

# Safe Work Practices Safe Job Procedures

2023

Version# 04

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## Revision History

This section is intended to record any changes made and to implement document version control.  
All SJP /SWP are reviewed annual.

| Revision Date | Revised By              | Summary of Changes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2021-02-25    | Crusher Crews / HSE     | <p>New SJP /SWP Crushers</p> <p><a href="#">Crusher - Cone Crusher Setup: Safe Job Procedure</a></p> <p><a href="#">Crusher - Crusher Operation: SAFE JOB PROCEDURE</a></p> <p><a href="#">Crusher - Electrical Activity (Lightning): SAFE JOB PROCEDURE</a></p> <p><a href="#">Crusher - Excavating from Quarry Blast: SAFE WORK PRACTICE</a></p> <p><a href="#">Crusher - Excavating unconsolidated material with a loader: Safe Job Procedure</a></p> <p><a href="#">Crusher - Jaw Die Replacements- Cone crushers: Safe Job Procedure</a></p> <p><a href="#">Crusher - Overload Procedure, Crusher stops under loaded conditions: SAFE JOB PROCEDURE</a></p> <p><a href="#">Crusher - Oversize rock in Crusher: SAFE JOB PROCEDURE</a></p> <p><a href="#">Crusher - Portable crushing plant: Safe Work Practice</a></p> <p><a href="#">Crusher - Quarries / Pits Inspections: Safe work practice</a></p> <p><a href="#">Crusher - Shut down procedure crusher: SAFE JOB PROCEDURE</a></p> <p><a href="#">Crusher - Startup Procedures Crusher: SAFE JOB PROCEDURE</a></p> <p><a href="#">Stockpiling-loader operators and truck drivers: Safe Work Practice</a></p> |
| 2021-11-04    | Microsurfacing Crew/HSE | <p><a href="#">Microsurfacing – Driving Continuous Paver: Safe Job Procedure</a></p> <p><a href="#">Microsurfacing – Maintenance and Service of Continuous Paver: Safe Work Practice</a></p> <p><a href="#">Microsurfacing – Startup &amp; Shutdown of Continuous Paver: Safe Job Procedure</a></p> <p><a href="#">Microsurfacing – Cleaning &amp; Wash-down of Continuous Paver: Safe Work Practice</a></p> <p><a href="#">Microsurfacing – Daily Inspections of Continuous Paver: Safe Work Practice</a></p> <p><a href="#">Microsurfacing – Filling Hoppers and Tanks of Continuous Paver: Safe Job Procedure</a></p> <p><a href="#">Microsurfacing – General Safety of Continuous Paver: Safe Work Practice</a></p> <p><a href="#">Microsurfacing – Operation of Continuous Paver: Safe Job Procedure</a></p>                                                                                                                                                                                                                                                                                                                                                       |
| 2022-11-23    | Chip Seal HSE           | <a href="#">Chip Seal – Chipspreader: Safe Work Practice</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|               |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

### Asphalt - Asphalt Digging, Patching & Filling Potholes: SAFE WORK PRACTICE

| Hazards Present                                                                             |                                                    | PPE or Devices Required                                                                                         | Additional Training Required |
|---------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>General Traffic, Bodily Injuries, Dust, vibrations, | Crushing, Elements, Property Damage, over exertion | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Long sleeve shirt as needed |                              |

- Ensure proper PPE is worn for the task performed.
- Be aware of your surrounds, especially around trucks and paving equipment (e.g. Spreader & compact roller).
- Controlling traffic with Traffic Control Personnel & warning signs, refer to traffic control manual for the province.
- Foreman must explain to their employees how to do hand spreading of asphalt safely.
- Always practice good Housekeeping.

**Patching:**

- Make a square cut of the pothole if needed, spreading tack to it, filling with new asphalt and compact it.

**Digging:**

- Repair a soft spot on existing road surface, using a skid-steer and/or grader to reshape, repave, and compact the roadway to return driving safe to the public.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                             |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | <p>This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> |
|                                                 | <b>Reviewed By:</b>                                                                                                      |

### Asphalt - Asphalt Liquid Unloading: SAFE JOB PROCEDURE

| Hazards Present                                      |  | PPE or Devices Required                                                                                     | Additional Training Required |
|------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------|------------------------------|
| Elevated temperatures<br>Burns<br>Fire<br>Explosions |  | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Coverall<br>Face shield |                              |

- Employees must wear proper PPE doing this job.
- Foreman must explain to employees how to work safely with asphalt liquid.
- Bulk asphalt liquid is delivered to the asphalt Plant by tanker and unloaded at their own risk. Their employee is trained and wears proper PPE equipment for that particular job.
- Our employee transporting asphalt liquid to asphalt plants has training in proper handling and transportation of dangerous goods course.

#### **Unloading Asphalt Liquid**

1. Put on PPE.
2. Check the outlet valve on the tank of the truck.
3. Pullout the transfer hose from its compartment.
4. Check the condition of the transfer hose from the truck to the asphalt tank before starting the transfer.
5. Be careful, this product is very hot, about 300 degrees Fahrenheit, if something happens you could be severely burned.
6. Open the valve on the truck tank and start transferring the product into the asphalt plant tank.
7. When you are done transferring, shut down the valve on the truck's tank and watch yourself not to get burned while shutting the valve and putting back the transfer hose where it belongs.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Reviewed By:                                                                                                      |

### Asphalt - Paving Crew: SAFE WORK PRACTICE

| Hazards Present                                                                          |                                                                  | PPE or Devices Required                                                          | Additional Training Required |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>General Traffic<br>Bodily Injuries<br>vibrations | Crushing<br>Elements<br>Property damage<br>Over exertion<br>Dust | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves |                              |

- All employees must wear proper PPE adequate with the Job they are doing.
- Supervisors are responsible to facilitate and/or provide proper safety instruction to their workers on protection requirements.
- Always be very careful around trucks and paving equipment (Ex. Spreader, Compact rollers etc.)
- The Traffic Control Person please refer to Traffic Control Person Safe Work Practice.
- The Raker with the most experience shall work on the side of traffic and the inexperienced Raker on the other side of the spreader. Must wear all proper PPE listed above.
- The Screedman shall be protected from asphalt burns by proper PPE.
- The Spreader operator shall remain on the paver at all times while in operation. He shall wear all proper PPE listed above while paving operations. He shall operator spreader in accordance with manufacturer's requirement and the company's job procedures.
- Traffic Control Signer refer to Traffic Control Person Sign Setup Safe Work Practice.
- Roller Operators shall remain on their equipment during paving operations. He/she shall wear proper PPE and operate the equipment in a safe manner as per manufacturer's requirement and job procedure for Roller Operators.
- Always practice good housekeeping.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                             |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | <p>This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> |
|                                                 | Reviewed By:                                                                                                             |

### Asphalt - Paving Crew: SAFE JOB PROCEDURE

| Hazards Present                                                                                        |                                                                                                    | PPE or Devices Required                                                                                 | Additional Training Required |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Burns<br>Crushing<br>Traffic<br>Rollovers<br>Pinch points<br>over exertion | Property damage<br>Rotating parts<br>Heat<br>Slips, trips, falls<br>Dust<br>Vibrations<br>Elements | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Sun (UV) protection |                              |

- All employees shall wear proper PPE.
- Every employee shall have some past experience and/or training with working at paving job and also working around paving equipment and trucks.
- The foreman will explain to each employee how to do his job safely, protecting himself and also his co-workers.
- Employees shall be very careful at asphalt not to get burned when working closely to it.
- The Traffic Control Person should always be on their guards to protect her life and the life of other workers which are paying attention to what they are doing.
- The rakers and screedman shall be very careful at the paving equipment and trucks.
- Paver operator should always follow all safety precautions, read the operation and maintenance section as per the paving machine operator's manual instructions provided with the equipment such as:

1. Never fuel the machine while engine is running.
2. Perform a walk-around visual inspection for signs of fluid leakage or component wear.
3. Before starting and stopping the unit, always set the parking brake and put the travel control in neutral.
4. Clear all parts and personnel away from the augers before starting it.
5. All guards and covers must be in their proper place during the operation.
6. No adjustment to the auger while machine is operating.
7. Operator must always be sure that both left- and right-hand auger controls are at off position before leaving operator's seat.
8. Do not attempt to get material from the auger with a shovel.
9. Watch for traffic near area of pave.
10. Stay clear of paver, side arms and screed when machine is working, do not walk close in front of paver or extended screed.
11. When working under spreader's screen, always use good blocking or have it secured with chains in case screen would fall down because it's really hot.
12. Dump man or others must stand in view of the operator, never in front when machine is operating.
13. Always shut off fuel pump and valve when burners are not in use or while repairs are being made.
14. Never use washdown while engine is running or burners are on.
15. When leaving machine, always park it on level surface with screed down with parking brake on.
16. Before starting the engine always sound horn to alert personnel.

Roller operator should always follow all safety precautions, read the operation and maintenance section as per the Roller operator's manual instructions provided with the equipment such as:

1. Roller operator, check fuel and oil levels, start the unit, release hand brake.
2. Pull engine throttle all the way out. Engine must be held at a constant speed to maintain a constant vibration frequency, never operate the roller with engine than half throttle.
3. Slowly push forward-reverse speed control lever forward to move forward or pull slowly back to move in reverse. Control roller speed with this lever. The farther the lever is moved from the neutral position the faster the roller will move.
4. Pull vibratory lever up to vibrate, roller should be moving when vibrating system is engaged. Roller can be shifted from one direction to the other without shutting the vibratory.
5. To stop the roller, return forward-reverse speed control lever to neutral. In the neutral position the propelling system will lock hydraulically to furnish the braking. Use hand brake for emergency stopping and parking brake. Always return control lever to neutral before using brake.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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|                                                 | Reviewed By:                                                                                                      |

### Asphalt - Paving: SAFE JOB PROCEDURE

| Hazards Present          |                     | PPE or Devices Required  | Additional Training Required |
|--------------------------|---------------------|--------------------------|------------------------------|
| Musculoskeletal injuries | Property damage     | Safety Boots             |                              |
| Burns                    | Rotating parts      | Safety Glasses           |                              |
| Crushing                 | Heat                | High visibility clothing |                              |
| Traffic                  | Slips, trips, falls | Hard Hat                 |                              |
| Rollovers                | Dust                | Gloves                   |                              |
| Pinch points             | Vibrations          | Sun (UV) protection      |                              |
| over exertion            | Elements            |                          |                              |

1. Look for hazards, i.e. overhead wires, tree limbs, pedestrian traffic, water valves, manholes and catch basins etc.
2. Required equipment on site shall have its daily walk around completed before starting.
3. Truck drivers will park at a safe distance away from paving equipment and be aware of any hazards on site.
4. The area where asphalt is to be laid is to be free of high spots and windrows so it will not create a bump on your first lift.
5. Swale and crown locations will be marked. The foreman and spreader operator will know what to do.
6. Depending on size of job, determine the amount of trucks and equipment required to do the job.
7. Swales, crowns, and valleys determine how the mat of asphalt is to be laid and the direction of your strips. Swales, valleys, crowns and objects also determine width of strips.
8. Once direction of mat is determined, the spreader is set in place and ready for its first truck.
9. The truck is guided into the spreader or transfer unit. The box is raised making sure the tailgate opens and no overhead wires are hit.
10. Once hopper is full, the spreader fills its augers and doors. Then you are ready to spread asphalt with the spreader. The operator also checks for correct switches being on and that the screedmen are ready to start.
11. The operator controls the speed and direction of paver and the Screedmen controls the thickness and width of the asphalt. This procedure is for each strip that is required for the job and for the final mat, which is the finished product.
12. The roller operator will make sure its fuel and water tanks are filled before they begin.
13. Water is turned on and drum is wet down, before he goes on mat.
14. The number of passes, vibratory and static is determined by the thickness and size of material and compaction that is required for this particular job.
15. The number of rollers is determined by the amount of rolling required and the speed of the paving operation.
16. The sizes of rollers are determined by the size of the job and the conditions of paving.
17. While rolling the operator will watch out for valleys, crowns, catch basins, curbs, manholes and water valves so they are not disturbed. Soft areas are watched for and especially pedestrian traffic.
18. Each roller has own purpose for a good finish. The roller operator will determine when to roll and not to roll; and the time required being on the asphalt.
19. Service truck operator fuels equipment, supplies water and any equipment required getting the job done safely and efficiently.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                                 | Reviewed By:                                                                                                      |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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|                                                                | <b>Reviewed By:</b>                                                                                               |

### Asphalt - Plant Lockout Procedure: SAFE JOB PROCEDURE

| Hazards Present                                                         |                                  | PPE or Devices Required       | Additional Training Required |
|-------------------------------------------------------------------------|----------------------------------|-------------------------------|------------------------------|
| Unintended release of hazardous energy<br>unintended start up or motion | Property Damage<br>Bodily Injury | Locks & Tags<br>Scissor Clasp | Lockout Tag Out              |

This procedure will lockout the following equipment of the asphalt plant:

|                    |             |                  |
|--------------------|-------------|------------------|
| • Control Room     | • Bag House | • All Conveyors  |
| • Asphalt elevator | • Silo      | • AC Tanks       |
| • Drum Mixer       | • Screener  | • Cold Feed Bins |
| • Scale            |             |                  |

Only properly trained and authorized personnel shall conduct lockout procedure

| Energy     | Lockout Location                 | Procedures for locking out<br>Definition: Lock – Tag & Test                                                                                                                                                                                                                                                                | Verification procedure                                                                              |
|------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Electrical | Electrical Panel in Control Room | <ol style="list-style-type: none"> <li>In the control house press the “STOP” button for the machine control.</li> <li>At the electrical panel switch the main breaker disconnect to “OFF”</li> <li>Lock and Tag.</li> <li>Verify non-start of machine.</li> </ol> <p>Ensure machine is brought to a zero-energy state.</p> | <p>Press the “START” button<br/>Should not start<br/>Press the “STOP” button</p> <p>Zero energy</p> |

**This procedure must be followed at all times**

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | <p>This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> |
|                                                 | <b>Created By: C. Beasley, A. Lagace, P. Jean</b>                                                                        |



### Asphalt - Plant: SAFE WORK PRACTICE

| Hazards Present                                                                         |                                                                                 | PPE or Devices Required                                                                                                                       | Additional Training Required      |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Truck & Equipment<br>Traffic<br>Bodily injuries | Dust<br>Vibrations<br>Crushing<br>Elements<br>Property Damage<br>Electric Shock | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Fall protection as required<br>Confined space as required | Fall protection<br>Confined space |

- All employees must wear proper PPE.
- Supervisor/Foreman is responsible to facilitate and/or provide proper safety instruction to their workers on protection requirements and training.
- Protect employees from injuries with asphalt plant operations, with training of employees, and emergency response plan.
- The employee must be knowledgeable with worksite operations that are part of asphalt plant operations.
- Lockout-Tag out procedures for all equipment must follow Northern Inc. rectify any electrical, hydraulic, or any other problems without first Locking out the equipment.
- Confined Space must follow Northern Inc. Code of Practice Confined Space all documents must be completed before entry of Confined Space, including the proper PPE and equipment. (Pre-use inspection of PPE and Equipment Documented)
- Fall Protection must follow Northern Inc. Code of Practice Fall Protection, including the proper PPE. (Pre-use inspection of PPE and Equipment Documented)
- Do not cross, jump, walk, or touch any moving conveyor.
- Follow start up and shut down procedures of asphalt plant.
- **Caution**, asphalt liquid is toxic and hazardous product, it is also a product with is heated up to 300 degrees Fahrenheit at all times, either as a liquid or when mixed with aggregates.
- Asphalt is very dangerous burns will occur with direct contact.
- Asphalt operations also involve heavy equipment such as loaders, conveyors, and trucks.
- Keep floors, catwalks, and platforms clean and free from debris.
- Be familiar with the various safety devices around the plant.
- Make sure all guards and other protective devices are in place, secured, and not damaged throughout the plant.
- Report any defects to your supervisor.
- Follow all maintenance schedules.
- Must maintain good housekeeping.

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|                                                 | Reviewed By:                                                                                                      |

### Asphalt - Plant: SAFE JOB PROCEDURE

| Hazards Present          |                     | PPE or Devices Required     | Additional Training Required |
|--------------------------|---------------------|-----------------------------|------------------------------|
| Musculoskeletal injuries | Truck and equipment | Safety Boots                | Fall protection              |
| Burns                    | Traffic             | Safety Glasses              | Confined space               |
| Crushing                 | Dust                | High visibility clothing    |                              |
| Pinch points             | Vibrations          | Hard Hat                    |                              |
| Rotating parts           | Elements            | Gloves                      |                              |
| Hot surfaces             | Electric shock      | Fall protection as required |                              |
| Slips, trips, falls      |                     | Confined space as required  |                              |

1. The employees must wear proper PPE.
2. Foreman must provide safety information and training to his workers.
3. The foreman has a daily meeting with his employees and tells them what to do and work safely. He also tells the loader operator which aggregate mix he needs to start the asphalt plant.
4. Starts the air compressor and the exhaust fan to advise the workers that the operator of the plant that all the asphalt plant equipment such as water nozzle, fuel pump, the screen, hot elevator, dryer, back conveyor, turbo fan, asphalt pump, mixer and fire is now in operation. For the safety of all other employees, they shall keep away from the operating plant until the batch is finished and loaded into the truck.
5. For computerized asphalt system, by pressing the start button will start the mixing operation.
6. If something breaks and the welder man has to weld, the plant operator, opens the breaker panel, shuts down the breakers of all the equipment that will have to be repaired, then puts a lock on every breakers to be locked, locks the breaker panel, locks the 2 doors of the operator's office and gives all the keys to the welder. In this case nobody can go into the operator's office and start anything except the welder who has all the keys.
7. Every day, the plant operator is doing greasing and preventive maintenance like looking around the equipment if there are any leaks and also having a close verification of the equipment directly on his monitor screen transmitted by different cameras positioned at different places.
8. For the security of the employees repairing the plant, there are guarded cat walk with safety railings all around the plant for both decks.
9. Our plant operator has fall protection and confined space training.

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|                                                                | <b>Reviewed By:</b>                                                                                               |

### Asphalt - Hot Asphalt Liquid Handling: SAFE JOB PROCEDURE

| Hazards Present                                |  | PPE or Devices Required                                                                                                   | Additional Training Required |
|------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Fire<br>Explosion<br>Faulty Equipment |  | Face shield/Safety glasses<br>Heat resistant gloves<br>Safety vest<br>Grade 1 Safety boots<br>Skin protection<br>Hard hat | WHMIS                        |

1. Wear all applicable PPE
2. Check the temperature and valves before starting to unload
3. The oil unloader connects the transfer hose from the tanker to the asphalt unloading pump
4. The driver climbs on top of the tanker (using three-point contact) and opens the hatch and top valve to allow the hot oil to flow through the asphalt pump into the plant storage facility
5. The bottom valve on the tanker is then opened by the driver
6. The plant storage tank valves are then opened to direct the flow to the proper storage tank
7. The asphalt unloading pump is then started by the operator
8. The oil unloader moves away from the pump and transfer hose
9. When the tanker is empty the driver closes the top valve and then the bottom valve
10. The oil unloader disconnects the transfer hose and the hose is cleaned by using(drawing) 5 gallons of diesel
11. If applicable the inlet valve is closed on the plant storage tank
12. The asphalt unloading pump is turned off

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### Asphalt - Repairing Potholes & Patching: SAFE JOB PROCEDURE

| Hazards Present                                                                                             |                                          | PPE or Devices Required                                                                                               | Additional Training Required |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------|
| General Traffic<br>Musculoskeletal Injuries<br>Dust<br>Vibrations<br>Crushing<br>Elements and over exertion | Burns<br>Heat<br>Slips, Trips &<br>Falls | Steel toe boots<br>Safety glasses<br>Reflective high visibility clothing<br>Hard hat<br>Gloves<br>Sun (UV) protection |                              |

Employees must wear proper PPE.

Controlling traffic with flaggers and warning signs and lights.

Foreman must explain to his employees how to do hand spreading of asphalt safely and also to be careful at the equipment such as trucks and compact-roller compacting all repaired asphalt patches.

To repair a pot hole using an abrasive saw to cut a square hole, clean the hole, add tacking, then fill the hole with asphalt by hand and compact it.

For digging a skid-steer or backhoe is used to take off the soft spot on existing road surface and to reshape, refill, repave and compact the road spot which will make the public safer driving.

Do housekeeping when job is finished.

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|                                                 | Reviewed By:                                                                                                      |

### Asphalt - Rolling Asphalt: SAFE WORK PRACTICE

| Hazards Present                                                                         |                                       | PPE or Devices Required                                                                               | Additional Training Required |
|-----------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Bodily Injury<br>Property Damage<br>Slips, Trips & Falls<br>Rollover / Tipping | Faulty Equipment<br>Noise<br>Elements | Safety boots<br>Safety vest<br>gloves<br>Safety glasses<br>Hard hat<br>Hearing protection as Required |                              |

- Inspect all around the equipment prior to start-up. Ensure adequate fuel levels and no vandalism or tampering has occurred.
- Do not operate hazardous mobile equipment, immediately report any defect to your Supervisor and record it in the pre-trip inspection book.
- Wear the required PPE for non-enclosed cab equipment. Inspect PPE to ensure it is in good working order and report any substandard equipment to your Supervisor.
- Ensure all safety devices are in place and functional, including hazard symbols.
- Always use three-point contact when climbing on or off equipment.
- Ensure no pedestrians or workers are around equipment when starting, provide adequate warning to workers if necessary.
- When traveling to the work area, watch for pedestrians and workers. Maintain stability of the equipment by traveling on relatively firm and level grades.
- Do not exceed rated speed limits for the equipment.
- Wear the seatbelt at all times during equipment operation.
- No smoking or other ignition sources during refueling.
- When parking after shift, ensure the parking brake is on and the night switch is activated. The equipment should be positioned well off roadways.
- Always consider pick-up of equipment when parking. Use cones to delineate around the equipment if needed. Block the wheels or drum if parked on a slope.
- Ensure the Traffic Control Person is aware of the rolling methods that are being applied, such as rolling cross-joints.
- Ensure those workers around the equipment are aware of rolling patterns.
- Equipment operators must be aware of each other's patterns. Maintain safe distances between equipment.
- Do not operate rollers in areas where there is potential for rollover. Always watch for areas that lack stability.
- Beware of and avoid utility piping or wires entering/ exiting buildings. Immediately report any contact with utilities to the Supervisor.
- When refueling, ensure the equipment is level, the parking brake is set and all sources of ignition are eliminated. Wear adequate clothing to avoid skin contact and know where spill kits are kept.
- Keep stairs free of asphalt build-up and clutter.

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### Asphalt - Tacking Road Surface: SAFE WORK PRACTICE

| Hazards Present                                                                |                                                | PPE or Devices Required                                             | Additional Training Required |
|--------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Hot surfaces<br>Hot Liquid<br>Burns<br>Slips, Trips & Falls<br>General Traffic | Bodily Injuries<br>Elements<br>Property Damage | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves |                              |

- All employees must wear proper PPE adequate with the Job they are doing.
- Operator must have Transportation of Dangerous Goods course.
- Controlling traffic with Traffic Control Personnel & warning signs refer to the WATCM where needed.
- Foreman must explain to the operator how to work safely.
- Don't spread the tacking hazardous liquid when it's too windy or rainy, because the fumes smell may not be pleasant to other employees and the public. The fumes and/or overspray may even stick to passenger vehicles passing thru the work area.
- Open the valve on the tank to let the liquid come out and spread on the milled road surface or could be spread on old asphalt patches or roads making the new asphalt adhering better to the old pavement.
- Make sure to shut off outlet valve on the spreader truck's tank right after finishing tacking work area.

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|                                                 | Created By:                                                                                                              |

### Asphalt - Tacking: SAFE JOB PROCEDURE

| Hazards Present                                                           |                                                    | PPE or Devices Required                                            | Additional Training Required |
|---------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Dust<br>Crushing<br>Traffic<br>Rotating parts | Burns<br>Heat<br>Elements<br>Noise<br>Pinch points | Steel toe boots<br>Safety glasses<br>Gloves<br>Sun (UV) protection |                              |

Employees must wear proper PPE.

Must have training course with transportation of dangerous goods.

Controlling traffic with flagging persons, warning signs and lights.

Foreman must explain to the operator how to work safely.

The operator loads the spreader truck's tank with tacking liquid.

He must be very careful not to have any accident or upset the truck while handling this because it's hazardous.

The operator should not be spreading too fast because it dries up fairly quickly. He should watch for not being too far ahead from the asphalt paver.

As soon as spreading is finished make sure that the outlet valve on the tank has been shut down.

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### Chip Seal - ChipSpreader: Safe Work Practice

| Hazards Present                                                                 |                                                                                         | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Site Traffic<br>Bodily Injuries<br>Dust | Vibrations<br>Crushing<br>Elements<br>Property Damage<br>Electric Shock<br>Pinch Points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Lockout Tag out              |

**Unsafe operation of equipment may cause injury. Read, understand, and follow the manuals when operating or performing maintenance.**

#### **Emergency Stop**

Turning ignition switch to “off” results in emergency stop

Selecting “park” while the chipspreader is moving results in an emergency stop.

#### **Always**

- Make certain everyone is clear of machine and honk horn twice before starting or operating the machine.
- Stay off hopper while machine is moving. Machine movements could cause a fall resulting in injury or death
- place the mode selector switch in the “Park” position when the chipspreader is stopped to avoid accidental movement of the machine
- use steps, platforms and handrails provided
- Keep loose clothing away from conveyor area when operating the conveyors.
- install locking control box cover and chock wheels when leaving machine unattended as protection against vandalism and accidental movement.
- Have shields, covers, and guards in place when operating.
- remain clear of all moving parts.

#### **Never**

- Never place hands between the spread roll or gate and rear of hopper. The gate could move at any time and cause severe injury
- Never travel with the seat unlatched. Seat movement could occur causing disorientation and possible loss of control.
- Never reset computer while chipspreader is in motion. Violent stop will occur which could cause a fall resulting in injury or death
- Never attempt to clear any jam with the engine running, auger may start automatically at any time.

#### **Pre-Use Inspection**

- Before operating the ChipSpreader, make an inspection of the machine to be sure that the machine is in a safe condition to operate; guards, lights, honk, etc...
- Before operating the ChipSpreader, do an inspection of the machine for condition of the tires, fluid leaks, fluid levels, fuel level, loose bolts, improper hose routings etc. Be sure that the machine is in a safe condition to operate.
- Grease all fittings and check all reservoir oil levels in accordance with the ChipSpreader Lubrication Chart on the side of the tool box prior to operation.
- Check engine coolant and oil levels prior to operation. Refer to engine operator’s maintenance manual for complete engine service requirements.
- Best performance for most operating conditions is achieved when tire pressures are set to 55 to 60 PSI in front and 60 to 65 PSI in rear. However, various operating speeds, road bed conditions, truck pulling arrangements and other operating conditions may require different tire pressures.
- Write findings of pre-use inspection in the Daily Checklist booklet. Advise supervisor immediately of any defects.



### Traveling to and from the jobsite

- Keep a safe distance of 1 meter from the shoulder of the roadway.
- The front hoppers should be fully closed up and latched using the safety chains on the left side of the machine when the unit is traveling between job sites to avoid possible damage to the outer ends of the hoppers.
- Keep machine on road or relatively uniform surface at all times to avoid loss of traction and/or possible damage to the front hoppers or rear of conveyors.
- Avoid roading the machine with material in the hoppers if at all possible. Added weight in either the front hoppers or the rear hopper increases stopping distance, and weight in the front hopper decreases available traction at the rear wheels.

### Operation

- Keep machine on road or relatively uniform surface at all times to avoid loss of traction and/or possible damage to the front hoppers or rear of conveyors.
- Under most operating conditions the ChipSpreader should be allowed to tow the truck. However, certain steep downgrade conditions may require the truck to assist the ChipSpreader. Do not attempt to push the ChipSpreader with the truck.
- When the ChipSpreader can not tow the truck up a steep upgrade, stop, fill the hoppers and disconnect from the truck and continue the process. In certain case the operation may have to change direction and proceed downgrade.
- Do not tow or push the ChipSpreader before reading the towing instructions contained in the manual as this may damage the hydraulic motors.
- Never use the ChipSpreader to dislodge a truck or other equipment which has become stuck in mud or soft shoulder conditions as this may cause damage to the hitch, which could fail later in normal operation.
- Keep a safe distance of 1 meter from the shoulder of the roadway.

### Maintenance

- Remain clear of all moving parts. When two people are required to perform adjustments or maintenance operations or two people are simultaneously performing different operations; the work must be coordinated between the two people to avoid possible injuries.
- When two people are performing maintenance adjustments, do not start engine without assuring that the other person is clear of moving parts and out from under the machine. Be sure that the mode selector is in park and the control stick is in neutral before attempting to start engine.
- After changing filters or working on the hydrostatic system, be sure to follow hydrostatic start up procedure to reduce the potential for damage to the hydrostatic system.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This safe work practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                | Created by:                                                                                                       |

### Civil - Backfilling: SAFE WORK PRACTICE

| Hazards Present                                                      |  | PPE or Devices Required                                                | Additional Training Required |
|----------------------------------------------------------------------|--|------------------------------------------------------------------------|------------------------------|
| Trips, Slips, Falls<br>Heavy equipment<br>Crushing<br>Uneven terrain |  | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat |                              |

- All appropriate PPE shall be worn.
- No backfilling shall commence until all workers are clear of working areas.
- The operators of any equipment being used in backfilling operations shall keep their spotters in sight at all times.
- Operators/Spotters to be conversant in hand signals for their work site.

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### Civil - Catch Basin Installation: SAFE JOB PROCEDURE

| Hazards Present                                                                      |  | PPE or Devices Required                                                                 | Additional Training Required |
|--------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------|------------------------------|
| Equipment malfunction<br>Other workers & equipment<br>Pinch Points<br>Overhead wires |  | Grade 1 safety boots<br>Gloves<br>Hard hat<br>High Visibility Apparel<br>Safety Glasses | Rigging                      |

1. Appoint a spotter who will be in charge of signaling the operator
2. Assess and barricade the lift area
3. Position the machine according to the center of gravity of the load
4. Use approved slings/chains of the proper size and length
5. Have a competent rigger hook up the load
6. Attach tag line(s) to load
7. Signal workers when ready to move suspended load. Workers never walk under suspended load; operators never move a suspended load over workers
8. Lift when spotter signals it is safe to do so and ensure the area is clear of personnel and other possible hazards
9. Move slowly to landing area and gently lower (if using an excavator for the lift the tracks should be aligned with the excavator's forward and reverse direction straight with the trench)
10. Complete final alignment of catch basin clear area, then spotter guides operator for final release
11. Ensure load is stable on level ground before slackening slings/chains and unhooking

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|                                                                | <b>Reviewed by:</b>                                                                                               |

### Civil - Concrete Pipe Handling/Installation: SAFE JOB PROCEDURE

| Hazards Present                                                                |  | PPE or Devices Required                                                     | Additional Training Required |
|--------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------|------------------------------|
| Pinch Points<br>Potential injury or death<br>Muscle Strain<br>Faulty equipment |  | Grade 1 safety boots<br>Gloves<br>Hard hat<br>Safety glasses<br>Safety vest |                              |

1. Use a machine for the lift that is rated for the proper weight
2. Attach chain to pipe to be lifted by a competent rigger
3. Signal workers when starting to move suspended load. Never walk under suspended load.
4. Have a spotter signal and guide the operator carefully and properly align the pipe
5. Carefully clean all dirt and foreign substances from the jointing surface of the bell or groove end of pipe
6. Lubricate bell jointing liberally with approved lube, using a brush, sponge or gloves
7. Clean spigot or tongue end of pipe
8. Fit gasket carefully. Use a smooth, round object (i.e. screwdriver) inserted between gasket and spigot, and run it along the circumference several times
9. Lubricate gasket on spigot or tongue end
10. Align bell and spigot to be jointed. Ensure gasket is in contact around entire circumference before homing the joint.

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|                                                 | Created By: R. Lebel, I. Underhill, T. Martin, P. Jean, L. Michaud                                                |

### Civil - Excavating & Trenching Dewatering: SAFE WORK PRACTICE

| Hazards Present                                          |  | PPE or Devices Required                                             | Additional Training Required |
|----------------------------------------------------------|--|---------------------------------------------------------------------|------------------------------|
| Slips, trips, falls<br>Drowning<br>Entrapment<br>Cave-in |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard hat | Trenching awareness          |

- All employees must wear proper PPE.
- Employees must have proper experience and knowledgeable about using a water pump in trenches and excavations.
- No worker shall enter any trench or excavation until the walls have been adequately cut back or temporary protective structures have been installed unless said trench or excavation is shallower than the legal minimums and the soil is stable.
- Supervisors are responsible to facilitate and/or provide proper instructions to their workers on protection requirements and to pre-plan trench/excavation soil condition.
- Control traffic by setting up barricades and controllers/flag persons at a reasonable distance from the trench to avoid damages, injuries and/or fatal accident to both, the employees and the public.
- Make sure that before going down the trench or excavation that a ladder is provided for access/egress.
- The gasoline water pump tank is full of gas, the motor has been pre-started and working properly, suction and discharge hoses are connected to the motorized water pump and ready to operate in case of emergency.
- The water discharge hose should be installed going downward and long enough so that the discharged water doesn't re-enter the trench or excavation.

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### Civil - Excavating & Trenching: SAFE WORK PRACTICE

| Hazards Present                                                       |                                                   | PPE or Devices Required                                             | Additional Training Required |
|-----------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Slips, trips, falls<br>Drowning<br>Entrapment<br>Cave-in<br>Explosion | Environment<br>Falling materials<br>Electrocution | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard hat | Trenching                    |

- All employees must wear proper PPE.
- Employees must be trained and be knowledgeable about proper trenching procedures and must be able to demonstrate competence.
- Protecting workers from injuries associated with excavating and trenching.
- No worker shall enter any trench or excavation until the walls have been adequately cut back or temporary protective structures have been installed unless the trench or excavation is shallower than the legal minimums and the soil is stable.
- Supervisors are responsible to facilitate and/or provide proper instructions to their workers on protection requirements and pre-plan trench/excavation soil condition.
- Prior starting working on any excavation ensure that all underground and/or overhead lines being crossed have been identified, exposed and well marked/flagged, same thing applies for propane and other fuel lines.
- Control traffic near roads or busy access ways.
- Use traffic controllers/flag persons.
- Set up barricades, caution tape, snow fence, or any other visible device to ensure the potential hazard area is identified.
- Provide ladders in immediate area for access/egress and keep the area to a max of 25' of workers.
- Where the cut back method is possible, provide timber shoring, trench jacks, sheet piling, cage, or other approved method.
- It's really important to watch and be suspicious about cave-ins on small or short jobs such as service connections, drains, and wells.
- Workers in and/or around the trench/excavation is to alert supervisor, excavator operator, and other workers right away of potential dangers they notice from other viewpoints.

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### Civil - Excavation & Trenching: SAFE JOB PROCEDURE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                   | PPE or Devices Required                                   | Additional Training Required           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------|----------------------------------------|
| Slips, trips, falls<br>Drowning<br>Entrapment<br>Cave-in<br>Explosion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Environment<br>Falling materials<br>Electrocution | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat | Fall Protection<br>Trenching Awareness |
| <p>1 Before beginning an excavation or trench, an employer shall ensure that the location of any underground utility line or piping is determined.</p> <p>2 Where employees are working within 600 mm of underground utility line or piping, an employer shall ensure that</p> <ol style="list-style-type: none"> <li>The authority operating the utility line or piping has been notified of the operation,</li> <li>The utility line has been de-energized, and</li> <li>An adequate operating procedure is used by the employees.</li> </ol> <p>3 An employer shall ensure that utility poles, posts and similar structures are supported or removed if they are within 3 m of an excavation or trench that is more than 1.2 m deep.</p> <p>4 An employer shall ensure that the walls of an excavation or trench are supported by shoring, bracing or caging except when the excavation or trench</p> <ol style="list-style-type: none"> <li>Is less than 1.2 m deep,</li> <li>Subject to 5 is cut in solid rock,</li> <li>Is sloped or benched to within 1.2 m of the bottom of the excavation or trench with the slope or bench not exceeding 1 m of vertical rise to each 1 m of horizontal run, or</li> <li>Is one that an employee is not required to enter.</li> </ol> <p>5 Where the walls or crests of an excavation or trench are cut in solid rock and are not stable, an employer shall ensure that the walls and crests are adequately supported by rock bolts, wire mesh, shoring or a method that provides equivalent support.</p> <p>6 Where powered mobile equipment or a mobile crane is used near the edge of an excavation or trench, an employer shall ensure that any shoring, bracing or caging for the excavation or trench is adequate to support the increased pressure.</p> <p>7 An employer shall ensure that shoring, bracing or caging for an excavation or trench is certified as adequate by an engineer and shall make the proof of the certification available to an officer on request</p> <p>8 An employer shall ensure that an employee does not, and no employee shall, enter an excavation or trench 1.2 m or more in depth unless</p> <ol style="list-style-type: none"> <li>The walls of the excavation or trench are supported by shoring, bracing or caging, the excavation or trench is cut in solid rock or the excavation or trench is sloped or benched to within 1.2m of the bottom of the excavation or trench with the slope not exceeding 1 m of vertical rise to each 1 m of horizontal run,</li> <li>4,5 and 6 have been complied with,</li> <li>Loose material that may fall into the excavation or trench has been removed, and</li> <li>A ladder that extends at least 1 m above the excavation or trench is installed no more that 15 m from where the employee is working or some means of access and egress is provided.</li> </ol> <p>9 Notwithstanding section 9, an employee may enter an excavation 1.2 m or more in depth to install bracing if the employee remains a distance from the face of the excavation equal to or greater than the depth of the excavation</p> <p>10 Notwithstanding section 9, an employer shall ensure that an employee does not, and no employee shall, enter an excavation or trench 1.2 m or more in depth to install or remove shoring or caging from a position inside an excavation or trench</p> |                                                   |                                                           |                                        |

- 11 Subject to 12, an employer shall ensure that excavated material is kept at least 1.2 m away from the edge of an excavation or trench.
- 12 Where an excavation or trench is more than 1.8 m deep in rock, an employer shall ensure that
  - a. Excavated material is located back from the face of the excavation or trench a distance equal to at least the height of the excavated material, or
  - b. A fence that is adequate to support the excavated material is erected at a minimum distance of 1 m from the face of the excavation or trench.
- 13 An employer shall ensure that an excavation or trench in which an employee works is kept reasonably free of water.
- 14 Where an employee may be exposed to a hazardous gas or to an oxygen deficient or oxygen rich atmosphere in an excavation or trench, an employer shall ensure that testing is carried out in accordance with confined spaces regulations before the employee enters the excavation or trench.
- 15 An employer shall ensure that no hazardous substance is stored in an excavation or trench.
- 16 An employer shall ensure that precautions are taken to prevent the accumulation of hazardous gases in an excavation or trench and that adequate ventilation is provided in the excavation or trench.
- 17 Where an employee is working in an excavation or trench, an employer shall ensure that there is an employee working on the surface who is able to observe the employee working in the excavation or trench.
- 18 An employer shall ensure that an operator of powered mobile equipment or a mobile crane does not lower material into an excavation or trench, and no such operator shall lower material into an excavation or trench, unless
  - a. The operator has unrestricted visibility, or
  - b. A signaller is used to direct the movement of the material.
- 19 An employee shall not move under or stay under any material being lowered into an excavation or trench.
- 20 An employer shall ensure that an excavation or trench is adequately illuminated
  - a. When work is being carried out in or near the excavation or trench, and
  - b. By warning lights or reflective materials to prevent inadvertent entry.
- 21 An employer shall ensure that an adequate barrier is set up around the excavation or trench so as to protect employees working in the excavation or trench from vehicular traffic.

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### Civil - Fine Grading: SAFE JOB PROCEDURE

| Hazards Present                                                                                                  |                                                                                  | PPE or Devices Required                                             | Additional Training Required |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Heat<br>Slips, trips, falls<br>Dust<br>Vibrations<br>Over exertion<br>Electric shock | Crushing<br>Traffic<br>Rollovers<br>Pinch points &<br>Rotating parts<br>Elements | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard hat |                              |

1. Check for hazards including power lines and buried cables.
2. Check for valves, manholes and catch basins to make sure all ties are taken and that they are properly covered.
3. Determine the finished grade for each gravel and mark on grade stakes.
4. All personnel should be made aware of the amount of truck traffic, where entering site and where leaving site.
5. Once the trucks have dumped the material, the grader operator grades the material to the level on the grade stakes.
6. After the grader has made its final pass, the roller operator may now begin to roll.
7. Water may be needed to be added to get the required compaction. This is done with a water truck. The grade foreman will go over the site conditions, hazards, etc. With the water truck operator before he begins.
8. Once the area is rolled, the grade foreman will check the grade with a straight-line. Areas that are too high or too low will be marked. The areas that are high have to be cut and the areas that are low have to be filled.
9. The grade is now re-checked in these problem areas and the procedure is repeated if necessary.
10. Once the material is to grade, the inspector can proceed with a compaction test.
11. If the compaction test is not high enough, then more water and more rolling are required until it passes compaction test.
12. Once it passes compaction test, the engineer is called to check grade and approve area for paving.

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### Civil - Grading: SAFE WORK PRACTICE

| Hazards Present                                                               |                                                         | PPE or Devices Required                                   | Additional Training Required |
|-------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------|------------------------------|
| Slips, trips & Falls<br>General Traffic<br>Pinch points<br>Dust<br>Vibrations | Crushing<br>Elements<br>Over exertion<br>Electric shock | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat |                              |

- Jobsite Hazard assessment completed and documented.
- Check with utilities for underground wires.
- All employees must wear proper PPE adequate with the Job they are doing.
- Foreman shall explain to employees how to work safely and do the job correctly.
- Traffic Control Personnel with the WATCM to ensure the workers and public safety thru the work site.
- For the preparation the landscape and/or old pavement must be removed. Then gravel is spread evenly with a grader, and then compacted. Making sure that the terrain drainage slope is done to avoid erosion and laying water.
- In doing so the grader will cover long sections of the worksite repeatedly going forward and backwards, stay clear of the grader.
- Watch for blind spots have signallers when needed.
- Keep distance with other machinery and vehicles.

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### Civil - Grading: SAFE JOB PROCEDURE

| Hazards Present                                                                                                    |                                                                                                  | PPE or Devices Required                                             | Additional Training Required |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Traffic<br>Rollovers<br>Pinch points and rotating parts<br>Heat<br>Slips, trips, falls | Crushing<br>Elements<br>Over exertion<br>Electric shock<br>Dust<br>Vibrations<br>General traffic | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat<br>Gloves |                              |

1. When machine is going to back up, the operator should look in his rear-view mirror, do a left to right and directly behind check and give 2 short horn blasts before proceeding in reverse.
2. The backup alarm should be in good working order, as well as the backup lights
3. If the machine is to be left unattended, make sure the parking brake is set, as well as the blade and ripper are down to prevent an unwanted accident.
4. To have an efficient operating procedure for a grader, the best way to attain that is to have the same operator on the same machine.
5. The operator should always look while cutting on a tight angle that the moldboard is not out so far that it will hit the tire.
6. Before traveling, the operator will clean the top of the blade and other areas where material may rest to prevent debris from hitting other vehicles.
7. The windows on the grader will be checked to have clear visibility. If visibility is compromised, then clean the windows.

#### Highway Work

The fine grade operation involves bringing the sub grade up to grade. This operation involves graders, rollers, surveyors and compaction people. There are often dusty conditions, which will require the use of a water truck. When the fine grading is finished, the gravel trucks are required to turn and back up to the dumpsite while the dozer spreads the material. Every precaution must be taken to keep these trucks clear of other operators. All operators, especially the truck drivers, should be aware of any low overhead wires and structures.

#### Fine Grading

1. Assess work area for hazards such as overhead wires, emergency vehicle access, fire prevention, buried electrical and chemicals.
2. Eliminate or control hazards as identified above to the fullest extent possible. Post and notify all workers of any hazard that cannot be eliminated.
3. Erect and maintain traffic control in accordance with traffic control manual.
4. Secure work site from general public as required, using barricades, fencing, flagging, etc.
5. Protect and identify all areas not part of the work or to remain in place.
6. Layout and stake work site to gravel elevations.
7. Grader may begin fine grading from either the high or low point and work to the other.
8. Limit vehicular traffic on graded areas until compaction is completed.
9. In areas restricted to grader access, grade by other means, to extent accessible by grader.
10. Compact graded areas, with roller as soon as grader has worked ahead to avoid interference between equipment.
11. Check gravel grades following compaction. Repeat grading / compaction process as required.
12. Compact areas adjacent curbs, poles, bases or other areas of restricted roller access.
13. Secure work area and maintain signage during non-working times.
14. Limit access to graded gravel areas if asphalt is to be placed at a later date.

### Placing Granular Base Material

1. Assess work area for hazards such as overhead wires, emergency vehicle access, fire prevention, buried electrical and chemicals.
2. Eliminate or control hazards as identified above to the fullest extent possible. Post and notify all workers of any hazard that cannot be eliminated.
3. Erect and maintain traffic control in accordance with the traffic control manual.
4. Secure work site from general public as required, using barricades, fencing, flagging, etc.
5. Protect and identify all areas not part of the work or to remain in place.
6. Layout and stake work site to gravel elevations.
7. Material loaded on the trucks is not exceed capacity of truck and ensure no spillage during travel. Drivers to be advised of proper haul load.
8. Placing operation to commence on approved sub grade material.
9. Establish haul route and use personnel to direct dumping operation if conditions require. Ensure haul road is adequate for weight of loaded trucks.
10. Place gravel material in specified lift thickness, using grader.
11. Compact gravel to specified compaction standard using suitably sized grade roller. Alternate rolling pattern as required.
12. Secure work area and maintain traffic signage as required during non-working times.

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### Civil - Grubbing: SAFE JOB PROCEDURE

| Hazards Present                                                                                              |  | PPE or Devices Required                                   | Additional Training Required |
|--------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------|------------------------------|
| Struck by/against heavy equipment<br>Slips, trips & falls<br>Handling heavy objects<br>Noise<br>Insect bites |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat |                              |

1. Grub on the high side of the ditch, leaving a buffer.
2. When grubbing on a side slope, you may have to build a bench along the slope in order to remove the material safely.
3. If using trucks to haul, load the grubbing so as not to get stuck in the body or hang out over the sides.
4. If dozers are grubbing to a push-off area, always try to push to the sides and leave a buffer at existing tree lines. Do not have the toe of the material on top of any standing trees.
5. Ensure any large pieces of wood are broken up either by the bucket or the blade.
6. When traveling with a dozer or excavator over ungrubbed areas, be sure there are no stakes or stumps protruding which may puncture the bottom of the machine.
7. Always prepare a stable access road for haul trucks.
8. If grubbing in a low area, it has to be piled up. Make sure that there are openings so any water may drain from the area.
9. When working around power lines, conform to the written SWP.
10. If burying excess material in a hole, make sure it is either backfilled or secured with a barrier and the appropriate signing each night.
11. Be aware of any environmental regulations while you are working.
12. Ensure any underground wires or services are marked.
13. The operator has to be aware of any boulders on site. He has to be careful to not dislodge them in case they might roll and hit any personnel or equipment on site.

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### Civil - Hauling Granular in Truck: SAFE JOB PROCEDURE

| Hazards Present                                                                                                     | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Vehicle damage<br>Vehicle malfunction<br>Other workers and equipment<br>Airborne particles<br>Roll over<br>Crushing | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. Pull up to the loading station. Avoid backing up if possible
2. Put truck in park
3. Stay with truck while loader is loading; keep an eye on the load in rear-view mirror
4. Wait for signal from loader operator before moving from the loading area
5. Ensure truck is not overloaded
6. Tarp load
7. Drive carefully with load to dump site
8. Dump per unloading granular procedure

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**  
**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                                                                  | Reviewed By:                                                                                                                               |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b><br><br><b>Granular Procedure</b> | This Safe Job procedure will be reviewed anytime the task, equipment or materials change and on an annual basis<br><br><b>Reviewed By:</b> |

### Civil - Trenching - Installation of Trench Box: SAFE JOB PROCEDURE

| Hazards Present                                                   | PPE or Devices Required                                                     | Additional Training Required |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------|
| Asphyxiation<br>Loose grounding<br>Muscle strain<br>Fall injuries | Grade 1 safety boots<br>Gloves<br>Hard hat<br>Safety Glasses<br>Safety Vest | Rigging                      |

1. Assign a spotter who will be in charge of signaling operator and guiding trench box in trench
2. Check grounding to ensure it is stable
3. Ensure trench box is properly rigged to the machine by a competent rigger
4. Attach guide line to trench box when it is being lifted by a swivel hook
5. Begin the lift when all workers are at a safe distance and spotter signals to position over trench
6. Slowly and cautiously lift trench box and follow direction of the spotter to position over trench
7. Lower trench box as per spotter, be sure to keep trench box level
8. Once trench box is in place wait for direction as to when it is clear to back away from the trench
9. Back away slowly

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|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By: I. Underhill, T. Martin, R. Lebel, P. Jean                                                            |

**Civil - Manholes, Catch Basins, Water Valves, Surface Water Drains & Hydrants: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                             |                                                                      | <b>PPE or Devices Required</b>                                      | <b>Additional Training Required</b> |
|--------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------|
| Slips, Trips & Falls<br>General Traffic<br>Bodily Injuries<br>Dust | Vibrations<br>Crushing<br>Elements<br>Over exertion<br>Muscle Strain | Safety boots<br>Safety vest<br>Safety Glasses<br>Hard Hat<br>Gloves | Rigging<br>Trenching                |

- All employees must wear proper PPE adequate with the Job they are doing
- Foreman shall explain to employees how to work safely and do the job correctly.
- **Refer and use proper Hoisting, Excavation, Trenching, Lifting, and Backfilling Procedures**
- When working on roadways Traffic Control Personnel with the WATCM to ensure the workers and public safety thru the work site. set up barricades around open excavation sites.
- When working off road place barriers to protect workers and the public from open excavation sites.
- Adjust the height of the manhole, Catch Basin, Water Valve, and Hydrant before backfilling.
- Compact the area with a hand tamper, tamper plate, and/or roller be careful not to break anything. Don't go to close to surface water drains and hydrants with the tamper plate.

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REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| <b>Guidance Documents / Standards</b>                                                                                                                   | <b>Reviewed By:</b>                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations:<br>Hoisting & Lifting Procedure<br>Excavation Procedure<br>Trenching Procedure<br>Backfilling Procedure | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                                                                                                                         | <b>Created By:</b>                                                                                                |



**Civil - Manholes, Catch Basins, Water Valves, Surface Water Drains and Hydrants: SAFE JOB PROCEDURE**

| <b>Hazards Present</b>                                                       |                                                                      | <b>PPE or Devices Required</b>                                                             | <b>Additional Training Required</b> |
|------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------|
| Musculoskeletal injuries<br>Burns<br>Traffic<br>Heat<br>Slips, trips, falls, | Vibrations<br>Crushing<br>Elements<br>Over exertion<br>Muscle Strain | Safety boots<br>Safety vest<br>Safety Glasses<br>Hard Hat<br>Gloves<br>Sun (UV) protection | Rigging<br>Trenching                |

1. Employees must wear proper PPE
2. Traffic Control shall be setup prior to work beginning.
3. Foreman shall explain to employee how to work safely and do the task correctly.
4. Spreading asphalt to the required thickness around manholes, catch basins, water valves, surface water drains and hydrants by hand with wheelbarrow or mechanical device.
5. Start the gas compactor and compact gently the area to be compacted by being very careful not to break anything.
6. When finished do housekeeping.

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| <b>Guidance Documents / Standards</b>                                                                                                                   | <b>Reviewed By:</b>                                                                                               |
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|                                                                                                                                                         | <b>Created By:</b>                                                                                                |

### Civil - Opening & Guarding Manholes: SAFE WORK PRACTICE

| Hazards Present                                                                              |  | PPE or Devices Required                                                                              | Additional Training Required |
|----------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips & Falls<br>Environment<br>Contact with bacteria<br>Flying particles<br>Elements |  | Safety boots<br>Safety Vest<br>Safety glasses<br>Gloves<br>Hard hat<br>Skin Protection<br>Barricades |                              |

- Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements and training.
- Complete Hazard Assessment.
- Work site inspection.
- Ensure obstructions to traffic shall be guarded by adequate signs, barricades, lights, flares or flags.
- Ensure a blow torch or other open flame is not utilized to melt ice around a manhole or vault cover.
- Ensure equipment is in good working conditions.
- Ensure covers are removed and replaced by means of approved hooks or hoists.

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|                                                 | <b>Created By:</b>                                                                                                |

### Civil - Shouldering: SAFE JOB PROCEDURE

| Hazards Present                                                  |                                                                 | PPE or Devices Required                                                                                   | Additional Training Required |
|------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Noise<br>Dust<br>Crushing<br>Traffic | Over exertion<br>Pinch points and<br>rotating parts<br>Elements | Steel toe boots<br>Safety glasses<br>Gloves<br>Reflective high visibility clothing Sun<br>(UV) protection |                              |

1. Employees must wear proper PPE.
2. Traffic Control shall be Setup before starting work.
3. The foreman shall explain the shouldering safety operations with all the employees, truckers, dozer, grader and compactor roller operators that will be working along the side of the road.
4. All the trucks, dozer, grader and roller-compactor operators shall be very careful not to upset any of the above equipment and neither hurt anyone.
5. The shouldering employee tells the trucker where to back up and dump the first load of crushed rocks on the road's shoulder and so on until all the shouldering has reached enough filling material.
6. Then the dozer spreads it out to the point that the grader operator can take over and making the shoulder of the road nice and evenly as close as he can matching with the road slopes.
7. The roller-compactor operator does the finishing touch.
8. Housekeeping to be done by picking up signs and etc....

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|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
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|                                                                | <b>Reviewed by:</b>                                                                                             |

### Civil - Shoveling Granular: SAFE JOB PROCEDURE

| Hazards Present                                        |  | PPE or Devices Required                                                | Additional Training Required |
|--------------------------------------------------------|--|------------------------------------------------------------------------|------------------------------|
| Muscle Cramps<br>Heart Attack<br>Stroke<br>Dehydration |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Lifting<br>Body Posture      |

1. Warm up muscles for 5 minutes with stretching
2. It is better to push the granular than lifting it
3. Keep the shovel close to your body
4. Space your hands on the shovel to increase leverage
5. Use a shovel that feels comfortable for your height and strength
6. Squat with your legs apart, knees bent and back straight
7. Lift with your legs and do not bend at the waist
8. Pace yourself and take frequent breaks and replenish fluids to prevent dehydration
9. Try not to hold a shovelful of granular with your arms outstretched
10. Throw granular ahead of yourself and not to the side or behind

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|                                                 | <b>Reviewed By:</b>                                                                                                    |

### Civil - Thawing of Frozen Ground: SAFE WORK PRACTICE

| Hazards Present                                             |                             | PPE or Devices Required                                             | Additional Training Required |
|-------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------|------------------------------|
| Hot surfaces<br>Hot Liquid<br>Burns<br>Slips, Trips & Falls | Bodily Injuries<br>Elements | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves |                              |

- Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements and training
- Hazard Assessment
- Work site inspection
- Ensure barricades and warning signs are in place.
- Ensure no presence of flammable items such as wood, plastic, insulation, cardboard, or hydrocarbon products.
- Ensure no presence of any electrical lines either above or below ground.
- Ensure no presence of any infrared fire detection devices.
- Ensure visibility is not restricted for workers and/or vehicles due to smoke and steam.
- Check steam hose for secure connections and hose punctures.
- Periodically check the depth of the thawing.
- Use proper PPE when thawing frozen ground.
- Follow thawing safe work procedures step by step.

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## Communicable Disease - Enhanced Surface Cleaning & Disinfection: SAFE WORK PRACTICE

| Hazards Present                    |  | PPE or Devices Required                                   | Additional Training Required |
|------------------------------------|--|-----------------------------------------------------------|------------------------------|
| Viral infection<br>Spread of virus |  | Disposable gloves<br>Face mask<br>Cleaner<br>Disinfectant |                              |

### Hygiene Practices

During the COVID 19 Public Health Emergency, enhanced cleaning and disinfection should be used on worksites to reduce the risk of disease transmission.

NOTE: in the event a confirmed case of COVID-19 was present on site, a specialized biohazard remediation, abatement company should be contacted for professional disinfection.

Clean and disinfect all frequently touched surfaces. This includes but is not limited to:

- table tops                      • control panels                      • computer/keyboard/mouse/phone                      • Steering Wheels
- light switches                      • handles                      • bathrooms                      • door knobs                      • Eating Areas
- Pens                      • Stair railings                      • First aid equipment                      • Shared Tools & Equipment

Cleaning and disinfection should be done as often as possible and at a minimum at the beginning of shift, before eating, between crew changes, end of shift.

Avoid sharing tools and pens. Disinfect any shared items before sharing.

**CLEANING:** Removes visible soiling (e.g., dust, soil). Cleaning removes rather than kills viruses and bacteria. It is done with water, detergents, and steady friction from cleaning cloth.

**DISINFECTING:** Kills viruses and bacteria. A disinfectant is only applied to objects, never on the human body.

All visibly soiled surfaces should be cleaned before disinfection.

Most cleaning can be done using regular housekeeping best practices.

### What products should be used for disinfection:

- Household or commercial disinfection products (follow manufacturer's instructions for disinfection), or a bleach solution (20 ml bleach per litre of water)
- Do not mix bleach with ammonia or any other cleaning product

### During cleaning/disinfection:

- If the surface is dirty remove visible dust and debris and clean using detergent or soap prior to disinfection.
- Follow disinfection product manufacturer's instructions for disinfection.
- Wear nitrile or neoprene gloves while working with disinfectant products.

### After cleaning/disinfection:

- Wash hands with soap and water using proper handwashing procedures immediately after gloves are removed.
- All disposable materials must be placed into a leak proof garbage bag and sealed for disposal.

### Housekeeping:

- Regular housekeeping practices should be maintained in addition to enhanced surface cleaning/disinfection.
- Do not sweep dust, use a vacuum when possible. Unable to use a vacuum use a mask when sweeping.

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## Communicable Disease: SAFE WORK PRACTICE

| Hazards Present                    | PPE or Devices Required                                                                                                  | Additional Training Required |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Viral infection<br>Spread of virus | Hard hat<br>Safety glasses<br>Safety vest<br>Grade 1 Safety boots<br>Disposable gloves<br>Mask as needed<br>Disinfectant |                              |

### What is Coronavirus (COVID-19)?

Coronaviruses are a family of viruses transmitted between humans and animals. COVID-19 can cause illness ranging from a very mild, cold-like illness to a severe lung infection. Symptoms can include fever, cough, sore throat, muscle ache, headache, and difficulty breathing (shortness of breath). The World Health Organization advises that symptoms may appear 2 - 14 days after being exposed.

### How is COVID-19 transmitted?

If a person carrying the virus sneezes, coughs or exhales, respiratory droplets are released into the atmosphere and they may quickly land on nearby surfaces and/or another person. A worker may then touch contaminated surfaces or objects and then rub their eyes, nose, or mouth before washing.

The virus can be transmitted by:

- Breathing in droplets in the air that are generated when people cough or sneeze
- Close contact with other people (e.g. shaking hands or hugging)
- Touching contaminated surfaces and then touching the face, mouth, or food
- Touching a contaminated surface and then touch another surface may cause the virus to transfer from one surface to another.
- Currently, according to health experts, the virus is not known to be airborne (e.g. transmitted through the particles floating in the air) and it is not something that comes in through the skin.

### Key Prevention Steps



Wash your hands often with soap and water for at least 20 seconds. If soap and water are not available, use an alcohol-based hand sanitizer.



Clean and disinfect objects and surfaces that are frequently touched.



Avoid touching your eyes, nose and mouth with unwashed hands.



Cover your cough or sneeze with your elbow or a tissue. Throw tissue in the trash.



Avoid close contact with people who are sick.

## STAY HOME IF YOU ARE SICK!



### What else can we do?

The most important thing you can do to prevent infection is to wash your hands regularly and avoid touching your face. To help reduce your risk of infection:

- Wash your hands often with soap and water for at least 20 seconds. Using soap and water is the single most effective way of reducing the spread of infection. If soap and water are not available, use an alcohol-based hand rub.
- Do not touch your face, eyes, nose or mouth with unwashed hands.
- Cover your mouth and nose with the crease of your elbow or a tissue when you sneeze or cough.
- Regularly clean and disinfect frequently touched surfaces.
- Do not share food, drinks, utensils, etc.
- Stay home if you feel you are sick and follow your employer's policy.
- Practice physical distancing (2 meters of distance from other people as much as possible).

### How to stop the spread of viruses on site:

To prevent a disease or virus from spreading on site, take the following steps:

- Emphasize hand hygiene etiquette by all workers at toolbox talks and orientations – lead by example, put up posters of proper hand washing techniques.
- Ensure that hand washing stations and alcohol base hand sanitizers are on site and available for all workers.
- All offices and non-porous tools are sanitized and cleaned regularly.
- Actively encourage sick workers to stay home.
- Do not permit anyone to enter a worksite if;
  - they have had symptoms of COVID-19 (fever, cough, difficulty breathing, sore throat).
  - they have travelled internationally in the past 14 days.
  - they share a residence with a person who has been exposed to COVID-19.
- Perform environmental routine cleanings and disinfection.
- Plan to minimize exposure between workers and the public – follow physical distancing procedures.
- Avoid touching your eyes, nose or mouth.
- Do not share cups, glasses, dishes or cutlery.
- Have an alternative Level 3 kit available on site.
- Place informative posters telling people what to do if they get sick.

### When should you get medical advice?

If you have any symptoms, isolate yourself from others as quickly as possible. Immediately call a health care professional or Public Health Authority. Describe your symptoms and travel history if applicable. Protect others from infection by washing your hands often and covering your mouth and nose, with your elbow, when coughing or sneezing.

You must stay home and self-isolate if your health care provider and/or a test has confirmed that you have COVID-19 and follow their instructions.

**Dial: 811**

### More information

Health Canada also has a website with guidance on COVID-19 available at:

<https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html>

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### Communicable disease: SAFE JOB PROCEDURES

| Hazards Present                    |  | PPE or Devices Required                                                                                                   | Additional Training Required |
|------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Viral infection<br>Spread of virus |  | Hard hat<br>Safety glasses<br>Safety vest<br>Grade 1 Safety boots<br>Disposable gloves<br>Masks is needed<br>Disinfectant |                              |

#### Hygiene Practices

Clean your hands with soap and water for 20 seconds – before you eat and at the end of the workday, during the work shift whenever possible, and when you get home from work.

- Do not shake hands; avoid physical contact.
- Do not share food, drinks, cigarettes, personal hands tools.
- Do not touch your face, eyes, nose, mouth with unwashed hands (i.e., smoking, drinking water, eating, etc.)
- Follow good respiratory etiquette by covering your mouth and nose with a disposable tissue or the crease of your elbow when you sneeze or cough.
- Regularly clean and disinfect commonly touched surfaces and tools.

#### Project Orientations

- Limit the number of persons in the orientation – a chair spacing between workers. This may require hosting the video orientation sessions more often. Where practical, move orientation outdoors and conduct a verbal orientation – reinforce physical distancing.
- Use the Public Health Authority Health Assessment tool questions to verify that workers are not feeling sick and so they are aware of what the symptoms are so they can self-monitor.
- Disinfect used pens, tables, chairs after each orientation.
- As part of the verbal orientation, discuss:
  - Physical distancing of 2 meters.
  - Hygiene, and location of hand washing and hand sanitization stations.
  - What the company is doing at the site to promote a safe workplace and remind them that their health is important to us.
  - Where the safety posters are located.
  - The importance of reporting to their supervisor if they are feeling unwell and leaving the project.

#### Health Verification of Visitors Prior to site Access

- Question all site visitors on the current status of their health – use NGC Health Assessment tool questions.
- Questionnaire in development.
- All site visitors (owner, consultants, inspectors, etc.) should limit site visits unless necessary for Business Continuity reasons. If visits are required, please:
  - a) Give site representatives 24 hours' notice that you are visiting the site.
  - b) Practice good physical distancing measures.
  - c) Avoid entry into site offices and the first aid trailer unless required.
  - d) Visitors should not use the construction hoist or the temporary construction elevators where possible.

#### Health Verification of Workers

- At start of shift, Supervisor to confirm the health status of contractor workers through discussion with Contractor supervisor and notify HSE Manager of any issues. Document issues.
- Supervisor, each day, to ask for updates of workers that have left the site for self-isolation. Document changes.
- At end of shift, Supervisor to confirm the health status of contractor workers through discussion with Contractor supervisor and notify HSE Manager of any issues.

- If a worker on-site is exhibiting symptoms of COVID-19, direct them to go home and use the COVID-19 Self Assessment Tool. Document this incident and clean and disinfect any surfaces in the area where the worker was working. If the worker is confirmed to have COVID-19, further cleaning may be required by a professional remediation team.

#### **Receive and Review Contractor COVID-19 Plan**

- How is their plan being applied to their Subcontractors?

#### **Project Radios**

- Disinfect radios at start of shift and regularly throughout the shift.

#### **Stairwells**

- Avoid passing each other on the stairs. Wait on the landing until person has exited stairs.

#### **When wearing gloves**

- Do not touch your face, eyes, or mouth.
- Make sure that hands are washed thoroughly or disinfected with hand sanitizer as soon as possible after gloves are removed.

#### **Meetings at Site**

- Hold outside in open areas.
- Where possible conduct meetings by phone or web-conferencing.

#### **Project Offices/Trailers**

- Restrict Access. Place contact information (phone #) outside on door.
- Limit the number of workers or restrict who is allowed to enter these offices.
- Maintain the physical distance requirements.
- Do not touch items – “keep your hands to yourself”.
- Do not share keyboard or mouse, pens, clipboards or documents.
- Disinfect commonly touched items like door handles, chairs, tables, etc.
- Handrails leading up to the trailer or office: Do not slide your hand down them. Routinely disinfect.
- Have workers whose roles permit work from home.

#### **Lunchroom**

- Provide handwashing stations in or near lunchrooms .
- Post signage to remind workers to wash or disinfect their hands before and after eating.
- Stagger coffee/lunch breaks to reduce the number of workers in the lunchroom at the same time.
- Maintain physical distancing by staggering seating arrangement, or do not eat in the lunchroom
- Remove garbage often.
- Routinely disinfect the tables and other commonly handled items.
- Ensure sufficient fresh air supply to reduce “recirculating” the air inside the lunchroom. Set-up neg air if required.
- Separate PPE and clothing that is hung up in the lunchroom to avoid touching.
- If you have to take your spare work clothing home, place it in a plastic bag and do not take it out of the plastic bag until it goes into the laundry to be washed – ideally separately.

#### **Work Locations**

- Maintain physical distancing between workers.
- Stagger work crews to reduce the number of people on site, if possible
- Where possible, reduce the number of partner workers.
- Do not mix workers on crews.
- Post signage promoting proper physical distancing protocols.

#### **Tools**

- Avoid sharing tools or equipment.
  - If you have to share equipment, clean and disinfect points of contact on the equipment.
- Example: on a shared extended work platform, before use wipe down controls, gate, guardrails and any other parts touched by hands. Disinfect it when you are done.

#### **First Aid Treatment**

- First Aid Attendants to wear N95 mask or ½ mask respirator, face shield and medical gloves when treating workers.
- If conscious and capable of answering, ask the worker the NGC COVID-19 Self Assessment Tool questions to verify current status of their health.
- The area should be cleaned and disinfected as soon as possible after treatment has completed.

#### **Handwashing and Hand Sanitizing Stations**

Install handwashing stations complete with soap and water in strategic locations on the project site. Install hand-washing posters at each location. If hand-washing stations are not practicable, hand sanitizer stations may be installed. Make sure that wipes are provided to allow people to remove dirt and soiling from hands prior to sanitization.

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## Communicable Disease - Disposable Gloves Removal: SAFE JOB PROCEDURE

| Hazards Present                    |  | PPE or Devices Required | Additional Training Required |
|------------------------------------|--|-------------------------|------------------------------|
| Viral infection<br>Spread of virus |  | Disposable gloves       |                              |

### The Dangers of Cross-Contamination

When working with chemicals, cleaning fluids or other substances, it's important that any contaminant on the outer surface of the glove is not transferred onto the skin or other 'clean' objects including other items of PPE. All too easily, the correct procedure is not followed, and skin irritation as well as cross-contamination can result. This can not only cause great distress and pain to the individual, but it can also cause downtime in your business. This can be minimised and ultimately avoided by following a few simple steps.

### A How-To Guide for the Removal (Doffing) of Disposable Gloves:

1. Pinch and hold the **outside** of the glove near the wrist area.
2. Peel downwards, away from the wrist, turning the glove inside out.
3. Pull the glove away until it is removed from the hand and **hold the inside-out glove with the gloved hand**.
4. With your un-gloved hand, slide your finger/s **under the wrist** of the remaining glove, **taking care not to touch the outside of the glove**.
5. Again, peel downwards, away from the wrist, turning the glove inside out.
6. Continue to pull the glove down and over the inside-out glove being held in your gloved hand.
7. This will ensure that both gloves are inside out, one glove enveloped inside the other, with no contaminant on the bare hands.

### Always remember

#### Clean to Clean

A clean bare hand touches only clean areas inside the other glove.

#### Dirty to Dirty

Contaminated surfaces only touch other contaminated surfaces.

- Do not touch your face or adjust PPE with contaminated gloves.
- Do not touch environmental surfaces – e.g. door handles, a keyboard, a computer mouse with contaminated gloves.
- Never wash or reuse disposable gloves.
- Safely remove excess liquid beforehand.
- Change gloves when heavily soiled or if they are torn.
- Dispose of used gloves appropriately.



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### Communicable Disease - Face mask: SAFE JOB PROCEDURE

| Hazards Present                    |  | PPE or Devices Required | Additional Training Required |
|------------------------------------|--|-------------------------|------------------------------|
| Viral infection<br>Spread of virus |  | Face mask               |                              |

#### What is a face mask

Face masks are one tool utilized for preventing the spread of disease. They may also be called dental, isolation, laser, medical, procedure, or surgical masks. Face masks are loose-fitting masks that cover the nose and mouth and have ear loops or ties or bands at the back of the head. There are many different brands and they come in different colors. It is important to use approved face masks.

#### What is a face mask used for

Facemasks help limit the spread of germs. When someone talks, coughs, or sneezes they may release tiny drops into the air that can infect others. If someone is ill a face masks can reduce the number of germs that the wearer releases and can protect other people from becoming sick. A face mask also protects the wearer's nose and mouth from splashes or sprays of body fluids.

#### How to put on and remove a face mask

Disposable face masks should be used once and then thrown in the trash. You should also remove and replace masks when they become moist.

Always follow product instructions on use and storage of the mask, and procedures for how to put on and remove a mask. If instructions for putting on and removing the mask are not available, then follow the steps below.

#### How to put on a face mask

1. Clean your hands with soap and water or hand sanitizer before touching the mask.
2. Remove a mask from the box and make sure there are no obvious tears or holes in either side of the mask.
3. Determine which side of the mask is the top. The side of the mask that has a stiff bendable edge is the top and is meant to mold to the shape of your nose.
4. Determine which side of the mask is the front. The colored side of the mask is usually the front and should face away from you, while the white side touches your face.
5. Follow the instructions below for the type of mask you are using.
  - *Face Mask with Ear loops:* Hold the mask by the ear loops. Place a loop around each ear.
  - *Face Mask with Ties:* Bring the mask to your nose level and place the ties over the crown of your head and secure with a bow.
  - *Face Mask with Bands:* Hold the mask in your hand with the nosepiece or top of the mask at fingertips, allowing the headbands to hang freely below hands. Bring the mask to your nose level and pull the top strap over your head so that it rests over the crown of your head. Pull the bottom strap over your head so that it rests at the nape of your neck.
6. Mold or pinch the stiff edge to the shape of your nose.
7. If using a face mask with ties: Then take the bottom ties, one in each hand, and secure with a bow at the nape of your neck.
8. Pull the bottom of the mask over your mouth and chin.

## How to remove a face mask

1. Clean your hands with soap and water or hand sanitizer before touching the mask. Avoid touching the front of the mask. The front of the mask is contaminated. Only touch the ear loops/ties/band. Follow the instructions below for the type of mask you are using.
2. *Face Mask with Ear loops:* Hold both of the ear loops and gently lift and remove the mask.
3. *Face Mask with Ties:* Untie the bottom bow first then untie the top bow and pull the mask away from you as the ties are loosened.
4. *Face Mask with Bands:* Lift the bottom strap over your head first then pull the top strap over your head.
5. Throw the mask in the trash. Clean your hands with soap and water or hand sanitizer.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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### Communicable Disease - Presumed COVID-19 Case onsite: SAFE WORK PRACTICE

| Hazards Present                    |  | PPE or Devices Required                                         | Additional Training Required |
|------------------------------------|--|-----------------------------------------------------------------|------------------------------|
| Viral infection<br>Spread of virus |  | Disposable gloves<br>Surgical mask or N95 Masks<br>Disinfectant |                              |

#### What to do when someone who has been on site is presumed to have COVID-19

Follow these procedures and flow chart if someone on site meets any of the following criteria:

1. Has been tested for COVID-19 within 10 days of being on site.
2. Has tested positive for COVID-19 within 10 days of being on site.
3. Has developed symptoms of COVID-19 within 10 days of being on site (cough, fever, sneezing, sore throat, fatigue).

This individual will be referred to as the “presumptive case”.

#### When can the presumptive case return to site?

The presumptive should not be permitted back on site until they no longer experiencing symptoms of COVID-19 **AND** 10 days have passed since they developed symptoms.

If the presumptive case is hospitalized or otherwise under the care of a medical professional, they should not return to work until the medical professionals determine that it is appropriate.

#### How should we clean the site?

Clean and disinfect all touch-surfaces in the area where the presumptive case was present.

Follow the safe job procedure for Enhanced Cleaning and Disinfection.

#### Should other teams or workers be isolated?

1. If the presumptive case has been tested for COVID-19, call Tele-Care - 8-1-1 for guidance. The steps below would still apply, but testing or other actions may also be required.
2. Identify any individuals who have been in CLOSE CONTACT with the presumptive case. These individuals should self-isolate for 14 days.

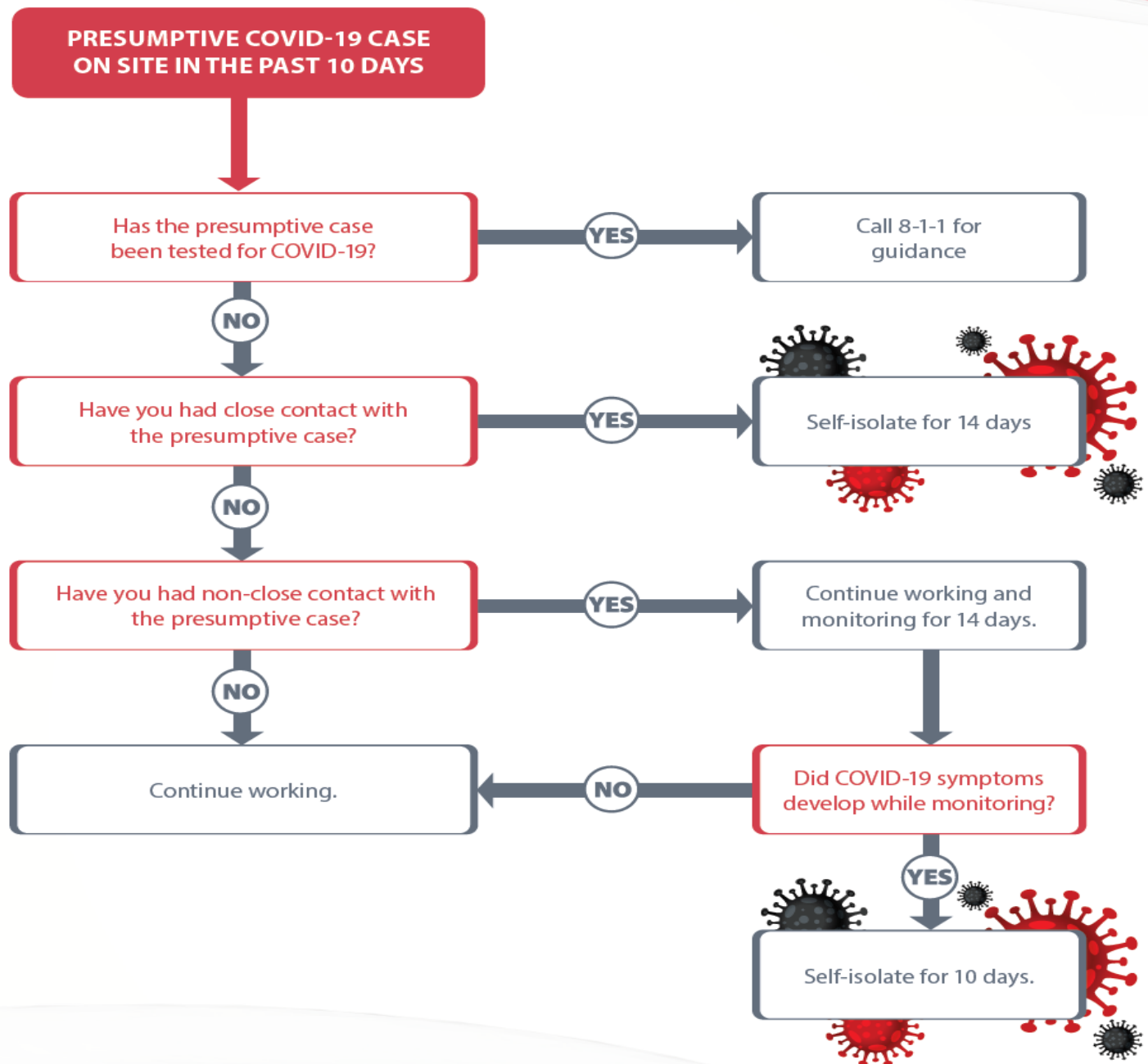
CLOSE CONTACT means:

- Provided care for the presumptive case without consistent and appropriate use of PPE.
  - Lives with the presumptive case.
  - Had direct contact with infectious body fluids of the presumptive case (e.g. was coughed or sneezed on)
  - Had close contact (within 2 meters) with the presumptive case while the presumptive case had symptoms of COVID-19 without consistent and appropriate use of PPE.
3. Identify any individuals who have been in NON-CLOSE CONTACT with the presumptive case. These individuals should be monitored for symptoms (including daily temperature checks) for 14 days and should maintain physical distance (2 meters) from other workers, as well as hand washing and cough/sneeze etiquette. If they develop any symptoms, they should self-isolate.

NON-CLOSE CONTACT means:

- Provided care for the presumptive case **with** consistent and appropriate use of PPE.
  - Has had contact with the presumptive case but has not been within 2 meters of the presumptive case while the presumptive case had symptoms of COVID-19.
4. Wherever possible, the presumptive case’s work crew should work separately from other work crews for 14 days after the presumptive case developed symptoms (e.g. in a different room, on a different shift)
  5. If any workers who have had close or non-close contact with the presumptive case develop symptoms, then they should also be considered as presumptive cases and the steps should be repeated.





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### Compressed Gas - Changing a Propane Cylinder: SAFE JOB PROCEDURE

| Hazards Present                      |  | PPE or Devices Required                                             | Additional Training Required |
|--------------------------------------|--|---------------------------------------------------------------------|------------------------------|
| Explosion<br>Burns<br>Muscle strains |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Safety boots |                              |

1. Check for date of manufacture or the last valid inspection date (10 years or less).
2. Visually inspect the cylinder for cuts, gouges, dents and rusting.
3. Test for leakage which may render cylinder defective. Use soap or leak detector (service valve, valve, sight gauge, relief valve, vent valve).
4. Check that the relief valve fitting is approximately 90° from the locating holes and secure.
5. Check service valve for defects (handle broken, spindle bent, defective or missing "O" ring or back up ring).
6. Fill valve cover in place (if applicable).
7. Check to ensure valve is closed before connecting to coupler.
8. Open flow control valve slowly (check for leakage).
9. Tag defective cylinder, noting defect and report to a supervisor.

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|                                                 | <b>Reviewed By:</b>                                                                                               |

### Compressed Gas - Changing Oxygen/Acetylene Tanks: SAFE JOB PROCEDURE

| Hazards Present                     |  | PPE or Devices Required                          | Additional Training Required |
|-------------------------------------|--|--------------------------------------------------|------------------------------|
| Explosion<br>Burns<br>Muscle strain |  | Grade 1 safety boots<br>Gloves<br>Safety glasses |                              |

1. Close valves on tanks
2. Press torch handle to disperse oxygen and acetylene
3. Disconnect hoses
4. Remove empty cylinders
5. Replace with full cylinders
6. Connect holding straps
7. Reconnect hoses
8. Open valves slowly
9. Check for leaks with soap solution
10. Ensure pressure gauges are set at the proper pressure
11. Ensure oxygen and acetylene flow freely when turned on

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### Compressed Gas - Gas Cylinders: SAFE WORK PRACTICE

| Hazards Present                              |  | PPE or Devices Required                                 | Additional Training Required |
|----------------------------------------------|--|---------------------------------------------------------|------------------------------|
| Fire<br>Explosions<br>Burns<br>Muscle Strain |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves |                              |

- Wear proper PPE
- Stay alert at all times and let others know of a problem.
- Check for leaks at cylinder valves, regulators and connections using soapy water
- Use proper storage site for all gas cylinders. Make sure they are upright and in well ventilated area.
- Use a proper storage site. Regulations and procedures should be followed by the book:
- Never smoke near cylinders.
- Always stand to the side of a valve when opening.
- Use proper fitting wrench for tightening connections. Never use pipe wrench or pliers.
- Use a trolley when moving a cylinder
- Don't use chain, wire, or rubber slings to transport cylinders.
- Have clean hands and clothing so you don't lose your grip. Avoid getting dirt grease into the nozzle or valve.
- NEVER pick it up by the protection cap.
- Move the cylinders properly-with the caps on.
- If an acetylene bottle has been transported horizontally, place it in the upright position for a minimum of 30 minutes before using.

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### Compressed Gas - Gas Cylinders: SAFE JOB PROCEDURE

| Hazards Present                                                                                  |  | PPE or Devices Required                                                                    | Additional Training Required |
|--------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------|------------------------------|
| Fire<br>Explosions<br>Burns<br>frostbite, sudden<br>uncontrolled release of<br>cylinder contents |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Sun (UV) Protection<br>Hard Hat |                              |

#### Gas Cylinders Standard Operating Procedures

1. All personnel who will be working in areas where compressed gases are used or stored must receive instructions regarding the safe handling of cylinders, emergency and evacuation procedures, the use of appropriate personal protective equipment, and those steps which may be necessary to be taken in the event of a leak or fire in or nearby the work area.
2. Do not remove any labels or other form of identification from any gas cylinder
3. Know how to detect the presence of leaks from any gas cylinder in your work area. Of particular importance are flammable and toxic gases. Notify supervisor in the event of a cylinder or valve leak.

#### Gas Cylinder Storage and Labeling

1. When receiving a gas cylinder do not accept it until the following items are verified:
  - The contents are identified either by labels or stencils
  - It contains the appropriate DOT label
  - It contains a valve protection cap (if so designed)
  - It is labeled with the current hydrostatic test date (if applicable)
2. Store gas cylinders in a well-ventilated area. All cylinders must be stored in a secured upright position to a sturdy permanent structure to prevent the cylinder from falling or being knocked over. Gas mixtures should be stored in accordance with their physical and chemical properties. See material safety data sheets for specifics with regards to this information.
3. All gas cylinders must be labeled as to their status "full", "in use", or "empty". Contact environmental safety services for copies of labels. Store "empty" and "full" gas cylinders separately. Cylinders are considered "empty" if their pressure is less than 25 psi. All cylinders will be considered "full" that are not properly identified.
4. Place protective caps on those cylinders which are not in use.
5. Separate flammable gases from oxidizing gases when storing them. Oxygen containers should be separated from flammable gas by a minimum distance of 20 feet or a non combustible barrier of 5 feet high with a fire-resistant rating of hour should separate the cylinders.
6. Cylinders of all gases having a Health Hazard rating of 3 or 4 (or 2 with no physiological warning properties) must be kept in a continuously mechanically ventilated hood or other continuously mechanically ventilated enclosure. There must be no more than three cylinders of gases with Health Hazard ratings of 3 or 4 per hood or other ventilated enclosure. Contact Environmental Safety Services if you have questions regarding the storage of cylinders in continuously mechanically ventilated enclosures.
7. Cylinders containing gases that are corrosive to cylinders or cylinder valves or that may become unstable while stored in the cylinder shall have a maximum retention period of six months, unless a shorter period is otherwise specified by the manufacturer.
8. Gas cylinders stored for more than 36 months should be discarded.
9. Pickup and delivery of gas cylinders needs to be at a properly covered, racked storage area. Identify all areas where oxidizing gases are stored with a sign stating the chemical name and the hazard associated with the gases which are being stored.

10. Do not store gas cylinders near elevators, ventilating systems, or other openings through which gas may spread to other parts of the building if a leak should occur. Do not store them where there is a risk of dropping them or having heavy objects fall on them or where they may be struck by a vehicle.
11. Cylinders in laboratory work areas containing oxygen, flammable gas, liquefied flammable gas, and with a Health Hazard rating of 3 or 4 shall comply with the quantities in Table 8.2 (NFPA 45, 8-2.6). See Below

Table 8.2: Maximum Quantity and Size Limitations for Compressed or Liquefied Gas Cylinders in Laboratory Work Areas. See NFPA 45 for more details

| Gases and/or Oxygen Flammable Gases      |                   |                      |                   |                      |                                           |
|------------------------------------------|-------------------|----------------------|-------------------|----------------------|-------------------------------------------|
|                                          | Sprinklered Space | No sprinklered Space | Sprinklered Space | No sprinklered Space | Gases with Health Hazard Rating of 3 or 4 |
| Maximum No. of Cylinders per 500 sq. ft. | 6                 | 3                    | 3                 | 2                    | 3                                         |
| Maximum Cylinder Size (Inches)           | 10x50             | 10x50                | 9x30              | 9x30                 | 4x15                                      |
| Approximate Water Volume (ft.3)          | 2.0               | 2.0                  | 0.6               | 0.6                  | 0.1                                       |

#### Proper Handling of Gas Cylinders

1. Prior to connecting a regulator, open the gas cylinder valve slightly and then immediately close it to blow out dirt or debris from the valve assembly. Aim the valve away from the operator and any other personnel present during this operation.
2. Always open cylinder valves slowly. Never force the valve open. If the valve cannot be opened by the wheel or small wrench provided, return the gas cylinder. To shut down a system, close the cylinder valve and relieve the pressure from the entire system through a hose that is not being used.
3. Never interchange regulators and hose lines among different types of gases.
4. Always turn off cylinders from the main stem valve (not the regulator). Turn off any cylinder slowly.
5. Suitable equipment must be available for moving cylinders and other portable containers. Hand trucks must be equipped with a clamp or chain to secure the container in place or they must be specifically designed for container handling. Never drag, roll, or slide a cylinder in an attempt to move it.
6. Never drop cylinders, never permit cylinders to strike each other, and never strike cylinders with a metal instrument.
7. Cylinders required to be secured at all times.

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### Compressed Gas - Handling Propane Tanks: SAFE WORK PRACTICE

| Hazards Present                                                              |                                                                                       | PPE or Devices Required                                                                        | Additional Training Required |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Sudden uncontrolled release of cylinder contents | Fire / Explosions<br>Slips, Trips & Falls<br>Inhalation of hazardous fumes or vapours | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing<br>Gloves |                              |

- Visually inspect propane tank prior to handling and use.
- Nylon slings must be used in a choker fashion when loading, off loading or lifting propane tanks
- Lifting lugs provided on tanks are not to be used. Slings are to be wrapped around the shell of the tank
- Regulators are to be removed from the tank prior to any movement of the tank
- Crane hooks shall be equipped with a safety latch
- All trucks, cranes or equipment used to handle propane tanks must be equipped with a fire extinguisher appropriate for the size and type of tank being handled
- Except in an emergency, any movement or repositioning of tanks shall be performed by a competent worker
- Tanks are not to be heated to increase flow
- When in use, propane bottles are to be securely held in an upright position
- Tanks are not to be hooked up and used without proper regulators
- Make sure date is correct on the tank before refilling.
- Do not smoke or use fire near propane tank.

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### Compressed Gas - Handling of Propane Tanks: SAFE JOB PROCEDURE

| Hazards Present                                                              |                                                                                       | PPE or Devices Required                                                                        | Additional Training Required |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Sudden uncontrolled release of cylinder contents | Fire / Explosions<br>Slips, Trips & Falls<br>Inhalation of hazardous fumes or vapours | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing<br>Gloves |                              |

#### Preventive and Corrective Measures

##### Personal Protection:

The selection of personal protective equipment varies, depending upon conditions of use.

In open systems where contact is likely, wear gas-proof goggles, face shield, chemical resistant overalls, and appropriate thermal/chemical gloves. Where skin and eye contact are unlikely, but may occur as a result of short and/or periodic exposures, wear long sleeves, chemical resistant gloves, gas-proof goggles, and a face shield. Where concentration in air may exceed the occupational exposure limits given in **(Section 8 Exposure controls/personal protection of the MSDS)** and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation.

##### Handling, Storage and Shipping:

Keep containers closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials, store as pressurized liquid in a pressure vessel. Store and load the container at normal (up to 30 deg C) temperature and at atmospheric pressure.

Material will accumulate static charges which may cause a spark. Static charge buildup could become an ignition source. Use proper relaxation and grounding procedures. Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

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### Concrete - Concrete Curb and Sidewalk: SAFE JOB PROCEDURE

| Hazards Present                                                                            |                                                                              | PPE or Devices Required                                                                            | Additional Training Required |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------|
| Pinch Points<br>Potential injury or death<br>Muscle Strain<br>Faulty equipment<br>Elements | Chemical burns<br>Rotating machinery<br>Slips, trips and falls<br>Eye injury | Grade 1 safety boots<br>Gloves<br>Hard hat<br>Safety glasses<br>Safety vest<br>Sun (UV) Protection |                              |

1. When loading and unloading machine, make sure that trailer is on level ground.
2. Excavate where the sidewalk will be poured and prepare site
3. Bring in material to prepare sub grade, compact material as per specification
4. Install forms where the sidewalk will be poured
5. Bring in cement truck and start pouring
6. Do handwork needed to achieve a nice even surface
7. Apply curing compound
8. Make appropriate cuts with concrete saw
9. Take off the forms
10. Backfill each side of the finished sidewalk with appropriate material
11. Clean material off finished sidewalk
12. Hydroseed or apply lawn seed on topsoil areas

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|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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|                                                                | <b>Created By:</b>                                                                                                |

### Concrete - Concrete Hammer Drill: SAFE WORK PRACTICE

| Hazards Present                                          |                                                                  | PPE or Devices Required                                                                     | Additional Training Required |
|----------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------|
| Failure of tool<br>Jamming<br>Muscle Strain<br>Vibration | Dust<br>Flying debris<br>Slips trips and falls<br>Electric shock | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest<br>Hearing protection<br>Respirator |                              |

- Inspect tool for defects proceed as needed.
- Ensure power cord and all extension cords are undamaged and come with a proper plug
- Choose proper drill bit for the job being done.
- Before drilling into concrete check with supervisor for electrical pipe, plumbing pipe, etc.
- Check drill to ensure handle is tight from movement so drill can be held firmly in place.
- Adopt a comfortable posture when using drills avoid bending where possible.
- Use Leg or load support when using large drill to drill into walls.
- Do not allow dust to accumulate.
- Use brush to remove material from drilled hole.
- After drilling, the bit will be extremely hot use caution handling.
- Store tools in case provided or in clean secure area protected from weather. Store drill bits in a manner which will prevent damage to cutting segments.

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### Concrete - Concrete Hammer Drill: SAFE JOB PROCEDURE

| Hazards Present                                                              |                                                                                      | PPE or Devices Required                                                                     | Additional Training Required |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------|
| Contamination<br>Jamming<br>Cuts<br>Flying objects<br>slips, trips and falls | Electrocution<br>Respiratory illness<br>repetitive strain<br>injury<br>Noise<br>Dust | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest<br>Hearing protection<br>Respirator |                              |

1. Unlike conventional drills, hammer drills can drill in concrete and brick as well as wood and metal. Be sure to position the mode selector switch for standard drilling (wood and metal) or hammer drilling (concrete and brick).
2. You must use percussion type drill bits when drilling concrete or brick with a hammer drill. These are special bits that are tipped with carbide steel which is much harder than drill bit steel. Carbide is able to fracture concrete and brick when the hammering action of a skill hammer drill is applied.
3. Always hold the drill by insulated gripping surfaces and use the auxiliary handle (if provided) for maximum control over torque reaction or kick-back.
4. Don't force the tool, let the drill bit do the work. Keep the speed up, don't stall. As you drill deeper, pull the bit out of the hole frequently to clean dust.

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### Concrete - Concrete Placement: SAFE JOB PROCEDURE

| Hazards Present                                                                            | PPE or Devices Required                                                       | Additional Training Required |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------|
| Pinch Points<br>Potential injury or death<br>Muscle Strain<br>Faulty equipment<br>Elements | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest<br>Hearing protection |                              |

#### Tools/Equipment Required:

- Rakes
- Shovels
- Bull Float
- Power Screen
- Hand Float
- Laser Level

#### Action Required:

- Bring concrete in using:
    - Wheelbarrow
    - Crane
    - Pump Truck
    - Concrete Truck
1. Place concrete in desired area
  2. Make grades to level concrete
  3. Level concrete
  4. Bull float concrete
  5. Clean up debris

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### Concrete - Portland Cement: SAFE WORK PRACTICE

| Hazards Present                             |  | PPE or Devices Required                                                                                       | Additional Training Required |
|---------------------------------------------|--|---------------------------------------------------------------------------------------------------------------|------------------------------|
| hazardous materials<br>Dust<br>Contaminants |  | Waterproof Safety boots<br>Safety vest<br>Safety glasses<br>Gloves<br>Skin protection<br>Respirator Equipment |                              |

- Wear waterproof Safety Boots high enough to prevent concrete from flowing in when workers must stand in fresh concrete
- Suitable eye protection where mixing, pouring, or other activities may endanger eyes
- Work in ways that minimize the amount of cement dust released.
- When and where possible wet-cut rather than dry-cut masonry products to prevent dust hazards. (Fill out code of practice concrete saw before work can begin.)
- When dry-cutting masonry products the cutter must wear a respirator.
- Mix dry cement in well-ventilated areas
- Make sure to work upwind from dust sources
- Clothing contaminated by wet cement should be quickly removed.
- Skin in contact with wet cement should be washed immediately with large amounts of cool clean water.
- Remove jewelry such as rings and watches because wet cement can collect under them.
- Refer to WHMIS guidelines for properties and ingredients in concrete recipe.

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| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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|                                                 | Created By:                                                                                                       |

### Concrete – Working with Concrete/Cement: SAFE WORK PRACTICE

| Hazards Present                                                                                            |  | PPE or Devices Required                                                                                                                     | Additional Training Required |
|------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, trips & falls<br>Explosive dust<br>Inhalation of dust particles<br>Flying debris<br>Skin irritation |  | Hard hat<br>Safety glasses<br>Grade 1 safety boots<br>Hearing protection is required<br>Respirator equipment is required<br>Skin protection |                              |

- DO NOT have prolonged contact with concrete, it can cause respiratory illness, burns, rashes and skin irritation.
- Ensure appropriate PPE is used. Wet concrete can cause severe burns to the skin. If wet concrete gets on the skin it should be washed off completely as soon as contact occurs.
- Become familiar with the Safety Data Sheet for the concrete/cement products you are using to ensure you know the proper personal protective equipment to use and what to do if exposure occurs.
- Avoid breathing concrete dust by:
  - Avoiding dusty areas
  - Wetting down the work area to minimize dust
  - Wearing approved respiratory protection
  - Use HEPA vacuums to collect dust, don't dry sweep.
  - Using wet cuts, rather than dry cuts.
  - Mix dry cement in well ventilated areas.
  - Work upwind from dust sources.

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## Confined Space - Calibration and Bump Test using the MSA Galaxy GX2: SAFE JOB PROCEDURE

| Hazards Present                                          | PPE or Devices Required | Additional Training Required |
|----------------------------------------------------------|-------------------------|------------------------------|
| Eye injury<br>Electric shock,<br>Compressed gas cylinder | Safety Glasses          |                              |

Safety glasses shall be worn when putting the regulator on the calibration check gas cylinder and keep it faced away from people and user's face.

The ALTAIR 4X can be turned on at any time during setup of the Galaxy GX2 cause the ALTAIR 4X can only be Calibrated or Bump tested when it is warmed up. (ALTAIR 4X is warmed up when it goes through its settings, date, time, last Calibration, and the screen will display the current gas reading in the room.)

1. On a flat surface remove the MSA Galaxy GX2 automated test system, Calibration Check Gas Cylinder, Regulator (the Regulator is an on-demand flow when it is called for by the GX2 there is no ON/OFF valve) with tubing, and MSA ALTAIR 4X Multigas detectors from its case.
2. Screw the Regulator onto the Calibration Check Gas Cylinder only hand tight (don't use any tools to tighten Regulator onto Cylinder) pointing away from persons and face.
3. Insert end of tubing on the Regulator to the Galaxy GX2 on the left-hand side where it is written "Cylinder 1" until it stops (before square).
4. Turn on the ALTAIR 4X if haven't by now by pressing the center power button and releasing it.
5. Plug the Galaxy GX2 into the power outlet. (There is no ON / OFF switch the unit turns on when it is plugged in and turns off when it is unplugged.) The Galaxy GX2 will be ready to test once it is warmed up it will display MSA logo, 4 Cylinder gauges GX2 Configuration, and Instrument Records.
6. When both are ready to test take the ALTAIR 4X place the bottom into the GX2 first (should be able to see 2 black holders on the GX2 behind the ALTAIR 4X). Once in place ALTAIR 4X should be straight on the GX2 take both thumbs on each side of the ALTAIR 4X (by the clip) and hold the GX2 with your fingers. Push the ALTAIR 4X till it snaps into place.
7. Once the ALTAIR 4X is attached the Calibration or Bump Test will begin in a few seconds automatically. **DO NOT** remove the ALTAIR 4X during testing. **DO NOT** unplug the GX2 during testing. (GX2 is programmed to Calibrate every 30 days and Bump Test every day.)
8. Once the Calibration is Complete it will pass it or fail the ALTAIR 4X. If failed write on the Test Log the date, the Unit # (on the ALTAIR 4X under the clip), the
9. Condition of the ALTAIR 4X, circle the test attempted; circle the result of the test, the time of the test, and initials of tester. If failed a Bump test it will do a Calibration of the unit automatically then if it fails the Calibration read operator's manual for troubleshooting. If it passes write on the Test Log the date, the Unit # (on the ALTAIR 4X under the clip), the condition of the ALTAIR 4X, circle the test attempted, circle the result of the test, the time of the test, and initials of tester. (Keep records of all tests and all results.)
10. After the test is completed push up on the release clip on the GX2 (clip is right above the detector) and with the other hand remove the ALTAIR 4X from the GX2.

11. When all done with the equipment unplug the GX2 from the outlet. If you don't plan on reusing the GX2 disconnect all components and place them back correctly in the case.

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### Confined Space: SAFE WORK PRACTICE

| Hazards Present                                                                                                                              |                                                                                                                              | PPE or Devices Required                                                                                                                                                                    | Additional Training Required      |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Toxic atmosphere<br>Oxygen deficient<br>Fire<br>Explosion<br>Activation of Equipment<br>Flood<br>Confined Space Moving<br>Noise<br>Vibration | Temperature<br>PPE Failing<br>Electrical Shock<br>Cutting & Welding<br>Rescue Problems<br>Falls<br>Communication<br>Problems | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest<br>Hearing protection<br>Skin protection<br>Fall Protection<br>Supplied air respirator<br>Air purifying respirator<br>Gas detector | Confined space<br>Fall protection |

- Follow all OH&S Regulations and Northern Inc. Code of Practice for Confined Space.
- Supervisors will ensure employees are competent to and do follow the standard practices included in the Code of Practice.
- Have Emergency plan ready before entry of confined space.
- Hazard assessment is completed.
- All documentation is completed fully **before** entry.
- Gas/Atmosphere tests are done **before** work in confined space starts.
- Have co-worker on Safety watch and Fire Watch as needed.
- Person entering the confined space is **trained and Competent**.
- Rescue responders have valid training in confined spaces entry and rescue.
- Continuous air testing or monitoring is to be done when needed.

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### Confined Space: SAFE JOB PROCEDURE

| Hazards Present                                                                                                                              |                                                                                                                              | PPE or Devices Required                                                                                                                                                                    | Additional Training Required      |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Toxic atmosphere<br>Oxygen deficient<br>Fire<br>Explosion<br>Activation of Equipment<br>Flood<br>Confined Space Moving<br>Noise<br>Vibration | Temperature<br>PPE Failing<br>Electrical Shock<br>Cutting & Welding<br>Rescue Problems<br>Falls<br>Communication<br>Problems | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest<br>Hearing protection<br>Skin protection<br>Fall Protection<br>Supplied air respirator<br>Air purifying respirator<br>Gas detector | Confined space<br>Fall protection |

#### Definition

A confined space means an enclosed or partially enclosed space that

- a. Is not designed for human occupancy except for the purpose of performing work,
- b. Has restricted means of access and egress, and
- c. May become hazardous to an employee entering it due to its design, construction, location or atmosphere, the material or substance in it, or any other condition related to it.

#### Procedure

View company's Confined Space Code of Practice

The supervisor will ensure that any employee to enter a confined space has received instruction and training on the procedures and equipment to be used during a confined space entry or emergency, including proper use of the entry permit. The supervisor is responsible for initiating the entry permit and ensuring it is properly completed and all employees understand its use. A permit must be completed for each entry into the confined space and must be signed by the worker entering the space and the supervisor.

A qualified person must test the atmosphere in the confined space and records must be kept. All necessary precautions must be taken before entry.

Workers must understand the potential hazards and the procedures to be followed for safe entry and work in a confined space.

The proper protective equipment, including rescue equipment, must be at the site before entry.

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### Crusher - Lockout-Tag Out: SAFE JOB PROCEDURE

| Hazards Present                                                                                                          |                                                                                                                | PPE or Devices Required                                                                                                                                                           | Additional Training Required |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Burns<br>Crushing<br>Traffic<br>Rollovers<br>Pinch points<br>Noise<br>Dust<br>Electric shock | Rotating parts<br>Heat<br>Slips, trips, falls<br>Truck and equipment traffic<br>Dust<br>Vibrations<br>Elements | Safety boots<br>Safety glasses<br>Gloves<br>Reflective high visibility clothing<br>Hearing protection<br>Respiratory protection<br>Padlocks<br>Lockout Tags<br>Multiple Lock Hasp | Lockout Tag Out              |

When maintenance is performed in any manner on the crusher the employees of the company shall insure that before work begins the main power switch is locked out:

1. Ensure Emergency response plan is in place.
2. Ensure employees are trained in lockout procedures.
3. Ensure that company Lockout code of practice is followed.
4. Identify all employees working on Crusher.
5. Distribute locks to all those affected by lockout.
6. Switch off all appropriate devices (MCC, Distribution Panel, and Disconnect).
7. Lockout and Tag out electrical supply devices in the OFF position.
8. Test to be sure the equipment cannot be operated at the STOP-START switch (Double Tap).
9. At completion of task ensure all tools are removed from work area.
10. Notify all employees in area that equipment is being put back in service.
11. After completion of task, remove padlocks and file tags.

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### Crusher - Plant: SAFE WORK PRACTICE

| Hazards Present                                                                         |                                                                                 | PPE or Devices Required                                                                                         | Additional Training Required |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Truck & Equipment<br>Traffic<br>Bodily injuries | Dust<br>Vibrations<br>Crushing<br>Elements<br>Property Damage<br>Electric Shock | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Fall protection as required | Fall protection              |

- All employees must wear proper PPE.
- Supervisor/Foreman is responsible to facilitate and/or provide proper safety instruction to their workers on protection requirements and training.
- Protect employees from injuries with Crusher operations, with training of employees, and emergency response plan.
- The employee must be knowledgeable with worksite operations that are part of Crusher operations.
- Lockout-Tag out procedures for all equipment must follow Northern Inc. Code of Practice Lockout-Tag out. Under no circumstance the employee shall proceed to attempt to rectify any electrical, hydraulic, or any other problems without first Locking out the equipment.
- Confined Space must follow Northern Inc. Code of Practice Confined Space all documents must be completed before entry of Confined Space, including the proper PPE and equipment. (Pre-use inspection of PPE and Equipment Documented)
- Fall Protection must follow Northern Inc. Code of Practice Fall Protection, including the proper PPE. (Pre-use inspection of PPE and Equipment Documented)
- Do not cross, jump, walk, or touch any moving conveyor.
- Keep floors, catwalks, and platforms clean and free from debris.
- Know weight capacities of platforms and catwalks. Don't overload.
- Be familiar with the various safety devices around the plant.
- Make sure all guards and other protective devices are in place, secured, and not damaged throughout the plant.

Follow start up and shut down procedures of Crusher plant.

Follow all maintenance schedules.

Report any defects to your supervisor.

Plant operator must maintain good housekeeping.

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### Crusher - Plant: SAFE JOB PROCEDURE

| Hazards Present                                                                                                  |                                                                                                        | PPE or Devices Required                                                                                                         | Additional Training Required |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Burns<br>Crushing<br>Traffic<br>Rollovers<br>Pinch points<br>Noise<br>Electric shock | Rotating parts<br>Heat<br>Slips, trips, falls<br>Truck and equipment<br>Elements<br>Dust<br>Vibrations | Safety boots<br>Safety glasses<br>Gloves<br>Reflective high visibility clothing<br>Hearing protection<br>Respiratory protection | Lockout Tag Out              |

Employees should wear proper PPE.

Foreman must facilitate and/or provide proper instruction to the workers on protection requirement and training.

Protecting workers from injuries associated with crushing operations.

The worker must be conversant with worksite operations that are part of a crushing operation.

1. Before starting the crusher plant, check all fluids systems levels and leaks, valves, fitting, and also all the motors. Verify conveyors' entrance is obstructed and if conveyor belts are ok.
2. Check if lock out tag out equipment is near the electrical controls.
3. Start the crusher and conveyor and check if there is anything wrong.
4. If everything and the equipment is running smoothly, then the loader operator goes to the rock pile to be crushed and get a full rock bucket.
5. Crushing operations involve heavy equipment such as loaders, conveyors, and trucks.
6. Watch not to keep the loader bucket too high so that big rock pieces fall and/or rolls and hurt any employees or damages nearby vehicles.
7. He takes a full bucket and brings it over to the crusher conveyor/hopper.
8. Then he activates the download and tilt valve of the loader bucket and empties the bucket into the hopper.
9. At the outlet conveyor/hopper of the crusher there is a truck being loaded with desired crush rock size and will go and dump it into the crushed rocks stockpile.

All the above steps are repeated hundreds of time during the day, the most important thing into all this is for your to work safely and to protect your co-workers from any accident always think before you act.

Loader operator and employees must maintain good housekeeping around the crusher and control room.

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### Crusher - Working in a Quarry: SAFE WORK PRACTICE

| Hazards Present                                                      |                                                                                 | PPE or Devices Required                                                                                                                 | Additional Training Required    |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Electric shock<br>Cuts<br>Rotating parts<br>Exhaust<br>Dust<br>Noise | Crushes<br>Falling objects<br>Machinery & truck traffic<br>Slips, Trips & Falls | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves<br>Hearing protection as needed<br>Respiratory protection as needed | Rigging<br>Electrical Awareness |

- Ensure proper PPE is worn.
- Ensure required and proper training of all workers onsite.
- Inspect equipment for any missing guards, flaws, breakage, or repairs needed before start up.
- Complete Job Hazard Assessment.
- Stand clear of all moving parts.
- Never walk underneath a moving conveyor.
- Quarry shall have an edge protection system, Fencing or a Berm to protect people from getting too close to the edge of the quarry face.
- Quarry shall be clearly marked with easy to read and understand signage warning people to stay clear. Access roads are to be blocked or gated with signage warning of a gate ahead.
- Quarry face to be inspected at the beginning and end of each shift by a competent supervisor. Any safety hazards to be reported and fixed before work begins.
- The height of shot rock piles shall not be higher than what can be safely reached by the equipment being used, or no higher than 5 meters.
- The face height for quarry operations in consolidated rock is not to exceed 10 meters, except with the written approval of a Geotechnical Engineer. The face should never exceed the height which cannot be reached with the equipment use.
- Any and all employees have the right to refuse work which they feel is unsafe.
- No equipment is to operate at or near the edge of a quarry face.

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### Crusher - Working in a Quarry: SAFE JOB PROCEDURE

| Hazards Present                                                                                                                     |                                                                                              | PPE or Devices Required                                                                                                            | Additional Training Required |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Rotating parts<br>Heat<br>Slips, trips & falls<br>Truck and equipment traffic<br>Vibrations<br>Elements | Burns<br>Crushing<br>Traffic<br>Rollovers<br>Pinch points<br>Noise<br>Dust<br>Electric shock | Steel toe boots<br>Safety glasses<br>Gloves<br>Reflective high visibility clothing<br>Hearing protection<br>Respiratory protection |                              |

Quarry shall have an edge protection system, Fencing or a Berm to protect people from getting too close to the edge of the quarry face.

Quarry shall be clearly marked with easy to read and understand signage warning people to stay clear. Access roads are to be blocked or gated with signage warning of a gate ahead.

Quarry face to be inspected at the beginning and end of each shift by a competent supervisor. Any safety hazards to be reported and fixed before work begins.

The height of shot rock piles shall not be higher than what can be safely reached by the equipment being used, or no higher than 5 meters.

The face height for quarry operations in consolidated rock is not to exceed 10 meters, except with the written approval of a Geotechnical Engineer. The face should never exceed the height which cannot be reached with the equipment use.

Any and all employees have the right to refuse work which they feel is unsafe.

No equipment is to operate at or near the edge of a quarry face.

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### Crusher - Cone Crusher Setup: Safe Job Procedure

| Hazards Present                                                                 |                                                                                         | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Site Traffic<br>Bodily Injuries<br>Dust | Vibrations<br>Crushing<br>Elements<br>Property Damage<br>Electric Shock<br>Pinch Points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Lockout Tag out              |

**This procedure is to be followed by competent persons following all requirements of the Occupational Health and Safety Act, any applicable regulations and the safety rules, policies, procedures of the Northern Inc.**

#### Mobile Crusher

- 1) Metso break down primary jaw is moved in two pieces. Feeder must be removed to transport on highway. Feeder moved on low deck and main chassis hauled separately.
- 2) Find a level spot, position low deck with feeder and raise unit off of low deck by means of the hydraulic legs which are an integral part of the feeder. Pull low deck out from under unit and back jaw chassis under feeder let down on jaw chassis by means of hydraulic legs. Retract legs and bolt feeder to main frame. Move complete unit to place where it is going to be set up. Build up rock / gravel pad , level up unit and lock in place.
- 3) Place scalper under jaw discharge by means of loader, using spotter etc, level up unit and lock in place.
- 4) Place feeder hopper under discharge belt of scalper with shunt truck, using spotter etc, level up unit and lock in place.
- 5) With shunt truck place duplex in position under discharge belt of feeder hopper using spotter etc, level up unit and lock in place.
- 6) With shunt truck place Syntron parallel with duplex, place discharge belts from duplex to Syntron. level up unit and lock in place.
- 7) Cone crusher mounted on chassis and is completely self-contained unit. Position under Syntron with shunt truck and using attached hydraulic jacks to level up unit and lock in place.
- 8) Position cone on left hand site of duplex. Back in place using shunt truck; unfold and place feed conveyor using excavator. Jack up and level up unit and lock in place.
- 9) Place tower/ generator / lunch room trailers parallel to cone with 5<sup>th</sup> wheel facing away from feeder hopper.
- 10) Position Astec with shunt truck at the end of discharge belt of the duplex and level up unit and lock in place.
- 11) Install conveyors.
- 12) Hook up all electrical wires; tie up and block up off ground and place caution tape or barricades in all appropriate places.

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|                                                | Created by: E.Cyr, N.Chase, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |



### Crusher - Crusher Operation: SAFE JOB PROCEDURE

| Hazards Present                                                                 |                                                                                         | PPE or Devices Required                                                                  | Additional Training Required |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Site Traffic<br>Bodily Injuries<br>Dust | Vibrations<br>Crushing<br>Elements<br>Property Damage<br>Electric Shock<br>Pinch Points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Locks and Tags | Lockout Tag Out              |

• Do a pre-shift check of all equipment to ensure it is in proper working order. This is to include:

1. All V-belts for wear, play, etc.
2. All sheaves for wear, play, etc.
3. Clean all dust from center of sheaves so they do not get out of balance. (as Needed)
4. Check fluid levels in hammer, crusher, hydroset, and fluid coupling.
5. Check oil pumps to ensure they are working.
6. Look for any oil leaks.
7. All conveyors belts for bed splices, cuts, etc.
8. Check all bearings, gear reducers, idlers for wear, fluid leaks, bad bearings, etc.
9. Ensure no excessive debris build up under belts, catwalks, etc.
10. Visually check concaves, spider etc. for wear, cracks, etc.
11. Set hydroset to crush rock to proper size ensuring it is still in its workable range.

#### Maintaining Crusher

- Grease bearings weekly.
- Grease hammer weekly.
- Grease hold down idlers weekly.
- Ensure floor plates are properly fastened and not leaking.
- Ensure hoses on hammer are in good condition.
- Check concaves for peening and have them gouged out If necessary.
- Inspect rubber flashings, metal flashing and head boxes for wear and have repaired or replaced if necessary.
- Inspect head boxes for buildup and clean out if necessary.
- Maintain good housekeeping practices including crusher base, catwalks, control room, oil room and all working areas.
- Ensure trucks have unobstructed access to stockpiles.
- Ensure proper cables and shackles are available for lifting large rocks out of crusher.
- Ensure hydroset has proper pressures of nitrogen Monthly
- Check pinion oil level weekly.
- Keep area between idlers free from debris
- Follow proper procedures for removing big rocks from crusher.

- Follow proper procedures for restarting crusher if it stops under load.
- Follow proper lock out procedures anytime the equipment is shut off and anyone is working, cleaning, on or inspecting the equipment.
- Check underneath the crusher for wear, missing guards etc.
- Follow proper start-up procedures when starting crushers.
- Ensure all guards and barriers are in proper place at all times.
- Ensure adequate grease is available for automatic greasing of spider.

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|                                                 | Created by: N.Chase, E.Cyr, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |

### Crusher - Electrical Activity (Lightning): SAFE JOB PROCEDURE

| Hazards Present                                       |  | PPE or Devices Required                                                | Additional Training Required |
|-------------------------------------------------------|--|------------------------------------------------------------------------|------------------------------|
| Personal Injury<br>Death<br>Fires<br>Equipment Damage |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. Upon visualization or notification of electrical storm activity, the crusher operator immediately must stop dumping Loaders.
2. Supervisor or designate will notify the crew of this activity.
3. The Tower Operator immediately cleans out the hopper and clears the belts.
4. Follow normal shutdown procedures. Specific procedures are in place.
5. Supervisor or designate Notifies crew that the crusher is clear.
6. After the notification that the electrical storm has passed the power is going to be restored, the crusher may be started. (This is at least one-half hour after the last sighting of lightning).
7. Normal start-up procedures are used. Specific procedures are in place.
8. The Loader operator may now proceed carefully out of dumping area checking each way for traffic. He/she then returns to the loading area.
9. When a loader operator approaches the feeder and there is a loader dumping, they must stop and wait.
10. The Loader operator then must wait until the Loader ahead has completed dumping and moved out of the dumping area. Once the dumping area is clear, the Loader operator may enter the dumping area following the normal procedures. UNDER NO CIRCUMSTANCES MAY A LOADER PULL OUT IN FRONT OF A DUMPING LOADER TO PREPARE TO DISCHARGE THEIR LOAD. THE LOADER MUST WAIT OUTSIDE THE LOADING AREA
11. When a Loader is in the process of dumping and signal to stop, they immediately lowers their bucket and moves out of the dumping area.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                                                                                                                                               |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | <p style="text-align: center;">This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> <p><b>Created by: N.Chase, E.Cyr, M.Ouellette, M.Deschenes, L.Michaud, P.Jean</b></p> |

### Crusher - Excavating from Quarry Blast: SAFE WORK PRACTICE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | PPE or Devices Required                                                                                           | Additional Training Required |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Equipment Failure<br>Equipment Rollover<br>Falling Rock<br>Restricted and congested area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots                                            |                              |
| <ol style="list-style-type: none"> <li>1. Prior to excavating equipment approaching an area, which could be dangerous due to falling rock from the working face, all blast back walls must be scaled to remove loose rock or other unconsolidated material from the face.</li> <li>2. This will be achieved by utilizing an excavator from the crest area above the blast to scale all material within reach as soon as practicable after blasting.</li> <li>3. Should additional scaling be required at lower levels in the face, the excavator must do so by traveling over the muck pile and build pad up to face and scale working face as needed.</li> <li>4. A thorough inspection must be carried out daily to be certain no danger exists due to loose material falling from above during the scaling process.               <ol style="list-style-type: none"> <li>a) At the beginning of every shift and/or when moving to a different working face during a shift, the excavator operator must make a thorough inspection of the planned work area to determine if any hazards exist, either to his equipment or person and to any other working in the immediate area.</li> <li>b) The results of this inspection must be recorded in an inspection report booklet and signed by the operator and this record is left in the tower for the next operator to read.</li> <li>c) The excavator operator will excavate the muck pile by making repetitive passes across the face of the pile beginning near the end wall so as to clear muck against the wall.</li> <li>d) When the elevation of the working face reaches a height where any sloughing material could strike the excavator, he must dig in such a fashion that a pocket, large enough to trap any sloughed material, is maintained between his travelling ramp and the excavated face.</li> <li>e) The final excavating pass across the much pile must be done in a manner not to expose the operator or machine to the danger of rock falling from the wall above.</li> <li>f) This will be achieved by cleaning the pile to the toe of the wall at the farthest reach of the excavator swinging to 90degree from the travelling ramp.</li> <li>g) Whenever possible position the excavator so that the operator's cab is away from the face.</li> </ol> </li> </ol> <p>Note!</p> <p>12. All inspections are to return to the main office once completed crushing at quarry.</p> <p style="text-align: center;"><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p style="text-align: center;"><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p> |  |                                                                                                                   |                              |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | Reviewed By:                                                                                                      |                              |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Created by: M.Ouellette, E.Cyr, N.Chase, M.Deschenes, L.Michaud, P.Jean                                           |                              |

### Crusher - Excavating unconsolidated material with a loader: Safe Job Procedure

| Hazards Present                                                                          |            | PPE or Devices Required                                                | Additional Training Required |
|------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------|------------------------------|
| Equipment Failure<br>Equipment Rollover<br>Falling Rock<br>Restricted and congested area | Engulfment | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

#### General:

This safe work procedure has been created to meet compliance with part 15, section 185 A) of the occupational safety general regulations, which is required for working and/or removing unconsolidated material from quarry or pit where the vertical height of the face is greater than 1.5 above the maximum reach of the machine in use.

No person or equipment shall begin work on the high wall of the muck pile, until hazard assessment has been carried out in accordance with SWP QUARRY / PIT INSPECTIONS and all applicable personnel have been thoroughly briefed.

When the situation arises where the feed loader operator is required to work above the 1.5m maximum for the machine in use, the supervisor will ensure that the following procedures are strictly followed and adhered to

NOTE! It is imperative that the supervisor (Designated Competent person) maintain detailed documentation of the working face conditions in their daily log book and that they involve the crew's safety representative in this process.

#### Procedures:

1. No person or loader shall approach a working face that has been identified as potentially dangerous due to falling rock until the crest of the working face has been scaled to remove all loose rock, overburden and/ or debris.
2. Prior to the loader starting to work in a quarry/ pit the requirements set out in working face inspection must have been carried out. This procedure includes inspection of the working face, removal of overburden, scaling of the working face, etc to ensure compliance with existing regulations.
3. At the beginning of every shift and/or when moving to a different working face during a shift, the supervisor ( competent person) must make a thorough inspection of the planned work area to determine if any hazards exist, either to his equipment or person and to any others working in the immediate area. The results of this inspection must be recorded in crusher logbook.
4. The loader operator will excavate the muck pile by making repetitive passes across the face of the muck pile whenever possible. The operator will approach the face at an angle of 90 degrees whenever practical.
5. At no time shall the loader operator engage in undermining operations when working or removing material from a muck pile that is over 1.5m above the maximum vertical reach of the equipment.
6. If the muck pile is more than 1.5m above the maximum reach of the loader a thirty-foot horizontal buffer zone will be maintained from the working face or side wall.
7. This thirty-foot buffer area will be removed by an excavator following the appropriate procedures including SWP Quarry/pit inspections and SWP excavating from quarry blast.

8. The loader operator should always position his equipment such that if a hazardous condition arises, he is able move his equipment away from the hazard.
9. NOTE! When any hazardous condition such as the sloughing of material that could strike the loader and/or cause injury to the operator must evacuate the hazardous area and immediately notify the supervisor of the situation. The supervisor shall notify the safety officer and Manager.

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LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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|                                                 | Created by: E.Cyr, N.Chase, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |

### Crusher - Jaw Die Replacements- Cone crushers: Safe Job Procedure

| Hazards Present                                                                             |                                        | PPE or Devices Required                                                         | Additional Training Required |
|---------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------|------------------------------|
| Slips, Trips, Falls<br>Bodily Injuries<br>Pinch Points<br>Property Damage<br>Overhead loads | Other personnel & equipment in service | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Locks | Lockout Tag Out              |

#### Removal process

1. Prior to any maintenance repair work being undertaken, the crusher must be shut down and locked out in accordance with proper lockout procedures. ( Individual lock and tag for each person involved in the repair operation)
2. Ensure that the proper rigging equipment is available for the job. This will be achieved by utilizing a boom truck with certified lifting slings and the proper jaw lifting device, supplied by Metso.
3. Other equipment required will include a pry bar and an 12x12 inch block of hardwood.
4. As with any operation, communication is essential. The supervisor shall ensure that the step-by-step procedures for the job reviewed with all of their personnel, prior to any work being undertaken.
5. It is also imperative that the supervisor communicates with the boom truck operator to confirm a proper understanding of signals to be used and the cable tension requirements for the various steps in the procedure.
6. Check to ensure that the jaw is clear of any obstructions and that the lifting holes on the jaw are cleaned out, in preparation for connection of the lifting devices.
7. Experience has proven that the removal process is made easier when the feeder is removed if able to do so.
8. While standing on the grizzly, guide the hooks of the Metso lifting device into the lifting holes. Check to ensure that the hooks are set prior to putting any tension on the cables.
9. Knock back the upper wedges first to free them from the jaw and give direction to the boom truck operator to provide only enough tension on the cables to support the weight of the jaw.
10. Sometimes the jaw will pop free at this point or you may have the position a pry bar between the feed plate and the back of the jaw and pry to get it to release.
11. NOTE! Care must be provided to ensure that the boom truck is only supporting the weight of the jaw, as too much tension on the cables will cause the jaw to bounce uncontrolled when it is freed, creating a potential hazard.
12. Lift the jaw out and place it on the ground.

### Installation process

13. Prior to installation, check to ensure that the jaw plate and the casing are thoroughly cleaned and free from damage.
14. The steps for installation of the new jaw are basically the reverse of the removal, however caution must be extended to ensure that the bottom of the jaw plate is properly seated before tilting the upper part of the plate into place.
15. Once it has been confirmed that the jaw is properly seated, drop an 12x12 inch block of hardwood between the two jaws. This will prevent the jaw plates from kicking out, while tilting the top of the plate into place.
16. Reset the upper wedges and lock the jaw into place.
17. Install Feeder if removed.

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|                                                | Created by: N.Chase, E.Cyr, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |



### Crusher - Overload Procedure, Crusher stops under loaded conditions: SAFE JOB PROCEDURE

| Hazards Present                                                                           |                 | PPE or Devices Required                                                                  | Additional Training Required |
|-------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------|------------------------------|
| Pinch points<br>Crushing<br>Electrical shock<br>Fire<br>Flying debris<br>Equipment damage | Personal injury | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>locks and tags | Lockout Tag out              |

1. Determine the cause of the stoppage, i.e. overload, electrical fault, power interruption, safety cable, etc.
2. If the cause of stoppage requires repairs, contact electrician, crusher supervisor, etc, to make necessary repairs. Use lockout procedures.
3. After repairs are completed, clear cone(s) inspect jaw if clearing is required.
4. Prepare to start the crusher following normal procedures, clearing area, head count, and sounding warning horn.
5. Start with reverse start up sequence.

#### For Third Spread Steps 6-9

6. Lower hydroset all the way down on to the saddle.
7. Raise hydroset all the way up but not so high as to damage the nuts on the spider seal retainer.
8. Lower hydroset all the way down on to the saddle.
9. Raise hydroset just enough so it is not setting on the saddle.
10. If crusher does not start, repeat steps 3-5 (3-9 for third spread).
11. If crusher will not start, it must be cleared manually.
12. Lockout the crusher.
13. Manually clean all components as needed.
14. After the components is cleared, unlock the crusher, use normal starting procedures to restart the crusher.

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|                                                 | Created by: N.Chase, E.Cyr, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |

### Crusher - Oversize rock in Crusher: SAFE JOB PROCEDURE

| Hazards Present                                                    |  | PPE or Devices Required                                                         | Additional Training Required |
|--------------------------------------------------------------------|--|---------------------------------------------------------------------------------|------------------------------|
| Other workers and equipment<br>Machine malfunction<br>Pinch points |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>locks | Lockout Tag out              |

1. Clean out the crusher except oversize rock under normal operating conditions. Ensure all loose rocks on side of the hopper are cleared.
2. Shut down crusher. Locking crusher out.
3. Obtain a loader equipped with a place to hook a cable or a excavator capable of lifting a large rock
4. With the assistance of the crew secure the proper cable around the rock using a shackle.
5. Hook the other end of the cable to the loader or the excavator.
6. Ensure all personnel are safety out of the way.
7. Direct loader or excavator operator in removing rock.
8. Remove lockouts.
9. Use normal starting procedures to restart crusher and belts.
10. Put cable and shackle away.
11. Resume crushing.

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|                                                 | Created by: E.Cyr, N.Chase, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |

### Crusher - Portable crushing plant: Safe Work Practice

| Hazards Present                                                                 |                                                                                         | PPE or Devices Required                                                                               | Additional Training Required |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Site Traffic<br>Bodily Injuries<br>Dust | Vibrations<br>Crushing<br>Elements<br>Property Damage<br>Electric Shock<br>Pinch Points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Welding PPE<br>Locks & Tags | Lockout Tag out              |

The following safety procedures mentioned here do not eliminate all safety hazards found in the area of the crushing plant. However, following the procedures will go a long way to improve in the safe operation of the plant.

#### A) Drive guards, Walkways & Platforms

1. All drive belts should have proper guarding
2. The guards must be replaced after maintenance has occurred
3. Belt sheaves, and crusher sheaves are designed for maximum rim speeds. If these speeds are exceeded, it is possible that the sheave could explode and cause severe injury or even death
4. It is the operator's responsibility to inspect these guards on a daily basis to make sure they are in place and in good condition.
5. It is the owner's responsibility to make sure that all guards, platforms, and walkways are kept in good condition and that any additional safety guards required are installed
6. During inspection, if the plant is operating, do not allow any loose clothing or long hair to contact any moving parts
7. Do not reach into any belt drive to dislodge a rock with your arms or hand. Severe personal injury may result

#### B) Electrical lockout

1. THE ELECTRICAL POWER SOURCE FOR THE CRUSHING EQUIPMENT MUST BE LOCKED OUT WHENEVER ANYONE IS WORKING ON IT. Each person who normally works on a crushing plant should be provided with his own personal padlock and key. If more than one person works on a piece of the plant, they must each lock out the equipment. Accidental start-up of crushing equipment with men in the immediate area has been responsible for many accidents on what was supposedly a clear machine. Do manpower count before starting any piece of equipment to make sure everyone is accounted for.
2. Follow the written energy lockout procedure

#### C) Mobile Cranes

1. When using a crane, always operate within the rated capacity of the crane
2. Use the maintenance manual, to obtain the correct weights of the components being removed on the crusher
3. Use the proper cables and make sure they are not damaged
4. Crane outriggers should be properly extended and placed on firm ground
5. Avoid fast swings, hoists or sudden braking as these can cause overloads.
6. Check for any power lines or overhead obstruction before making the lift

#### D) Welding Equipment

1. One of the most frequently used tool around the crusher is the cutting torch. Crushers, which are equipped with hydraulic components, should have these depressurized and adequately covered with flameproof material so that sparks; weld splatter cannot reach these areas. Wet the areas down if a fire could start. Ruptured high-pressured hydraulic lines will quickly become a mass of flames, resulting in severe burns for personnel in the immediate area.

2. All maintenance personnel who use a torch and who would be working around pressured equipment must be told that there are hydraulic components in the immediate area
3. Protective equipment must be worn at all times when cutting/welding

E) Conveyor Belts

1. Conveyors can be one of the most dangerous pieces of machinery in a crushing operation
2. All conveyors have many open areas, which are potential danger areas. Take extreme caution whenever working around conveyors
3. All tail pulleys must be enclosed with a guard
4. If a catwalk is installed along a conveyor then the head pulley drive must be properly guarded
5. Do not attempt to remove any rocks or other material while the conveyor is operating. Shut the conveyor down, lock out and remove the material
6. Railings must be in place and in positions that prevent personnel from falling onto the belt
7. Never ride the conveyor belt
8. Make sure that all spills are kept clean which could cause an unintentional contact with a moving conveyor

F) Blocking and Moving the portable plant

1. It is extremely important that the plant be properly blocked.
2. The plant should be on as solid a level footing as possible
3. The crusher should not vibrate excessively which could cause a very unsafe condition
4. When moving the plant, check for broken hydraulic lines, airlines and check proper brake applications on the trailers
5. Make sure all the brake lights work before moving
6. Check the height of the crusher and make sure it will pass under bridges when moving
7. Use proper traffic warning flags and signs
8. When necessary, escort the crusher to the next job

G) Crushing plant noise

1. Crushing equipment by its very nature is noisy so hearing protection is required. Long term-unprotected exposure will result in hearing loss

H) Crusher Backing

1. When using epoxy backings, care should be taken to follow the manufacturer recommendations
2. The area should be well ventilated because epoxy fumes can cause nausea or possible eye or skin irritation
3. The WHMIS label will give the proper safe handling procedure and safety information should an incident happen

I) Flammable and Hazardous Material Safety

1. The work trailers must be kept clean and tidy
2. Store flammable, combustible or hazardous material in a safe place and in containers specially designed and clearly marked for that purpose
3. Oxygen, acetylene and propane bottles must be secured properly in the trailer
4. Make sure the back flash valves are installed on the cutting equipment

J) General Safety Work

A certain amount of the work must be done while the crusher is operating on a day-to-day basis. The following are some dos and don'ts.

DO

1. DO avoid spillage around the crusher. Clean up the spillage to avoid tripping hazards
2. DO read and understand each of the warnings, cautions and instructions in the operator's manual and on the signs fixed to the equipment
3. DO report all accidents and incidents to you supervisor
4. DO use handgrips, ladders, and guardrail when getting on and off the equipment

5. DO wear gloves to protect your hands when necessary
6. DO wear a hardhat and safety boots at all times when working around the crusher
7. DO keep a list of the emergency telephone numbers close to the phone
8. DO keep the first aid kit full of supplies and the eye wash station clean
9. DO wear a dust mask when necessary
10. DO wear safety glasses when necessary
11. DO protect all electrical cables from damage
12. DO keep fully charged fire extinguishers and know how to use them

**DO NOT**

13. DO NOT perform maintenance on moving machinery. This includes such items as adding lubricating oil or greasing parts of the crusher while is in operation.
14. DO NOT put hands or feet on the rods or rod ends of the cylinders, which protect the crusher from, tramp iron overloads while the crusher is in operation
15. DO NOT look into the crusher unless you have adequate protection from flying material
16. DO NOT operate or work around equipment while under the influence of alcohol, medicines, tranquilizers or other drugs that can make you less alert and affect your judgment
17. DO NOT take chances with a load that you cannot lift safely. Always lift with your legs and not with your back
18. DO NOT allow unauthorized personnel to operate the plant
19. DO NOT leave the controls unattended
20. DO NOT permit smoking around fuel tanks

| Guidance documents/Standards                  | Reviewed by:                                                                                                      |
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### Crusher - Quarries / Pits Inspections: Safe Work Practice

| Hazards Present            |  | PPE or Devices Required                                                | Additional Training Required |
|----------------------------|--|------------------------------------------------------------------------|------------------------------|
| Falling Rock<br>Engulfment |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

Many inherent dangers exist in a quarry/pit area. Some are obvious and others are not. The purpose of these inspections is to identify and correct any hazardous conditions that may exist. The following guidelines have been prepared to assist employees in the identification, elimination and/or control process. They have also been prepared in accordance with the regulations that are legislated in Part 15 of the occupational safety general regulations.

#### Inspections:

The following inspections process will be carried out for any quarry or pit that is owned, leased, and/or operated by Northern Inc.

1. A "post blast inspection" will be conducted immediately following a blast by the "designated competent" person in charge of the blast and the report will be submitted to the Aggregate Manager.
2. The Aggregate Manager will review the blaster's inspection report and ensure that a "Quarry Hazard Assessment" is conducted and corrective actions initiated, prior to the crusher plants arrival on site.
3. An inspection of the working face will be conducted by the crusher crew's designated competent person(s) at the start of each working day and at the beginning of each new shift. The results of these inspections will be documented in a daily logbook. No person(s) shall begin work, other than at a stockpile, at or near the working face until this inspection is conducted and all required corrections made. The inspection logbooks are to be made available to the company's JOHS committee when requested.
4. The inspection process will address the following areas.

#### Working Face:

1. A designated competent person(s) shall inspect the working face to identify any actual or potentially hazardous conditions.
2. Overburden on the crest of the walls or working face must be cleared back 7 meters in height. If it is in excess of 20 meters, the wall or the working face must be benched and have a vertical rise not in excess of 20 meters for every horizontal run not less than 8 meters or an engineer must certify in writing that the wall or the working face is adequate.
3. Ensure that the wall or the working face does not exceed 20m in height. If it is in excess of 20 m, the wall or the working face must be benched and have a vertical rise not in excess of 20m for every horizontal run not less than 8 meters or an engineer must certify in writing that the wall or the working face is adequate.
4. Regulations require that when extracting any unconsolidated material that is more than 1.5m above the maximum reach of the equipment that written specifications and a safe work procedure be developed. If the vertical height of the muck pile exceeds the 1.5m restriction that is outlined in the regulation, the foreman must ensure that the guidelines of safe job procedure: Excavating unconsolidated material with a loader are strictly enforced and that all personnel have been thoroughly briefed on its content.
5. The rock face shall be free of loose cobbles, boulders and debris. Scaling and/or trimming may required to prevent hazardous material from falling on to personnel or equipment.

6. After careful review of the inspection report that was prepared by the person in charge of the blast, a designated person will ensure that it is safe to work or remove any unconsolidated material following a blast. Where a charge has misfired, no person shall enter the danger area until the senior blaster has confirmed that it is safe to do so.
7. Any findings that are in violation of the requirements of this procedure shall be identified and recorded in the log by a designated person and corrected as soon as practicable.
8. For the purpose of this inspection, the selection of personnel who will be considered "designated competent" will be based on their knowledge, experience, prior and current training and familiarization with the provisions or Part 15 of the occupational safety general regulations.

The following areas shall also be part of the inspection process, but the results do not necessarily have to be recorded in the daily logbook. If any discrepancies are found, they shall be rectified and identified on the Superintendent's/ Foreman's bi-weekly inspection report.

#### Stockpiles:

1. Where unconsolidated material is being worked/removed, the vertical height of that material shall not be more than 1.5m above the maximum reach of the equipment that is being used to work/remove the unconsolidated material unless written specifications and a written safe work procedure are in place or it is sloped to its angle of repose.
2. Where, at the of a ramp or stockpile, a drop-off greater than 3 meters creates hazard, a berm (up to at least the height of the axle) or another adequate shoulder barrier shall be put in place to prevent vehicles from inadvertently going off the ramp.
3. Where material that has been excavated from the quarry is dumped from a vehicle onto a stockpile, ensure that the grade on top of the stockpile is adequate to prevent a vehicle from overturning.
4. Where undercutting is performed at a stockpile in the quarry by means of a loader or an excavator, ensure that the undercutting is restricted to the depth of the bucket on the equipment and that the operator approaches the undercut at a 90degree angle to the working face.

#### Facilities:

1. All haul roads and access routes leading from the quarry floor up to the crest of the quarry face must have grades not in excess of 12% over any 300m portion.
2. Any ponds, water holes or ditches in the quarry/pit will have adequate berms or rock barriers positioned around the perimeter to prevent any equipment from falling into them.
3. Any temporary overhead wires which provide power to equipment in the quarry shall be erected to height not less than 4m and they shall be draped with fluorescent tape in the areas where there is a risk that mobile equipment will be passing underneath them. Any temporary underground cable installations will be identified with a "danger" sign to warn operators not to dig in that location
4. Where fencing is not in place around the perimeter of the quarry face, "danger" signs warning people of the falling hazard potentials must be posted not more than 20m and not less than 6m from the edge, in areas where the rock face is 3m or greater in height. In areas where blasting will not take place, the signs are to be permanently mounted. In areas where the face is still being worked, temporary signs may be erected. These signs are to be removed prior to a blast and set back in place immediately following a blast.
5. All existing and future access roads in the quarry/pit that lead up and around the perimeter shall be established no less than 7m from the edge of the quarry face.
6. Where the quarry face is not being worked, an effective barrier shall be erected on the quarry floor, equal to 1.3m times the height of the face, out from the toe of the same face.

7. When work at the quarry has resumed after cessation of operation of 4 months or more, the director of the nova scotia department of labour must be notified in writing at least two weeks prior to our intention to resume operation
8. During periods of inactivity in a quarry that exceed a period of 4 months, where the material in the quarry/pit has been worked by means of powered mobile equipment, the superintendent and/or foreman shall ensure that the working face is sloped to a maximum grade 1 to 1. (One unit of vertical rise for every one unit of horizontal run)

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE  
LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This safe work practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                | Created by: M.Deschenes, E.Cyr, N.Chase, M.Ouellette, L.Michaud, P.Jean                                           |



### Crusher - Shut down procedure crusher: SAFE JOB PROCEDURE

| Hazards Present             |  | PPE or Devices Required                                                | Additional Training Required |
|-----------------------------|--|------------------------------------------------------------------------|------------------------------|
| Overload<br>Property Damage |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. After the last loader has dumped, the operator will clean out the feeder.
2. After the Feeder has cleared itself, shut it off.
3. After the Jaw has cleared itself, shut it off.
4. After the Scalper has cleared itself, shut it off.
5. After the Feed Hopper has cleared itself, shut it off.
6. After the Coarse Cone has cleared itself, shut it off.
7. After the Syntron has cleared itself, shut it off.
8. After the Fine Cone has cleared itself, shut it off.
9. After the Duplex has cleared itself, shut it off.
10. After the Astec has cleared itself, shut it off.
11. After all conveyers has cleared itself, shut it off.
12. Shut down main genset and start small genset.
13. In warm weather and when the crusher is going to be shut down for an extended period of time, the oil pump may be shut off.
14. In colder weather, the oil pump is left on and the oil heater is started.
15. Do post shift inspection and clean up.
16. Ensure all lighting is working properly.
17. Work in safe, efficient manner at all times.
18. Ensure fire extinguishers are in proper working order
19. Ensure crusher is left in a clean manner at the end of the shift.
20. Ensure proper shutdown procedures when stopping the plant.
21. Be on the lookout for lightening and follow proper procedures if observed.
22. Complete Daily report at the end of the shift.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created by: E.Cyr, N.Chase, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |

### Crusher - Startup Procedures Crusher: SAFE JOB PROCEDURE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | PPE or Devices Required                                                                                           | Additional Training Required |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Other workers and equipment<br>Machine malfunction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots                                            |                              |
| <ol style="list-style-type: none"> <li>1. Prior to starting the equipment, the operator must do a walk around inspection of all equipment. He has to follow the proper lockout procedures before doing this. Some things to check are: fluid levels, V-belt condition, sheave condition, belt condition, hydro set height, ect.</li> <li>2. Ensure crusher oil temperature is above 60 and below 120F before starting this may be done either by the heating system or the cooling system.</li> <li>3. Be sure everyone is accounted for (roll call); nobody is around the equipment.</li> <li>4. Remove lockouts from equipment</li> <li>5. Sound warning horn.</li> <li>6. Start Main Genset</li> <li>7. Start the Discharge, VM Feeder, &amp; Jaw, check amperage</li> <li>8. Start the Discharges then Scalper, ensure flywheel is turning.</li> <li>9. Start the Feed Hopper Discharge, ensure belt is turning and metal detector is working.</li> <li>10. Start the Discharge then the Coarse Cone, check amperage and oil pressure.</li> <li>11. Start the Discharge then the Fine Cone, check amperage and oil pressure.</li> <li>12. Start the Syntron Feed, ensure belts are moving freely.</li> <li>13. Start the Astec feed then Astec, ensure belts are moving freely.</li> <li>14. Start all remaining conveyors, ensure belts are moving freely</li> <li>15. Start the Duplex, ensure screen decks are moving</li> <li>16. Start Syntron</li> <li>17. Start Feed Hopper</li> <li>18. Start the Feeder, make sure it is vibrating.</li> <li>19. Communicate with Loaders via CB to start dumping into feeder.</li> <li>20. Precede crushing following written operating procedures.</li> </ol> |  |                                                                                                                   |                              |
| <p><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                   |                              |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Reviewed By:                                                                                                      |                              |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | Created by: E.Cyr, N.Chase, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |                              |

### Crusher - Stockpiling-loader operators and truck drivers: Safe Work Practice

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | PPE or Devices Required                                                                                           | Additional Training Required |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Other workers and equipment<br>Machine malfunction<br>Rollover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots                                            |                              |
| <ul style="list-style-type: none"> <li>General</li> <li>Prior to commencing, inspect roadways, ramps, and dump point for any hazards i.e. excessive side slope that might tip trucks; adequate turning spaces for trucks.</li> <li>If Hazards exist, the loader operator must repair them by cleaning material or backfilling where needed. Any overhang of banks at the dump point must be pushed down by the loader or backfilled from below until the natural angle of repose is established, before backing out near the edge with the trucks.</li> <li>Communication between drivers and the loader operators is very important. Let the loader operator know when you require him to "clean up". The loader operator must comply with the truck driver's request. Your personal safety is at risk.</li> <li>Failure to comply with these procedures will result in disciplinary action being taken</li> </ul> |  |                                                                                                                   |                              |
| Guidance documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | Reviewed by:                                                                                                      |                              |
| Occupational Health & Safety Act & Regulations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | This safe work practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | Created by: E.Cyr, N.Chase, M.Ouellette, M.Deschenes, L.Michaud, P.Jean                                           |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                   |                              |

### Electrical Safety: SAFE WORK PRACTICE

| Hazards Present       |  | PPE or Devices Required                                             | Additional Training Required |
|-----------------------|--|---------------------------------------------------------------------|------------------------------|
| Electrocution<br>Fire |  | Safety Boots<br>Safety Vest<br>Safety glasses<br>Hard hat<br>Gloves |                              |

- Follow all OH&S Regulations pertaining to electricity.
- Don't cut off or bend back the ground pin on a three-prong plug. Don't use a two-prong cheater or adapter. Don't replace three-wire cord with two-cord on tools and equipment, these practices are dangerous.
- Check extension cords and outlets for grounding with circuit-tester before using.
- Ensure that all electrical hand tools are grounded or double insulated. Double-insulated are made of non-conducting plastic. External metal parts are insulated from internal electrified parts. Make sure that casings are not cracked, broken, or otherwise defective.
- Don't hold onto a water pipe or other grounded conductor when using and electric tool. The tool or cord could be defective and you might be electrocuted.
- Use ground fault interrupters GFCI's on all electric tools.
- Never use aluminium or metal-reinforced ladders near overhead lines or live electrical equipment or wiring. Even contact with a wooden ladder can be fatal under damp or wet conditions.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Reviewed By:                                                                                                      |

### Electrical Safety: SAFE JOB PROCEDURE

| Hazards Present                         |  | PPE or Devices Required                                             | Additional Training Required |
|-----------------------------------------|--|---------------------------------------------------------------------|------------------------------|
| Electric shock<br>Electrocution<br>fire |  | Safety Boots<br>Safety Vest<br>Safety glasses<br>Hard hat<br>Gloves |                              |

#### Procedures:

Electrical accidents can occur when electricity is present in faulty wiring and equipment or when poor work practices are followed. Accidents involving electricity can lead to burns and tissue damage and in some cases, cardiac arrest and death when the body forms part of the electric circuit. Electric shock can be very unsettling to the victim even if there is no apparent injury. Any person receiving an electric shock is strongly advised to seek medical attention within 24 hours. Other possible consequences of electrical accidents are fire and explosion (as sparking can be a source of ignition) and damage to equipment. Many of the accidents can be traced back to faults such as incorrectly earthed equipment, frayed or broken insulation or practices such as inappropriate work on live equipment. Most mains power is supplied at 240 volts (50 Hertz); however, a higher voltage (such as 415 volts) or lower (such as 12 volt) systems may power some equipment. Low voltage systems are usually safer by virtue of reducing current flow through the body. Nevertheless, users should be aware that low voltage equipment may still be hazardous in some situations.

#### Equipment Safety

The safety of electrical equipment and cables primarily relies on insulation to separate live parts and to guard against people coming into contact with those live parts. Additional safety is provided by connecting accessible conductive parts to earth. This means that if external parts become live, the electricity will be conductive to earth rather than through the person. Equipment can become unsafe after repeated usage if a component becomes faulty or insulation deteriorates, or if flexible cords are damaged. Visual inspections can usually verify that the following safety standards are maintained and are recommended to be carried out annually. All work on electrical equipment, including construction or modifications must only be performed by a competent authorized person. Internal, non visual or earthing equipment checks must only be conducted by a licensed electrical worker and in accordance with the manufacturer's specifications. The use of electrical apparatus in applications that involve liquids can present special electrical hazards, as liquids will usually conduct electricity. This will be apparent in many laboratories where equipment such as electrophoresis equipment or water baths are commonly used. In these cases, the equipment must be of good standard and be suitable for the purpose for which it is used. Flammable liquids must be kept separate to prevent fire or damage. No double adaptors and piggy backs to be used. All electrical plugs must be either moulded (integral part of the cord) or transparent.

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|                                                 | Reviewed By:                                                                                                      |

### Electrical - Working Around Power Lines: SAFE WORK PRACTICE

| Hazards Present                                                      |  | PPE or Devices Required                                             | Additional Training Required |
|----------------------------------------------------------------------|--|---------------------------------------------------------------------|------------------------------|
| Fire<br>Burns<br>Bodily Injuries<br>Property Damage<br>Electrocution |  | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves |                              |

- Locate and identify all overhead power lines.
- Remember that any voltage can kill under the right circumstances.
- Plan escape procedure for all personnel working around vehicles that can come into contact with High voltage lines.
- Use a signaller whenever a backhoe, crane, or similar device is closer than one boom length to a live power line of 750 volts or more.
- Never store material or equipment under overhead power lines if current is more than 750 volts and cranes or similar lifting devices will be involved.
- Remember that overhead lines can be struck not only by booms and ladders but also by long pieces of material being lifted by hand, such as pipe and siding. And beware of wind blowing hoist lines or loads into contact with power lines.

| VOLTAGE RATING          | MINIMUM DISTANCE |
|-------------------------|------------------|
| <b>750 – 69,000</b>     | <b>3 METERS</b>  |
| <b>69,001 – 138,000</b> | <b>5 METERS</b>  |
| <b>OVER 138,000</b>     | <b>6 METERS</b>  |

#### In the event of contact between equipment and overhead power lines:

**Stay on equipment.** Don't touch equipment and ground at the same time. In fact, touching anything in contact with the ground can be fatal.

**Keep others away.** Warn everyone not to touch the equipment or its load. That means buckets, outriggers, load lines, and any other part of the machine. Beware of time delay relays. Even after line damage trips breakers relays may still try to restore power. They may reset automatically two or three times

**Break Contact.** If Possible, break contact by moving the equipment clear of the wires. This may not be feasible where contact has welded conductors to the equipment, hoist line, or load.

**Call local utility.** Get someone to call the local electrical utility for help. stay on the equipment until the utility shuts down the line and confirms that the power is off. Report every incident of power line contact so that the utility can check for damage that could cause the line to fall later.

**Jump clear.** If an emergency such as a fire forces you to leave the equipment, jump clear. If part of your body contacts the ground while another part touches the machine current will travel through you. In cases of high voltage contact Jump clear and shuffle away in small steps. With voltage differential across the ground, one foot may be in a higher voltage area than the other. This difference could kill you.

**Polarity.** When installing switches, receptacles, fixtures, and other equipment be sure to respect the color code in wiring. As always, only an electrician or person with equivalent qualifications should install electrical equipment. Otherwise polarity may be reversed with dangerous results. Switches may remain energized when turned off, for instance, and GFCI's may not work properly.

**Underground Contact Safeguards.**

Before construction begins, ask the local electrical utility to locate and mark all buried services. Indicate underground lines on all plans and drawings. Post warning signs along the route. Ensure that warning signs remain in place during construction.

Use fiberglass ladders if you have to work next to power lines.

When digging next to underground lines, careful not to pinch any lines with hand tools (ex. Pinch bar, shovel) and within the designated area the digging has to be "hand made".

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| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By:                                                                                                       |

### Equipment - Aerial Lift Platforms / Scissor Lift: SAFE WORK PRACTICE

| Hazards Present                                                                            |                                                                                         | PPE or Devices Required                                                            | Additional Training Required             |
|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------|
| Damage to equipment or property<br>Rollover / Tipping<br>Crushing<br>Congestion<br>Traffic | Falling objects<br>Jamming<br>Electrocution<br>Slips, Trips & Falls<br>Overhead hazards | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Fall arrest equipment | Aerial Lift / Manlift<br>Fall Protection |

- Follow the lift's specific make/model safe work procedures as per manufacturer instructions.
- Perform job site hazard assessment and walk around inspection of the equipment.
- Check the area of travel for hazards from above and below.
- Ensure correct lift is utilized.
- Complete the Fall Protection Plan.
- Complete inspection of Fall Arrest Equipment.
- Wear the applicable safety harness attached to the machine when operating any lift.
- Ensure ground is firm and level.
- Use outriggers to stabilize lift if equipped.
- Be aware of power line proximity, maintain a safe distance.
- Ensure that others are a safe distance from the aerial platform / lift.
- Know the capacity of the lift you are using and do not overload.
- Close and secure entry immediately after getting onto the lift
- No platform is to be made higher by the use of a scaffold, boxes, buckets or ladders.
- Do not stand on the guard rail.
- Get on and off the platform when it is in the lowered position.
- While operating an aerial work platform, the operator shall not use any hand-held device(s) while the equipment is being operated.
- If the lift is unattended, lower the platform, power it down, engage the parking brake and remove the key.
- Use proper lockout procedure when doing maintenance or repairs.

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| Guidance Documents / Standards                                                                      | Reviewed By:                                                                                                      |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Health &amp; Safety Act &amp; Regulations:<br/>Fall Protection Code of Practice</b> | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                                                                     | Reviewed by:                                                                                                      |



### Equipment - Articulated Rock Truck: SAFE WORK PRACTICE

| Hazards Present                                               |                                                         | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property Damage | Crushing<br>Pinch points<br>Roll over<br>Uneven terrain | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat |                              |

- Refer to owner's manual for instructions.
- Only be operated by a competent operator.
- Complete daily inspection checklist 360-degree walk-around. Ensure all safety devices are working properly.
- Beware of blind spots; always use a signaller (driver and signaller should have clear signals) if a signaller is not available use
  - **(G.O.A.L)**
  - **G – Get**
  - **O– Out**
  - **A – And**
  - **L - Look**
- Operate at a speed consistent with working conditions, visibility, and terrain.
- **A.R.T Backup Tips for Spotters**
- Stand to the side of the vehicle when backing to avoid being run over or caught between the vehicle and objects and other equipment.
- Signaller is to use big, easy to see hand signals.
- Watch your step, don't step into a hole or fall over a trip hazard.
- Always wear PPE when at company locations where PPE is required, and around moving vehicles.
- **A.R.T Best Practices**
- Block raised dump bed with a prop rod or heavy block before working beneath it.
- Maintain climbing ladders and steps.
- Provide a grab handle for tilting cab hood.
- Never raise dump bed on uneven ground.
- Check for overhead wires before raising bed.
- Clear workers from area while dumping.
- Use three-point contact when mounting and dismounting.
- Never jump from the cab of the truck.
- Survey area for unsafe conditions before exiting cab.
- Chock wheels when parked on an incline and when servicing the truck.

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|                                                 | Reviewed By:                                                                                                      |

### Equipment - Cold Start Equipment: SAFE JOB PROCEDURE

| Hazards Present   | PPE or Devices Required                                                | Additional Training Required |
|-------------------|------------------------------------------------------------------------|------------------------------|
| Equipment Failure | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. Check all appropriate fluid levels and record on your pre-trip
2. Visually inspect for leaks and worn belts
3. Do a walk around to ensure it is safe to start the machine
4. Proceed to start engine using 3-point contact to enter the machine
5. Let the machine idle and do another overall check for leaks
6. Once machine is warm, proceed to task

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| Guidance Documents / Standards                                    | Reviewed By:                                                                                                                                      |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations:<br>Owner's manual | <p>This Safe Job procedure will be reviewed anytime the task, equipment or materials change and on an annual basis</p> <p><b>Reviewed By:</b></p> |

### Equipment - Compactors: SAFE WORK PRACTICE

| Hazards Present                                 |                                                          | PPE or Devices Required                                        | Additional Training Required |
|-------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------|------------------------------|
| Manual Handling<br>Injuries<br>Noise<br>Exhaust | Vibrations<br>Flammable Fuel<br>Hot Engine<br>Components | Safety boots<br>Eye Protection<br>Gloves<br>Hearing protection |                              |

- Refer to owner's manual for instructions.
- Check for loose bolts and damaged parts.
- Never operate indoors due to carbon monoxide buildup.
- Ensure all guards are in place.
- Use proper lifting procedures (2 People).
- Do not fill fuel more than  $\frac{3}{4}$  full to prevent vibration from expelling fuel from tank.
- Operate tool within the design limits of the manufacturer.
- Wear appropriate PPE.
- Do not leave machine running unattended.
- Shut off engine and remove spark plug before making repairs or adjustments
- Recommended that gloves are to be worn to cushion vibrations during operation.
- Be aware of weather conditions, changing the ground condition not to get caught in a dangerous situation.
- Watch for different types of ground conditions, because the reaction from the compactor will be different. For the Jumping Jack the harder the ground the higher the jump will be, so stay alert at all times.

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|                                                 | Created By:                                                                                                       |

### Equipment - Compactors: SAFE JOB PROCEDURE

| Hazards Present                                 |                                                          | PPE or Devices Required                                                                                                                     | Additional Training Required |
|-------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Manual Handling<br>Injuries<br>Noise<br>Exhaust | Vibrations<br>Flammable Fuel<br>Hot Engine<br>Components | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing<br>Hearing protection<br>Gloves<br>Sun (UV) protection |                              |

Plate compactors are safe and simple to operate. However, there are a number of considerations to keep operators and jobsites as safe as possible. It's important to pay close attention to the basics.

Tight job deadlines and hectic work schedules can cause even experienced operators to overlook "common sense" safety guidelines. Remembering and following the safety tips below can minimize the potential for accidents.

1. Review and follow the manufacturer's operating guidelines for proper machine preparation and start up procedures. If renting, review these procedures with the rental store staff.
2. Do not operate plate compactors or any gasoline powered machines inside a building or other enclosed environment that is not fully vented.
3. Keep hands and clothing away from the plate's moving parts at all times.
4. Do not use or operate any equipment under the influence of alcohol or drugs.
5. Never refuel a plate compactor unless the engine is stopped and cool. Refueling a hot engine can result in burns or explosions.
6. Make certain the work area is clear of debris to prevent tripping or falling onto the machine.
7. Always wear headgear, plus ear and eye protection when operating.

Ignoring any one of these guidelines could result in serious injury or property damage.

When operating on a relatively level grade, a plate compactor will move under its own power with the operator simply directing its travel path. When compacting on a grade that is not level, the operator might have to take steps to ensure his or her safety.

1. During uphill compaction, it might be necessary for the operator to swing the compactor's handle around and pull the machine slightly.
2. Place compactors also tend to slide sideways when operating on a sloping terrain. To prevent the plate from sliding, steer the plate toward the rise of the slope to angle the machine.
3. Avoid operating a plate compactor on a fully compacted, hard or non-yielding surface. Running a compactor on these surfaces will inflict costly damage to the unit and could redirect the plate's vibratory forces away from the surface to the operator, causing injury.
4. Like any piece of equipment, a plate compactor requires proper service, maintenance and storage after operation.
5. Whenever assembling, lubricating or adjusting any part of a plate compactor, stop the engine and disconnect the spark plug wire.
6. Refer to the plate compactor's operator's manual for service specifications, intervals and safety issues.
7. When not in use, cover the plate compactor and store in a dry place.
8. Keep these safety tips and operating instructions in mind and you can be confident of working safely and productively.

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|                                                 | Created By:                                                                                                       |

### Equipment - Crawler Carrier: SAFE WORK PRACTICE

| Hazards Present                                               |                                       | PPE or Devices Required                           | Additional Training Required |
|---------------------------------------------------------------|---------------------------------------|---------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property damage | Pinch points<br>Rollovers<br>Crushing | Safety boots<br>Gloves<br>Safety vest<br>Hard hat |                              |

- Read the manufacturer's instruction book before operating an unfamiliar vehicle.
- Only to be operated by a Competent Operators.
- Perform visual inspection with the daily checklist completed daily prior to starting work.
- Understand the differences in performance when loaded and unloaded, particularly relating to braking and stability on slopes.
- Know the different handling and braking characteristics of the vehicle in wet or icy conditions.
- Wear appropriate personal protective equipment.
- Always wear the seat belt while operating.
- Check that nobody is at risk of injury before moving off, particularly in the area obscured by the skip when going forward, and behind the vehicle when reversing.
- Keep to designated vehicle routes and follow site rules.
- Drive at appropriate speeds for site conditions.
- Follow directions given by traffic signs and signallers.
- Load only on level ground with the parking brake applied.
- Drivers need to take extra care when moving on sloping ground and particularly if the ground is rough or uneven.
- Avoid slopes that exceed the vehicle's capability. When travelling with the skip loaded, reverse down slopes to ensure good stability and traction. If turning is unavoidable when travelling across slopes, turn uphill, not downhill.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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|                                                 | Created By:                                                                                                       |

### Equipment - Defective Tools: SAFE WORK PRACTICE

| Hazards Present                                                                                         |  | PPE or Devices Required                                                                                | Additional Training Required |
|---------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------|------------------------------|
| Bodily injuries<br>Muscle strains<br>Electrocution<br>Burns<br>Property damage<br>Slip, trips and falls |  | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Hearing protection |                              |

- Be aware of problems like chisels and wedges 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
- Never use a defective tool
- Double check all tools prior to use
- Ensure defective tools are repaired
- Air, gasoline or electric 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
  - Missing ground wire or grounding lug (on plug) on cords of non-double insulated tools
  - On/off switch not in good working order
  - Cracked tool blade
  - Wrong speed grinder wheel being used, or
  - Guard has been wedged back
- Tag and/or remove defective tools from service as soon as possible.

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### Equipment - Defective Tools: SAFE JOB PROCEDURE

| Hazards Present                                                                                         | PPE or Devices Required                                                                                | Additional Training Required |
|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------|
| Bodily injuries<br>Muscle strains<br>Electrocution<br>Burns<br>Property damage<br>Slip, trips and falls | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Hearing protection |                              |

- Workers must inspect their hand tools before use to ensure that they are in proper working order. Damaged or defective tools must be reported to the supervisor and repaired or removed from service.
- Supervisors must periodically inspect the tools of all apprentices and trades persons to ensure that tools are in proper working condition and meet appropriate guidelines.
- Tools and jigs especially designed for a specific purpose should be checked by a qualified person to ensure that there are no inherent or hidden safety hazards.
- Proper and appropriate personal protective equipment must be worn when using all tools.
- All tools must be cleaned and properly stored after use. Each tool must have its own storage area to prevent damage. This is particularly important with power tools.
- All defective tools must be tagged to have it repaired or recycled.

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| Equipment - Dump Trucks: SAFE WORK PRACTICE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                                                                                                                   |                              |
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| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                | PPE or Devices Required                                                                                           | Additional Training Required |
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property Damage<br>crushing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Rollovers<br>Equipment failure | Safety Boots<br>Safety Vest<br>Safety glasses<br>Hard hat                                                         |                              |
| <ul style="list-style-type: none"> <li>Refer to owner's manual for instructions.</li> <li>Complete daily inspection checklist 360-degree walk-around. Ensure all safety devices are working properly.</li> <li>Beware of blind spots; always use a signaller (driver and signaller should have clear signals) if a signaller is not available use</li> <li><b>(G.O.A.L)</b><br/><b>G – Get    O– Out    A – And    L – Look</b></li> <li>Operate at a speed consistent with working conditions, visibility, and terrain.</li> <li><b>Dump Truck Backup Tips</b></li> <li>Stand to the side of the vehicle when backing to avoid being run over or caught between the vehicle and objects and other equipment.</li> <li>Use Big, easy to see hand signals.</li> <li>Watch your step, don't step into a hole or fall over a trip hazard.</li> <li>Always wear PPE when at company locations where PPE is required, working in traffic, and around moving vehicles.</li> <li><b>Dump Truck Best Practices</b></li> <li>Block raised dump bed with a prop rod or heavy block before working beneath it.</li> <li>Maintain climbing ladders and steps.</li> <li>Provide a grab handle for tilting cab hood.</li> <li>Secure tarps when in use or when stored.</li> <li>Never raise dump bed on uneven ground.</li> <li>Check for overhead wires before raising bed.</li> <li>Clear workers from area while dumping.</li> <li>Use three-point contact when mounting and dismounting.</li> <li>Never jump from the cab of the truck.</li> <li>Survey area for traffic and unsafe conditions before exiting cab.</li> <li>Bleed water from air tank after the end of the work day.</li> <li>Chalk wheels when parked on an incline and when servicing the truck.</li> </ul> <p><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p> |                                |                                                                                                                   |                              |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                | Reviewed By:                                                                                                      |                              |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
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## Equipment - Dumping Trucks & Trailers: SAFE WORK PRACTICE

| Hazards Present                                               |                                            | PPE or Devices Required                                   | Additional Training Required |
|---------------------------------------------------------------|--------------------------------------------|-----------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property Damage | Rollovers<br>Equipment failure<br>Crushing | Safety Boots<br>Safety Vest<br>Safety glasses<br>Hard hat |                              |

### Communication

- Supervisor to inform all personnel of the hazards onsite by completing the JHA and daily FLRA.
- Spotter needs to be clearly visible in the truck's mirrors.
- Driver and spotter should know the hand signals being used and safe procedures for the task. **(Refer to Spotters SWP and SJP)**
- Driver must wait for the signal from the dumper to raise dump body.

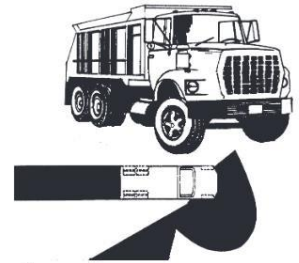


Figure 1

### Workers on foot

- Know how to work safely around trucks and equipment.
- Be aware of the equipment and truck's blind spots areas to avoid. **(Figure 1)**
- Make eye contact with the driver or operator **before** approaching equipment.
- Signal intentions to the driver or operator.
- When possible, use separate access rather than vehicle's path of travel to enter or exit the sites.
- Avoid standing and talking near vehicle paths, grading operations, and other activities where heavy equipment is moving back and forth.
- Flying debris hazard from rocks laying on hard surfaces being pinched under tires and ejected to the side have the potential to cause damage and injury. Maintain a minimum distance of 15 feet from vehicles and equipment while traveling over hard surfaces (roadways, haul roads, bedrock etc..). if loose large rock(s) are laying in roadways remove rock(s), if roadway is littered with them have roadway cleaned and haul roads graded.



figure 2

### Danger Zone

- The danger zone is the area around the truck while the dump body is raised. this area should be kept free of other workers, the public, equipment and vehicles. **(Figure 2)**

### Contact with Overhead obstructions

Before allowing the dump body to be raised look for overhead obstructions. If spreading view in front of the truck for potential obstructions and hazards.

### Potential Causes of a Rollover:

- **Wind**  
Do not attempt dumping operations in high gusty wind conditions. If possible, raise/dump directly into the wind.
- **Terrain**  
Uneven terrain, causing the trailer wheels to be 3 ½ inches to 4 inches higher than the other side, puts the top of the body 12 inches to 14 inches off center when the cylinder is fully extended. On fresh fill, loaded trailer wheels may sink on one side. On road construction, the crown is also critical on spread application, as is dumping on a slope. A 4 inch plus, height differential of wheels on axle 8 feet wide, is another rollover potential. To prevent a rollover, the tractor and trailer should be in a straight line and on firm level ground with all tires in contact with the ground. The greater the length of the truck or trailer bed, or the greater a slope, the greater is the hazard of rollover. **(Figure 3)**



Figure 3

- **Hung Loads**

A hung load is commodity that does not discharge when a dump body is raised to an elevated position. In order to avoid a rollover due to a hung over, the driver should be warned by the dumper or be aware of the materials moisture content. If this condition exists, immediately lower the dump body.

- **Jackknife**

A jackknife position of the tractor with the trailer is not recommended when dumping.

- **Tires**

A blown tire or a severely under-inflated tire can cause dump instability when dumping.

- **Stay at the Controls**

An operator who fails to stay at the controls will never control the body when it starts to lean over for a rollover. If a problem exists, the body can be lowered and the operator can check and remedy any potential problems, then resume dumping the trailer.

- **Overloading**

Overloading is a very common occurrence that aggravates all of the above conditions.

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|                                                                | <b>Created By:</b> P.Jean, E.Duguay, T.Martin, Y.Godine                                                           |

### Equipment - Daily Maintenance: SAFE JOB PROCEDURE

| Hazards Present                                |  | PPE or Devices Required                                                     | Additional Training Required |
|------------------------------------------------|--|-----------------------------------------------------------------------------|------------------------------|
| Equipment Failure<br>Collision<br>Pinch points |  | Grade 1 safety boots<br>Gloves<br>Hard hat<br>Safety glasses<br>Safety vest |                              |

- Walk around machine to check for tire damage, vandalism, any loose parts, or any other damage
- Check engine for:
  - Any frayed or damaged belts
  - Any damaged or leaking hoses
  - Engine mounting bolts are in place, tight and not damaged
- Check all fluid levels (some fluids may require the engine to be on, check manufacturers recommendations)
- Get into vehicle using 3-point contact method. Check for fire extinguisher and turn on engine
- Check all gauges:
  - Oil pressure is normal
  - Temperature is normal
  - Hydraulic pressure is normal (if gauge is applicable)
- Put machine in reverse to ensure back up alarm is working
- Do another walk around to check all lights
- Check brakes are working when pulling away to drive
- Proceed to job

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### Equipment - Forklift Operation: SAFE WORK PRACTICE

| Hazards Present                                                                |  | PPE or Devices Required                       | Additional Training Required |
|--------------------------------------------------------------------------------|--|-----------------------------------------------|------------------------------|
| Falling objects<br>Pedestrian Traffic<br>Unbalanced loads<br>Fuel<br>Rollovers |  | Safety Boots<br>Safety Vest<br>Safety Glasses | Forklift Operator            |

- Walk around inspections must be completed and documented before using forklift
- Seatbelts must be used at all times when on a forklift
- No part of a load may pass over a worker
- All loads must be handled in accordance with the height and weight restrictions on the forklift's load chart.
- When a load is in the raised position, the controls must be attended by an operator.
- If an operator does not have a clear view of the path, assistance from a signaler who has been instructed in a code of signals for managing traffic in the workplace should be employed.
- Loads should be carried as close to the ground or floor as the situation safely permits.
- Loads that may tip or fall and endanger a worker must be secured.
- A forklift must not be used to support, raise or lower a worker.
- A forklift left unattended must be immobilized and secured against accidental movement, and forks, buckets or other attachments should be in the lowered position or be firmly supported.
- No part of operator's body should extend beyond the side of the forklift while in operation.
- Passengers are not allowed in the forklift while in operation.
- The forklift operator is responsible for the safety of other workers in the vicinity of the operating forklift.
- Use 3-point technique when climbing in or out of forklift.

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### Equipment - Forklift: SAFE JOB PROCEDURE

| Hazards Present                                                           |  | PPE or Devices Required                                                         | Additional Training Required |
|---------------------------------------------------------------------------|--|---------------------------------------------------------------------------------|------------------------------|
| Falling objects<br>Pedestrian Traffic<br>Unbalanced loads<br>Pinch points |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hearing protection<br>Hard Hat | Forklift Operator training   |

Qualified personnel

One (1) on board 2 1/2" lb ABC fire extinguisher

#### Steps:

1. Assess ground conditions where forklift is to travel
2. Assess materials to be lifted-weights and condition of packaging
3. Circle check forklift before mounting
4. Step up into forklift
5. Sit squarely on seat
6. Check to ensure parking brake is engaged
7. Check to ensure forklift is in neutral
8. Turn key to start engine
9. Apply foot to brake and release parking brake
10. Shift transmission into desired gear
11. If using reverse ensure back up warning is working
12. Apply gas as required
13. When traveling with no load the forks must be kept at 6" above the ground
14. When traveling with a load keep the forks at a minimum above the ground
15. Approach materials to be lifted
16. Place forks under materials to be lifted
17. Lift materials to a safe traveling height
18. Approach designated location for off loading of materials
19. Before raising load, ensure forklift is level
20. Apply foot brake
21. Shift transmission into neutral
22. Apply parking brake
23. Proceed to lift to desired height
24. When you have reached desired height tilt forks to allow for easy unloading
25. Shut forklift off and wait to be unloaded
26. Once unloaded, tilt forks back and lower boom

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### Equipment - Heavy Equipment Operators: SAFE JOB PROCEDURE

| Hazards Present                                                            | PPE or Devices Required                                                | Additional Training Required |
|----------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Other workers and equipment<br>Vehicle damage<br>Slip/Trip<br>Pinch points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Operator training            |

1. Do pre-trip inspection on machine and start using Cold Start Procedure
2. Check all gauges and ensure back up alarm are working properly
3. When proceeding to the work location, check the brakes
4. Turn on beacon light
5. While traveling, allow faster traffic to pass if safe to do so
6. At job site, inspect area for any hazards
7. Always be aware of other workers and equipment in work area
8. When parking, park out of way and rest buckets/blades on ground where applicable

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### Equipment - Heavy Equipment: SAFE WORK PRACTICE

| Hazards Present                                                                               |                                                 | PPE or Devices Required                                                                               | Additional Training Required |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property Damage<br>Faulty equipment<br>Rollover | Blind spots<br>Fire<br>Musculoskeletal injuries | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Gloves<br>Hard Hat<br>Hearing protection as required |                              |

- Refer to owner's manual for instructions.
- Complete daily inspection checklist. Ensure all alarms are working properly. Defective equipment should not be operated.
- Beware of blind spots, always use signaller when needed.
- Always maintain the required distance between equipment and electrical power lines.
- Always locate underground gas and power lines before digging. Contact with utilities can cause serious accidents and property damage.
- When operating this equipment in confined areas be alert for other workers – if possible, flag the area off limits to avoid unnecessary entry by both employees and visitors.
- Always shut off the engine before fueling or performing maintenance work. Never get under a raised blade, bucket, truck body, or other suspended load unless it is properly blocked.
- When working near heavy equipment always allow space for equipment failure or operator error. If you must work close to operating equipment, keep the operator informed of your location.
- Think safety. Plan the work and work the plan. Follow planned inspections and report or correct any unsafe conditions immediately.

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### Equipment - Heavy Equipment: SAFE JOB PROCEDURE

| Hazards Present                                                                               |                                                 | PPE or Devices Required                                                                               | Additional Training Required |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property Damage<br>Faulty equipment<br>Rollover | Blind spots<br>Fire<br>Musculoskeletal injuries | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Gloves<br>Hard Hat<br>Hearing protection as required | Operator training            |

1. Heavy equipment operators must wear proper PPE.
2. All drivers have to be properly licensed, and have been trained in the proper and safe way of operating vehicles and heavy equipment.
3. The operator must use and operate safely heavy equipment as per manufacturer's recommendations and specifications.
4. Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements and also the worker must be conversant with worksite operations.
5. Perform daily inspections of the vehicle such as: check fluid levels and also if any leaks, tires and air pressure in each tire, brakes, and any other defects that may cause an accident and/or injury to the operator, other workers and the public.
6. Follow a regular maintenance schedule as per manufacture's recommendations.
7. Make sure that no one is working on the machine before starting the motor, then start the motor and check the followings: gauges, hear if the motor is running correctly, power steering, check lights, windshield wiper/washer, backup alarm, and the other accessories if working properly.
8. Before going with the machine, check in the mirrors and all around it if there is somebody close to you before you go, beep the horn and /or back up alarm. Never start moving with the machine if you're not sure that there is nobody around.
9. Now you can start doing the job that the foreman told you to do, always be careful to high degree slopes and also to soft spots because the machine may overturn.
10. Always to be careful to the other employees working near you or the public when backing up, be extremely careful to the blind spots.
11. Before leaving the equipment at the end of the dayshift, shut off the lights, let the motor idle for a while before shutting it off, let it cool off for a while, and then shut it. Make sure to lower to the ground, dozer blades, loader and excavators' buckets and leave in gear or in the "park" position and/or have wheels blocked.

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### Equipment - Loaders: SAFE WORK PRACTICE

| Hazards Present                                                       |                                                  | PPE or Devices Required                                             | Additional Training Required |
|-----------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Fire<br>Bodily Injury<br>Property Damage | Rollover<br>Muscle strain<br>Slip, Trips & Falls | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Gloves<br>Hard Hat |                              |

- Refer to owner's manual for instructions.
- Complete daily inspection checklist. Ensure all alarms are working properly.
- Always use 3-point contact entering and exiting the loader.
- Beware of blind spots, always use signaller when needed.
- This is a one-person machine, NO RIDERS ALLOWED.
- Know the pinch points and wrap points on the loader.
- Operate at a speed consistent with working conditions, visibility, and terrain.
- Ensure loader has an adequate rear counterweight
- When crossing exposed railroad tracks, ditches, ridges, or curbs reduce speed and cross at an angle.
- Carry loaded buckets as close to the ground as possible. The further a loaded bucket is from the ground the more unstable the loader becomes.
- Use extreme caution when operating a loader on a side slope. Slow down and carry the bucket, loaded or empty, as close to the ground as possible.
- Stay in gear when traveling downhill - this will help control speed.
- Never move a load above the heads of other workers.
- When back filling, use extreme caution. The weight of the material plus the weight of the machine could cause the new construction to collapse.
- Keep work area level; avoid developing ruts by occasionally back dragging the bucket to smooth the surface.

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### Equipment - Loading Granular with Loader: SAFE JOB PROCEDURE

| Hazards Present                                                                            | PPE or Devices Required                                                | Additional Training Required |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Vehicle damage<br>Vehicle malfunction<br>Other workers and equipment<br>Airborne particles | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. Try to have a roadway for drivers in a way that will prevent them from having to back up
2. Scoop up bucket water level full of granular
3. Be sure that truck is stopped before loading
4. Pull up to side of truck box and dump load
5. Repeat, and fill box to desired amount. Do not over load and ensure load is spread evenly throughout box
6. Signal driver to proceed
7. Clean up any granular that was spilled

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### Equipment - Portable Generators: SAFE WORK PRACTICE

| Hazards Present                                                     |  | PPE or Devices Required                                                    | Additional Training Required |
|---------------------------------------------------------------------|--|----------------------------------------------------------------------------|------------------------------|
| Electrocution<br>Fire<br>Burns<br>Muscle Strain<br>Faulty equipment |  | Safety boots<br>Safety glasses<br>Gloves<br>Spill Kit<br>Fire extinguisher |                              |

- Ensure all cords and connections are free from Defect.
- Keep fueling area free from sparks
- Check that all fluid and safety guards are in place
- Follow manufacturer's instructions.
- Engine exhaust should always be directed away from the structure.
- Never use indoors unless being exhausted outside in a safe way.
- Check breaker to be sure they are working properly

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By:                                                                                                       |

### Equipment - Portable Generators: SAFE JOB PROCEDURE

| Hazards Present                                          |                                                   | PPE or Devices Required                                                                                  | Additional Training Required |
|----------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------|
| Fires<br>Explosions<br>Electric shock<br>Carbon monoxide | Trips & Falls<br>Faulty Equipment<br>Hot Surfaces | Safety boots<br>Safety glasses<br>Gloves<br>Hard Hat<br>Spill Kit<br>Reflective high visibility clothing |                              |

#### Safety Procedures

1. Before operating a generator, the operator must:
  - Be designated or directed by supervisory personnel to operate the machine
  - Read and understand the manufacturer's operational instructions and these safe work practices
  - Receive instruction from experienced shop personnel in the operation of the machine
  - Read and understand the Safe Work Practices for electrical machinery
2. Do not run the engine indoors. If the engine must be run indoors, the room must have at least 200 square feet of ventilated space to the outside air.
3. Do not connect the generator to the electrical system of any building unless an isolation switch has been installed by a licensed electrician.
4. Store the generator where it will not be damaged by rain. When the generator has gasoline in the tank, it cannot be stored indoors unless the storage area is approved for storage of explosive vapors. If the fuel tank has been completely purged of gasoline, the generator may be stored anywhere indoors.
5. Allow no sparks, flames or smoking within 25 feet of the generator if the tank has gasoline. (The gas tank is vented to the atmosphere to allow for fuel flow when in operation, so gas vapors are constantly escaping through the lid.)
6. When running, parts of the generator are very hot, and should not be touched.
7. Be aware of the electricity being generated. Injury or death from electrocution could result from contact with the current when grounded.
8. As the generator is heavy and bulky, two or more persons should move or lift it.
9. As the generator has no spark arresting muffler, do not operate it in areas containing combustibles. If place of operation cannot be changed mitigate the danger of spontaneous combustion by removing or wetting the combustibles.
10. Orient the machine so that the exhaust is pointed away from walls or other objects which could be damaged by heat or exhaust fumes.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                             |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
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|                                                 | Created By:                                                                                                              |

### Equipment - Portable Grinders: SAFE WORK PRACTICE

| Hazards Present                                                     |                                         | PPE or Devices Required                                                                                                                | Additional Training Required |
|---------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Electrocution<br>Fire<br>Burns<br>Muscle Strain<br>Faulty equipment | Faulty Grinding wheels<br>Flying debris | Safety boots<br>Safety glasses / Face shield<br>Gloves<br>Hard hat<br>Hearing protection is required<br>Spill Kit<br>Fire extinguisher |                              |

- Refer to owner's manual for instructions.
- Wear appropriate PPE.
- Check for loose bolts, damaged parts, and blades.
- Ensure all guards are in place.
- Operate tool within the design limits of the manufacturer.
- Never exceed the maximum wheel speed marked on wheel.
- Do not use grinders near flammable materials
- Before grinding, run newly mounted wheel at operating speed to check for vibrations.
- Check cable to be sure it is in proper working condition and grounded.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
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|                                                 | Created By:                                                                                                       |

### Equipment - Scissor Lift: SAFE JOB PROCEDURE

| Hazards Present                                                                                 |                                             | PPE or Devices Required                                                                                           | Additional Training Required         |
|-------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Electrocution<br>Faulty equipment<br>Unstable/uneven ground<br>Vehicular and pedestrian traffic | Slips, Trips & Falls<br>Rollover & Crushing | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing<br>Fall protection equipment | Fall Protection<br>Manlift Awareness |

#### Procedure

1. Lifting and elevating the work platform must be done on flat, firm surfaces.
2. The safety bar located inside the lifting mechanism must be used to prevent lowering of the scissor-type lift during maintenance.

#### DO NOT

3. Exert excessive side force while the work platform is elevated.
4. Overload (the relief valve does not protect against overloading)
5. Alter or disable limit switches
6. Raise the platform in windy or gusty conditions. (The manufacturer recommends not raising to full height or half height in windy or gusty wind conditions. The manufacturer follows a 20mph wind speed as a guide. The manufacturer recommends not raising the lift if the wind speed is 20mph or greater)
7. Elevate the work platform if it is not on a firm level surface
8. Park the work platform on high traffic sidewalks that will impede foot traffic or wheelchair traffic.
9. Safety Devices
10. The guardrails must be upright and locked in place with locking pins.
11. The safety bar must be used for inspection and maintenance.
12. Do not reach through scissor assembly without the safety bar in its proper position.
13. The operator must wear a personal protective device (positioning device system) to prevent movement past or over handrails. The personal protective device will consist of a body belt with a lanyard attached to an anchor point to ensure a 100% no-fall situation. The anchor point must be positioned so the employee cannot reach the handrail with slack in the lanyard; this will prevent an employee from being able to fall from the platform

#### Operating Procedures

14. Operators must read and completely understand the operator's manual before being allowed on a work platform. The manual is located inside the side metal box of the scissor lift in a rain-tight pouch.
15. Inspect and/or test for the following daily:
16. Operating and emergency controls
17. Safety devices and limit switches

18. Tires and wheels
19. Outriggers
20. Air, hydraulic, and fuel systems for leaks
21. Loose or missing parts
22. Guardrail systems
23. Engine oil level
24. Hydraulic reservoir level
25. Do not operate unless proper authorization and training have been received.

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THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                                 | Reviewed By:                                                                                                      |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b> | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                                | <b>Created by:</b>                                                                                                |

### Equipment - Skid Steers: SAFE WORK PRACTICE

| Hazards Present                                                                                    |                                          | PPE or Devices Required                                   | Additional Training Required |
|----------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|------------------------------|
| Damage to equipment or property<br>Rollover / Tipping<br>Crushing<br>Congestion of site<br>Traffic | Slips, Trips & Falls<br>Overhead hazards | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat |                              |

- Always follow the manufacturer's operation and service instructions.
- Do daily inspection as required all alarms, controls etc. and document them.
- Never operate the machine from the outside of the cab.
- Always wear seat belt.
- Watch for blind spots, use signaler when needed.
- Don't overload a bucket or attachments, or carry a load which could fall. Lifting attachments can change the weight distribution of the machine.
- Keep the machine under complete control at all times.
- Always lower the lift arms before exiting the cab.
- Turn off the engine and set the parking brake whenever you exit the machine.
- When changing buckets or installing attachments, make sure all connectors are securely fastened.
- Never modify your skid steer's rollover protective structure. Doing so could result in severe injury or death.
- Know and avoid the pinch points and rotating parts on the machine and attachment.
- Never allow an untrained individual to operate the machine. Read the operator's manual. Participate in a training course offered regularly.
- A skid steer loader is a one-person machine. Never permit riders. Don't use the bucket for a work platform or personnel carrier. An extra rider has no protection should any type of accident occur. Overturns are a common type of accident. An extra rider is often crushed when a skid steer loader turns over.
- Always look around before you back up or swing an attachment. Be sure that everyone is in the clear. Keep others away from the area of Skid-Steer operation. Never lift, swing or move a load over anyone.
- If you must work beneath an elevated load, securely block it and do a hazard assessment to ensure the blocking will remain secure.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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|                                                 | Created By:                                                                                                       |



### Equipment - Skid Steers: SAFE JOB PROCEDURE

| Hazards Present                                                             |  | PPE or Devices Required                                                              | Additional Training Required |
|-----------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|------------------------------|
| Rollover<br>Crushing<br>Property damage<br>Vehicular and pedestrian traffic |  | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing | Operator training            |

1. Don't overload a bucket or attachments, or carry a load which could fall. Lifting attachments can change the weight distribution of the loader. They can also affect its stability and handling response. Be sure you can keep the machine under complete control at all times.
2. When changing buckets or installing attachments, make sure all connectors are securely fastened
3. Never modify your skid steer's rollover protective structure. Doing so could result in severe injury or death.
4. Know and avoid the pinch points and rotating parts on the loader.
5. Never allow an untrained individual to operate the machine. Read the operator's manual. Participate in a training course offered regularly.
6. A skid steer loader is a one-person machine. Never permit riders. Don't use the bucket for a work platform or personnel carrier. An extra rider has no protection should any type of accident occur. Overturns are a common type of accident. An extra rider is often crushed when a skid steer loader turns over.
7. Never overload the lift with hay bales, bales of cotton or materials that could injure someone if they fall. Keep the loaded bucket level as lift-arms are moved and as the loader climbs slopes or traverses' ramps.
8. Always look around before you back up or swing an attachment. Be sure that everyone is in the clear. Keep others away from the area of loader operation. Never lift, swing or move a load over anyone.

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| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
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|                                                 | Created By:                                                                                                       |

**Equipment - Utility Task Vehicle (UTV): SAFE WORK PRACTICE**

| <b>Hazards Present</b>                        |  | <b>PPE or Devices Required</b>                                      | <b>Additional Training Required</b> |
|-----------------------------------------------|--|---------------------------------------------------------------------|-------------------------------------|
| Bodily Injury<br>Property Damage<br>Rollovers |  | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves |                                     |

- Read the manufacturer's instruction book before operating an unfamiliar vehicle.
- Complete visual inspection with daily checklist before starting work.
- Keep legs and arms inside the vehicle at all times.
- Drive slowly and turn smoothly to avoid an overturn.
- When hauling cargo, the vehicle's center of gravity is raised, increasing the chance of overturning.
- Drive completely up or down a slope or hill before making a turn. Do not turn the vehicle in mid-slope or hill as this increases the probability of overturning.
- Use the appropriate speed on rough terrain. Operators and passengers have been thrown from vehicles.
- Stay clear of ditches and embankments.
- Each passenger must ride in his/her own seat, not anywhere else on the UTV.
- Operators must back up carefully.
- Due to the hauling purpose of a UTV, special attention should be paid to making sure cargo or material is properly secured during transport.
- Since UTVs may be used to tow implements, it is important to follow safety practices when towing a load:
- When towing a load, make sure the cargo box is loaded to assume good traction for driving and stopping.
- Be sure to tow load at a speed slow enough to maintain control. Remember, the stopping distance increases with speed and weight of a towed load.
- Follow the manufacturer's recommendations for weight limits for towed equipment.

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| <b>Guidance Documents / Standards</b>                          | <b>Reviewed By:</b>                                                                                               |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b> | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                                | <b>Created By:</b>                                                                                                |

### Equipment - Vehicle & Equipment Recovery: Safe Job Procedure

| Hazards Present                                                                          |  | PPE or Devices Required                                                              | Additional Training Required |
|------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|------------------------------|
| Cuts, Muscle Strain,<br>Flying Objects, Slips,<br>Trips, Uneven Ground,<br>Unstable Soil |  | Steel toe boots, Safety<br>glasses, hard hat, reflective<br>high visibility clothing |                              |

1. Stop, consider the task at hand and assess the hazards.

If you have any questions or doubts at this point, call a tow truck,

2. If the vehicle recovery takes place on or near a roadway, you must implement a traffic warning or traffic control system (e.g., traffic cones or reflector).

3. Ensure that you have the correct equipment — a recovery strap is essential.

The recovery strap should be at least 6 m or 20 ft in length and in good working condition (no cuts or broken stitches)

4. Check both vehicle weights and add the weights of any loads either vehicle is carrying.

The vehicle doing the pulling must be of equal or, ideally, greater weight than the vehicle that is being pulled.

5. Ensure the recovery strap has a Minimum Breaking Strength (MBS) that is 2-3 times the total weight of the stuck vehicle.

If it is less, the danger is the strap may snap under high tension.

If the MBS is greater, it will not function optimally (they are most effective when their elasticity enhances the pull).

6. Ensure tow hooks, hitch receivers and any shackles used are rated to loads that exceed the recovery strap MBS. In the event of excessive loads, the recovery strap should always be the weakest link and snap first. A shackle should have a Working Load Limit (WLL) stamped on it (remember 1 ton = 2000 lbs or 900 kg).

7. As much as possible, clear out mud, sand, or snow from under the stuck vehicle and in front of the tires in the direction of the pull.

8. Position the pulling vehicle in line with the stuck vehicle — the pulling vehicle facing forward; the stuck vehicle being pulled from the front (ideally) or the back. You need to be within 10° of a straight line — side loading can lead to serious vehicle damage. You need to be sure you have a clear path straight forward free of any obstacles that is at least the length of the strap and stuck vehicle.

9. Lay out the recovery strap between the two vehicles and loop the strap onto a tow hook bolted to the vehicle frame or put the loop on a shackle which is properly pinned to a frame mounted hitch rated for recovery. If using a threaded shackle, hand tighten the pin and then turn it back one quarter turn for ease of release later.

Never tie the strap onto the vehicle, slip the strap over a ball hitch, or attach it to anything other than a tow hook or frame mounted hitch. Only use one recovery strap (never two in parallel) — however, there are two options for creating additional length with two recovery straps if needed: Double length by threading straps through each other's eye. A rolled newspaper stuck between the loops provides a safe means of undoing the knot later. Gain 50% more length by looping one strap through the eye of another. Never use a shackle to join two straps — if a strap fails, it becomes a deadly projectile.

- Reduce the expected strength of the recovery straps by 25% if you are using two correctly joined straps.

10. Drape a heavy coat or blanket over the middle of the strap to dampen any backlash if it snaps or releases.
11. Agree on a plan and communication signals between the two drivers.
12. Ensure all other bystanders are at least 2 times the length of the recovery strap to the side of the vehicles — both the strap and the vehicles lurching forward unexpectedly present a hazard.
13. The pulling vehicle accelerates slowly (to about 10-12 KPH) to build tension in the strap and provide a sustained pull. Once the slack is taken up, the stuck vehicle likewise applies acceleration in low gear to assist the pulling car. Neither vehicle should spin their tires.

Steady momentum is most effective — never resort to jerking or taking a long run and jerk.

Maintain tension throughout the pull, do not allow slack to develop in the strap at any point.

14. Do not remove straps until both vehicles are fully stopped and secured.

It is a good idea to clean and dry out a recovery strap after use as dirt and moisture weaken the strap.

Remember, if at any point in the process you have any safety concerns whatsoever or concerns about potential damage to vehicles, stop and call a certified tow truck.

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| Guidance Documents / Standards                  | Reviewed By:                                                                                                                                                                                   |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | <p>This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> <p><b>Created By: J. Bernier, G, Beaulieu, P. Jean, B. Clancy</b></p> |

| Equipment - Vehicles & Equipment: SAFE WORK PRACTICE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                   |                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | PPE or Devices Required                                                                                           | Additional Training Required |
| Crashing<br>Faulty equipment<br>Spills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                   |                              |
| <ul style="list-style-type: none"> <li>• Ensure vehicle is registered, licensed and inspected. Make sure the insurance card is up to date</li> <li>• Perform daily inspections checklist: <ul style="list-style-type: none"> <li>○ Check all lights</li> <li>○ Fluid levels, including windshield washer</li> <li>○ Tires including spare tire</li> <li>○ Gauges</li> <li>○ Brakes</li> </ul> </li> <li>• Seat belts must be worn when in a moving vehicle/equipment at all times</li> <li>• Do a walk around the vehicle or equipment before operating</li> <li>• Drive safely and drive appropriately for weather and traffic conditions</li> <li>• Ensure loads on trucks are secure and don't overload</li> <li>• Company vehicles should be equipped with a fire extinguisher and if the operator has the first aid training, it should also contain a first aid kit</li> </ul> |  |                                                                                                                   |                              |
| <p><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                   |                              |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Reviewed By:                                                                                                      |                              |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | Created By:                                                                                                       |                              |

### Equipment - Vehicle & Equipment: SAFE JOB PROCEDURE

| Hazards Present              |  | PPE or Devices Required                                                              | Additional Training Required |
|------------------------------|--|--------------------------------------------------------------------------------------|------------------------------|
| Crashing<br>Faulty equipment |  | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing |                              |

#### Operator Qualifications

Valid Driver's License: Each employee is required to have a valid driver's license in their possession for the appropriate class of vehicle before operating a company owned vehicle, rental or privately owned vehicle. Employees will not be allowed to operate a vehicle until their supervisor has determined the employee can operate the vehicle safely under the anticipated conditions. An employee may refuse, without reprisal, to operate specific type of vehicle if they do not feel that they have the physical capabilities or the necessary skills and experience to safely complete their assignment. An employee may also refuse to operate any vehicle that is defective.

- **Suspended Drivers License:** If an employee has their driver's license suspended, they should notify their supervisor as they can no longer operate a company owned vehicle, rental or privately owned vehicle. If the situation should arise where the employee needs to drive a vehicle the employee must inform the supervisor. Driving a company vehicle with a suspended license could result in disciplinary action.

#### Vehicle Use

Use of Company Vehicles: The transportation of this company or company personnel in a company owned, leased, rented, chartered, or privately-owned motor vehicles or aircraft engaged in official business is limited to "official passengers": The following are considered "official passengers".

The use of company owned vehicles, including the transport of "unofficial passengers" in the case of emergencies, such as natural disaster (storm, floods etc.). Need for medical attention, or other errands of mercy, is not restricted. Employees are authorized to exercise their own judgment.

Company owned vehicles may not be used to transport either family members or "unofficial passengers" (i.e., passengers not described above) unless specific written authorization has been obtained. The operator and all passengers in company owned vehicles are required to wear seatbelts whenever the vehicle is moving. Occupants of vehicles on company business are prohibited from drinking alcohol or using illegal drugs while in the vehicle. Prescription medication and over the counter products may be used by the driver (or potential drivers) only if the medication does not affect their ability to operate a motor vehicle.

1. **Driving Time:** It is each employee's responsibility to assure they are fully alert and rested when operating a motor vehicle. As a general rule, employees should not exceed 8 hours of driving time (behind the wheel) during a 16-hour duty period. Management may place further limitations on the above hours of duty and/or driving time due to fatigue or to other safety factors.
2. **Vehicle Inspection:** Each driver shall perform a pre-trip inspection to ensure the proper working order of the following: Lights, signals, windshield wipers and washers, horn, and brakes. Windshields must be clear and clean. Warning lights shall be checked and drivers shall check for required tools, such as first aid kit, jack, chains, spare tire, vehicle record book, etc.

3. Domiciling Company Vehicles: The domiciling of a company owned vehicle at an employee's residence must be approved in advance.

#### Vehicle Accidents

- Reporting Policy: The policy for the reporting of vehicle accidents is that any vehicle accident (no matter what the estimated dollar amount of damage is) must be reported immediately to your supervisor and the appropriate Administrative Officer. The supervisor and Administrative Officer are also required to notify the Safety Officer within one (1) work day after an accident (immediate notification is required if the accident involves a fatality or a serious injury).

If private property or another vehicle is involved in the accident, the vehicle should not be moved from the accident scene except under the direction of local law enforcement authorities. It is recognized that the vehicles may need to be moved out of the flow of traffic. Do not admit responsibility for an accident. If a private citizen and/or property is involved, expect that a Tort Claim will be filed against the government. Because of this, the information you should obtain are the names and addresses of persons involved, drivers license numbers, vehicle license numbers, insurance policy references, the names and addresses of any witnesses, and pictures of the accident scene from all directions as soon as possible after the accident.

#### Accident Investigation

All accidents involving an employee are required to be investigated. The company supervisor will make the determination as to the extent of the investigation and who will conduct the investigation.

Disciplinary action may also be appropriate if it is determined an employee is responsible for damage to company property and/or negligent or unsafe in operating a vehicle. Disciplinary action for negligence in operating a motor vehicle or the destruction of company property can range from a letter of reprimand to removal depending on the circumstances surrounding the accident. It is the supervisor's responsibility to determine the appropriate disciplinary action.

#### Backing Accidents

The most common vehicle accident is the backing accident. Employees are reminded to be extra careful when backing a vehicle. If a passenger is available, they should be utilized as a "spotter" to prevent backing accidents. Employees involved in these types of accidents are generally subject to disciplinary action depending on the circumstances surrounding the accident.

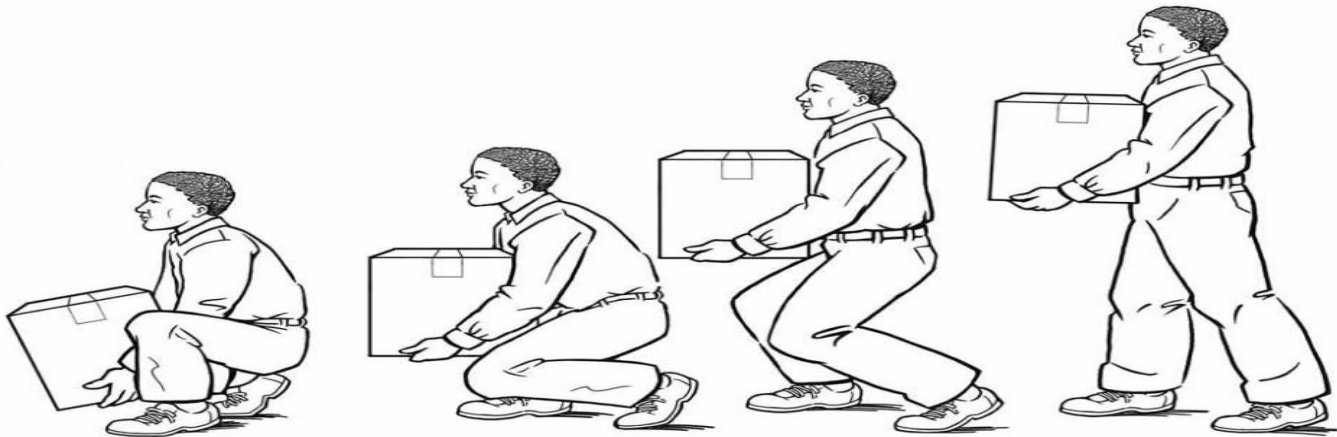
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| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
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|                                                 | Created By:                                                                                                       |

### Ergonomics - Manual Lifting: SAFE WORK PRACTICE

| Hazards Present                                                                      | PPE or Devices Required | Additional Training Required |
|--------------------------------------------------------------------------------------|-------------------------|------------------------------|
| Back injuries<br>Muscle strains<br>Over exertion<br>Crushing<br>Slips, Trips & Falls |                         |                              |

- Do risk assessments first, plan your moves.
- Make certain that your balance is good.
- When lifting tuck in the chin to keep the back as straight as possible.
- Lift with the strong leg muscles, Bend to lift an object - don't stoop
- Feet shoulder width apart.
- Grip the load with the palms of your hands and your fingers.
- Carry load close to your body as possible.
- Ask for help with the heavy, awkward items.
- When possible, use mechanical equipment to move heavy items.



**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                                                                                                                                                                         | Reviewed By:                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b><br><b>Hoisting &amp; Lifting Procedure</b><br><b>Excavation Procedure</b><br><b>Trenching Procedure</b><br><b>Backfilling Procedure</b> | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                                                                                                                                                                        | <b>Created By:</b>                                                                                                |



### Ergonomics - Manual Lifting: SAFE JOB PROCEDURE

| Hazards Present                                                                      | PPE or Devices Required | Additional Training Required |
|--------------------------------------------------------------------------------------|-------------------------|------------------------------|
| Back injuries<br>Muscle strains<br>Over exertion<br>Crushing<br>Slips, Trips & Falls |                         |                              |

1. Check to see if object is too heavy by tipping it slightly. Never attempt to lift alone if it is too heavy or awkward
2. Take a good stance with feet planted firmly, legs shoulder width apart. Ensure you are on level ground
3. Get a firm grip with your hand rather than just fingers
4. Keep back straight, almost vertical. Bend at the hips
5. Hold load close to your body, keeping weight of your body over your feet for good balance
6. Use large leg muscles to lift. Push up with the foot positioned in the rear as you start to lift
7. Lift steadily and smoothly, avoid quick, jerky movements
8. Avoid twisting motions, turn the forward foot and point it in the direction of the eventual movement
9. Never try to lift more than you are accustomed to
10. Always get help when lifting bulky loads

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                                 | Reviewed By:                                                                                                                               |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b> | This Safe Job procedure will be reviewed anytime the task, equipment or materials change and on an annual basis<br><br><b>Reviewed By:</b> |

### Ergonomics - Material Handling: SAFE WORK PRACTICE

| Hazards Present                                                                                                            |                                                           | PPE or Devices Required                                             | Additional Training Required |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Lifting and pushing/pulling<br>Bending, reaching & twisting<br>Hazardous substances<br>Risk of injury from Falling objects | Slips, Trips & Falls<br>Overhead hazards<br>Poor lighting | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves |                              |

- Wear appropriate personal protective equipment such as work gloves when handling objects with sharp edges and safety footwear when handling heavy objects.
- Ensure there is adequate clearance for safe lifting/material handling.
- Ensure storage areas are kept tidy, well organized and free of clutter.
- Keep loading and unloading area free of unnecessary personnel
- Use a hand truck, cart, dolly, wheelbarrow, mechanical lifting device, etc. to move heavy, awkward or bulky objects. Ask for assistance.
- Know how to safely handle controlled WHMIS products.
- Reduce repetition as much as possible by pacing your work and by varying tasks.
- Use a stepladder or step stool to reach high places.
- Use a power grasp for loads with handles.
- Use a ledge grasp for loads without handles.
- Ask for assistance and/or use a two-wheeled hand truck dolly to move heavy, awkward or bulky items up or down stairs if an elevator is not available.
- Do not lift or carry items by the packing straps or cords.
- Do not use a box, desk or chair to reach high objects.
- Do not lift a load if you are not sure that you can handle it safely.

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|                                                 | Created By:                                                                                                       |

### Ergonomics - Office Ergonomics: SAFE WORK PRACTICE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                              | PPE or Devices Required                                                                                           | Additional Training Required |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal<br>Injuries<br>Repetitive movements<br>Posture & Duration<br>Headaches                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Eye strain<br>Lighting<br>Indoor air quality |                                                                                                                   |                              |
| <ul style="list-style-type: none"> <li>• Work in a neutral body posture without excessive bending, reaching, twisting or slouching.</li> <li>• Work with your wrists and hands in a neutral position.</li> <li>• Position work so it is easy to see and reach.</li> <li>• Ensure your computer workstation is properly setup and adjusted.</li> <li>• Change your body position frequently by varying your tasks and taking micro and rest breaks.</li> <li>• Avoid sitting for a long period of time. Alternate between sitting, standing and walking.</li> <li>• Consider alternating tasks within a job to minimize repetition.</li> <li>• Stretch regularly. Stretches should be done slowly and smoothly.</li> <li>• Do not hold a single posture too long.</li> <li>• Do not lean back in a chair with your feet on a desk.</li> <li>• Do not squeeze the mouse or press buttons with excessive force.</li> <li>• Do not store items under your desk; allow free movement of your legs.</li> </ul> |                                              |                                                                                                                   |                              |
| <p style="text-align: center;"><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p style="text-align: center;"><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                              |                                                                                                                   |                              |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                              | Reviewed By:                                                                                                      |                              |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                              | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                              | Reviewed By:                                                                                                      |                              |

## Ergonomics - Office Ergonomics: SAFE JOB PROCEDURE

| Hazards Present                                                                        |                                              | PPE or Devices Required | Additional Training Required |
|----------------------------------------------------------------------------------------|----------------------------------------------|-------------------------|------------------------------|
| Musculoskeletal<br>Injuries<br>Repetitive movements<br>Posture & Duration<br>Headaches | Eye strain<br>Lighting<br>Indoor air quality |                         |                              |

### 1. Chair

- Adjust your chair height so that your elbows are about the same height as the top of the work surface and your thighs are horizontal. If your feet are not resting flat/comfortably on the floor, consider using a footrest.
- Another way to check height is to stand in front of your chair and adjust the height so the highest point of the seat is just below your kneecap.
- Sit so the clearance between the front edge of the seat and the back of your knees just fits a clenched fist.
- Adjust the backrest height so that it supports the hollow of your lower back.
- Tighten the backrest so that it does not give way with body weight.
- Rest your back against the backrest at all times.
- Adjust the height of the armrests so your shoulders are relaxed and your elbows are at 90 degrees. Keep your back in good alignment; slouching puts pressure on it.

### 2. Monitor

- Position the screen away from windows or at a 90-degree angle to the windows.
- Position the monitor directly in front of you.
- Viewing distance should be about one arm's length away from you (within 30 to 60 cm or 12 to 24 in).
- Adjust the monitor height so your neck is in a neutral position when looking at the top row of text on the screen.
- Tilt the monitor down if glare is noted on the screen.
- Adjust the screen brightness and contrast for optimal character definition. Ensure the text on the screen is sharp, easy to read and does not flicker.
- If you wear bifocals, it may help to position the monitor lower or tilt it back slightly.
- Every 30 minutes look away from the screen and focus on a distant object.
- Regularly clean the screen; follow the manufacturer's instructions

### 3. Keyboard and Mouse

- Position the keyboard directly in front of you.
- Position the mouse directly beside the keyboard at the same height.
- Position the keyboard and mouse within a comfortable reach so your arms are close to your body while using them.
- Adjust the mouse speed setting. The mouse is harder to control if you use a fast setting.
- Keep your wrist relaxed and straight. Your forearm, wrist and fingers should all be in a straight line. Elbows should be at 90 degrees.
- Hold the mouse loosely with your palm and all fingers.
- Move the mouse with your whole arm initiating movement from your shoulder. Apply a light touch while clicking.
- Use the keyboard and mouse wrist supports for micro-breaks.

### 4. Desk

- Desk height should be about the same height as your elbows when your arms are hanging straight down when seated.
- Work surface should be large enough to hold work materials.
- Place frequently used items close to you to avoid over-reaching and twisting.

#### 5. Document holder

- Position the document holder at the same height and distance as the monitor.
- Position the document holder on the same side as your dominant eye.

#### 6. Telephone

- Place the telephone close to you within easy reach on your non-dominant hand side.
- Avoid cross midline reaching for the telephone.
- Hold the telephone receiver with one hand. Do not cradle it between your ear and shoulder.

#### 7. Environment

- Lighting should be evenly distributed and should not create a glare or shadows.
- Adjust window blinds or drapes to control light levels and glare.
- Use adjustable task lighting to increase light levels when needed.
- Replace flickering fluorescent tubes and maintain fixtures.

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| Occupational Health & Safety Act & Regulations: | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By: C. Michaud, B. Cyr, J. Breau, G. Beaupre, M. McClure, G. Desjardins                                   |

### Fall Protection: SAFE WORK PRACTICE

| Hazards Present                              |  | PPE or Devices Required                                                                                             | Additional Training Required |
|----------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------|------------------------------|
| Falls<br>Faulty Equipment<br>Slips and trips |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard hat<br>Fall protection harness<br>Lanyard<br>Anchor | Fall Protection              |

- Always inspect Harness and other equipment before use.
- Follow Northern Inc. Code of Practice for Working at heights. This must be signed by anyone working at heights as well as rescue team.
- Always follow the manufacturer's instructions for use of harness.
- Wear proper PPE for the job.
- Have Rescue Plan in place.
- Check work area for possible hazards.
- Make sure proper harness is used for the job ex. (Welding Steel Work etc.).
- To be used at heights higher than 3m.

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### Fall Protection: SAFE JOB PROCEDURE

| Hazards Present                              |  | PPE or Devices Required                                                                                             | Additional Training Required |
|----------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------|------------------------------|
| Falls<br>Faulty equipment<br>Slips and trips |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard hat<br>Fall protection harness<br>Lanyard<br>Anchor | Fall Protection              |

### Fall Protection System

Fall Protection Systems are designed to protect personnel from the risk of falls when working at elevated heights.

Recognized systems include:

1. Fall Prevention-A structural design to limit a fall to the same level (e.g. guardrails, aerial lifts with work platforms)
2. Fall Arrest Equipment-An approved full body harness, shock absorbing lanyard or self retractable lifeline, locking snap hooks and anchor points approved for a static load of 5000 pounds or engineered to meet a two to one safety factor.

### Fall Protection Requirements

1. Climbing, standing on or working from equipment, pipes, ducts or other such areas is prohibited except for where the surface is designed for climbing or standing. Appropriate fall protection must be implemented when areas have been designed for climbing or standing and are elevated six feet or more from ground or a lower level.
2. Aerial Lift
  - Initial training is required to operate Aerial Lifts. Generally, the equipment manufacturer or distributor can provide Operator Training.
  - Articulated and extensible boom platforms must have both platform (operator controls) and lower controls.
  - The operator must test the controls each day to determine that the controls are in safe working condition.
  - Body harnesses must be worn with a shock absorbing lanyard, (preferably not to exceed 3 feet in length). The point of attachment must be the Aerial Lift's boom or work platform. Personnel cannot attach lanyards to adjacent poles, structures or equipment while they are working from the Aerial Lift.
  - Personnel cannot move an Aerial Lift while the boom is in an elevated working position and the operator is inside of the lift platform.
3. Supported and Suspended Scaffolding for construction, renovation and maintenance activities. Basic requirements include but are not limited to:
  - Use-Daily inspection of scaffold's integrity by a competent person; no horizontal movement with personnel on scaffold; personnel may not work off of ladders or other raised structures set up on the work platform of the scaffold.
  - Fall Protection-Required when the work platform is ten feet or higher.
  - Supported Scaffolds-Must be constructed on secure footings. Scaffolds that are four to one (vertical height four times higher than the scaffold's base width) must be restrained from tipping over. Typical restraints are tying into the structure or using outriggers.
  - Training-Personnel who use, assemble, maintain or dismantle scaffolds are required to be initially trained in the following:
    - Scaffold standard
    - Nature of electrical, fall and falling object hazards
    - Correct procedures and safety equipment for protection from those hazards
    - Proper use and procedures for erecting, dismantling, moving and inspecting scaffolds
    - Load capacities of scaffolds

4. Ladder Safety-For wood/metal portable and extension ladders includes frequent inspection and prompt removal of defective ladders from service. Defective ladders must be tagged as Dangerous, Do Not Use and repaired or destroyed. Ladder inspection criteria includes but is not limited to the following:
  - Wood ladders must be free of splinters, sharp edges and have no visual defects noted by wood decay or other irregularities.
  - Metal ladders must not have structural defects, sharp edges or metal burrs.
  - Ladders with broken, bent or missing steps, rungs or cleats or broken, bent or dented side rails or other defects, must not be used. Improvised repairs cannot be made.
  - Joints between the steps and side rails must be tight.
  - Hardware and fittings must be securely attached and movable parts must operate freely without binding.
  - Locking spreaders are required and must operate to securely hold the front and back ladder sections in the open position.
5. Ladder Safety Use Of:
  - Use ladders according to the posted load limits.
  - Set up ladders on firm footing and secure in place to prevent the ladder from slipping.
  - Follow the four to one rule during set up (for every four feet of vertical ladder height move the ladder out one foot from the wall, building or structure)
  - Do not place ladders onto unstable bases to obtain additional height including setting up ladders onto the working platforms of scaffolding.
  - Do not set up ladders in front of doorways.
  - Ladders used to access roofs must have side rails that extend up an additional three feet to allow a safe transition.
  - Do not stand on the top of ladders or work from the top step.
  - Do not climb ladders carrying equipment or tools. Use other means to transport equipment and tools up to the worksite.
  - Always face the ladder when going up and down.
  - Follow the three on rule (two hands and one foot on the ladder or two feet and one hand on the ladder at all times). Do not over reach from the sides of the ladder.
6. Anchor Points for Personal Fall Arrest Equipment-Secure anchor points are the most critical component when employees must use fall arrest equipment. UV buildings may have existing structures (e.g., steel beams or anchored roof cupolas that may meet the criteria for a secure anchor point). Other work locations and assignments may require the installation of a temporary or permanent anchor. As a minimum, the following criteria must be considered for each type of anchor point:

Criteria for an Existing Structure:

  - Structure must be sound and capable of withstanding a 5000lb static load
  - Structure/anchor must be easily accessible to avoid fall hazards during hook up
  - Prior to tying off to perform the work a means of rescue in the event of a fall must be immediately available
  - Direct tying off around sharp-edged structures can reduce breaking strength by 70% therefore, chafing pads or abrasion resistant straps must be used around sharp edged structures to prevent cutting action against safety lanyards or lifelines
  - OSHA limits free falls to 6 feet. Structures used as anchor points must be at the worker's shoulder level or higher to limit free fall to 6 feet or less and prevent contact with any lower level
  - Choose structures for anchor points that will prevent swing fall hazards. Potentially dangerous "pendulum" like swing falls can result when a worker moves horizontally away from a fixed anchor point and falls. The arc of the swing produces as much energy as a vertical free fall and the hazard of swinging into an obstruction becomes a major factor
  - Raising the height of the anchor point can reduce the angle of the arc and the force of the swing



- Horizontal lifelines can help maintain the attachment point overhead and limit the fall vertically. Qualified persons must design horizontal lifeline systems.

Criteria for Permanent Anchor in addition to all the criteria listed for Existing Structures, the following points must be considered:

Environmental factors and dissimilarity of materials can degrade exposed anchors.

- Preserving roof/structure integrity after penetrating roof/structure for installation of anchors.
- Compatibility of permanent anchors with employee's fall arrest equipment
- Permanent anchor systems that meet a 2 to 1 safety factor of at least 3,600 lb. must be Certified. The design and installation must be done by a qualified person. If the permanent anchor system is not certified it must meet a 5,000 lb static load or greater.
- inclusion of permanent anchors into a preventive maintenance program.
- Schedule recertification test.
- Determine appropriate end life and schedule for replacement.
- Visibly label permanent anchors.
- Roof anchors must be immediately removed from service and disposed of if subjected to fall arrest forces.

Reusable Temporary Roof Anchors in addition to all the criteria listed for existing structures, the following points must be considered:

- Reusable temporary roof anchors must be installed and used following the manufacturer's installation guidelines.
- Roof anchors must be compatible with employee's fall arrest equipment.
- Roof anchors must be removed from service at the completion of the job and inspected prior to reuse following the manufacturer's inspection guidelines.
- Roof anchors must be immediately removed from service and disposed of if subjected to fall arrest forces.

7. Fall Arrest Equipment Requirements: Fall arrest equipment reduces the risk of injuries that can occur when a worker falls from one level to another. If engineering controls are not feasible to prevent the fall, fall arrest equipment becomes the last line of defense. Equipment manufacturers routinely test and certify components of their fall arrest equipment as a "system". Components of fall arrest equipment from different manufacturers are rarely interchangeable or certified as a complete "fall arrest system".
8. Consistency (one manufacturer's line of fall arrest equipment) is usually the best choice for departments and/or cost centers to ensure compatibility of equipment. Assistance is available from the Office of Environmental Health and Safety on selection and procurement of Fall Arrest Equipment. Critical components of fall arrest equipment include:
  - Body Harnesses: Body harnesses are required. The harness must, comfortably but snugly, fit the individual. Many body harnesses are designed for "universal fit" to accommodate several individuals. "Universal fit" has limitations, small frame and large frame individuals may not be adequately accommodated by the mid range "universal fit".
  - Shock Absorbing Lanyards 'Connector': Shock absorbing lanyards are required. Static rope and nylon lanyards must be replaced with an appropriate length shock absorbing lanyard. During fall arrest the rip stitching of the shock absorbing lanyard absorbs the shock of the fall, drastically reducing forces onto the body and preventing significant injury. Special attention must be given to the stopping distance required by the manufacturer of the lanyard. Generally, the overall free fall distance may be 9 feet.
  - Locking Snap hooks "Connector": Locking snap hooks are required. All connection hardware (e.g., - snap hooks, carabineers) must have a locking mechanism to prevent roll out from the anchor and sized appropriately to fit with the anchor.
  - Inspection of Fall Arrest Equipment: OSHA and fall arrest equipment manufacturers, require any defective equipment to be immediately removed from service and replaced. Defective equipment must be destroyed to prevent accidental use that could endanger someone's life.

- **Harness Inspection:** Defects include but are not limited to:

|            |          |               |
|------------|----------|---------------|
| Cuts       | Abrasion | Loose threads |
| Stretching | Tears    | Mold          |

Look for Deterioration:

- Exposure to molten metal or flame from hot work will fuse nylon fibers together. There may be hard shiny spots and the nylon appears shriveled and brown. The nylon will feel brittle.
- Exposure to harsh chemicals-change in color, appearing as a brownish smear. Nylon webbing loses elasticity.
- **Hardware Inspection:** Look for cracks, pitting and any distortion in all hardware components: buckles, D-rings, snap hooks, and carabineers, rivets and grommets. Belt buckle grommets get a lot of wear from opening and closing. Snap hooks must lock and close tightly; buckles must function properly.

Use of Fall Arrest Equipment:

- Always use a secure anchor point (hold 5,000 lb load)
- Connect to an anchor point at shoulder level or above. Never connect below the D-ring of the body harness.
- Connection to anchor points must prevent a dangerous swing fall hazard or impact with any lower level in the event of a fall.
- Connection to an anchor point must limit the fall to no greater than six feet.
- Use chafing pads or anchor slings to prevent cutting “connectors” (lanyards and lifelines) on sharp edges.
- Do not use knots on “connectors” (lanyards and lifelines).
- Vertical lifelines must be synthetic (nylon) fiber.
- Rope grab devices used on vertical lifelines, must be secured twelve feet up from the terminal end of the vertical lifeline.
- Terminate the end of the vertical lifeline to prevent the rope grab device from slipping off.
- Only one person can “tie off” to a vertical lifeline.
- **Cleaning and Storage of Fall Arrest Equipment:** Follow the equipment manufacturer’s cleaning instructions. Always dry equipment naturally. Use an approved lubricant (light motor oil or aerosol lubricant) to oil snap hooks when dry. Store clean and dry away from direct sunlight and excessive heat.

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|                                                 | Reviewed By:                                                                                                             |

### Fencing - Barbed Wire Dispenser: SAFE WORK PRACTICE

| Hazards Present                                                                             |                                    | PPE or Devices Required                                                                                                      | Additional Training Required |
|---------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Pinch Points<br>Hydraulic Fluid<br>Slips, Trips, Falls<br>Overhead Wires<br>Overhead Hazard | Sharp objects<br>Cuts<br>Punctures | Steel toe boots<br>Safety glasses with side shields<br>hard hat<br>High visibility clothing,<br>Gloves<br>Long Sleeved Shirt |                              |

- Do not operate machine without reading and understanding Operator's Manual.
- Read all safety messages; follow safety messages to avoid personal injury and/or property damage.
- The operator must be fully trained to operate this machine.
- Before operating this machine, the operator must know the location and purpose of the following:

|                    |                                 |
|--------------------|---------------------------------|
| • Controls         | • Instruments                   |
| • Indicator Lights | • Safety and instruction decals |

- Wear CSA approved protective clothing when working on or near this machine.
- Barb wire is sharp use caution at all times.
- Remove jewelry before working on or near this machine.
- Do not use your hands to search for hydraulic leaks.
- Before disconnecting lines, relieve all pressure.
- Do not exceed factory adjusted hydraulic pressure settings.
- Always wear seat belt, fastened snugly, when operating the machine to reduce the risk of personal injury resulting from a rollover or sudden stop.
- Do not allow riders on machine.
- Stay 3 meters or more away from machine unless operating machine barbed wire may snap.
- Keep safe working distance from electric lines.

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|                                                 | <b>Created By:</b> P.Jean, B.Clancy, D.Levesque, J.Myers, D.Baker, T.Morin, R.Leclerc, J.Bernier                  |

### Fencing - Barbed Wire Installation: SAFE WORK PRACTICE

| Hazards Present                                                                             |                                    | PPE or Devices Required                                                                                                      | Additional Training Required |
|---------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Pinch Points<br>Hydraulic Fluid<br>Slips, Trips, Falls<br>Overhead Wires<br>Overhead Hazard | Sharp objects<br>Cuts<br>Punctures | Steel toe boots<br>Safety glasses with side shields<br>hard hat<br>High visibility clothing,<br>Gloves<br>Long Sleeved Shirt |                              |

- Ensure equipment is in good working condition.
- Utilize appropriate tools.
- Practice good housekeeping.
- Don't work alone.
- Complete Job Hazard Assessment.
- Ensure PPE is being worn.
- Always control wire to prevent backlash.
- Ensure ladder is secured against fence or that proper training has been received to operate man lift.
- Review Code of Practice for working at heights.
- Do not over reach.

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### Fencing - Chain Link Fence: SAFE WORK PRACTICE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                          |  | PPE or Devices Required                                                                                                              | Additional Training Required |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Muscle Strains<br>Cuts<br>Underground & overhead utilities<br>Working at heights<br>Noise                                                                                                                                                                                                                                                                                                |  | Safety boots<br>Safety glasses<br>Hard hat<br>Safety vest<br>Gloves<br>Hearing protection as required<br>Fall Protection as required | Fall Protection              |
| <ul style="list-style-type: none"> <li>• Ensure equipment is in good working condition</li> <li>• Utilize appropriate tools</li> <li>• Practice good housekeeping.</li> <li>• Block chain link rolls to keep them from rolling.</li> <li>• Ensure post holes are refilled when posts are removed.</li> <li>• Use traffic control when necessary.</li> <li>• Don't work alone.</li> </ul> |  |                                                                                                                                      |                              |
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| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                           |  | Reviewed By:                                                                                                                         |                              |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                          |  | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum                    |                              |
|                                                                                                                                                                                                                                                                                                                                                                                          |  | Created By:                                                                                                                          |                              |

## Fencing - Chain Link Fence Installation: SAFE JOB PROCEDURE

| Hazards Present                                                                                      |  | PPE or Devices Required                                                                                                                                                                  | Additional Training Required |
|------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries,<br>Underground utilities<br>Slips, trips and falls<br>Cuts<br>Eye injuries |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard hat<br>Sun Screen<br>Hearing Protection as required<br>Harness / Lanyard as required<br>Aerial Lift Platform as required | Fall Protection<br>Manlift   |

### Step 1-Survey Property Lines

Make sure that the fence does not exceed property lines. Most fence installers recommend that all posts be set approximately 4" inside the property line. This will help avoid encroaching on adjoining property with concrete footings. This is easily done by stretching a string along the property line and setting the posts 4" inside.

**Step 2-Locate and Set Terminal Posts** (corner, end, and gate posts are called terminal posts) Distance between gate posts is determined by adding the actual width of the gate plus an allowance for hinges and latches. Usually walk gates require 3 3/4" for hinges and latches and double drive gates require 5 1/2". Next, dig the holes.

Terminal posts should be set 2" higher than the height of the fence fabric and line posts 2" lower than the height of the fence fabric (terminal posts should be 4" higher than the line posts). Set the terminal posts in concrete using a concrete mix. You can use 1-part cement, 2 parts sand, and 4 parts gravel. There is also pre-mix cement. Use a level to make sure the posts are straight. Posts should be centered in the hole. Crown posts footings so the water will drain away from the posts.

### Step 3-Locate and Set Line Posts

After the concrete around the terminal posts have hardened, stretch a string tight between the terminal posts. The string should be 4" below the top of the terminal posts. Line posts should not be spaced more than 10 feet apart. For example, if the length between two terminal posts is 30 feet, then line posts would be spaced 10 feet apart.

Dig the post holes and set the line posts. Before concrete begins to set, adjust post height by moving post up or down. Top of the line posts should be even with the string. Check with level to make sure posts are straight.

### Step 4-Apply Fittings to Terminal Posts

Check material list and fittings chart above. After all posts have been installed and the concrete footings have hardened, slip the tension and brace bands onto the terminal posts. The long flat surface of the tension band should face towards the outside of the fence. Take care not to spread or distort the fittings. Now apply terminal post caps.

### Step 5-Apply Top Rail

Attach loop caps to line posts. Insert one length of top rail pipe through the eye-top closest to one of the terminal post. Slide a rail end onto the end of the top rail and attach it to a terminal post by using the brace band (if using swedge top rail, do not insert the swedged end into the rail end). Secure the rail end to the brace band with a carriage bolt. Continue by attaching top rails together. If swedged top rail is not used, you'll connect the rail ends together by using top rail sleeve. Upon reaching the other terminal post, measure carefully and cut the top rail to fit tightly into the rail end. Secure rail end to the terminal post with brace band and carriage bolt.

### Step 6-Hang Chain Link Fabric

Unroll the chain link fabric on the ground along the fence line. Slide tension bar through the last link on the chain link fabric. Stand the fabric up and lay it against the posts. Fasten the tension bar (that you just inserted) to the terminal post with

tension bands (already on the post). Use the carriage bolts with the head to the outside of the fence. Walk along the fence and take the slack out. Loosely attach fabric to top rail with a few wire ties.

**To Connect Two Sections or Rolls of Fence Fabric Together**-Take a single strand of wire from one of the sections of fence (Sometimes it is necessary to remove a second wire on the one end in order for the two sections to mesh properly). Place the two section of fence next to each other (end on end). Join the two sections by winding (corkscrew fashion) the loose strand down through the fence. Join and tighten the knuckles at bottom and top. Now you shouldn't even be able to see where the two sections were connecting together.

**To Remove Excess Chain Link Fence Fabric**-Untie both top and bottom ends of fence. Twist the wire in a corkscrew fashion until the fence comes apart.

### Step 7-Stretch Chain Link Fabric

Fabric should already be fastened to the opposite end of the fence. Insert a tension bar (may need an extra one) approximately 3 feet inside the unattached end of the fabric. Securely fasten one end of the fence stretcher to the tension bar and the other end to the terminal post. Stretch the fabric-the correct tension should allow a slight amount of give when squeezed by hand. The top of the fabric should be located approximately 1/2" above top rail. Adjust fabric to exact length by adding or removing wire as mentioned in step 6. Insert a tension bar at the end of the fabric and connect tension bands on terminal post. Remove fence stretcher. Attach wire ties to top rail 24" apart. Attach wire ties to posts 12" apart. Tighten nuts on all brace and tension bands.

### Step 8-Hanging Gates

After the fence has been completed, install the male hinges to one of the gate posts, hanging the top hinge with pin pointing down and the bottom hinge with the pin pointing up. This will prevent the gate from being lifted off. Set gate in place, aligning top of the gate with the top of fence. Adjust and tighten hinges to allow for full swing. Install gate latch for single gates. Double gates use the same procedure but install center latching device (fork latch).

**Notes:** Post depth can be determined by local weather and soil conditions; terminal posts are normally dug 10" wide and 18" to 30" deep. Depending on the wind and soil conditions you may want to use 8' centers or eve a narrower spacing for line posts. You may want to use longer line or terminal posts depending on the wind and soil conditions in your area. If you want to add privacy slats in the future, make sure the frame work will be strong enough for additional wind load.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**  
**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Reviewed By:                                                                                                      |

### Fencing - Cement Hog Material Delivery System: SAFE WORK PRACTICE

| Hazards Present                                        |  | PPE or Devices Required                                                                   | Additional Training Required |
|--------------------------------------------------------|--|-------------------------------------------------------------------------------------------|------------------------------|
| Gas emissions<br>Wet concrete<br>Noise<br>Moving parts |  | Safety boots<br>Safety glasses<br>Hard hat<br>Safety vest<br>Gloves<br>Hearing protection |                              |

- Always know the location of nearest fire extinguisher, first aid kit, and emergency personnel phone numbers in case of emergency.
- Inspect all fasteners, bolts and welds for nicks, cracks, cuts, damage, wear or looseness before each use. Repair as needed.
- Read and understand entire manual before operating Make sure anyone operating the Machine is thoroughly familiar with its operation. Keep all unauthorized and untrained personnel, especially children, away from the unit.
- Never operate the unit with safety grate, guards or safety devices removed or open. Do not alter any safety guards.
- Do not use as a lifting device.
- Stay clear of all moving parts while the unit is in operation.
- Keep all body parts, clothing, jewelry and solid objects away from moving parts.
- Never operate the Machine under the influence of alcohol, drugs, or medications
- Ensure load capacity on lifting device is not exceeded.
- Never stand under an elevated machine.
- Never ride the machine.
- Never run machine with end cap removed.
- Operate only in properly vented environments.
- Do not smoke around the Cement Hog.
- Never perform any work on or clean the Machine while it is running. Before working on the Cement Hog, stop skid steer and disconnect the hydraulic hose to prevent accidental starting.
- Allow system to cool before performing any repairs or service, such as adding fuel or oil.

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REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                                                                                                                                     |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | <p>This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> <p><b>Created By:</b> P.Jean, B.Clancy, D.Levesque, J.Myers, D.Baker, T.Morin, R.Leclerc, J.Bernier</p> |



### Fencing - Driving Post with Hydraulic Post Driver: SAFE WORK PRACTICE

| Hazards Present                                               |                                                                                              | PPE or Devices Required                                                                                               | Additional Training Required |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property Damage | Slips, Trips, Falls<br>Environmental Spill<br>Underground & Over<br>Head Utilities & Objects | Safety glasses<br>Safety boots<br>Hard hat<br>Gloves<br>Double hearing protection<br>Respiratory protection as needed |                              |

- Refer to owner's manual for instructions.
- Locate all underground and overhead utilities.
- Have clear hand signals and communication between excavator operator and assistant.
- **Safety Checks:** Check your driver daily for loose bolts, cracks, bulges or abnormalities in welds, castings, chuck or chuck adapters, top cover plate, piston, hydraulic line, or any other part. Do not repair any parts. Immediately replace worn or defective parts with new parts. Do not run the unit with worn or defective parts.
- Before installing or removing post driver depressurize the hydraulic system.
- The machine operator should wear hearing protection; all other personnel near the area where the post driver is being used should wear hearing protection.
- Check post for abnormalities and defectives before installation.
- Do not put anything but a post into the chuck on your driver.
- Do not operate your post driver unless it is on a post to be driven. Operation of the driver without it driving on a post could damage it.
- Do not use a chuck or chuck adapter that is too large for the post being driven. If the fit is too loose it is not safe to operate the driver, damage may occur to the driver and the driver may batter the end of the post.
- Never use the post driver to lift objects.
- Never operate the post driver with the boom cylinders of the machine at the end of their stroke. By doing so may damage the machine.
- Never operate the post driver underwater or allow any part of the post driver other than half the visible length of the tool to be submerged in liquid.
- Never allow the post driver to hit the machine boom.

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| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
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| Occupational Health & Safety Act & Regulations: | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Create by: B. MacCormick, M. McCooey, P. Jean, B. Clancy                                                          |

### Fencing - Driving Post with Hydraulic Post Driver: SAFE JOB PROCEDURE

| Hazards Present                                               |                                                                                              | PPE or Devices Required                                                                                               | Additional Training Required |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property Damage | Slips, Trips, Falls<br>Environmental Spill<br>Underground & Over<br>Head Utilities & Objects | Safety glasses<br>Safety boots<br>Hard hat<br>Gloves<br>Double hearing protection<br>Respiratory protection as needed |                              |

- Refer to owner's manual for instructions.
  - Locate all underground and overhead utilities and objects.
  - Have clear hand signals and communication between excavator operator, skid steer operator and assistant.
  - Complete pre-use inspection of all equipment and tools.
1. Check locates of all underground utilities and objects. Inform crew of any existing or potential hazards.
  2. Complete FLRA before starting work.
  3. Mark fence line and placement of post with an "X"
  4. Use skid steer's post holder attachment to pick up and place post on the marked "X" along the fence line.
  5. Plumb post.
  6. Place post driver on top of post in the vertical position while being held in place with post holder and start driving post.
  7. Stop driving post after partial installation and verify plumbness.
  8. Finish driving post to required depth.
  9. Remove post driver from a top of post and release the post holder from post.
  10. Verify plumbness and adjust post by hand as required. Task completed

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| Guidance Documents / Standards                                 | Reviewed By:                                                                                                      |
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|                                                                | <b>Create by: B. MacCormick, M. McCooey, P. Jean, B. Clancy</b>                                                   |

### Fencing - Fence Hog Fabric Dispenser: SAFE WORK PRACTICE

| Hazards Present                                                                                 |  | PPE or Devices Required                                             | Additional Training Required |
|-------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------|------------------------------|
| Pinch Points<br>Hot Hydraulic Fluid<br>Slips, Trips, Falls<br>Overhead Wires<br>Overhead Hazard |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard hat |                              |

- Before operation the fence hog study entire Operator's Manual.
- The Fence Hog is a fence-dispensing device. Used outside of this scope may cause damage to equipment or could result in injury, or death.
- Make sure anyone operating the Fence Hog is thoroughly trained with its operation. Keep all unauthorized and untrained personnel, especially children, away from the Fence Hog.
- Consult lift equipment manufacturer's specifications to ensure load capacity is not exceeded.

| Model   | Empty Weight         | With 4ft. Extension |
|---------|----------------------|---------------------|
| FH08-36 | 1350 lbs. (612.9 kg) | 1775lbs. (805 kg)   |

Do not exceed Maximum Gross Weight

- Always make sure Fence Hog is securely fastened to skid steer.
- Stay clear of gate opening while machine is running. Keep all body parts, solid objects, clothing, and jewelry away from all moving parts.
- Never perform any work on the Fence Hog while it is running. Before working on the Fence Hog, stop skid steer and disconnect the hydraulic hose to prevent accidental starting.
- Avoid contact with hot hydraulic fluid. Allow system to cool before performing any repairs or service, such as adding fuel or oil.
- Never stand under an elevated Fence Hog.
- Never ride the Fence Hog.
- Never operate the Fence Hog under the influence of alcohol, drugs, or medications.
- Inspect all hoses and components for cracks, leaks, abrasions, and general wear before each use. Replace if damaged before using.
- Always wear approved PPE when operating or servicing a Fence Hog.
- Do not use the Fence Hog as a lifting device and do not load more than one roll of fence fabric or wire in the Fence Hog at a time.

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|                                                 | <b>Created By: J. Bernier D. Baker J. Myers T. Morin P. Jean</b>                                                  |

### Fencing - Razor Wire Installation: SAFE WORK PRACTICE

| Hazards Present                                                            |  | PPE or Devices Required                                                                                                                                    | Additional Training Required                   |
|----------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Cuts<br>Punctures<br>Risk of eye injury<br>Strains<br>Slips, Trips & Falls |  | Safety boots<br>Safety vest<br>Cut & puncture resistant gloves<br>Safety glasses / Face shield<br>Gloves<br>Skin protection<br>Fall protection as required | Manlift as required<br>Fall Arrest as required |

- Complete Job Hazard Assessment.
- Ensure vehicle is parked at a safe location
- Use two person lift when handling and transporting wire to worksite.
- Ensure specialty PPE is being worn face shield, cut and puncture resistant gloves and arm cuffs
- Always control wire to prevent backlash.
- Tie razor wire off every 24" using bag ties as it "s being uncoiled.
- Ensure ladder is secured against fence or that proper training has been received to operate manlift.
- Complete Northern Inc. Permit for working at heights.
- Inspect harness & lanyard for any defects before using.
- Maintain 100% tie off at all times
- Ensure man lift is in a safe even area for operation
- Do not over reach.

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### Fencing - Rhino Pneumatic Post Driver: SAFE WORK PRACTICE

| Hazards Present                                                                       |                                                     | PPE or Devices Required                                                                                  | Additional Training Required |
|---------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Bodily Injury<br>Property Damage<br>Slips, Trips & Falls | Underground & over head utilities<br>Compressed Air | Safety boots<br>Safety vest<br>Anti-vibration gloves<br>Safety glasses<br>Hard hat<br>Hearing protection |                              |

- Refer to owner's manual for instructions.
- Locate all underground and overhead utilities.
- **Safety Checks:** Check your driver daily for loose bolts, cracks, bulges or abnormalities in welds, castings, chuck or chuck adapters, top cover plate, piston, airline, or any other part. Do not repair any parts. Immediately replace worn or defective parts with new parts. Do not run the unit with worn or defective parts.
- Check post for abnormalities and defectives before installation.
- Do not put anything but a post into the chuck on your driver.
- Do not operate your post driver unless it is on a post to be driven. Operation of the driver without it driving on a post could damage it.
- You must oil your post driver while it is operating.
- You must have an adequate supply of clean air at the proper pressure 90 PSI.
- Blow out air lines before coupling them to your post driver. This precaution will help remove any dirt that may have entered an open hose. **CAUTION:** Do not turn on pressurized air through an unsecured airline; the air line could whip around causing serious injury.
- Check your regulator and lubricator. Make sure the regulator is set at no more than 90 PSI (6.4 kg/cm<sup>2</sup>). the lubricator filled with the proper weight oil.
- Do not use a chuck or chuck adapter that is too large for the post being driven. If the fit is too loose it is not safe to operate the driver, damage may occur to the driver and the driver may batter the end of the post.
- Never tape, wire, etc., the throttle valve lever open.

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### Fire Prevention - Fire Extinguishers: SAFE WORK PRACTICE

| Hazards Present                                 |  | PPE or Devices Required                                   | Additional Training Required |
|-------------------------------------------------|--|-----------------------------------------------------------|------------------------------|
| Burns<br>Fire<br>Explosions<br>Smoke inhalation |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat |                              |

Always keep fire extinguishers visible and easy to get at. Fire extinguishers have to be properly maintained to do the job. Where temperature is a factor, ensure that care is taken in selecting the right extinguisher.

**Recommended Extinguishers;** Water from a hose, pump type water can, or pressurized extinguisher, and soda acid extinguishers.

**Fighting the Fire; P.A.S.S** Pull pin, aim at the base of the fire, Squeeze handle, Sweep back and forth the fire till out. Soak the fire completely-even the smoking embers.

#### Type of Fires

Class A: Class A fires are fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics

Class B: Class B fires are fires in flammable liquids, combustible liquids, petroleum grease, tars, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gases.

Class C: Class C fires are fires that involve energize electrical equipment.

Class D: Class D fires are fires in combustible metals, such as magnesium, titanium, zirconium, sodium, lithium and potassium.

Class K: Class K fires are fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats)

**Recommended Extinguishers;** ABC unit, dry chemical, foam and carbon dioxide extinguishers.

**Fighting the Fire;** Start at the base of the fire and use a sweeping motion from the left to right, always keeping the fire in front of you.

**Recommended Extinguishers;** Carbon dioxide and dry chemicals (ABC units) extinguishers.

**Fighting the Fire;** Use short bursts on the fire. When the electrical current is shut off on a Class C fire, it can become a Class A fire if the materials around the electrical fire are ignited.

**Recommended Extinguishers** Certain metals such as magnesium and sodium requires a Class D dry powder extinguisher. A class A, B, or C type extinguishers are not adequate on fires of this type.

Have each fire extinguisher inspected once a year and proper maintained by certified person.

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### Fire Prevention - Fire Extinguisher: SAFE JOB PROCEDURE

| Hazards Present                                 |  | PPE or Devices Required                                   | Additional Training Required |
|-------------------------------------------------|--|-----------------------------------------------------------|------------------------------|
| Burns<br>Fire<br>Explosions<br>Smoke inhalation |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat |                              |

#### TYPES OF FIRES AND EXTINGUISHERS

A portable fire extinguisher is a “first aid” device and is very effective when used while the fire is small. The use of fire extinguisher that matches the class of fire, by a person who is well trained, can save both lives and property. Portable fire extinguishers must be installed in workplaces regardless of other firefighting measures. The successful performance of a fire extinguisher in a fire situation largely depends on its proper selection, inspection, maintenance, and distribution.

#### There are four different types of fires:

**Type A:** Ordinary combustibles such as wood, cloth, paper, rubber and many plastics

**Type B:** Flammable liquids, such as gasoline, oil, grease, tar, oil-based paint, lacquer, and flammable gas.

**Type C:** Energized electrical equipment, including wiring, fuse boxes, circuit breakers, machinery and appliances.

**Type D:** Combustible metals such as magnesium and potassium (**uncommon**)

Most of the fire extinguishers at Northern Inc. are classified as ABC which can be used on the three common types of fires. Note that most extinguishers are limited and most small extinguishers will discharge their contents with 8-15 seconds. For information on how to use a fire extinguisher please read the following and see the safety class descriptions for hands-on fire extinguisher training.

#### All Employees Should Know

Where the fire alarm boxes are in your area. They should be well marked and easy to access. Where the exit routes are in your area. The lighted exit signs will help guide you in heavy smoke or if the lights are out, but you should know the layout of the area where the extinguishers are located. The extinguishers must be mounted in a designated location, well marked and easy to access, the procedures to follow in the event of a fire. What steps to follow, where to go and how to use a fire extinguisher if needed.

#### Procedures for Fire Emergency

Immediately pull the handle on the nearest fire box and/or call police at 911. If the fire is small, heavy smoke is not present and you have an exit available to you for evacuation purposes, you can use the nearest appropriate extinguisher following the P-A-S-S procedure. Otherwise, leave the area by the nearest exit. Do not use an elevator; use the stairs to change floors. If you are disabled and not able to exit the building, go to the nearest safe area and wait for rescue. If the fire is large or the area is filled with heavy smoke (just as deadly as the fire), pull the handle on the nearest fire box, evacuate the building and call 911 from safe area.

### Fire Extinguisher Use

#### Remember the P-A-S-S

Although extinguishers can vary in size, color and type of extinguishing agent, all devices operate basically the same way. If the fire is small and heavy smoke is not present and have an exit available to you for evacuation purposes, grab the nearest appropriate extinguisher and operate following the P-A-S-S procedure:

**P-Pull** the pin located in the extinguisher’s handle.

**A-Aim** the nozzle, horn or hose at the base of the fire.

**S-Squeeze** or press the handle.

**S-Sweep** from side to side at the base of the fire until it is out.

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### Fire Prevention - Fire on the Work Site: SAFE JOB PROCEDURE

| Hazards Present                                                                                                    |  | PPE or Devices Required                                                                                                                | Additional Training Required |
|--------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Inhalation of smoke<br>Inhalation of chemicals/toxins<br>Inhalation of carbon monoxide<br>Burns<br>Property damage |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Grade 1 Safety boots<br>Respiratory protection as required<br>Fire Extinguisher |                              |

1. Clear the area of any unauthorized personnel
2. Determine the size of the fire:
  - Small – attempt to extinguish small fires only if no back up support and you are knowledgeable in fire fighting
  - Large: Fire Department should be called to put out large fire
3. Notify Supervisor
4. Remove one or more of the four elements of fire (oxygen, fuel, heat and chemical chain reaction) to extinguish
5. Determine class of fire so proper extinguisher is selected:
  - Class A – occur in combustible materials (paper, wood, straw, cloth)
  - Class B – occur over the surface of flammable liquids (gasoline, oil, grease)
  - Class C – occur in energized electrical equipment
  - Class D – occur in certain combustible metals such as magnesium, titanium, potassium or sodium.
6. Remember PASS when using a fire extinguisher
  - **P**ull the pin
  - **A**im the extinguisher
  - **S**queeze the trigger
  - **S**weep at the base of the flames
7. If attempt successful, all procedures may be ended. If NOT successful, provide the following information:
  - Exact location of fire
  - Type of fire
  - Whether medical assistance is required.

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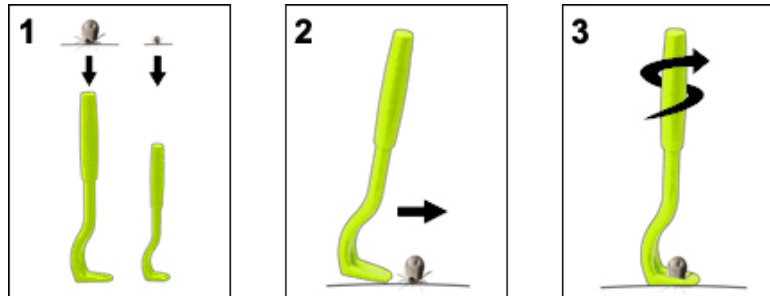
### First Aid - Proper Tick Removal: SAFE JOB PROCEDURE

| Hazards Present           |  | PPE or Devices Required | Additional Training Required |
|---------------------------|--|-------------------------|------------------------------|
| Lyme disease<br>Infection |  | Safety glasses<br>Glove |                              |

If you discover you've been bit, it is important to remove the tick properly:

- Use the tick removal tool located in your first aid kit.

How to Use Tick Twister to Remove a Tick:



1. Select the correct sized tool according to the size of the tick - the large hook for medium and large ticks or the small hook for small and very small ticks.
2. Hold the handle between your thumb and index finger and slide the fork end of the tool toward the tick until it is caught between the prongs.
3. Lift the tool very lightly and rotate in either direction several (2-3) turns. You will feel when the tick has released its mouth-parts and it is safe to pull up on the tick and Tick Twister.
4. Disinfect bite site and the removal tool (with alcohol).
5. Place disinfected removal tool back in package for re-use.
6. Wash hands with soap and water.
  - Contact your doctor if you've been bitten or (suspect).
  - If a bull's eye-shaped rash appears, make sure to take a dated photo.
  - Try to collect the specimen. Put it into a small bag or pill container with a wet piece of paper towel to keep it alive or from drying up. Take it into the nearest public health office, fill out a form and let them send it for identification and testing. Ensure the results come back to you and your physician.
  - If a tick removal tool is not available and you must with fingers to remove a tick, use a leaf or tissue to avoid contact with infected tick fluids.
  - Do not prick, crush or burn the attached tick as it may release infected fluids or tissue.

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|                                                                | <b>Created by: L. Michaud, B. Clancy, T. Vallillée, M. Webb, M. Ouellette, T. Martin</b>                          |

### Fueling - Fueling: SAFE WORK PRACTICE

| Hazards Present                                      |  | PPE or Devices Required                                                                   | Additional Training Required |
|------------------------------------------------------|--|-------------------------------------------------------------------------------------------|------------------------------|
| Fire<br>Explosions<br>Burns<br>Spills<br>Environment |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Fire Extinguisher<br>Spill Kit |                              |

- Turn off all ignition sources and extinguish cigarettes.
- Familiarize yourself with the MSDS of fuel.
- Wear proper PPE.
- No smoking allowed near refueling stations.
- When filling Jerry Cans make sure they are grounded, not filled in truck bed.
- Load and unload in authorized areas only.
- Have a spill kit at the refueling site.
- Have a safety plan in place in case of emergency

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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|                                                 | Created By:                                                                                                       |

### Fueling - Fueling: SAFE JOB PROCEDURE

| Hazards Present                                      |  | PPE or Devices Required                                                                  | Additional Training Required |
|------------------------------------------------------|--|------------------------------------------------------------------------------------------|------------------------------|
| Fire<br>Explosions<br>Burns<br>Spills<br>Environment |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard Hat<br>Fire Extinguisher |                              |

#### Ensure:

1. A fire extinguisher is nearby
2. The appropriate MSDS is available and read
3. The fuelling area is well ventilated
4. Equipment/vehicles are shut off
5. No smoking or open flames in fuelling area
6. Spillage is avoided
7. Cellular phones are shut off
8. Portable containers are not filled in plastic lined truck beds. Set them on the ground before filling
9. Caps/covers are replaced on all fuel tanks and containers
10. Conductive fuel containers (metal) are bonded and grounded
11. Portable fuel containers do not sit in full sunlight on hot days
12. The person fuelling stays alert and remain in control of filling operations
13. Fuelling operations should not be carried out near waterways or open sewers

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### Fueling - Handling Diesel Fuel: SAFE JOB PROCEDURE

| Hazards Present           | PPE or Devices Required                                                | Additional Training Required                                  |
|---------------------------|------------------------------------------------------------------------|---------------------------------------------------------------|
| Toxic vapors<br>Flammable | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Fire Extinguisher Training<br>WHMIS<br>First Aid<br>Spill Kit |

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

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### Fueling - Handling Gasoline: SAFE JOB PROCEDURE

| Hazards Present           | PPE or Devices Required                                                | Additional Training Required                     |
|---------------------------|------------------------------------------------------------------------|--------------------------------------------------|
| Toxic Vapors<br>Flammable | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Fire Extinguisher Training<br>WHMIS<br>First Aid |

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

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### Fueling - Refueling Trucks and Equipment: SAFE JOB PROCEDURE

| Hazards Present                                              |  | PPE or Devices Required                  | Additional Training Required |
|--------------------------------------------------------------|--|------------------------------------------|------------------------------|
| Fire/Explosion<br>Skin exposure<br>Inhalation of toxic fumes |  | Safety boots<br>Gloves<br>Safety Glasses |                              |

1. Park vehicle parallel to the fuel pump. Position the vehicle to have its fuel tank opposite the pump.
2. Apply brakes.
3. If operating a gas engine, shut engine off before starting the fuel pump.
4. When using the card lock system, follow the instruction on the screen.
5. Make sure the pump meter is returned to zero before pumping.
6. Place the nozzle of the hose in the fuel tank of the vehicle, start the pump, fill the tank by depressing the lever on the nozzle. Do not overfill the tank or use any device to hold the nozzle open while fueling.
7. When the fuel tank is filled, shut off the pump and place the nozzle back on the mount.
8. Record the fuel used on your time card or get the print out from the card lock system. Turn this information in at the end of the day.
9. Any spills are to be contained immediately. Use oil dry on any small spills. Absorbent pads are to be used on larger spills. All spills are to be reported to the office.
10. Fuel spilled on hands or exposed skin shall be washed off immediately.

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### General - Dust Control: SAFE WORK PRACTICE

| Hazards Present                                                                        | PPE or Devices Required                                                                                 | Additional Training Required |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------|
| Extreme dust<br>Excessive inhalation<br>Eye & respiratory irritation<br>Low visibility | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves<br>Respiratory protection as needed |                              |

Particles are "inorganic" or "organic," depending on the source of the dust. Inorganic dusts can come from grinding metals or minerals such as silica, asbestos, and coal.

| Inorganic Dust   | Type of Disease     | Lung Reaction |
|------------------|---------------------|---------------|
| Asbestos         | Asbestosis          | Fibrosis      |
| Silica (Quartz)  | Silicosis           | Fibrosis      |
| Coal             | Coal Pneumoconiosis | Fibrosis      |
| Beryllium        | Beryllium Disease   | Fibrosis      |
| Tungsten Carbide | Hard Metal Disease  | Fibrosis      |
| Iron             | Siderosis           | No Fibrosis   |
| Tin              | Stannosis           | No Fibrosis   |
| Barium           | Baritosis           | No Fibrosis   |

- Use of wet processes
- Enclosure of dust-producing processes under negative air pressure (slight vacuum compared to the air pressure outside the enclosure)
- Exhausting air containing dust through a collection system before emission to the atmosphere
- Use of vacuums instead of brooms
- Good housekeeping practices
- Efficient storage and transport
- Controlled disposal of dangerous waste

Use of personal protective equipment may be vital, but used as a last resort of protection.

#### Protection from silica Dust

##### What is Silica?

Silica is the basic component of sand and rock. The best known and most abundant type of crystalline silica is quartz. Some common silica-containing materials include:

- Concrete, concrete block, cement, and mortar;
- Masonry, tiles, brick, and refractory brick;
- Granite, sand, fill dirt, and top soil;
- Asphalt-containing rock or stone;
- Abrasive used for blasting.
- Silica is so common that any workplace activity that creates dust can expose workers to airborne silica.

##### Are you exposed to Silica Dust?

If you do any of the following activities, you are at risk of breathing silica dust:

Chipping, sawing, grinding, hammering, or drilling of rock, concrete, or masonry structures;

Crushing, loading, hauling, or dumping of rock;

Many building demolition processes;

Power cutting or dressing stone;

Facade renovation, including tuck-point work;

Abrasive or hydro blasting of concrete;

Clean-up activities such as dry sweeping or pressurized air blowing of concrete or sand dust;

Tunneling, excavation, or earth moving of soils with high silica content.

##### What is Silicosis?



Silicosis is a disease caused by the prolonged breathing of crystalline silica dust. Fine particles deposited in the lungs cause thickening and scarring of the lung tissue. Crystalline silica exposure has also been linked to lung cancer.

A worker may develop any of the following three types of silicosis, depending on the concentrations of silica dust and the duration of exposure:

**Chronic silicosis** - develops after 10 or more years of exposure to crystalline silica at relatively low concentrations;

**Accelerated silicosis** - develops 5 to 10 years after initial exposure to crystalline silica at high concentrations.

**Acute silicosis** - symptoms develop anywhere from a few weeks to 4-5 years after exposure to very high concentrations of crystalline silica. Initially, workers with silicosis may have no symptoms. However, as the disease progresses a worker may experience:

- Shortness of breath
- Severe cough
- Weakness

These symptoms can worsen over time and lead to death.

#### **What Can Supervisors and Managers do to Protect Workers from Silica Dust?**

- Change the material - Substitute crushed glass, olivine, or other material for silica sand in abrasive blasting.
- Change the process - Design buildings with pre-built recesses for plumbing, gas, and electric wiring so there is less need to cut or drill masonry and concrete.
- Provide engineering controls - Use local exhaust ventilation or water spray systems to reduce dust levels. Use barriers to restrict access by unprotected workers.
- Provide appropriate personal protective equipment (PPE) such as respirators and protective clothing.
- Train workers on the dangers of silica exposure, and how to use dust controls and PPE.
- Develop and implement an exposure plan for silica. An effective plan must include purpose and responsibilities, risk assessment, controls, education, training, written safe work procedures, washing or decontamination facilities, health monitoring, and documentation.

#### **How Can Workers Protect Themselves?**

If you are a worker exposed to silica dust, you can do the following:

- Learn about the control methods that can protect you;
- Ask your supervisor how you will be protected when performing dusty work;
- Follow safe work procedures, and use respiratory protection;
- Talk to your family doctor, who may recommend medical monitoring.
- The occupational exposure limit is 0.025 milligrams per cubic metre (mg/m<sup>3</sup>), which is the maximum amount of crystalline silica to which workers may be exposed during an eight-hour work shift. Crystalline silica is also classified as a human carcinogen, and exposures must be kept as low as reasonably achievable.
- Exposure control plans are also required by the Occupational Health and Safety Regulation. An effective plan provides a detailed approach to protecting workers from harmful exposure to crystalline silica dust, including health hazard information, engineering controls, safe work procedures, worker training, and record keeping. Employers can use the sample exposure control plans (see the link below) as templates to develop their own plans, and add specific details regarding safe work practices for their operations. It is important to follow all the points outlined in the sample plans, or use equally effective measures.

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### General - Dust Control: SAFE JOB PROCEDURE

| Hazards Present                                              | PPE or Devices Required                                                              | Additional Training Required |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------|
| Low visibility<br>Crashing<br>Eye and respiratory irritation | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing |                              |

Employee must wear proper PPE.

The foreman must give all proper instructions to the truck operator how to control dust by spreading water on the road construction site.

1. The truck operator is to complete a daily walk around before starting.
2. Start the truck.
3. Have to fuel up the truck and also the water pump with appropriate fuel for each piece of equipment.
4. Check if water valve is closed on the truck's water tank, if taking water from a water-way, hook-up the suction and discharge hose to the pump, start the water pump and refill the water tank until full. Then stop the water pump and put back the suction and discharge hose at their proper place.
5. When taking water from the municipal's hydrants, connect the discharge hose from the hydrant to the water tank and open up the hydrant's valve until tank is full, then shut the hydrant's valve and disconnect discharge hose and put it back at its proper place.
6. On dusty road construction site, put on the headlights and 360 degree flashing amber lights on the truck, open-up the water valve and start spreading water and cover the dusty road area.
7. When finished, close the valve on the water tank, check the water level in the tank, if it needs to be refilled, if so, refill it and be ready to do the same process again when dust starts showing up again.
8. Leave the tanker truck parked at a proper place for public and employee safety, and shut down the lights and stop the motor of the truck.

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### General - Use of Emergency/Maintenance Crossover: SAFE WORK PRACTICE

| Hazards Present |  | PPE or Devices Required         | Additional Training Required |
|-----------------|--|---------------------------------|------------------------------|
| Vehicle mishap  |  | 360 degree flashing amber light |                              |

- All employees using these crossovers must be trained by supervisors
- Ensure warning devices are functioning properly
- When approaching a median crossover activate the right turn signal and exit to the right shoulder. Bring the vehicle to a complete stop and allow all traffic to pass.
- Deactivate the right turn signal, activate warning lights (360 degrees amber roof lights etc.) and verify all traffic has passed (look over shoulder and in all mirrors).
- Activate left turn signal, verifying a second time that all traffic has passed and proceed without stopping into the median crossover.
- Come to a complete stop near the end of the crossover prior to re-entering the main lanes. Verify there is no approaching traffic from either direction before proceeding across the main lanes to the right shoulder (both directions must be checked because, although unlikely, there could be a potential hazard or pedestrian moving against the flow of traffic).
- Activate the right turn signal and remain on the right shoulder of the highway until you have verified that all traffic has passed.  
Accelerate the vehicle in the right shoulder of the highway, activate the left turn signal and check over shoulder and all mirrors for approaching traffic. Once it is safe to do so, merge into the driving lane and deactivate the left turn signal and warning lights.
- Always use interchanges whenever possible and practical.

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### General - Working Around Heavy Equipment: SAFE WORK PRACTICE

| Hazards Present                                                             |                                                                 | PPE or Devices Required                                                                               | Additional Training Required |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------|
| Fire<br>Burns<br>Slips, Trips & Falls<br>Bodily Injuries<br>Property Damage | Repetitive movement<br>Muscle strain<br>Electric shock<br>Noise | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves<br>Hearing protection as required |                              |

- Before starting work, ensure that you are aware of all mobile equipment operating in and around the site.
- Wear high visibility apparel when working with or near mobile equipment.
- Always locate underground utilities lines before digging and locate all overhead utilities before work starts on site. Contact with utilities can cause serious incidents and property damage.
- When working near heavy equipment always allow space for equipment failure or operator error.
- If you must work close to operating equipment, keep the operator informed of your location.
- Be alert at all times and don't be distracted.
- Keep in eye contact with the operator when working near moving machinery or equipment.
- Beware of blind spots, always use signaller when needed. If you cannot see the eyes of the operator, he cannot see you.
- Never get under a raised blade, bucket, truck body, auger drill or other suspended load unless it is properly blocked.
- Never assume you have the right of way.
- Report or correct any unsafe conditions immediately.
- Never get on or off equipment while it is moving.
- Never ride on equipment that is not made for passengers.
- Always walk around excavated mounds of dirt.
- Never cross directly behind any piece of mobile equipment.
- Do not take shortcuts across areas where mobile equipment is working.
- Wear hearing protection when working in close proximity to loud equipment.
- Cell phone use should be limited around heavy equipment, if you must use your phone move away from the work area. Be aware that it can distract your attention from hearing or seeing mobile equipment as it moves around the site.
- Working safely in and around mobile equipment is a **shared** responsibility between both the operator and workers on the ground.

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### General - Working Around Water: SAFE WORK PRACTICE

| Hazards Present                                                                                                             |  | PPE or Devices Required                                                                                   | Additional Training Required |
|-----------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------|------------------------------|
| Drowning<br>Immersion Hypothermia<br>Heat and Cold Injuries<br>Lighting Strike<br>Slips, Trips & Falls<br>Slippery Surfaces |  | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves<br>Approved Personal Flotation Device |                              |

#### Complete Job Hazard Assessment to identify and mitigate all hazards:

- Discuss hazards & exposures water presents
- Discuss PPE when working around water
- Discuss controls in place
- Discuss the rescue plan and procedures
- Ensure trip hazards are removed
- Walk through the work area with employees before starting any tasks on site

#### Make sure the following safety equipment is in the immediate work area:

- Emergency Phone with emergency number posting
- Lifeline or rope
- Life buoy
- Boat hook
- Transport Canada approved personal flotation device (PFD) that enables unconscious victim to maintain head above water
- First Aid Kit
- Water for hydration
- An adequate motor boat to ensure a safe and timely rescue, if appropriate

#### When Working Around Water:

- Ensure fall protection is used when required
- Where a work place is a wharf, dock, pier, quay or other similar structure, a ladder that extends at least two rungs below water level shall be affixed to the face of the structure every 60 m along its length.
- Be aware of soft shoulders on edge of the water and slipping or falling into the water.
- Docks are slippery when wet. Walk with care and do not participate in horseplay.
- Do not work around water during a thunder storm.
- Do not put any part of your body between you and the dock when helping dock a boat. If operators are coming in too fast, let the boat take the damage.

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### General - Working in the Sun: SAFE WORK PRACTICE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | PPE or Devices Required                                                                                           | Additional Training Required |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Heat stroke<br>Dehydration<br>Sun burn<br>General fatigue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Sunscreen<br>Gloves<br>Grade 1 safety boots<br>Safety glasses with UV protection<br>Hard Hat                      |                              |
| <ul style="list-style-type: none"> <li>Keep track of UV warnings</li> <li>Wear long sleeved loose-fitting clothing to ensure no exposed skin</li> <li>Apply sunscreen with a minimum SPF 15, liberally to all exposed skin at least 15 minutes before sun exposure (General rule of thumb, reapply sunscreen at a 1:1 ratio SPF 30, reapply every 30 minutes etc.)</li> <li>Wear proper sunglasses that allow less than 1% UVB radiation</li> <li>Drink plenty of water (not alcohol)</li> <li>Ensure that If a sun burn occurs, that it is covered as to not get burned further</li> <li>Seek shelter from the sun if and when possible</li> </ul> |  |                                                                                                                   |                              |
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### General - Working on Hills and Slopes: SAFE WORK PRACTICE

| Hazards Present                                                                             |  | PPE or Devices Required                                                                                | Additional Training Required |
|---------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips & Falls<br>Faulty Equipment<br>Working at heights<br>Falling / rolling objects |  | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves<br>Fall Arrest equipment as needed | Fall Protection              |

- Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements and training.
- Complete Hazard assessment
- Ensure you are acquainted with ERP.
- Ensure warning signs/devices are in place.
- Ensure you are familiar with restraining devices and rigging.
- Ensure you are familiar with the use of anchors, bridals and winches.
- Be familiar with anchoring of pipe/equipment.
- Ensure you are in view of operator at all times.
- Ensure you wear appropriate PPE (including high visibility vests).
- Ensure wheel chocks are utilized.
- Be aware of rolling boulders or loose rocks.

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### Guide Rail - Auger Trucks: SAFE WORK PRACTICE

| Hazards Present                                                           |                                             | PPE or Devices Required                                                                                | Additional Training Required |
|---------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips, Falls<br>Crushing<br>Dust<br>Noise<br>Underground Utilities | Pinch Points<br>Traffic<br>Faulty Equipment | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Hearing protection |                              |

- Have all underground utilities and obstructions marked and identified.
- When traveling with the auger truck, make sure all attachments are secured properly
- Always sound horn and use a backing guide when backing the auger.
- Do not travel with an auger bit attached to the drill shank. This practice can result in destruction of the drill shank inner seals.
- Do not allow personnel to stand near the auger when boring holes.
- Do not exceed the capacity of the auger when pulling or setting poles.
- Do not try to remove any objects from the auger when the auger is running.
- When boring into material of unknown consistency, run the unit at low speed.
- Always protect personnel from open holes by placing caution tape and covers around and over the holes and illuminate the area with lighting at night.
- Maintain safe working distance from overhead power lines.
- Only enter a line closure once traffic control is in place.

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### Guide Rail - Auger Trucks: SAFE JOB PROCEDURE

| Hazards Present                                                           |                                             | PPE or Devices Required                                                                                | Additional Training Required |
|---------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips, Falls<br>Crushing<br>Dust<br>Noise<br>Underground Utilities | Pinch Points<br>Traffic<br>Faulty Equipment | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Hard Hat<br>Gloves<br>Hearing protection | Operator Training            |

By outlining and following safe operating procedures we learn to prevent injury and safeguard ourselves and our co-workers against a job-related injury or death.

- Secure all equipment involved to ensure that it cannot be accidentally started or moved.
- Keep children away from the elevator, whether it's stored or in use. Elevators are not intended as slides or seesaws, and children should never be allowed to climb on them.
- Replace any worn or broken parts. Check equipment prior to use and periodically as recommended by the supervisor or operator's manual.
- Never wear loose clothing or jewelry when working around elevators or augers.
- Use extreme care when transporting portable elevators and augers. Always transport the auger in the lowered position with the safety locking device in place.
- Travel at safe speeds for the road conditions and equipment you are moving.
- Use a flag to mark the end of the elevator and follow local traffic regulations concerning the use of lights and reflectors when transporting elevators on public roads.
- If the auger is in the raised position, watch for overhead power lines. If possible, lower auger to increase its stability before moving.
- Do not operate the machine without the guards or covers in place.
- Never allow the height adjustment crank to be released and spin freely. Do not try to stop a spinning crank.
- At no time will the driller operate the drill controls and add stem while alone, unless the drill rig is mechanically designed to operate as a single person operation. The drill helper must always be present whenever the drill is in the operating mode.
- At no time will the driller try to operate the drill beyond the capabilities of the drilling rig.
- A driller shall always remember that power lines can appear in both remote and populated areas. Therefore, a careful visual check must be taken at all times when the mast is raised or, when the rig is moved with the mast up.
- Repairs or service must not be attempted while rotary machinery is running.
- Before drilling check for buried cable or buried pipeline signs.
- Pressure must be completely released before breaking any line or connection. Check the gauges.
- When drilling on an auger type drill or a Heli-portable drill, only the person drilling shall handle the slip.
- For safety consideration, drill units with rotary controls that will automatically return to the neutral position are preferable to "constant-on" controls.

19. Hands and feet must be kept clear of the rotating drill stem.
20. When using a pipe wrench, extreme caution must be exercised at all times.
21. The wrench handle must be secured before moving the drill.
22. Extreme caution must be used when drilling in summer operations to ensure that the exhaust system is protected from underlying grasses which could become a fire hazard.

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REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                                 | Reviewed By:                                                                                                             |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b> | <p>This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> |
|                                                                | <b>Reviewed By:</b>                                                                                                      |

### Guide Rail - Core Drill: SAFE WORK PRACTICE

| Hazards Present                                          |                                                                  | PPE or Devices Required                                                                     | Additional Training Required |
|----------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------|
| Failure of tool<br>Jamming<br>Muscle Strain<br>Vibration | Dust<br>Flying debris<br>Slips trips and falls<br>Electric shock | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest<br>Hearing protection<br>Respirator |                              |

- Identify hazards and risks associated with handling, loading, moving, using and storing air drilling equipment.
- Load, unload, move, handle, use and equipment and all associated tools, sampling devices and connecting equipment according to workplace procedures.
- Set up and stabilize rod racks as required.
- Take necessary safety precautions when handling equipment.
- Inspect drill bits, threads and other down-hole equipment for wear or damage.
- Observe housekeeping and site safety measures while supporting operations.
- Use pipe/casing handling equipment according to manufacturer's recommendations and the organizations procedures.
- Clean and service sampling equipment as required.
- Perform inspections and routine checks on equipment such as water tank and adaptor.
- Observe occupational health and safety procedures in carrying out equipment maintenance.
- Adopt an ergonomic position to prevent injuries.
- Watch for rebar that will make the drill jam and kick, so have a firm grip on the tool and pay attention at all times.

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## Guide Rail - Core Drill: SAFE JOB PROCEDURE

| Hazards Present                                          |                                                                  | PPE or Devices Required                                                                     | Additional Training Required |
|----------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------|
| Failure of tool<br>Jamming<br>Muscle Strain<br>Vibration | Dust<br>Flying debris<br>Slips trips and falls<br>Electric shock | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest<br>Hearing protection<br>Respirator |                              |

### Core Drilling

The purpose of this operating procedure is to provide guidelines for safe conduct of drilling operations with truck-mounted and other engine-powered drill rigs. The procedure addresses off road movement of drill rigs, overhead and buried utilities, use of augers, rotary and core drilling, and other drilling operations and activities.

### Application

The guidelines apply to projects in which truck-mounted or other engine powered drill rigs are used. Normally for drill rigs operated by contractors, drill rig safety is the responsibility of the contractor.

### Responsibility and Authority

Drill rig safety and maintenance is the responsibility of the drill rig operator.

### Safety Guidelines

#### Movement of Drill Rigs

Before moving a rig, the operator must do the following:

1. As practical, inspect the planned route of travel for depressions, gullies, ruts, and other obstacles.
2. Check the brakes of the truck/carrier, especially if the terrain along the route of travel is rough or sloped.
3. Discharge all passengers before moving on rough or steep terrain.
  - a. Engage the front axle (4 x 4, 6 x 6, etc. vehicles) before traversing rough or steep terrain. Driving drill rigs along the sides of hills or embankments should be avoided, however, if side hill travel becomes necessary, the operator must conservatively evaluate the ability of the rig to remain upright while on the hill or embankment and take appropriate steps to ensure its stability. Logs, ditches, road curbs, and other long and horizontal obstacles should be normally approached and driven over squarely, not at an angle. When close lateral or overhead clearance is encountered, the driver of the rig should be guided by another person on the ground.
4. Loads on the drill rig and truck must be properly stored while the truck is moving, and the mast must be in the fully lowered position. After the rig has been positioned to begin drilling, all brakes and/or locks must be set
  - a. Before drilling begins. If the rig is positioned on a steep grade and leveling of the ground is impossible or impractical, the wheel of the transport vehicle should be blocked and other means of preventing the rig from moving or tipping over should be employed.

### Buried and Overhead Utilities

The location of overhead and buried utility lines must be determined before drilling begins, and their locations should be noted on boring plans or assignment sheets. When overhead power lines are close, the drill rig mast should not be raised unless the distance between the rig and the nearest power line is at least 6m, or other distance as required by local ordinances, whichever is greater. The drill rig operator or assistant should walk completely around the rig to make sure that proper distance exists. When the drill rig is positioned near an overhead line, the rig operator should be aware that hoist lines and power lines can be moved towards each other by wind. Presence of power lines requires special safety provisions as they present serious danger.

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|                                                 | Created By:                                                                                                       |

### Guide Rail - Guide Rail Installation: SAFE WORK PRACTICE

| Hazards Present                                                                                                |                                                                                | PPE or Devices Required                                                                   | Additional Training Required |
|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------|
| Traffic<br>Faulty equipment<br>Underground &<br>Overhead utilities<br>Heavy equipment<br>Controlled substances | Crushing<br>Pinch points<br>Muscle strain<br>Noise<br>Musculoskeletal injuries | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat<br>Hearing protection<br>Gloves |                              |

- Check to ensure equipment is in good working condition.
- Make sure SDS sheets for products are onsite.
- Guide rail sections shall be installed to produce a smooth continuous rail, paralleling the line and grade of the finished highway surface.
- Salvaged guide rail shall not be intermixed or alternated with new guide rail in the same installation. (NBDTI Standards)
- Guide rail sections shall be lapped in direction of the traffic.
- Cut surfaces of all wood products shall be treated with an approved preservative (Pentox)
- Offset blocks and delineators shall be installed on the guide rail.
- The color of the delineator shall be consistent with the color of the adjacent Pavement line markings.
- Use traffic control when required

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### Guide Rail - Guard Rail Installation Basic: SAFE JOB PROCEDURE

| Hazards Present                                                                                             |                                                                                | PPE or Devices Required                                                                                          | Additional Training Required |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------|
| Traffic<br>Faulty equipment<br>Underground & Overhead utilities<br>Heavy equipment<br>Controlled substances | Crushing<br>Pinch points<br>Muscle strain<br>Noise<br>Musculoskeletal injuries | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat<br>Hearing protection<br>Gloves<br>Sun (UV) Protection |                              |

After locating area to place guardrail, follow all DTI specifications

1. Mark holes at 12'6" center if that is the specification with paint on ground
2. Mark lines (X's) for auger operator to auger holes
3. After holes dug with auger, put wood posts in holes backfilling and compacting dirt
4. Lift posts as per specified spacing & leveling, post done at this time
5. Auger truck returns to start of line and pound post to grade
6. Installation of rail is started
7. Lay out nuts, bolts & post bolts
8. Lift one end of rail and install pin
9. Spacer blocks as required
10. Lift all rail and install post pins
11. Install splice bolts
12. Adjust rail (in/out or up/down) tighten post bolts
13. Tighten rail with impact guns
14. Install tails or E-GERT systems or buried ends as per spec.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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### Guide Rail - Removal of Guiderail: SAFE JOB PROCEDURE

| Hazards Present                                                                                                       |      | PPE or Devices Required                                                                                                                                                       | Additional Training Required |
|-----------------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Crush points<br>Blind spots<br>Uneven or slippery terrain<br>Cuts<br>Noise<br>Manual lifting<br>Slips trips and falls | Fire | Hard hat<br>Safety glasses<br>Hearing Protection<br>Gloves<br>High Visibility Safety vest<br>Grade 1 Safety boots<br>Face Shield (when required)<br>Fire prevention equipment | Hot Work Permit              |

1. Complete Job FLRA for task
2. Review Safe Work Practice for Removing Guiderails
3. Ensure Proper PPE is being worn
4. Review signals with operator and vehicle driver
5. Make sure mirrors are adjusted properly
6. Make sure working area is free from other persons or obstructions
7. Remove Splicer Bolts. Watch for pinch points and sharp edges
8. Remove Post Pins
9. Do not force Guiderail wait for proper Machinery to remove safely
10. Be aware of traffic in the area
11. Stay clear of swing area of machinery until you have given the signal to the operator and have made eye contact
12. Do not enter swing area until operator removes hands from control panel
13. When post is removed, and all is clear fill post hole with dirt.

### REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

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|                                                 | Reviewed By:                                                                                                      |



### Guide Rail - Wire Rope Guardrail Installation: SAFE JOB PROCEDURE

| Hazards Present                                                           |                                 | PPE or Devices Required                                                                                              | Additional Training Required |
|---------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Cuts<br>Eye injuries<br>Underground utilities | Noise<br>Slips, trips and falls | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing<br>Gloves<br>Hearing protection |                              |

After locating designed area for guard rail placement.

Follow all DTI specifications.

1. Complete hazard assessments and tool box meeting.
2. Traffic control to be completed before any work can begin.
3. Mark lines at a distance of 2.4 meters or what is required from DTI with paint on the ground.
4. Using a GPS to measure for the anchor blocks two per each side of the guardrail.
5. Mark the location with paint on the ground for excavators to dig
6. Mark lines for the holes with an (X) for auger operator to drill holes.
7. After holes are dug with the auger adjust the depth of the holes by adding or removing material from the holes to 37inches using a level with the grade of the roadway.
8. Compact the bottom of the holes with a hand tamper and place a sleeve in each hole.
9. Once the sleeve is in the hole, level and put to grade.
10. Once the anchor block holes have been dug place concrete anchor blocks in and level.
11. Backfill all hole's sleeves and anchor blocks with concrete.
12. Pin all posts to all sleeves with bolt and cotter pin.
13. Run wire rope from inner anchor block thru all posts to the inner anchor block on the other side.
14. Repeat last step now for the outer anchor block.
15. Set tension to specification giving by DTI.
16. Galvanized wire is pushed through the hole under were the cables rest and wrapped around the cable holding it in place on the post.
17. Inspect site and perform housekeeping

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### Housekeeping: SAFE WORK PRACTICE

| Hazards Present                                                                                             |                           | PPE or Devices Required                                             | Additional Training Required |
|-------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------|------------------------------|
| Slips Trips, Falls<br>Load shifting<br>Personnel around lifting<br>Faulty equipment<br>Overhead obstruction | Use of improper equipment | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Gloves<br>Hard Hat |                              |

- Wear proper safety equipment for task at hand.
- Be aware of potential hazards before work begins
- Work places shall be kept free of materials, scrap and debris to eliminate tripping and slipping hazards.
- Be aware of normal walkways used by workers and pay special attention to them
- The supervisor shall assign duties to keep up with scrap removal.
- Scrap bins shall be constructed of metal or non-flammable materials.
- Bins designed for waste saturated with oil, grease, turpentine or other flammables
- Trash or scrap accumulation on working surfaces indicates the need for a container.
- Supervisors shall arrange scrap clean up on a regular basis at least once a day.
- Materials and supplies should be safely and neatly stored out of the way of ongoing work.

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### Housekeeping: SAFE JOB PROCEDURE

| Hazards Present                              |  | PPE or Devices Required                                                                   | Additional Training Required |
|----------------------------------------------|--|-------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips, Falls<br>Cleaners and solvents |  | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Gloves<br>Hard Hat<br>Hearing protection |                              |

#### The Purpose of Workplace Housekeeping

Poor housekeeping can be a cause of accidents, such as:

1. Tripping over loose objects on floors, stairs and platforms
2. Being hit by falling objects
3. Slipping on greasy, wet or dirty surfaces
4. Striking against projecting, poorly stacked items or misplaced material
5. Cutting, puncturing, or tearing the skin of hands or other parts of the body on projecting nails, wire or steel strapping.

To avoid these hazards, a workplace must “maintain” order throughout a workday. Although this effort requires a great deal of management and planning, the benefits are many.

#### Some Benefits of Good Housekeeping Practices

Effective housekeeping results in:

1. Reduced handling to ease the flow of materials
2. Fewer tripping and slipping accidents in clutter free and spill free work areas
3. Decreased fire hazards
4. Lower worker exposures to hazardous substances
5. Better control of tools and materials
6. More efficient equipment cleanup and maintenance
7. Better hygienic conditions leading to improved health
8. More effective use of space
9. Reduced property damage by improving preventive maintenance
10. Less janitorial work
11. Improved morale

#### Good Housekeeping Program

A good housekeeping program plans and manages the orderly storage and movement of materials from point of entry to exit. It includes a material flow plan to ensure minimal handling. The plan also ensures that work areas are not used as storage areas by having workers move materials to and from work areas as needed. Part of the plan could include investing in extra bins and more frequent disposal.

The costs of this investment could be offset by the elimination of repeated handling of the same material and more effective use of the worker’s time. Often, ineffective or insufficient storage planning results in materials being handled and stored in hazardous ways. Knowing the plant layout and the movement of materials throughout the workplace can help plan work procedures.

Worker training is an essential part of any good housekeeping program. Workers need to know how to work safely with the products they use. They also need to know how to protect other workers such as by posting signs (e.g. “wet-slippery floor”) and reporting any unusual conditions.

Housekeeping order is “maintained” not “achieved”. This means removing the inevitable messes that occur from time to time and not waiting until the end of the shift to reorganize and clean up. Integrating housekeeping into jobs can help ensure this is done. A good housekeeping program identifies and assigns responsibilities for the following:

1. Clean up during the shift
2. Day to day cleanup
3. Waste disposal
4. Removal of unused materials
5. Inspection to ensure cleanup is complete

Do not forget out of the way places such as shelves, basements, sheds, and boiler rooms that would otherwise be overlooked. The orderly arrangement of operations, tools, equipment and supplies is an important part of a good housekeeping program. The final addition to any housekeeping program is inspection. It is the only way to check for deficiencies in the program so that change can be made. The documents on workplace inspection checklists provide a general guide and examples of checklists for inspecting offices and manufacturing facilities.

### **The Elements of an Effective Housekeeping Program**

#### **Dust and Dirt Removal**

In some jobs, enclosures and exhaust ventilation systems may fail to collect dust, dirt and chips adequately. Vacuum cleaners are suitable for removing light dust and dirt. Industrial models have special fittings for cleaning walls, ceilings, ledges, machinery, and other hard to reach places where dust and dirt may accumulate.

Dampening floors or using sweeping compounds before sweeping reduces the amount of airborne dust. The dust and grime that collect in places like shelves, piping, conduits, light fixtures, reflectors, windows, cupboards, and lockers may require manual cleaning. Special purpose vacuums are useful for removing hazardous substances. For example, vacuum cleaners fitted with HEPA (high efficiency particulate air) filters may be used to capture fine particles of asbestos or fiberglass. Compressed air should not be used for removing dust, dirt or chips from equipment or work surfaces.

#### **Employee Facilities**

Employee facilities need to be adequate, clean and well maintained. Lockers are necessary for storing employees’ personal belongings. Washroom facilities require cleaning once or more each shift. They also need to have a good supply of soap, towels plus disinfectants, if needed.

If workers are using hazardous materials, employee facilities should provide special precautions such as showers, washing facilities and change rooms. Some facilities may require two locker rooms with showers between. Using such double locker rooms allows workers to shower off

workplace contaminants and prevents them from contaminating their “street clothes” by keeping their work clothes separated from the clothing that they wear home.

Smoking, eating or drinking in the work area should be prohibited where toxic materials are handled. The eating area should be separate from the work area and should be cleaned properly each shift.

## **Surfaces**

Floors: Poor floor conditions are a leading cause of accidents so cleaning up spilled oil and other liquids at once is important. Allowing chips, shavings and dust to accumulate can also cause accidents. Trapping chips, shavings and dust before they reach the floor or cleaning them up regularly can prevent their accumulation. Areas that cannot be cleaned continuously, such as entrance ways, should have anti-slip flooring. Keeping floors in good order also means replacing any worn, ripped, or damaged flooring that poses a tripping hazard.

Walls: Light-colored walls reflect light while dirty or dark colored walls absorb light. Contrasting colors warn of physical hazards and mark obstructions such as pillars. Paint can highlight railings, guards and other safety equipment, but should never be used as a substitute for guarding. The program should outline the regulations and standards for colors.

## **Maintain Light Fixtures**

Dirty light fixtures reduce essential light levels. Clean light fixtures can improve lighting efficiency significantly.

## **Aisles and Stairways**

Aisles should be wide enough to accommodate people and vehicles comfortably and safely. Aisle space allows for the movement of people, products and materials. Warning signs and mirrors can improve sight lines in blind corners. Arranging aisles properly encourages people to use them so that they do not take shortcuts through hazardous areas. Keeping aisles and stairways clear is important. They should not be used for temporary “overflow” or “bottleneck” storage. Stairways and aisles also require adequate lighting.

## **Spill Control**

The best way to control spills is to stop them before they happen. Regularly cleaning and maintaining machines and equipment is one way. Another is to use drip pans and guards where possible spills might occur. When spills do occur, it is important to clean them up immediately. Absorbent materials are useful for wiping up greasy, oily or other liquid spills. Used absorbents must be disposed of properly and safely.

## **Tools and Equipment**

Tool housekeeping is very important, whether in the tool room, on the rack, in the yard, or on the bench. Tools require suitable fixtures with marked locations to provide orderly arrangement, both in the tool room and near the work bench. Returning them promptly after use reduces the change of being misplaced or lost. Workers should regularly inspect, clean and repair all tools and take any damaged or worn tools out of service.

## **Maintenance**

The maintenance of buildings and equipment may be the most important element of good housekeeping. Maintenance involves keeping buildings, equipment and machinery in safe, efficient working order and in good repair. This includes maintaining sanitary facilities and regularly painting and cleaning walls. Broken windows, damaged doors, defective plumbing and broken floor surfaces can make a workplace look neglected; these conditions can cause accidents and affect work practices. So, it is important to replace or fix broken or damaged items as quickly as possible. A good maintenance program provides for the inspection, maintenance, upkeep and repair of tools, equipment, machines and processes.

## **Waste Disposal**

The regular collection, grading and sorting of scrap contribute to good housekeeping practices. It also makes it possible to separate materials that can be recycled from those going to waste disposal facilities.

Allowing material to build up on the floor wastes time and energy since additional time is required for cleaning it up. Placing scrap containers near where the waste is produced encourages orderly waste disposal and makes collection easier. All waste receptacles should be clearly labeled (e.g. recyclable glass, plastic, scrap metal, etc.)

**Storage**

Good organization of stored materials is essential for overcoming material storage problems whether on a temporary or permanent basis. There will also be fewer strain injuries if the amount of handling is reduced, especially if less manual materials handling is required. The location of the stockpiles should not interfere with work but they should still be readily available when required. Stored materials should allow at least one meter (or about three feet) of clear space under sprinkler heads.

Stacking cartons and drums on a firm foundation and cross tying them, where necessary, reduces the chance of their movement. Stored materials should not obstruct aisles, stairs, exits, fire equipment, emergency eyewash fountains, emergency showers, or first aid stations. All storage areas should be clearly marked.

Flammable, combustible, toxic and other hazardous materials should be stored in approved containers in designated areas that are appropriate for the different hazards that they pose. Storage of materials should meet all requirements specified in the fire codes and the regulations of environmental and occupational health and safety agencies in your jurisdiction.

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### Hydrovac Operation: SAFE WORK PRACTICE

| Hazards Present                                                                                     |                                                                                                                   | PPE or Devices Required                                                                                                                            | Additional Training Required |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips & Falls<br>Airborne Particles<br>Muscle Strain/Repetitive Motion<br>Noise<br>Machinery | Risk of eye injury<br>Risk of injury from falling objects<br>Exposure to toxins<br>Flammable/combustible material | Safety Boots<br>Safety Glasses / Face shield<br>Safety Vest<br>Gloves<br>Hard Hat<br>Skin protection<br>Hearing protection<br>Respirator equipment |                              |

- Complete job hazard assessment and share results with crew.
- Determine if the soil the hydrovac is working in is contaminated by hazardous substances or not.
- Do not stand near the edge of an excavation.
- Keep all unnecessary personnel and equipment out of the area the hydrovac is working in.
- Designate wand operator and remote operator.
- With wand start cutting ground in small section, always keeping wand moving.
- Use vacuum hose to suck out excess water and mud being broken away.
- Pay constant attention to what is being exposed.
- Additional care must be taken when locating and exposing fiberglass lines.
- If damaged electrical wires become exposed, stop immediately and assess the hazards.
- Ensure that wand end is clear of debris and mud at job completion.
- Clean off vacuum hose.

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### Ladders: SAFE WORK PRACTICE

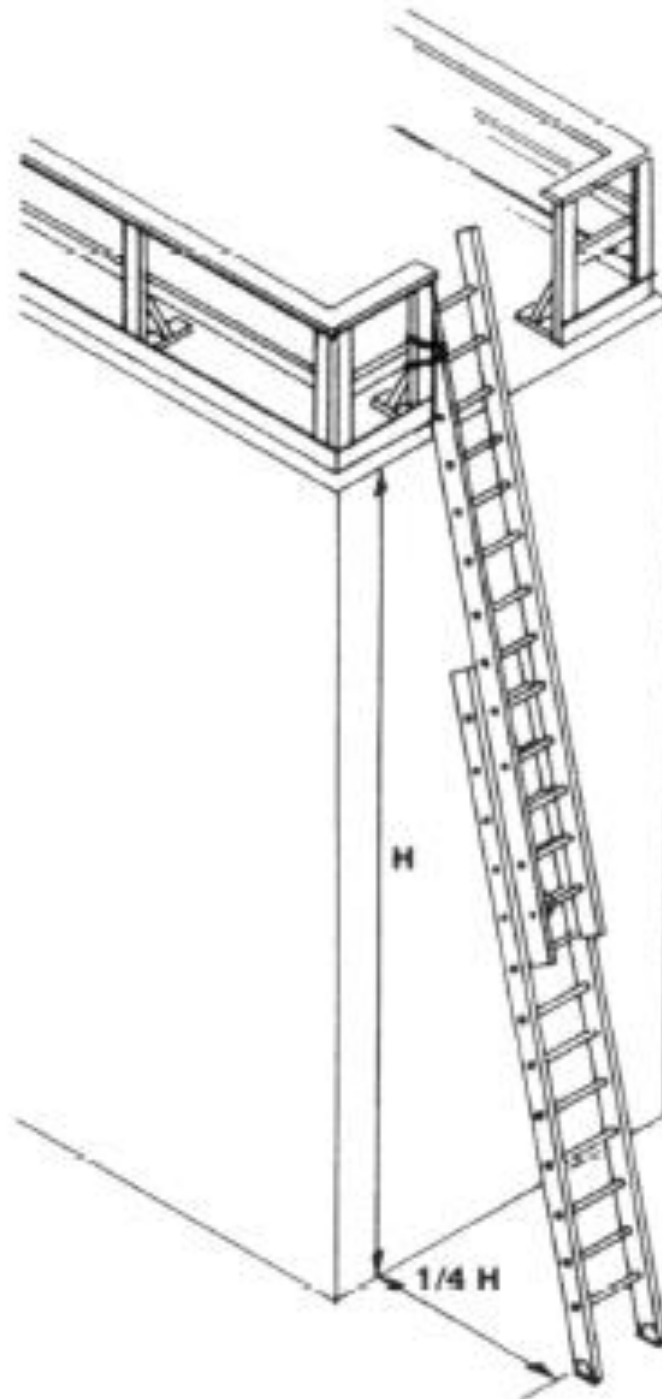
| Hazards Present                                                                                                                         |                                                                                                                  | PPE or Devices Required                                             | Additional Training Required |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Falls from ladders<br>Ladders falling<br>Struck by falling ladders<br>Struck by materials falling from ladders<br>Tripping over ladders | Lifting heavy ladders<br>Striking persons or objects while carrying ladders<br>Contact with electrical equipment | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves |                              |

- Every person who uses a portable ladder shall be responsible to adhere to this safe work practice.
- All portable ladders must be inspected by the user prior to use. Inspection shall include the following:
  - **All Ladders**
    - Visual inspection of overall condition (cracks, dents, etc.)
    - Sturdiness
    - CSA Certification
    - Side Rails
    - Safety Feet
    - Clean and free of grease
  - **Step Ladders**
    - Head Tray
    - Braces
    - Steps
    - Spreader Arms
    - Pail Shelf
  - **Extension Ladders**
    - Slide guides
    - End caps
    - Fly rope
    - Gravity locks
    - Rungs
    - Have no more than 3 sections
    - Have locks that securely hold the sections of the ladder in an extended position
    - Must maintain overlaps as follows:
      - 11m or less, overlap shall be 1m
      - Greater than 11m and is 15m or less, the overlap shall be 1.25m
      - Greater than 15m and is 22m or less, the overlap shall be 1.5m.
- Any ladder found to not meet the above standards is to be removed from service immediately
- **Use**
  - Check the work area for electrical equipment or other hazards.
  - Ensure that the equipment has been de-energized safe, or there is no possibility of contact between the ladder and the electrical equipment.
  - Check for structures overhead; avoid hitting hard hat when climbing.
  - Face the ladder and maintain 3-point contact while climbing or descending.
  - Use the ladder only as it was designed to be used.
  - Ensure you have the correct ladder for your task, including weight rating.



- When standing on a ladder, stand in the center between the side rails.
- Secure the ladder against movement.
- Ensure that the side rails extend at least 1m above any platform or landing to which the ladder is a means of access.
- (Step ladder) Ensure that the legs are securely held in position by means of metal braces or an equivalent rigid support.
- Get help when moving long ladders.
- Inspect footwear prior to using ladder as soiled footwear could cause slippage.
- Tape off area below.
- Only one person at a time on the ladder.
- Hoist materials, do not carry them up.
- Follow the 4 to 1 rule which means One foot back for each four feet up. **See Figure I.**
- **Employees Must Not:**
- Splice ladders together.
- Place ladder in front of or against a door unless the door is blocked in the open position, locked or guarded.
- Stand on the material shelf, the top or top step of a portable step ladder.
- Use a ladder as scaffold flooring or as support for scaffold flooring.
- Work from the top three rungs of a portable single or extension ladder.
- Reach so that your belt buckle goes beyond the side rails of the ladder.
- Place the ladder on or against an unstable surface.

**Figure 1**  
**A properly raised ladder**



- Ladder Safety Matrix: Safe Use of Portable Ladders

- QUESTIONS TO ASK:

- Is any heavy lift of materials involved? —————> YES = Use alternate access

↓  
▪ NO

- Is a chance of contacting hazardous energy? —————> YES = Use alternate access

↓  
▪ NO

- Will ladder create traffic hazard for others? —————> YES = Use alternate access

↓  
▪ NO

- Is a safe tie off available to secure ladder? —————> NO = Use alternate access

- Does the ladder extend a minimum of 3' above the point of support?

- Is there an anchor point to tie off your safety harness? (100% tie off is required if your feet exceed 10' above ground)

↓  
▪ YES

- Is ladder in safe condition? —————> NO = DO NOT USE

↓  
▪ YES

- Is grading for ladder footing safe? —————> NO = Use alternate access or level footing

↓  
▪ YES —————> USE LADDER FOR JOB ACCESS

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By:                                                                                                       |

### Ladders: SAFE JOB PROCEDURE

| Hazards Present                            |  | PPE or Devices Required                                   | Additional Training Required |
|--------------------------------------------|--|-----------------------------------------------------------|------------------------------|
| Falls<br>Electrocution<br>Faulty equipment |  | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Hard Hat |                              |

#### Proper Ladder Use

- The ladder should be long enough for the job and should project at least three (3) feet (90cm) above the level of the point of support.
- Wooden ladders should not be painted, since this may hide serious defects that may develop. A wood preservative or clear finish should be used to protect the ladder.
- Use a straight ladder, not a stepladder if the work task required that you need to reach a height in excess of twenty (20) feet.
- Place the ladder on a solid, firm, flat surface. The feet of extension or stepladders should be level.
- A board may be necessary to ensure that it's level or to prevent it from sinking into soft ground.
- Keep the area around the base of the ladder uncluttered.
- When you use a stepladder, make certain that it's fully open and that its spreader is locked securely.
- Both railings of the top section of a straight ladder must be resting on a firm support.
- Ladders should be firmly secured or "tied-off" at the top before anyone works with power equipment from the ladder.
- Use the "4 to 1" rule with straight ladders. This simply means that the ladder should be placed (1) foot away from the base for every four (4) feet in height to the place where the top of the ladder rests.
- Always make sure that a ladder is not placed in front of a door that opens toward the ladder unless the door is blocked, locked or guarded.
- When using a ladder for access to high places, always securely "tie-off" the ladder to prevent it from slipping.
- Do not place a ladder close to, or against pipes containing acid, chemicals, sprinkling systems etc.
- Obtain assistance when handling a heavy or long ladder.
- When a ladder is used to climb onto a platform or roof make certain that it extends at least three feet above the platform or roof edge contact point.
- Never stand on the top two (2) rungs of ladders and never stand on the top step or platform of a ladder.
- Never place a ladder against an unstable surface.
- Make sure that the locking device is fully secured on extension ladders before using them.
- Unless a ladder is designed for additional weight, only one (1) person should be on the ladder.
- Go up and down a ladder facing the ladder, taking only one (1) step at a time. Hold the side rails with both hands when climbing up or down a ladder. Do not hold on to the rungs when going up or down a ladder.
- Never climb a ladder "one-handed" while carrying something in the other hand. Use a hand line to raise or lower large objects, tools etc.
- Keep your body centered between the rails of the ladder and never over-reach when working on ladders.
- Before using a ladder always check your shoe soles and ladder rungs (or steps) to ensure that they are free of any slippery material (grease, oil, paint, snow, ice etc.)
- Do not attempt to reach too high as you may lose your balance.
- Do not use stepladders or straight ladders horizontally for platforms or scaffolds.
- Transport ladders with the feet to the rear and the top of the ladder higher than anyone in front of you.
- Wet wood ladders conduct electricity and should not be used when working on, with or around electrical equipment or electrical power sources.
- Never "walk" a stepladder while standing on it.
- Never use makeshift items such as a chair, barrel or box, etc., as a substitute ladder.
- Never place a ladder against a window pane or sash. Fasten a board (do not use nails) across the top of the ladder to give a bearing surface at each side of the window.

31. Never slide down the side rails of ladders.
32. Never use ladders during strong winds or storms except in emergencies, and then only, when they are securely “tied-off”

#### **Ladder Maintenance**

1. Ladders should be inspected once every three (3) months and a record of said inspections should be kept on file for future reference.
2. Untreated wooden ladders should be stored in dry areas to prevent moisture or water absorption. When transported on a vehicle, ladders should be properly secured and supported.
3. Ladders constructed from fiberglass should be cleaned and sprayed lightly with a clear or pigmented lacquer or paste wax once every three (3) months.
4. Check all ladder hardware, nuts, bolts, spreaders, etc. for tightness and good repair.
5. Examine and replace worn or frayed ropes or extension ladders.
6. Do not attempt to straighten, or allow to remain in use, a bent or bowed ladder.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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|                                                 | Created By:                                                                                                       |

### Ladders - Portable Ladders: SAFE WORK PRACTICE

| Hazards Present                                                                           |                      | PPE or Devices Required                                                                    | Additional Training Required |
|-------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------|------------------------------|
| Electrocution<br>Muscle Strain<br>Slips, Trips & Falls<br>Improperly maintained equipment | Working from heights | Safety boots<br>(Safety vest<br>Safety glasses<br>Hard hat as required by task undertaken) |                              |

- Make sure all legislation laws are followed.
- Before the using any ladder, make sure that it is in good condition and is the right ladder for the job. Check maximum weight designation
- 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 foot (1') horizontal to every four feet (4') vertical.
- Before using a ladder, make sure it is secured against movement at base, against kick out and the top lateral movement.
- When in position, a portable ladder should protrude three feet (3') above the intended landing point.
- Workers shall not work from the top three rungs of a ladder.
- Don't overreach while on a ladder-maintain centre of gravity. It is easier and safer to climb down and move the ladder over a few feet to a new position.
- Always face the ladder and use the three-point contact.
- Keep metal ladders away from electrical sources.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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### Lockout Tag Out: SAFE WORK PRACTICE

| Hazards Present                                                         |                                                                                    | PPE or Devices Required                                                                    | Additional Training Required |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------|
| Unintended release of hazardous energy<br>unintended start up or motion | Property Damage<br>Bodily Injury<br>Stored energies<br>Struck by<br>Electric shock | Safety boots<br>Safety vest<br>Safety Glasses<br>Hard Hat<br>Locks & Tags<br>Scissor Clasp | Lockout Tag Out              |

- Follow Northern Inc. Code of Practice for lockout/Tagout
- Ensure lockout Tagout is performed according to the specific instructions for this particular piece of equipment or machinery (located in vehicle)
- Use proper PPE
- Keep Spill kit on hand.
- Be aware of Emergency Response plans.
- Have lock out tags in all pieces of equipment and use them if there is a potential hazard if operated.

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### Lockout/Tag Out: SAFE JOB PROCEDURE

| Hazards Present                                                         |                                                                                    | PPE or Devices Required                                                                    | Additional Training Required |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------|
| Unintended release of hazardous energy<br>unintended start up or motion | Property Damage<br>Bodily Injury<br>Stored energies<br>Struck by<br>Electric shock | Safety boots<br>Safety vest<br>Safety Glasses<br>Hard Hat<br>Locks & Tags<br>Scissor Clasp | Lockout Tag Out              |

#### Identifying Hazardous Energy

Hazardous energy can be found in the workplace in different forms. The most common form of energy is electrical, but mechanical, hydraulic, pneumatic, chemical, and thermal energy can also be dangerous. Energy can also mean movement or the possibility of movement.

#### There are two types of energy.

**Kinetic Energy** is the force caused by the motion of an object. A spinning wheel is an example of kinetic energy. Bar screens or clarifiers can also hold kinetic energy.

**Potential Energy** is the force stored in an object that is not moving. A spring under tension is an example of potential energy. Garbage compactors and gravel crushers are also examples. Potential energy can also be the potential energy from suspended parts or springs.

Whenever any part of the body is exposed to these types of energy while servicing or maintain equipment, lockout/tag out procedures must be followed.

#### What is Lockout/Tag Out?

To keep equipment from being energized during repairs or maintenance, it can often be locked out. An energy isolating device (the disconnect switch or valve) is placed in the off position. A lock, either combination or key, is then placed over the energy isolating device. This lock remains over the energy source until servicing or maintenance is completed.

A piece of machinery is tagged out when the machine is turned off and a tag with a written warning is attached to the disconnect switch, circuit breaker or valve or other energy isolating device. The purpose of the tag is to assure that the equipment will not be operated until the tag has been removed. Tags used with the lock also identify the employee who is servicing the equipment.

Note: Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

#### Lockout/ Tag Out is Needed as Follows:

Lockout/Tag Out is required in general industry employment where servicing and maintenance of machines and equipment could cause injury to employees due to unexpected start up or release of stored energy. Such situations could occur when repairing electrical circuits, cleaning or oiling machinery with moving parts, or clearing jammed mechanisms.

Some examples of machine maintenance requiring lockout/tag out are listed below:

1. The employee must either remove or bypass machine guards or other safety devices, resulting in exposure to hazards at the "point of operation". (The point of operation is an area on a machine or piece of equipment where work is actually done upon the material being processed).
2. The employee is required to place any part of his or her body in contact with the point of operation of the operational machine or piece of equipment.



3. The employee is required to place any part of his or her body into an area on the machine where it could be caught by moving parts.

### **Requirements**

Employers to establish a lockout/tag out program that will:

1. Use energy control procedures, employee training and periodic inspection to ensure that machines or processes cannot be started while an employee is repairing, servicing or maintaining it.
2. Ensure that new or overhauled equipment be designed to accept lockout devices

Lockout is often bypassed because it is difficult and takes too much time when there may be pressure to get a piece of equipment back on line. To avoid the temptation to bypass lockout procedures, lockout should be as easy and as fast as possible. We require that conveniently located lockout points must be designed and installed into machinery and equipment, whenever replacement or major repair, renovation or modification of a machine is performed.

1. Use a tag out program when locks cannot be used. The tag out program must provide employees with a level of safety equal to that obtained by using a lockout program, note: tag out is not as effective as lockout, because tags can be bypassed. Allow tags to be used instead of locks in some cases
2. Established procedures for release of the lockout/tag out that includes machine inspection, notification and safe positioning of workers and removal of the lockout/tag out device
3. Obtain locks, tags, chains, wedges, key blocks, adapter pins or self-locking fasteners that identify the employee using them. Locks and tags must be able to withstand the environment to which they are exposed for any extended period. For example, tags used outside should have a plastic covering.

### **Tagout vs. Lockout**

We prefer the use of locks instead of tags when controlling hazardous energy because locks provide a physical restraint. They cannot be removed without a key. The key is in the possession of the employee working on the machine.

Tags are not as effective because they can be removed or ignored by someone who is not aware that the machine is being repaired.

Tags may only be used in two situations:

1. When locks cannot be used
2. When the employer can demonstrate that a Tagout system will provide full employee protection. Full employee protection is a strict set of procedures that the employer must follow to ensure that employees are provided with the same level of safety as using lockout procedures.

These may include: removing a valve handle, blocking a controlling switch or other measures that will reduce the potential for any accidental energization while tags are attached.

### **Tagout Program**

When the Tagout program is used, it is essential that employees be trained in the limitations of the tags. For example:

1. Tags are only warning devices. They do not provide the physical restraints that the locks do.
2. Tags can provide a false sense of security and their meaning may not be understood if all affected employees have not been properly trained.
3. It is easier to bypass or ignore a tag or remove it without authorization.
4. Tags may not be effective unless they are legible and understandable by all authorized and affected employees, and all other employees who may work in the area.
5. Tags can fall off or be knocked off unless they are securely attached.

## **Lockout Tagout Equipment**

1. Lockout and Tagout devices must be durable and substantial so that can withstand the environment. Wet conditions or chemicals (such as acids) used in the vicinity must not destroy the tags or make them unable to be read. They must be attached so that they cannot accidentally fall off or be easily removed. Simple cardboard tags attached by string or wire are not permitted. Tags used outside should be in plastic covers.
2. Both lockout and Tagout devices must be standardized according to their color, shape or size. Tagout devices must also be standardized according to print and format. This means that only the employer's devices can be used for lockout/Tagout.
3. Locks and tags should be identifiable. They must show the identity of the employee who applied the device.
4. Tags must also warn against hazardous conditions with messages that read "do not start, do not open, do not close, do not energize, or do not operate".

## **Applying Lockout/Tagout**

1. In preparation for lockout/Tagout, the employee and supervisor should agree on the equipment being taken out of operation and type and amount of the energy which needs to be controlled. All employees who will be affected by the lockout/Tagout should be notified and advised of the reason.
2. The machine or equipment must be shut down in the normal fashion (pushing the "stop" button, closing a valve, throwing a switch, etc.) to avoid any additional hazards to employees.
3. The authorized employees who will service the equipment should locate and identify all energy isolating devices. Locking out one source of power to a piece of equipment may not be enough. Some machines use a combination of power supplies. If the main power source has been turned off, then so should the backup generator.
4. Locks should be attached to each energy-isolating device in a way that will hold the device in a "safe" or "off" position. Tags must be put in the same location a lock would be placed. Only the locks and tags supplied by the employer are to be used. Every employee in the work crew must attach his or her personal lock. More than one employee can lock out a single energy isolating device by using a multiple lock hasp.
5. If tags are used instead of locks, attach them at the same point as you would a lock, or as close as possible where they will be immediately obvious to anyone attempting to operate the device. Remember, the tags must be filled out completely and correctly.

Steps must be taken to guard against energy left in the equipment after it has been isolated from its energy sources. For example, the authorized employees must make sure that all parts have stopped moving, tension in springs have been released, piping systems have been drained, valves have been closed, and lines have been blocked.

1. Use a lockout device if your lock cannot be placed directly on the energy control. A lockout device is a device that physically keeps the machine from being turned on, operating or releasing energy.

When this device is used, each employee in the work crew must attach his or her personal lock. Lockouts are designed to hold many padlocks. This provides additional protection for the entire service team since the controls cannot be operated until each member of the team has removed his/her lock. Keys for the locks should remain with and be used only by the employees working on the job.

1. Before starting work on locked out equipment, authorized employees must know that the equipment has been de-energized by showing that the main disconnect switch or circuit breaker can't be moved to the on position, by pushing buttons or other normal operating controls and/or by other tests to make sure that the equipment will not operate.
2. Before the last lock or tag is removed, the employee should check to ensure that all tools have been removed from the work area, the system is completely assembled
3. As each employee completes his or her repairs, they should each remove their own lock or tag
4. All employees are clear of the hazard, all employees who work in the area are notified the lockout/Tagout is being removed
5. The supervisor should then be advised that the equipment is ready to be put back in service

**Periodic Inspections**

Periodic inspections of the energy control procedures must be performed annually by an authorized employee. The inspections must review lockout and Tagout procedures and correct any deficiencies found.

**Training**

As important as a lockout/Tagout program is, it can only be effective if employees are aware of the program and trained properly.

Three types of employees are covered by the standard: authorized, affected, and other. The amount and type of training that employees receive depends on their job in relation to the machine that is being locked out or tagged out.

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### Lockout/Tagout - Mobile Equipment Lockout: SAFE JOB PROCEDURE

| Hazards Present                                            |  | PPE or Devices Required                                         | Additional Training Required |
|------------------------------------------------------------|--|-----------------------------------------------------------------|------------------------------|
| Electrocution<br>Pinch points<br>Unexpected energy release |  | Safety glasses<br>Gloves<br>Safety vest<br>Grade 1 Safety boots | Lockout Tag Out              |

1. Inspect the piece of mobile equipment needing repair to determine what repair is required
2. Turn the machine ignition off and remove key, if machine has a push start button remove the battery ground cable
3. Close and lock console if it has a cover and place the key in your pocket
4. If more than one person is working on the equipment, both people must place a lock out on the machine
5. Use chocks to ensure equipment doesn't move
6. Repair the equipment
7. After repair, unlock the cover and replace the key
8. If you require the machine running to test the repair, stand clear of any hazardous locations. Do not approach any moving part while machine is running.

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### Lockout/Tagout - Mobile Equipment: SAFE WORK PRACTICE

| Hazards Present                                                       |                                                  | PPE or Devices Required                                             | Additional Training Required |
|-----------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Electrical Shock<br>Burns<br>Fire<br>Bodily Injury<br>Property Damage | Rollover<br>Muscle strain<br>Slip, Trips & Falls | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Gloves<br>Hard Hat |                              |

- Refer to owner's manual for instructions.
- Complete daily inspection checklist. Ensure all alarms are working properly (air pressure in tires if equipped with rubber tires, test brakes and controls). Defective equipment should not be operated. Follow Northern Inc. Code of Practice for Lockout-Tag out procedures.
- No employee is to operate any mobile equipment without being trained to operate that equipment.
- All operators of mobile equipment are to wear seat belts.
- Beware of blind spots, always use signaller when needed.
- Always maintain the required distance between equipment and electrical power lines.
- Be alert at all times and don't be distracted. If attention must be turned elsewhere, stop the machine.
- Before starting engines, make sure no one is working on or near the mobile equipment.
- Never get on or off a moving machine.
- Equipment operators shall inspect their work areas for hidden holes, obstacles, drop offs etc., before operating in those areas. Operators shall continue to monitor changing conditions and adjust operating procedures while operating in those areas where hazards are present.
- Maintain a safe speed while in operation.
- Park on level ground whenever possible.
- Transmissions to be set as recommended in operator's manual
- Unattended mobile equipment shall be adequately choked.

Always have a fire extinguisher on hand and know how to use it. Check each extinguisher daily to be sure it is in working order.

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## Microsurfacing – Driving Continuous Paver: Safe Job Procedure

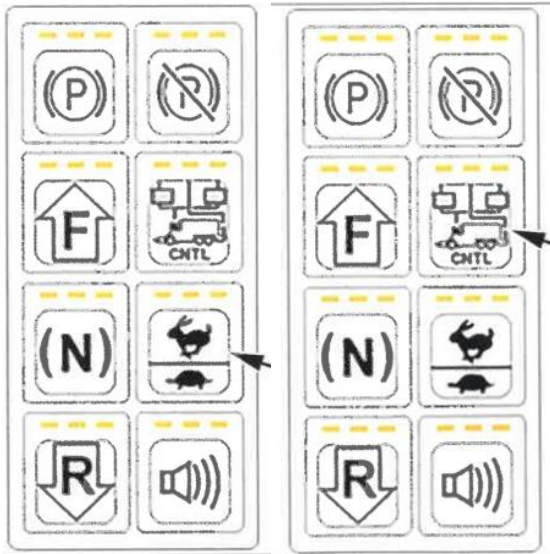
| Hazards Present                                            |                                                   | PPE or Devices Required                                                | Additional Training Required |
|------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Heat<br>Slips, Trips, Falls<br>Crushing<br>Bodily Injuries | Property Damage<br>Electric Shock<br>Pinch Points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. Move engine throttle switch to high idle. **(Figure 1)**



**Figure 1**

2. Select the rate of travel speed on the ground drive keypad. Use low when paving and moving around in stock pile area. Use high when driving to and from stockpile area and job site. **(Figure 2)**



**Figure 2**

**Figure 3**

3. Enable the station by pressing the station control key on the ground drive keypad. When taking control the foot pedal must be fully released. **(Figure 3)**

LED indicators above key will illuminate to show which station is active.

Station Control LED Indicators:

Left LED – Left station active

Middle LED – Rear station active

Right LED – Right station active

4. Select forward or reverse direction of travel on ground drive keypad. **(Figure 4)**
5. Verify all personnel are clear of paver. Honk horn before moving.
6. Press release park brake key and monitor LED indicators and/or brake pressure on operator terminal. Brake pressure should be 1450 – 1958 psi. **(Figure 5)**

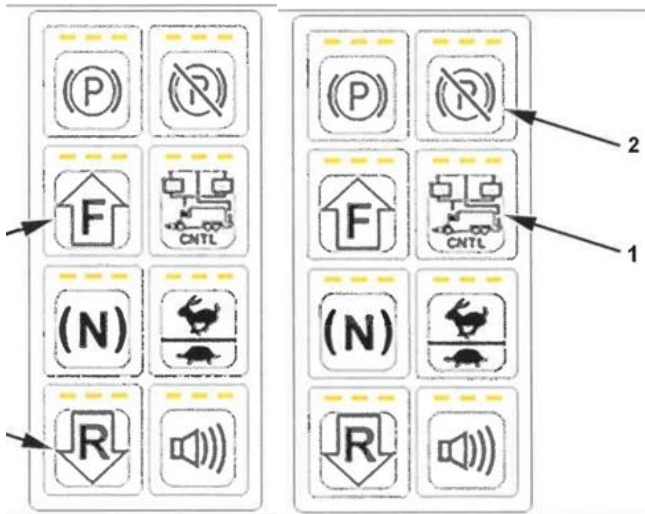


Figure 4

Figure 5

#### Park Brake Release LED Indicators:

- Pressure below 1450 psi – Blinking at a rate of on 0.1 second, off 0.1 second.
- Pressure okay – Solid On
- Pressure greater than 1958 psi – Blinking at a rate of on 0.5 second, off 0.5 second. **(Figure 6)**



Figure 6

Press foot pedal to obtain desired speed. With motor in low, maximum speed is 7mph (11 kph). With motor in high, maximum speed is 18 mph (29kph). The high/low speed of the wheel motors can't be switched when the paver is in motion. When foot pedal is fully released, wheel motor hydrostatic system will act as brakes. If on an incline, it may be necessary to press service brake foot pedal or activate the parking brakes to hold paver stationary.

Note: ***Never rapidly accelerate the paver.***

**If an emergency occurs or there is an equipment malfunction, engage the emergency stop and Follow the lockout procedure.**

**Report any hazardous situations to your supervisor.**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                | Created by: L.Michaud, P.Jean, Perry Underhill, Andrew O'Donnell, Raymond Coté, Curtis Walker                     |



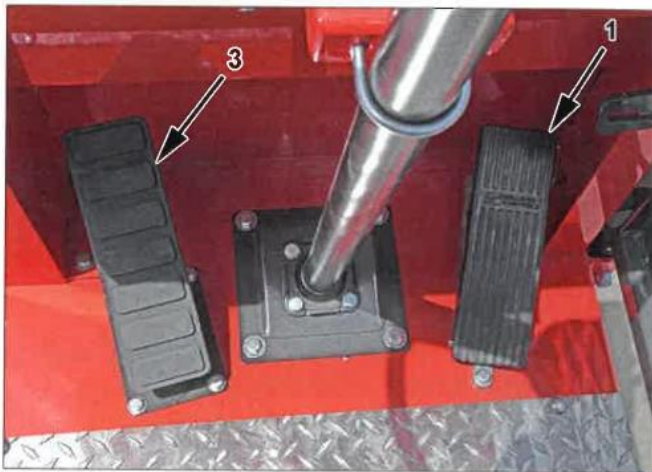
| Microsurfacing – Maintenance and Service of Continuous Paver: Safe Work Practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                   |                                                                                                                   |                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                   | PPE or Devices Required                                                                                           | Additional Training Required      |
| Burns<br>Heat<br>Slips, Trips, Falls<br>Crushing<br>Bodily Injuries                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Property Damage<br>Electric Shock<br>Pinch Points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots                                            | Lockout Tag out<br>Confined Space |
| <p><b>Before performing inspections, service or maintenance:</b></p> <ul style="list-style-type: none"> <li>- Park the machine on firm, level service.</li> <li>- Turn paver and vehicle engine(s) off and remove ignition key(s).</li> <li>- Lock control cabinet.</li> <li>- Attach a <b>DO NOT OPERATE</b> tag or similar warning tag to the starter switch , steering wheel, instrument panel or control cabinet</li> <li>- Chock tires</li> <li>- Follow lockout/tag out procedure as defined by Northern Inc.</li> </ul> <ul style="list-style-type: none"> <li>• After performing inspections, service or maintenance, make certain all guards have been reinstalled and all safety devices are functional.</li> <li>• Always wear face or eye protection, safety boots, and other protective items as required by Northern Inc.</li> <li>• If you must troubleshoot machine with engine running, have someone in constant visual contact who can shut off the engine or engage an Emergency stop switch.</li> <li>• If you must service machine with an attachment raised, block up that attachment in a safe position.</li> <li>• Follow proper procedures before entering and working in confined spaces. Provide adequate ventilation and communication. Use appropriate Personal Protection Equipment. Follow the instructions provided by Northern Inc. SWP and SJP.</li> </ul> <p style="text-align: center;"><b>If an emergency occurs or there is an equipment malfunction, engage the emergency stop and<br/>Follow the lockout procedure.<br/>Report any hazardous situations to your supervisor.</b></p> |                                                   |                                                                                                                   |                                   |
| Guidance documents/ Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                   | Reviewed by:                                                                                                      |                                   |
| Occupational Health & Safety Act & Regulations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                   | This safe work practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                   | Created by: L.Michaud, P.Jean, Perry Underhill, Andrew O'Donnell, Raymond Côté, Curtis Walker                     |                                   |



## Microsurfacing – Startup & Shutdown of Continuous Paver: Safe Job Procedure

| Hazards Present                                                     |                                                                        | PPE or Devices Required                                                                  | Additional Training Required |
|---------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Crushing<br>Bodily Injuries | Property Damage<br>Electric Shock<br>Pinch Points<br>Fire<br>Explosion | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Ear Protection | Lockout Tag out              |

- Before starting the paver it is important to know how to properly shutdown or stop the paver. The paver is equipped with multiple ways to shut off or stop it.
  - Prior to starting the paver for the first time each day, verify all daily maintenance has been performed.
1. **Ground Drive Pedal** - depressing the foot pedal invokes the ground drive system to propel the paver. If the paver is moving and the pedal is released, the hydrostat system provides hydrodynamic braking to slow the paver.
  2. **Travel Stop** – Activating the travel stop at any of the three operators stations (2 front, 1 rear) while the paver is in motion will disable pump output causing the hydrostat system to perform hydrodynamic braking. This is the same as releasing the ground drive pedal described in number 1 (**figure 1**). It allows any operator to deactivate the ground drive and apply hydrostatic brakes even if that operator station is not in control.
  3. **Service Brake Pedal** – The brake pedal at each front operator station will apply the brakes on all wheels. The service brake will provide a very strong braking force. Be careful to modulate the braking force with the foot pedal to achieve the degree of braking desires.
  4. **Ignition switch** – Turning off the ignition switch will stop the engine and therefore stop the travel of the machine.
  5. **Emergency Stop** – Located at both of the front and rear operator stations is an emergency stop switch. This should only be activated in an emergency stop condition. When driving the paver in high speed range, release the foot pedal speed control before activation the emergency stop switch. Keep all hand tools and objects away from the E-Stop switch area. Loose items in the vicinity of the switch could interfere with pushing the start button or result in an unintentional start up.



**Figure 1**



**Figure 2**

### Startup

1. Verify that throttle switch is in the idle position. (figure 3, #1)
2. Turn ignition switch to the start position. Release ignition switch when engine starts. Verify the drive keypad control's LED lamps for park brake and neutral switches are illuminated indicating park brake is set and ground drive is in neutral. (figure 3, #2)



Figure 3



Figure 4

3. Allow the engine to warm up for a few minutes at idle.
4. Monitor the engine instruments located on the main page of the operator terminal display. Red (figure 5) indicates an engine STOP service code and amber (figure 5) indicates an engine WARNING. The fault code can be read on either operator terminal at the front driver stations by selecting the engine icon on the terminal.

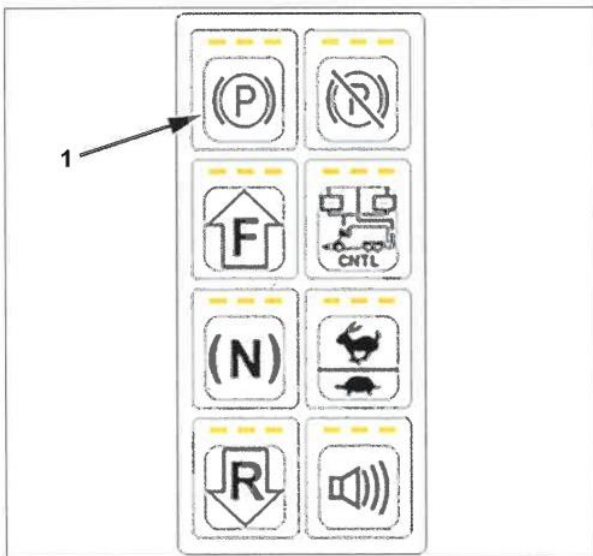


Figure 5

5. Allow air pressure to build up to operating pressure.
6. Set the engine throttle speed switch to select either intermediate or high. Intermediate is 1500 RPM and is suitable for all paver operations. High is 1850 RPM and is for maximum production operations. If there are any issues or concerns after starting the paver or during operation, stop the engine. Refer to operator's manual.

### Paver Shutdown

1. Drive paver to a firm, level surface prior to stopping the paver. If the paver has been driven in high range for an extended period, return the paver to low range well in advance of reaching the area where the paver will be parked. This allows the hydrostatic drive system to cool down properly.
2. Depending on the next operation; loading/unloading, cleaning or maintenance, park the paver so the needed areas of the paver can be accessed and the cleaning or maintenance can be done safely out of the way of other equipment.
3. Once paver has stopped, place the ground drive system into neutral and apply the park brake (1) (figure 6) on the ground drive control. Verify the LED status lamps indicate the proper selections. Press the station enable/disable button to deactivate the driver station.



**Figure 6**

### Stopping the Engine

If the engine has been working for an extended period, return the engine to idle and allow engine and related components to cool before stopping engine.

1. Lower all hydraulic cylinders.
2. Move engine throttle to idle.
3. Turn ignition key to off position.
4. Remove key.

**Follow lockout/tagout procedure before servicing.**

**If an emergency occurs or there is an equipment malfunction, engage the emergency stop and  
Follow the lockout procedure.  
Report any hazardous situations to your supervisors.**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                | Created by: L.Michaud, P.Jean, Perry Underhill, Andrew O'Donnell, Raymond Côté, Curtis Walker                     |

### Microsurfacing – Cleaning & Wash-down of Continuous Paver: Safe Work Practice

| Hazards Present                                                     |                                                  | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Crushing<br>Bodily injuries | Property Damage<br>Electric shock<br>Pinch Point | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Lockout Tag Out              |

**Before starting the cleaning and wash-down of the continuous paver, make sure to:**

- Park the machine on firm, level surface.
  - Turn paver and vehicle engine(s) off and remove ignition key(s).
  - Lock control cabinet.
  - Chock Tire.
  - Follow lockout/tag out procedure as defined by Northern Group of Company SJP.
- 
- Lower spreader box on the jack stands or other method of supporting structure. Do not use box lift to support while cleaning.
  - No smoking while cleaning.
  - Always disconnect spreader box hoses or use shut-off valves to ensure hydraulic functions are locked out.
  - Only operate augers and conveyors enough to gain access to surface to be cleaned. Then follow the lockout/tag out procedure before you continue cleaning.
  - Never reach into operating auger, conveyor, or climb into the hopper when engine is running. Keep all personnel clear.
  - Clean materials from decks, walkways and remove all residue to prevent these surfaces from becoming slippery and causing falls.
  - When paver is travelling but not paving, only the driver is allowed on machine, no riders are allowed.
  - Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area when cleaning, remove the exhaust fumes from the area with an exhaust pipe extension or a method to provide adequate ventilation.

**If an emergency occurs or there is an equipment malfunction, engage the emergency stop and follow the lockout procedure.**

**Report any hazardous situations to your supervisor.**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This safe work practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                | <b>Created by: L.Michaud, P.Jean, Perry Underhill, Andrew O'Donnell, Raymond Côté, Curtis Walker</b>              |

### Microsurfacing – Daily Inspections of Continuous Paver: Safe Work Practice

| Hazards Present                           |  | PPE or Devices Required                                                | Additional Training Required |
|-------------------------------------------|--|------------------------------------------------------------------------|------------------------------|
| Slips, Trips, Falls<br>Crush/pinch hazard |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Lockout/tagout               |

**Refer to your owner's manual for detailed directions with images.**

➤ **Daily Before Use**

- Verify all guards and covers are in place
- Verify lights are operable
- Verify audible signal devices
- Check engine oil level
- Check pump drive oil level
- Check engine coolant level
- Check hydraulic oil level
- Check Engine fuel and DEF levels
- Check front axle hub oil level
- Check for leaks
- Lubricate rear conveyor
- Lubricate mixer bearings
- Lubricate fines (cement) hopper bearings
- Lubricate front conveyor bearings
- Lubricate hopper auger bearings
- Water supply strainer
- Empty conveyor cleanout pan
  1. Start paver engine.
  2. Activate operator console. Verify all personnel are clear of paver and press front lift key to fully raise front of paver.
  3. Remove cylinder stop from storage bracket and install on lift cylinder as shown. Repeat this step for cylinder stop on opposite side of paver.
  4. Verify all personnel are clear of paver and press front lower key to lower paver onto cylinder stops.
  5. Stop paver engine and remove keys.
  6. Strike swing latches with a hammer to release latches. Remove cleanout pan to empty accumulated aggregate. Do not loosen locknuts.
  7. Install cleanout pan, install in position and rotate swing latches to fasten pan.
  8. Start paver engine.
  9. Verify all personnel are clear of paver and press front lift key to fully raise front of paver.
  10. Remove cylinder stop from lift cylinder and place in storage bracket. Repeat this step for cylinder stop on opposite side of paver.
  11. Verify all personnel are clear of paver and press front lower key to fully lower paver.
  12. Stop paver engine.
- Check Tires

➤ **Daily After Use**

- Drain water and emulsion
- Extend mixer for service
  1. Disconnect spreader box lift chains.
  2. Start paver engine and fully lower spreader box lift.

3. Stop paver engine and move valve's manual control in both directions to relieve hydraulic pressure.
  4. Disconnect electrical connector, motor case drain coupler and hydraulic hoses. Lay hoses and electrical cable on top of mixer.
  5. Disconnect hydraulic hoses from storage couplers on operators station and connect to couplers on rear of paver as shown.
  6. Disconnect water hose, additive hose and emulsion hose.
  7. Remove spray hood and deck plate.
  8. Disconnect diverter chains from diverter.
  9. Start paver engine and set engine throttle to intermediate idle.
  10. Raise box lift to clear the area for the mixer to extend out the rear of the paver.
  11. Push and hold mixer slide extend button to extend mixer from the machine. During extension, the mixer bottom is scraped out by the rear mounting plate of the upper housing.
- Clean residue from mixer
  - Inspect mixer paddle tips
  - Inspect mixer bottom pan
  - Retract mixer
    1. Push and hold mixer slide retract button to retract mixer onto the machine.
    2. Lower spreader box lift arms to level position.
    3. Stop paver engine and move control valve's manual lever in both directions to relieve hydraulic pressure.
    4. Connect diverter chains to diverter.
    5. Install deck plate and spray hood.
    6. Connect water hose, additive hose and emulsion hose.
    7. Disconnect hydraulic hoses from couplers on rear of paver and connect to storage couplers.
    8. Connect electrical connector, motor case drain coupler and hydraulic hoses as shown.
  - Inspect Augers
  - Empty fines (cement) hopper
  - Mix water system
  - Additive system – 10:1
  - Additive system – Peristaltic pump
  - Wash paver
  - Drain air tanks

**If an emergency occurs or there is an equipment malfunction, engage the emergency stop and follow the lockout procedure.**

**Report any hazardous situations to your supervisor.**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This safe work practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
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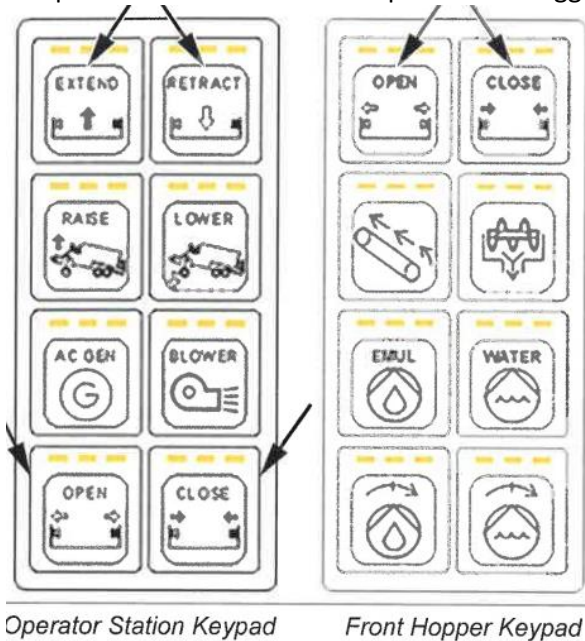
## Microsurfacing – Filling Hoppers and Tanks of Continuous Paver: Safe Job Procedure

| Hazards Present                                                |                                                  | PPE or Devices Required                                                               | Additional Training Required |
|----------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------|
| Elements<br>Slips, Trips, Falls<br>Crushing<br>Bodily Injuries | Property Damage<br>Electric shock<br>Pinch Point | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Respirators |                              |

**Note:** Emulsion, water and aggregate can be loaded simultaneously.

### Emulsion and Water

1. Throttle on high rabbit
2. Position aggregate truck trailer in front of paver.
3. Operate the hitch to connect paver to the aggregate truck trailer.



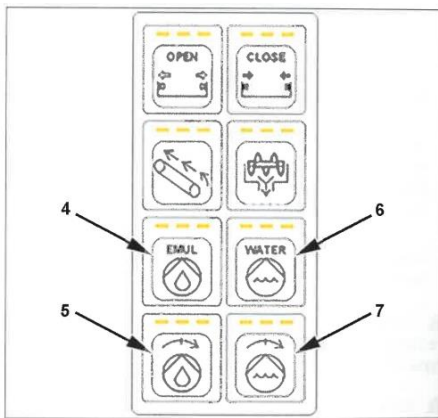
**Figure 1**

4. Connect water 1 (Figure 2) and emulsion 2 (Figure 2) hoses to support truck and open valves on the hose ends and mobile support tanks. Open valves 3 (Figure 2) to allow flow from support tanks to paver load pumps. Valves 3 (Figure 2) are shown in the closed position.

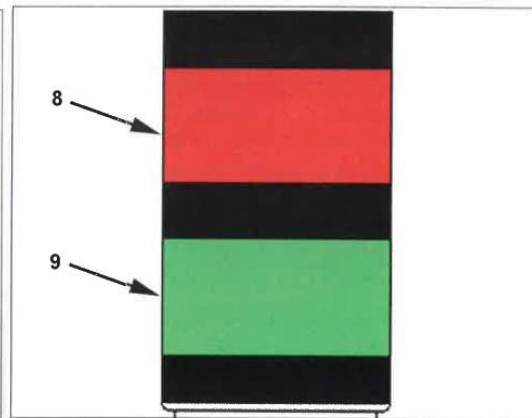


**Figure 2**

5. Press emulsion key 4 (Figure 3) to activate emulsion load pump. LED indicators will turn on. When the key is activated on, the emulsion pump control is locked on until either its switch is pressed to shut it off, or the tank float switch is activated. Emulsion tank has an automatic shutoff to stop load pump when tank is full. Press the emulsion key to stop the load pump or when mobile support is empty. Monitor the beacon top red indicator 8 (Figure 4). When slowly blinking the tank level is 75% to 99% capacity. When solid on the tank is full.
6. If paver tank is full before disconnecting from the support truck, press the emulsion override key 5 (Figure 3) to empty the suction hose before disconnecting from the support truck. Shut off the support truck tank valve and supply hose valve before disconnecting the supply hose. The pump will turn off after 20 seconds.
7. Press water key 6 (Figure 3) to activate water load pump. LED indicators will turn on. When the switch is activated on, the water pump control is locked on until either its switch is actuated to shut it off, or the tank float switch is activated. Water tank has an automatic shutoff to stop load pump when tank is full. Press the water key to stop the load pump or when mobile support is empty. Monitor the beacon green indicator 9 (Figure 4). When slowly blinking the tank level is 75% to 99% capacity. When solid on the tank is full.
8. If paver tank is full before disconnecting from the support truck press the water override key 7 (Figure 3) to empty the suction hose before disconnecting from the support truck. Shut off the support truck tank valve and supply hose valve before disconnecting the supply hose. The pump will turn off after 20 seconds.



**Figure 3**



**Figure 4**

9. Close valves 3 (Figure 5). Valves are shown in the closed position.
10. Disconnect water 1 (Figure 5) and emulsion 2 (Figure 5) hoses from mobile support.



**Figure 5**



## Aggregate

1. Position mobile support in front of paver.
2. Move throttle switch to high.

**Note:** Auger operation is dependent upon load conveyor. Selection of the auger key 2 (Figure 6) sets the auger to the ON position. The auger will only start when the function is active ON and when the load conveyor key 1 (Figure 6) is pressed to start. To stop the auger press the conveyor key OR the auger key.

3. Press the auger key 2 (Figure 6) to activate the auger function to the ON position. The LED's on the key will illuminate to signify it is active. Press the conveyor key 1 (Figure 6) to start both the auger and load conveyor.

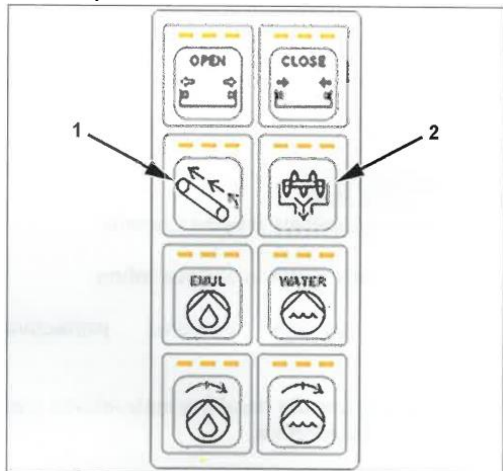


Figure 6

4. Begin loading materials from mobile support.
5. When aggregate hopper is full or mobile support is empty, press the conveyor key 1 (Figure 6) to stop both the auger and the conveyor. Press the auger key when it is active to terminate the function.

## Additive Tank

### Fill using load pump

1. Connect bulk hose to pump coupler. Open ball valve 1 (Figure 7). Rotate needle valve 2 (Figure 7) to start the pump and to regulate pump speed. Close needle valve 2 (Figure 7) when loading is completed to stop load pump.
2. Close ball valve 1 (Figure 7) and disconnect bulk hose.



**Figure 7**

**Fill at top of tank**

1. If not done already, erect handrails.
2. Open hatch 1 (Figure 8)) and fill additive tank.
3. Close and lock hatch 1 (Figure 8) after filling.



**Figure 8**

**Fines (Cement) Hopper**

1. If not done already, erect handrails.
2. Open fines (cement) hopper cover 1 (Figure 9)).
3. Fill hopper and close cover 1 (Figure 9).



**Figure 9**

**If an emergency occurs or there is an equipment malfunction, engage the emergency stop and follow the lockout procedure.**

**Report any hazardous situations to your supervisor.**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                | Created by: L.Michaud, P.Jean, Perry Underhill, Andrew O'Donnell, Raymond Coté, Curtis Walker                     |

### Microsurfacing – General Safety of Continuous Paver: Safe Work Practice

| Hazards Present                                                     |                                                  | PPE or Devices Required                                                               | Additional Training Required |
|---------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Crushing<br>Bodily Injuries | Property Damage<br>Electric shock<br>Pinch Point | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Respirators |                              |

- Be sure to read, understand and follow the operation section of the operator's manual and follow the safety alerts and operation instructions in Northern Inc. SJP & SWP for Startup and Shutdown of the Continuous Paver.

❖ **Do not operate, work on or around this machine while under the influence of alcohol, drugs or if feeling ill.**

#### **Pressurized fluids and grease can penetrate the skin.**

- Hydraulic hoses can fail from age, damage and exposure.
- Do not search for hydraulic leaks without body and face protection. A tiny, almost invisible leak can penetrate the skin, thereby requiring immediate medical attention.
- Use wood or cardboard to detect hydraulic leaks, never use your hands.
- Cleaning fluids, lubricants, coolants and emulsifiers (break control chemical additive) can be hazardous. Before operating or filling tanks, check the Safety Data Sheet (SDS) for each fluid or lubricant to understand the product, safe handling procedures, and first aid measures relating to the product. Clean up spilled fluids immediately.
- If any fluid is injected into the skin, it must be surgically removed with in a few hours by a doctor familiar with this type of injury or gangrene may result.
- Do not drain or pour any fluids or lubricants on the ground. Check with local environmental agencies, recycling centers, or your dealer for correct disposal information.
- Operate equipment only if all guards, covers and access doors or panels are properly fastened in place. Make sure all personnel are clear of moving parts prior to starting or operating equipment. **SAFETY IS YOUR RESPONSIBILITY.**

#### **Entanglement Hazard.**

- Loose fitting clothing and long hair can become entangled in moving or rotating parts.
- Do not wear loose fitting clothing.
- Long hair must be tied back or netted.
- Keep clear of moving components.
- Never operate machine with open or missing guards or shields.
- Observe manufactures' safe handling procedures for materials such as emulsion, emulsion additives and hydraulic fluid. Respirators may be required while filling gines (cement) hopper.
- Be prepared for emergencies. Devise a plan with detailed instructions in case of emergency situations (runaway equipment, equipment fires, chemical spills, etc.).
- Set park brake when machine is stopped and before you dismount machine.

**Risk of falling while on top of hoppers.**

- Be aware of overhead obstructions such as trees, power lines overhead signs and lights.
- Erect handrails when on top of hoppers and be aware of changing conditions.
- Be prepared for sudden changes in paver speed.

**Risk of crushing.**

- Stay out from under machine or near tires to avoid being run over and crushed.
- Follow lockout/tagout procedure before working under machine.

**Falling hazard.**

- The walk platforms and covers may be slippery. Keep steps, handrails, and platform clean.
- Erect and use handrails, and face the machine when climbing up or down the steps. Use three points of support when climbing up or down steps.
- Use handholds, handrails or steps (as provided).
- Never jump on or off the machine.

**Corrosive chemicals may be present.**

- Exposure may result in serious injury.
- Wear appropriate personal protective equipment.
- Read and follow the handling instructions and SDS for the additive.

**Fines (Cement) Hopper**

- Inhalation hazard.
- Fines are potentially hazardous.
- Read and follow the handling instructions and SDS for the fines (cement).

**Explosion, fire, or property damage hazard.**

- This engine is equipped with an air intake heater.
- Do not use starting fluid with this engine.
- Use of starting fluid can cause an explosion, fire, personal injury or damage to the engine and other property.

**FIRE OR EXPLOSION PREVENTION**

- No smoking on or around paver.
- Engine fuel can cause an explosion or fire. Do not refuel with engine running or near open fire. Do not weld near fuel servicing. Never allow fuel, engine oil or hydraulic fluid to spill on hot machine components. Check for fuel, oil and hydraulic leaks, reference procedure **Pressurized Fluids**. Replace worn or damaged hoses or lines. Clean up spilled fuel or oils immediately.
- Two fire extinguishers are provided. At the front radiator shroud or at the rear operator station. Always have a fire extinguisher available at the machine. Keep the fire extinguisher serviced according to manufacturer's instructions.

**Noise hazard.**

- Prolonged exposure to loud noise can cause impairment or loss of hearing.
- Operators, workers and bystanders must use ear protection while machine is in operation.

**Dispose of waste properly.**

- Improper disposal of waste can harm the environment.
- Use leak proof container when draining fluids. Do not use food or beverage containers.
- Contact your local environmental or recycling center for the proper way to recycle or dispose of waste.

**If an emergency occurs or there is an equipment malfunction, engage the emergency stop and follow the lockout procedure.**

**Report any hazardous situations to your supervisor.**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This safe work practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
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### Microsurfacing – Operation of Continuous Paver: Safe Job Procedure

| Hazards Present                                                     |                                                  | PPE or Devices Required                                                                           | Additional Training Required |
|---------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Heat<br>Slips, Trips, Falls<br>Crushing<br>Bodily Injuries | Property Damage<br>Electric shock<br>Pinch Point | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Respirators (as needed) |                              |

#### When you enter or leave the machine

- Maintain a three-point hand/foot contact with the machine. Three point contact is defined as using one hand and two feet or two hands and one foot at any single time. Always face machine when either mounting or dismounting.
- Enter and exit machine on side away from traffic if possible.
- Use handholds, handrails or steps (as provided).
- Never use control levers as handholds.
- Never step on foot controls when entering or leaving.
- Clean your boots and wipe your hands before mounting or dismounting.
- Never jump on or off the machine.
- Never attempt to mount or dismount a moving machine.

**Note:** Operations are a three part system. A driver, front hopper operator and a rear station operator who should all have constant communication.

1. Open truck hitch by pressing and holding hitch open key.
2. When aggregate tank trailer rear wheels contact push rollers on hitch, press and hold the hitch close key. Hitch arm side rollers should be in contract with truck tire and small front roller should be inside tire rim.
3. Turn on loading conveyor and auger by pressing their keys located on front hopper keypad.
4. Open aggregate gate on mobile support.
5. Activate aggregate tank trailer conveyor to deliver aggregate to paver front hopper.
6. Connect emulsion pump hose to mobile support and open valve on mobile support.
7. Turn on emulsion pump by pressing it's key located on front hopper keypad.
8. Connect water pump hose to mobile support and open valve on mobile support.
9. Turn on water pump by pressing it's key located on front hopper keypad.
- **Please follow Filling Hoppers & Tanks of Continuous Paver SJP**
10. Constantly monitor aggregate hopper, emulsion and water tank level beacon.
11. When hopper is full or near full, turn mobile support aggregate conveyor off. Allow paver loading conveyor to empty and turn conveyor and auger off.
12. If emulsion or water beacon lights are blinking or off, press key to start them.
13. When mobile support is empty of aggregate, turn off mobile support conveyor and close gate.
14. With emulsion and water pumps on, close valves and disconnect hoses from mobile support. When hoses are disconnected, pumps will remove most of the liquid out of hoses to minimize spillage. If tanks are full before disconnecting hoses, press the override keys to turn the pumps on to allow them to remove the liquid from the hoses while disconnecting. The overrides will only stay on for 20 seconds before turning the pumps off.
15. Turn off emulsion and water pumps.
16. Open truck hitch and signal aggregate tank driver that they are free to pull away from paver.

### Stopping production of continuous paver.

1. Press the mix start/stop button on the joystick. Continue paving to empty mixer and spreader box. It may be necessary to reverse spreader box augers to maintain a consistent level throughout the box while emptying.
2. Turn off road spray bar switch.
3. Turn off mixer.
4. Turn speed control clockwise to stop paver.
5. Set park brake.
6. Press N (neutral) on ground drive keypad.
7. Push station enable switch to disable ground drive

**If an emergency occurs or there is an equipment malfunction, engage the emergency stop and  
Follow the lockout procedure.**

**Report any hazardous situations to your supervisors.**

| Guidance documents/ Standards                  | Reviewed by:                                                                                                      |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                | Created by: L.Michaud, P.Jean, Perry Underhill, Andrew O'Donnell, Raymond Coté, Curtis Walker                     |

### Milling - Milling & Pulverizing: SAFE WORK PRACTICE

| Hazards Present                                                               |                                                                                                     | PPE or Devices Required                                                         | Additional Training Required |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------|
| Rotating parts<br>Noise<br>Fire<br>Electric shock<br>Jamming<br>Flying Debris | Risk of injury from<br>Falling objects<br>electrocution<br>Slips, Trips & Falls<br>Overhead hazards | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Hearing Protection |                              |

- Employees must wear proper PPE.
- Controlling traffic with the use of Traffic Control Personnel & Signage. (WATCM)
- Operators must do daily inspection on equipment and document it. All alarms, controls, and emergency stops.
- Foreman must explain to machine operator, employees, and truckers how to work safely with either the pulverizer and/or cold milling machine as per the manufacturer's safety instructions and specifications.
- All work done on equipment (changing teeth) must be done with the machinery Locked Out, using Northern Group Code of Practice Lockout-Tag out.
- Never go underneath the milling machine or the pulverizer while they are in use.
- If employees notice anything wrong with the machinery noises, fluid leaks, jammed parts etc. tell the supervisor and operator immediately.
- Watch for blind spots use signallers when needed.
- Maintain a 1 metre distance on unpaved shoulders to the edge of the roadway.
- **Pulverizing:** The Pulverizer mills the asphalt to the specified dept keeping it on the roadway for reshaping, re-compacting, resurfacing with new asphalt, and compacted to DTI specs.
- **Cold Milling:** the milling machine mills the asphalt to a specified dept, picking it up and loading the asphalt into waiting dump trucks, which then is hauled away to a disposal site. Then the milled road surface is tacked and re-paved with new asphalt then compacted to DTI specs.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                       |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Work Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By:                                                                                                        |



### Milling - Milling: SAFE JOB PROCEDURE

| Hazards Present                                                                                  |                                                      | PPE or Devices Required                                                                                | Additional Training Required |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Rotating parts<br>Fire<br>Electric shock<br>Jamming<br>Flying debris | Noise<br>Dust<br>Crushing<br>Traffic<br>Pinch points | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Hearing Protection<br>Sun (UV) protection |                              |

1. Employee must wear proper PPE.
2. Traffic Control shall be setup prior to work beginning.
3. The foreman shall explain the safety operations with all the employees and truckers that will be working around the machinery.
4. Start machinery as per manufacturer's safety specifications / recommendations and as per the operator's manual.
5. The operator sets his machine on the correct spot where pavement has to be taken off and sets the depth and the length of asphalt patch to be removed. The conveyor shall be adjusted to the height of the truck for loading asphalt pieces.
6. Always make sure that the way the conveyor is set that this will not upset over the truck or hurt any employees and the public.
7. Employees shall always be careful to traffic and also to asphalt loading trucks

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By:                                                                                                       |

### Milling - Pulverizing and Cutting Keys: SAFE JOB PROCEDURE

| Hazards Present                                                                           |                                                              | PPE or Devices Required                     | Additional Training Required |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Rotating parts<br>Electric shock<br>Jamming and flying debris | Noise<br>Dust<br>Crushing<br>Traffic<br>Pinch points<br>Fire | Steel toe boots<br>Safety glasses<br>Gloves |                              |

Employees must wear proper PPE.

Traffic Control shall be setup prior to the commencement of work.

Foreman must explain to machine operator, employees, and truckers how to work safely with pulverizing equipment as per the manufacturer's safety instructions and specifications.

All employees have to be very careful to the traffic, working equipment and trucks.

The pulverizing machine operator has to make sure that the machine is in good working condition and that all turning rollers are tight. Check if all safety features such as back-up alarm and warning lights are functioning correctly.

The operator is starting the pulverizing machine and doing the patch of road to be done as per the contract specifications.

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|                                                                | <b>Created by:</b>                                                                                                |

**Office Safety: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                                    |      | <b>PPE or Devices Required</b> | <b>Additional Training Required</b> |
|---------------------------------------------------------------------------|------|--------------------------------|-------------------------------------|
| Electrical Shock<br>Burns<br>Fire<br>Muscle strain<br>Slip, Trips & Falls | Cuts |                                |                                     |

- Be sure emergency procedures are in place.
- Ensure electrical cords are in good condition and not overloaded.
- Ensure computer monitors are adjusted to correct height and kept clean.
- Ensure fans/space heaters are used to manufacturers specifications.
- Keep floors and aisles free of clutter.
- Keep only one drawer of filing cabinet is open at one time.
- Ensure proper type of Fire extinguisher is in place.
- When transporting materials of a heavy nature ensure that handcarts and trolleys are used properly.
- Operate microwave and coffee makers are according to manufacturers specifications.
- Keep photocopier maintained according to manufacturers specifications.
- Keep office furniture in good repair.
- Keep paper cutter blade in locked closed position.
- Make sure all loose clothing and hair is tied back when using paper shredder.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| <b>Guidance Documents / Standards</b>                          | <b>Reviewed By:</b>                                                                                               |
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|                                                                | <b>Created By:</b>                                                                                                |

### Office Safety: SAFE JOB PROCEDURE

| Hazards Present                                 |  | PPE or Devices Required | Additional Training Required |
|-------------------------------------------------|--|-------------------------|------------------------------|
| Slips, Trips, Falls<br>Faulty equipment<br>Cuts |  |                         |                              |

#### Safe Operating Procedure for:

##### Office Safety

1. Reduce the risk of a slip or trip by keeping your work area clean. Clean up spills as soon as they happen. The carpet must be properly fitted and intact. Use non-skid floor mats.
2. Electrical cords used for projectors, or other equipment, must be placed in a cord guard before laying the cord on the floor in an open area. Use power strips with built in circuit breakers to avoid tangled extension cords and overloaded outlets. All outlets must be grounded.
3. Coffee pots, microwaves, or other appliances used in the workplace need to carry an Underwriters Laboratory (UL) or other appropriate listing for electrical safety. Appliances must be maintained in good working order.
4. Keep desk drawers, filing cabinets, and lockers closed except when in use. Open one drawer at a time and close it gently, using the handle. Do not try to force open a stuck drawer. Fill empty cabinets and storage racks from the bottom up to prevent tipping.
5. Arrange contents of filing cabinets and storage racks so they will not be top heavy. Store frequently handled or heavy objects between mid-thigh and shoulder height. Do not use the top for storage.
6. Secure filing cabinets and storage racks that are three or more times taller than they are deep to the floor, wall, or ceiling. For example, bolt a storage rack to the wall if it is eight feet tall but only two feet deep. As an alternative you can bolt storage racks back to back.
7. Store sharp and pointed objects safely and do not reach for them without looking. Use paper cutters safely. Keep fingers away from blades and only cut a small stack of paper at a time.
8. Before placing equipment on a desk or table, check to be sure it is stable and can support the weight of the equipment. Disconnect power to a business machine, such as a computer, before attempting to service. Observe all warning labels on office machines.

##### Manage my Work and Time for Safety

1. Hurrying to make a deadline and taking short cuts can lead to accidents. Get organized before you act. Spending a little time in planning and preparation saves time and accidents later on.
2. Take responsibility for safety. Stop when you see a hazard and eliminate it on the spot. Report hazards that you cannot easily fix to your supervisor. Do not wait for someone else to make the workplace safe.
3. Use the right tool for the job and use whatever safeguards you can. A finger guard protects against paper cuts. A moistener prevents cuts to the mouth or tongue while licking stamps or envelopes.
4. Know where emergency equipment is stored. Know what to do in case of fire, medical, or other emergencies. Keep telephone numbers for police and fire departments handy. Know where the fire alarms and fire extinguishers are and know how to use them.
5. In case of fire, leave as quickly as possible. Know where your emergency exits are. Always plan your primary and secondary escape routes.
6. Use a step or ladder (never a desk, chair or box) to reach overhead objects, and move close to what you need rather than stretching for it. When standing more than six inches off the floor for any reason (i.e. filing or getting something down) it is recommended that you remove rings (jewelry). If you should slip, rings can catch on drawers or the edges of furniture causing potentially severe injury to your fingers or hand.

### Avoiding Aches and Pains in the Office

1. Use good lifting techniques. When possible, modify the work areas so routine lifting from high or low levels is not necessary. For example, provide a table for waist high delivery/pickup of parcels and mail.
2. Plan your moves and path of travel when you are going to move something. Clear obstacles away before you begin. Get close to the object you are lifting, squat down to it, and bring the load against your body. Do not twist or “jerk” when lifting. Lift with your legs, maintaining the three natural curves of your spine. Turn corners and change direction by moving your feet, not turning at the waist. Avoid carrying loads that block your view and take care when rounding corners. Get help when lifting heavier objects, such as computer monitor or box of paper, and use a dolly or other mechanical aid to move it.

### Office Safety

1. 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.
2. Look away from paperwork or your monitor periodically to reduce eye strain. Relax your eyes by re focusing them for 15 seconds on a point at least 20 feet away (try the upper corner of a room) and then closing them for 15 seconds.
3. Position your monitor and document holder at eye level and about an arm’s length away.
4. Move around, vary your work activities, and take frequent rest pauses during your shift.

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### Pre-Trip Inspection of Semi-Truck: SAFE JOB PROCEDURE

| Hazards Present                       |  | PPE or Devices Required                                                | Additional Training Required    |
|---------------------------------------|--|------------------------------------------------------------------------|---------------------------------|
| Vehicle malfunction<br>Vehicle damage |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Operator training/certification |

1. Complete pre-trip inspection before use, including complete fluid check
2. Ensure horn and back up alarm are working
3. Ensure truck is equipped with flares, portable fire extinguisher and first aid kit
4. Raise and lower box to ensure it is working properly
5. Check braking systems carefully
6. Be sure parking brake/device is working
7. Fill out inspection report

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## PPE - Personal Protection Equipment (PPE): SAFE WORK PRACTICE

| Hazards Present |  | PPE or Devices Required | Additional Training Required |
|-----------------|--|-------------------------|------------------------------|
| Bodily injuries |  |                         |                              |

The appropriate PPE is specific to each work task. Check with workplace supervisor for individual and departmental requirements.

- Inspect All PPE before each use.
- For equipment not functioning or in need of repair, report malfunctions to supervisor
- Ensuring head and facial hair is confined or worn in a manner that ensures proper fit of PPE with no interference.

### **Head protection**

Required to be worn by all personnel in all construction zones or where the danger of items falling, flying or thrown objects or any other contacts is present, or where personnel can be made more visible in the workplace.

### **High Visibility Apparel**

Mandatory in all construction zones or when personnel are exposed to the hazards of moving vehicles or equipment while directing traffic on any public roads.

### **Safety footwear**

Worn by all personnel in all construction zones and other work sites, that is of design, construction and material type appropriate to the protection required in that specific work area.

### **Hearing protection**

Worn by all personnel working where the noise level cannot be controlled below the permissible values established in the Occupational Health and Safety Regulations\*.

### **Fall Arrest**

Equipment provided in situations where personnel work from heights and as outlined by the Fall Arrest Equipment SWP.

### **Respiratory Protection**

Worn where personnel are exposed to air contaminants in excess of permissible concentration or excursion limit or an oxygen-deficient or enriched atmosphere, as outlined by the OHS Regs\*.

### **Safety eyewear**

Face protectors, prescription or non-prescription safety eyewear is to be worn when personnel are exposed to atmospheres, materials or substances injurious to vision and as outlined in the OHS Regs\*.

### **Skin, Leg and Body Protection**

Provided for personnel exposed to substances or a condition that may puncture, abrade, burn, corrode, electrically shock or otherwise adversely affect the skin or be absorbed through it.

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|                                                 | Created By:                                                                                                       |

### Rigging - Hoisting and Lifting: SAFE WORK PRACTICE

| Hazards Present                                                                                             |                           | PPE or Devices Required                                             | Additional Training Required |
|-------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------|------------------------------|
| Slips Trips, Falls<br>Load shifting<br>Personnel around lifting<br>Faulty equipment<br>Overhead obstruction | Use of improper equipment | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Gloves<br>Hard Hat | Rigging                      |

- Determine the weight of the object or load prior to a lift to make sure that the lifting equipment can operate within its capabilities.
- Estimate the centre of gravity or point of balance. The lifting device should be positioned immediately above the estimated centre of gravity.
- Prepare a place to land the load, lower the load gently and make sure it is stable before slackening the sling or chain.
- Select only alloy chain slings and NEVER exceed the working load limits.
- Make sure the hoist or crane is directly over the load.
- Use slings for reach. Never shorten a line by twisting or knotting. With chain slings, never use bolts or nuts.
- Never permit anyone to ride the lifting hook or the load.
- Make sure all personnel stand clear from the load being lifted.
- Never work under a suspended load.
- Never leave a load suspended when hoist or crane is unattended.
- Ensure all slings are inspected by a designated competent person at specified intervals and maintain according to manufacturers specifications.
- Ensure each chain or sling is inspected by a designated competent person. If in doubt, don't use it.
- Ensure that safety latches on hooks are in good working condition.
- Ensure that the signaler is properly identified and understands techniques of proper signaling.
- Make sure a tagline is used to control the load.
- Install guard to control object out of reach so workers can stand at a farther distance.

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### Rigging - Hoisting: SAFE JOB PROCEDURE

| Hazards Present                                                                      |  | PPE or Devices Required                                                               | Additional Training Required |
|--------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips, Falls<br>Load shifting<br>Personnel around lifting<br>Faulty equipment |  | Safety Boots<br>Safety Glasses<br>Safety Vest<br>Gloves<br>Hard Hat<br>Sun Protection | Rigging                      |

All industrial trailer manufacturers are reminded of the following safety practices:

1. Conduct pre-job planning to assess the maximum clearance between the hook of the overhead hoist and the floor. Consider this in relation to the width and weight of the roof/floor section to be flipped.
2. Never allow workers beneath a suspended load or within danger zone areas. Use taglines whenever possible.
3. Ensure the overhead hoist system is compatible with the spreader bar in term of rated load capacity and hook-pin connectors.
4. Before lifting or flipping any building sections, ensure the hoist hook safety latch is effectively holding the connecting pin of the spreader bar in place.
5. Follow proper hoisting and rigging practices and procedures.
6. Follow safe work procedures when lifting and flipping roof or floor sections.
7. Ensure the section being lifted is completely off the ground before any flipping.
8. The entire load must remain on the hoist hook rather than on the ground. Avoid introducing lateral (side) force to the hoist hook.
9. Raise and lower the section slowly to avoid any shock loading of the hoist hook.

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### Rigging - Planned Lifts & Suspended Loads: SAFE WORK PRACTICE

| Hazards Present                                                                                                         |  | PPE or Devices Required                                                                           | Additional Training Required |
|-------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------|------------------------------|
| Falling Objects<br>Risk of eye injury from flying particles<br>Use of various machinery & tools<br>Extreme temperatures |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Grade 1 Safety boots<br>Hearing protection | Rigging                      |

- Ensure barricades and warning signs are in place.
- Determine the weight of the load.
- Determine the shape and the size of the load.
- Determine the maximum height and final position of the load to be raised.
- Determine the centre of gravity of the load so proper length of slings can be determined
- Ensure that safety inspections are completed on equipment and rigging.
- Ensure potential hazards are identified within the work area.
- Communicate with all personnel involved of potential hazards.
- Never walk or work under a suspended load.
- Notify spotter and or operator of danger or potential danger.
- Signal to others when load is moving.
- Operator should have clear view of spotter. Multiple spotters may be needed but only one gives signals to the operator.
- Ensure clear communications with equipment operators are in place.
- Ensure tag lines are used and constructed of non-conductive material.
- Ensure atmospheric conditions are monitored such as temperature, humidity and wind may affect the operator.
- Ensure you understand proper hand signals.
- Establish load chart rating of crane.

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|                                                 | Created By: I. Underhill, T. Martin, R. Lebel, P. Jean, L. Michaud                                                       |

### Rigging: SAFE WORK PRACTICE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | PPE or Devices Required                                                                                           | Additional Training Required |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal Injuries<br>Falling objects<br>Heavy machinery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Grade 1 Safety boots                                       |                              |
| <ul style="list-style-type: none"> <li>Name one member of the crew to act as a signalman and instruct the equipment operator to recognize signals from that person only. The signalman must be careful not to order a move until he has received the “all ready” signal from each member of the crew.</li> <li>Ensure that each rigger confirms that he’s in the clear before he gives an “all ready” to the signalman. When you have positioned the sling or choker you’re using, release it, if possible, before you give the “all ready” signal.</li> <li>Ensure that if you hold the sling or choker in position, that your hand is clear of pinch points. If fact, your hand should be far enough way so there’s no possibility of a frayed wire catching your glove and jerking your hand into a pinch point. (Of course, frayed cables should never be used).</li> <li>Watch out for the roll or swing of the load. Since it’s almost impossible to position the hook exactly over the load centre, there will almost always be a swing or roll. Anticipate the direction of the swing or roll and work away from it.</li> <li>Do not place yourself between material, equipment or any stationary object and the load swing. Also stay away from stacked material that may be knocked over by a swinging load.</li> <li>Do not stand under the load, and keep from under the boom as much as possible.</li> <li>Look over the place where the load is to be set. Remove unnecessary blocks or other objects that might fly up if struck by the load.</li> <li>When lowering or setting the load, be sure your feet and all other parts of your body are out from under. Set the load down easily and slowly.</li> <li>Identify the designated signalman by the use of distinctive vests, armlets, etc.</li> <li>Use tag lines to control the load.</li> </ul> |  |                                                                                                                   |                              |
| <p style="text-align: center;"><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p style="text-align: center;"><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                   |                              |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | Reviewed By:                                                                                                      |                              |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Created By: I. Underhill, T. Martin, R. Lebel, P. Jean, L. Michaud                                                |                              |

### Scaffolds: SAFE WORK PRACTICE

| Hazards Present                                                                    |                                     | PPE or Devices Required                                                                                  | Additional Training Required |
|------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips & Falls<br>Tipping<br>Working at heights<br>Repetitive motion strains | Risk of injury from falling objects | Safety boots<br>Safety vest<br>Safety glasses<br>Gloves<br>Hard hat<br>Fall arrest equipment as required | Fall protection as required  |

- Tool Box meeting to be held prior to erection of scaffold.
- Cordon off area to prevent others present in the area.
- Ensure the scaffold you intend to use is the correct one for the job.
- Maintain the established minimum clearances from all power lines.
- Ensure that when working at 3m (10 Ft.), fall protection system must be used.
- Do not use a ladder sloped against the side of a scaffold at any time.
- Make sure the location in which the scaffold is to be constructed is level or is capable of being leveled by use of mud sills and screw jacks.
- See that all Legislative and manufacturer's requirements have been compiled with.
- Check to see that leveling adjustment screws have not been over extended
- Tower scaffolds have outriggers or are guyed and have all component parts secured in place (i.e. cross braces, pins, lateral braces)
- Scaffold work platforms have perimeter guardrail:
- **Horizontal Rail -** 0.91 meters to 1.06 meters above the work platform
- **Intermediate Rail -** Horizontal rail midway between work platform and top rail
- **Toe Board -** Horizontal member at work level no less than 102 mm in height above the platform level
- Scaffold planks are of number one grand materials with maximum spans of 3.1 meters on light duty and 2.3 meters on heavy duty with a maximum projection beyond the ledger of no more than 305 mm, and no less than 152mm.

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### Scaffolds - Scaffolding: SAFE JOB PROCEDURE

| Hazards Present                                                               |                                                                                        | PPE or Devices Required                                                                                  | Additional Training Required |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, trips & Falls<br>Electrocution<br>Faulty equipment and unstable ground | Working at heights<br>Repetitive motion strains<br>Risk of injury from falling objects | Safety boots<br>Safety vest<br>Safety glasses<br>Gloves<br>Hard hat<br>Fall arrest equipment as required | Fall protection as required  |

#### Scaffolding and Edge Protection

1. Scaffolding must be erected wherever a person can fall 2.0 meters or more so that the work may be performed safely and competently.
2. An employee who performs work as a scaffolder and is not able/likely to fall more than 4 meters from the working platform of the scaffolding is exempt from having to obtain a class 1 license.
3. Guardrails, mid rails and edge protection must be provided so as to guard the edge of any area where persons or materials are likely to fall.
4. Wire ropes, fiber ropes and chains shall not be used as guardrails, timber guardrails shall be of solid strength and size not less than given in AS 1657.
5. A guardrail and mid rail must be provided to the exposed edges of working platforms or any other place where a person can fall 2.0 meters or more.
6. Toe boards must be provided to the exposed edges of a working platform or any other place where tools or materials can fall 2.0 meters or more and comply with AS 1577 and 1578 or be of a material and construction which has sufficient strength for their intended use. They must be securely fixed to the floor or posts and extend not less than 150 mm above the top surface of the plate.
7. Where mesh screens are provided instead of guardrails and toe rails, they shall be vertically fixed, parallel to the platform and incorporate a kick plate.
8. All tube scaffolds must be erected, altered or dismantled only by a 'competent person'.

#### Working Platforms

9. A working platform must be designed to carry safely all imposed loads and be constructed using scaffold planks.
10. A working platform must:
11. Be not less than 225 mm in width if used solely by a scaffolder or rigger for the purpose of erecting or dismantling scaffolding or rigging.
12. Be not less than 450 mm in width.
13. In any other case, be not less than 450 mm in width.
14. Where materials or tools are to be placed on a working platform, the platform must be planked to the full width of the scaffold.
15. A working platform must not be set at a greater slope than one vertical to six horizontal.
16. A working platform for working on a ceiling must be erected with scaffold planks
17. Spaced not more than 225 mm apart where the height from the floor to the ceiling is less than 3 meters or;
18. Close laid where the height from the floor to the ceiling exceeds 3 meters
19. Safe access and egress from all working platforms shall be provided in the form of stairways, access ways, ladders or other means.

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|                                                                | <b>Created by:</b>                                                                                                |

### Service - Air Brake Adjustment: SAFE JOB PROCEDURE

| Hazards Present                                    |  | PPE or Devices Required                                                                       | Additional Training Required  |
|----------------------------------------------------|--|-----------------------------------------------------------------------------------------------|-------------------------------|
| Other workers and equipment<br>Machine malfunction |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Wheel Chocks/Blocks | Operator Training Certificate |

1. If unit has auto slack adjuster do not try to adjust. See supervisor if travel is more than 2"
2. Park on level ground (out of the way of traffic)
3. Lock out ignition
4. Make sure psi will maintain 115 psi for duration of adjustment
5. Block/Chock the wheels
6. Release the brakes
7. Check the brake lining thickness (min 3/8")
8. Check for air leaks and repair
9. Check for damaged brake pod or slack adjuster, worn lining or leaking wheel seals
10. Ensure lock sleeve is operational
11. Ensure push rod travel is between 3/4" - 1 1/2" and within 1/4" of each other
12. Ensure push rod angle is between 85 and 90 degrees (90 degrees being the best angle)
13. Report any of the above problems to your supervisor
14. Ensure brakes do not drag
15. With psi at a minimum of 115 make one full brake application
16. PSI should not drop more than 12 psi; if so, recheck adjustment

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**  
**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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|                                                 | Reviewed By:                                                                                                      |

### Service - Boosting & Charging Batteries: SAFE WORK PRACTICE

| Hazards Present                     |  | PPE or Devices Required                                                | Additional Training Required |
|-------------------------------------|--|------------------------------------------------------------------------|------------------------------|
| Explosion<br>Electrocution<br>Burns |  | Steel toe boots<br>Safety glasses<br>Hard hat<br>Safety Vest<br>Gloves |                              |

#### **Boosting**

- Read owner's manual for instruction on boosting battery.
- Wear proper PPE.
- Check condition of battery, check if the battery is a 12 volt or 24 volt.
- Make sure terminals are clean.
- Use proper battery and cables needed for boosting.
- Check cables conditions prior to uses.
- Make sure the proper connections are made refer to the owner's manual and/or your job procedures if needed.
- Stand clear when starting.
- Once started watch from moving parts while removing cables.

#### **Charging**

- Read owner's manual for instruction on charging battery.
- Wear proper PPE.
- Check condition of battery, check if the battery is a 12 volt or 24 volt.
- Disconnect battery from machinery/vehicle to protect the electronics.
- Refer to owner's manual and/or job procedures if needed.

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|                                                 | Created By:                                                                                                       |

### Service - Changing Engine Oil: SAFE JOB PROCEDURE

| Hazards Present                                    |  | PPE or Devices Required                          | Additional Training Required |
|----------------------------------------------------|--|--------------------------------------------------|------------------------------|
| Pinch Points<br>Burns<br>Rolling<br>Unbalance load |  | Grade 1 safety boots<br>Gloves<br>Safety Glasses |                              |

1. Park vehicle, turn off the engine, set the brake, utilize lock out procedure and place wheel chocks.
2. Place oil pail under the oil pan
3. Remove plug and let drain.
4. Loosen oil filter and remove. Dump contents of the filter in to the pail.
5. Clean and check threaded insert and filter base. Ensure sealing ring from used filter is removed.
6. Lubricate sealing ring with clean oil, spin the filter until sealing ring contacts base then turn it once more.
7. Clean oil plug and replace it in the oil pan.
8. Open the hood, remove oil fill cap, place funnel in hole and fill with proper amount of oil, as per manufacturer specifications, then remove the funnel and replace the cap
9. Check oil dipstick and ensure it is at the proper level, if not add more, start engine and let run for several minutes
10. Turn engine off, look under the hood and under vehicle or unit to be sure there are no leaks

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### Service - Chocking Vehicles: SAFE WORK PRACTICE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | PPE or Devices Required                                                                                           | Additional Training Required |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, trips & falls<br>Muscle strain<br>Crushing<br>Pinch point                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Safety boots<br>Safety glasses<br>Safety vest                                                                     |                              |
| <ul style="list-style-type: none"> <li>• Ensure vehicle is parked on a flat level surface.</li> <li>• Engage emergency brake on vehicle and test it.</li> <li>• Remove keys from vehicle. Only authorized persons allowed near vehicle while vehicle being worked on.</li> <li>• All vehicles must be unloaded before work begins.</li> <li>• Chose the size of the chock and inspect for damage or defects.</li> <li>• Drop suspension on vehicle and trailer.</li> <li>• Position Wheel Chocks snugly and in the center of the wheels (more than one pair may be required).</li> <li>• Proceed to work on vehicle.</li> <li>• When finished do a walk around to ensure no materials or tools are left behind.</li> <li>• Remove the chocks. Only the person who placed the chocks can remove them unless someone directed by that person to do so.</li> <li>• Remove chocks and inform driver work has been completed.</li> <li>• <b>All vehicles left unattended on an uneven surface must be chocked.</b></li> </ul> |  |                                                                                                                   |                              |
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| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Reviewed By:                                                                                                      |                              |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Created By:                                                                                                       |                              |

### Service - Cleaning Solvents & Flammables: SAFE WORK PRACTICE

| Hazards Present                                                   |  | PPE or Devices Required                                                                                                                            | Additional Training Required |
|-------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Chemical burns<br>Toxic substances<br>Fire<br>Explosions<br>Burns |  | Safety boots<br>Eye Protection<br>Gloves as required<br>Protective clothing as required<br>Respirator as required<br>Supplied air or SCBA required |                              |

- The foreman must be aware of all solvents and 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.
- Review (Material) Safety Data Sheet (M)(SDS) when needed.
- Use non-flammable solvents for general cleaning
- When flammable liquids are used, no hot work is permitted in the area.
- Store flammables and solvents in special storage areas.
- Check toxic hazards of all solvents before use.
- Provide adequate ventilation where all solvents and flammables are being used.
- When breathing hazards exist, use the appropriate respiratory protection.
- Ensure that proper containers are used for transportation, storage, and field use of flammables.
- 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.
- Use Proper equipment appropriate for the job.
- Relate to the product being used.

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### Service - Cleaning Solvents & Flammables: SAFE JOB PROCEDURE

| Hazards Present                                                   |  | PPE or Devices Required                                                                                                                            | Additional Training Required |
|-------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Chemical burns<br>Toxic substances<br>Fire<br>Explosions<br>Burns |  | Safety boots<br>Eye Protection<br>Gloves as required<br>Protective clothing as required<br>Respirator as required<br>Supplied air or SCBA required |                              |

#### Use of Cleaning Solvents & Flammables

Cleaning solvents are used in the day to day construction work to clean tools and equipment. Special care must be taken to protect the worker from hazards which may be created from the use of these liquids. Wherever possible, solvents should be non-flammable and non-toxic.

The foreman must be aware of all solvents and 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.

1. Use non-flammable solvents for general cleaning.
2. When flammable liquids are used, no hot work is permitted in the area
3. Store flammables and solvents in special storage areas
4. Check toxic hazards of all solvents before use.
5. Provide adequate ventilation where all solvents and flammables are being used.
6. Use goggles or face shields to protect the face and eyes from splashes or sprays, rubber gloves to protect the hands and appropriate protective clothing.
7. When breathing hazards exist, use the appropriate respiratory protection.
8. Ensure that proper containers are used for transportation, storage and field use of flammables.
9. 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.

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### Service - Mounting Tires: SAFE JOB PROCEDURE

| Hazards Present                             |  | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------|--|------------------------------------------------------------------------|------------------------------|
| Pinch points<br>Eye Injury<br>Muscle strain |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. Place tire in tire cage or chain tire on two opposite sides
2. If beads do not contact both rim seats enough to retain air, spread the beads by using mounting band
3. If necessary, use tire mounting soap between bead and rim seat to take up space
4. Use clip-on style air chuck to start inflating
5. Inflate tire just enough to contact bead seats on rim. Then, for safety, remove mounting band if used
6. Increase air pressure to seat tire beads on rim. DO NOT EXCEED MAXIMUM PSI ON TIRE
7. If beads do not seat, deflate and lubricate again
8. Adjust air pressure to recommended pressure, check for leaks

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### Spill Kits (Containment): SAFE WORK PRACTICE

| Hazards Present                                                                 |                                                                                   | PPE or Devices Required                                                                                                                                                                           | Additional Training Required |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Hazardous materials<br>Fire<br>Chemical reaction<br>Environmental contamination | Chemical inhalation<br>Chemical burns<br>Possible acute or chronic health hazards | Safety boots or chemical resistant as required<br>Safety vest<br>Safety glasses<br>Hard hat<br>Face shield as required<br>Specialty clothing as required<br>(Material) Safety Data Sheet (M)(SDS) |                              |

- Spill Kits are available on all jobsites.
- **Spill Control and Cleanup plan.**
- Stop Work. Every available person is to help with the cleanup. If additional help is needed Forman is to bring help
- **Contain Spill.** Contain spill by building dyke around it with sand. Using contents of spill kit soak up spilled material and dispose back into container(s). cover drains and other escape routes if possible.
- Stop the spill at the source if possible.
- Before work commences a plan should be made to determine most effective way of handling the spill
- **Clean up.** Sweep all the contents or whatever materials used into containers.
- **Follow-up.** Once the spill is cleaned do follow-up investigation as to causes of spill.
- Complete HS26 Spill Report
- Note: If any of the spilled material enters storm or sanitary sewers Environmental Department must be contacted as soon as possible. If near waterways, notify appropriate authorities as soon as possible. All contaminated material is to be removed by the closest contractor available that removes test material.
- **Environmental Emergency 1-800-565-1633**

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### Spill Kits: SAFE JOB PROCEDURE

| Hazards Present                                                                 |  | PPE or Devices Required                                   | Additional Training Required |
|---------------------------------------------------------------------------------|--|-----------------------------------------------------------|------------------------------|
| Hazardous Materials<br>Fire<br>Chemical reaction<br>Environmental contamination |  | Steel toe boots                                           | Emergency Plan               |
|                                                                                 |  | Safety glasses                                            |                              |
|                                                                                 |  | Hard hat                                                  |                              |
|                                                                                 |  | Reflective high visibility clothing                       |                              |
|                                                                                 |  | Face shield,<br>Gloves<br>Specialty clothing if required) |                              |

#### General Spill Cleanup Procedures

In the event of a chemical spill, first decide if you are trained, knowledgeable and equipped to handle the incident. Immediately evacuate and notify your supervisor if there is a possibility of an acute respiratory hazard present or if you need assistance to clean up the spill. Never proceed to clean up a spill if you do not know the hazards associated with the chemical or if you are unsure of how to clean up the spill. If anyone is injured or been exposed, immediately notify emergency services (911) environmental emergency (1-800-565-1633) and your governing regulatory authority begin decontamination measures or first aid, if trained.

Don the personal protective equipment from the spill kit; splash goggles and nitrite/silver shield combination gloves. Always ask a fellow researcher for assistance. They should also don splash goggles and nitrite/silver shield combination gloves. Make sure that all forms of local exhaust i.e. fume hoods, are operating. It is normally not advisable to open the windows. If broken glass is involved, do not pick it up with your gloved hands. Use the scoop or tongs to place it in the bag, and then place the bag in a strong cardboard box or plastic container. Follow the procedures provided below based on the class and type of chemical.

All tools used in the clean up need to be decontaminated (plastic scoop, tongs, etc.) Remove all gross contamination with a wet paper towel. Dispose of the contaminated paper towels as waste. Rinse the tools off with copious amounts of water. Dispose of the gloves as waste. Dry the tools off and place back into the spill kit along with the splash goggles. Contact DOHS to obtain replacement gloves and spill cleanup material

#### Liquid Spills other than Flammable Liquids

Spread the chemical spill powder over the spill starting with the edges first. This will help to confine the spill to a smaller area. Spread enough powder over the spill to completely cover the liquid. There should be no free liquid. Use plastic scoop to ensure that the liquid was completely absorbed by the powder. Pick up the powder with the scoop and place in the polyethylene bag. Wipe the area down with a wet paper towel.

Dispose of paper towel with the waste generated from the spill cleanup. Seal bag with tape and attach a completed orange hazardous waste sticker on the bag.

#### Flammable Liquid Spills

Control all sources of ignition. Lay the chemical spill pads over the spill. These pads are designed to suppress the vapors emitted by a volatile liquid. Allow pads to completely soak up liquid. Pick up pads with tongs or other device that minimizes direct contact with a gloved hand.

Place in the polyethylene bag. Wipe the area down with a wet paper towel. Dispose of paper towel with the waste generated from the spill cleanup. Seal bag with tape and attach a completed orange hazardous waste sticker on the bag.

### Solid Spills

Use the plastic scoop to place the spilled material into the polyethylene bag. Care should be taken so as not to create dust or cause the contaminated powder to become airborne. After the bulk of the material is cleaned up, wet a spill pad and wipe the area down. Place the pads into the polyethylene bag. Wipe the area down with a wet paper towel. Dispose of paper towel with the waste generated from the spill cleanup. Seal bag with tape and attach a completed orange hazardous waste sticker on the bag.

### Note:

Precautions must be taken to minimize exposure to the spilled chemical. Be careful not to step in the spilled material and track it around. Contact DOHS and UDPD if an exposure to a chemical occurs.

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**Spotter: SAFE WORK PRACTICE**

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | PPE or Devices Required                                                                                                  | Additional Training Required  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Crush points<br>Blind spots<br>Uneven terrain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Hard hat<br>Safety glasses<br>Gloves<br>High Visibility Safety vest<br>Grade 1 Safety boots                              | Knowledge of standard signals |
| <ul style="list-style-type: none"> <li>• Review the signals to be used with the operator</li> <li>• Sound the horn before starting to move the vehicle.</li> <li>• Stop all vehicle movement while the guide is repositioning.</li> <li>• Remain visible to the driver at all times.</li> <li>• Wear high-visibility clothing. See CAN/CSA Z96-02 High Visibility Safety Apparel Standard.</li> <li>• Establish and maintain eye contact with the driver.</li> <li>• Position yourself to maintain as clear a view as possible of the intended path of the vehicle.</li> <li>• Stay clear of the vehicles path.</li> <li>• Minimize foot traffic. Cordon off an area if necessary.</li> <li>• Never stand behind a reversing vehicle.</li> <li>• Avoid walking backward.</li> <li>• Use standard hand signals to communicate with the driver.</li> <li>• Be sure that no one is riding on the outside of the vehicle before signalling to the driver to begin moving.</li> <li>• Immediately signal to the driver to stop if any person or object enters the vehicles intended path.</li> <li>• Signal to the driver to stop if you must change position. Reposition, and when ready, signal to the driver to continue.</li> <li>• Use distinct and deliberate body movements.</li> <li>• Be aware of blind spots.</li> <li>• Protect yourself and be aware of crush points.</li> <li>• Remember that large vehicles have significant blind spots.</li> <li>• Remain clear of the vehicle unless acting as a guide.</li> <li>• Make eye contact with the driver to ensure he or she knows that you are there.</li> <li>• Never cross or step behind the vehicle when it is backing up or when its backup signals are on.</li> </ul> <p><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p> |  |                                                                                                                          |                               |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | Reviewed By:                                                                                                             |                               |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | <p>This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> |                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Reviewed By:                                                                                                             |                               |



### Spotter: SAFE JOB PROCEDURE

| Hazards Present                                                                   | PPE or Devices Required                                                                                | Additional Training Required |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------|
| Other workers and equipment<br>Machine malfunction<br>Pinch Points<br>Blind Spots | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots<br>Two-way radio (if necessary) |                              |

#### Spotters should

- Remain visible to the driver at all times.
- Wear high-visibility clothing.
- Establish and maintain eye contact with the driver.
- Position yourself to maintain as clear a view as possible of the intended path of the vehicle.
- Stay clear of the vehicles path.
- Never stand behind a reversing vehicle.
- Avoid walking backward.
- Use standard hand signals to communicate with the driver.
- Be sure that no one is riding on the outside of the vehicle before signalling to the driver to begin moving.
- Immediately signal to the driver to stop if any person or object enters the vehicles intended path.
- Signal to the driver to stop if you must change position. Reposition, and when ready, signal to the driver to continue.
- Use distinct and deliberate body movements.
- Be aware of blind spots.
- Protect yourself, and be aware of crush points. Other workers should do the following:
- Remember that large vehicles have significant blind spots.
- Remain clear of the vehicle unless acting as a guide.
- Make eye contact with the driver to ensure he or she knows that you are there.
- Never cross or step behind the vehicle when it is backing up or when its backup signals are on.

#### Keep in mind the following general considerations:

- Fit reversing beepers, reversing cameras, and other backup warning devices where it makes sense to do so.
- Use a guide even if backup warning devices are in place.
- External workers coming onto a work site increase the risk of incident. Never assume that new personnel know how to be safe around moving vehicles.

#### If no guide is available, the driver should do the following:

- Check the intended path of the vehicle.
- If necessary, get out of the vehicle and visually inspect the site.
- Back up immediately. Do not trust the scene to remain as it was when you checked.
- Sound your horn before starting to move.
- Back up slowly.
- Place a marker a safe distance behind your vehicle, and then back up to it.
- As you back up, check all of your mirrors, including both side mirrors.
- Avoid backing up to your blind side. The blind side is the passenger door side.
- Don't back up further than necessary.
- If in doubt, stop and get out. Check the intended path carefully.

These hand signals have been developed by industry, for industry, so that employers can implement them into their hazard management systems and safe operating procedures with confidence. Co-operation and clear, consistent communication between drivers and spotters can minimize the potential for harm or damage. The driver is ultimately responsible for the safe operation and movement of the vehicle.

## PROCEED SLOWLY



### FORWARD

Always face palms in direction of desired travel.



### BACKWARD

Then bend both arms repeatedly toward head and chest, and then extend.

## TURNS



Point one arm to indicate the direction to turn.



Bend monitoring arm repeatedly toward head to indicate continued turning.

## DISTANCE TO

### STOPPING POINT



FACE PALMS FORWARD WITH HANDS ABOVE HEAD. BEND ELBOWS FORWARD AND HANDS TOGETHER.

## STOP

### CROSS BOTH ARMS ABOVE HEAD



- Whenever possible, the vehicle shall be positioned so as to minimize movement in reverse.
- Extreme caution shall be exercised when moving a vehicle. Whenever possible, a guide should assist the driver.
- The driver takes direction and guidance from the guide.
- The guide must always be fully visible to the driver. If the guide is not fully visible, the driver must stop.
- Guides shall wear high-visibility clothing (e.g., reflective striping). See CAN/CSA Z96-02 High Visibility Safety Apparel Standard.
- Drivers shall not permit anyone to ride on the running boards, fenders, or any other part of the vehicle except on the seats provided.
- No one should cross or step behind a vehicle when the backup warning device is activated.
- Plan a path that minimizes the need to drive in reverse.
- Conduct a visual inspection of the desired path.
- Identify potential hazards in the vehicles path, such as overhead lines, ruts, wellhead, or personnel.
- Once you identify the hazards, assess the risk of harm and implement control measures.

**When backing up, drivers should do the following:**

- Use a guide whenever possible.

Stop backing up immediately under any of these conditions:

- ♣ The guide is not fully visible.
- ♣ Visual contact with other workers is lost.
- ♣ An emergency stop signal is received from anyone in the area.

Resume backing up only after visual contact with the guide or workers on foot is restored and acknowledged.

- Sound the horn before starting to move the vehicle.
- Stop all vehicle movement while the guide is repositioning.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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**Tool - Air Nailing Machines: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                       |                                                                | <b>PPE or Devices Required</b>                                                                                     | <b>Additional Training Required</b> |
|--------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Slips<br>Trips<br>Falls<br>Sparks<br>Noise<br>Compressed Air | Punctures<br>Flying Debris<br>Pinch and squash<br>Eye injuries | Safety Boots<br>Safety Glasses<br>High visibility clothing<br>Gloves<br>Hard Hat<br>Hearing protection as required |                                     |

- Only trained and experienced workers to operate nailing tool.
- Follow manufacturers operating instructions.
- Always wear proper PPE.
- Check tool daily for proper operation.
  - Check safety mechanisms
  - Make sure the air pressure is as specified by the manufacturer of the tool (if pneumatic)
- Do not operate pneumatic nailing tools above the manufacturer's specifications.
- Do not squeeze the trigger unless the nosepiece of the tool is directed at a safe work surface.
- Do not overreach when using the tool.
- Do not hold or carry a hand nailing tool with your finger on or near the trigger.
- Disconnect the air supply and exhaust all air from the tool by squeezing the trigger when,
  - Not in use, or
  - Cleaning or adjusting, or
  - Clearing a blockage
- Always keep tool pointed in a safe direction. It should always be treated as if it were loaded.
- Never point the tool at yourself or any other person

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| <b>Guidance Documents / Standards</b>                          | <b>Reviewed By:</b>                                                                                                      |
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| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b> | <p>This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum</p> |
|                                                                | <b>Reviewed By:</b>                                                                                                      |

**Tool - Band Saw: SAFE JOB PROCEDURE**

| <b>Hazards Present</b>                                     |                                | <b>PPE or Devices Required</b>                                                                                               | <b>Additional Training Required</b> |
|------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Jamming<br>Clothing/hair<br>Entanglement<br>Electric shock | Cuts<br>Slips<br>Dust<br>Noise | Steel toe boots<br>Safety glasses with side shields<br>hard hat<br>High visibility clothing,<br>Gloves<br>Hearing protection |                                     |

1. Employees will be properly and thoroughly trained before attempting to do any work with or on any band saw.
2. Read and understand operating instructions.
3. It is the duty of each operator to immediately eliminate or report any changes occurring on the machine or in the material being processed which changes may affect the machine's safe operation.
4. The cleanliness and tidiness of the machine and its surrounding area must be ensured through appropriate instructions, routine inspections and cleaning.
5. Do not operate a band saw with neckties, loose sleeves, jackets or jewelry.
6. Wear appropriate personal protective equipment to included eye protection.
7. Work on or alternation of the machine which detrimentally affects the safety of the machine in any way is prohibited.
8. Keep guards in place and in working condition.
9. Keep work area clean. Cluttered areas and benches invite accidents.
10. Keep all observers at a safe distance from the work area.
11. Disconnect the power to the band saw before servicing, making adjustments, and when changing blades.
12. Avoid dangerous environments. Don't use band saws in damp or wet locations. Keep work area well lit.
13. For straight cutting, always use a fence or guide.
14. When sawing curves or outlines, it is advisable that the line be marked on the stock. If several pieces are to be cut, it is best that a pattern or template be made. More than one piece can be sawed at the same time by nailing the pieces together. Drive the nails so that the heads of the nails will be on the same side as the outline. This way the nails will be visible to the operator. Place the nails outside the outline to be sawed in such a way as that they will not interfere with the saw blade. Select the proper saw blade for the curve or outline to be cut.
15. Always grab the wood being sawed with both hands, being careful to keep away from the saw.
16. An inexperienced operator must saw slowly at first until experience is gained.
17. If there is work that has to be beveled or chamfered, tilt the band saw table to the desired angle and lock it in that position. Always hold the work to the right of the blade.
18. The guide post may be moved up or down and guide must always be adjusted so that the bottom of the guide is slightly higher than the material to be saved.
19. The steel jaws will have to be set each time a blade of different blade width is used.
20. The pointer must always be in the center of the blade regardless of the size of the blade.
21. Keep your blade properly filed and set and avoid backing the saw out of the cut.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| <b>Guidance Documents / Standards</b>                          | <b>Reviewed By:</b>                                                                                               |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b> | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                                | <b>Created By:</b>                                                                                                |

**Tool - Bench Grinders: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                                           |                                                                         | <b>PPE or Devices Required</b>                                     | <b>Additional Training Required</b> |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------|
| Cuts<br>Flying objects<br>Dust<br>Rotating parts<br>Clothes/hair<br>Entanglement | Noise<br>Faulty grinding wheels<br>Slips, trips and falls<br>Vibrations | Steel toe boots<br>Safety glasses with side shields<br>Face shield |                                     |

- **Severe injury may occur if protective equipment is not used and properly maintained.**
- Check the tool rest for the correct distance from the abrasive wheel, maximum 1/8 in. or 3 mm.
- Replace the grindstone when adjustment of the rest cannot provide 1/8 in. or 3 mm. clearance.
- If the wheel has been abused and ground to an angle or grooved, reface the wheel with the appropriate surfacing tool.
- Protect your eyes with goggles or a face shield at all times when grinding.
- Make sure all shrouds and guards are in place.
- Ensure fire extinguisher is close by
- Each time a grinding wheel is mounted, the maximum approved speed stamped on the wheel bladder should be checked against the shaft rotation speed of the machine to ensure the safe peripheral speed is not exceeded. A grinding wheel must not be operated at peripheral speed exceeding the manufacturer's recommendation.
- The flanges supporting the grinding wheel should be a maximum of the diameter of the wheel and must fit the shaft rotating speed according to the manufacturer's recommendation.
- Bench grinders are designed for peripheral grinding. Do not grind on the side of the wheel.
- Do not stand directly in front of the grinding wheel when it is first started.

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**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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|                                                                | <b>Created By:</b>                                                                                                |

**Tool - Brush Saw: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                                                      |                                                                                                 | <b>PPE or Devices Required</b>                                               | <b>Additional Training Required</b> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------|
| Cuts<br>Flying debris<br>Muscle Strain to arms<br>Back Fatigue<br>Kickback<br>Fire<br>Burns | Inhaling Fumes<br>Eye injury<br>Facial injury<br>Bodily injury<br>Foot injury<br>Hearing damage | Safety boots<br>Face shield<br>Hard hat<br>Safety Vest<br>Gloves<br>Overalls |                                     |

- Before starting work, always read the operating instructions for your tool carefully.
- Always hold saw firmly and prepare for possible kickback.
- An area with a radius of at least 15 m (50 ft) around the person using the brush cutter must be kept clear of other persons and animals.
- Always take care where you cut. This is best done by keeping your eyes on the cutting tool.
- Always inspect rough terrain before starting work.
- Inspect your cutting tool regularly. In the case of grass cutting blades, shredder blades and brush knives you can check quickly for damage by tapping the tool with a metal object. If the tool rings clearly it is undamaged. If the sound is dull the tool is damaged and must be replaced.
- When you have used all of the mowing line on the spool you can fill the spool again with a fresh line. Use proper line as per manufacturers specifications.
- When winding new line onto the spool, take care to keep it tight.

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REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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|                                                                | <b>Created By:</b>                                                                                                |

**Tool - Brush Saw: SAFE JOB PROCEDURE**

| <b>Hazards Present</b>                                                                      |                                                                                                 | <b>PPE or Devices Required</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Additional Training Required</b> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Cuts<br>Flying debris<br>Muscle Strain to arms<br>Back Fatigue<br>Kickback<br>Fire<br>Burns | Inhaling Fumes<br>Eye injury<br>Facial injury<br>Bodily injury<br>Foot injury<br>Hearing damage | Safety boots<br>Face shield<br>Hard hat<br>Safety Vest<br>Gloves<br>Overalls<br>Leg protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |
| <b>Sequence of Job Steps</b><br>(what to do in the right order)                             |                                                                                                 | <b>Standard Operating Procedure</b><br>(How to do it)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |
| <b>Special Note</b>                                                                         |                                                                                                 | <b>No personnel are to use this equipment without undergoing thorough practical training while properly supervised</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |
| Adjust the Harness                                                                          |                                                                                                 | Inspect complete harness before fitting<br>Ineffective/damaged harness could break, causing brush cutter to hit the operator<br>The harness should be adjusted so that the saw can be hung at normal height for adjustment of balance<br>Hook should be about 15 cm (6 inches) below the hip bone<br><b>For a person of average height, when the saw is at normal height and held in the cutting position:</b> The blade should slope slightly forwards, permitting stumps to go clear under the guard<br>The stump height should be about 20 cm (8 Inches)<br><b>Incorrect fitting results in undue pressure on back and arms causing strain, fatigue, etc.</b><br><b>AVOID SHARING A HARNESS</b> |                                     |
| Adjust Saw Balance                                                                          |                                                                                                 | Fuel tank should be half full<br>Stand on level ground<br>Allow the saw to hang in the harness, letting go of the handles<br>The blade should then rise a little above stump-height                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |
| Adjust Handles                                                                              |                                                                                                 | Adjust the handles to suit the individual<br>Work becomes easier if your posture is correct-fatigue is decreased and output will rise<br>Be sure to adjust the handles properly<br><b>Generally, the best working stance is secured with the handle setting that causes the elbows to be slightly bent, with a moderate gap between the handles</b><br><b>It should be possible to rest the body against the left handle</b>                                                                                                                                                                                                                                                                       |                                     |
| Refueling Brush Cutter                                                                      |                                                                                                 | Refuel working "over" brush cutter for maximum control<br>Ensure the correct fuel mix is used<br>Use an appropriate fuel container with a filling spout<br>Do not refuel in a confined area due to danger of inhaling fumes<br>When refueling, ensure area is free from any source of flame or sparks                                                                                                                                                                                                                                                                                                                                                                                              |                                     |
| Final Adjustment of the Harness                                                             |                                                                                                 | To give even pressure on both shoulders, make sure that the blade is exactly in front of you when the saw hangs freely and you stand squarely on your feet<br>Adjust suspension height according to the nature of the job<br><b>Generous height is required if the terrain is stony and bumpy or when clearing after clear-cutting</b><br><b>Low height is preferred on even terrain with no stones or particularly if low stub height is required</b>                                                                                                                                                                                                                                             |                                     |



|                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal Safety                                                                                                                                                                              | <b>Personal protective clothing (ear muffs, face shield, gloves, steel-capped boots, let protection) MUST BE WORN</b><br>Equipment must be correctly adjusted<br>Maintain a safe working distance from other persons<br>Run blade at full speed before starting a cut<br>Use thigh and let muscles to move the saw<br>Control the direction of fall<br>Do not touch sawn off stems           |
| Brush Cutter Efficiency                                                                                                                                                                      | Ensure the right amount of the correct lubricant is in the angle gear<br>Clean air filter<br>Ensure the correct fuel mix is used<br>Perform regular maintenance on equipment<br>Check and tighten all nuts and bolts before using<br>Continually check guard/s and nuts and bolts throughout operation and re-tighten if necessary<br>Use the blade to suit the job<br>Keep the blades sharp |
| <b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b><br><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b> |                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Guidance Documents / Standards</b>                                                                                                                                                        | <b>Reviewed By:</b>                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b>                                                                                                                               | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum<br><br><b>Created By:</b>                                                                                                                                                                                                                                                  |

**Tool - Chainsaw: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                                                                           |  | <b>PPE or Devices Required</b>                                                                                | <b>Additional Training Required</b> |
|------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Cuts<br>Rotating parts<br>Flying chips & debris<br>Push-pull (jamming)<br>slips trips and falls<br>Muscle strain |  | Safety boots<br>Safety glasses<br>Hard hat<br>Safety vest<br>Gloves<br>Hearing protection<br>Protective chaps | Chainsaw                            |

- Before starting work, always read the operating instructions for your tool carefully. This SWP is intended as a supplement to these instructions and do not replace them.
- Check your chainsaw thoroughly before use. Make sure that your brake, bar, chain and sprocket are in top condition and that all safety devices are working and the chain is tightened properly.
- Do not start cutting until you have a clear work area and a secure footing
- Keep other people and animals well away from the working area
- Use the chainsaw to cut wood only
- Do not become distracted. Stop the chainsaw if somebody starts speaking to you
- Refuel the chainsaw only after the engine has cooled down and away from place where you are cutting.

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| <b>Guidance Documents / Standards</b>                          | <b>Reviewed By:</b>                                                                                               |
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|                                                                | <b>Created By:</b>                                                                                                |

### Tool - Chainsaws: SAFE JOB PROCEDURE

| Hazards Present                                                          |                                    | PPE or Devices Required                                                                                                                   | Additional Training Required |
|--------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Cuts<br>Rotating parts<br>Flying chips and debris<br>Push-pull (jamming) | Kick back<br>Slips trips and falls | Safety boots<br>safety glasses<br>hard hat<br>reflective high visibility clothing<br>hearing protection<br>gloves<br>chainsaw pants/chaps |                              |

#### Use of Chainsaws

Chainsaws are used for many jobs in construction. Since this tool was primarily meant for use in the logging industry, it can be an unfamiliar tool to some workers.

Workers must be trained in its safe use before using a chainsaw.

This training must include a minimum of the following elements:

- The proper personal protective equipment to be worn is set out by the manufacturer, occupational health and safety legislation and the Forest Professional
- Fuelling of the saw must be done in a well-ventilated area and not while the saw is running or hot
- An approved safety container must be used to contain the fuel used along with a proper spout or funnel for pouring
- The correct methods of starting, holding, carrying, storage and use of the saw must be used as directed by the manufacturer
- Ensure that the chain brake is functioning properly and adequately stops the chain
- The chain must be properly sharpened, have the correct tension, and be adequately lubricated
- When carrying/transporting a chainsaw, the bar guard must be in place, the chain bar must be toward the back and the motor must be shut off
- The chainsaw must not be used for cutting above shoulder height

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|                                                 | Reviewed By:                                                                                                      |

**Tool - Compressed Air Safety: SAFE WORK PRACTICE**

| Hazards Present                                             |  | PPE or Devices Required                                 | Additional Training Required |
|-------------------------------------------------------------|--|---------------------------------------------------------|------------------------------|
| Explosion<br>Dust<br>Flying debris<br>Slips trips and falls |  | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest |                              |

- All pipes, hoses, and fittings must have a rating of the maximum pressure of the compressor. Compressed air pipelines should be identified (psi) as to maximum working pressure.
- Air supply shutoff valves should be located (as near as possible) at the point-of-operation.
- Air safety valve is to be tested for proper working condition.
- Air hoses should be kept free of grease and oil to reduce the possibility of deterioration.
- Hoses should not be strung across floors or aisles where they are liable to cause personnel to trip and fall. When possible, air supply hoses should be suspended overhead, or otherwise located to afford efficient access and protection against damage.
- Hose ends must be secured to prevent whipping if an accidental cut or break occurs.
- Pneumatic impact tools, such as riveting guns, should never be pointed at a person.
- Before a pneumatic tool is disconnected (unless it has quick disconnected plug), the air supply must be turned off at the control valve and the tool bled.
- Compressed air must not be used under any circumstances to clean dirt and dust from clothing or off a person's skin. Shop air used for cleaning should be regulated to 15 psi unless equipped with diffuser nozzles to provide lesser pressure.
- Static electricity can be generated through the use of pneumatic tools. This type of equipment must be grounded or bonded if it is used where fuel, flammable vapors or explosive atmospheres are present.

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### Tool - Compressed Air Safety: SAFE JOB PROCEDURE

| Hazards Present                                             |  | PPE or Devices Required                                 | Additional Training Required |
|-------------------------------------------------------------|--|---------------------------------------------------------|------------------------------|
| Explosion<br>Dust<br>Flying debris<br>Slips trips and falls |  | Safety boots<br>Eye Protection<br>Gloves<br>Safety vest |                              |

1. Before starting the compressor, be sure the manual and all warning signs have been completely read.
2. Pipes should be properly labeled that carry compressed air and the direction of air flow correctly labeled with an arrow. Shutoff valves should be properly labeled and identified so air can be shut off quickly in an emergency situation.
3. Hoses, fittings, regulators and valves should be inspected periodically for leaks, damage, and other defects.
4. Goggles must be worn over safety glasses when cleaning with compressed air.
5. Flexible air hoses should be kept as short as possible to minimize tripping hazards and to reduce whipping action in the event a hose would fail.
6. High pressure jacketed lines should be anchored at several points to prevent them from whipping.
7. Quick disconnect fittings should be installed on flexible air hoses in high fire hazard areas, the hoses can be disconnected quickly, preventing whipping actions that might not only cause injury and damage but also stoke a fire.
8. Use a vacuum system rather than compressed air for cleaning whenever possible. Vacuuming stirs up less dust and other particles than an air compressor does  
.DO NOT use compressed air to:
  - Transfer flammable liquids
  - Static electricity builds up can discharge and ignite the liquid
  - Empty containers. The container could rupture due to excessive internal pressure
  - Clean clothes, hair, or skin
9. When using compressed air, direct air away from eyes and skin.
10. To reduce noise exposure and prevent exhaust from the equipment or tool, direct the pressure relief valve away from the work areas.

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|                                                 | Created By:                                                                                                       |

**Tool - Drill and Drill Press: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                                       |                                                                            | <b>PPE or Devices Required</b>                   | <b>Additional Training Required</b> |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------|
| Breaking objects<br>Flying materials<br>Jamming<br>Clothes/hair entanglement | Rotating parts<br>Electric shock<br>Slip, trips and falls<br>Fire<br>Burns | Safety Boots<br>Safety Glasses or<br>Face Shield |                                     |

- Always use a brush to remove drillings from the work. Never use your hands.
- Avoid dangerous environments. Do not use the power in rain, damp or wet locations or in the presence of explosive atmospheres such as gaseous fumes, dust or flammable materials.
- Remove materials or debris that may be ignited by sparks.
- Do not wear loose clothing or jewelry. Wear a protective hair covering to contain long hair.
- When working outdoors wear rubber gloves and insulated non-skid footwear. Keep hands and gloves away from moving parts.
- Wear safety goggles or glasses with side shields or face shield.
- Keep bystanders away. Onlookers should be kept at a safe distance from the work area to avoid distracting the operator and contacting the tool or extension cord.
- Use the tool for the purpose it was designed. Do not defeat safety accessories or guards.
- Avoid accidental starting. Never carry the tool by the trigger.
- Stay alert. Watch what you are doing and use common sense. Do not use a power tool when you are tired, distracted or under the influence of drugs, alcohol or any medication causing decreased control.
- Firmly secure the material to be drilled, tapped or reamed by blocks or clamps so that it cannot spin or climb the drill. Never use your hand to secure the material from turning.
- Run the drill only at the correct speed for material and application. Forcing or feeding too fast may cause broken drills and result in serious injury.
- An operator should never attempt to loosen the chuck of a tapered shank drill unless the power is turned off.
- When chucks are being removed from the spindle, the spindle should be lowered close to the table so the chuck will not fall.

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### Tool - Drills and Drill Press: SAFE JOB PROCEDURE

| Hazards Presents                                                             |                                                                            | PPE or Devices Required                                                              | Additional Training Required |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------|
| Breaking objects<br>Flying materials<br>Jamming<br>Clothes/hair entanglement | Rotating parts<br>Electric shock<br>Slip, trips and falls<br>Fire<br>Burns | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing | Orientation<br>WHMIS         |

#### 1. General Safety-Safe Operations:

Read all instructions-failure to follow the safety rules listed below and other basic safety precautions may result in serious personal injury.

#### 2. Work Area

1. Keep children away
2. Do not let visitors contact tool or extension cord. All visitors shall be kept away from work area.
3. Do not use power tools in damp or wet locations
4. Keep work area well lit
5. Do not expose power tools to rain.

#### 3. Personal Safety

1. Now your power tool-read and understand the owner's manual and labels affixed to the tool. Learn its application and limitations as well as the specific potential hazards peculiar to this tool
2. Don't over-reach keep proper footing and balance at all times
3. Watch what you are doing at all times
4. Dress properly, do not wear loose clothing or jewelry; they can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair
5. Disconnect tools from power source when not in use, before servicing, when changing wheels etc.
6. Keep guards in place, in working order, and in proper adjustment and alignment
7. Remove adjusting keys and wrenches when not in use, before servicing, and when changing wheels
8. Ensure the switch is in the "off" position before plugging in tool
9. Never stand on tool or its stand
10. Check damaged parts for damaged parts before operating the tool
11. Only trained repairmen should attempt all repairs, electrical or mechanical
12. Don't leave tool until it comes to a complete stop
13. Do not operate electric tools in gaseous or explosive atmosphere
14. Keep handles dry, clean and free from oil and grease
15. Before connecting the tool to a power source (receptacle, outlet) be sure voltage supplied is the same as that specified on the nameplate of the tool
16. Use the drill press in a well-lit are and on a level face, clean and smooth enough to reduce the risk of trips and falls
17. Never place your fingers in a position where they could contact the drill bit or other cutting too parts
18. Always support work piece so it won't shift or bind on the tool
19. Always position backup material underneath the work piece
20. Whenever possible, position the work piece to contact the left side of the column
21. When using a drill press vise, always fasten to the table
22. Never do any work "free hand" (hand holding a work piece rather than supporting it on the table)
23. Never move the head or table support while the tool is running
24. Before starting the operation, jog the motor switch to make sure the drill bit or other cutting tools do not wobble or cause vibration

25. If a work piece overhangs the table such that it will fall or tip if not held, clamp it to the table or provide auxiliary support
26. Use fixtures for unusual operations to adequately hold, guide and position the work piece
27. Use the spindle speed recommended for the specific operation and work piece material
28. Never climb on the drill press table, it could break or pull the entire drill press down on you
29. Turn the motor switch off and unplug from the power source when not in operation
30. To avoid injury from thrown work or tool contact, do not perform layout, assembly, or setup work on the table while the cutting tool is rotating

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|                                                                | <b>created by :</b>                                                                                               |



**Tool - Electric & Cordless Reciprocating Saw: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                   |                                             | <b>PPE or Devices Required</b>                                      | <b>Additional Training Required</b> |
|----------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------|-------------------------------------|
| Electrocution<br>Fire<br>Dust<br>Debris<br>Faulty blades | Rotating parts<br>Cuts<br>Push-pull jamming | Safety Boots<br>Safety Vest<br>Safety glasses<br>Hard hat<br>Gloves |                                     |

- Inspect Saw before using,
- Ensure all Safety Guards are in Place.
- Do not wear loose clothing or jewellery.
- Operate tool within the design limits of the manufacturer.
- Wear appropriate PPE.
- Never use tool in wet or damp areas.
- Ensure work area is well lit.
- Recommended that gloves are to be worn to cushion vibrations.
- Expose area to have a safe and clean work site.
- Use appropriate blade for the right job.
- Make sure saw is at zero energy (no power to saw, unplugged) while you change and remove blade.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| <b>Guidance Documents / Standards</b>                          | <b>Reviewed By:</b>                                                                                               |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
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|                                                                | <b>Reviewed By:</b>                                                                                               |

**Tool - Electric Reciprocating Saw: SAFE JOB PROCEDURE**

| <b>Hazards Present</b>                                                                 |                             | <b>PPE or Devices Required</b>                                                                                   | <b>Additional Training Required</b> |
|----------------------------------------------------------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Jamming<br>Cuts<br>Flying objects<br>Rotating parts<br>Noise<br>Slips, trips and falls | Electrocution<br>Vibrations | Safety Boots<br>Safety Vest<br>Safety glasses<br>Hard hat<br>Gloves<br>Hearing protection<br>Sun (UV) Protection |                                     |

**Procedures**

1. Locate yourself in a good steady position prior to making cuts with the reciprocating saw.
2. If the reciprocating saw has a variable speed control, set on fast speed for cutting wood and on slow speed for cutting materials.
3. Select the correct blade for the type of material being cut with the reciprocating saw.
4. Place the rocker shoe against the work when cutting with the reciprocating saw.
5. Do not place excessive pressure on the saw while cutting and become over balanced.
6. If the saw requires excessive pressure to cut it, it is in need of a new blade. Change the blade before continuing to use the saw.
7. To make a plunge cut (internal cut) with the reciprocating saw place the rocker shoe on the material and tilt the saw forward slowly until the blade cuts through the material. Too much forward pressure will usually cause the blade to break prematurely.
8. Keep a good supply of blades on hand for the reciprocating saw as it will break blades frequently.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| <b>Guidance Documents / Standards</b>                          | <b>Reviewed By:</b>                                                                                               |
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**Tool - Electric Cut Off Saw: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                | <b>PPE or Devices Required</b>                                                                                    | <b>Additional Training Required</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Electrocution<br>Fire<br>Dust<br>Debris<br>Faulty blades                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Rotating parts | Safety Boots<br>Safety Vest<br>Safety glasses<br>Hard hat<br>Hearing Protection                                   |                                     |
| <ul style="list-style-type: none"> <li>Always follow manufacturer's instructions</li> <li>Wear proper PPE, Hard hat, safety boots, eye and ear protection are required.</li> <li>Do not wear loose clothing that can get caught in the equipment.</li> <li>Safety glasses are required. Loose chips, s and dust are blown into the air during drilling.</li> <li>Guards should be used as the manufacturer intended. The guard should be checked frequently to be sure that it operates freely and encloses the teeth completely when cutting. It should also enclose the unused portion of the blade when it is cutting.</li> <li>Do not use a circular saw that is too heavy for a worker to easily control</li> <li>Be sure that the switch turns the tool on and returns to the off position after release</li> <li>Use sharp blades</li> <li>Use the correct blade for the application, and observe rotation marks on the blade during installation</li> <li>For maximum control, use both hands, or a guide block to properly and safely guide the saw.</li> </ul> |                |                                                                                                                   |                                     |
| <b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b><br><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                                                                                                                   |                                     |
| <b>Guidance Documents / Standards</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                | <b>Reviewed By:</b>                                                                                               |                                     |
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                | <b>Reviewed By:</b>                                                                                               |                                     |

**Tool - Electric Cut Off Saw: SAFE JOB PROCEDURE**

| <b>Hazards Present</b>                                                          |                                           | <b>PPE or Devices Required</b>                                                                                   | <b>Additional Training Required</b> |
|---------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Vibrations<br>Noise<br>Electrocution<br>Faulty blades<br>Slips, trips and falls | Jamming<br>Cuts<br>Flying Objects<br>Dust | Safety Boots<br>Safety Vest<br>Safety glasses<br>Hard hat<br>Hearing Protection<br>Gloves<br>Sun (UV) Protection |                                     |

1. Secure the material to be sawed in a vise or with clamps to the work table.
2. Mark the line of cut with a pencil.
3. Install the proper blade suited to the material being cut.
4. Grasp the saw firmly with both hands. Start the saw and allow the blade to reach full operating speed before making contact with the material being sawed.
5. Allow the saw to move at its own rate through the wood. Do not force the saw.
6. Protect the electrical cord from the line of the cut.
7. Always use both hands to hold and guide the saw.
8. Clear away scraps of wood on the table only after the saw stops running.

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REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| <b>Guidance Documents / Standards</b>                          | <b>Reviewed By:</b>                                                                                               |
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**Tool - Extension Cords: SAFE WORK PRACTICE**

| <b>Hazards Present</b>         |  | <b>PPE or Devices Required</b>                                      | <b>Additional Training Required</b> |
|--------------------------------|--|---------------------------------------------------------------------|-------------------------------------|
| Electrocution<br>Fire<br>Trips |  | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Gloves<br>Hard hat |                                     |

- All portable extension cords must be of the outdoor type and have an insulated grounding conductor.
- All extension cords will be CSA approved and inspected before use.
- Defective cords must not be used. They must either be destroyed or be tagged and removed from the worksite until repaired.
- Extension cords must be protected during use to prevent damage from sharp edges, movement of materials, and flame cutting.

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**Tool - Gasoline Cut Off Saw: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                              |               | <b>PPE or Devices Required</b>                                                                                    | <b>Additional Training Required</b> |
|---------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Cuts<br>Muscle Strain<br>Rotating parts<br>Exhaust<br>Noise<br>fire | Flying debris | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat<br>Gloves<br>Hearing protection<br>Snug fitting clothes |                                     |

- Refer to owner's manual for instructions.
- Refer to Code of Practice for Concrete Cutting Saw
- Check for loose bolts and damaged parts.
- Never operate indoors due to carbon monoxide buildup.
- Ensure all guards are in place.
- Never let saw run unattended
- Do not wear loose fitting clothing or jewellery.
- Be aware of fire hazards with sparks.
- Before assembling your cutting wheel, make sure that the maximum wheel operating speed is above or equal to the spindle speed of your cut-off saw.
- Store spare cutting wheels in a dry place where there is no risk of frost damage.
- Check the wheel for cracks and make sure that no pieces have broken off.
- Always stop the engine before putting down or carrying saw.
- Damaged blades can cause a severe injury or fatality

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|                                                                | <b>Created By:</b>                                                                                                |

### Tool - Gasoline Cut Off Saw: SAFE JOB PROCEDURE

| Hazards Present                                                         |                                                              | PPE or Devices Required                                                                                          | Additional Training Required |
|-------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------|
| Jamming<br>Cuts<br>Dust<br>Rotating parts<br>Clothes/hair entanglement, | Flying debris<br>Vibrations<br>Noise<br>Slips, Trips & Falls | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat<br>Gloves<br>Hearing protection<br>Sun (UV) Protection |                              |

#### Quick Cut Saws

Also known as hand held portable circular cut off saws, are widely used for cutting concrete, masonry products, sheet metal products (both steel and aluminum) and light steel sections such as angles and channels.

#### Hazards

The use of quick-cut saws may involve both safety and health hazards. Safety hazards are caused by the high-speed rotation and exposure of the blade during operation. The major causes are:

1. Use of inappropriate disks and blades for the operation
2. Improper starting of saw
3. Kickback and pull-in
4. Improper supporting and securing of the work to be cut
5. Improper cutting stance and grip

Health hazards are caused by noise exposure and exhaust from the internal combustion engine the common power source. The saws also create clouds of dust when dry cutting masonry and showers of hot sparks when cutting metal.

#### Controlling Hazards

Major safety hazards can be controlled by:

1. Training operators to use quick cut saws properly and to wear the right protective equipment
2. Keeping saws in good working condition, equipped with the proper blades or abrasive disks
3. Using the saw with all guards in place
4. Keeping work secured to prevent it from shifting during cutting

#### Health Concerns

Your quick cut saw produces poisonous exhaust fumes as soon as the combustible engine is running. These gases (e.g. carbon monoxide) may be colorless and odorless. To reduce the risk of serious or fatal injury from breathing toxic fumes, never run the saw indoors or in poorly ventilated areas.

Prolonged use of cut off saws exposing the operator to vibrations may produce white finger disease (carpal tunnel syndrome). These conditions reduce the hand's ability to feel and regulate temperature, produces numbness and burning sensations and cause nerve and circulation damage and tissue necrosis. If any of the above conditions appear, seek medical advice immediately.

Asbestos dust can cause serious or fatal injury. Do not cut asbestos without proper breathing protection specifically approved for asbestos dust. Other persons should not be allowed in the area during such operations.

#### Saw Maintenance and Operation

Quick cut saws must be serviced and maintained in accordance with the manufacturer's instructions. Guards and air-intakes should be cleaned regularly and often. Excessive blade vibration should be corrected before trying to make a cut.

#### Starting Procedures

Start saw only on a hard surface.

### Support

For repeated cuts of masonry or metal pieces, a jig designed and built to hold material in place without manual contact improves efficiency and safety.

### Stance and Grip

Grip the saw firmly with one hand on each handle, hold forward arm straight to keep the saw from kicking back or climbing out of the cut.

### Cutting

Work should be supported so that the blade will not bind in the cut. Cut should be as close as possible to the supporting surface.

### Storage and Use of Quick Cut Saw Fuels

1. Store flammable materials well away from work site
2. Fuel your quick cut saw in a well-ventilated area, outdoors only
3. Always shut off the engine and allow it to cool before refueling
4. Never smoke while refueling
5. Never refuel close to an open flame
6. Relieve fuel tank pressure by loosening fuel cap slowly
7. Select bare ground for refueling and move at least 10 feet from fueling spot before starting the engine
8. Wipe off any spilled fuel before starting your saw and check for leakage.

**Gasoline is an extremely flammable fuel. Use extreme caution when handling gasoline or fuel mix.**

### Protective Equipment

In addition to the standard equipment mandatory on construction sites, operators of quick cut saws should wear snug fitting clothing, hearing protection, and eye and face protection, and heavy-duty leather gloves. The dry cutting of masonry or concrete products calls for respiratory protection as well. For general dust hazards, a half mask cartridge respirator for dust, mist, and fumes should provide adequate protection when properly fitted and worn by a clean-shaven person.

### Disks and Blades

Abrasive disks, diamond tipped blades, and carbide tipped blades are the three basic types available. A carbide tipped blade used with a quick cut saw must be designed for that purpose. It must also be used only to cut the materials specified by the manufacturer.

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### Tool - Grinders: SAFE JOB PROCEDURE

| Hazards Present                                                                   |                                                                           | PPE or Devices Required                                                                                          | Additional Training Required |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------|
| Rotating parts<br>Clothes/hair<br>entanglement<br>Noise<br>slips, trips and falls | Cuts<br>Flying objects<br>Dust<br>Vibrations<br>Faulty grinding<br>wheels | Safety Boots<br>Safety Vest<br>Safety Glasses<br>Hard hat<br>Hearing protection<br>Gloves<br>Sun (UV) Protection |                              |

#### Safe Work Procedures

The employer, in consultation with employees or safety and health representatives should provide safe procedures for angle grinder tasks. Tasks with an angle grinder should not be allowed unless covered by an agreed safe procedure. In your workplace, do safe work procedures determine the following? Is grinding work necessary? Could a different tool be used with less risk? Is the correct size angle grinder used for the job? Is there a risk of losing control of a heavier, more powerful tool? Could a smaller model be used for some or all of the work? Is the correct disc used for the job, depending on the type of material being worked on and the size of the disc? Does the guard cover half the disc between the operator and the disc? Does the grinder have an automatic cut off or “deadman” switch as part of the hand grip, so that power is cut off as soon as finger pressure is released? Deadman switch kits are available for older models. (A deadman switch may not be appropriate for certain tasks with small angle grinders). When replacement tools are purchased, does the employer choose grinders with adjustable handles that can be moved to suite different operators, and a “deadman” switch that is easy to hold.

#### Guards on Angle Grinders Should only be Removed for Maintenance and Storage

##### Before Starting

Is the operator instructed to check before each use that: the correct flange and locking nut is in place for the type of disc being used? (otherwise the disc can shatter at high speed). The guard and handles are secure? There are no defects or damage to the disc? Any disc that has been dropped or become damp is thrown away? (Cracked or weakened discs can shatter in use) No flammable materials are close by? Is the work piece held firmly in a bench vice where necessary? Kept at waist height during grinding, where possible? Are all employees instructed to keep at a safe distance when an angle grinder is used? Are welding screens positioned to prevent flying particles hitting other workers?

##### Electrical Safety

Is the angle grinder checked for electrical safety before every use to ensure that: there are no breaks or damage to the machine’s outer body? All screws are tight? Brush caps are intact and firmly in position? The sheathing of flexible cord is held firmly at the tool? There are no exposed wires? The flexible cord is in good condition, free from cuts and breaks? The plugs and extension sockets are free from cuts or damage? A safety switch or residual current device (RCD) is always used? Any defects are repaired by a licensed electrical person? The angle grinder has been inspected and tagged by an electrician at the required three-monthly intervals if it is used for construction work, and at least once every twelve months for other work?

##### Personal Protective Equipment

Is appropriate protective equipment always provided and used, for example, wide vision goggles or safety spectacles and a face shield? A hood for extra protection against particles rebounding in a confined space, ear plugs or muffs? Safety boots with steel toe caps? Overalls or other close-fitting clothing? Gloves?

##### Safe Operation

Are two hands always used to operate an angle grinder, including small models? Did you know: large angle grinders should always have a side handle? Some makes of grinder can be used either right or left-handed? Is it a workplace safety policy to remove the guard or handles from an angle grinder?

### Safe Procedure Details

Do safe work procedures require operators to allow the grinder to “run up” to operating speed before applying it to the job. Hold the grinder against the work piece with minimum pressure, so it doesn’t object while grinding, keep the grinding disc at a 15 to 30-degree angle to the work, adopt a comfortable stance, with feet apart and well balanced, and with a clear view of the job. Wear knee pads to work at floor level, never use a grinder between the legs while sitting on the floor. Stop the grinder at regular intervals for a short break to rest your arms and hands. Disconnect the power and place the grinder on a bench with the disc facing upwards when not in use. Never put a grinder down until the disc stops rotating. Remove the plug from the power point before changing discs.

### Instruction, Training and Supervision

Do all operators who use angle grinders receive information and training, including safety instructions provided by the angle grinder manufacturer? Have all operators been instructed in safe work procedures specific to tasks done at the workplace? Is one to one supervision provided for people receiving training, or who are unfamiliar with the use of angle grinders? Is general supervision provided for all angle grinding tasks?

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### Tool - Jackhammers: SAFE WORK PRACTICE

| Hazards Present                                                                        |                             | PPE or Devices Required                                                                                                                     | Additional Training Required |
|----------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips & Falls<br>Airborne Particles<br>Muscle Strain/Repetitive Motion<br>Noise | Vibrations<br>Flying debris | Safety Boots<br>Safety Glasses / Face shield<br>Safety Vest<br>Gloves<br>Hard Hat<br>Hearing protection<br>Respirator equipment as required |                              |

- Inspect the jackhammer and associated equipment before use for defect or damage.
- Rotate workers, whenever possible, when jackhammering for extended periods of time.
- Check if all components are complete, securely in place or tightened and in good condition.
  - 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.
- Follow manufactures specs and operating procedures.
- Secure hose ends to prevent whipping in an accidental cut of break occurs.
- Wear proper PPE.
- 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.
- Hose can be a tripping hazard so it must be kept out of the way or protected.
- Never use your hand or finger to look for air leaks or put over a pinhole leak.
- 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.
- Shut off the air supply and relieve pressure from the supply hose before changing tool points. Do the same when leaving the jackhammer unattended and when finished task.
- Pneumatic percussion tools such as jackhammers operate by producing heavy impacts or by rapid pulsating motion. This causes a great deal of vibration. Rubber handgrips, air cushion devices, and vibration dampers shall be used where possible.

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**Tool - Percussion Drilling Hammer: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                  |                | <b>PPE or Devices Required</b>                                                            | <b>Additional Training Required</b> |
|---------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------|-------------------------------------|
| Electrocution<br>Fire<br>Dust<br>Noise<br>Muscle Strain | Chips<br>Rocks | Safety boots<br>Safety Vest<br>Safety glasses<br>Gloves<br>Hard hat<br>Hearing Protection |                                     |

- Always follow manufacturer's instructions
- Wear proper PPE.
- Do not wear loose clothing that can get caught in the equipment.
- Safety glasses are required. Loose chips, rocks and dust are blown into the air during drilling. Wear safety glasses when sharpening bits.
- This equipment is very heavy. Handle with care.
- Exhaust air and hydrocarbons can form an explosive mixture under certain conditions. If the drilling formation is known, proper precautions can be taken to avoid potential danger
- Do not operate the hammer at excessive pressures or speeds. Follow the instructions in the manual and use the suggested procedures for operation and maintenance.
- Be aware of drill fetching up and injuring your wrists.
- Use Compressed Air for Cleaning Purposes with Extreme Caution.
- Never apply directly to the skin
- Never use for cleaning dirt from clothing
- Never direct at another person
- Take care not to blow dirt on personnel or into the equipment
- Always wear safety glasses.

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### Tool - Percussion Drilling Hammer: SAFE JOB PROCEDURE

| Hazards Present                                                          |  | PPE or Devices Required                                                                   | Additional Training Required |
|--------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------|------------------------------|
| Electrocution<br>Fire<br>Flying debris<br>Explosions<br>Faulty equipment |  | Safety boots<br>Safety Vest<br>Safety glasses<br>Gloves<br>Hard hat<br>Hearing Protection |                              |

Percussion methods raise and drop a heavy drill bit to break up the soil. The material can then be removed from the hole by several means, including a cable driven bailing bucket and a dry bucket. In soft formations, the cut material is merely pushed into the sides of the well. The drill bit may be raised either manually or with a motor.

Two methods of manually raising the drill bit. The drill bit should be raised about half a meter before it is dropped. A bouncing action is preferred; as the cable stretches and springs back from the impact of the drill tool, lifting action is applied to keep it bouncing. Experience develops this skill. When the reverse-circulation technique is used, flowing water assists the percussion drilling process.

The drill bit can be mechanically lifted by the use of a cathead (capstan) attached to jeep, truck motor, or other power source. The cathead consists of a metal spool, welded together from a scrap section of metal pipe and two steel disks, one of which is drilled and bolted to the vehicle. The vehicle should be parked 4 to 6m from the well, the rear end elevated by placing rocks under the axle for support. The rear wheel is removed and a cathead is attached to the wheel hub.

The rope or cable supporting the drill bit is wrapped around the cathead. Alternately tightening and loosening the rope will allow the rotating cathead to raise and drop the drill bit. Since unprotected ropes and cathead are very dangerous, they should be covered to protect the operator from accidental injury.

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### Tool - Router Machines: SAFE WORK PRACTICE

| Hazards Present                                                     |               | PPE or Devices Required                                                                   | Additional Training Required |
|---------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------|------------------------------|
| Damage to equipment or property<br>Jamming<br>Electrocution<br>Nips | Flying debris | Safety boots<br>Safety vest<br>gloves<br>Safety glasses<br>Hearing protection as Required |                              |

- Always inspect equipment before use.
- Always follow the manufacturer's instructions
- Wear proper PPE for the job
- Never run router tools in other machines.
- Do not use force to continue cut if vibrations and material push away are present.
- Do not feed into router when material is not supported by machine table and guide rails.
- Do not wear loose fitting clothes or jewelry when working around router.
- Ensure unit is unplugged at all times during inspection and changing bits

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**Tool - Vinyl Router Machine and Routers: SAFE JOB PROCEDURE**

| Hazards Present                                                   |  | PPE or Devices Required                                                        | Additional Training Required |
|-------------------------------------------------------------------|--|--------------------------------------------------------------------------------|------------------------------|
| Damage to equipment and/or property, jamming, electrocution, nips |  | Steel toe boots, Safety glasses, hard hat, reflective high visibility clothing |                              |

**Warning:**

Large diameter router bits are designed for use in stationary router machines or shapers only. Use in other machines may cause serious personal injury.

1. For the highest quality cut and safest operation, a heavy-duty stationary router machine or shaper with a horsepower rating of two or higher is recommended. The overall performance and quality of cut depend on speed (RPM), feed-rate, material type and amount of material being removed. Small depth adjustments can be made to provide the desired finish of cut.
2. When using large diameter bits, make several passes, taking off a little material at a time. Do not attempt to make the full cut in one pass.
3. When installing the router bit into the stationary router machine or shaper collet, be sure the tool is straight and firmly tightened. Router bits should be completely inserted into the collet and backed off slightly (approx. 1/16") never partially insert the bit into the collet.
4. Do not use a dull router bit. This results in a poor-quality cut, excessive vibration, burning of the wood and possible chipping or breaking of the router bit. Sharp tools cut smoother, faster, and with less strain on both the router and the operator.
5. As with all power tools, wear proper eye protection and unplug before changing the tooling. Follow all instructions included with your stationary router machine or shaper.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By:                                                                                                       |

**Tool - Skill Saw/ Mitre saw/Table Saw: SAFE WORK PRACTICE**

| <b>Danger present</b>                                                                                   |  | <b>PPE or Devices Required</b>                                                                                       | <b>Additional Training Required</b> |
|---------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Flying objects<br>Exposed blades – cuts<br>amputations<br>Electrical shock<br>Faulty equipment<br>Noise |  | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Dust mask as required<br>Hearing protection as required |                                     |

- Wear proper PPE protection.
- Replace dull, defective or burned saw blades.
- Check all cords for defects.
- Ensure safety guards are in place before using.
- Lift the saw from the cut after the blade stops.
- Carry the saw by the handle and use the handle to raise or lower the saw.
- Use the correct blade for the cut intended.
- Disconnect power before cleaning the saw, changing blades, or making adjustments.
- Use power hand saws appropriately.
- Place materials on a firm surface for cutting (not on hands, arms, across the knees or feet).
- Cut the materials beyond the end of a support so that the waste falls clear.
- Adjust the blade depth to limit the amount of blade exposed below the material being cut to 1/2" or less.
- Be sure to use safety equipment as required for task at hand.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**  
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**Tool - Skill Saw/Mitre Saw/Table Saw: SAFE JOB PROCEDURE**

| <b>Danger present</b>                                          |  | <b>PPE or Devices Required</b>                                                                         | <b>Additional Training Required</b> |
|----------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------|-------------------------------------|
| Electrocution<br>Flying debris<br>Cuts<br>Slips, trips & Falls |  | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing<br>Safety glasses |                                     |

1. Wear safety glasses, goggles or a face shield at all times while using the saw
2. If the cutting operation is dusty, wear a dust mask
3. Do not wear gloves while operating a table saw
4. Avoid long sleeves, ties, dangling jewelry or any other loose-fitting clothing while operating a table saw. The clothing could get caught in the blade
5. Wear non slip footwear
6. Use a push stick to cut stock that is 150cm or less in width
7. Use a stop block when you crosscut short lengths
8. Position your body so that it is not in line with the blade. This is to avoid being injured by flying sawdust, woodchips or the work
9. The height of the blade should be set just slightly higher than the stock being cut. It should never be more than 6mm above the height of the stock. This is to ensure that if your hand slip you only receive a slight cut and do not lose a limb
10. Always stand firmly on the floor and avoid any awkward operations. This is to avoid falling into the blade by slipping or losing your balance.
11. Do not carry on a conversation while cutting. Pay attention to the work being performed.
12. Do not reach behind or over the blade unless it has stopped turning
13. Do not leave the saw until the blade has come to a complete stop
14. Always disconnect the power prior to changing the blade or performing any other maintenance operation.
15. Make sure that the blade has stopped turning before you adjust the table saw.
16. After any adjustment, make sure that the blade is free before you turn on the power.
17. Ensure that the guides are positioned properly and that the tabletop is smooth and polished. An unclean or rough table requires you to use more force to push the stock through the blade. The more force that you are required to use the more chance that you may slip or lose your balance.
18. Maintain the rip fence parallel to the blade so the stock will not bind on the blade and be thrown.
19. Check the throat plate to ensure that it fits exactly and has a slot just slightly larger than the blade. Never operate a table saw with the throat plate removed.
20. Do not make free-hand cuts on the table saw. The stock must be guided through the blade either by the rip fence or the mitre gauge.
21. Keep the blades' guards, spreaders and anti-kickback devices in place and operating properly. The spreader must be in alignment with the blade and the anti-kickback device must be in place and operating properly. Their action must be checked before cutting.
22. Only seasoned, dry, flat wood should be cut.
23. Work should be released only when it has gone past the blade.
24. Whenever the stock is lifted or tilted above the surface of the table, the saw can shake the stock, causing you to lose your grip.

25. Losing your grip on a piece means that your hand can slip toward the saw blade or the work can be forcefully kicked back towards you.
26. Check that the stock has no nails, knots screw, stones etc. in it prior to cutting the wood. These items can become projectiles and cause injury.
27. Do not use the fence and a mitre gauge at the same time, unless they are both on the same side of the fence.
28. A circular table saw should be guarded with a hood (crown guard) that completely covers the blade projecting above the table. The guard should ride the thickness of the stock being cut, adjusting to the thickness of the stock.
29. The fence must not be adjusted while the saw is running.
30. While long stock is sometimes crosscut on a table saw, it is not a good practice. The long stock may interfere with other operations and may be a hazard to other workers or equipment. It is also difficult to support and is better cut on a swing saw, pull saw or radial arm saw.

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**Tool - Tools General: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                      |                                                                                   | <b>PPE or Devices Required</b>                                      | <b>Additional Training Required</b> |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------|
| Burns<br>Flying debris<br>Electrical shock<br>Dust<br>Noise | Repetitive movements<br>& posture<br>Moving parts<br>Sharp blades<br>Pinch points | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves |                                     |

- Make sure tools are of good quality, and adequate for the work for which they are intended.
- Inspect before use, and if not in adequate condition, tag out and have them repaired or replaced.
- Select the right tool for the job; do not substitute.
- Use tools only for their intended purpose.
- Maintain tools in good working condition.
- Tools should be equipped with a device to ensure a secure handgrip where necessary.
- All tools should be installed, assembled, started, operated, used, handled, stored, stopped, inspected, serviced, tested, cleaned, adjusted, carried, maintained, repaired, and dismantled, in accordance with the manufacturer's specifications, or where there are no manufacturer's specifications, in accordance with adequate work procedures developed by a competent person.
- Tools should only be used by properly trained personnel.
- Replace cracked or broken handles on files, hammers or screwdrivers.
- Replace worn jaws on wrenches, pipe tools and pliers.
- Keep cutting tools sharp and cover the sharp edges with a suitable covering to protect the tool and to prevent injuries from unintended contact.
- Do not throw tools. Hand them; handle first, directly to another worker.

Ensure that a portable power operated hand tool:

- Is repaired by a designated competent person.
- Where powered by electricity, is double insulated or grounded, except where battery operated.
- Where lines or hoses are connected to the tool, has a shut-off mechanism installed on the tool so as to be immediately available to the operator.
- Is an explosion-proof device where there is a risk of explosive atmosphere?
- Where reasonably practical, keep all hydraulic, pneumatic, chemical and electrical lines and hoses clear of aisles, travel ways, or work areas. If it is necessary to do this then proper markings and signage should be in place to warn of hazards.

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**Tool - Tool General Safety: SAFE JOB PROCEDURE**

| Hazards Present                                                                                 |  | PPE or Devices Required                                                              | Additional Training Required |
|-------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|------------------------------|
| Burns<br>Flying debris<br>Electric shock or electrocution<br>Being struck<br>Slip, trips, falls |  | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing | Specialized training         |

1. Common tools such as hammers, utility knives, staple guns, ladders, rakes, and power tools must be handled with care. More complicated equipment such as blowers, foamers, and sprayers require special instruction and practice.
2. Have a first-aid kit and a fire extinguisher handy and know how to use them.
3. Protect your back when lifting heavy objects; do not lift and reach at the same time.
4. Avoid working in an awkward working position.
5. Take special care when handling heavy or bulky objects, especially when going up and down stairs.
6. Smoking is especially hazardous. Do not take smoke breaks near insulation or flammable fumes.
7. Keep your work site well organized, with tools out on the way of traffic, and give yourself plenty of clear space to maneuver.
8. Make sure that the workspace is well lighted and ventilated.
9. Ensure proper electrical supply for power tools.
10. Wear appropriate protective clothing for the job at hand.
11. When working in conditions of extreme temperatures beware of your physical condition. Exercise a schedule of rotation in and out of the extreme temperatures.

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|                                                 | Created By:                                                                                                       |

**Tool - Use of Tiger Torches: SAFE WORK PRACTICE**

| Hazards Present                                            |                                                       | PPE or Devices Required                                             | Additional Training Required |
|------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------|------------------------------|
| Compressed gas<br>Inhalation of hazardous fumes or vapours | Burns<br>Fire/explosion<br>Repetitive motion / strain | Safety glasses<br>Grade 1 safety boots<br>Skin protection<br>Gloves |                              |

- Ensure you are aware with the operation of equipment before use.
- When a torch is used, an adequate fire extinguisher should be present.
- Eye protection must be worn when heating edges where loose aggregate is present, because the rocks can explode due to the extreme heat that is applied to them.
- Ensure fuel lines are in good working conditions. Inspect the hoses and valves to ensure there are no leaks. If you suspect that there is a leak, do not use a match to test. Instead, use soap and water and look for bubbles.
- Ensure proper cylinders are secured and regulators in place
- Ensure that the propane bottle is in the upright position during use of the torch.
- Follow proper procedures for lighting torch.
- When not used for pre-heating operation, shut torch off. Do not leave the tiger torch on, unattended.
- Torches are not to be used for heating or thawing of lines where known hydrocarbons are present.
- Ensure that the propane bottles are properly shut off.
- Ensure that you turn the propane off at the tank and not just the tiger torch head. This will ensure that no propane will leak out of the tank if there is a leak in the propane line linking the tank to the torch.
- **Do not use a tiger torch to heat a propane tank.**

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**Tool - Use of Vibrating Tools: SAFE WORK PRACTICE**

| <b>Hazards Present</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | <b>PPE or Devices Required</b>                                                                                    | <b>Additional Training Required</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Excessive noise<br>Flying debris,<br>Musculoskeletal Injury Slips,<br>trips & falls<br>Fatigue<br>Vibrations                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | Safety glasses<br>Grade 1 safety boots<br>Anti-vibration Gloves<br>Hearing protection                             |                                     |
| <ul style="list-style-type: none"> <li>• Ensure vibration suppression material is applicable.</li> <li>• Ensure work area has appropriate barricades and warning signs in place.</li> <li>• Ensure you are familiar with the proper safe operating procedures for any vibrating tools.</li> <li>• Know the work limits associated with equipment, including levels of sensitivity, numbness or stiffness.</li> <li>• Ensure proper PPE is utilized for task, including, but not limited to, hearing protection.</li> </ul> <p>Take frequent breaks to avoid fatigue</p> |  |                                                                                                                   |                                     |
| <p><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p>                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                   |                                     |
| <b>Guidance Documents / Standards</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | <b>Reviewed By:</b>                                                                                               |                                     |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | <b>Created By:</b>                                                                                                |                                     |

### Tool - Water Pumps: SAFE WORK PRACTICE

| Hazards Present                                                                |                                                   | PPE or Devices Required                                 | Additional Training Required |
|--------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------|------------------------------|
| Slips, Trips & Falls<br>Drowning<br>Burns<br>Electric shock<br>Bodily injuries | Muscle strain<br>Exhaust fumes<br>Property Damage | Safety boots<br>Safety Vest<br>Safety Glasses<br>Gloves |                              |

#### **Engine Driven Pumps**

- Be sure to read and understand your Owner's Manual prior to operating, or complete on-the-job training with a competent worker on the use, care, and maintenance of the pump.
- Failure to do so may result in personal injury and/or equipment damage.
- Familiarize yourself with the water pump and all of the controls and how to operate them. You must know how to shut off your water pump in an emergency situation.
- Never permit anyone to operate your water pump without proper instruction.
- When in use, keep a safe distance from children and pets.
- Always operate the water pump on a level surface; operating on any other surface may result in accidents and/or equipment damage potentially due to fuel spillage.
- Keep your water pump at least 3 feet away from building walls and other equipment during operation. This is to prevent fire hazards and to provide adequate ventilation to your pump's engine.
- Refer to fueling safe work practice when re-fueling. Be very careful not to spill fuel when re-fueling. If any fuel is spilled be sure the area is dry before starting the engine – spilled fuel may ignite and cause serious injury and/or damage. No smoking allowed.
- Exhaust from your water pump contains poisonous carbon monoxide gas – exposure to this gas can cause serious injury, loss of consciousness, and may in some cases, lead to death.
- Be careful not to touch the muffler as it becomes very hot during operation; touching it can lead to severe burns.
- Let the engine completely cool before storing it. Drain pump completely of water after every use
- Ask for assists while transporting heavy pumps, always use proper lifting practice.
- Use chain or strap to move suction hose when in use, use proper lifting equipment

#### **Submersible Pumps & Electric Motor Driven Pumps**

- Never attempt to raise pump by its electrical cord.
- Always use an approved control box, mounted in a vertical position.
- Always check rotation on 3 phase pumps.
- Shut down and lock out all related electrical circuits before performing any maintenance.
- Do not hold reset button if overload control trips off. Wait 10 minutes before resetting again.
- Never put pump directly on soft, loose bottom.
- Be sure to connect pump to correct phase and voltage.
- Electrocution may occur whenever electricity is present.
- Allow only qualified personnel to install, wire and operate pumps and motors.
- Always ground electrical units.
- Be sure to connect motor to correct phase and voltage.
- Do not operate pump if voltage is not within limits.
- Make sure all electrical installations are in accordance with federal code and local codes.
- Shut down and lock out all related electrical circuits before performing any maintenance.
- If circuit breaker or fuse is tripped, locate and fix the problem before restarting pump.
- Overheated pumps can cause severe burns and injury. If overheating of pump casing occurs:
- Stop pump immediately.
- Allow pump to cool to air temperature.

- Slowly and cautiously vent pump at drain plug.
- Do not remove the cover plate, fill port cap, gauge port plug or drain plug from any running or overheated pump.
- Allow pump to cool to air temperature. Shut off and check pump temperature before opening cover plate, fill port, gauge port plug or drain plug.
- Do not operate pump without all guards and shields in place.
- Do not operate a self-priming pump unless the pump casing is filled with liquid. If not, it may cause damage to the pump. The pump will not prime unless the pump casing is filled with liquid.
- Cautiously approach any pump that has been in operation.
- Pump only liquids for which the pump was designed.
- Do not pump flammable or corrosive liquids.
- Check all lubricants before operation.
- Do not operate pump against a closed valve.
- Check the suction strainer regularly to be sure that it is not clogged. Operating pump with suction and/or discharge closed or clogged is one cause of severe overheating.
- Secure the pump so that it cannot move after it is in its operating position.
- Never operate pumps in explosive or volatile atmospheres.
- Never wear loose clothing around machinery.
- Before disconnecting hoses, feel pump casing to ensure that it is not hot. A hot casing signals the potential presence of steam in the hoses which may cause severe burns.
- Be sure that only experienced personnel operate machinery.
- Before working on pumps with electric motors and panels, LOCK control panel in the OFF position:
- Remove all V-belts.
- Disengage drive coupling.
- Drain pump completely of water before freezing weather.

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### Traffic Control - Traffic Control Sign Setup: SAFE WORK PRACTICE:

| Hazards Present                                                    |                                                      | PPE or Devices Required                                                                              | Additional Training Required     |
|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------|
| Slips, Trips & Falls<br>General Traffic<br>Bodily Injuries<br>Dust | Cuts<br>Vibrations<br>Crushing<br>Elements (Weather) | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves<br>White suits & Cuffs as needed | Work Area Traffic Control Manual |

- Wear proper PPE.
- Must have Work Area Traffic Control Manual on site at all times.
- Know the work taking place on the site for proper signage use.
- Look for hazards, drive the jobsite looking for begin and end of jobsite, look for the speed limit in the work zone to determine distances of signage.
- Follow the DTI 2009 WATCM latest version for setup and take down procedures.
- Vehicle must have 360 Degree flashing amber light.
- Watch for traffic before opening vehicle door at all times.
- Signs are to be clean and readable and up to date.
- Signs with a depicting a person on it need orange flags on top refer to WATCM.

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### Traffic Control - Setup and Removal of Traffic Control Signs: SAFE JOB PROCEDURE

| Hazards Present                                             |  | PPE or Devices Required                                                                        | Additional Training Required |
|-------------------------------------------------------------|--|------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Cuts<br>Traffic<br>Pinch points |  | Steel toe boots<br>Safety glasses<br>Gloves<br>Reflective high visibility clothing<br>Hard hat | WATCM                        |

Setting up and removing Traffic Control Devices can be more hazardous than completing the actual work, as workers are often directly exposed to traffic during these times. To minimize worker exposure, it is essential that setup and removal activities are carried out in a quick, yet orderly, manner. For this reason, it is also important to plan every setup and removal in advance.

While it is recognized that every Work Area presents its own unique circumstances that can impact how setup and removal are carried out, the following safety principles shall be adhered to:

1. All workers shall wear the appropriate personal protective equipment (see section 5)
2. All vehicles involved in the setup and removal of Traffic Control Devices as a minimum must display 1) a 360-degree amber light on two lane roads; or 2) a Flashing Arrow Board on multilane roads;
3. The Traffic Control Agent shall ensure that an onsite meeting is organized prior to the erection of work area traffic control devices. This meeting (commonly called a "tail gate meeting") shall include all staff involved with the erection of work area traffic control devices and the organizer shall record the date and time of the meeting.
4. No Delineation Devices, Barriers, or Barricades shall be installed until after all advance and approach signs have been setup;
5. Work in the Activity Area shall only commence once all Traffic Control Devices are in place. However, in the case of a lane closure, Work may commence in the Activity

Area once the lane closure taper has been effectively established and the centerline delineators have passed the Activity Area.

1. A Dedicated Traffic Observer shall be present during all setup and removal activities to warn workers of potential hazards.

Some other best practices that can improve safety and should be followed whenever possible include:

1. Offloading and loading Traffic Control Devices from the side of the truck farthest from traffic;
2. Assembling and disassembling Traffic Control Devices away from the roadway;
3. Avoiding pointing Work Vehicles towards the flow of traffic, especially at night.

Generally, signs are to be setup and removed beginning in the Advance Warning Area and then proceeding toward the Activity Area with the flow of traffic.

Consult with the Work Area Traffic Control Manual 2009 newest revision for figures that illustrate the proper procedures and sequencing that shall be followed for common activities involved in the setup and removal of traffic control on two lane and multilane roads

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|                                                                | <b>Reviewed by:</b>                                                                                             |

### Traffic Control - Traffic Control Person: SAFE WORK PRACTICE

| Hazards Present                                                    |                                                      | PPE or Devices Required                                                                              | Additional Training Required |
|--------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------|
| Slips, Trips & Falls<br>General Traffic<br>Bodily Injuries<br>Dust | Cuts<br>Vibrations<br>Crushing<br>Elements (Weather) | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves<br>White suits & Cuffs as needed | Traffic Control Person       |

- Wear proper PPE. Stay in contact with the signer on the jobsite.
- Refer to the Work Area Traffic Control Manual for proper traffic control procedures.
- Signage is to be setup on the roadway **before** any personnel can be on the roadway.
- Emergency Vehicles must clear the work zone as fast and safely as possible.
- Face Traffic at all times.
- Have good Communication with other flaggers at all times visual and/or two-way radios.
- Ask Before sending traffic thru work zone if no responses from other flagger ask again. Never send traffic if you are not sure.
- Never shut off two-way radio even on breaks in case of emergencies.
- Stay hydrated, stay alert.
- Don't get distracted (talking to people).
- Keep spare batteries on you for two-way radio.
- Don't stand too close to machinery at least 100 meters. Don't stand in hills, if you can't see the traffic coming to you 150 meters away then it is not safe to stand in that area.

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### Traffic Control - Traffic Control Person: SAFE JOB PROCEDURE

| Hazards Present                                                                  |                         | PPE or Devices Required                                                                                               | Additional Training Required |
|----------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------|
| Musculoskeletal injuries<br>Noise<br>Dust<br>Crushing, traffic<br>Rotating parts | Traffic<br>Pinch points | Steel toe boots<br>Safety glasses<br>Gloves<br>Hard hat<br>Reflective high visibility clothing<br>Sun (UV) protection | Traffic Control Person       |

All employees must wear proper PPE.

#### Signalling Procedures

#### **TO STOP TRAFFIC:**

1. Stand just outside the traveled lane.
2. Always face on-coming traffic until it is completely stopped.
3. Display stop sign to on-coming traffic.
4. Use hand signals to indicate to the motorists where to stop.
5. Make sure you give the motorist plenty of warning.
6. Before changing the stop sign to slow, make sure:
  - Opposing traffic has stopped.
  - That the last opposing vehicle has passed you.
  - Check the construction activity to make sure the lane will be clear.
7. Change the stop sign to slow.
8. With hand signals, direct the traffic to the path they should follow.
9. Monitor the traffic to ensure they maintain a slow speed.

Note: if an emergency vehicle approaches when a STOP sign is displayed, the Signaler should contact the other Signaler so that traffic in the opposing direction is stopped.

#### **TO SLOW TRAFFIC:**

1. Stand just outside the traveled lane.
2. Always face on-coming traffic.
3. Display, slow sign to on-coming traffic.
4. With hand signals, direct the traffic to the path they should follow.
5. Monitor the traffic to ensure they maintain a slow speed.
6. If two-way traffic is allowed through the work area at reduced speeds with a Signaler assigned to each direction, motorists may become confused or misled by seeing the STOP sign in the opposite lane. Signs should be modified so that the STOP side is covered.

#### **TO CONTROL TWO LANES OF TRAFFIC WITH ONE LANE CLOSED:**

1. Stop traffic using normal procedures.
2. If you are unable to see the other Signaler because of the diversion, use a two-way radio or a third Signaler to facilitate communication.
3. When it is safe for the traffic to proceed, stand out of the way of vehicles but remain in eye contact with drivers.
4. Turn the paddle to display the slow sign to the stationary traffic and use your free arm to direct traffic into the open lane.

**TO CONTROL TRAFFIC NEAR EQUIPMENT ON A TWO-LANE ROAD, ONE LANE CLOSED:**

1. Normally the safest position is on the opposite shoulder facing the on-coming traffic,
2. Display the slow paddle and use the normal hand signals.

Note: Never stand or walk in front of on-coming traffic.

Traffic control persons must receive from their supervisor oral instructions regarding their duties which are how to control traffic safely and efficiently with communication system.

Flagging duties are as per:

1. Methods to signal traffic to stop, proceed or slow down.
2. Methods of one-way or two-way traffic control.
3. Proper flagging methodology and operations.
4. Emergency vehicles travelling through the work zone.
5. Handling emergency situations.
6. Methods of dealing with hostile drivers.
7. To stop traffic the flagger shall face traffic and extend the stop sign paddle in a stationary position with the arm extended horizontally away from the body. The free arm should be raised with the palm toward approaching traffic.
8. To direct stopped traffic to proceed – the flagger shall face the traffic with the slow paddle held in a stationary position with the arm extended horizontally away from the body. The flagger should motion with free hand for traffic to proceed.
9. To alert or slow traffic – the flagger shall face the traffic with the slow sign paddle held in a stationary position with the arm extended horizontally away from the body. The flagger may motion up and down with free hand, palm down, indicating that vehicle should slow down.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE  
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By:                                                                                                       |

### Trucking - Load Crawler Loader: SAFE JOB PROCEDURE

| Hazards Present                                                           | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Slip/Trip hazard<br>Fall injury<br>Vehicle/Machine damage<br>Pinch points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Operator training            |

1. Enter crawling loader using 3-point contact method
2. Drive up to back of trailer, making sure you are straight and properly aligned
3. Raise bucket on to deck and use bucket to raise the loader
4. Move ahead slowly until front of tracks are on the trailer
5. Proceed to the front of the trailer carefully
6. Lower bucket and set parking brake
7. Exit cab using 3-point contact method
8. Dismount trailer by sitting on deck and pushing off. Jumping off trailers is prohibited
9. Secure loader with four chains using 4-point contact
10. Inspect load and proceed to job

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### Trucking - Loading Excavator: SAFE JOB PROCEDURE

| Hazards Present                                                           | PPE or Devices Required                                                | Additional Training Required    |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------|
| Slip/Trip hazard<br>Fall injury<br>Vehicle/Machine damage<br>Pinch points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Operator training/certification |

1. Enter loader using the 3-point contact method
2. Drive up to back of trailer, making sure you are straight and properly aligned
3. Use backhoe bucket to lower trailer until you are able to drive the front tires/front of tracks on to trailer and proceed until back tires/tracks are on the trailer
4. Continue using bucket to move backhoe further on trailer until proper position is reached at front of trailer. Do this slowly, as the trailer will be leveling out
5. Position bucket and lower then secure hoe arm
6. Exit backhoe using 3-point contact method
7. Dismount trailer by sitting on deck and pushing off. Jumping off trailer is prohibited
8. Secure excavator with a minimum of four chains using 4-point contact and one chain securing attachments.

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|                                                 | <b>Reviewed By:</b>                                                                                                    |

### Trucking - Loading Loader: SAFE JOB PROCEDURE

| Hazards Present                                                           | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Slip/Trip hazard<br>Fall injury<br>Vehicle/Machine damage<br>Pinch points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Operator training            |

1. Enter loader using 3-point contact method
2. Drive up to back of trailer, making sure you are straight and properly aligned
3. Using the bucket, gently push down on back of trailer until it is low enough to drive the front wheels on
4. Proceed to drive on to trailer until bucket is at front of trailer. Keep bucket no more than 6" from deck
5. Lower bucket and set parking brake
6. Exit loader using 3-point contact method
7. Dismount trailer by sitting on deck and pushing off. Jumping off trailer is prohibited
8. Secure loader with minimum of four chains using 4-point contact
9. Inspect load and proceed to job

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### Trucking - Loading Skid Steer: SAFE JOB PROCEDURE

| Hazards Present                                                           | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|
| Slip/Trip hazard<br>Fall injury<br>Vehicle/Machine damage<br>Pinch points | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Operator training            |

1. Set ramp down
2. Enter skid steer using 3-point contact
3. Drive up to ramp, make sure machine is properly aligned, and slowly drive on to trailer
4. Engage brakes and ensure Skid Steer is in neutral
5. Exit skid steer using 3-point contact method. Dismount trailer with caution. Jumping is prohibited
6. Secure skid steer with minimum two chains using 4-point contact
7. Load ramps

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| Guidance Documents / Standards                                 | Reviewed By:                                                                                                    |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
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|                                                                | <b>Reviewed by:</b>                                                                                             |

### Trucking - Operating Trailer Ramps: SAFE WORK PRACTICE

| Hazards Present                                      |  | PPE or Devices Required                                             | Additional Training Required |
|------------------------------------------------------|--|---------------------------------------------------------------------|------------------------------|
| Crushing<br>Pinch points<br>Jamming<br>Muscle Strain |  | Safety boots<br>Safety Vest<br>Safety glasses<br>Gloves<br>Hard hat |                              |

- Never attempt to operate the ramp unless you are trained to do so.
- Make sure your float is parked in a flat level surface.
- Wear proper PPE Hard Hat, gloves, Hi-vis clothing, safety glasses.
- Do not wear chains or loose clothing.
- Obey all warning stickers and labels.
- Keep back a minimum of 10 feet from the base of the ramp.
- Check to see that area is clear of all persons or objects.
- Inspect Ramp, Hydraulic Cylinders, Safety Bars, Hoses, Connections and pins before lowering the ramp.
- **Never walk or stand directly behind the ramp.**
- Always remove safety pins by standing at the side of the ramp never behind it.
- Watch for pinch points.
- When float is loaded check to see all safety devices have been put back in place.
- Follow all the same safety procedures for lowering the ramp to raise it again.
- If Ramps do not work properly do not attempt to fix it. Lock out the trailer.

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|                                                 | Created By:                                                                                                       |

### Trucking - Securing Equipment on Trailer: SAFE JOB PROCEDURE

| Hazards Present                             |  | PPE or Devices Required                                                | Additional Training Required |
|---------------------------------------------|--|------------------------------------------------------------------------|------------------------------|
| Slip/Trip<br>Pinch points<br>Vehicle damage |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. Ensure that machine (load) is on trailer properly and that brake is set
2. Secure machine starting at front
3. Front chains will be pulled forward. Rear will be pulled towards back
4. Use two chains and secure them at 4 separate contact points
5. Once chains are tightened, do an inspection to ensure none came undone
6. Check load over
7. When pulling load, periodically check it in rear view

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### Trucking - Semi and Tandem Truck Drivers: SAFE JOB PROCEDURE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PPE or Devices Required                                                                                                | Additional Training Required                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Other workers and equipment<br>Vehicle damage<br>Slip/Trip<br>Pinch points<br>Door Crushing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots                                                 | Operator Certification<br>Training on trailers |
| <ol style="list-style-type: none"> <li>1. Do pre-trip inspection on machine and start using Cold Start Procedure</li> <li>2. Check back up alarm, all gauges, hydraulics</li> <li>3. When proceeding to the work location, check the brakes</li> <li>4. Tarp load</li> <li>5. Make use of spotter when backing and driving in tight areas</li> <li>6. Park on secure, level ground</li> <li>7. Set parking brake</li> </ol> <p><b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b></p> <p><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b></p> |                                                                                                                        |                                                |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Reviewed By:                                                                                                           |                                                |
| Occupational Health & Safety Act & Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>This Safe Job procedure will be reviewed anytime the task, equipment or materials change and on an annual basis</p> |                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Reviewed By:                                                                                                           |                                                |

### Trucking - Supporting (Chocking) Dump Boxes: SAFE JOB PROCEDURE

| Hazards Present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | PPE or Devices Required                                                                                           | Additional Training Required |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------|------------------------------|
| Serious injury<br>Pinch points<br>Potential death                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Grade 1 safety boots<br>Gloves<br>Hard hat<br>Safety glasses<br>Safety vest                                       |                              |
| <ol style="list-style-type: none"> <li>1. Park and block truck in neutral with the PTO (power take off) and pump engaged</li> <li>2. Raise truck box to desired level</li> <li>3. A stiff leg is a permanently attached pivot and rest, and is the preferred method of support</li> <li>4. Always use two forms of blocking               <ul style="list-style-type: none"> <li>○ A Stiff Leg is a permanently attached pivot and rest, and is one preferred method of support</li> <li>If not available, use the following:                   <ul style="list-style-type: none"> <li>○ 6"x 6" timber block across the truck frame between the box and subframe as close as possible to the box hinge</li> <li>○ Build a cage of 6"x6" timber in the middle of the box</li> <li>○ 6"x 6" timber placed vertically between tandem tire and the box</li> <li>○ Pin locks provided by the manufacturer to secure the box in the elevated position</li> </ul> </li> </ul> </li> <li>5. Only keep the box lifted for as long as required</li> </ol> |  |                                                                                                                   |                              |
| <b>IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE</b><br><b>REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                   |                              |
| Guidance Documents / Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | Reviewed By:                                                                                                      |                              |
| <b>Occupational Health &amp; Safety Act &amp; Regulations:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | This Safe Job Procedure will be reviewed anytime the task, equipment or materials change and on an annual minimum |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | <b>Reviewed By:</b>                                                                                               |                              |

### Trucking - Unloading Crawler Loader: SAFE JOB PROCEDURE

| Hazards Present                                                 |  | PPE or Devices Required                                                | Additional Training Required     |
|-----------------------------------------------------------------|--|------------------------------------------------------------------------|----------------------------------|
| Vehicle or property damage<br>Slip/Trip Hazards<br>Pinch points |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Equipment training/certification |

1. Park truck and trailer on level ground and set parking brakes
2. Exit vehicle using three-point contact
3. Set ramps
4. Remove chains/binders from machine and unplug exhaust
5. Mount trailer using caution and enter machine using 3-point contact method
6. Release brake and raise bucket or attachments just above the deck so as to not flip backwards
7. Slowly back off of the trailer and park in secure level area
8. Load ramps onto the trailer

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### Trucking - Unloading Excavator: SAFE JOB PROCEDURE

| Hazards Present                                                 |  | PPE or Devices Required                                                | Additional Training Required     |
|-----------------------------------------------------------------|--|------------------------------------------------------------------------|----------------------------------|
| Vehicle or property damage<br>Slip/Trip Hazards<br>Pinch points |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Equipment training/certification |

1. Park truck and trailer on level ground and set parking brakes
2. Exit vehicle using three-point contact
3. Set ramps
4. Remove chains/binders from machine and unplug exhaust
5. Mount trailer using caution and enter machine using 3-point contact method
6. Disengage safety switch
7. With excavator arm at rear of trailer slowly back up
8. Set arm on the ground and continue backing off the trailer until the tracks reach the ground
9. Swing the arm to the front of the machine to lower the deck and use the pressure to raise the front of the tracks and slowly creep down
10. Park on level ground

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### Trucking - Unloading Granular: SAFE JOB PROCEDURE

| Hazards Present                                              |  | PPE or Device Required                                                 | Additional Training Required |
|--------------------------------------------------------------|--|------------------------------------------------------------------------|------------------------------|
| Vehicle or property damage<br>Serious injury<br>Pinch points |  | Hard Hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots |                              |

1. Back up to the dumping location with the use of a spotter
2. Park and ensure brake is applied
3. Exit cab using three-point contact and inspect the ground to ensure it is level and firm
4. Roll up tarp
5. Enter cab using three-pointed contact
6. Engage PTO and pump
7. When hoist is lifting, trip the end gate
8. Hoist box to the final stage
9. When load is dumped slowly drive ahead a few feet and lower hoist
10. Disengage pump and PTO and close end gate

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### Trucking - Unloading Loader: SAFE JOB PROCEDURE

| Hazards Present                                                            |  | PPE or Devices Required                                                | Additional Training Required    |
|----------------------------------------------------------------------------|--|------------------------------------------------------------------------|---------------------------------|
| Vehicle or property damage<br>Serious injury<br>Pinch points<br>Slip/Trips |  | Hard hat<br>Safety glasses<br>Gloves<br>Safety vest<br>Steel toe boots | Operator training/certification |

1. Park truck and trailer on level ground and set brake
2. Exit cab using three-point contact
3. Remove chains from load
4. Set up ramps
5. Mount trailer using three-point contact
6. Mount cab of loader using three-point contact
7. Release brake and raise bucket or attachment 6" above the deck
8. Back up slowly and cautiously until loader is on the ground

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### Utilities - Overhead and underground power lines: SAFE JOB PROCEDURE

| Hazards Present                          |  | PPE or Devices Required                                             | Additional Training Required |
|------------------------------------------|--|---------------------------------------------------------------------|------------------------------|
| Electrocution<br>Electric shock<br>Burns |  | Safety boots<br>Safety Vest<br>Safety glasses<br>Gloves<br>Hard hat |                              |

1. All employees must wear proper PPE.
2. Before starting the job, the foreman must receive the locations of any underground wires running through the job site, and if there is, to supply the wiring layout and plans to the company, that they come and mark it with stakes and/or marker paint. (You should also have the depth that the wires were set in the ground).
3. As for overhead power lines, the foreman can estimate and take necessary precautions not to touch down high voltage power lines in order to protect the lives of employees and the public.
4. Make sure to have the utility company's phone number in case of emergency.
5. The foreman must advise all employees to be very careful and not touch at any electrical wires.
6. Employees can now start working safely at the job that they were instructed to do and be very careful all the time until job is completely done.

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|                                                 | Created By:                                                                                                       |

### Utilities - Underground Utilities: SAFE WORK PRACTICE

| Hazards Present                                                 |  | PPE or Devices Required                                             | Additional Training Required |
|-----------------------------------------------------------------|--|---------------------------------------------------------------------|------------------------------|
| Explosion<br>Electrocution<br>Service disruption<br>Environment |  | Safety boots<br>Safety vest<br>Safety glasses<br>Hard hat<br>Gloves |                              |

- Call for locations.
- Maintain the layout.
- Follow procedures by utility company.
- Be aware of unknown services.
- Follow Northern Inc. procedure.
- Beware of fellow workers.
- Barricade worksite to protect public.

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### Welding - Portable Arc Welders: SAFE WORK PRACTICE

| Hazards Present                                 |  | PPE or Devices Required                                           | Additional Training Required |
|-------------------------------------------------|--|-------------------------------------------------------------------|------------------------------|
| Electrocution<br>Fire<br>Burns<br>Muscle Strain |  | Safety boots<br>Welding Gloves<br>Welders mask<br>Skin protection |                              |

Portable arc welders are equipment that should be treated similar to a vehicle inspection

- Be sure the machine is firmly attached to the transporting unit.
- Make sure all cables are wound securely when transporting.
- Do not operate them indoors.
- Check all fluid levels, water, oil and gas to be sure they are at acceptable levels for operation.
- When fuelling, DO NOT top off the gas tank. Gasoline expands as the outside temperature rises, this may result in seepage and an ensuing fire.
- Do not fuel the machine while it is running.
- Be sure the radiator and gas caps are in proper working order and securely attached.
- Do a walk around to check for damage and obvious leaks.
- Ensure the side covers are kept closed to protect the machine from any damage from external objects and outside weather, as well as to protect the operator and others from the moving parts of the machine.
- Note all deficiencies and report to appropriate personnel.
- Any repairs should be done by qualified mechanics or technicians.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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**Welding - Portable Welders: SAFE WORK PRACTICE**

| Hazards Present                                 |  | PPE or Devices Required                                           | Additional Training Required |
|-------------------------------------------------|--|-------------------------------------------------------------------|------------------------------|
| Electrocution<br>Fire<br>Burns<br>Muscle Strain |  | Safety boots<br>Welding Gloves<br>Welders mask<br>Skin protection |                              |

- Portable MIG welders are equipment that should be treated similar to a vehicle inspection
- Be sure the machine is firmly attached to the transporting unit.
- Make sure all cables are wound securely when transporting.
- Do not operate them indoors.
- Ensure the side covers are kept closed to protect the machine from any damage from external objects and outside weather, as well as to protect the operator and others from the moving parts of the machine.
- Note all deficiencies and report to appropriate personnel.
- Any repairs should be done by qualified mechanics or technicians.
- Don't add wire while the MIG is still on.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

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### Welding - Portable Welder: SAFE JOB PROCEDURE

| Hazards Present                                                              |                                | PPE or Devices Required                                                              | Additional Training Required |
|------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------|------------------------------|
| Fires<br>Explosions<br>Electric shock<br>Carbon monoxide<br>Faulty equipment | Trips<br>Falls<br>Hot surfaces | Steel toe boots<br>Safety glasses<br>Hard hat<br>Reflective high visibility clothing |                              |

1. Do not perform welding tasks while wearing wet cotton gloves or wet leather gloves.
2. Insulated work gloves are required for all welders when using welding equipment.
3. Do not use welding apparatus if power plug is cut frayed split or otherwise visibly damaged or modified.
4. When replacing power plugs and cords of welding apparatus, always check to ensure that the ground wire is connected and the notches on the power plug prongs are not worn off, allowing the plug to be inserted backward.

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|                                                 | Created By:                                                                                                       |

### Welding – Welding, Cutting, Burning, Soldering: SAFE WORK PRACTICE

| Hazards Present                                                                           |                                                                                                                        | PPE or Devices Required                                                                                        | Additional Training Required                              |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Fire<br>Burns<br>Explosion<br>Slips, Trips & Falls<br>Bodily Injuries<br>Property Damage, | Repetitive movement<br>Muscle strain<br>Electric shock<br>Bright light<br>Ultraviolet radiation<br>Toxic fumes & gases | Welding helmet / hand shield /<br>goggles use as required<br>Respirators as required<br>Safety boots<br>Gloves | Fall Protection as required<br>Confined Space as required |

- Inspect all equipment before starting work.
- Never start work without proper authorization.
- Always ensure that adequate ventilation is supplied since hazardous fumes and gases can be created during welding, cutting, or burning.
- Where other workers may also be exposed to the hazards created by welding, cutting, and burning, they must be alerted to these hazards or protected from them by the use of screens.
- Always have fire fighting or prevention equipment on hand before starting welding, cutting, or burning.
- Check the work area and remove any combustible material and possible flammable vapours before starting work.
- A welder should never work alone. A sparks or fire watch should be maintained.
- Ensure cables and hoses are protected from slag and/or sparks.
- Never weld or cut lines, drums, tanks, etc. That have been in service without making sure that all precautions have been carried out and permits obtained.
- Never enter, weld or cut in a confined space without meeting all requirements, OH&S Regulations, Northern Inc. Code of Practice Confined Space. (All required PPE)
- When working at heights follow Northern Inc. Codes of Practices Fall Protection. (All Required PPE)
- When working overhead, use fire resistant materials (blankets, tarps) to control or contain slag and sparks.
- Cutting and welding must not be performed where sparks and cutting slag can fall on cylinders (move all cylinders away to one side).
- Open all cylinder valves slowly. The wrench used for opening the cylinder valves should always be kept on the valve spindle when the cylinder is in use.

**IF AN EMERGENCY OCCURS OR THERE IS AN EQUIPMENT MALFUNCTION, ENGAGE THE EMERGENCY STOP AND FOLLOW THE LOCK OUT PROCEDURE**

**REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Occupational Health & Safety Act & Regulations: | This Safe Work Practice will be reviewed anytime the task, equipment or materials change and on an annual minimum |
|                                                 | Created By:                                                                                                       |

## Welding - Welding/Cutting/Burning/Soldering: SAFE JOB PROCEDURE

| Hazards Present                                                                         |  | PPE or Devices Required                                                                                   | Additional Training Required |
|-----------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------|------------------------------|
| Chemicals, being struck, explosion, electrocution, burns, stored energies, fire, sparks |  | Steel toe boots, Safety glasses, hard hat, reflective high visibility clothing, welding helmet and gloves |                              |

### Cutting and Welding Operations

#### Program Description

Cutting and welding operations often are found in maintenance, but can also occur in research settings. Adequate controls and procedures must be used to minimize the hazards associated with these activities.

#### General Cutting and Welding Controls

Areas where hot work is done should be properly designated and prepared. Combustible and flammable materials within the work area should be protected against fire hazards and the operation should not pose a hazard to others in nearby areas. To help achieve this, the following controls should be used:

1. Cutting and welding operations restricted to authorized, properly trained individuals.
2. If possible, hot work performed in a properly designed shop area equipped with all necessary controls' adequate ventilation.
3. Move combustible materials at least 35 feet from the work site. If this is not possible, protect combustible materials with metal guards or by flameproof curtains or covers (other than ordinary tarpaulins)
4. Cover floor and wall openings within 35 feet of the work site to prevent hot sparks from entering walls or falling beneath floors or to a lower level.
5. Fire resistant curtains and/or tinted shields used to prevent fire, employee burns, and ultra-violet light exposure.

#### Ventilation and Atmospheric Testing

Hot work should not be conducted in the presence of explosive mixtures of flammable gases, vapors, liquids or dusts or where explosive mixtures could develop inside improperly prepared tanks or equipment. Atmospheric testing and monitoring for combustible gases and vapors should be done before work begins and at regular, predetermined intervals thereafter. Ventilation of the work site, either through local or general exhaust ventilation, should be adequate for the work performed.

#### Fire Protection

1. A fire extinguisher rated at not less than 2-A: 20-B: C must be available in shop areas where hot work is performed.
2. A fire extinguisher rated at not less than 2-A: 10-B: C must be attached to all portable cutting and welding carts.
3. If a building or area is equipped with a sprinkler system, then that system must be operational when hot work is performed.

#### Personal Protective Equipment

Personal protective equipment specifically designed for hot work should be provided to and used by workers. The potential for toxic fume emissions from the material being worked on or surface coatings should be considered and appropriate steps should be taken to provide for respiratory protection.



### Cutting and Welding in Confined Spaces

When cutting or welding is to be done in confined spaces, appropriate entry procedures should be followed (see Northern Inc. Code of Practice, Confined Space).

### Compressed Gas Cylinder Storage and Handling

Storage and handling of compressed gas cylinders are important parts of many cutting and welding operations. The following should be observed:

1. Oxygen and fuel gas cylinders should be stored separately with the protective valve caps in place. Except when in use, oxygen and fuel gas cylinders should be stored at least 20 feet apart or separated by a non-combustible wall at least 5 feet high.
2. Cylinder carts equipped with a cylinder restraint, such as a chain or strap, should be used for all transporting of compressed gas cylinders.
3. Cylinders should be secured from tipping, in an upright position.
4. Regulators must be compatible with the cylinder and its contents. Many regulators are similar in design and construction. Check the regulator's model number and compare that with the cylinder's requirements.

### Hot Work Permits

Northern Inc. hot work permits are for cutting and/or welding when performed on the project sites. Hot work permits can help minimize the risk of fire during cutting and welding activities by serving as a checklist for operators and those performing fire watch duties. The person responsible for issuing permits should be qualified to examine the work site and ensure that appropriate protective steps, such as those listed in this section, have been taken. A hot work permit should be issued at the beginning of each shift for each specific operation.

### Training

All persons performing hot work should be trained in proper equipment operation, handling and storage of welding materials, compressed gas safety, chemical hazards, and in working procedures, including the written hot work permit. Additional training may also be necessary in the proper selection and use of personal protective equipment. Training in confined space entry is necessary before working in such areas.

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REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR**

| Guidance Documents / Standards                  | Reviewed By:                                                                                                      |
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