

GUIDANCE FOR REDUNDANT PERIMETER CONTROL

Intent of redundant perimeter control best practices is to preserve integrity of a water resource when working within or above the 50 (normal water) or 100 (special or impaired water) foot resource buffer (protection) zone. Redundant Perimeter Control will also be required by contract for robust protection of permanent SWQ and sediment treatment.

- 1. Preserve/retain all upgradient vegetated green space as practicable,
- 2. Stage and phase disturbance to the shortest practicable time to accomplish the work. Ensure stabilization occurs within the permit defined timeframes. Restoring buffer function by quick stabilization is key to success.
- 3. Restore buffer function as rapidly as possible.

Definition.

Redundant Perimeter Control is defined as two sediment control BMPs with a 5 foot stabilized separation gap (where feasible), along with rigorous upgradient erosion prevention BMPs and inspections that provide integrity and effectiveness.

Pre-planning, Hold-Points, Site Management Plan.

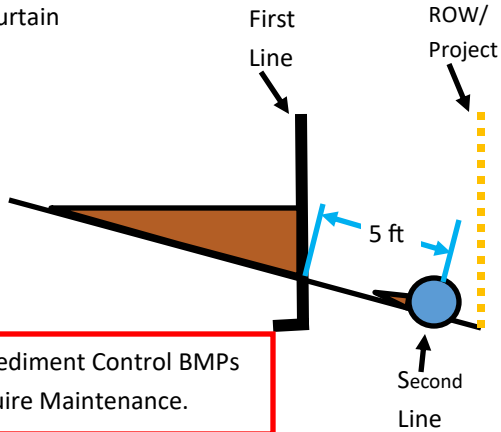
Redundant perimeter control must be part of land disturbance pre-planning and proper BMP selection in order to effectively control the target pollutant (grubbing, causeways, exposed soils, stockpiles, etc.) and facilitate installation in a timely manner. The design professional will not always know or show the correct series of BMPs suitable to field conditions. Amend the SWPPP_Plan within 7 days of implementing the corrective actions. Protect Filtration/Infiltration Basins.

Redundant Perimeter types.

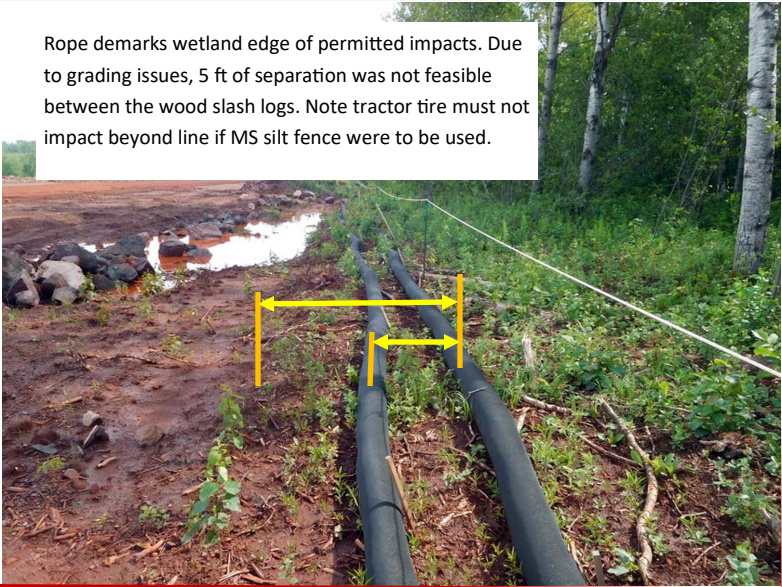
The types of redundant perimeter control is a function of the type of work, work limits, slope steepness, slope length, time of year, and ability to properly maintain.

In all cases, the second line of perimeter control must be within the defined project limits. Depending on the installation method, the second line of perimeter may need adjustment upgradient to prevent foot, tire or machine impacts. The first line (nearest the land disturbance) of perimeter control should be the most robust to contain the largest load of debris, sediments, and slough impacts, with enough project footprint to allow a 5 foot stabilized (existing vegetation, straw, slash, hydro- mulches, blanket, aggregate) filtration gap zone. Document in SWPPP reason for 5 ft gap as not feasible.

First Perimeter Line	Second Perimeter Line
SCL, Silt Shield, Blanket edge roll	Curb Cut Depression
Upper Blanket Edge Roll	Lower Blanket Edge Roll
Sediment Control Log (Type WF, Compost)	SCL (Type WF or Compost)
Silt fence	Silt Fence
Silt fence	Sediment Control Log (Type WF or Compost)
SuperDuty SF	SCL, Silt fence, SDSF
Muck Berm (stabilized)	Turbidity Barrier, Hay Bale Barrier, Silt Curtain
Topsoil Berm (stabilized)	SCL, Hay Bale Barrier, SuperDuty SF
Slash Mulch Berm	SCL (Type WF or Compost)
Compost Berm (stabilized)	SCL (Type WF or Compost)
Rock/Aggregate Berm	SCL (Type WF or Compost)
Turbidity Barrier, Trench Box Lid, Plywood	Flotation Silt Curtain
Sand Totes	flotation Silt Curtain
Silt Curtain	Flotation Silt Curtain
None	Sheet Pile



All Sediment Control BMPs Require Maintenance.



SPECIAL CONDITION SYSTEM REDUNDANCY.

While not adjacent to water resource, the curb conveyance directly discharges to a special water. The photos represent alternative perimeters in urban reaches. Amend the SWPPP location and sketch a doodle of the installed perimeter.



BARRIER AND SILT FENCE SYSTEM REDUNDANCY

Bale Barrier with SCL, type Wood Chip. (SCL should be between wetland and bale). Note the stabilization above the barrier and an additional redundant soil berm at top of slope.

Winter applied dual line of Silt fence with a SCL Type Compost toe buttress support. Spacing not 5 ft to minimize wetland impact.

Dual lines composed of MS and HI Silt Fence. Gap between SF must be stabilized concurrent with the perimeter installation with straw, slash or blanket..

SD Silt Fence wrapped with woven geotextile, 5 ft gap for skid steer maintenance (as needed) and HI Silt Fence for redundancy.

Flood Stage Redundancy when Flotation Silt Curtain is infeasible due to anchoring, Silt Fence is underwater, and unsafe installer condition : Mobile dual lines of SCL, Type Wood Chip. Note interim stabilization and topsoil berm cut perimeter.

Dual line of MS Silt Fence and preserved green space within buffer. Gap not 5 ft.

Dual lines of SD Silt Fence, wrapped with non-woven geotextile.. Note Flotation containment boom for installation and removal spill management program.

Limited ROW for slope fill redundancy composed of MS Silt Fence and SD Silt Fence, with gap filled with slash mulch berm for additional reduction of turbid brown water.

Critical water resource with daily cover and multiple lines of perimeter control (Flotation Containment Boom, HI Silt Fence/SCL Type Compost, and SCL Type Excelsior).

Integrated system for sediment and brown water management with soil berm, shallow sediment trapping, (pretreatment) preserved green space, and dual MI Silt Fence.

Planned integrated redundant system of actions and BMPs for spills (flotation Containment Boom), Permanent Stabilization (aggregate mat) SD Silt Fence, and movable daily plastic sheet cover (temporary stabilization). Aggregate Mat preforms as a sediment trap.

Robust redundant perimeter control with dual lines of SD Silt Fence, and an outer ring of HI Silt Fence for remnant wetland protection, along with a 3882 certified weed-free mulch-ring stabilized interim buffer.



3874 FILTER BERM SYSTEM REDUNDANCY

Slash mulch berm. High performance sediment filter. Straw biology redundancy and orange fence to demark limits of wetland impact encroachment. Area that drains to perimeter kept stabilized with 3884 BFM.

Topsoil berm with MS Silt Fence. Note Topsoil berm ideal practice to preserve and later place topsoil media for plant cover. Stabilize topsoil berm within 24 hours of placement. Note sediment trap for brown water treatment.

Packed Soil Berm Constructed out of stockpile materials. With SDSF redundancy (needs ballast on fabric flap).

Dozer blade rolled existing vegetation and soil berm barrier.

Stabilized muck berm with MS Silt Fence or SCL. Type wood chip.

3888 Plastic stabilized Muck Topsoil Berm, with 3886 Super-Duty Silt Fence around wetland remnant. Note gap for cleanout as necessary based on weather and activities. SDSF will remain until final perennial cover.

Dozer and excavator placed and shaped topsoil and muck barrier. Wetland limit oof impact defined prior to formation. Stabilization required (supplemental seeding). Amend the SWPPP.

Slash mulch berm with MS Silt Fence. Orientation acceptable either way.

3885 Category 25 blanket stabilized muck and topsoil berm, with SCL, type compost.. Metal stakes and rope demark wetland impact boundary. SCL requires repositioning.

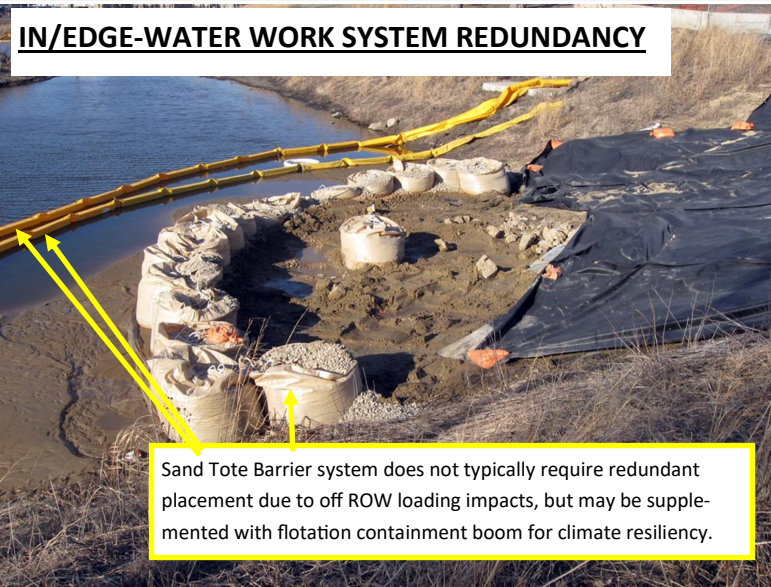
Riprap berm and HI Silt Fence. Sediment will require cleanout, and slope stabilization.

Tree debris slash berm with wood chip filter berm redundant perimeter control. Drainage was tilt graded to allow defined stabilized down drainage to sediment trap (not shown).

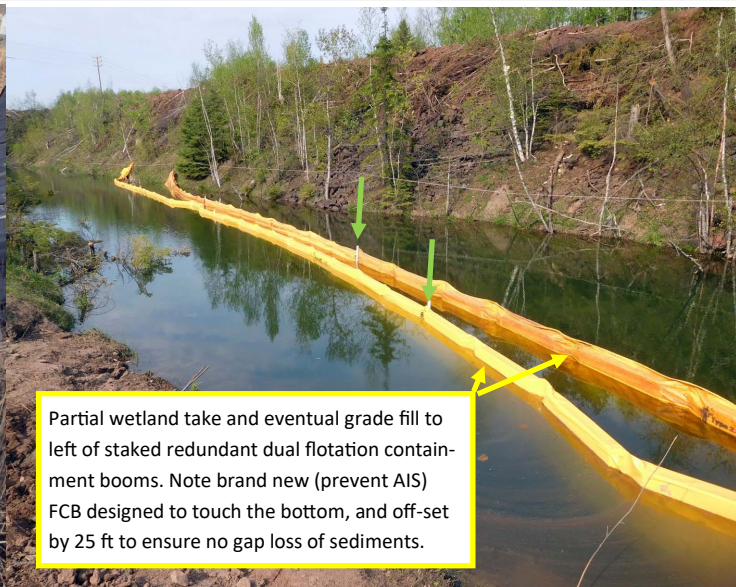
Seeded Topsoil Berm and MS Silt Fence (installed prior to stockpile placement. Berm retaining deep utility pipe excavation materials in wetland and conveyance.



IN/EDGE-WATER WORK SYSTEM REDUNDANCY



Sand Tote Barrier system does not typically require redundant placement due to off ROW loading impacts, but may be supplemented with flotation containment boom for climate resiliency.



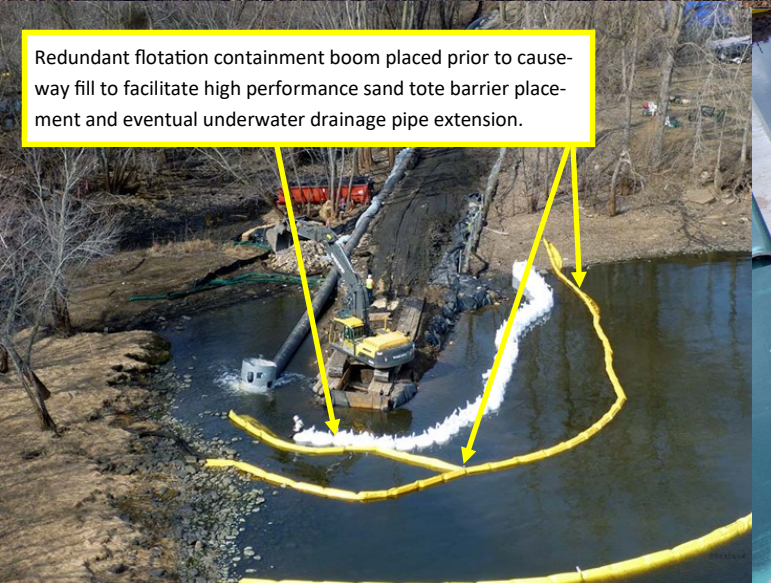
Partial wetland take and eventual grade fill to left of staked redundant dual flotation containment booms. Note brand new (prevent AIS) FCB designed to touch the bottom, and off-set by 25 ft to ensure no gap loss of sediments.



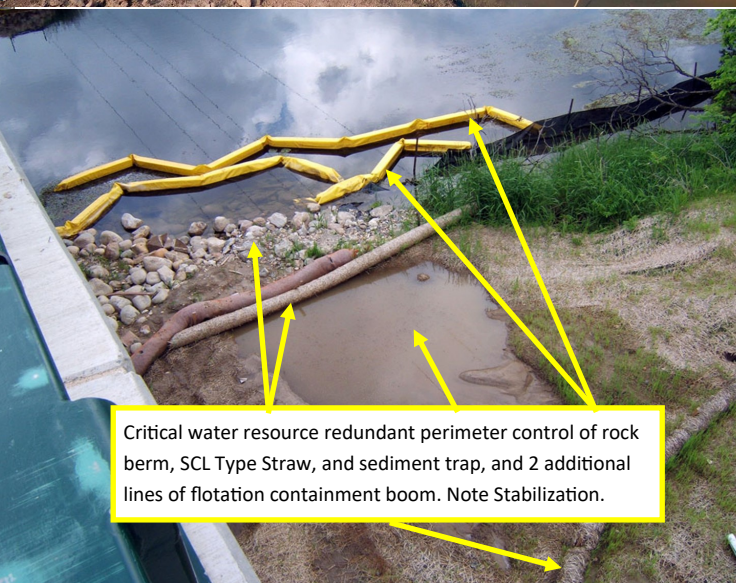
Frozen in place snow berm for short term winter work in water.



High performance sheet pile perimeter system does not require redundant perimeter control. Flotation Containment Boom placed to capture any potential leaks (risk management) from pile hammer during installation



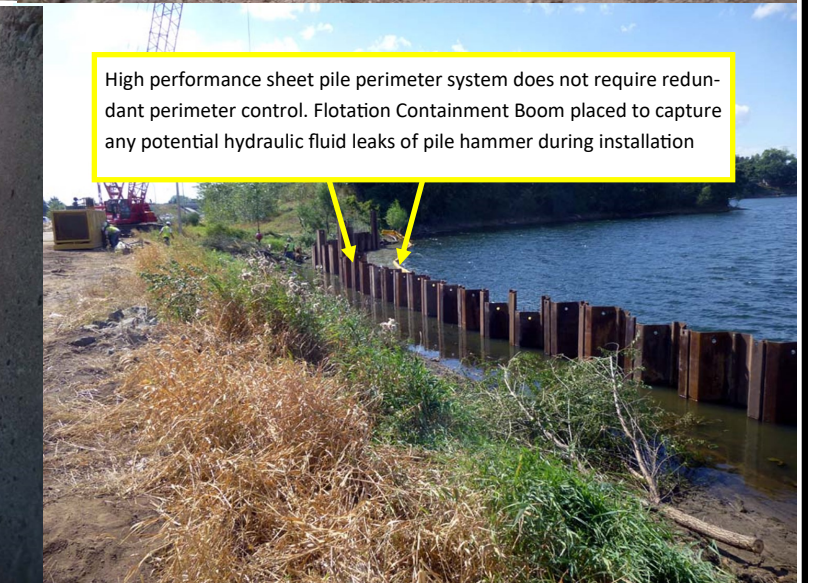
Redundant flotation containment boom placed prior to causeway fill to facilitate high performance sand tote barrier placement and eventual underwater drainage pipe extension.



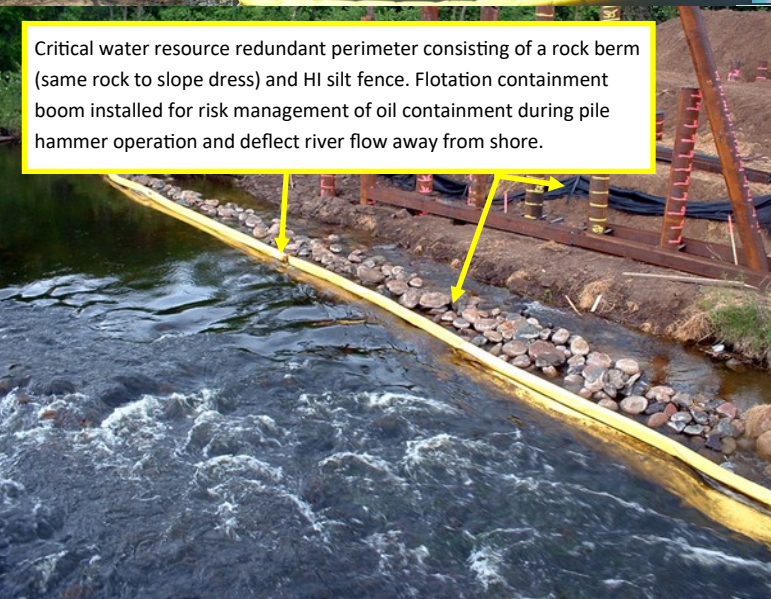
Critical water resource redundant perimeter control of rock berm, SCL Type Straw, and sediment trap, and 2 additional lines of flotation containment boom. Note Stabilization.



SCL Type Compost filter perimeter control at holes in hopper barge side walls.



High performance sheet pile perimeter system does not require redundant perimeter control. Flotation Containment Boom placed to capture any potential hydraulic fluid leaks of pile hammer during installation



Critical water resource redundant perimeter consisting of a rock berm (same rock to slope dress) and HI silt fence. Flotation containment boom installed for risk management of oil containment during pile hammer operation and deflect river flow away from shore.



Redundant flotation containment boom during within wetland during removal of USACE approved temporary wetland fill to facilitate bridge erection.



High performance portable dam system perimeter does not require redundant perimeter control.



High performance sheet pile perimeter system does not require redundant perimeter control.

INFILTRATION/FILTRATION SYSTEM REDUNDANCY



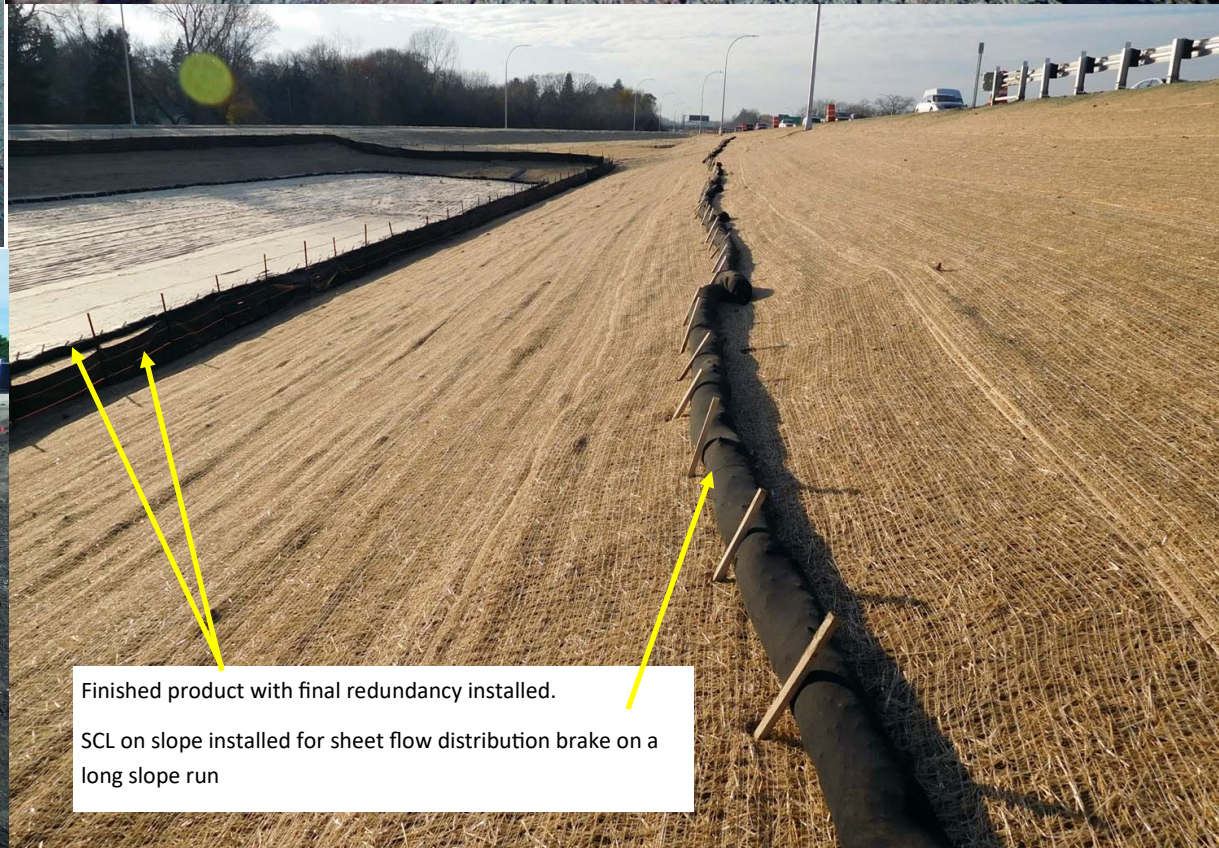
First prepare topsoil soil, fertilize, till, seed and stabilize prior to installing additional redundant perimeters



Critical first line of stabilization blanket basin ring and sediment control redundancy.



Finished product with final redundancy installed. Note SCL at top of slope along ramp to direct storm water to start of ramp with the intent to limit shoulder rilling/raveling.



Finished product with final redundancy installed. SCL on slope installed for sheet flow distribution brake on a long slope run



All sediment control BMPs require maintenance. Redundant perimeter control is no exception. Continue monitoring and documenting visual inspections (1) 48 hour draw-down, (2) sediment loading, (3) erosion, and (4) vegetation establishment for diversity and density. Perform corrective actions immediately to preserve function and integrity.



Finished product with final redundancy installed and early vegetative establishment. Note sign as a communication reminder and permit compliance requirement.