Personal Protective Equipment:

* Hearing protection while operating machine
* Hi-Vis clothing and hard hat when outside machine
* Substantial appropriate footwear at all times
* Gloves when doing maintenance or servicing

**SAFE PROCEDURES:**

* All operators will be trained on the specific machine before commencing work and their work assessed on a regular basis (e.g. weekly, monthly).
* Inspect machine to ensure it is in safe operating condition before using.
* Use a 4 point or greater harness system while operating machine.
* Ensure a check-in system is established.
* Only use the winch cable for traction assist. Never use for pulling logs or winching the machine into place.
* Test machine stability regularly by releasing cable tension to see if the machine slides. If it is not stable during the test, stop work and reposition machine to a stable location.
* Ensure good housekeeping is maintained (no loose articles in cab).
* Always enter and leave the machine in a safe manner. Position machine on flat or less steep ground. Use 3 point mount/dismount. Use the handholds for stability.

**PRE-WORK AND WORK PLAN CONSIDERATIONS:**

* Complete a steep slope harvesting assessment and develop site specific procedures including identification no go zones if necessary.
* Review and follow the safe work procedures for operating machinery on steep slopes. The on-site supervisor will review with the operator, the steep slopes assessments and procedures before operations commence.
* Phase congestion and stacking hazards considered and controls put in place to reduce risk (e.g. no-one working near or below).

**STEEP SLOPE PROCEDURES**

* Exercise due caution while working on hillsides including:
  + Do not travel across a slope that is too steep for maintaining proper stability of the machine.
  + Confine travel to up and down slope.
  + When traveling across any slope, avoid running over logs, chunks, stumps, etc. which could cause the machine to become unstable.
  + Avoid operating the boom too far from the center of the machine, causing instability.
  + Stop working and contact supervisor if any conditions are unsafe or concerning.

**CABLE, CONNECTORS AND SAFE WORKING LOADS**

* The tension on the wire rope and all related tethering and anchoring components shall be

restricted to 33 percent of its breaking load at all times. This will be referred to as the ‘Safe

Working Load’ or SWL.

* Wire rope’s SWL should be reduced according to the efficiency rating of the weakest component in the system (wire rope, connectors, chains, shackles, etc.)
* Visually check wire rope attachment points daily.
* Inspect the entire wire rope following manufacturer’s recommended procedures every 2 weeks or 100 hours of operation.
* Keep a log book noting dates and details of: cable use hours, cable inspections, any cable damage, any shock loading incidents, any cable sections cut out, splices, and end connectors.
* If shock loading has occurred or is suspected, inspect the wire rope for damage.
* Stop operations and replace the rope if tension ever exceeds the elastic limit (usually 2/3 of the cable breaking strength).
* Only use the engineered attachment points on the machine.
* Knots should not be tied in wire rope.
* Avoid running the cable over rock or other surface that could damage the cable. Use logs or trees to redirect and protect the cable.
* Do not allow cable connections to contact sheaves.

**MACHINE ANCHORS**

* Anchor machine’s blade or bucket must be dug into the ground.
* Attach guylines to anchor machine and one or more suitable uphill anchors.
* Ensure anchor machine is level or slightly elevated in front. Road crowns can act as a pivot contributing to anchor tip overs.
* Extend excavator booms past 90 degrees.
* Align the anchor machine so the pull is as straight as possible.
* Install and use anchor movement alarm that signals the operator and applies the winch

brake should the anchor machine move.

* Conduct a straight pull test after each set up to ensure the anchor is holding.
* Take extra steps to anchor machine during frozen ground conditions.

**STUMP OR TREE ANCHORS**

* Use appropriate stumps or trees for anchors (size, species, soils). Use accepted cable yarding practices when anchoring.
* If using multiple stumps or trees as anchors, follow accepted tie back procedures used in yarding operations.
* Anchor straps must match or exceed the safe working load of the wire rope being used.

**SITE-SPECIFIC HAZARDS TO CONSIDER**

* Monitor the weather, soil moisture and frozen conditions which may affect traction and load capacity of anchor.
* Watch for terrain and ground conditions hazards such as shallow soils over bedrock, broken rock, loose shale, stable or slippery snow pack, etc.
* Congestion and other operations taking place at the location.

**REDIRECTING CABLE**

* Minimize sharp angles when redirecting the cable around a tree or stump.
* Position the cable low on the tree or stump.
* Use blocks when possible to reduce cable wear.

**SAFETY SYSTEMS AND ALARMS**

* Before operating, make sure all safety systems are functioning.
* A back up-safety system is required for all winch assist machines (e.g. blade, double lines, etc.)
* Operations must be stopped immediately if any of the systems are defective or if the associated

alarm sounds.

**COMMUNICATION SYSTEMS**

* Adequate signal must be maintained between the assisted machine and a remote winch unit.
* If communication is lost, an alarm must notify the operator.