



SOURCE TO STREAM

2023 Conference

Canada's Premier
Stormwater and Erosion
and Sediment Control
Conference

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Source to Stream Conference
March 23, 2023
Michael Dhanraj

An Economical Approach to
ESC: Observations from my
first year as a CISEC.





Agenda

1. Introduction
2. Silt Fence Barriers
3. Erosion Control Matting
4. Vegetation
5. Rip Rap Spillway
6. Lessons Learned

Introduction

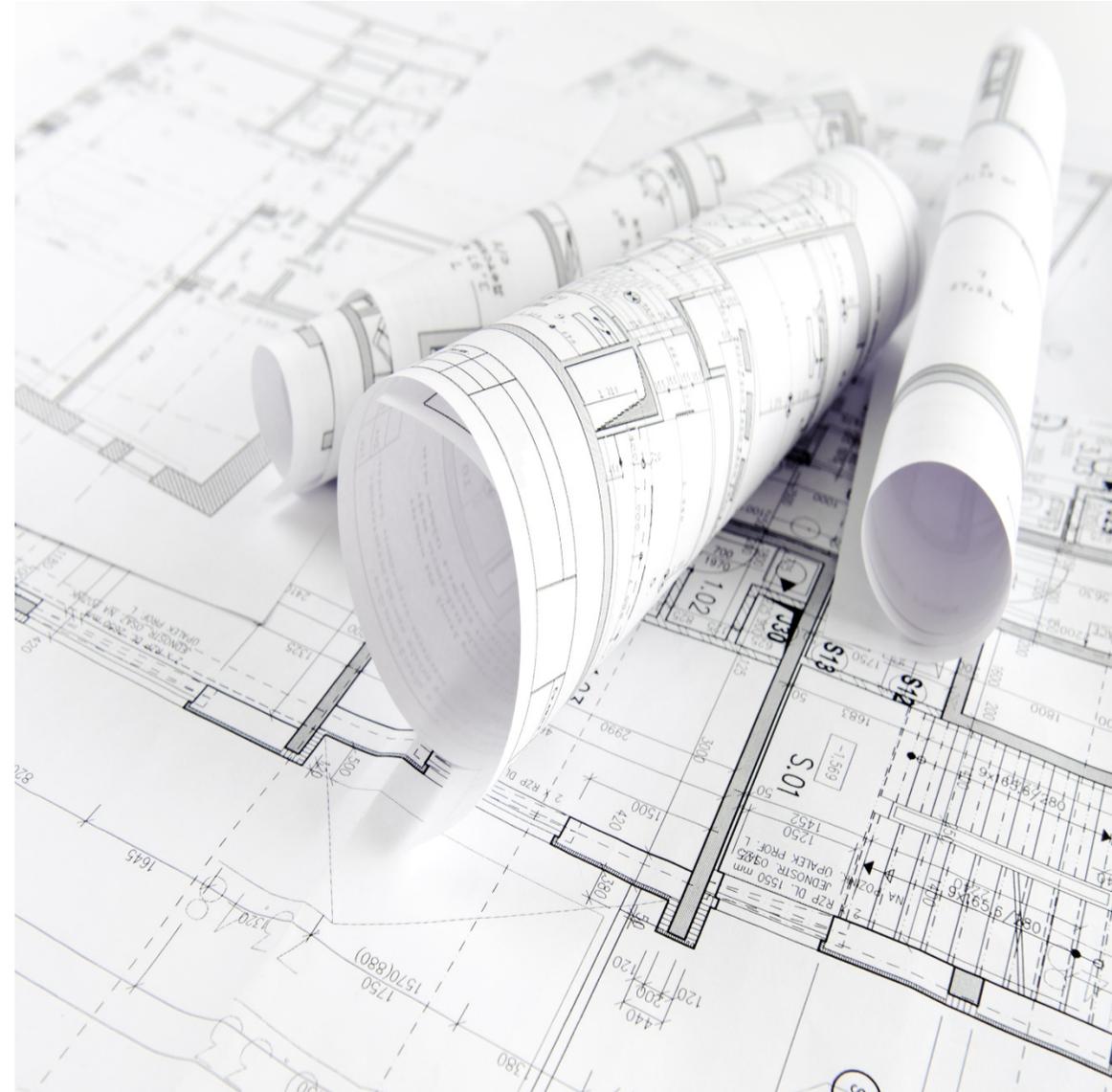
An Erosion and Sediment Control Plan (ESC Plan) should serve as the **blueprint**.

Control Measures / Best Management Practices (BMPs)

- What works best.
- Establish effective mitigation.
- Installed per design?

Effectiveness

- Is a BMP installed per design, effective at mitigating erosion and sedimentation?



Introduction

Control Measures / Best Management Practices (BMPs)

1. Silt Fence Barriers
2. Erosion Control Matting
3. Vegetation (Growing Season)
4. Rip Rap Spillway



Silt Fence Barriers

Purpose:

- A temporary sediment barrier used to retain sediment from sheet runoff.



Silt Fence Barriers

Issue:

- Improper placement can make the fence a complete waste of money and labour.



Silt Fence Barriers

Consider:

- Phasing of construction activities.
- The use of a field fit approach when appropriate.



Silt Fence Barriers



Day 1



Day 2



Day 3

Silt Fence Barriers

Consider:

1. Russian proverb- “Measure seven times, cut once.”
2. Determine limits of clearing and grading.
3. Avoid disturbing critical areas.



Erosion Control Matting

Purpose:

- Temporary erosion control used in the protection of exposed soils and assists in the establishment of vegetation.



Erosion Control Matting

Consider:

1. Communication / consultation with design engineer.
2. Assessing potential outcomes procuring and installing an alternate product.
3. Wildlife (SAR)



Vegetation (Growing Season)

Purpose:

- The most effective soil surface protection.



Vegetation (Growing Season)

Consider:

1. Best time for roots to establish (Seasonality).
2. Watering needs.
3. Warranty.
4. Seeding operation of disturbed areas.



Rip Rap Spillway

Purpose:

- Temporary or permanent constructed rock structure across a drainage ditch or channel used to reduce flow velocity and allow sediment to settle out.



Rip Rap Spillway

Question:

- What works best? Permeable or Impermeable?



Rip Rap Spillway

Consider:

- Identifying potential problems in the planning process.
- Consulting design engineer/ environmental monitoring team prior to modifying drainage areas.



CISEC Year 1- Lessons Learned

- **Silt fencing**- Correct placement/installation the first time, saves you cost and labour in the long run.
- **Erosion Control Matting**- Pay attention to specified product in design detail. Some ESC products can sometimes be dangerous.
- **Vegetation**- Seasonal weather can be an advantage or disadvantage.
- **Rip Rap Spillway**- Changes to ESC plan should be done in consultation with design engineer and environmental compliance team.





QUESTIONS?

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