safety, transportation or handling of dangerous substances, inspection and certification of equipment. As CN is a federally regulated enterprise, Contractors are advised that work undertaken on CN right-of-way may be governed by Federal regulation.

The Contractor shall become familiar with CN's Risk Management Policy as well as all applicable regulations and shall ensure compliance by workers at the job site. Supplementary instructions may be issued by CN representatives from time to time.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
The information in this document is from "Safety Guidelines for Contractors and Non-CN Personnel" – You must follow the guidelines whenever working on or near railroad tracks. **OHS LEGISLATION:** Federal OHS legislation	PPE –SWP Working Near or on Rail Right of Ways - SWP

WORKING NEAR OR ON RAIL RIGHT OF WAYS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Being hit by a train –causing serious injury or death (S) • Thermal Exposure (H) • Over Exertion – Sprains, strains, exhaustion (H)	✓ Proper training (A) ✓ CSA Approved PPE (P) ✓ Thermal Exposure – SWP (A) ✓ Ergonomics – SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
PPE – specified by CN Tools & Equipment specific to Job being completed.	Safety Guidelines for Contractors and Non-Cn Personnel Proof of Orientation	CN Orientation

PPE REQUIREMENTS

							
Safety Boots	**Gloves**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**			**Communication**

PRE-OPERATIONAL SAFETY CHECKS

- Make sure communication devices are working
- Inspect all tools & equipment before starting work
- Hazard identification / risk assessment of hazards inherent in the work to be undertaken or generated by the work processes to be used.
- Various controls used to mitigate risk of the hazards present both as a result of the railway and contractor work processes.
- Local communication procedures including emergency call-out / response.
- Local evacuation procedures.

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE WORK PRACTICES
• Stay alert around live tracks. • Expect movement of on-track equipment at any time. • Look in both directions before going onto any tracks. • Make sure it's safe to get on or cross the track. • Never sit, walk, step, stand, or lay on rails; including other track components such as switch points, frogs, guard rails, derails, and wheel stops. • Never cross a track in front of oncoming traffic unless you are absolutely certain there is sufficient time and space to do so safely. • When on-track equipment is approaching, stay at least 30 feet from the track while the equipment is passing. • Watch for protruding structures on passing equipment as well as other hazards. • When rail traffic is approaching move away from the track, and warn your co-workers as well. • Do not lean on, climb on, or go under any on-track equipment unless your job requires it. Then do so only after all required safety procedures, such as lockout / tagout procedures have been put in place. • Do not walk between two pieces of on-track equipment unless they are separated by at least 50 feet. • Keep at least 25 feet from the end of standing trains, cars, or locomotives. • Avoid being trapped between on-track equipment passing on adjacent tracks. • Use good judgment and common sense. • Keep alert at all times on the job.
REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
	Safety Guidelines for Contractors and Non-CN Personnel

WORKING NEAR OVERHEAD POWERLINES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Electrocution – serious injury, death (S)	✓ Legislation – Overhead powerlines, Safe Limits of approach (A) ✓ Electrical Safety – SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Equipment & tools – job specific		Working around overhead power lines

PPE REQUIREMENTS


Safety Boots


Gloves


Hard Hat


High Vis Vest


Safety Glasses

PRE-OPERATIONAL SAFETY CHECKS

- Always check distances to ensure you stay within the legal distances from high power lines

READ THIS FIRST: IMPORTANT INFORMATION

- Using proper safe practices/ procedures near power lines is absolutely necessary. Work with your supervisor and co-workers to ensure a proper safety attitude at your workplace.
- Injuries and deaths near power lines are all too common. Near misses are frequent. A voiding contact with power lines requires common sense, a strong awareness of safety factors and good decision making abilities.

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE WORK PRACTICE

- Before work begins, conduct a hazard assessment. Identify and correct hazards and to establish that the safe limits of approach distances to overhead power lines contained in Schedule 4 of the OHS Code (Alberta) and Table 19-IA & B.(British Columbia) can be maintained.

- Contact the electrical utility to determine the operating voltage of the line and confirm the safe limits of approach distances.
- Also, request assistance from the electrical utility if the work must be performed at a distance that is less than those specified in Schedule 4. In this situation, have the electrical utility disconnected or relocate the line, if needed.
- If this isn't practical or feasible, carry out the following:
- Keep an eye out for overhead lines at all times; take time to examine the hazard.
- Check the height of your equipment or load.
- Plan your moves -are there power lines to pass under or avoid?
- Before operating equipment, make a safety plan that prevents contacts with wires.
- Take extra care and precautions.
- Look out for uneven ground that may cause your vehicle to weave, bob or bounce.
- Think about wind and temperature -they may affect the power line's height.
- Never ride or climb on equipment or a load when near a power line.
- Work around power lines to be done only during daylight hours.
- Don't ground your equipment around a power line.
- Do not allow equipment or objects to approach the overhead power line closer than the safe limit of approach specified.
- If work is being carried out near the safe limit of approach, use a trained signaler to act as an observer to ensure that the required distance is maintained (communication by radio or air horn).
- Do not place materials under or adjacent to the overhead power line if it reduces the clearance above ground required by OHS regulations. Contact the electrical utility for assistance to determine the required clearance between the power line and the ground.
- Do not allow excavations to reduce the support required for power poles. Contact the electrical utility to determine support required. Request line locates in case of grounding grids buried at the base of power poles.
- Remember - electricity is invisible, don't take chances.
- Keep a safe working distance between your equipment and power lines - follow OHS regulations which require you to stay clear of power lines.
- Don't go too close with people or equipment.
- The limits are outlined in the regulations. Depending on the voltage of the power line, you need to establish a safe working distance and make sure everyone follows the guidelines shown on Schedule 4 for Safe Limits of Approach in OHS Handi-guide (Alberta) or the guidelines shown in British Columbia's OHS Regulation in Table 19-1, General Limits of Approach.

SAFE LIMITS OF APPROACH DISTANCES

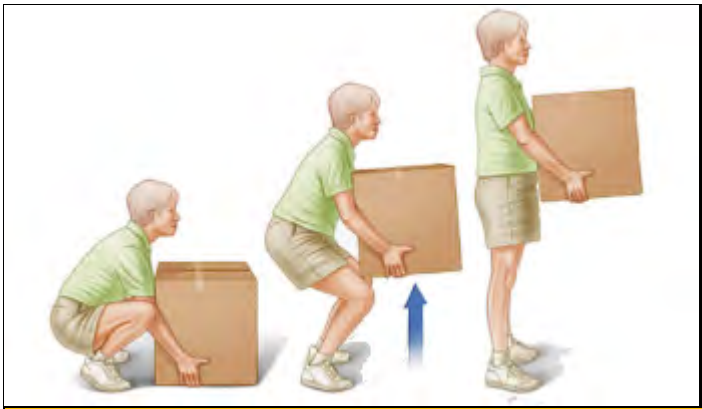
TABLE 19-1
GENERAL LIMITS OF APPROACH FROM OVERHEAD POWER LINES FOR PERSONS AND EQUIPMENT

VOLTAGE	MINIMUM DISTANCES	
Phase to Phase	**Metres**	**Feet**
Over 750 V to 75 kV	3	10
Over 75 kV to 250 kV	4.5	15
Over 250 kV to 550 kV	6	20

Operating voltage between conductors of overhead power line	Safe limit of approach distance for persons and equipment
0-750 volts Insulated or polyethylene covered conductors (1)	300 millimetres
0-750 volts Bare, uninsulated	1.0 metre
Above 750 volts Insulated conductors (1) (2)	1.0 metre
750 volts-40 kilovolts	3.0 metres
69 kilovolts, 72 kilovolts	3.5 metres
138 kilovolts, 144 kilovolts	4.0 metres
230 kilovolts, 260 kilovolts	5.0 metres
500 kilovolts	7.0 metres

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Overhead Powerlines	Electrical Safety



LIFTING, HANDLING & STORAGE

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Muscle Sprains & Strain (H) • Hand Injury – caught between/pinching (S) • Foot injury – dropping object being lifted (S) • Handling Controlled Products (H,S)	✓ SWP- Ergonomics (A) ✓ SDS (A) ✓ CSA Approved PPE (P)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Mechanical devices for heavy lifting		Safe Lifting and Handling Safe Work Practice

PPE REQUIREMENTS

Safety Boots

Gloves

PRE-OPERATIONAL SAFETY CHECKS

- Check weight of object being lifted before and if heavy get assistance or use mechanical lift or dolly
- Make sure path you are going to be taking is clear of all obstacles.
- If mechanical lift or dolly is being used make sure you inspect it before lifting to make sure it is in good condition.

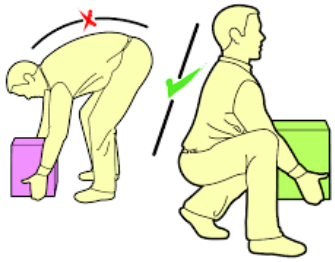
READ THIS FIRST: IMPORTANT INFORMATION

✓ Follow safe work procedures.
✓ Get help or use a device to lift or move equipment and supplies, if necessary.

SAFE JOB PROCEDURE

1. Evaluate the object you are lifting to see if it is unequally balanced, if it has handles and where the best place to grasp it is.
2. Know where you are going with the object before you begin.
3. Stand directly in front of the item that you wish to lift.
4. Center your body over it and position your feet shoulder width apart.

5. Tighten your stomach muscles and stand straight and tall, keeping your back as straight as possible.
6. Bend your knees. Without moving your upper body, squat down to the floor.
7. Grab the item you wish to lift firmly with one hand on either side of it. Hold on to it firmly and in such a way that it is balanced.
8. Use your leg muscles to raise your body to a standing position while lifting the object off the floor at the same time.
9. Lift slowly, not with a sudden jerk upward. Keep the item close to your torso, using your body to help balance the object.
10. Walk with the item without twisting your body. Stand straight and take small steps.



SAFE WORK PRACTICES

- Plan the lift before attempting.
- Make sure team members understand their role
- Use lifting equipment wherever possible
- Make sure you have a clear path to where you are going with the object before you begin.
- Have someone help you by leading the way if you cannot see where you are going to avoid running into someone or something.
- Never lift anything too heavy – use a mechanical lift or get help.
- Your back should remain straight at all times when lifting heavy objects. Use only your leg muscles to lift the object.
- When lowering the object, bend at the knees, keeping your back straight. Use only the leg muscles as you lower the object to the floor or table. Lower the item gently one side at a time to prevent smashing your fingers.
- Consider grip – would gloves or ungloved hands provide the best grip?
- Do a few stretches to limber up.
- Set position of feet close to object. This allows for better balance and keeps the center of gravity above the feet and muscles in the legs.
- Bend the knees, not the back.
- Use your leg muscles to raise your body to a standing position while
- Avoid twisting body at the trunk
- Do not bend back when squatting – try to keep the natural curve of the back. Key is to not stoop or crouch over the load.
- Keep shoulders back and butt out.
- Natural curve of back will be maintained by keeping the head up.
- Use legs for powering the lift, keeping object as close as to the body as possible, around waist level.
- Never turn until the lift is complete. Only feet should move.
- The best way to carry a heavy object is to grasp it with hands underneath, waist high and up against the body.
- When hoisting materials using a rope, be certain the materials are secured and their path up is unobstructed. Also be certain there is either a warning sign or co-worker below the direct lift area to protect those underneath.

MOVING BARRELS & CARTS

- The more supplies and tools loaded on the barrel or cart, the greater the force needed to push it, particularly on carpet.

- Materials unevenly distributed around the barrel or cart also contribute to instability. Running the barrel over uneven surfaces, such as elevator gaps or over thresholds, can cause the barrel to tip over. If the barrel tips let go of it – don't try to stop it as you can strain yourself.
- Stock the cart or barrel only with materials you will need and the barrel is less likely to tip over
- Place the most frequently used products/tools closer to you
- Set up a caddy and a caddy apron at exactly opposite sides of the barrel – weight is more evenly distributed

STORAGE

1. Dispose of waste materials on a constant basis in the proper storage bins to reduce the risks of slips, trips and falls.
2. When staking materials, use supports or blocking as necessary to ensure they do not roll or topple
3. Be certain that piled materials do not obscure or obstruct warning signs or walkways.
4. Keep flammable materials away from any heat source or open flame.
5. Supplier labels must be attached to all containers of controlled products. If missing or unreadable replace with workplace labels.
6. If putting a controlled product from one container to another, the new container must have workplace labels attached directly onto the new container.
7. MSDS for all controlled products are obtained and available through the safety department, in the warehouse storage locker, on the company server and intranet.
8. Put workplace labels on unidentified containers or tanks containing controlled products. Ensure MSDS sheets are readily available for these substances.

IMMEDIATELY REPORT ANY HAZARDS TO YOUR SUPERVISOR

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Mechanical lift or dolly - manufacturer's instructions **OHS LEGISLATION:** Lifting & Handling Ergonomics WHMIS	Ergonomics WHMIS

QUAD (ATV) SAFE OPERATION

DO NOT USE THIS EQUIPMENT UNLESS YOU HAVE BEEN TRAINED IN THE SAFE OPERATION OF THE UNIT AND HAVE BEEN GIVEN PERMISSION.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Rollover (S) • Collision (S) • Eye injuries (S) • Crush injuries (S) • Head injuries (S)	✓ Training (A) ✓ SWP- Quad Operations (A) ✓ CSA approved Helmet (P) ✓ SWP - Drug & Alcohol (A) ✓ Safework Rules (A) ✓ Legislation (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Tie-down straps (if hauling equipment	Operator's manual	Approved Canada Safety Council training course or equivalent

PPE REQUIREMENTS

Safety Boots	Gloves	Helmet	High Vis Vest	Safety Glasses	Seasonally suitable clothing		Appropriate Communication

PRE-OPERATIONAL SAFETY CHECKS

- Follow manufacturer's recommendations and warning labels
- Locate and ensure you are familiar with all machine operations, controls and warnings
- Check fuel, tyres, guards, drive line and brakes as recommended by the manufacturer
- Always tell someone where you are going and estimated time of return

READ THIS FIRST: IMPORTANT INFORMATION

- **Do not use faulty equipment. Report suspect machinery immediately.**
- **Do not drive in excessively poor conditions (weather, visibility or surface).**
- **ONLY operate a Quad if you have been trained (Training = passed an approved Canada Safety Council training course or have documented equivalent written and practical exercises**

SAFE JOB PROCEDURE

If an emergency situation occurs while conducting this task, or there is an equipment malfunction

1. shut the equipment off immediately
2. report to supervisor

1. COMPLETE YOUR PRE-OPERATIONAL SAFETY CHECKS

- Follow manufacturer's recommendations and warning labels.
- Locate and ensure you are familiar with all machine operations, controls and warnings.
- Check fuel, tyres, guards, drive line and brakes as recommended by the manufacturer.
- Always tell someone where you are going and estimated time of return

2. PERFORM A PRE-RIDE INSPECTION

- A Pre-Ride Inspection must be performed on all ATV's prior to riding and documented on your daily FLHA's. Any ATV that does not pass a pre-ride inspection must be returned after being Locked-Out-Tagged-Out for repair prior to anyone operating that machine.
- An easy way to remember what to check before riding is the acronym T-CLOC.
- Follow the T_CLOC Inspections (below) when inspecting your machine.
- If any defects are found that affects the safe operating of the machine – DO NOT OPERATE & report defects immediately to your supervisor

3. DURING JOB

- Do not carry passengers or any load that is not suitable and secured.
- Observe speed limits and no-go areas.
- Drive at speed slow enough to keep control over unexpected hazards.
- Travel up/down slopes rather than across, taking extra care when ascending or descending slopes or riding over uneven ground.
- Take care when refuelling to avoid spilling fuel onto hot motor or exhaust.
- Ensure no person or animal is endangered when operating equipment.
- Advise your supervisor of any mechanical problems and do not ride a quad bike that is not in good repair

4. WHEN NOT IN USE

- Park on even ground.
- Lock the parking brake.
- Stop the engine and remove the keys.

5. AFTER USE

- Remove any foreign material from in and around engine parts.
- Wash unit
- Check for damage and report if found.

SECURING LOADS

- Secure loads on the ATV with quality straps and cords.
- If straps are worn, discard and replace.
- Do not overload the ATV - see manufacturer specifications.
- Do not ride on the load.
- A 4 point tie-down must be used at all time when transporting an ATV.

LOADING AND UNLOADING A.T.V.

- There is no guaranteed safe way to load and unload Quads, only the safest way in each different circumstance.
- Loading and unloading ATVs is hazardous and should only be completed by a competent rider.
- Wear safety helmet with chin strap fastened in place and necessary

- Use a spotter or someone to assist you. Spotter to stay clear of ATV's travel route.
- Park truck on level ground. Make sure brakes and throttle are working properly.
- Truck should be clear and free of any obstacles. Ensure ATV will fit in the tuck then proceed with extra caution.
- When completed, ensure ATVs cannot move or roll using wedges, straps, and tailgate. Lock the brake. **Note:** In winter, brakes tend to freeze up.
- Once loaded, ensure that the park brake is on and the quad is fastened down securely with a four point tie down.

With Ramps

- Ramps are supplied at office so no lifting is required.
- Attach ramp to tailgate or deck and ensure it is secured. Ensure ramp is level. Make sure ramp is free of ice, snow, sand or water.

No Ramps

1. Without ramps, quads can still be loaded safely by backing to a ditch or abutment of some type.
2. Quads should never have to be lifted into the truck with the tailgate being more than 2 feet above the ground.
3. If lifting is required, use proper lifting techniques, always keeping legs bent and back straight.

Loading & Unloading When Using a Trailer

1. Make sure ramp is securely attached to trailer.
2. Make sure trailer is free of obstacles.
3. Make sure trailer is secured to truck. Verify that hitch is fully attached to truck with tongue lock secured. Trailer may pop up or back when ATV is first placed on trailer.
4. When task completed, make sure brakes are locked on ATVs, and that suitable straps are secured and ramp is secured.
5. Before proceeding, take a walk around truck and trailer making sure straps are secure, trailer is attached to truck securely, safety chains are attached and will not interfere with turning radius of truck and all lights are working.

Loading & Unloading In The Field

1. Make sure ramp is secure.
2. Use opposite type slope if possible to reduce the ramp incline.
3. Make sure ramps are free of ice, snow, sand and water.
4. Use same procedure if loading and unloading in parking lot.

RIDING IN THE FIELD

- Always tell someone where you're going and when you expect to return. In winter, watch out for thin ice which may be camouflaged by snow. Use antenna flags in hilly areas and wear bright clothing to increase conspicuity.
- Use maps, a compass, and/or a handheld GPS if you are riding in an unfamiliar area.
- Make a mental note of landmarks.

- If lost at night, do not move around, save valuable fuel for daylight hours when you can ride to safety.
- Obey posted signs and respect landowners or wilderness reserve areas.

GETTING TO THE BOTTOM

Scan terrain carefully prior to picking a safe route down.

It may require dismounting and walking the slope first as some hills and or river (creek) banks are too steep to descend at a particular location.

When choosing the route down these are the options to consider:

- Is there a "shoefly" diversion that was used by previous activity in the area? (This is typically the preferred access option.)
- Are there ditch blocks traversing the hill? (See below for definition.)
- If the terrain allows safe descent, you should do the following:
    - Check brakes.
    - Choose a path that is straight downhill as much as possible with a minimum of obstacles.
    - Shift your weight to the rear and use a low gear.
    - Use gradual braking (back brakes first and then the front brakes).
    - Continue scanning the terrain as you proceed.

DITCH BLOCK HAZARDS

This hazard is an erosion control devise on the hillside typically angled to direct water flow off the Right-of-Way. For crossing these hazards two options should be considered:

1. The preferred method should be to use the ditch block swale to traverse down the slope avoiding the hazard.
2. The last option is to approach the swale orientating your ATV so it is perpendicular to the ditch block. Then proceed with extreme caution crossing the high point on the ditch block.

RECOMMENDATIONS WHEN UNLOADING

1. Winch or come-along up or down.
2. Leave ATV in 1st gear or reverse.
3. Keep wheels straight and in line with ramps.
4. Reduce the grade of the ramps by unloading A TV's on a side slope. If possible, keep hand on a brake.

SAFE WORK PRACTICE

- All ATV's must be properly maintained by qualified technicians and records must be kept verifying that the maintenance of the machine is being completed according to the manufacturers' specification. These records must be centrally located and available for inspection by the operator. Mechanical alterations are not allowed for any machine being used in the workplace.
- Before operating an ATV, operators must have taken proper instruction and be qualified competent by a qualified and competent instructor.
- Each rider must assess their skill and experience with A TV's when choosing the safest route. ALWAYS decide on the side of caution; if you have to think about it for too long it is probably best to look for an alternate place to cross.
- All ATV's must be equipped with a first aid pack, fire extinguisher, shovel and a repair kit.
- Never operate an ATV on a public roadway or any concrete surface.
- Never consume alcohol or drugs before or while operating an ATV.

- Never lend your ATV to anyone who has not completed a recognized training course.
- Never carry passengers on an ATV (unless specifically designed for that use).
- Never carry passengers on fore or aft racks.
- Avoid parking on a slope or hill when parking an A TV
- A copy of the owners' manual must be with the machine, or accessible at all times.
- Registration and insurance must be with the machine at all times.
- Always apply the parking brake when dismounting your ATV and chock tires. Do a pre-trip check of machine – Follow **T-CLOC** format for inspecting
- Check for spares – spark plug, and tools.
- Travel plan must be completed and left with another person so they know where you are.
- Always work in pairs if using quads. If going out alone is unavoidable make sure you follow the work alone procedure and have specified check-in points.
- Drive at safe speeds according to conditions.
- When braking use both brakes together.

- Gear down for hill decent.
- Reduce speed for ditches, berms, and obstacle climbing.
- Lean into turns; lean into hills.
- Keep your feet on the pegs at all times-Do not use your feet to control the ATV.
- If riding on pavement shift out of 4 wheel drive; and use extra caution.
- Be alert for branches and overhead hazards.
- Do not operate an ATV if it is mechanically defective.
- Conduct a post trip check and have deficiencies rectified.
- Should an ATV be used that has a roll-over protection system, it must have seatbelts and the operator and passenger(s) must use them.
- Should falling objects be an identified hazard any machine identified in must have an overhead guard.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: All-Terrain vehicle legislation	Pressure washing - SJP

ATV Pre-Ride Inspection - T-CLOC		
T	**TIRES & WHEELS**	Air pressure - Always have the recommended tire pressure. Be sure front tire(s) and both rear tires are inflated to equal pressure. If the tire pressure on one side is higher than the other side, the vehicle may pull to one side. Condition - Check for cuts or gouges that could cause air leakage To avoid loss of control or injury, make sure axle nuts are tightened and secured by cotter pins. Check these before every ride.
C	**CONTROLS AND CABLES**	Controls - Check the location of all the controls by sitting on the A TY. Make sure they work properly. Throttle and other cables - Make sure the throttle moves smoothly and snaps closed with the handlebars in any position. An off-road environment is hard on cables. Brakes - Do the controls operate smoothly and are the controls adjusted according to the owner's manual? Are they positioned for easy reach? Your brakes are a crucial part of riding and must always be in tip-top condition. Foot Shifter- Is it firmly attached and positioned for safe operation?
L	**LIGHTS AND ELECTRICS**	Ignition switch (if so equipped) - Check the condition of the switch and make sure it works properly by switching it off and on during your warm-up period. Engine stop switch - Does it tum off the engine? Headlight and taillight (if so equipped) - are they working? You could be caught out after dark.
O	**OIL & FUEL**	Do not get stranded because you are out of oil or fuel. Know your A TV's cruising range. Check oil level with dipstick or sight glass while the engine is off. Check your owner's manual for procedure. Always start your ride with a full fuel tank. Check for fuel or oil leaks. Take off the filter cover and check the condition of the air filter element. Be sure it is clean and not torn or blocked.
C	**CHAIN AND DRIVE SHAFT CHASSIS**	Chain- Inspect, adjust and lubricate the chain regularly. Your chain is the vital link from the engine to the wheels. Check for chain slack or free play so that it is within specifications as described in your owner's manual. Drive shaft- If your ATV is equipped with a drive shaft rather than a drive chain, check for oil leaks. Maintain its oil supply as outlined in your owner's manual. Nuts 'n' bolts - Riding in rough terrain will loosen parts. Look and feel for loose parts while the engine is off. Shake handlebars, footrests, etc., before each ride and periodically check fasteners.

USE OF SNOW MACHINE

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Exposure to cold temperatures • Loose clothing getting caught in track • Impairment • Speed & Careless Operation • Crossing Roadways & Railways • Ice on rivers/lakes • Avalanches	✓ Proper training ✓ Wear proper insulated CSA approved PPE (P) ✓ Drug & Alcohol – SWP (A) ✓ Safework Rules (A) ✓ Legislation (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Equipment used for specific job	Operator's manual	Machine Specific training – safe operatiing

PPE REQUIREMENTS

Helmet	**Gloves**	**High Vis Vest**	Long sleeved and long pants – NO loose fitting, dangling clothing	**Safety Glasses**	**Safety Boots**		**Cell Phone or other Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Always inspect machine before use

READ THIS FIRST: IMPORTANT INFORMATION

✓ **Always Wear The Lanyards (Tether Cords) With Emergency Shut Off.**

SAFE JOB PROCEDURE

Most of our employees have taken a one day safety course and are well aware of the procedures to follow while riding.

If you have no experience:

- If you have no experience:
- read owner's manual, and
- read safety book from course
- Once reading is completed:
- the party chief will demonstrate the procedures on the snow machine in an open field
- the student may then practice the skills he has studied with the party chief correcting any mistakes
    - the student will find the snow machine very easy to operate and should have no problems if they are careful

SAFE WORK PRACTICE

LOADING AND UNLOADING A SNOW MACHINE

Loading

- Ramps for snow machines generally are not used but there is no reason a machine cannot be loaded safely into the back of a truck with the help of three or four people.
- If only two people are around to lift the machine, a snow bank can always be found and the lifters should never have to lift any higher than 2.5 feet to the tailgate.

Unloading

- Two people can unload by pulling or sliding the machine backwards out of the truck until the skis come to rest on the ground.

Performing a Pre-ride Inspection (T-CLOC Inspection)

- Ensure that you are properly dressed; tell someone where you are going and travel with a buddy -two people, two machines.

Check the fuel and oil levels

- Check throttle operation before starting the units ... make sure it snaps back to the idle position without any restrictions
- In an oil injection or rotary valve engine, the oil levels should be checked and filled if necessary. Don't rely on gauges, flip the gas and oil filler cap
- Do not check fuel level with a match -use a flashlight
- Make sure suspension parts are not frozen and can move freely
- There should not be any foreign objects lodged in the suspension assembly or track tunnel
- Check for loose bolts or defective parts
- Make sure brake lever operates properly
- Check the proper operation of the steering system by moving the skis manually from right to left
- Check the drive belt and track for wear
- On liquid cooled models, check coolant levels and hoses
- Ensure the hood is fastened
- Spare parts and tools should be secured on machine

Reduce the risk of the throttle sticking

- Add 100 ml (5oz) of Fuel Drier (De-ice) to every tank of gas.
- When there is deep powdery snow conditions block off the nose vents to stop the snow from accumulating in the engine compartment. The vents can be blocked off with duct tape thereby creating a higher operating temperature reducing the likelihood of the carburetor icing.
- ALWAYS WEAR THE LANYARDS (TETHER CORDS) WITH EMERGENCY SHUT OFF.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES

SNOW REMOVAL

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

RISK LEVEL	HAZARDS	CONTROL MEASURES
MEDIUM Risk	• Slips trips (S) • Rotating equipment – on snow blowers (S) • Flying Debris (S) • Medical Emergencies – unfit to perform task (S) • Thermal Exposure – frost bite, hyperthermia (S) • Noise (S)	✓ Well maintained equipment/tools (E,A) ✓ Manufacturer's safe operating instructions (A) ✓ Safe Work Practices (A) ✓ P.P.E. – CSA Approved (P)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
Snow blower Skidsteer/Bobcat Shovel	SDS	Job Specific – equipment operations WHMIS - Fueling

PPE REQUIREMENTS

Safety Boots with ice picks	Leather Gloves	Safety Glasses	Hearing Protection	Thermal insuplated PPE			

PRE-OPERATIONAL SAFETY CHECKS

- Always inspect equipment or tools before performing job

READ THIS FIRST: IMPORTANT INFORMATION

- Safety Boots with ice picks are required when shoveling or snow blowing
- If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

SAFEWORK PRACTICES

Snow removal can be a difficult task when working in small areas that have heavy pedestrian traffic. Here are some tips that will help keep everyone safe.

PLAN AHEAD

- Before you begin removing & piling snow, have a plan
- Know where entries and exits are
- Mark all obstructions before removal begins
- Be sure to also mark the drainage areas
- Be aware of varying ground elevations in the area you are working removing snow
- Never pile snow in front of entries or exits
- Never pile snow in an area that will block the view of traffic or pedestrians
- Snow piles should be kept a minimum of 3 feet away of fire hydrants
- Never pile snow in the middle of a parking lot where it can cause visibility issues for traffic
- Do not pile snow around designated parking spots
- Never pile snow on an incline where it can melt and possibly refreeze, creating additional hazards

REMOVING SNOW WITH SKIDSTEER/BOBCAT

- Make sure you have been trained in the safe operation of the machine you are going to be operating.
- Don't remove snow when ground workers are in the area. Clear the area first.
- Always watch out for pedestrians
- Follow manufacturer's safe operating instructions
- Never operate equipment unless you have been trained and are deemed qualified by company appointed instructor.
- Follow Skidsteer/Bobcat SWP

SNOW BLOWER

- Disengage the clutch and shift to neutral before starting the motor.
- Ensure the auger control and engine kill switch are working properly.
- Point auger in direction you want the snow to blow
- Start machine
- Proceed slowly watching ahead for hidden hazards and foreign objects, vents.
- Walk slowly, maintain a good footing and keep a firm hold of the handles.
- Proceed slowly in heavy snow to avoid chocking the machine or stalling the engine.
- Turn off the machine if a person enters the work area or a foreign object appears in your path.
- Stop the engine if the machine begins to vibrate abnormally, disconnect the spark plug wire and check for the cause of the vibration.

SNOW BLOWER

- Ensure you are dressed for the weather. Thermal clothing required
- If the auger or discharge chute becomes clogged turn off the engine, disconnect the spark plug wire and use a stick or tool to pry out the clogged snow. Do not put your hand in the chute.
- When job is complete shut off snow blower
- Allow engine to cool before storing.
- Never point auger in direction where other people may be
- Stop immediately if someone comes into area where snow blowing is taking place.

SHOVELING SNOW

- Make sure you are physically fit enough to perform the job.
- Tell your supervisor if you have a reason you should not be shoveling due to health concerns
- Dress for the weather in insulated clothing
- Take frequent breaks
- Work in as upright position as possible – use a shovel with a long handle, bending over at the waste adds strain to your heart & lungs so stand upright as much as possible.
- Keep the shovel close to your body
- Space your hands on the shovel to increase leverage
- Shovel an inch or two off the top of the snow
- Use a shovel that feels comfortable for your height and strength
- Squat with your legs apart, knees bent and back straight
- Lift with your legs...do not bend at the waist
- Scoop small amounts of snow into the shovel and walk to where you want to dump it

Do not:

- Hold a shovelful of snow with your arms outstretched – it puts too much weight on your spine
- Remove deep snow all at once
- Throw the snow over your shoulder or to the side – this requires a twisting motion that stresses your back
- Use a shovel that is too heavy or too long

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Manufacturer's operating instructions **OCCUPATIONAL HEALTH AND SAFETY:** Mobile equipment Personal Protective Equipment	Skidsteer/Bobcat Thermal Exposure Lifting & Handling Lockout/Tagout PPE

SALTING SIDEWALKS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

RISK LEVEL	HAZARDS	CONTROL MEASURES
LOW Risk	• Debris in the eyes • Slip/trip • Pedestrian traffic	✓ Administrative – SOP, SWP, SDS, ✓ P.P.E. – CSA Approved

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
	Salt	Operator Job Specific Training

PPE REQUIREMENTS

		
Safety Boots with ice picks	Leather Gloves	Safety Glasses

PRE-OPERATIONAL SAFETY CHECKS

-

READ THIS FIRST: IMPORTANT INFORMATION

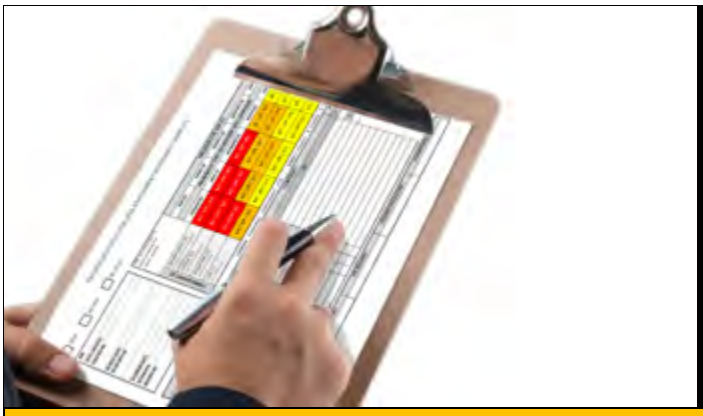
➢ If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

SAFE JOB PROCEDURES

1. Ensure that you are wearing the proper PPE
2. Scan the intended work area for any potential slip/fall areas and note their location
3. Remove any excess snow that may be on the steps/sidewalk
4. Use a hand held spreader or scoop to apply the de-icing compound at a rate of approximately 114 grams (about 4 ounces) per square meter ensuring a light even coating
5. Avoid piling and overspreading as this will result in a loss of material
6. Allow the de-icer to soak in for about 10 or 15 minutes and remove the resulting slush or water with a shovel or stiff broom.
7. If there is no melting occurring after 10 or 15 minutes, then it is too cold for the de-icer.

SAFEWORK PRACTICES /
SAFE WORK PRACTICES • Check to make sure de-icer is not a controlled product under WHMIS. • If a worker has skin sensitivity which would be characterized by itching, scaling or reddening then hand protection in the form of Neoprene Nitrile Rubber gloves is recommended. • The worker must also be aware of dust forming through the use of this product and the product must be used in a well-ventilated area. • The use of safety eyewear will be determined by the worker. • If the weather forecast is for rain or snow, consider a pre-application of the de-icer to prevent ice from bonding to the surface for easy removal. • Review the MSDS for the material, especially the de-icer being used • Review the labeling instructions before use
REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: WHMIS	WHMIS



PRE-CONSTRUCTION INVENTORIES (HAZARD ASSESSMENT)

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Sharp horizontal or vertical curves which partially or completely block view of oncoming or trailing traffic (S) • Major intersections, including businesses, where traffic may be entering or exiting the job site (S) • Railway crossings (S) • Slips trips falls (S) • Mobile equipment (S)	✓ Proper PPE (A) ✓ Hazard Assessment Checklist (A) ✓ Flashing hazard/warning lights on vehicle (E) ✓ Rotating/flashing yellow beacon (E) ✓ Traffic signs (E) ✓ Traffic cones(E) ✓ First Aid Kit (A) ✓ Fire Extinguisher (E) ✓ Emergency Response Plan (A) ✓ Communication Device (E)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Flashing hazard/warning Rotating/flashing yellow beacon Traffic signs (i.e., Testing crew ahead, Max 50 passing workers) Traffic cones First Aid Kit Fire Extinguisher Two-way radios (if required) Cellular phone Emergency triangles or flares Basic tool kit Other tools as required for job at hand	Job Plan Hazard Assessment Emergency Response Manual	Job Specific – mentoring, SWPs, SJPs

PPE REQUIREMENTS

Safety Boots	**Gloves**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**	Coveralls	Cell Phone	**Radio**

PPE must be in compliance with individual contractor safety standards while on job site

PRE-OPERATIONAL SAFETY CHECKS

- stablish minimum safety standards when conducting pre-construction inventories
- Inspect all sites involved in job - before work begins
- Complete the hazard assessment on site

READ THIS FIRST: IMPORTANT INFORMATION

SAFE JOB PROCEDURE

1. List all jobs on site
2. List all equipment to be used
3. List all processes being completed
4. List all hazards to each of the above
5. Rate the risk of each hazard
6. List all controls for the hazards
7. Ensure controls are in place before job is started
8. Communicate to all workers the hazards and controls to be used to prevent injury to workers or damage to equipment

SAFE WORK PRACTICE

- Flashing hazard/warning lights - on vehicle to be used while travelling below posted speed limits and within posted construction zones
- Workers must have communication devices for emergencies as well as to warn others about hazards in area.
- Be aware of construction or maintenance vehicles.
- Always be aware of vehicular traffic.
- Be familiar with the projects to be inspected, i.e., drive the entire job limits at least once and identify any obvious hazards and/or obstructions, which you will need to be conscious of while conducting the inventory.
- Beware of the fact that motorists' visibility may be reduced during poor weather conditions, bright sunshine, and during early morning or late evening hours.
- Always use your vehicle's flashers and beacon when stopped alongside the road or anywhere within the right-of-way.
- When reducing the speed of the vehicle on a public highway, always try to pull over to the shoulder. When parking, always try to park at an entrance located on the same side of the direction of travel, and located near a sag or past the crest of a vertical curve to allow passing vehicles maximum visibility.
- When walking within a travel lane, ensure no vehicles are nearby there is maximum site distance for approaching vehicles necessary for safe stopping conditions; all required PPE is being used repeatedly check for approaching vehicles.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

CONDUCTING SURVEYS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Traffic hazards (S) • Mobile equipment hazards (S) • Trips, Slips, Falls (S) • Strains, sprains (H)	✓ PPE – CSA Approved (P) ✓ Signage (E) ✓ Flashing Warning Lights (E) ✓ Safe Work Practices (A) ✓ Safe Job Procedures (A) ✓ Relevant Job Documentation (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Flashing hazard/warning lights on vehicle to be used while travelling below posted speed limits. Rotating / flashing yellow beacon Fire Extinguisher Computer with inverter Portable printer Pens / pencils / eraser Stapler, tape, paper clips Surveying Equipment	• Emergency Response Manual • Safety Field Report/Pre-job Safety Assessment • Time Sheets I Survey Crew Daily Report Forms • Relevant project information • Standard Specifications for Highway Construction Manual and Amendments • Standard Drawings for Highway Construction (Signs) • Diary • Telephone list • Maps of AB, BC • Field book	Ground Disturbance Traffic Control

CONSTRUCTION SURVEYS EQUIPMENT CHECKLIST

- Traffic Signs (2 of each) reference ATT-59, ATT signing (required only if working within the contractor's work zone).
  - SURVEY CREW AHEAD
  - ONE LANE TRAFFIC
  - MAXTh1UM 50 AHEAD
  - MAXIMUM 50 PASSING WORKERS
- Chainsaw (if required)
- Axe
- Range poles
- Truck beacon
- Box tape
- Chains
- Transit
- Stakes
- Tripod
- Sledge
- Rod
- Flagging

• If flag persons are to be used, additional signing is required. o FLAG PERSON AHEAD o BE PREPARED TO STOP o REDUCE SPEED AHEAD • Traffic cones (6 or more as necessary) • First Aid Kit • Two-way radios with charger • Cellular phone • Emergency triangles or flares • Fire extinguisher • Basic tool kit • Total station with charger • Right angle prism	• Clinometer • Level • Orange Paint	• Mallet • Hatchet • Machete

PPE REQUIREMENTS

							
Hard Hat	**High Vis Vest**	**Safety Boots**	Hearing Protection	**Safety Glasses**			**2-way Radio**

PRE-OPERATIONAL SAFETY CHECKS

PARTY CHIEF KIT

- Emergency Response Manual
- Safety Field Report/Pre-job Safety Assessment
- Time Sheets I Survey Crew Daily Report Forms
- Relevant project information
- Standard Specifications for Highway Construction Manual and Amendments
- Standard Drawings for Highway Construction (Signs)
- Computer with inverter
- Portable printer
- Pens / pencils / eraser
- Stapler, tape, paper clips
- Diary
- Telephone list
- Map of Alberta, Map of British Columbia
- Field book

PRELIMINARY SURVEY DETAILED CHECKLIST

The following list should be completed by the survey crew. Any items with a "No" response should be rectified prior to departure.

Are the Pre-job Safety Assessment form and Project Safety Field Report completed in full?

☐ YES ☐ NO

Is the required Personal Protective Equipment (PPE) available and in good repair?
☐ YES ☐ NO
Are the proper signs loaded and in good repair?
☐ YES ☐ NO
Is the required additional equipment available?
☐ YES ☐ NO
Are all necessary items for the crew kit available?
☐ YES ☐ NO

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE WORK PRACTICE

- Beware of construction vehicles (if any)
  - Gravel trucks
  - Other testing, surveying, or construction vehicles
- Beware of all other vehicular traffic.
- Be familiar with the job to be surveyed.
- Drive the entire job limits at least once prior to job start and identify hazards and/or obstructions which you will need to be conscious of while conducting the preliminary survey.
- Possible hazards may include:
  - Sharp horizontal or vertical curves which partially or completely block the view of oncoming traffic
  - Major intersections, including businesses, where traffic may be entering or exiting the job site
- Watch out for wildlife (bears, etc.) especially when working in heavily wooded areas
- Be aware of the hazards of working in extreme cold. Guard against hypothermia, frostbite, etc. Be aware of the hazards of working in extreme heat. Guard against dehydration, sunstroke, sunburns, etc.
- Be aware of the fact that motorist visibility may be reduced during poor weather conditions, bright sunshine, and during early morning or late evening hours. In addition, many motorists are not accustomed to encountering road crews during winter months when many preliminary surveys take place. Therefore, extra caution and care must be taken to ensure that motorists can see you and are aware of your presence.
- Watch for sudden drop offs if on new terrain. Also be aware of such possible hazards as barbed wire hidden beneath snow, or barbed wire fences in poor condition.
- When reducing the speed of the vehicle, always try to pull over to the shoulder. When parking, always try to park at an entrance located on the same side of the direction of travel; and located near a sag or past the crest of a vertical curve to allow passing vehicles maximum visibility.
- When walking within a travel lane, ensure no vehicles are nearby; all required PPE is being used; repeatedly check for approaching vehicles.
- Contact the office and/or RCMP immediately if motorists are not following posted signage and speed zones the same side of the direction of travel and located near a sag or past the crest of a vertical curve to allow passing vehicles maximum visibility.
- When walking within a travel lane, ensure no vehicles are nearby; all required PPE is being used repeatedly check for approaching vehicles.
- Contact the office and/or RCMP immediately if motorists are not following posted signage and speed zones.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

PROJECT MANAGEMENT

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RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Traffic hazards • Mobile equipment hazards • Trips, Slips, Falls • Strains, sprains	✓ PPE – CSA Approved (P) ✓ Signage ✓ Flashing Warning Lights ✓ Safe Work Practices ✓ Safe Job Procedures ✓ Relevant Job Documentation

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
• Traffic Signs (2 of each) reference ATT-59, ATT signing • First Aid Kit • Two-way radios with charger • Cellular phone • Emergency triangles or flares • Fire extinguisher • Basic tool kit	• Emergency Response Manual • Safety Manual • Diary • Field books • Time Sheets • Safety Reports	Project manager training Ground Disturbance Traffic Control

PROJECT MANAGEMENT EQUIPMENT CHECKLIST		
Safety Manual Laptop with portable printer Camera Ce11ular phone Diary Emergency Response Manual Clipboard Field books 4/5" briefcase Scales - metric, imperial Set of squares (45 degrees, 30-60 degrees) Protractor - 6"	Scientific calculator Paper (engineering, blank, etc.) Telephone list Manual of Standard Practice Map of AB & BC French curve Pencils, pens, highlighters, erasers, liquid paper, stapler (including staples), scissors, etc. Scotch tape Time Sheets Safety Reports Tool box with tools	Standard Specifications for Highway Construction Measuring tape (30 metres or more) and box tape Safety equipment (hard hat, vest, boots, etc.) Road chalk and felt markers Spray paint Traffic cones First aid kit Fire extinguisher Safety Inspection Report

PPE REQUIREMENTS							
							
Hard Hat	**High Vis Vest**	**Safety Boots**	Hearing Protection	**Safety Glasses**			**2-way Radio**

PRE-OPERATIONAL SAFETY CHECKS

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

SAFE WORK PRACTICE

- Beware of construction vehicles (if any)
  - Gravel trucks
  - Grader/dozer working on side slope, etc.
  - Other testing, surveying, or construction vehicles
- Beware of all other vehicular traffic.
- Be familiar with the job to be surveyed.
- Drive the entire job limits at least once prior to job start and identify hazards and/or obstructions which you will need to be conscious of while conducting the preliminary survey.
- Possible hazards may include:
  - Sharp horizontal or vertical curves which partially or completely block the view of oncoming traffic
  - Major intersections, including businesses, where traffic may be entering or exiting the job site
- Periodically, as construction work progresses on the job, a reassessment of safety hazards will need to be conducted as new hazards or safety concerns arise.
- Fill out the Project Manager Construction Safety Checklist on a weekly or daily basis as determined by the Project Manager.
- When reducing the speed of the vehicle, always try to pull over to the shoulder.
- When parking, always try to park at an entrance located on the same side of the direction of travel; and located near a sag or past the crest of a vertical curve to allow passing vehicles maximum visibility.
- When walking within a travel lane, ensure: no vehicles are nearby; there is maximum site distance for approaching vehicles; all required PPE is being used. Repeatedly check for approaching vehicles.
- Contact the office and/or RCMP immediately if motorists are not following posted construction signage and speed zones.
- Follow SWP-Excavations & Trenching, when working near culvert excavations.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

WALKING IN FIELD OPERATIONS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Slips, trips (A) • Strains, sprains (H)	✓ Ergonomics – SWP (A) ✓ CSA Approved PPE (A) ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED

PPE REQUIREMENTS

High Vis Vest

Safety Glasses

Safety Boots

Hard Hat

Communication Device

PRE-OPERATIONAL SAFETY CHECKS

- Check ground conditions

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE WORK PRACTICE

GENERAL

- Avoid areas of tall grass. If it is necessary to walk in areas of tall grass, slow your pace, taking deliberate and cautious strides. The purpose for this is to avoid falling into potholes and tripping over obstacles, both very difficult to see in tall grass.
- If possible, walk on an established path (to minimize damage to terrain). Wear rubber boots on wet days for protection, traction and comfort. Rubber boots will allow you to walk through puddles and small streams instead of trying to jump over them.

- On construction sites you should be aware of waste lumber containing nails.
    - Puncture wounds from nails can be painful, difficult to heal and become infected easily.
    - If working after a fresh snow fall in a construction area containing nails, adopt a "shuffle walk". The steel-toe on your boots will bend the nail first, preventing it from penetrating the sole.

- Deadfall-Dead Slow
- Allow extra time to negotiate areas where trees are blown and/or burnt. If you proceed at a normal pace in a deadfall area, you could slip on fallen logs.
- Traffic and Heavy Equipment
    - Remember to be seen (make eye contact with operator)
    - Be careful around farm yards, machinery and livestock
    - Remember traffic is a danger even on minor country roads
- Be aware of the consequences of changes in the weather and check the forecast

WALKING IN COLD WEATHER

Use these tips to prepare yourself and take care when out walking in icy or snowy conditions.

- Concentrate on your walking and take small steps - walking at a slower pace than normal increases your traction and can greatly reduce your chances of falling.
- Be aware of where you are going - always watch for hazards and dangers such as ice on steps, pavements, and pathways.
- Don't Rush. Move at a speed that feels comfortable and remember to shorten your stride. Give yourself lots of time to get where you are going. Keep one hand free for your balance. Use handrails when available for going up or down steps and take care to plant your feet firmly on each step. Wear good footwear with treads - these are designed to provide a better grip in wet and slippery conditions. Alternatively, you can try shoe chains or ice grippers which are designed to provide traction on ice and snow; however they are not suitable for walking on normal surfaces because the chain links provide unstable footing.
- Stay alert - look out for icicles hanging from house eaves, sheets of ice on sloping roofs that may be melting if the sun is out.
- Don't carry a heavy backpack as this will alter your center of balance, reducing your stability.
- Brighten up your outer gear by wearing a safety vest; this makes you more visible to drivers.
- If the sun is bright, wear sunglasses. They help you see better through any glare and avoid hazards, and also protects eyes from harsh sunlight.
- Give yourself the equivalent of four legs by using walking poles, which will reduce the chances of slips and give you extra stability in extremely icy conditions.
- Remember that it is important to keep your head warm when walking in cold winter weather - you can lose about 20% of your body heat from your head. Hats also shield your head from the sun, and the visor will protect your face from both the sun and rain.

WALKING IN WARM WEATHER

Walking in the heat can have dangerous consequences. Follow these guidelines to stay safe.

Water

- When walking in warm weather it is very important to take plenty of water with you. Drink small amounts of water often. Even if you don't feel thirsty you should still have a drink at least every 15 minutes.
- Remember that approximately 68% of your body is made up of water. You only have to lose 2% of your body weight in fluids and you will start to feel hot and your heart rate increases.
- Heat stroke and heat exhaustion potentially are very serious so if you get a headache or feel dizzy, stop walking immediately, have a rest, a drink of water and try to cool down.

Clothing

- A hat is essential for providing protection against sunburn and sunstroke. Protect your eyes with sunglasses that block UV A and UV rays.
- Wear clothes that are light coloured as this helps to reflect the sun's heat.

- Ideally, wear a fabric that wicks away moisture from your skin to the outside of the material, where it will evaporate.
- Don't wear tight clothing - go for a loose top and lightweight trousers and a cool long sleeved shirt to protect you from the sun's rays.
- Don't forget your sunscreen. Wear SPF 15 or above, and reapply frequently if you are sweating heavily.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

ROAD CONSTRUCTION

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Mobile equipment – run into, run over causing severe injury, death • Workplace violence • Overhead powerlines – electrocution • Getting hit by vehicles – severe injured or death • Extreme Temperatures • Dust	✓ Signage (E,A) ✓ Cones (E,A) ✓ CSA Approved PPE – (P) ✓ Safework Practices (A) ✓ Safe Job Procedures (A) ✓ Training (A) ✓ Flag Persons (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Rotating/flashing yellow beacon Buggy whips with light at top Flashing hazard / warning lights on vehicle (to be used while traveling below posted speed limits) Signs Cones Escort vehicle	Operator's manuals for equipment Hazard assessment Site Plan Permits Emergency plan	Ground Disturbance Job Specific – tasks, equipment Flag Person certification

PPE REQUIREMENTS


Safety Boots


Hearing Protection


Hard Hat


High Vis Vest


Safety Glasses


Radio

PRE-OPERATIONAL SAFETY CHECKS

- **A Hazard Assessment is mandatory before beginning to work on road construction.**

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

The purpose of heavy equipment at road construction sites is to move enormous quantities of construction material. Because of this capability, it is very easy for heavy equipment to run over a survey vehicle (or survey personnel).

SAFE WORK PRACTICE

GENERAL

- Always yield to heavy equipment
- Obey traffic signs and flag persons
- Be aware of blind spots on large vehicles
    - When working around heavy equipment, try to be in the operator's field of view at all times. If you cannot see the operator, then the operator cannot see you!
    - Never approach heavy equipment unless operator gives permission
    - Always make eye contact and receive positive acknowledgement (i.e., hand signals) from the operator prior to approaching any heavy equipment
- Do not attempt to pass moving heavy equipment at any time, at any place, without positive eye contact with the operator.
- All equipment and vehicles when parked are parked away from work area or behind protective barriers signs, when not in use.
- No materials are left in a dangerous location and that the road adjacent to the worksite is kept clean and swept of any debris arising from the road works.
- Proper precautions are taken and protective clothing is provided.
- All operators are trained in the use of their equipment. If they are not adequately trained when they are assigned to the engineer or supervisor, he should provide, or arrange for, the necessary instruction. Both operators and labourers must be informed of the potential risks of, and procedures for, working with or close to machinery.
- Traffic control operations are properly carried out and road users are not unnecessarily delayed.
- All ladders, scaffolding and safety rails used in bridge works are securely fixed.
- That, where work on the carriageway or shoulder remains unfinished overnight, proper warning signs/lights are arranged and, if necessary, protected.
- All sites are left tidy and cleared of debris when the work is completed.
- First Aid Supplies & trained certified personnel are available at each work site.

HOUSEKEEPING

- Make sure all tools and small equipment is put away after use.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Powered mobile equipment Inspections – OHS ACT Hazard assessment Toilets and Washing Facilities Ground Disturbance Working Near Overhead lines Flag person training Scaffolds Overhead power lines	Ground Disturbance - SWP Electrical Safety – SWP Thermal Exposure – SWP Silica – SWP Scaffolds– SWP Overhead power lines– SWP Powered mobile equipment– SWP Inspections – – SWP Hazard assessment – SWP

CLIMBING FENCES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Electric shock • Severe cuts • Decapitation (on quad or snowmobile)	✓ Permission from fence owner (A) ✓ Fences – SLP (A) ✓ Designated Travel Route (A) ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED

PPE REQUIREMENTS

Safety Boots	Gloves	Hard Hat	High Vis Vest

PRE-OPERATIONAL SAFETY CHECKS

- Check to see if fence is electrified before climbing

READ THIS FIRST: IMPORTANT INFORMATION

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SAFE JOB PROCEDURE

SAFE WORK PRACTICE

GENERAL

- Fences usually indicate property boundaries. For this reason it is important to notify the owners of the property where you plan to work.
- Take the extra effort to notify the owners of your intentions. This notification alleviates misunderstandings and ensures good public relations. Look for an alternate route if necessary.
- Watch for DO NOT CLIMB ON FENCE signs or NO TRESSPASSING

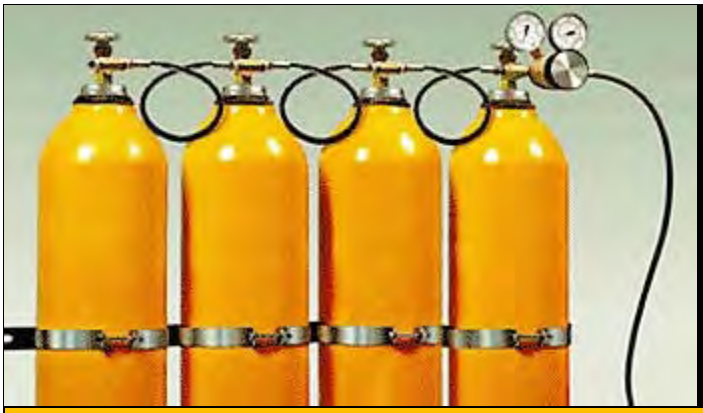
- Watch out for terminals, battery hook ups, humming noises (electric fences)
- When on an ATV or snowmobile always be on lookout for any obstructions to your travel route.
- Look for an alternate route if possible. If a gate is unavailable, safety precautions to be taken when climbing fences are:
    - DO NOT CUT FENCES without permission of the owner or your survey supervisor. Unauthorized cutting of fences will not be tolerated.
    - DO NOT run and jump over fences. Severe injury can result on landing or catching yourself on a barb

BARBED WIRE FENCES

- On three-wire barbed wire fences, try to pass between the wires at the midpoint between fence posts by having someone hold the wires open for you. With practice you will learn to pass between the wires unaided. Move slowly during this maneuver so that if you catch a barb from the fence you can correct the situation before the barb rips your clothing.
- On four and five wire fences it may be necessary to climb OVER the fence. Climb over immediately adjacent to a fence post (not midway between posts), using the post for support.
- If fence is weak, climb through close to fence post for added stability. Be sure to replace or hammer in any loose staples and repair any damages.
- Be careful landing after jumping down from the top of a board or chain-link fence. There is potential for twisting or breaking an ankle from this "top of fence" position.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES



USE OF PROPANE

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Fire, explosion (S) • Suffocation (H)	✓ Regulators, valves (E) ✓ Specific Storage Area (A) ✓ Tank support devices (E) ✓ Legislation (A) ✓ Fire & Explosion Hazards– SWP (A) ✓ Flammable and Combustible – SWP (A) ✓ Propane – SJP (A) ✓ CSA approved PPE (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Propane tank	SDS - Propane	Job Specific - Compressed Gas Hazards

PPE REQUIREMENTS

Gloves

Safety Glasses

Safety Boots

PRE-OPERATIONAL SAFETY CHECKS

- Inspect bottle, hoses and connections before use. Do not use if defects are present

READ THIS FIRST: IMPORTANT INFORMATION

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SAFE WORK PRACTICE

- Wear gloves and long sleeved shirt when handling propane cylinders.
- Do not smoke or have open flame around or near propane cylinders.
- Inspect cylinder's protective collar and foot ring for broken welds or corrosion.
- Inspect propane cylinders for damage prior to use or filling. Cylinders containing dints or gouges to their walls larger than the size of a quarter shall not be filled or used.

- Ensure that the cylinder valve outlet has a safety plug installed when not in use and that the cylinder safety relief valve is unobstructed.
- Ensure that tank valves and regulators are not removed before moving tank
- Attach nylon sling in a "choker" fashion for loading, unloading, or moving tank
- Make sure tank is stored at an upright position on level ground at proper temperature
- Handle propane cylinders in an upright position secured to wheeled carts/dollies.
- Avoid dropping, bumping or rolling cylinders on their sides.
- Do not hoist propane cylinders to roof level by their cylinder valves or protective collars. Use a properly designed propane cylinder-hoisting cage at all times.
- Do not attempt to deliver propane cylinders to roof level by carrying them up extension ladders.
- Keep the area around propane cylinders clear and avoid placing roofing materials or clothing on top of cylinders.
- Place a charged ABC type fire extinguisher in the work area.
- Do not place the extinguisher next to the propane cylinder.
- Complete a Transportation of Dangerous Goods (TDG) training program when handling, offering for transport or transporting propane.

HOUSEKEEPING

- Store cylinders outside, at ground level, in a level upright position on an elevated base to prevent ground thawing and cylinder tipping.
- Do not store propane cylinders at roof level.
- Do not store propane cylinders indoors, in a heated, enclosed or inhabited space.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Fire & Explosion Hazards	Fire & Explosion Hazards - SWP

USE OF CLEANING SOLVENTS & FLAMMABLES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Burns (S) • Fumes (H) • Fire (S) • Explosion (if mixed) (S)	✓ SDSs (A) ✓ PPE – CSA Approved (P) ✓ WHMIS Legislation (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Rags, cloth, Mop, mop bucket	SDSs WHMIS -SWP	WHMIS

PPE REQUIREMENTS

Safety Boots

Gloves

Safety Glasses

PRE-OPERATIONAL SAFETY CHECKS

- Always check the products SDS before use

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SAFE WORK PRACTICE

GENERAL

- Wherever possible, solvents should be non-flammable and nontoxic.
- The foreman must be aware of all solvents/flammables that are used on the job, and be sure that all workers who use these materials have been instructed in their proper use and any hazard they pose.

- Where solvents are controlled products, ensure all employees using or in the vicinity of use or storage are trained and certified in the Workplace Hazardous Materials Information System. Ensure all WHMIS requirements are met.
- The following instructions or rules apply when solvents/flammables are used:
  - Use non-flammable solvents for general cleaning.
  - When flammable liquids are used, make sure that no hot work is permitted in the area.
  - Store flammables and solvents in special storage areas.
  - Check the toxic hazards of all solvents before use (MSDS) on all liquids in these containers.
  - Provide adequate ventilation where all solvents and flammables are being used. The vapors are what burn.
  - Use goggles or face shields to protect the face and eyes from splashes or sprays.
  - Use rubber gloves to protect the hands.
  - Wear protective clothing to prevent contamination of workers clothing.
  - When breathing hazards exists, use the appropriate respiratory protection.
  - Never leave solvents in open tubs or vats - return them to storage drums or tanks.
  - Ensure that proper containers are used for transportation, storage and field use of solvents/flammables.
  - No smoking when use of a flammable is in the close vicinity.

BASIC SAFE WORK METHODS FOR FLAMMABLE AND COMBUSTIBLE SOLVENTS:

Flammable and combustible solvents require the safety precautions listed above in addition to the following:

Containers and Storage

Use containers that are specifically designed for flammable solvents. If you have more than a few pints of flammable solvents, use safety storage cabinets, or keep them in a separate room, away from combustible materials.

Ground and Bond Metal Containers

When transferring flammable solvents, ground and bond metal containers. This prevents static electricity sparks. You do this by connecting containers to each other and to an electrical ground using clamps, wires, or direct metal-to-metal contact. Ask your supervisor to show you the right way for your situation.

Keep These Away From Flammable Solvents:

- Chlorine gas, chromic acid, compressed air, compressed oxygen, nitric acid, peroxides, sulfuric acid, and any chemicals labeled "oxidizer."
- Oxidizers - oxidizers are chemicals that add oxygen, which can start fires or make fires bum faster. Don't use or store oxidizers near flammable solvents, or near other flammable materials.

Never Use Gasoline Except as a Fuel

- Never clean up with flammable solvents.

Keep Small Amounts in the Work Area

- Keep only enough solvent for one day in the work area. Keep larger amounts in a separate fireproof storage area.

UNDERSTANDING FIRE HAZARDS OF SOLVENTS:

Flammable Solvents are Dangerous

- Flammable solvents can catch fire at ordinary room temperature. All it takes is a spark or heat source touching the vapor. Combustible solvents can catch fire too, but only if they are warmer than 100 degrees F.

It's Actually the Vapor that Burns

- Sparks and heat must be strictly controlled wherever invisible vapors may be found. Usually heavy concentrations of vapors are found next to the surface of the liquid solvents. But in a very bad ventilation conditions, concentrated vapors can be found far from the liquid. Therefore, a fire can start where invisible vapors exists.

What is a "Flash Point"?

- The flash point is the lowest temperature at which a solvent gives off enough vapor to start burning when a heat source is present. Each solvent has a different flash point: low flash points are more dangerous.

- Flammable solvents have flash points of less than 100 degrees F.

The NFPA Diamond:

- The NFPA Diamond is a diamond with four boxes that contain numbers and symbols. Fire hazards are rated in the top box. Health and reactivity (chemical reactions releasing energy) are rated in the side boxes. The greatest hazard is rated 4, on a scale of 0 to 4. The NFPA is the National Fire Protection Association.

NFPA Fire Rating for Solvents:

- 0-Not flammable: will not burn
- 1-Combustible liquid: able to catch fire if heated over 100 degrees F.
- 2-Flammable liquid: can catch fire at ordinary room temperatures (100 degrees F. or less).
- 3-Highly Flammable
- 4-Explosive

HOUSEKEEPING
• Keep cleaning solvents put away when not in use. Make sure they are stored properly

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: WHMIS	WHMIS

BARRIER TAPE & RESTRICTED ENTRY

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Slips, trips, falls (S) • Dangerous areas (S)	✓ Barrier tape –SJP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Barrier tape Stakes to attach barrier tape	Barrier Tape	Job Specific Legislation

SAFE WORK PRACTICE

- To protect workers while working in/around areas that are cordoned off with barrier tape or have restricted entry.
- Barrier tape is a plastic tape in red or yellow with black lettering (usually describing a hazard). It is used to section off a hazardous area, for example, spills, hoisting, unguarded equipment, leaks of gases, pressure testing, or open trenches.
- The barrier tape is usually positioned far enough away from the hazard to prevent injury.
- Red barrier tape means absolutely NO ENTRY. Permission from the tape installer must be acquired before gaining entry into the hazardous area.
- Yellow tape refers to conditional entry. This means entry may be acquired by acknowledging the hazard and in accordance with the conditions of entry.
- Always read the message on the tape itself and obey the warning.
- If unsure of the hazards in an area with barrier tape, do not enter.
- Often, the barrier tape will have a tag attached. This tag will have:
    - An explanation of the hazard(s) and conditions of entry
    - Date of hazard
    - Installer's name
    - Company name

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

USE OF AN AXE

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.
THE MATERIAL IN THIS DOCUMENT DOES NOT TAKE PRECEDENCE OVER APPLICABLE GOVERNMENT LEGISLATION WHICH ALL EMPLOYEES MUST FOLLOW.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Serious cuts (S) • Head flying off of axe – getting hit with axe blade (S) • Handle breaking – splinters (S) • Blisters (S) • Handle slipping from hands – hitting someone (S) • Fatigue – (H) • Strains Sprains (H) • Inspect Bites (H)	✓ Axe inspection (A) ✓ Use of an Axe – SJP (A) ✓ Job/Tool Specific Training (A) ✓ PPE – CSA Approved (P)

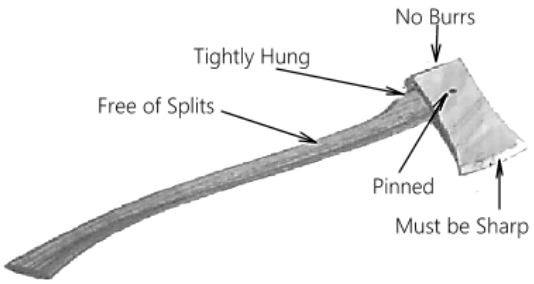
TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Axe	SJP – Use Of Axe	Job Specific – hazards of using an axe, dangerous trees, Mentor - how to handle an axe – proper swing & posture. Must show competency before being able to use axe on actual job

PPE REQUIREMENTS

							
Gloves with good gripping	**Hard Hat**	**High Vis Vest**	**Safety Glasses**	**Safety Boots- High leather boots are recommended**		Whistle	**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

Always inspect an axe before using: make sure the head is tight on the handle, no burrs, handle is free from splits, the head is pinned to the handle and the blade is sharp.



READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

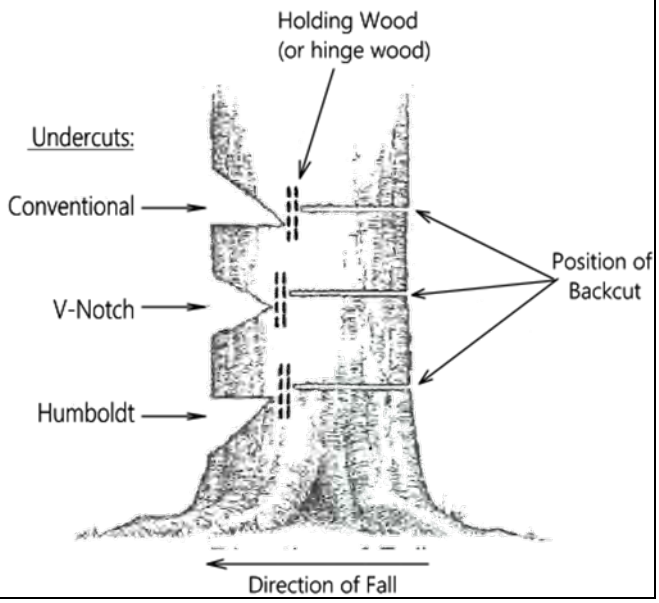
SAFE JOB PROCEDURE

CHOOSE THE RIGHT TOOL FOR THE JOB

1. For chopping logs and limbing trees choose the larger pole or three-quarter axe, which takes both hands to use safely.
2. When choosing a pole axe, select a handle about as long as your arm from armpit to finger tips. Check the axe for balance; you don't want a heavy head on a light handle.
3. Check the oval-shaped end of the axe handle to see which way the wood grain runs. Look for grain that runs parallel to the length of the oval. That handle will absorb the hitting shock better than one with crooked grain running across the oval.
4. Lay the handle along a straight line and eyeball it for warping. For best performance, you want a nice straight handle with no knots. Avoid handles finished with varnish or glossy paint. They can raise friction blisters and become dangerously slippery when wet.

USING THE AXE

1. Before you start cutting, prepare the area.
   - Before you do anything else, check overhead for dead branches, which may fall and injure you, and for hazards like hornets' nests.
   - Grasp the axe head and swing the handle around, over and below to see if it contacts any brush or overhanging branches.
   - Make sure spectators stand a minimum of 10 feet (2 axe handles) away so that they can't be hit by the axe or flying chips.
2. Cutting - Let the axe head do the work.
   - Lift the axe with a smooth wrist and forearm motion, aim the bit by looking at the point you want to hit, and let the axe head fall in a guided driven drop.
   - Stand on the side of the trunk opposite the branches you are cutting. This keeps the tree between you and the axe head.



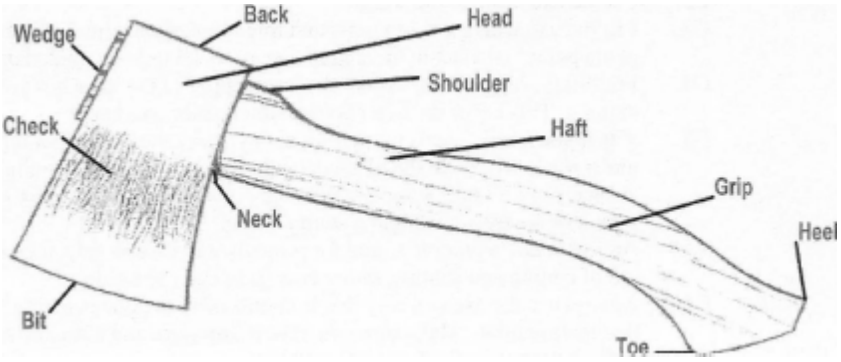
- Cut from both sides of the tree.
- Chop a notch out at an angle and then another on the opposite side at a lower level, on the side you want the tree to fall.

- Do not cut through more than half the tree before starting the other notch.
- Cut downwards at 45° (you may need a horizontal cut occasionally to clear debris, etc.).
- Alternating the angle of the stroke will prevent the axe from jamming.
- Too steep an angle will cause the axe to glance off, end-on will make the axe jam (or simply be inefficient). Try to aim for a 45° angle.

3. When you are finished cutting for the day, carry the axe by holding it just under the head.
   - Point the blade down or away from you to minimize the chance you will fall on top of the blade if you trip.
   - Keep the axe head in a sheath or securely sunk into a stump or log.

SAFE WORK PRACTICE

- You must work at a height that is comfortable for you.
- A steady rhythm of blows will cut much more efficiently than fewer big blows.
- If you put too much effort behind the axe your aim will suffer, you will tire and then every swing becomes more dangerous. Always let the weight of the axe do the work.
- Make sure you do not swing an axe when in close proximity to other people – ensure 10 ft. clear radius around you
- Don't use axe if it is defective in any way – make sure you have completed the inspection before starting work
- Use the single-bitted axe for cutting, brushing-out, driving wedges and a plumb to determine lean.
- The axe head must be kept sharp and free of burrs.
- The axe head should be pinned to the handle
- The axe handle must be tightly set into the head and free of splits
- In large timber, the axe head should be 1-1.5 kg (2.5-3.5 lbs.) or more. This makes driving wedges easier, with less shock to the arms and shoulders



- The axe head should be wide and square enough to make good contact with the wedges
- The axe must be within reach at all times. It should be kept at the base of the tree being felled.
- Always use the axe in a way that is comfortable to you, swinging in an arc that feels natural.
- Make sure you have a firm grip, and always swing AWAY from your body, hands, and legs.

HOUSEKEEPING

- Always place axe back in designated storage area.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Hand & Power Tools	Falling Trees with axe - SWP Dangerous Trees - SWP

DANGEROUS TREES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.
THE MATERIAL IN THIS DOCUMENT DOES NOT TAKE PRECEDENCE OVER APPLICABLE GOVERNMENT LEGISLATION WHICH ALL EMPLOYEES MUST FOLLOW.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Serious cuts (S) • Being hit by tree – serious injury death • Strains Sprains (H)	✓ Axe/Powersaw inspection (A) ✓ Job/Tool Specific Training (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Axe or chainsaw	SJP – Jobs being performed (axe, chainsaw)	Job Specific – hazards of job, dangerous trees, how to handle an axe or saw – competency PPE – CSA Approved (P)

PPE REQUIREMENTS

Safety Boots	Gloves	Hard Hat	High Vis Vest	Safety Glasses		Communication Device

PRE-OPERATIONAL SAFETY CHECKS

Check area for dangerous trees before starting job

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE WORK PRACTICE

- Only qualified workers may fall danger trees.
- Falling or bucking must not be started if a tree or log is in a dangerous condition, or there is reason to doubt that the cut can be completed.

- Where practicable, dangerous trees must be felled progressively with the falling of other timber but before falling adjacent live trees and into open areas.
- When falling danger trees use extra caution and remove loose bark within reach from the ground before starting to fall the tree.
- Use a deep undercut with a wide face opening, and fall the danger tree in the direction of lean whenever possible to avoid vibration caused by wedging.
- One worker must not fall a tree or danger tree when the assistance of another worker is necessary to minimize the risk of injury caused by overhead hazards, loose bark, lose or interlocked limbs, conditions of the tree, terrain or cutting conditions.
- An escape route must be determined and arranged before a tree is fallen so the worker(s) falling the tree can move at least 25 feet away from and to the side of the base of the tree.
- The escape route must be clear of brush, snow, tools and other material that would impede a quick escape.
- Fallers and buckers must not work in a location where they or other workers will be endangered. A faller must not fall a tree in a normally inaccessible area if the faller's safety depends on a lifeline or similar device and the faller does not have the ability to move to a safe position. This does not preclude the use of a lifeline to prevent slipping or falling.
- Workers must not remain at the stump as the tree falls unless it is necessary to complete the backcut. Once the backcut is completed, the worker must immediately release the throttle and move a safe distance away from the tree.
- Trees must be felled into the open whenever practical.
- When manual falling or tree jacking, trees must not be felled directly uphill when the probability of the tree sliding back past the stump is likely.
- When manual falling or tree jacking, trees felled uphill must be quartered to the slope, to minimize exposure to sliding or rolling trees.
- When trees or snags are over 6 inches DBH the undercuts must not be less than 1/4 the diameter of the tree.
- Face openings must not be less than 1/5 the diameter of the tree.
- Trees must be under-cut in the direction they are to be felled before starting the felling cut. The falling of a tree must be conducted in accordance with the following procedures - a sufficient undercut must be used and the undercut must be complete and cleaned out.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Hand & Power Tools	Falling Trees with axe - SWP Dangerous Trees - SWP

PLACING STATUTORY IRON POSTS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Rupture buried lines – fumes (H), asphyxiation, electrocution (S) • Pinch points (S)	✓ Job Specific Training (A) ✓ Ground Disturbance – SWP (A) ✓ Line locating (A) ✓ Construction Safety Training System (CSTS) (A) ✓ Work permit (A) ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Post Sledgehammer	Job plan Permit to work (as applicable) Customer instructions for jobsite	Ground Disturbance Buried Facilities Locator, Basic Line locating equipment proficiency (model specific) Construction Safety Training System (CSTS)

PPE REQUIREMENTS

							
Safety Boots	**Leather Gloves**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**	Hearing Protection		**Communication Device**

DEFINITIONS

Ground disturbance: any work, operation, or activity without Limitation that results in a disturbance o the earth to a depth greater than 30 cm.

Statutory iron post: an iron post that is approximately 90 centimeters long and is pointed at the bottom.

Buried facility: includes but not limited to pipes, conduits, ducts, cables, wires, manholes, catch basins, tanks, and attachments to these items.

PRE-OPERATIONAL SAFETY CHECKS

Inspect tools to ensure their serviceability. If defective, DO NOT USE, tag it and remove from service for repair or replacement.

READ THIS FIRST: IMPORTANT INFORMATION

Under no circumstances should one person hold the statutory iron post in place while the other strikes it with the sledgehammer.

SAFE JOB PROCEDURE

STATUTORY IRON POSTS

Use of Sledge Hammer

1. Holding the statutory iron post in one hand and the sledgehammer, close to the head with your dominant hand, drive the post into the ground until it is firmly set in the ground (ie. It does not wobble).
2. Keep fingers out of the line of fire
3. Using two hands on the sledgehammer drive the post the remainder of the distance into the ground.
4. It is not necessary to swing the sledgehammer hard, use the weight of the head to do the work and ensure solid, square contact with the post.
5. Use proper technique when swinging the sledgehammer, lift with legs and arms, and use proper swinging motion.
6. Grasp the bottom of the handle with your weaker hand and place your stronger hand several inches below the head (sufficiently clear should the head miss the post and the handle strike the post).
7. Place the foot on the side of your weaker hand slightly closer to the post with the foot on the side of your stronger hand slightly behind you, both feet should be approximately shoulder width apart.
8. You should be roughly a half of a meter away from the post. On your dominant side, bring the sledgehammer head to the same level as your own head and then drive it into the center of the post.
9. The handle should be parallel to the ground when striking the post.
10. Ensure there are no personnel within swing zone and no personnel "down range" of potential sledge hammer failure (i.e. which way will the head go if it breaks off handle).
11. Repeat hitting until pin is at the required depth

SAFE WORK PRACTICE

PRIOR TO FIELD SURVEY (DESKTOP SEARCH PHASE)

- Be aware of buried facilities (gas, electrical, etc.) and obey all OHS requirements, client ground disturbance guidelines as well as Acts & Regulations governing ground disturbance.
- All The supervisor is responsible for conducting pre-disturbance searches of the anticipated project area including but not limited to: AB OneCall/ BC One Call, the facility owner or operator(s), existing survey plans, EGIS information, Land Title records, Crown Land records and in-house databases. Before starting the field work phase of the project, the field crew will be provided with:
    - Any as-built drawings or schematics of buried facilities within or near the project area;
    - Relevant legal survey plans;
    - AB OneCall/BC One Call documentation;
    - Work permit issued by facility operator;
    - Pre-job hazard assessment specific to the project; and
    - Emergency Response Plan

FIELD SURVEY (SETTING OF SURVEY MONUMENTS)

- A tailgate meeting and ground disturbance checklist will be completed daily before the commencement of survey activities.
- The facility owner must provide a work permit or similar for ground disturbance activities on their right of way.
- If there is record of, visible indication of, or likelihood of a buried facility within 30m of a new survey post, a minimum of 5m around the proposed survey post must be swept and marked.
- All buried facilities within 5m of a proposed new survey monument must be located and marked on the surface utilizing "Locating Industry Recognized Practices" (LIRP). This requires that at least one person on the field crew has the minimum required training as outlined below.
- A sketch of the immediate project area showing results of the line locating, existing survey monuments and proposed survey monuments must be completed prior to setting any new survey posts.
- Survey monuments shall not be set closer than 5 meters to buried facilities.
- Alternative means for demarking the right of way shall be employed including setting witness posts or denoting the corner as "unsuitable to post" in such situations. The project manager/ ALS supervisor will provide advice on preferred placement of witness posts.
- Inspect tools to ensure their serviceability.
    - If defective, DO NOT USE, tag it and remove from service for repair or replacement.
    - Do not use sledge hammers with loose heads or damaged handles.
    - Check all equipment for defects, inspect handles for splitting, check security of handle and hammer portion.
- Ensure that the proper PPE is in place.
- Ensure that the area of the proposed monument has been cleared of debris so as to provide sufficient freedom of movement for the use of sledge hammers, etc., as well as to remove any hazards that can cause injury (sharp sticks, loose rocks, etc.)
- Watch for pinch points.
- If using powered equipment, such as Hilti hammers, generators, etc., then personnel shall be trained in the use of such equipment. It should be noted that some companies will not allow the use of internal combustion engines in certain areas.
- If using a sledge hammer, use proper technique when swinging hammer. Head of hammer should ALWAYS strike pin centered and perpendicular (at 90 degrees), if not struck correctly hammer could glance off pin possibly causing injury.
- Ensure there are no personnel within swing zone and no personnel "down range" of potential sledge hammer failure (i.e. which way will the head go if it breaks off handle).
- Fatigue is possible - take intermittent breaks to rest.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Tools, Equipment and Machinery	

INSTALLING MARKER POSTS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Hitting buried lines – electrocution, gas fumes, explosions, damage to line (S) • Pinch points (S)	✓ Pre-Disturbance Searches (A) ✓ Line locating (A) ✓ Line locating instruments (E) ✓ Equipment specific training (A) ✓ Job specific training (A) ✓ Ground Disturbance guidelines - SWP ✓ Job specific instructions (A) ✓ Safe Job procedure ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Job specific tools & equipment may include: Sledge Hammers Hilti hammers Generators Marker post	Existing survey plans EGIS information Land Title records Crown Land records and in-house databases Operator's manual for equipment	Ground Disturbance Buried Facilities Locator, Basic Line locating equipment proficiency (model specific) Construction Safety Training System (CSTS)

PPE REQUIREMENTS

Safety Boots	**Leather Gloves**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**	Hearing Protection		**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Line locates must be completed before work begins

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURES

Placing or pounding of marker posts and statutory iron posts presents different areas of potential risk associated with our normal day to day surveying. The following are areas of concern and precautions required:

1. Place post in designated spot
2. Hold post with non-dominant hand
3. Hit pin on top with sledge hammer using dominant hand
4. Repeat hitting until pin is at the required depth

PRIOR TO FIELD SURVEY (DESKTOP SEARCH PHASE)

General

Be aware of buried facilities (gas, electrical, etc.) and obey all OHS requirements, client ground disturbance guidelines as well as Acts & regulations governing ground disturbance.

The supervisor is responsible for conducting pre-disturbance searches of the anticipated project area including but not limited to: AB OneCall/BC One Call, the facility owner or operator(s), existing survey plans, EGIS information, Land Title records, Crown Land records and in-house databases.

Before starting the field work phase of the project, the field crew will be provided with:

- Any as-built drawings or schematics of buried facilities within or near the project area;
- Relevant legal survey plans;
- AB OneCall/BC One Call documentation;
- Work permit issued by facility operator;
- Pre-job hazard assessment specific to the project; and
- Emergency Response Plan

FIELD SURVEY (SETTING OF MARKER POSTS)

1. A tailgate meeting and ground disturbance checklist will be completed daily before the commencement of survey activities.
    - The facility owner must provide a work permit or similar for ground disturbance activities on their right of way.
    - If there is record of, visible indication of, or likelihood of a buried facility within 30m of a new marker post, a minimum of 5m around the proposed marker post must be swept and marked.
2. All buried facilities within 5m of a proposed new survey monument must be located and marked on the surface utilizing "Locating Industry Recognized Practices" (LIRP). This requires that at least one person on the field crew has the minimum required training as outlined below.
3. A sketch of the immediate project area showing results of the line locating, existing survey monuments and proposed survey monuments must be completed prior to setting any new survey posts.
4. Where practical, monuments shall be referenced by a marker post placed 0.3m from the monument, and the direction shall be noted on the plan. Marker posts must be of a design approved by the Alberta Land Surveyors' Association. Marker posts should not be placed where they may constitute a hazard to the public or interfere with the normal use of land. Marker posts shall not be set closer than 5m to buried facilities. Marker posts placed along road or right-of-way surveys should be situated on adjacent fence lines whenever possible.
5. For surveys in unsurveyed territory, bearing trees and/or marker posts are required. Where a marker post is placed other than 0.3m from a monument, both the distance and the direction of the marker post from the monument shall be noted on the plan. The project manager/ALS supervisor will provide advice on preferred alternative placement of marker posts.

6. Inspect tools to ensure their serviceability. Do not use sledge hammers with loose heads or damaged handles. Check all equipment for defects, inspect handles for splitting, check security of handle and hammer portion. If defective, DO NOT USE, tag it and remove from service for repair or replacement.
7. Ensure that the area of the proposed area has been cleared of debris so as to provide sufficient freedom of movement for the use of sledge hammers, etc., as well as to remove any hazards that can cause injury (sharp sticks, loose rocks, etc.)
8. Watch for pinch points.
9. If using powered equipment, such as Hilti hammers, generators, etc., then personnel shall be trained in the use of such equipment. It should be noted that some companies will not allow the use of internal combustion engines in certain areas.
10. If using a sledge hammer, use proper technique when swinging hammer. Head of hammer should ALWAYS strike pin centered and perpendicular (at 90 degrees), if not struck correctly hammer could glance off pin possibly causing injury.
11. Ensure there are no personnel within swing zone and no personnel "down range" of potential sledge hammer failure (i.e. which way will the head go if it breaks off handle).
12. Fatigue is possible; take intermittent breaks to rest.

IMPORTANT: Under no circumstances should one person hold the marker post in place while the other strikes it with the sledgehammer.

USING MANUAL POST POUNDER

- Set the bottom of the post where you want to install it. If the post has knobs or is directional, be sure it is set in the correct manner.
- While holding the bottom of the post steady, tilt the top downwards until you can slide the manual post ponder over the top. A manual post pounder looks like a three foot length of pipe with a closed end.
- There are normally two handles on either side of the pipe. The pipe will slide over the top of the steel post and the closed end will hammer the post into the ground.
- Pivot the post and pounder until it is perpendicular to the ground. Double check that you have the proper position and that the post has not turned while you were mounting the post pounder.
- Pound the post into the ground.
- On a manual post pounder, you will slide the pounder upwards until it is near the top of the post then drop the pounder; the solid end of the pipe will pound the steel post into the ground.
- Marker posts will need to be driven in about 0.6m on most marker posts this is indicated by stopping once the unpainted area is covered by soil.
- Remove the post pounder. Lift the post pounder over the top and lay it aside

USING POWERED POST POUNDING EQUIPMENT

- If using powered equipment, such as pneumatic, hydraulic, propane or gas
- operated post pounding equipment, etc., personnel shall be trained in the use of such equipment. It should be noted that some companies will not allow the use of internal combustion engines in certain areas.
- Follow the owner's manual regarding safe operation, maintenance and storage of equipment.

SAFE WORK PRACTICE
• Ensure that the proper PPE is in place.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES

OHS LEGISLATION:	

WORKING ON ICE

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Falling through ice • Hypothermia • Drowning	➢ Working Safely on Ice Video (A) ➢ Safety watch person on large crossings or during multiple depth testing (A) ➢ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Mustang type floater suit or equivalent DOT/transport Canada approved Communication device 30 metres of 10-mm thick buoyant polypropylene rope (lifeline) Harnesses 15 metre throw bag Axe or ice chisel, ice auger Measuring tape or stick Ice rescue picks Snowshoes, boot grips Spot locator	Job Plan Emergency Response Plan	Working Safely on Ice Job Specific Duties

PPE REQUIREMENTS

						**Full change of clothing to replace wet clothes**	
Rubber-soled, felt-pack winter boots Safety Boots with Ice picks	**Insulated gloves**	**High Vis Vest**	**Dry suit in cold conditions**	**Safety Glasses**	**Approved life jacket or personal floatation device (PFD)**	**Warm clothing worn in layers**	**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Equipment must be inspected before use.

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, REPORT TO SUPERVISOR.

Do not work alone when measuring initial ice thickness.
Always work together. Extreme care and caution should be exercised.

SAFE JOB PROCEDURE

1. Complete pre-job hazard assessment
2. Complete an Ice Safety Plan
3. Determine if the ice is safe

COMPLETE PRE-JOB HAZARD ASSESSMENT

- Fill out prejob hazard assessment form

COMPLETE AN ICE SAFETY PLAN

1. What you plan to do, where, and for how long
2. Conditions and limits on the ice cover
3. Weight of the load you plan to put on the ice cover (stationary vs. moving loads)
4. Ice condition changes as a result of sudden changes in temperature (±20°C in 24 hours)
5. What type of water body is it? River vs. Lake vs. Wetland vs. Swamp
    - Many factors affect the ice thickness, including:
        - Type of water (river ice can be more dangerous than lake ice because currents can erode ice and create thin spots)
        - Location
        - Time of year
        - Water depth and size of body of water Chemical (such as salt)
        - Changing air temperatures

Determine if the ice is safe

- Measure thickness in several locations.
- Use the table for the minimum thicknesses for slow moving loads or loads parked less than 2 hours together with the hazard controls outlined in the Pre-job hazard assessment for the ice cover you are working on.

10 cm (4") -for person walking (120 kg)
18cm (7") -for 1 snowmobile and rider less than 500 kg
38 cm (15") -for a¾ ton 4x4 vehicle: GVW up to 5,000 kg
Loads over 5,000 kgs -refer to Best Practice
GVW (gross vehicle weight): equipment, cargo, people and your fully fueled vehicle.

SELF-RESCUE IN FREEZING WATER

The first danger is drowning, not the cold. If you fall through the ice, you have time to save yourself. For about 1 minute, you'll gasp for air, in reaction to the extreme cold. After one minute, the gasping gets less, the skin numbs and the feeling of intense cold lessens. You have about 10 minutes to get out of the water:

1. Tread Water: Don't panic and thrash about. Resist the urge to gasp. Instead, slowly tread water or grasp the edge of the ice to keep your head above water.
2. Kick and Pull: Keep your hands and arms on the ice and kick your feet. This brings your body to a horizontal position, parallel to the ice surface.
3. Horizontal Kick and Pull: Once you're horizontal, continue to kick your feet, while pulling with your hands. Draw yourself up onto the ice.
4. Roll onto the Ice: Keep your weight spread out as you roll, crawl and slide to reach ice that can support your weight.

After 10 minutes your muscles will not have the strength to get yourself out of the water. Eventually (approx. 1 hour), you will lose consciousness.

SAFE WORK PRACTICE

GENERAL

All personnel will have viewed the video "Working Safely on Ice".

Always perform a Safety Task Analysis prior to your work. Plan your work- and your safety - with the following in mind:

- Extreme cold that affects equipment and personal safety
- Do not work alone when measuring initial ice thickness. Always work together. Extreme care and caution should be exercised.
- Always wear proper PPE (appropriate to weather conditions)
- Review ice plan
- Never go out on the ice if there is any question of its safety.
- During spring and fall months, NO CROSSING of major water sources(more than 0.5 m. deep, more than 5 m. across)
- Prior to traversing onto any ice surface survey the ice. Watch for cracks and other signs of stress. Look for open water areas, signs of recent changes in water levels, etc.
- If the ice is snow covered, look for wet areas in the snow.
- Ice thickness can vary a great deal, particularly near shore, around the bend of a river, near snow banks or over modulating current.
- Look for an easy point of access to the ice, free of cracks/broken ice.
- Be aware of the hazards of working in extreme cold. Guard against hypothermia, frostbite, etc.
- Be careful when approaching river embankments, as the area may be steep and slippery especially during wet weather conditions.
- Be aware of hazardous footing that may possibly cause slipping or tripping. k. Make test holes as required check the thickness of the ice.

WALKING OR WORKING ON FOOT

- Before you step on the ice, check for required minimum ice thickness.
    - There must be at least 10 cm of clear, good quality ice before you can walk on it.
    - Measure ice thickness every meter along proposed crossing.
- Inspect ice conditions at this time.
    - Measure depth of water and estimate flow.
    - Deep, fast moving water is extremely dangerous.
    - These crossings must be inspected daily.

- When walking across a river, use a safety line between workers.

SAFE VEHICLE OPERATIONS ON ICE COVER

Before you drive or park any vehicle or equipment on ice cover, even a snowmobile, check:

- Your GVW - Vehicle including fuel, equipment, cargo and people
- Ice thickness - One snowmobile needs at least 18 cm of clear, good quality iced to support GVW less than 500 kg. A light truck (GVW less than 5,000 kg) needs at least 38 cm of ice thickness.
- Maximum time on the ice and minimum ice thickness. For example, a light truck parked for more than 2 hours but less than 7 days requires at least 55 cm of clear, good quality ice.
- While traveling in an enclosed vehicle, always drive with the windows open and no seatbelt for quick escape.
- If you drive across wet cracks, your path should be as close to perpendicular to them as possible, instead of parallel to them.
- A load deflects the ice slightly into a bowl shape. When you drive on floating ice, this moving bowl generates waves in the water. If the speed of the waves equals the vehicle speed, the ice-sheet deflection is increased and the ice is much more likely to break. The problem is more serious for thin ice and shallow water. In general you avoid this danger by driving below 10 kph.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

RESOURCE ROADS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
HIGH Risk	• Oversized loads (S) • Road Conditions – dust, mud, soft, narrow, bumpy (S) • Excessive speed (S) • High traffic volumes (S) • Fallen trees (S) • Poor visibility due to smoke, fog or dust (S) • Passing or being passed on narrow roads (S) • Changing road surface conditions freezing rain and snow (S) • unmarked hazards(S) • mudslides and avalanches(S) • Washouts(S) • Failing to follow traffic control procedures(S) • Public users with no radio and limited experience on resource road etiquette(S) • Wildlife(S)	✓ Private road rules from road owner (A) ✓ License for vehicle being operated (A) ✓ Radio-Assisted Roads (Resource Roads) – SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
2 way radio set to appropriate channel	Rules of the road – from road owner	Private road rules

PPE REQUIREMENTS

Radio

PRE-OPERATIONAL SAFETY CHECKS

Make sure your radio is on the right frequency
Logging Trucks have the Right of Way!!

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

COMMUNICATION

Industrial traffic communicates using two-way radios; this is how drivers talk with each other - so they know to "clear" when a vehicle is heading towards them.

If you have a two-way radio, learn how to use it, ensure it is installed and working properly as well as programmed with the channels needed to communicate in areas you travel; follow communication instructions posted at the start of the road.

The "road channel" is the radio frequency posted at the stat of the road. It's used for communicating location, a hazard or emergency on a resource road

TWO-WAY RADIO USAGE

- Radios are pre-programmed. Know where you are travelling and ensure the right channels are in your radio.
- Be sure you have a copy of the road call procedures for the area you are working in and understand how to call your position before travelling on the road. If you are unsure of the procedure listen to others use the radio to familiarize yourself.
- Perform a radio check to ensure its working and you are on the right channel.
- Wait and listen for a few minutes when you start on a new road channel to listen and see if anyone is in the area.
- Observe and follow posted rules or directions.
- Excessive radio chatter is not tolerated on resource roads.
- If you don't have a two-way radio or are missing a frequency, wait at the beginning of the road for a vehicle that does. Follow behind that vehicle, pulling over if it does.
- Don't try to keep up, drive the speed appropriate for conditions, your knowledge and skill level.

VEHICLE AND LOAD SIZE

- Industrial vehicles and loads come in all shapes, sizes and travel varied speeds. Some industrial vehicles are very large, long and/or wide; you may need to clear out of their way. There might not be a pilot car ahead of large, long or wide vehicles.
- Use extreme caution when meeting loaded logging trucks; the load may extend well behind the rear of the trailer and when the truck turns, the logs may extend into your path of travel.
- Watch out for people on A TVs, motorcycles, snowmobiles, horses and bikes; be prepared for them around any comer. ATV operation is allowed on some roads; driver's license and insurance are generally required. A TV operators must follow the rules of the road including watching for and yielding to other traffic.
- General "right of way" rules: generally loaded industrial vehicles have the ROW, followed by unloaded, followed by light trucks; please ensure that you know what the recognized rules are in your area of operations.

PULLOUTS

- Most resource roads have pull-outs built alongside the main driving surface; pull-outs may be located on either side of the road. It is OK to use a pull-out on the wrong side but only if there is no other place available. Make sure you do not cut off any road users if you cross the center to a pull-out.
- Use your two-way radio to advise oncoming traffic that you are "clear".

ROAD CONDITIONS

- Resource roads might not be in use or maintained year round; they may sustain damage due to frost, flooding, vandalism, etc. - damage might not be marked. Roads may be overgrown or not plowed; the road might not be drivable - even though you found it on a map or GPS.
- Expect rough surfaces, potholes, sinkholes, washouts, water bars and cross ditches.
- When it's dusty or when roads are slippery, slow down so you can react to traffic, potholes, wildlife, changing road conditions and unexpected hazards.
- In winter months roads may change from a dirt road to an ice road without notice. Be sure you are aware of the surface you are travelling on and drive according! y.
- Travel at a speed that allows you to stop within half of your range of sight (others need room to stop too).

BRIDGES

- Most bridges on resource roads are one lane. Make sure you yield to oncoming traffic; it is better to pull over and let the other vehicle through -play it safe!
- Be sure to check clearances and weight restrictions on bridges before crossing them with wide or oversized loads.
- Just because the map shows a road crossing a watercourse doesn't mean that crossing will be there. Many bridges get pulled out once the work in a certain area is complete. Some bridges -depending on the area - aren't maintained regularly so use caution when approaching!

OBSERVE AND OBEY SIGNS

- Take time to read and understand signs at the start of a resource road and along the way. Signs communicate important information about the road, radio frequency, traffic you can expect and active worksites or hazardous conditions -remember not all hazards are signed.
- Must calls are designated road kilometer signs/markers that you **"must call"** out on the road frequency.
- Some resource roads will require working beacons and truck whips; be sure your equipment is present and functioning before you enter these roads.

STOP IN SAFE, VISIBLE LOCATIONS

- If you must stop along an active road find a pull out; if there isn't one find a straight section that provides good visibility from both directions, and is wide enough for other traffic to pass; pull over onto the shoulder.
- Avoid stopping in a curve or on the crest of a hill.

YIELD TO INDUSTRIAL TRAFFIC

- Large industrial vehicles can't manoeuvre as quickly as passenger vehicles -give these vehicles room so workers can safely do their job; let them go ahead.

DRIVING SAFELY

- Be Prepared and Alert
- Dust means traffic.
- Road conditions may change rapidly.
- Be prepared to stop quickly and safely.

- Be prepared for unexpected conditions; have sufficient food, clothing and supplies to spend the night if breakdown occurs.
- Set up check in/check out procedures, please see SWP 24- Journey Management Policy.
- Some resource roads do not have posted speed limits; it's the driver's responsibility to travel speeds reflective of road conditions. If not otherwise posted, the maximum speed on a resource road is 80 km/hr. When limits are posted, you must obey them; these limits are enforceable.
- Do not overtake industrial vehicles unless the driver pulls over and signals that it is safe to pass.
- Take the time to plan your trip. Allow additional travel time so you will arrive on time or early to your destination.
- Avoid travelling resource roads in the dark.
- Seatbelts save lives! Always wear your seatbelt.

Stay Focused

- Keep your headlights and tail lights on.
- Tum down or turn off the stereo.
- Keep off of your mobile phone.
- Wait until you get to your destination, or pull over, if you are going to eat.
- When descending steep grades shift to lower gears to reduce wear on the braking system and potential brake fade; while ascending downshift to prevent engine "lugging".
- Follow the 3 C's - Caution, Courtesy and Concentration.

SAFE WORK PRACTICE

- Resource roads are constructed to develop and protect natural resources. They are used primarily by industrial vehicles engaged in forestry, mining, oil & gas or agriculture operations.
- Resource roads are not built to the same standard as highways. Consequently, resource road users must be aware of potential dangers.
- Most resource roads are built from gravel and are narrow (in some cases they are only one lane wide). There may be encroaching roadside brush limiting visibility, soft shoulders, poor or changing road surface conditions, and little to no ditch.
- Road grades may be much steeper than you encounter on highways.
- Resource roads might not have signs identifying hazards, or barriers at dangerous or steep road sections.
- Do not expect to see stop lights on resource roads.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

USE OF A BRUSH AXE

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Misuse - severe injury or death(S) • Falls on axe- severe injury or death (S) • Awkward body positions - sprains & strains (H) • Frozen trees in winter – axe can swing back – serious injury (S) • Exhaustion (H)	✓ Properly sharpened axe (A) ✓ Experienced workers (A) ✓ Training on use of specific tool (A) ✓ Mentoring of new workers (A) ✓ Hazard Assessment (A) ✓ Periodic Breaks (A) ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Brush axe	Hazard Assessment of Job	Job Specific – how to use Only Crew chiefs that are experienced and competent should mentor new employees.

PPE REQUIREMENTS

						
Steel-toed high ankle leather boots	**Cut resistant gloves with good grip**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**		**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Inspect axe before use. Do not use if defects are found

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK REPORT TO SUPERVISOR

- This saw is Intended use is for clearing small brush/shrubs and trimming trees of larger branches. For trees over two (2) inches in diameter see SWP-06 (Use of Chainsaws) or SWP-28 (Use of an Axe).

- Certain trees and brush are harder than others, particularly in winter. Poplar is exceptionally hard when frozen and prone to deflecting or glancing blows.

SAFE JOB PROCEDURE

The blade must be sharp to do its work safely. To sharpen follow these steps:

1. Secure the axe in a vise with its blade edge pointed upward, or secure it by hand with the blade edge pointed away from your body.
2. Have a large flat file (mill file) ready.
3. Move the mill file against the blade in a direction away from your body using a small angle so that your hand is just out of contact with the blade.
4. Repeat this procedure down the length of the blade.
5. The manufacturer recommends that the blade not be sharpened so that the edge is razor sharp. Instead they recommend that a 0.05 mm (0.002 in.) flat be left in the blade to assure the best cutting ability and longer lasting sharpness.
6. Repeat steps 3 and 4 on the other side of the blade edge. Remember to always orient the blade edge away from your body.

SAFE WORK PRACTICE

- Also known as a Sandvik, the Swedish Safety Brush Axe is the ideal tool for clearing vegetation and small trees from survey flag lines.
- Because of the shorter blade and longer handle (68 cm overall length), the tool may be safer than a machete. Its shorter handle and lighter weight make it faster, easier to control, and safer than an axe or brush hook.
- The thin, flat, replaceable steel blade cuts easily through springy hardwood stems
- Intended use is for clearing small brush/shrubs and trimming trees of larger branches. For trees over two (2) inches in diameter
- When choosing a brush axe, conduct a visual inspection of the axe before use.
- Ensure the blade is sharp and that the handle is not cracked, warped or broken.
- Check the retaining pin that joins handle, frame and blade for secureness.
- The quality of axe is important to a safe job.
- Be particularly careful when walking along a cleared survey line having protruding sharp stubs. They can cause serious injury if fallen upon.
- Be aware of slip hazard when using axe whilst wearing gloves, especially over long periods of time. Bush axes are heavy implements and can slip from hands when the user is fatigued.
- A brush axe is a dangerous tool, and severe injury or death can result from its misuse.

USING THE TOOL

- Before you start cutting, prepare the area and ensure that you are in a comfortable working position with secure footing.
- Check overhead for dead branches, which may fall and injure you, and for hazards such as hornets' nests.
- Maintain a safe distance outside the swing arc of the bush axe (approximately 5 m) so that bystanders can't be hit by the axe or flying chips.
- Always cut away from body, never across your body.
- While chopping, if possible, lean forward.
- Proper use is to cut with one hand/arm motion to the base of the plant. The other hand holds the upper part of the plant/limb and push to fell.

- Ensure this hand is located well away from the area to be cut, considering potential ricochet arcs/areas.
- Two-handed operation is usually for larger branches. Before cutting two-handed clear all small brush in the area first.
- Once cleared, ensure proper footing and check swing angle before proceeding with the cut.
- Swing with a full swing at an approximate 45°angle, but do not over swing or swing too hard. Always clear small branches, etc., before cutting larger vegetation.
- Right-handed: When swinging downward toward the left or upward to the right put right foot forward.
- When swinging downward toward the right or upward to the left put left foot forward. If you are left handed reverse right handed procedure. Be sure to not cross your body when swinging axe.
- Let the axe do the work.
- Always chop away from the body. Make sure you have a firm grip, and always swing AWAY from your body, hands, and legs.
- To swing your axe, swing down with your whole arm to increase momentum while allowing gravity to aid you.
- Bring your shoulder down so the momentum of your core whips your arm and the tool around to generate added force. Lead with your elbow.
- Do not hack perpendicularly into the object you are chopping, usually woody vegetation. Hack at a 45 degree angle, alternating cuts from vertical.
- If you are tired, rest before continuing. Fatigue can result in injuries.
- Switching hands may be okay, but only if you are coordinated with your opposing arm. Try cutting backhand with your weaker arm.
- Clean and oil the axe after use. Since you will be using it to cut a lot of wet plants with woody pulp, the finish won't last long and the blade will soon become prone to rust.

HOUSEKEEPING
• Store the brush axe in a dry location; ensure the blade guard is in place when the axe is not in use.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Hand and Power tools	SWP-Use of Chainsaws SWP - Use of an Axe.

VEHICLE RECOVERY

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Tipping (around corners) (S) • Caught between- crush hazard (S) • Run over - causing serious injury or death (S) • Damaged Equipment/vehicle (E)	✓ Job specific training (A) ✓ Vehicle Recovery – SJP (A) ✓ Safety Zone (A) ✓ Well maintained equipment (E) ✓ Vehicle Safety - SWP (A) ✓ Operator's manual(A) ✓ Equipment specific training (A) ✓ Hand Signals training (A) ✓ P.P.E. – CSA Approved

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Rotating/flashing yellow beacon Buggy whips with light at top Flashing hazard / warning lights on vehicle (to be used while involved in recovery operations) Approved/certified recovery device	Safe work procedures Operators Manuals	Equipment & Job Specific Proper licensing of driver for unit being operated Hand Signals training (A)

PPE REQUIREMENTS

Hard Hat	**Gloves**	**High Vis Vest**	**Safety Glasses**	Hearing Protection	**Safety Boots**		**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

A Hazard Assessment is mandatory before beginning to work on vehicle recovery.

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

The danger zone extends 100 feet! 30.5 meters beyond the vehicles!

SAFE JOB PROCEDURE

1. Vehicle recovery is inherently dangerous; if possible, a professional recovery operator (professional tow truck operator) shall be used.
2. Workers shall at all times abide by client/site practices (types of towing devices, attachments or even if worker initiated recovery is permissible.)
3. If recovery is permitted and your vehicle is stuck in sand, snow, mud, etc., use a tow strap or other device designed specifically for vehicle recovery.
4. Always follow the manufacturer's instructions for the recovery device.
5. When attempting a vehicle recovery attention must be paid to all workers who are in/near the recovery attempt. The danger zone extends 100 feet! 30.5 meters beyond the vehicles!
6. Communication signals (hand signals, radio, etc.) must be agreed upon prior to recovery attempt.
7. Company vehicles shall not be used to assist in the recovery of 3rd party vehicles.
8. All property/equipment damage that occurs during a vehicle recovery or extrication shall be reported to the company and client.
9. Recovery history shall be documented in vehicle logbook.

SAFE WORK PRACTICE

- Never jerk or shock load the removal device (tow strap, etc.) during recovery.
- DO NOT move a vehicle while anyone is between the two vehicles. (unit being towed and towing unit)
- DO NOT go between the vehicles while either one is in motion.
- A driver must not move until he/she receives a signal from the person hooking up the two machines and can clearly see that person is well out from between the machines.
- ENSURE that all ground people are well away from the moving units in case the units move in an unexpected fashion or the cables or towing apparatus break.
- If assisted by a ground man, DO NOT move the equipment until signaled that everyone is clear from the machines and it is safe to move.
- ENSURE equipment is secured against movement while units are being connected: both units must be stopped, the brakes set. Tires blocked where required.
- Ensure tow chain/cable is connected to the tow hitch of vehicle or machine (don't just hook it to anything)
- Tow bars are usually safer than towing cables. If cables are used, ENSURE that they are in good condition and of sufficient size and length for the towing job at hand.
- ENSURE all equipment being towed is secured by a safety chain attached to the pulling unit, in addition to the regular hitch or drawbar.
- Ease the vehicle being towed – DO NOT JERK IT.
- Contact your supervisor and client contact before engaging in vehicle recovery operations.
- Warning highway signs to be installed far in advance of oncoming vehicles to allow ample time for vehicles to slow down or stop.
- Assess road conditions.
- Be aware of road/site traffic; have your escape route planned.
- If site/client allows vehicle recovery operations, follow site/client guidelines and vehicle recovery operations listed in your vehicle owner's manual. Attach recovery devices only to main structural members of the vehicle or the recovery hooks.

- Do not use the vehicle tie-downs to tow or free a stuck vehicle.
- Only use devices specifically designed for vehicle recovery and follow the manufacturer's instructions
- Always pull the recovery device straight out from the front of the vehicle. Never pull at an angle.
- Ensure recovery devices do not touch any part of the vehicle except the attachment point.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
TRAFFIC SAFETY ACT Vehicle Safety **OHS LEGISLATION** Mobile Equipment	Driving – SWP Mobile Equipment - SWP

USE OF BEAR REPELLANT

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Bear Attack – serious injury or death (S)	✓ Use of Bear Repellant – SJP (A) ✓ Training on use (A) ✓ Training – Bear Aware (A) ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
repellant	Prejob hazard assessment	Job Specific Bear Aware Legislation – Use of Bear Spray Only Crew chiefs that are experienced trained and competent should mentor new employees.

PPE REQUIREMENTS

Safety Boots	Gloves with good grip, especially in rainy or winter conditions	Hard Hat	High Vis Vest	Safety Glasses		Communication Device

PRE-OPERATIONAL SAFETY CHECKS

- Check can for expiry date and any damage – get replacement if expired or damaged and hand the old can into office for disposal

READ THIS FIRST: IMPORTANT INFORMATION

Bear deterrents must only be used for the purpose they are intended for.
Using a bear deterrent for any other purpose is a chargeable offence under the Criminal Code of Canada

Bear spray is no substitute for appropriate conduct when working in bear country. It should only be used as a last resort to resolve - a human-bear encounter.

SAFE JOB PROCEDURE

INSPECTION

- When choosing a container, conduct a visual inspection of the can before use.
- Check expiry date to ensure that it is current.
- Ensure the disarming clip is in place, check discharge nozzle to ensure that it is clear of obstructions.
- Discard any cans that are dented or are suspect
- Return to office for proper disposal.
- Known as a bear spray or pepper spray

USING THE EQUIPMENT

1. Designed for one-hand operation.
2. Place forefinger through the hole in the handle with your thumb on the safety clip curl.
3. With thumb, pull safety clip straight back and off
4. Aim slightly down and towards the approaching bear. If necessary, adjust for cross wind.

OPERATION:

1. Depress actuator tab for burst of spray
2. Aim slightly downward in front of the bear at the eyes and face.
3. Depress actuator tab for 1-2 seconds in order to create a barrier of spray between you and the bear.
4. Bear Spray only lasts a total of 7-9 seconds all together to empty canister
5. Stop to evaluate the impact of wind and other factors and adjust your aim if needed before spraying again.
6. Spray again if the bear continues to approach.
7. Once the bear has retreated or is busy cleaning itself, leave the area as quickly as possible, but don't run.
8. Go to an immediate area of safety, such as a vehicle, tree, or building.
9. Do not chase or pursue the bear.
10. TO DISARM
11. Replace safety clip by pushing firmly with thumb until audible snap is heard
12. Check to see if safety is completely in place. No gap should be visible between actuator handle and safety clip.

PERSONAL DECONTAMINATION

The effects of bear deterrent spray typically last for approximately 30-45 minutes and discomfort can be somewhat relieved by washing with lots of cool water.

A non-oil based soap (Johnson's Baby Wash, no tears formula) can be used and will help remove the pepper oil from the skin. Once completed, pat dry with a cloth towel. DO NOT RUB

If symptoms persist over an hour, seek medical attention.

SAFE WORK PRACTICE

STORAGE/TRANSPORTATION

- Do not store/transport spray where it is subject to puncture or crushing.
- WHEN TRAVELING DO NOT STORE IN PASSENGER COMPARTMENT.
- Contact air carriers for regulations concerning air transport.
- Do not expose to temperatures above 50° C **Temperatures in the interior of crew trucks can reach or exceed 50° C during the spring/summer/fall.**
- Do not store in temperatures below 0° C.
- DO NOT INCINERATE.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

USE OF A SLEDGEHAMMER

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Sprains, strains (H) • Pinch points (S) • Caught between hammer & object being hammered (S) • Exhaustion (H)	✓ Sledgehammer SJP (A) ✓ Take frequent breaks as necessary (A) ✓ Stand in proper position when swinging hammer (A) ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
sledgehammer		All field crew chiefs must demonstrate and train inexperienced crew members.

PPE REQUIREMENTS

						
Safety steel toed Boots	**Gloves**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**		**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Inspect sledgehammer before use. If you see any damage or the head is loose do not use it.

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK REPORT TO SUPERVISOR.

Use a solid stance. Legs spread so a glancing blow lands between your legs, not on them.

SAFE JOB PROCEDURE/ SAFE WORK PRACTICE

- Certain soils are harder than others to pound pins in, particularly in winter.
- Quality of sledgehammer, is important to a safe job.
- Use a solid stance. Legs spread so a glancing blow lands between your legs, not on them.

CHOOSING THE TOOL

- For pounding in Survey Pins and Marker Posts, 8 lbs is a good sledge weight. After a few swings anything over 8lbs gets too heavy.
- Check the hammer for tightness and condition.
- Check handle for cracks, wood slivers, and/or grease and oil.
- Next, lay the handle along a straight line and eyeball it for warping.
- Ensure a nice straight handle with no knots.
- Avoid handles finished with varnish or glossy paint. They can raise friction blisters and become dangerously slippery when wet.
- Select a sledgehammer that has a rubber coated collar attached to the head. Always wear your shock resistant work gloves.
- Do Not Use A Sledgehammer When You Are Overtired.

USING THE TOOL

1. Make sure spectators stand a minimum of two handle-lengths away so that they can't be hit by the sledgehammer or flying debris
2. Hold the hammer shaft with one hand approximately 8-12 inches from head and other hand approximately 6 inches from the top.
3. Set feet in a balanced position with terrain etc.
4. Set the hammer on the object to be struck before beginning swing.
5. Lift the hammer in a controlled manner and swing toward object.

Safe work practices

- A sledgehammer is like any tool. Cared for properly and used wisely, it can make the job easy, safe and enjoyable.
- Always use the sledgehammer in a way that is comfortable to you, swinging in an arc that feels natural.
- Make sure you have a firm grip, and always swing AWAY from your body, hands, and legs.
- Before you do anything else, check overhead for dead branches, which may fall and injure you, and for hazards like hornets' nests.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Hand & Power Tools	Hand & Power Tools - SWP

FOREST FIRES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Starting a fire (S, E) • Getting caught in a fire (S) • Working alone (S)	✓ Fire safety training (A) ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Shovel and axe Fire extinguisher - if using a chainsaw Backpack, or similar device, with water and sprayer.	Job Plan Emergency response plan Emergency numbers	Fire safety training

PPE REQUIREMENTS

						
Safety Boots	**Gloves**	**Hard Hat**	**High Vis Vest**	**Safety Glasses**		**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Inspect all equipment used for job prior to starting job

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, REPORT TO SUPERVISOR.

The following are potential causes of fires that we might encounter:

- cigarette butts and matches
- improper dousing of camp fires
- placing the chainsaw muffler in contact with combustible material
- hot transmission or engine on a vehicle (also applicable in dry stubble fields)

- flares and bear bangers
- muffler on quad

SAFE JOB PROCEDURE

Forest fires have the potential to create great harm to the environment and our personnel.

Be aware of the fire hazard in the area and the location of the nearest ranger station.

The following phone number can be called anywhere in the province to report a forest fire:

- **AB - 310-FIRE (310-3473)**
- **BC -1-800-663-5555 or *5555 on most cellular networks**

SAFE WORK PRACTICE

- All survey crews must have a shovel and axe available.
- Anyone using a chainsaw must have a fire extinguisher with them.
- It has been agreed with Alberta Forestry and British Columbia Forest Service that should any survey crew comprised of three or more people enter a forested area, they must have a backpack, or similar device, with water and sprayer.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	Fire Safety – SWP Axe - SWP Fire extinguisher -SWP

HELICOPTER

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Hit Caught in / by rotor (S) • Crashes- causing serious injury or death (S)	✓ Pilot briefing (A) ✓ Helicopter – SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Radio communication		Pilot will go through a briefing with all new workers: • Location and operation of the EL T • Location of the survival gear • Tail rotor dangers • Emergency procedures • Approaching and leaving a running helicopter • Storage of equipment • Door operation • Carrying equipment to and from a running helicopter • Seat belt use • Ground positions when the helicopter is landing • Frequency of your hand held walkie talkies

PPE REQUIREMENTS	
	
	Radio

PRE-OPERATIONAL SAFETY CHECKS

Make sure you know the rules for helicopter safety. If you don't – ASK!

READ THIS FIRST: IMPORTANT INFORMATION

From time to time it becomes necessary for our survey crews to utilize helicopters for their projects. These machines provide a great potential for risk to the survey crews.

Prior to the survey crews starting their project, the pilot will go through a briefing to familiarize the personnel with the machine and the procedures that must be followed when working with the helicopter. New members to the project must undertake this briefing.

SAFE JOB PROCEDURE / SAFE WORK PRACTICE

GENERAL

- Make sure landing zones are clear with a clearly marked perimeter.
- Always crouch when approaching or exiting a helicopter – always be aware of the blades.
- Ensure the pilot sees you.
- Carry objects below waist level when beneath the rotating blades.
- Never smoke near a helicopter.

LOADING THE HELICOPTER

- Survey equipment is typically stored in the rear storage compartment.
- Care must be taken to ensure that heavy and sharp objects are placed as far into the compartment as possible.
- The metal skin of a helicopter is very thin and can be damaged quite easily.
- Tripod legs are capable of denting and even puncturing the compartment.
- Care should also be taken to ensure that when the door is opened in the field, the contents will not fall out.
- Often, the helicopter's refueling hose and pump are also in this compartment. Care must be taken to prevent damage to these items as well.

RIDING IN THE HELICOPTER

- Seat belts must be worn at all times. They must not be taken off until the pilot tells you that you can leave the machine.
- Many helicopters come with shoulder harness straps as well. These must be worn.
- A head set complete with microphones is provided for communications and must be worn to prevent hearing damage.
- Check that your headset is working at the beginning of each day.
- Do not slam the door after you get in. The door is meant to close with a moderate amount of force. There is a locking mechanism that is activated by turning the door handle.
- Do not talk on the intercom system when the pilot is taking off or landing unless it is to warn the pilot about a potential problem.
- Do not make any major moves in the helicopter during take-off and landing.

ENTERING AND LEAVING A RUNNING HELICOPTER

- You cannot leave or approach a running helicopter without the pilot's permission.
- If you are in the machine, this will be verbal. If you are outside the machine, this will be a nod or wave by the pilot.
- **THE PILOT MUST BE AWARE OF WHERE YOU ARE AT ALL TIMES.**
- When leaving the helicopter, make sure that your seat belt is placed on the seat and is not hanging outside.
- Close the door and make sure that it is latched.
- If you do not require access to the storage compartment, then you must exit away from the helicopter by crouching down and proceeding towards the front of the helicopter.
- If you are required to access the storage compartment and you are on the wrong side of the helicopter, you must go around the FRONT of the machine to access the compartment.
- The equipment is then taken out. If the helicopter is leaving, heavy equipment can be left on the ground away from the skids and you can vacate the area by crouching and walking towards the front of the machine and continuing away in that direction until sufficient distance from the helicopter has been reached.
- If there are other crew members with you leaving the helicopter, watch out that everyone understands what they must do to safely leave the area.
- The storage compartment area can be a very confusing area, as it is extremely noisy and you are being blasted by tail rotor winds and exhaust fumes. In addition, the tail rotor is in your area and is going so fast that it is almost unrecognizable.
- If you are waiting for the helicopter to land so that you can board it, try to make sure that you are positioned in what will be the front of the helicopter once it has landed.
- As the helicopter approaches, crouch down and make sure everything with you is secured.
- Once the helicopter has landed, wait for the pilot's signal and then approach the machine crouching with your equipment in hand.

CARRYING SURVEY EQUIPMENT TO AND FROM A RUNNING HELICOPTER

- When leaving the helicopter, some heavy equipment can be left on the ground near the machine, away from the skid, until it leaves or stops running.
- Make sure all equipment is secured and in hand when approaching or leaving.
- Baseball hats can be blown off and sucked into the rotor if care is not taken.
- **ALL equipment MUST BE CARRIED NEAR THE GROUND.**
- **DO NOT PLACE ANYTHING ON YOUR SHOULDER.**
- **DO NOT THROW objects from the storage compartment away from the helicopter**

HOUSEKEEPING
• Always take away with you - what you brought. Don't leave anything in the helicopter

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

WORKING IN SHOP

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Cuts, Contusions, Lacerations (S) • Noise Hazard (H) • Strains and Sprains (S) • Atmospheric Exposure (H) • Residual H2S (H) • Lifting & Handling (H) • Awkward Body Positions (H) • Hand injuries (S) • Airborne particles (S, H) • Electrocution (S)	✓ Proper tools & machines for jobs, proper guards, shields & lifts (E) ✓ Job Safety Assessment (A) ✓ Policies, Safe Work Practises (A) ✓ Safe Job Procedures (A) ✓ Manufacturer's Specifications and Recommendations (A) ✓ PPE – CSA Approved (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Tools, ladders, lifts, machines, chemicals	Manufacturer's specifications, SDSs,	Job Specific Certified Mechanic Training Course - H2S Alive

PPE REQUIREMENTS

						
Safety Boots	**Gloves**	**Hard Hat**	Hearing Protection	**Safety Glasses**		**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Shop Inspections must be competed
- Inspect all tools and equipment before use
- Check SDS for controlled products before using

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING A TASK, REPORT TO SUPERVISOR.

Always follow manufacturer's instructions for safe operation of tools.

SAFE WORK PRACTICE

The shop presents different areas of potential danger not associated with our normal day to day surveying.

- The workplace must be provided with equipment that meets the requirements of the standards and regulations
- All machines should be constructed and maintained so that while running at full or idle speed and with the largest attachment it is free of excessive noise and harmful vibration
- All machines except mobile or portable ones should be leveled and if necessary vibration dampened
- All machines should be securely fastened to the floor or other suitable foundation to eliminate movement/walking
- Small units should be secured to benches or stands of adequate strength and design
- Arbors and mandrels should be constructed to ensure a firm and secure bearing and free from slip or play
- Loose clothing, long hair and jewelry should not be worn around rotating parts and nip points
- Adjustments should not be made if at all possible while the machine is running

SAFE JOB PROCEDURES

The following are areas of concern and precautions required:

POWER TOOL INSPECTIONS

- Check On/Off switch is functioning properly
- Check cords for frays and ensure tool is equipped with proper 3-prong plug
- Check air filters, gas levels, spark plug and blade if applicable
- Ensure guards are in place and secure
- Turn tool on by switch, not by plugging/unplugging
- Notify supervisor of any malfunctioning tools to be discarded or repaired
- Store tool properly with cord wrapped around too

GRINDER USED FOR SHARPENING TOOLS

- Safety goggles must be worn at all times
- Gloves must be worn at all times
- Ensure the proper grinding technique is being used
- Ensure that no one is standing in the area
- Ensure that the operator does not have articles of clothing that can be caught in the grinder

STAMPING OF SURVEY POSTS

- Gloves, safety goggles and hearing protection must be worn at all times
- Vice grips must be used to hold the stamps
- Ensure the post is firmly held in position by the large vice

STORAGE OF SURVEY EQUIPMENT

- Equipment and supplies stored on the shelves and cupboards present potential areas of danger - care should be taken when removing supplies from overhead.
- Use proper lifting techniques for heavy objects (see JPR-11 Manual Lifting).

SWEEPING

Sweeping floors may involve awkward positions of wrists and prolonged contact pressure on hands. Also, the back and neck are often in an awkward forward bent posture.

- Gather required tools
- Put on PPE
- Start at one end of area and work in methodical manner across area
- Avoid rushing - Move slowly so dust is reduced as much as possible
- If heavy objects are to be moved get assistance
- Alternate right and left hands at the top of the broom handle
- Use lightweight brooms, standup dustpans, and lobby brooms
- Do not bend your back. Kneel down to get closer to the work
- Use tools that allow you to remain upright. If needed, bend your knees and not your back.

HOUSEKEEPING

- Keep work area clean & free of tripping, slipping hazards
- Tools are properly stored away when not in use

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Ergonomics	Lifting & Handling - SWP

ROAD SURVEY JOBS INITIAL MEETING REQUIREMENTS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Hazards not identified (S,E) • Controls not put in place (S,E) • Being hit by public traffic (S)	✓ Traffic Accommodation System (A) ✓ Prejob Meeting Form (A) ✓ Hazard Assessment (A) ✓ Permits (A) ✓ Flag persons (A) ✓ Signage (E) ✓ Blockades (E) ✓ CSA Approved PPE (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Signage Blockades	Traffic Accommodation System Overall Job Specifications & Permits Prejob Meeting Hazard Assessment	Site Orientation

PPE REQUIREMENTS

					
Safety Boots	**High Vis Vest**	**Hard Hat**	WHITE Coveralls		**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Make sure everyone is at the meeting that is involved in the job

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

Be familiar with the Traffic Accommodation System implemented for the worksite.

"Tailgate Meeting" topics to discuss:

a. Job Hazards
b. Setting up signs
c. Safety vests and equipment
d. Beacon light
e. First aid kit and procedures
f. Nearest hospital
g. Operation of truck mobile
h. Surveying required for that day
i. Total awareness of heavy equipment around you
j. Working around dust
k. Working around borrow pits
l. Working on rough terrain, ditches, etc.
m. Working in the rain, "driving conditions, walking conditions"

Complete field Safety Report including job hazard analysis and the information discussed above.

Crew Chief should communicate daily with contractor's foreman regarding work assignments around equipment.

Painting:

- Signage
- Move signs with work crew

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Hazard assessments Inspections PPE Orientation & Training	Hazard ID & Assessments Inspections PPE Job Competency - Orientation & Training Safety Rules Legislation Emergency Response Safety Meetings Drug & Alcohol Program - SWP

GENERAL SAFETY GUIDELINES FOR ROAD CHECKERS

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Mobile equipment hazards (S) • Vehicles (S) • Congested Worksites (S) • Falling, flying debris - material falling off loads thrown from tires (S) • Overhead powerlines – electrocution (S) • Truck tip overs (S) • Slips, trips, falls (S)	✓ CSA Approved PPE (P) ✓ Traffic Control Signs (E) ✓ Overhead Powerline legislation (A) ✓ Planned escape route (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Automatic level	Job Plan	Job Specific training Mobile equipment - SWP

PPE REQUIREMENTS

Safety Boots	Hard Hat	High Vis Vest		Communication Device

PRE-OPERATIONAL SAFETY CHECKS

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READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK REPORT TO SUPERVISOR.

SAFE WORK PRACTICE

GENERAL

- Checkers will be issued a hard hat and reflective vest; this protective equipment must be worn during road checking operations. Appropriate safety footwear should be worn as determined by Project Manager.

- Checkers should be aware of the construction traffic control signs erected through the work zone for the guidance of the public. Never assume that any moving vehicle will stop for you.
- Park your vehicle in an area to avoid conflict with moving equipment and/or public traffic.
- Never stand directly behind a backing truck.
- Always be as conspicuous as possible to equipment operators and vehicles.
- Be prepared to take evasive action at any moment. Wait until trucks are fully stopped before receiving a haul card. **If you cannot see the operator/driver they cannot see you**
- Be alert for material falling off loads or being thrown from tires.
- When checking from ditches or slopes, be aware of hazardous footing that could result in causing slips, trips or falls.
- Be aware of overhead power lines and caution the truckers when checking their loads.
- Do not stand on running boards of moving vehicles/equipment.
- Checkers should remain in the vicinity of the designated work area.
- Do not stand beside any truck on the low side of a curve when the truck box is being hoisted. Long box end dump trucks have been known to tip over in this situation.
- Be particularly cautious during periods of high winds and dusty conditions. Should you have your hat blown off or a haul card fall out of your hand, check for moving vehicles before attempting to retrieve them.
- Always have an escape route.
- Be alert to changing traffic conditions.
- THINK SAFETY - BE SAFE.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

SETTING UP CONSTRUCTION SIGNS

(Temporary Set-Up & Take Down)

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Lifting Signs - Strains, sprains (S) • Traffic – hit by high speed traffic (S) • Pinch points • Lifting & Handling	✓ Safe work Practices (A) ✓ High visibility PPE (P) ✓ Lifting & Handling - SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Vehicle Signs Post pounder or hammer flashing lights flashing beacons	Safe Work Practices	Job Specific Traffic Safety

PPE REQUIREMENTS

Safety Boots	Gloves	Hard Hat	High Vis Vest	Safety Glasses		Radio

PRE-OPERATIONAL SAFETY CHECKS

Keep alert for oncoming traffic

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

1. Load signs in back of pickup
2. Drive to location of sign
3. Stop in a visible location on shoulder of roadway.
4. Activate flashing lights and revolving lights (if any) on vehicle.

5. Check traffic before exiting vehicle.
6. Unload signs from rear or passenger side of vehicle whenever possible.
7. Set up signs as per Traffic Accommodation Strategy diagram.

8. Safely enter truck and proceed to next location. Get back into truck and move to next sign location
9. Continue until all signs are posted

SAFE WORK PRACTICE

- Park at a visible location on shoulder or clear of the roadway. Use the vehicles as a barrier against traffic.
- If traffic lanes have to be crossed, only do so when traffic is clear
- No riding in truck box, on tailgates or bumpers
- Be aware of pinch points on signs
- Wear proper PPE
- Be visible
- Watch for oncoming traffic
- Remove signs from rear or passenger side of vehicle
- Use proper lifting techniques
- Always work facing traffic

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Hand & Power Tools Lifting & Handling	Hand & Power Tools - SWP Lifting & Handling - SWP

GAS DRILL / JACK HAMMER

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Hearing Hazards (H) • Hammering action creates potentially dangerous noise levels. • Smashing hazards • Vibration • Flying debris • Manual lifting • Fuel and oil – chemicals, fire	✓ CSA Approved PPE (P) ✓ Noise– SWP (A) ✓ Vibration – SWP (A) ✓ Ergonomics – SWP (A) ✓ PPE-SWP (A) ✓

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Jack hammer	Operator's manual Manufacturer's safety requirements	Job Specific Equipment specific – jack hammer Ergonomic hazards – SWP Noise – SWP Receive hands on instruction from a competently trained individual

PPE REQUIREMENTS


Hearing Protection


Gloves


Hard Hat


High Vis Vest


Safety Glasses


Safety Boots

PRE-OPERATIONAL SAFETY CHECKS

- Inspect jackhammer before

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

- In hard ground or concrete, small chips of rock break away forming tiny projectiles.
- In wet conditions, water displaced by the shovel often explodes up the shaft towards the face of the operator.
- There is a constant spattering of oil produced by the self lubricating motion of the gas drill/jack hammer.

PNEUMATIC / ELECTRICAL JACKHAMMERS

WHEN USING A JACKHAMMER:

- Wear proper PPE: eye protection, steel-toed boots, hearing protection; and safety gloves.
- Rotate workers, whenever possible, when jackhammering for extended periods of time.
- Position the jackhammer as near as possible to the work location. Place the compressor as far as possible from the work area to reduce the level of noise.
- Inspect the jackhammer and associated equipment regularly for defect or damage. Check if all components are complete, securely in place (or tightened) and in good condition. Make sure to do this, too, before every shift or start of operations.
- Check air hoses for breaks, cracks, and worn or damaged couplings.
- Ensure that the rating of the hose is sufficient for the job intended.
- Inspect the electrical cord for frays, wear and other signs of damage.
- Secure hose ends to prevent whipping if an accidental cut or break occurs
- Workers must sling the electrical cord on their shoulder to prevent its accidental swerving which can cause electrocution.
- Use the proper weight of the jackhammer for the job. Use a lighter jackhammer for the job as much as possible.
- Use the proper point for the material to be broken. Remember to use rock point for rock, spade point for asphalt, and chisel point for concrete. Never use a broken or cracked point.
- Lift the jackhammer properly by using the legs. This helps you avoid back strain or injury.
- Position the bit where you wish to the start the cut, then widen your stance to an athletic position prior to pulling the trigger.
- Operate the tool at a slight angle with it leaning back towards you. This way, you prevent the point from getting stuck in the material and the tool from getting out of control.
- Check for dust when operating jackhammer – If necessary, use water suppression and/or respiratory equipment to limit exposure levels.
- Do not jackhammer down beyond the depth of the cutting bit.
- Release air trigger whenever lifting up on the jackhammer. If jackhammer trigger is operated when jackhammer is not being held down with pressure, it could jump around uncontrolled and injure the worker.
- When moving the jackhammer from place to place during operation, place your hand between the handle and the operating lever.
- Shut off the air supply and relieve pressure from the supply hose before changing tool points. Do the same when leaving the jackhammer unattended.
- Immediately remove defective or malfunctioning jackhammers and other tools until they are properly repaired.
- Barricade the work area as much as possible to keep spectators and untrained personnel from getting exposed to the hazards of jackhammer operations.
- In the event that the jackhammer bit “gets stuck”:
- Attempt to free the bit by moving the jackhammer back and forth from side to side.

- If bit is still stuck, put a second bit into the jackhammer and work at stuck bit from an angle

GAS DRILL/JACK HAMMER

GENERAL

The first step in operating any piece of equipment safely is to become familiar with its features. Prior to operating a gas drill or jackhammer, all persons should thoroughly read and understand the instruction manual (reference copies are available in the Safety Department, Warehouse Manager's and Crew Supervisors' offices).

The gas drill/jackhammer is a very simple tool, however if it is not fueled, operated and maintained properly, it becomes a potentially dangerous tool.

Receive hands on instruction from a competently trained individual (generally this would be the Party Chief) with particular attention to planting iron posts and marker posts

Read and adhere to all applicable sections of the "Company Safety Policy" including:

Once the operator has read and fully understands the basic operation of the gas drill/jackhammer, he is ready to be instructed on its proper use. It is required that all new operators:

- Job Procedures -"Manual Lifting" and "Rules"
- Personal Protective Equipment

The gas drill/jack hammer is very heavy, particularly if it becomes lodged.

Be sure to follow proper procedure for manual lifting and get assistance if required. Furthermore, to avoid crushing one's toes, steel-toed boots must be worn.

The fuel and oil used for operation and lubrication are potentially explosive, toxic substances. Coveralls, gloves and hard hats are recommended for fueling and prolonged operation.

NOTE: Always **USE AN APPROVED FUEL CONTAINER** and **NEVER SMOKE IN THE VICINITY WHILE REFUELLING**

When using the gas drill/jack hammer in an elevated position such as when planting iron posts or marker posts, the operator is particularly vulnerable. Do not attempt this operation alone.

At least one person must be trained in this technique or it is not to be attempted.

NOTE: IT IS HELPFUL TO HAVE AN OBJECT TO STAND ON (SUCH AS A TAILGATE) TO FACILITATE THIS OPERATION.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

USE OF ICE AUGERS FOR CUTTING HOLES IN ICE

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Hearing hazards (H) • Eyesight hazards (S) • Frozen throttle -be aware that there is no kill switch. (S) • Mixing fuel (H) • Burns (S) • Slips, trips, falls (S, H) • Auger jamming (S) • Modifying auger or engine – serious injury or death (S)	✓ Blade Guards (E) ✓ CSA approved container – for mixing Fuel (E) ✓ Ice Auger SWP (A) ✓ Manufacturer Instructions (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
auger	Operator's manual Job Plan	Tool Specific Training Operator's manual

PPE REQUIREMENTS

							
Hearing Protection	**Gloves**	**Safety Glasses**	Safety Boots with Ice Picks	**Thermal lined clothing for cold weather**			**Radio**

PRE-OPERATIONAL SAFETY CHECKS

- Always inspect auger before each use. If defects are found DO NOT use

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

The auger is a simple tool, however, if it is not fueled, operated and maintained properly, it becomes a potentially dangerous tool.

NEVER Alter/Modify engine or auger in any way from how it arrived from the manufacturer.

SAFE JOB PROCEDURE

Prior to operating an auger, all persons should read and understand the instruction manual (copies available from Safety Department, Warehouse Manager and Survey Supervisor.

Once the operator has read and fully understands the basic operation of the auger, he is ready to be instructed on its proper use. It is required that all new operators:

- receive hands on instruction from a competently trained individual (generally this would be the Party Chief)
- read and adhere to all applicable sections of the "Company Safety Policy'' including:
  - "Manual Lifting" and "Rules"
  - Personal Protective Equipment

STEPS FOR WORKING ON ENGINE OR AUGER

1. Turn off engine switch
2. Disconnect the spark plug wire from spark plug
3. Securely place the disconnected spark plug wire safely away from the spark plug and any metal parts. This must always be done or arching may occur between the spark plug wire and other metal parts
4. Repair or replace the part on the engine or auger
5. Check all parts that were repaired or removed during repair to ensure that they are secure and -t correctly
6. Replace spark plug wire

NOTE: NEVER ATTEMPT TO START ENGINE IN ANY OF THE FOLLOWING WAYS

- Do not use a starting fluid
- Do not spray flammable liquids or vapors into air cleaner, carburetor or spark plug chamber
- Do not remove spark plug and pull on starter rope. Flammable fuel can spray out and ignite from a spark from the spark plug

STEPS FOR CLEANING AIR FILTER

1. Wash in a warm water with mild soap until dirt and debris are removed. Press filter when washing... do not twist
2. Rinse in warm water until soap and dirt are removed
3. Dry Filter by wrapping in a clean cloth and pressing filter until it is dry
4. Apply oil to the entire filter and remove any excess oil
5. Attach the filter and air cleaner cover back onto the auger engine

SAFE WORK PRACTICE

OPERATING ICE AUGER

- The ice blades are very sharp.
- Use extreme caution when drilling a hole or replacing blades.
- Put blade guard on after each use

- Do not carry the auger powerhead between locations while the engine is running
- The auger should not rotate when the engine is idling
- Always keep hands, feet, hair and loose clothing away from any moving parts of engine or auger
- Never allow adults to operate unit without proper instructions
- Do not operate this unit or other power equipment under the influence of alcohol or drugs
- Keep all screws, nuts and bolts secure and tight
- Before any repairs or maintenance is attempted, unit should be shut off and allowed to cool.
- Spark plug wire must be removed from spark plug before attempting repairs
- Muffler and nearby areas can exceed temperatures of 150° F (65° C).... Avoid these areas
- Never run engine indoors or in an enclosed area. Engine exhaust contains carbon monoxide.
- This is an odorless and deadly gas that can result in unconsciousness and even death
- If the ice auger blade is not able to turn in a hole, turn off the engine and allow to cool before attempting to remove it manually
- The auger is a gas powered drilling tool with no muffler. The engine is extremely loud and it creates potentially dangerous noise levels. HEARING PROTECTION MUST BE WORN
- In ice, small chips can breakaway and form tiny projectiles. SAFETY GLASSES/GOGGLES MUST BE WORN
- Use proper lifting techniques to avoid muscle sprains and strains.
- Always keep protective covers on the blades when the auger is not in use, to prevent accidental lacerations. Read owner's manual.
- Ensure you have proper footing to maintain control of the auger, and to make sure you do not force the auger down.
- Start in upright position - utilizing two people to do this.
- Ensure you have proper footing to maintain control of the auger, and to make sure you do not force the auger down.
- Maintain control of the auger as it can jam.
- Maintain clear borehole by clearing cuttings often.
- Use proper lifting techniques.
- Keep covers on blades when the machine is not in use to prevent accidental cuts.

PREVENTION OF BURNS AND FIRES

- Never remove the mufer guard from the engine
- Never touch the mufer guard because it is extremely hot and will cause severe burns
- Never touch parts of the engine that become hot after operation
- Always keep materials and debris away from the mufer guard and other hot parts of the engine to avoid fires

PREVENT CARBON MONOXIDE POISONING

All engines contain carbon monoxide in their exhaust. Carbon monoxide is a deadly, colorless, tasteless, odorless gas which may be present even if you do not smell or see any engine exhaust. Levels of carbon monoxide, which can be deadly, can be present for days in an enclosed area that has poor ventilation. Any level of carbon monoxide, if inhaled, can cause headaches, drowsiness, nausea, dizziness, confusion and eventually death. If you experience any of these symptoms, seek fresh air and medical attention immediately

Prevent Carbon Monoxide Poisoning

- Never run engine indoors.
- Never try to ventilate engine exhaust indoors. Carbon monoxide can reach dangerous levels very quickly
- Never run engine outdoors where exhaust fumes may be pulled into a building

- Never run engine outdoors in a poorly ventilated area where the exhaust fumes may be trapped and not easily taken away. (Examples include: in a large hole or areas where hills surround your working area)
- Never run engine in an enclosed or partially enclosed area. (Examples include: buildings that are enclosed on one or more sides, under tents, car ports or basements)
- Always run the engine with the exhaust and muffler pointed in the direction away from the operator
- Never point the exhaust muffler towards anyone. Any bystanders should always be well away from the operation of the engine and all attachments

MIXING FUEL AND FILLING GAS TANK

Mixing Fresh Fuel

- Fuel must be mixed in a container outside in a well ventilated area
- Fill certified fuel container 1/4 full of recommended fuel
- Add recommended amount of 2-cycle oil with fuel stabilizer
- Screw container cap on straight and tight
- Shake the container to mix fuel and oil
- Unscrew gas cap slowly to vent, add the remainder of fuel requirements
- Wipe away any spilled fuel or oil and allow to evaporate before moving or transporting

Filling Gas Tank

1. Shut-off engine and allow engine to completely cool before refilling the gas tank
2. Move to a well ventilated area, outdoors, away from flames and sparks
3. Clean debris from area around the gas cap
4. Loosen gas cap slowly. Place the cap on a clean, dry surface
5. Carefully add fuel without spilling
6. Do not fill gas tank completely full, allow space for fuel to expand
7. Immediately replace gas cap and tighten. Wipe off spilled fuel and allow to dry before starting engine

GASOLINE FIRES AND HANDLING FUEL SAFELY

- Fuel and fuel vapors are highly flammable.
- Never use fuel where a spark or flame may be present.
- Never use fuel where a potential source of ignition could occur. (Examples include: water or space heaters, clothes dryer, electric motors, etc.)
- Keep flames and sparks away from engine fuel to prevent fires. Fuel -res spread very quickly and are highly explosive

HOUSEKEEPING

STEPS FOR LONG TERM STORAGE

1. Add fuel stabilizer according to the manufacturer's instructions
2. Run engine for 10-15 minutes to ensure that the stabilizer reaches the carburetor
3. Remove the remainder of the fuel from the gas tank into an approved fuel container
4. Remove auger from powerhead and apply a thin layer of grease to the output shaft
5. Store auger and powerhead (engine) in a vertical position
6. Remove all debris from the auger and powerhead (engine)
7. Attach blade protector to the bottom of auger cutting blade

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Hand & Power Tools	Hand & Power Tools – SWP Flammable & Combustible Hazards - SWPO

TAKING OF CORE SAMPLES

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Pinch points • Ground conditions - Slips, trips, falls	✓ CSA Approved PPE (P) ✓ SWP – Ground disturbance (A) ✓ Tools & machinery - SWP (A) ✓ Hand & Power Tools – SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Coring unit	Manufacturer's instructions for equipment used	Job Specific Training Ground Disturbance

PPE REQUIREMENTS

Gloves	Hard Hat	High Vis Vest	Safety Glasses	Safety Boots		Radio

PRE-OPERATIONAL SAFETY CHECKS

- Equipment must be inspected before use

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, REPORT TO SUPERVISOR.

No coring operations will be undertaken unless there is adequate signing in place and at least one flag person (and an arrow board as conditions warrant).

SAFE JOB PROCEDURE

SAFE WORK PRACTICE

- Assemble the coring unit off the road, at the lab site, or at an approach.
- Ensure that the water barrel is full. Check the generator for fuel level.

- At the job site, put on the white coveralls, safety vest and hard hat.
- Tum on the rotating amber light, four-way flashers and arrow board.
- When required, properly position the appropriate qualified flag person(s), road signs (e.g., Testing Crew Ahead, Maximum 50 km, Do Not Pass) and orange glow cones or pylons to delineate the work zone, as per Traffic Accommodation System.
- **NOTE:** At the start of the job, you should discuss road safety requirements with your supervisor. No coring operations will be undertaken unless there is adequate signing in place and at least one flag person (and an arrow board as conditions warrant).
- Park the vehicle away from traffic and locate the core site.
- Move the vehicle so that the coring unit is centered over the site location.
- Ensure that the water pump and coring drill are plugged in.
- Ensure that the on-off switch is in the "ON" position and tum the choke to full on.
- Start the generator
- Switch on water pump, open the water intake and line taps.
- Place the steady board over the area to be cored.
- Unlock the hand feed assembly by removing the retaining pin, and carefully lower the bit to check the positioning of the steady board.
- Lift the bit and turn on the water so that the stream is slow but steady.
- Lower the bit until it just enters the top of the hold in the stead board. Do not rest the bit on the ground.
- Start drill by pressing on switch to "ON" position.
- Gently lower the bit to contact the ground and apply a slight pressure to seat the bit.
- Once the bit is seated, slowly increase the pressure.
- Apply a firm uniform pressure on the feed wheel (handle). Do not force the bit into the material with excessive pressure, or repeatedly increase and decrease the pressure while drilling.

HOUSEKEEPING
• Make sure all equipment is store properly at the end of each job completed

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

USE OF MASONRY SAW

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Noise (H) • Contact with rotating blade (S) • Eye injuries (S) • Burns from hot workpieces. (S) • Cuts & amputations (S) • Strains, sprains (S,H)	✓ CSA approved PPE (P) ✓ Manufacturer's Safety Instructions (A) ✓ Saw Guards (E) ✓ Noise – SWP (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Masonry saw	Manufacturer's operators manual	Job specific training Equipment specific training

PPE REQUIREMENTS

Safety Glasses

Safety Boots

Gloves

Hearing Protection

PRE-OPERATIONAL SAFETY CHECKS

- Saw must be inspected before use. Never use defective tools or equipment

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

PRE-OPERATIONAL SAFETY CHECKS

- Locate and ensure you are familiar with all machine operations and controls.
- Ensure all guards are fitted, secure and functional.
- Do not operate if guards are missing or faulty.
- Ensure the saw is operated on an RCD protected circuit.
- Inspect the blade for chips and cracks.
- Check workspaces and walkways to ensure no slip/trip-hazards are present.

- Ensure the depth stop is properly adjusted.

OPERATIONAL SAFETY CHECKS

- Ensure all adjustments to machine are secure before making a cut.
- Allow the machine to reach full speed before contacting the workpiece.
- Keep hands away from the blade and cutting area.
- When using the masonry saw, a protective face shield or goggles, hearing protection and gloves must be worn.
- When cutting cores a rubber bib is recommended.
- For safe operation, ensure saw is sitting on a stable, level and flat surface (table top or counter top without wobbling).
- Check plug in cord for any damage or loose connections.
- Connect water supply and check for any leakage in water hose.
- Make sure water supply or water spillage during operation does not interfere with electrical supply.
- Place core in core holders, turn water and saw on, check water flow to ensure it is working.
- The core is then cut off at the desired thickness.
- Turn off the saw and remove finished core from core holder.
- At the end of operation, disconnect water and electric supply.
- Place saw in safe position
- Before making any adjustments, disconnect the plug from the power source and bring the machine to a complete standstill.

HOUSEKEEPING

CLEANING UP

- Remove foreign material from in and around ventilation openings and switch levers.
- Leave the machine in a safe, clean and tidy state

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Power Tools Noise	Hand & Power Tools SWP Noise SWP

PROCEDURES FOR MOBILE LAB

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Working with chemicals	✓ WHMIS

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Test equipment & supplies – beakers, test tubes, viles, etc. First aid kit Fire extinguisher	WHMIS legislation SDSs	Job Specific WHMIS Certified Tech

PPE REQUIREMENTS

							
Gloves	**Hard Hat**	**High Vis Vest**	**Safety Glasses**	**Safety Boots**			**Radio**

PRE-OPERATIONAL SAFETY CHECKS

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SAFE WORK PRACTICE

- All pertinent MSDS sheets are to be kept in a folder in the lab with copies prominently displayed with the mobile lab.
- Lab trailer should be equipped with First Aid Kit.
- A set of Alberta/BC Infrastructure Manual of Test Procedures will be kept in the lab, for both reference and staff training.

- No employee of this firm will be left in control of lab procedures until that employee has been adequately trained for each procedure and is confident of their own abilities.
- Where there is a need for P.P.E., such as filtration masks, protective eye, ear or head wear, such equipment shall be provided by the company and shall be worn by the employees.
- Every employee working in the lab who requires a filtration mask shall be provided one for their exclusive use. They will also have access to replacement cartridges as required.
- Protective hand wear will also be provided when the employee is required to handle hot items.
- All containers having materials classified as dangerous goods shall be labeled with appropriate Dangerous Goods Information stickers.
- Ventilation fans are to be used whenever any solvents are used in the lab.
- All solvents must be kept closed all the time.
- Whenever placing or taking materials into or from the battery jars in the centrifuge, canister masks and protective gloves must be worn.
- During work hours nuclear gauges are not to be stored or plugged in in the lab.
- **NOTE: Whenever ignition oven is in use, absolutely no volatile solvent should be stored or used in the lab.**

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

SOLVENT TRANSFER AND STORAGE

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Burns (S) • Fumes (H) • Fire (S) • Explosion (if mixed) (S)	✓ SDSs (A) ✓ PPE – CSA Approved (P) ✓ WHMIS Legislation (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
	SDSs WHMIS -SWP	WHMIS

PPE REQUIREMENTS


Safety Boots


Gloves


Safety Glasses

PRE-OPERATIONAL SAFETY CHECKS

- Always check the products SDS first

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

- Appropriate PPE to be used as outlined on MSDS and the Safety policy.
- Transferring of solvents is preferably done outside (if done in lab, it is to be done in front with the exhaust fans on and the fresh air vents open) and a pan in case of spillage.
- The 20 L pails of solvent are only to be transferred (poured) into 4 L plastic jugs.
- The filling of the 15 L tilt-storage tank is only to be done from the 4 L plastic jugs with use of a funnel (fill opening dictates this).
- The filling of wash bottles can be done from 4 L plastic jugs, using a funnel, but using the tilt-storage can's fill nozzle is preferred.

- The tilt-storage container should be stored on its stand, the wash bottles, the 4 L plastic jugs and the 20 L pails should be stored in each of their designated storage areas in front of the lab with their lids securely fastened.

HOUSEKEEPING
• Always follow SDS for storage instructions for solvents

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: WHMIS Chemical &Biological Hazards	WHMIS USE OF CLEANING SOLVENTS & FLAMMABLES

FORMING MARSHALL BRIQUETTES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

The material in this document does not take precedence over applicable government legislation which all employees must follow.

RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Heat - burns	✓ Safe work practices (A) ✓ Safe work procedures (A) ✓ Job specific training (A) ✓ CSA approved PPE (P)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Marshall tamper Spatula Teri-Cord Gloves 2 Marshall Molds Pie Plate Large Mixing Pan Paper Discs Funnel Metal Pail Concrete Block, Post And Steel Plate Grocer Scoop Plastic Pail Electronic Balance - capable of reading to 0.1 g and having an accuracy of at least 0.01% of the sample mass, e.g. for a 2000 g sample weight, the balance must be accurate to 0.2 g. The balance must be operated and calibrated as per manufacturer's recommendations. ASTM D1559 shall be referenced for Marshall tamper, mold, block, steel plate and post specification requirements.	Manufacturer's instructions	✓ Job specific training

25 mm diameter dial face x 125 mm stem pocket thermometer		

PPE REQUIREMENTS

							
	Gloves	**Hard Hat**	**High Vis Vest**	**Safety Glasses**	**Safety Boots**		**Radio**

PRE-OPERATIONAL SAFETY CHECKS

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READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

GENERAL # 1

1. Proper hearing and hand protection required. (Materials to be handled are extremely hot. Teri-cord gloves recommended).
2. Before sampling the mix, place the two Marshall molds, grocer scoop, funnel, and spatula in the oven, pre-heated to the compaction viscosity temperature of the asphalt cement being used.
3. Obtain ¾ of a metal pail of representative mix as directed in ATT-37 Sampling Mixes.
4. Pour the contents of the pail into the large mixing pan and use the heated grocer scoop to mix it.
5. Weigh two 1200g samples of mix into two tarred pie plates. Each sample will be used to form one Marshall specimen.
6. Take the temperature of the mix in each pie plate.
7. If mix is too cold, place the mix in the oven and heat it, or if the mix is too hot, air cool it until the mix is within± 2 °C of the compaction viscosity temperature.
8. Once the mixes are at, or slightly above the compacting temperature, remove one mold, the funnel, and the spatula from the oven.
9. Take one sample out from the oven, pour into the mold, using funnel.
10. Form Marshall Briquette, as per ATT-13 Test Procedure.
11. After compaction, set the mold on a level surface, base plate downward and allow the specimen to cool until it is hard enough to be removed from the mold without distortion. For faster cooling, an air fan may be used.
12. Remove specimen from the mold by using extruder.
13. Gloves should be worn when using and handling the Marshall tamper. This piece of equipment is capable of inflicting a severe injury to the hands and fingers.

ENSURE THAT THE MARSHALL SPECIMENS ARE COOLED BEFORE REMOVING FROM THE MOLD. SPECIMENS WILL DISTORT IF REMOVED WHILE HOT, RESULTING IN ERRONEOUS DENSITIES. INCORRECT MARSHALL DENSITIES WILL RESULT IN INCORRECT AIR VOIDS, CONTENT, AND PERCENT COMPACTION

DETAILED # 2

EQUIPMENT PREPARATION

1. Install the concrete block, post and steel plate.
2. Before sampling the mix, place the two Marshall molds, grocer scoop, funnel and spatula in the oven pre-heated to the compaction viscosity temperature of the asphalt cement being used.

3. NOTE: If the equipment is not heated, it will cool the mix and affect the density of the specimen.

FORMING THE SPECIMENS

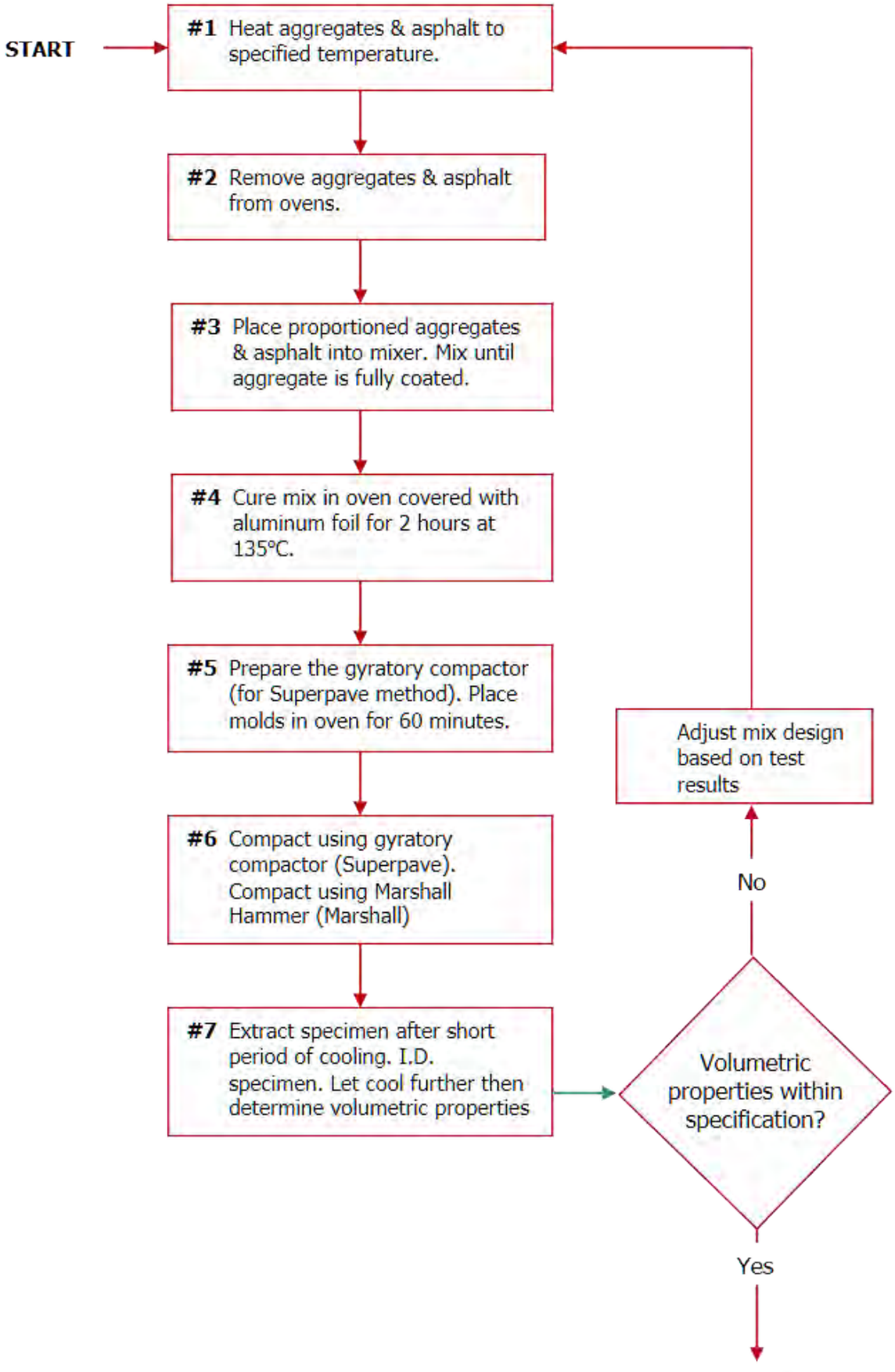
1. Obtain ¾ of a metal pail of representative mix as directed in ATT-37, SAMPLING MIXES.
2. Pour the contents of the pail into the large mixing pan and use the heated grocer scoop to mix it.
3. Perform a visual inspection on the mix as directed in ATT-51, VISUAL INSPECTION, Asphalt Concrete Paving Mixtures, and record pertinent data in the plant log book.
4. Weigh two 1 200 g samples of mix into two tared pie plates. Each sample will be used to form one Marshall specimen.
5. Take the temperature of the mix in each pie plate.
   The compaction viscosity temperature is the temperature to which an asphalt cement must be heated to produce a viscosity of 280 mm /s (millimetres squared per second) and at which the mix for the Marshall specimen must be compacted.
   The Mix Design for the project includes the compacting temperature of Marshall specimens for the asphalt supplier and grade of asphalt cement to be used in the mix. The Marshall briquette compaction temperature should be close to the temperature shown in Table 1.

ASPHALT CEMENT GRADE	ASPHALT SUPPLIER	COMPACTION TEMPERATURE (±2E)	
		ACP	RACP
150-200 (A)	ESSO	133	134
	HUSKY	134	
	MOOSE JAW or SHELL	131	
200-300 (A)	HUSKY	127	128
	MOOSE JAW	126	
	ESSO or SHELL	128	
300-400 (A)	SHELL	124	
	ALL OTHERS	123	

TABLE 1

6. If the mix is too cold, place the mix in the oven and heat it, or if the mix is too hot, air cool it, until the mix is within ±2EC of the compaction viscosity temperature.
7. Once the mix is at or slightly above the compacting temperature, remove one mold, the funnel and the spatula from the oven.
8. Assemble the mold and place it between the mold holder guide bolts on the steel plate.
9. Place a paper disc in the bottom of the mold and the funnel on top of the mold.
10. Pour all of the mix from the pie plate into the mold in one batch to avoid segregation. Ensure that no material is lost. If the sample is segregating when being dumped, use the scoop to place the sample in the mold.
11. Remove the funnel and use the heated spatula to rod the mix vigorously 15 times arund the perimeter of the mold, and 10 times over the interior. This will result in a smoother specimen and eliminate any bridging of the rock.
12. Smooth the surface of the mix to a slightly round shape.
13. Place the grocer scoop, funnel and spatula in the oven.

14. Check the temperature of the mix, then refer to step 6. When the temperature of the mix in the mold reaches the compacting temperature, place a paper disk on top.
15. Compact the mix carefully with the Marshall tamper for the proper amount of blows as specified in the mix design, e.g., 50 blows, 75 blows. Hold the axis of the tamper by hand as nearly perpendicular as possible to the steel plate. No mechanical device of any kind shall be used to hold the tamper in the above described position. For safety purposes, the teri-cord gloves should be worn while operating the tamper.
16. Reverse and reassemble the mold. Apply the same number of blows to the face of the reversed specimen.
17. After compaction, set the mold on a level surface, base plate downward and allow the specimen to cool until it is hard enough to be removed from the mold without distortion. For faster cooling, an air fan may be used.
18. For each series of tests, form a second Marshall specimen by repeating steps 7 to 17.


START
#1 Heat aggregates & asphalt to specified temperature.
#2 Remove aggregates & asphalt from ovens.
#3 Place proportioned aggregates & asphalt into mixer. Mix until aggregate is fully coated.
#4 Cure mix in oven covered with aluminum foil for 2 hours at 135°C.
#5 Prepare the gyratory compactor (for Superpave method). Place molds in oven for 60 minutes.
#6 Compact using gyratory compactor (Superpave). Compact using Marshall Hammer (Marshall)
#7 Extract specimen after short period of cooling. I.D. specimen. Let cool further then determine volumetric properties
Volumetric properties within specification?
No
Adjust mix design based on test results
Yes
Continue to Performance Testing

EXTRUDING THE SPECIMENS

If an extruder is available, proceed to step 2 below. If an extruder is not available, remove each specimen from the mold as follows:

- set the mold collar on the steel plate
- set the mold on the collar
- place the tamper vertically over the mold so that the tamper foot rests on the specimen
- slide the hammer upwards on the tamper and then firmly pound it against the tamping foot
- repeat step (d) until the specimen begins to move from the mold
- decrease the force of the blows so that the sample gently slides out, and is not disturbed

If an extruder is available, remove each specimen from the mold in the following manner:

- centre the extruder's circular base plate on the jack;
- centre the mold in the extruder's base plate;
- jack the assembly up until the top of the mold is just about touching the top plate;
- line up the inside circumference of the top of the mold with the hole on the top plate;
- jack the specimen up through the hole, keeping the specimen as perpendicular as possible so that the specimen is not distorted.

PROCESSING THE SPECIMENS

1. For each specimen, perform ATT-32, VISUAL INSPECTION, Asphalt Concrete Formed Specimens.
2. Determine the dry density of each specimen using ATT-7, DENSITY Immersion Method, Saturated Surface Dry Asphalt Concrete Specimens (or ATT-6 for Waxed Specimens), and ATT-15, Part V, MOISTURE CONTENT, Oven Method, Asphalt Concrete Mixes.
3. Determine the asphalt content of the test series Marshall specimens as follows:
    a. If performing quality control testing, determine the asphalt content of the test series mix using ATT-55, NUCLEAR ASPHALT CONTENT. If a nuclear gauge is not available, use ATT-12, Part II, Filterless Extraction and Filterless Centrifuge. For either test, use the mix remaining in the large mixing pan from step 2 of Section 3.2.
    b. If performing quality assurance testing, determine the average corrected extraction asphalt content of the cores taken for the lot.
4. Use the average dry density of the two Marshall specimens compacted for the test series and the asphalt content determined in step 3 above to determine the test series Marshall void contents as directed in ATT-36.
5. Use the average dry density of the Marshall specimens compacted for the lot as a comparison for core road densities that fall within that lot. The procedure for determining segment and lot percent compaction is described in ATT-67.
6. If performing quality control testing and a nuclear asphalt gauge is available, adjustments to the plant's asphalt setting may be made if required until the field Marshall's air void content is within 0.5% of the design air void content.

HINTS AND PRECAUTIONS

Ensure that the mix is at the compaction viscosity temperature (±2EC) before tamping. Consistent densities depend on the consistency of weights and compacting temperatures.

Gloves should be worn when using and handling the Marshall tamper. This piece of equipment is capable of inflicting severe injury to the hands and fingers. Tamper operation other than that described in the Equipment Section, is not permitted.

Ensure that the Marshall specimens are cooled before removing from them old. Specimens will distort if removed while hot, resulting in erroneous densities. Incorrect Marshall densities will result in incorrect air voids content and percent compaction.

Table 1: Summary of types of Marshall Mixes used

Hot Mix Type	Abbreviation	Summary of Hot Mix Use and Properties
Dense Friction Course	DFC	A dense-graded surface course mix with high frictional resistance for high volume roads
Hot Laid 1	HL 1	A dense-graded surface course mix with a premium quality coarse aggregate
Hot Laid 2	HL 2	A sand mix used primarily as a leveling course on existing pavements or surface course on low speed traffic areas requiring thin overlay
Hot Laid 3	HL 3	A dense-graded surface course mix for intermediate volume roads
Hot Laid 3 High Stability	HL 3HS	A dense-graded padding and leveling mix of high stability
Hot Laid 3 Fine	HL 3F	A fine-graded used as a surface course where hand work is necessary for placement
Hot Laid 4	HL 4	A dense-graded mix used as a surface or binder course on low volume roads
Hot Laid 4 Fine	HL 4F	A fine-graded mix used a s surface course where hand work is necessary for placement
Hot Laid 8	HL 8	A coarse-graded binder course mix
Medium Duty Binder Course	MDBC	A binder course mix intended for use in locations where rutting and deformation is likely
Heavy Duty Binder Course	HDBC	A high stability binder mix designed to provide superior resistance to rutting

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

USE OF BOATS OR DINGHIES

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
MEDIUM Risk	• Falling into water – Drowning, Hypothermia (S) • Being swept away by current (S)	✓ Training - Canadian Pleasure Craft (A) ✓ Life jackets

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Boat or dingy Oars Life jackets for everyone in boat/dinghy	Operator's manual	Valid Canadian Pleasure Craft Operators license

PPE REQUIREMENTS

	CSA approved life jacket or personal floatation device (PFD)	**Communication Device**

PRE-OPERATIONAL SAFETY CHECKS

- Inspect boat or dinghy before taking out on water. Do not go out if there are any defects affecting the safe operation of the craft.

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK REPORT TO SUPERVISOR.

SAFE WORK PRACTICE

- Regardless of the size of vessel to be used, anyone operating a motorized Pleasure Craft on behalf of company will hold a valid Canadian Pleasure Craft Operators license before operating that vessel on Canadian waterways. Life jackets must be worn at all times.
- Never overload the dinghy or boat.

- Never stand in the boat.
- Insure that a good set of oars is in the boat prior to launch.
- Insure the dinghy is properly inflated.
- Use extreme caution when placing the rod in the water when cross-sectioning or profiling the water body.
- If boating on a lake, ensure someone on shore has your schedule and arrangements are made for assistance should arrival time be exceeded.
- Communication with shore through radios must be available.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION:	

START TO WORK

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Unknown hazards • Rules unknown • Rules not followed • Incidents & near misses	✓ Hazard assessment (A) ✓ Pre-job meeting (A) ✓ Permits (A) ✓ Job plans (A) ✓ CSA approved PPE (P) ✓ Jobsite safety rules (A) ✓ Emergency Response ✓ Incident reporting

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Job specific	Job Specific	Task specific

PPE REQUIREMENTS


Gloves


Hard Hat


High Vis Vest


Safety Glasses


Safety Boots


Radio

PRE-OPERATIONAL SAFETY CHECKS

•

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

PLANT/WORKSITE RULES

- You must be aware of :
  - Hazards you will or may face on the jobsite
  - All rules relating to your worksite

- Emergency response plan
- Posted speed limits
- Incident reporting procedures
- Driving curfews during the workday
- Regulations apply to the use of cell phones
- Regulations apply to on-site parking
- Regulations apply to on-site smoking

UNDERSTANDING THE JOB REQUEST

- What are you being asked to do, where in the plant site/ construction site is it located?
- Discuss the job requirements with your supervisor.
- Does the job require the use of specialized PPE?
- Do you have adequate training in its use PPE required?
- Does the job you are requested to do require you to attend a pre-job client / contractor meeting?
- Do not undertake the job until you have a clear understanding of what you are being asked to do.

PRE-WORK MONITORING / TESTING

In many instances the nature of your task may require the initial involvement of other trades, for example:

- Prior to digging - Alberta First Call; BC One Call
- Prior to accessing a trench (confined space) - air quality monitoring, adequate access/ egress.
- Prior to working at heights - arranging for aerial Lift and trained operator.
- Make sure you understand your role.

EMERGENCY RESPONSE

- All industrial sites are required by law to establish and maintain an Emergency Response Plan.
- Is a copy of the Emergency Response Plan posted at the site office?
- Have you read and understood what you are to do in the event of an emergency?
- Have you asked your supervisor to explain the significance of any sirens you may hear?
- Do you understand vehicle restrictions in the event of an emergency?

SUPERVISOR/CLIENT/PROJECT COORDINATOR

All three are in a position of authority, whom do you take direction from? The normal protocol would direct all questions and decisions back to your immediate supervisor. However ensure you have these questions answered by your supervisor before work begins.

PERMITTING: NO PERMIT, NO WORK

All industrial sites require permitting and/ or the filing of a work plan.

- What type of permit is required?
- Who has jurisdiction for the planned work area?
- Where is the permit center for the area in question?
- Is a site map available to assist you in locating the correct permit center?
- When should you be at the permit center?
- Do you have all necessary information to make an informed permit request?

FIELD LEVEL RISK ASSESSMENT

Now that you have satisfied all of the above requirements, you are ready to proceed to the work place.

At this stage of the job you must conduct a Field Level Risk Assessment. **A FIELD LEVEL RISK ASSESSMENT IS A REQUIREMENT BY LAW**. It is intended as a means of identifying and mitigating job-site hazards and must be conducted at the beginning of each new task.

COMPLIANCE

If you have satisfied all of the above requirements, you will now have sufficient information/ authorization to begin the requested task.

Maintain all permits, Field Level Risk Assessments and other work related notes for review, distribution and filing.

SAFE WORK PRACTICE

- The information contained in this policy does not take precedence over the OHS Act, Regulations or Codes of Practice nor is it intended to supersede workplace health, safety and environmental management systems currently in place at any given site.
- Regardless of the location or ownership of the worksite, certain basic steps must be followed prior to beginning the actual work

HOUSEKEEPING

- If you brought it to the site – take it with you at the end of the each day or waste is to be put in the designated waste bins, don't litter.
- Put tools and equipment in proper designated location at the end of each use.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: • House Keeping • Hazard Assessments • Right To Know • Inspections • Worker Training • Emergency Response • Maintenance • Incident reporting	Company policies and procedures: • House Keeping SWP • Hazard Assessments • Right To Know • Inspections • Worker Training • Emergency Response • Maintenance • Incident reporting

METROTECH USER POLICY

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

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RISK LEVEL	HAZARDS	CONTROLS
LOW Risk	• Slip, trip falls (S) • Uneven ground conditions and debris (S) • Wildlife in areas (S) • Missed lines when locating (S) • Ergonomics/ tired arms from carrying equipment (H) • Site Specific Hazards – identified through pre-job (S,H) • Lack of communicated by prime contractor (S) • Equipment is NOT approved for use in areas where hazardous gases may be present. (S)	✓ Manufacturer's instructions (A) ✓ Line Locating regulations (A) ✓ CSA approved PPE (P) ✓ Ergonomics – SWP (A) ✓ Wildlife awareness training (A) ✓ Fatigue management – SWP (A) ✓ Field Level Hazard Assessment (A)

TOOLS EQUIPMENT SUPPLIES	MATERIALS REQUIRED	TRAINING REQUIRED
Line locator	Manufacturer's instructions Line Locating certification	Line locating certification Equipment specific training

PPE REQUIREMENTS

							
Gloves	**Hard Hat**	**High Vis Vest**	**Safety Glasses**	**Safety Boots**			**Radio**

PRE-OPERATIONAL SAFETY CHECKS

- Inspect Metrotech before each job. Do not use if defects are present.

READ THIS FIRST: IMPORTANT INFORMATION

IF AN EMERGENCY SITUATION OCCURS WHILE CONDUCTING THIS TASK, OR THERE IS AN EQUIPMENT MALFUNCTION, SHUT THE EQUIPMENT OFF IMMEDIATELY AND REPORT TO SUPERVISOR.

SAFE JOB PROCEDURE

Metrotech 810 - A lightweight, hand-held battery operated pipe and cable locating device. When used under ideal conditions, the manufacturer claims a depth readout range of up to 4m with an accuracy of +/- (5%+2"). It should be noted however, that scanning is not an exact science.

GENERAL

- It is the intent of this procedure to provide both the Operator and the Client with a clear understanding of the technical capabilities and corresponding limitations of data derived/ supplied when using the Metrotech 810.

TECHNICAL

- The technical information contained in this procedure is as supplied by the manufacturer. Any expectation of optimum performance can only be achieved when a competent operator understands the limitations of the scanning device he is operating.

STEP 1 - Understanding the job request

1. Do not rush into the job.
2. Take the time to fully explore the Client's objectives.
3. Research the area of interest. This should involve a review of all pertinent as-built drawings of underground installations.
4. At the time of permitting, the Client should have, or request, the as-built drawing as above-mentioned.

Step 2: Inspect the equipment to be used

1. Ensure all components of the Metrotech are available to the user.
2. Check and verify the battery life of both the Transmitter and Receiver.
3. Check and verify that all systems and audible tone are operational.
4. As time and conditions permit, verify the present-day readings against a known value.

Step 3: Performing the job request

1. A competent operator using reliable equipment is essential to the satisfactory outcome of the scan.
2. Prior to beginning the scan, it is important to visually inspect the specific work area.
3. The inspection should also include the extended work area for any indications of previous underground installations such as pipe standards, trace wires or electrical utility outlets.
4. The actual scan should be carefully executed within the area of interest.
5. Wherever possible use conductive method of tracing vs. inductive method.
6. The scan operator or designate will have been present during the field preparation of the clients' field level risk assessment and will be aware of any hazards identified at the time.

Step 4: Job completion

1. At the completion of the scan, the Operator or Supervisor shall convey all scan results both verbally and in writing to the Client.
2. Make the Client aware of the scanning limitations and ensure the Client understands the scan results.
3. If a plan or sketch of the scanned area is prepared for presentation to the Client, ensure that a written advisory is included.

CHECKOUT PROCEDURE

To insure proper operation of the 810 Line Tracer, use the checkout procedure below at the following times:

- Upon receiving the equipment

- Before each job, preferably before you leave for the site

IF PROBLEMS ARISE DURING A LOCATE

Checkout Steps:

1. Turn the Transmitter ON/OFF switch to the "ON" position.
2. Within seconds the lamp next to the POWER SWITCH on the Transmitter should flash, indicating that the 810
3. Transmitter is ready to operate.
4. Fully extend the Receiver antenna by loosening the nut on the stem assembly and extending the stem as far as possible.
5. Set the Receiver MODE SWITCH to battery test (second position). The needle on the Left/Right Guidance meter should move to the right of the line labeled BATT TEST. The farther the needle is to the right of this line, the greater the charge in the batteries. If the needle is to the left of the line, the Receiver batteries should be replaced.
6. Move the Receiver MODE SWITCH to the AUX position (fourth position).
7. Position the Receiver as shown in Figure 3-1. The digital signal strength indicator should display 950 or above. Note the field strength figure, you will be using it for comparison in the next steps of the procedure.
8. With the Receiver MODE SWITCH in the line-tracing mode (third position), move the Receiver back from the
9. Transmitter 2-5 feet. Point the Receiver at the Transmitter as in Figure 3-1, the Left/Right Guidance needle will be centered on the meter and the tone will be silent.
10. Point the Receiver to the left and right of the Transmitter centerline. The needle should follow the change in direction (solid arrow and continuous tone when you move right, broken arrow and broken tone when you move left).

SAFE WORK PRACTICE

- Wear the proper CSA approved PPE
- Watch your step
- take breaks when fatigued

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
OHS LEGISLATION: Ergonomics Ground Disturbance General Safety Precautions Fatigue	Ergonomics – SWP Ground Disturbance -SWP Fatigue management - SWP

WORKING IN HOT OR COLD WEATHER

DO NOT COMPLETE THIS JOB UNLESS YOU HAVE BEEN TRAINED BY A QUALIFIED PERSON.

RISK LEVEL	HAZARDS	CONTROL MEASURES
LOW Risk	• Hypothermia(H) • Frostbite (H) • Heat stroke (H) • Heat collapse (H) • Heat exhaustion (H) • Heat cramps/rashes (H)	✓ Heated supplied air equipment (E) ✓ Warm up Sheds/Vehicles (E) ✓ Work Schedules (A) ✓ Work-rest cycle (A) ✓ Arctic cold weather clothing (P) ✓ SWP – Thermal Exposure (A) ✓ Training on warning signs & how to treat (A)

TOOLS/EQUIPMENT	MATERIALS REQUIRED	TRAINING REQUIRED
	Safe work procedures	Job Specific

PPE REQUIREMENTS

			
Insulated Safety Boots during cold weather	Hard Hat With insulated liner	Insulated Coveralls during cold weather	Insulated Gloves

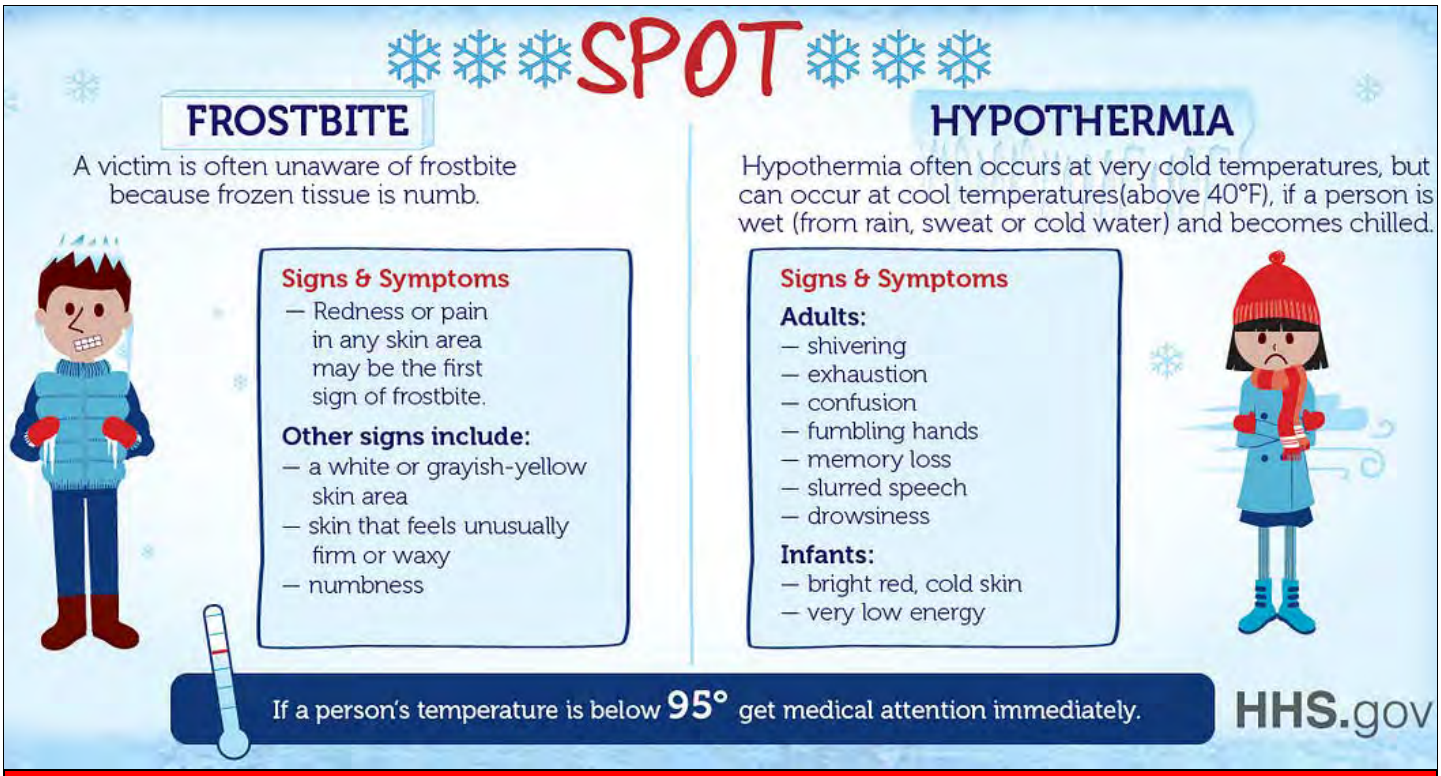
PRE-OPERATIONAL SAFETY CHECKS

- No work below -40 C

SAFEWORK PRACTICES

- Be aware of the signs associate with hypothermia,
- Be aware of the signs associate with heat stroke, heat exhaustion
- Use a heater/fan
- Dress for the appropriate weather
- Drink warm fluids for the cold
- Drink a lot of water for heat
- Schedule outside work for the warmest part of the day for working in cold weather
- Schedule outside work for the coolest part of the day for working in hot weather

- Eat well balanced meals
- Take more breaks
- Follow extreme weather practices
- Wear PPE designed for seasons – thermal (winter) Light weight (summer)



REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

GUIDANCE DOCUMENTS/ STANDARDS/ APPLICABLE LEGISLATION/ OTHER:	OTHER RELATED PRACTICES PROCEDURES
Manufacturer's Instructions **TRAFFIC SAFETY** • Adverse weather conditions	SWP-Thermal Exposure SWP – Adverse Weather