



HEALTH, SAFETY &
ENVIRONMENTAL PROGRAM

Section: Environmental Policy

PREPARED BY: HEALTH AND SAFETY TEAM

DATE OF ORIGIN: 02/02/2023

REVISION # 1

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PURPOSE

CF is committed to conducting its business activities in an environmentally responsible manner. CF recognizes the value of sound environmental practices and the need to comply with all legislative requirements pertaining to the preservation of our environment. Preventative measures and engineering controls are essential in preventing environmental incidents, and preparedness is essential in minimizing the impact on the environment in the event that an unforeseen event occurs. The assessment and control of potential environmental concerns are essential to the maintenance and improvement of our natural world.

SCOPE

Water Quality and Sediment Retention (General)

The best management practices to prevent damage to water quality should be in place before evidence of erosion and runoff appears. Engineering controls to prevent runoff includes:

- Stabilized site entrance with mud pads, rock spall
- Slope stabilization and/or roughing
- Runoff diversion
- Control volume and water runoff
- Construction of sediment and retention ponds
- Minimal site disturbance
- Mulch and/or seeding disturbed area
- Stockpile protection, covered with 6 mm plastic and secured, then circled at the bottom to catch runoff
- Minimizing the amount of time bare soil is exposed To the extent possible, sediments should be contained on the site.

Whether engineering controls are temporary or permanent (for the duration of the project) it is essential that regular monitoring and maintenance be performed. Engineering controls should also be inspected and maintained after major storms or other changed conditions. Such maintenance should be assigned to a designated worker who has been trained in the implementation and maintenance of engineering controls.

Filter Fabric Fences

Filter fences are suitable to trap small quantities of eroded material but should not be used when the drainage is over one acre. This is unless the fencing is used in conjunction with another drainage system. Filter fabric fences if correctly installed and maintained will normally trap a higher percentage of sediment than other methods.

Procedure

- Fabric should be cut in a continuous roll and attached to metal supports on 1.8m (6') centres
- Joints are best avoided. If unavoidable joints may be overlapped at least 150 mm (6") or more
- Trenches should be 300mm x 200mm (12" x 8") lined with fabric and filled with gravel



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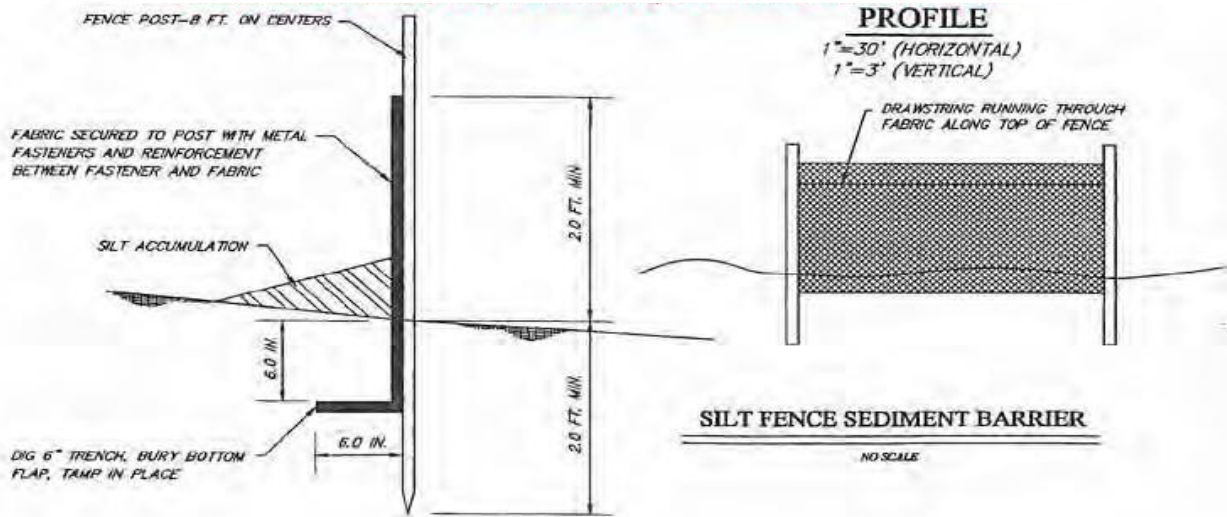
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Straw Bales

Straw bales correctly installed and maintained will intercept and detain a small amount of sediments from a drainage area typically of ¼ acre or less. This is unless the bales are used in conjunction with another drainage system which would increase the area of coverage. The maximum gradient behind the bales should not exceed 2:1. (Refer to diagram)

Procedure

- Place bales in a single row with ends tightly abutting one another.
- Dig a 100mm (4") trench the width of the bale and the length of the line. Install a fabric seal to prevent undercutting.
- Anchor the bales with two stakes (preferably metal), driven toward the previously laid bale. Drive the stake into the bale to prevent impalement of workers. Use mushroom caps or other protective devices if required to prevent injury of impalement.
- Straw bales should be inspected regularly and replaced if damaged or if the retention capacity is reduced.

Excavate the trench and place and stake bales





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Wedge loose straw between bales. Compact excavated soil.



Location of Straw bale barrier in swale section view



Plastic Sheeting

Plastic sheeting provides immediate temporary erosion protection to slopes and disturbed areas, including stockpiles and is particularly suited for temporary protection and to protect against erosion during periods of heavy rain.

Plastic sheeting will result in rapid 100% run off which may cause serious erosion problems and/or flooding at slope bases unless other measures are in place.

Procedure

- Use 6mm plastic sheeting, or heavier
- Overlap sheeting at least 300mm to 600mm (1' to 2') and anchor with sandbags or tires, on ropes with a maximum 3m (10') grid
- Seams should be weighted down their full length
- Plastic sheeting should be inspected regularly for rips and for locations where the plastic may be dislodged. Use extreme caution around slippery plastic sheeting.

Stabilized Site Entrance

A pad of rock spall at the entrance to a site should be provided in order to reduce the amount of runoff and to reduce the amount of dirt and rocks transported onto public right of ways.



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Procedure

- Use 100 mm to 200mm (4" to 8") quarry spalls.
- The pad should be at least 300mm (12") thick by 6m (20') wide.
- For site of more than one acre, the length of the pad should be 30m (100'). For site less than one acre, the recommended length of the pad is at least 15m (50').

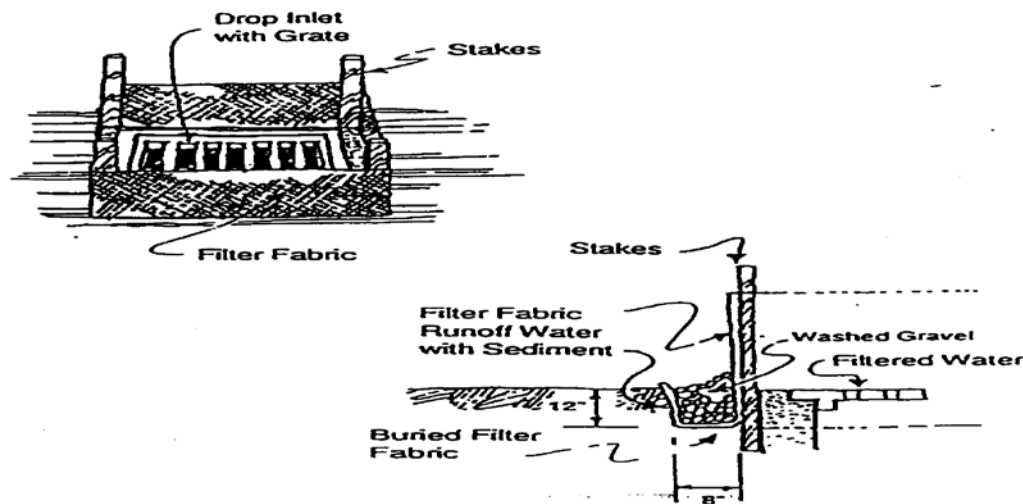
Protection of Storm Drain Inlets

Unprotected drains that are operational before their drainage area is stabilized can convey a large amount of sediment and pollutants. Most storm drain protection procedures are adequate for drainage areas of one acre or less.

Filter Fabric Storm Drain Protection (see also illustration)

- Place 50mm x 50mm (2' x 2') stakes around the perimeter of the inlet. Drive the stakes approximately 200mm (8") into the ground.
- Excavate a trench 200mm wide by 300mm deep (8" wide by 12" deep) around the outside of the stakes.
- Staple filter fabric to the stakes and form at least 1m (3') of the fabric into a trench.
- Back fill the trench with 18mm ($\frac{3}{4}$ ") gravel.

Fabric Inlet Filter



Block and Gravel Filter (see also illustration):

- Place 12mm ($\frac{1}{2}$ ") wire mesh over the inlet. Extend the wire a minimum of 300mm (1') beyond each side of the inlet and place the filter fabric over the wire mesh.
- Securely anchor the perimeter of the outlet, e.g. using cement blocks. The blocks should abut and be at least 300mm (12") high.
- Place 18mm ($\frac{3}{4}$ ") wire mesh over the outside face of the CMU blocks to prevent debris from being washed through the blocks.



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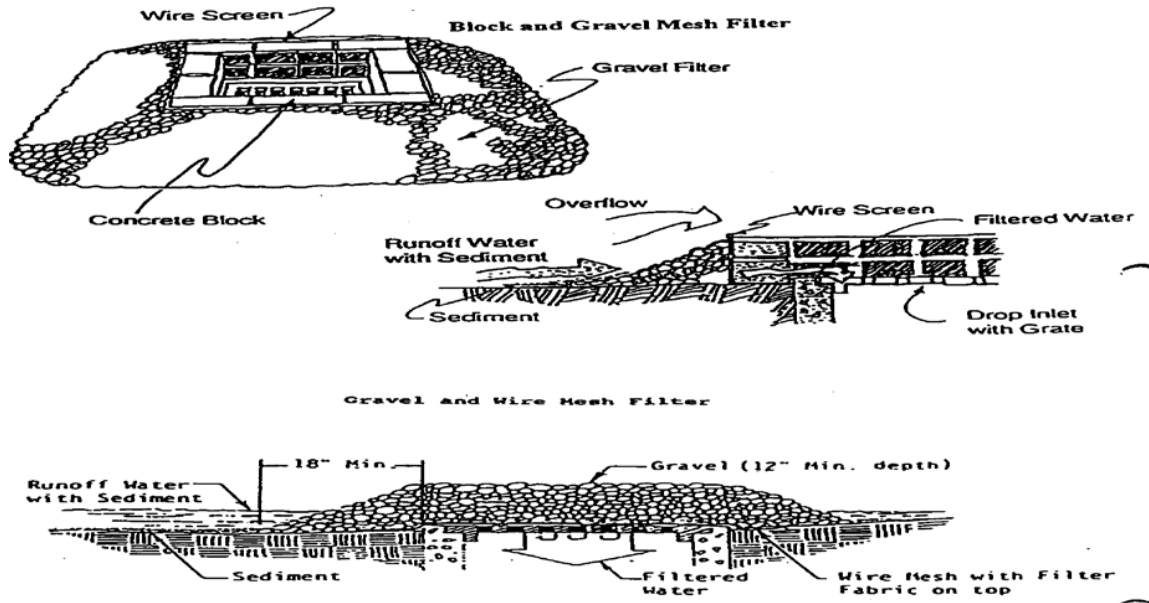
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- Pile 18mm ($\frac{3}{4}$ ") or larger gravel against the wire mesh to the top of the blocks.



Wastes Requiring Special Management

Demolition and construction debris may contain products that are subject to special regulations. For example, mercury-containing fluorescent lamps, refrigerants containing chlorofluorocarbons (CFC's), polychlorinated biphenyls (PCB's) in electric light ballast; tile, roofing and other asbestos-based products, lead paint, silica powder and absorbent products contaminated with oils, hydraulic fluids and hazardous materials.

Storage and Disposal of Construction Debris

- Inspect products for hazardous warning labels.
- Segregate potentially hazardous waste products from normal construction debris.
- Choose storage areas at least 15m (50') from any receiving waters.
- Inspect material storage areas for signs of leaching.
- Discharges from sandblasting, acid washing, painting, vehicle maintenance should be contained and prevented from discharging into storm drains, sediment ponds or from leaving the site.
- Hazardous material storage areas should be isolated and contained to prevent leaching.
- Concrete truck rinsing areas should not be subject to surface water runoff, or be less than 15m (50') from a storm drain, open ditch or receiving water.

Work in Streams and Waterways

Work to be performed in harbours, streams, rivers, and lakes such as the construction of culverts, bridge foundations, diversion works, and power generation facilities may require permits from several different environmental branches including municipal Provincial/and/or federal authorities. As a condition of approval to



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perform work in waterways, the contractor must take adequate steps to minimize disruption or damage to the natural environment.

It will be necessary to take every means possible to mitigate damage from the following:

Erosion of Banks & Siltation

Access to the watercourse and work area should be limited to only that which is required to perform the work. Disturbance of river or streambeds shall be minimized to prevent siltation. This can be achieved by the use of siltation filtering or containment systems such as straw bales filter cloth or containment booms and dykes (see illustrations).

Diversion beams shall be protected with materials, which are not readily susceptible to erosion and the equipment required to perform the work should be chosen carefully to ensure that the methods of operation will adhere to the applicable environmental regulations.

It should be noted that work in certain watercourses is restricted to time “windows.”

when spawning fish or other wildlife are less susceptible. Other restrictions may include the quantity of flow, which can be temporarily diverted to facilitate construction.

In addition, siltation of the watercourse could adversely affect the quality of water extracted downstream of the worksite by others for drinking water supplied or commercial requirements.

Pollution

Small quantities of oil, fuel or other hazardous substances can result in extreme damage to the environment. Equipment operating on or in the proximity of waterways shall be well maintained with servicing and fueling performed away from the water if possible.

Use of Water/Dewatering

As per applicable legislation, a permit may be necessary for extraction and use of surface or well water. A permit may also be required if large volumes of water will be removed from excavations/trenches or cofferdams during dewatering activities. Its issuance is generally conditional on the applicant adhering strictly to regulations pertaining to pollution control, erosion protection, siltation, and access. Contact the H&S department for guidance when these activities are planned.

Hazardous Materials – Storage, Handling & Disposal

- Storage areas for fuel containers or other hazardous material shall be situated in a location that is not susceptible to accidental damage as a result of construction operations.
- All bulk storage for Hazardous liquids will be contained in tanks with double wall protection or have secondary containment adequate to hold the volume of product being stored.
- Spill kits will be maintained in close proximity to storage areas.
- Adequate Fire Extinguishers will be located in close proximity to storage areas.
- The areas shall be regularly inspected.
- All leaks or spills shall be isolated, contained, and cleaned up.
- Spills shall be reported immediately to the project manager.



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- Storage of fuel and other flammable or otherwise hazardous material shall be in accordance with specific information provided on the product MSDS, client requirements workplace-specific and applicable regulations.

Handling

Any workers that are required to handle or otherwise work with Hazardous Materials must be:

- Trained in WHMIS
- Must Review the MSDS for the product in use
- Be made aware of the potential health effects from overexposure
- Instructed on the Personal Protective Equipment required to prevent exposure
- Instructed in the controls necessary for the safe use of the product
- Instructed in contingency plans in the event of an uncontrolled release
- Instructed in proper storage and disposal methods

Disposal

Disposal of Hazardous Materials/Waste is regulated by the applicable environmental authorities in the jurisdiction in which work is performed. Project management is responsible to ensure that all legislative requirements for the disposal of hazardous materials/waste are identified and followed including transportation.

General Requirements for Disposal

- All workers required to handle hazardous materials/waste must be trained on handling and disposal requirements.
- All waste storage areas must be configured to prevent leaking/leaching of material.
- Appropriate signage must be provided to identify the hazards.
- Wastes must be segregated as per manufacturer’s requirements to prevent reactive hazards (as per MSDS).
- Only licensed waste disposal contractors that have been prequalified may be hired to remove and dispose of Hazardous materials/waste from the project.
- In client owned workplaces, all shipping of Hazardous Materials/waste must be preapproved.
- All shipping documentation/manifests must be signed by a client representative and copies kept by both DB/CF and client representatives.
- In DB/CF owned workplaces, only employees with Transportation of Dangerous Goods qualifications may develop and sign shipping manifests. Copies of which must be maintained by the applicable project manager.

Waste Water Handling and Disposal

Standard

The content of any wastewater should be known before discharging. If the contents of the wastewater are hazardous (toxic, corrosive, flammable, etc.), the wastewater needs to be disposed of in a facility authorized to dispose of hazardous waste. All necessary precaution for the protection of employees who may have to handle waste water will be taken



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- All disposal of waste water must be coordinated with the project owner. Disposal must be in accordance with applicable permits issued for the project
- Any employees involved in the disposal of wastewater will be trained on the necessary precautions for safe handling and administrative requirements for disposal
- Dependent upon characteristics of the waste water as identified by testing Personal protective equipment such as face, hand, body/trunk protection, respiratory protection will be used as deemed necessary by the Supervisor

Consult the H&S Department for guidance in regard to testing and PPE selection.

Disposal of Non-Hazardous Waste & Surplus Material

Water excavated materials should be disposed of in areas designated or approved by applicable government authorities. Contamination of surface and ground water as a result of the location or operation of the spoil site should be avoided.

Measures are to be taken to ensure that siltation and/or erosion of materials disposed or stockpiled does not occur. Temporary ditches, seeding or other siltation prevention methods outlined elsewhere readily prevent this. Littering on the project will be prohibited. Collect and disposed of other waste and debris to an approved regulated landfill or incinerator. A permit may be required from the community receiving the waste material.

Burning and Forest Fire Prevention

Burning of construction refuse including but not restricted to trees, branches, waste wood, or construction materials shall only be undertaken in accordance with the conditions and requirements of a burning permit issued by the applicable authorities and shall, in all cases, comply with the requirements of applicable forest fire prevention practices.

Any burning shall comply with applicable fire codes for the area.

Urban Forests – Tree Protection Standard

This guideline is established to protect our urban forests from damage during construction work activities.

Check with the local municipality for details within their jurisdiction.

Procedure

Establishing a Tree Protection Zone

The following chart shows minimum required distances for determining a Tree Protection Zone. Some trees and some site conditions may require a larger Tree Protection Zone.



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| Trunk Diameter (DBH)* | Minimum Protection Distances Required ** |
|-----------------------|--|
| < 10 cm | 1.8 m |
| 11 – 40 cm | 2.4 m |
| 41 – 50 cm | 3.0 m |
| 51 – 60 cm | 3.6 m |
| 61 – 70 cm | 4.2 m |
| 71 – 80 cm | 4.8 m |
| 81 – 90 cm | 5.4 m |
| 91 – 100 cm | 6.0 m |

Diameter at Breast Height (DBH), diameter of tree trunk taken at 1.4 m above the ground.

Tree Protection Zone distances are to be measured from the outside edge of the tree base.

Most roots of a tree are located within 60 cm of the surface and can extend 2 to 3 times the drip line dimension. The drip line is determined by the outer most extension of the tree branches.

Any area beyond the curb of a road allowance can be excluded from the Tree Protection Zone.

Any area beyond a sidewalk or driveway must be included within the Tree Protection Zone.

Within the Tree Protection Zone there must be:

- No alteration or disturbance to existing grade.
- No changes to the grade by adding fill, excavating or scraping.
- No storage of construction materials or equipment.
- No storage of soil, construction waste or debris.
- No disposal of any liquids, e.g. concrete slush, gas, oil, paint
- No movement of vehicles, equipment or pedestrians

When excavating or trenching through or near the Tree Protection Zone be sure to:

- Dig a narrow trench along the line of the excavation closest to the tree by hand digging or slot trenching using a hydro-vac. Extend narrow trench (30cm – 40cm deep) beyond Tree Protection Zone by 2m to 3m where possible.
- Cut exposed roots cleanly with a sharp cutting tool before using a backhoe. This prevents the backhoe from ripping up and damaging roots within the Tree Protection Zone.
- Leave larger roots (75mm or more) across the trench.
- Backfill with native soil.
- Consider directional drilling wherever possible.



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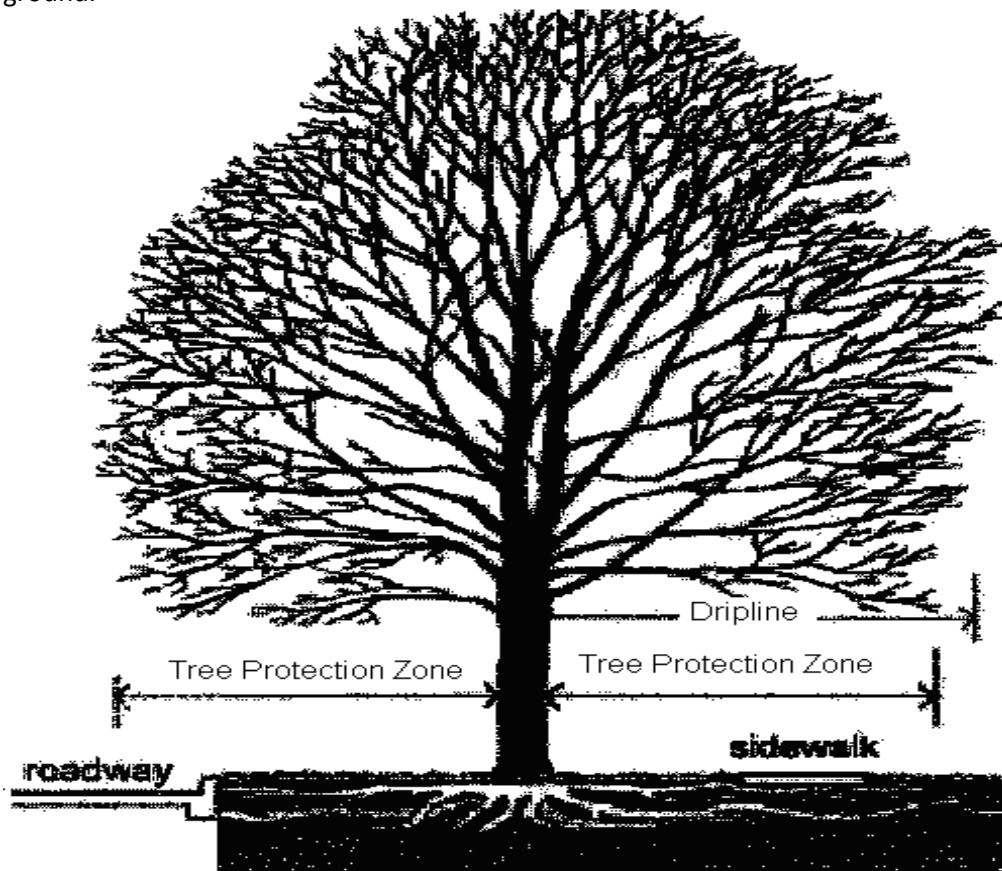
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Tree Protection Barriers

A tree protection barrier may be installed for trees on private property situated on or adjacent to construction site work or for protection of municipally owned trees. Consult with your jurisdiction for details.

- Tree Protection Barriers must be 2.8 m high (9.2 ft), plywood clad hoarding or an equivalent material.
- On a road allowance where visibility must be maintained tree protection barriers may consist of 1.2 m (4 ft) high orange plastic web snow fence on a wooden 2" x 4" frame.
- Where some excavated material or fill has to be temporarily located near a Tree Protection Barrier, plywood must be used to ensure no material enters the Tree Protection Zone.
- All supports and bracing should be outside the Tree Protection Zone. All such supports should minimize damage to roots. Underground utility locates must be obtained before support stakes are driven into the ground.





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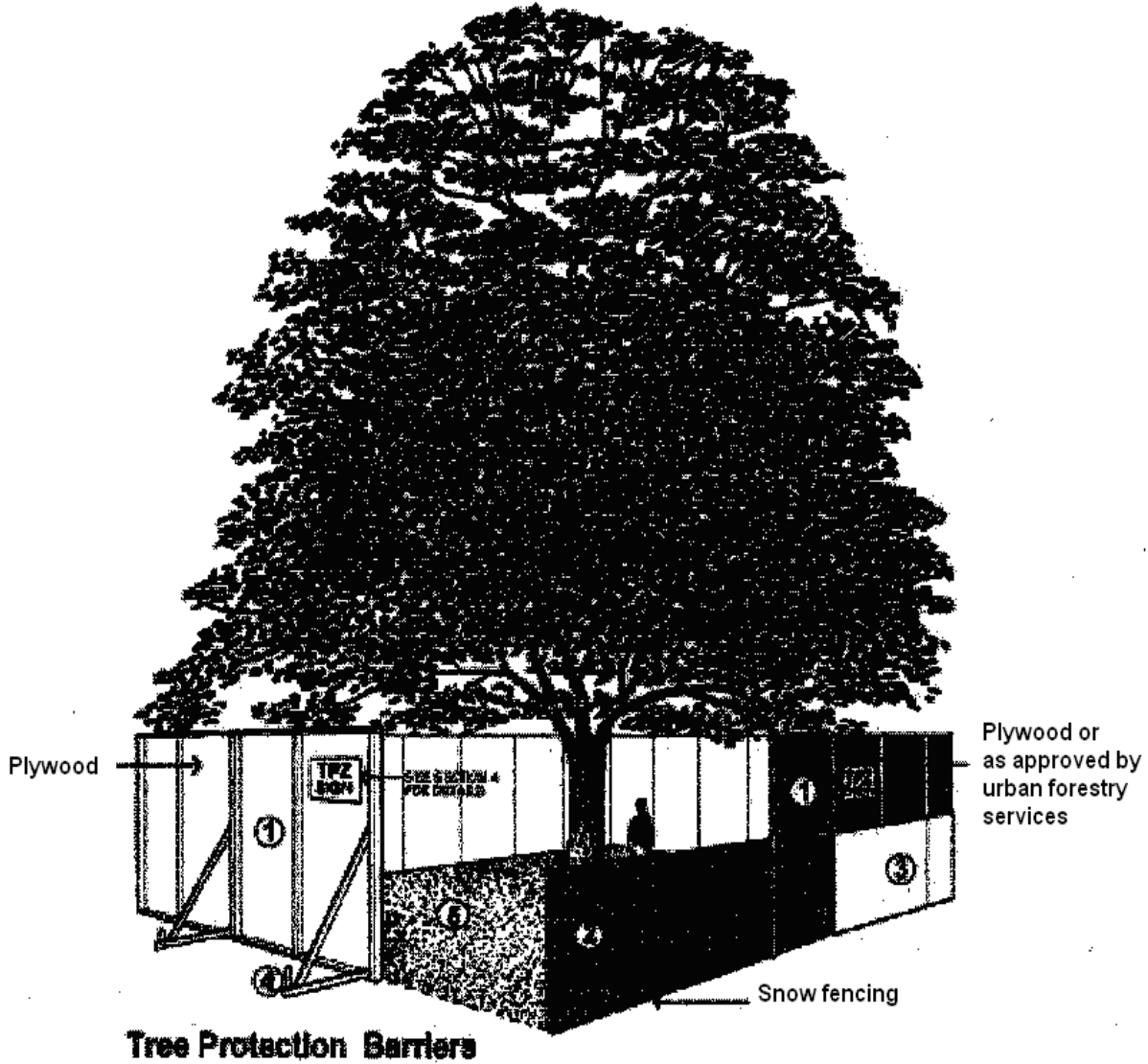
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Environmental De-Mobilization

CF's sustainable environmental commitment must continue during the demobilization period on every project. The following safe work practice is designed to assist supervisors and educate workers in determining the proper disposal procedure for hazardous products during the demobilization period. The purpose of this practice is also, to ensure all products whether destined for disposal or re-use are transported in accordance to the Transportation of Dangerous Goods Act and are disposed of according to the Material Safety Data Sheet.



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Supervisors must ensure that any product regulated by the Transportation Dangerous Goods Act is not placed or stored in any tool box, gang box or sea container destined for offsite shipping unless the truck/transport is licensed to haul hazardous waste accordingly.

Supervisors must also ensure that in the event that regulated goods are being transported that a qualified person is assigned the duties of preparing the Dangerous Goods and the associated paperwork for shipment.

Demobilization Preparation Steps

- Establish a Hazardous Waste Drop off center where products can be placed onsite (if possible).
- Establish spill kits and fire extinguishers in close proximity of the drop-off area.
- Review the MSDS Sheet for Regulatory Disposal procedure and the PPE use during disposal. Train all workers to these steps.
- Ensure all containers are marked with a proper WHMIS label.
- Provide the MSDS Sheet for all hazardous waste products destined for disposal to the licensed hauler.

Energy Conservation and Carbon Emission Reduction Anti-Idling

Vehicle and equipment idling times will be reduced whenever possible in order to lower fuel consumption and subsequently, carbon emissions. Operators are to communicate with supervisors about the timing requirements of the equipment and turn equipment off where practical.

Cab Heaters

Operators are to make use of installed cab heaters over idling engines to provide heat into vehicles.

Engine Tracking Technology

Machinery and equipment may utilize tracking technology in order to ensure engines are running efficiently and properly.

Light Emitting Diode Lighting

Use Light Emitting Diode (LED) lighting over incandescent bulbs. LEDs unlike ordinary incandescent bulbs have no filament. They require less energy, produce less heat and last an average six times longer than incandescent bulbs.

Air Conditioning

Turn vehicle air-conditioning units off when not required. Air-conditioning systems draw loads from engines that reduce fuel economy and increase carbon emissions. Adjust room temperatures when possible to reduce electrical demands or diesel demands when in use of generators.