



COMPOST 2022

“Exonerating” Compost from other Materials on Trial

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TODAY'S ASSIGNMENT

Discuss how to...

1

Separate Compost Blanket/Seeding as not just another “material on trial” for use on highway right of way

2

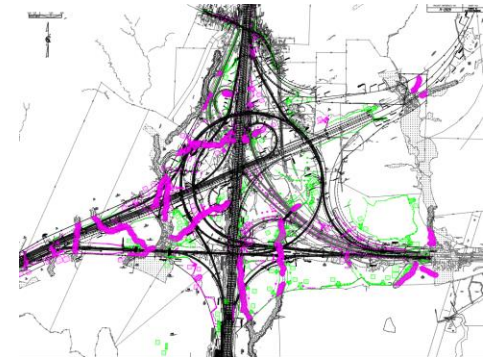
Inform Contractors that Compost Blanket/Seeding is an option worth consideration for establishing permanent vegetation stabilization on their projects

COMPOST

Not talking about capital letter COMPOST...



PERSPECTIVE



COMPOST BLANKET/SEEDING ✓

AASHTO R 52

Compost shall be uniformly applied using an approved spreader unit ... **Alternatively, apply compost using a pneumatic (blower) unit, or other unit that propels the product directly at the soil surface...** Dry or hydraulic seeding may be completed following compost application, as required, or during the compost application itself, where a pneumatic unit is used to apply the compost.

Environmental Protection Agency (EPA)

A compost blanket is a layer of loosely applied composted material placed on the soil in disturbed areas to reduce stormwater runoff and erosion... Compost blankets can be placed on any soil surface: flat, steep, rocky, or frozen... **a compost blanket can be applied to the ground surface without having to be incorporated into the soil, it provides excellent erosion and sediment control on difficult terrain, such as steep or rocky slopes...**

North Carolina Department of Transportation

This work shall consist of furnishing, installing, maintaining, and seeding a water permeable *Compost Blanket* to reduce soil erosion and sediment by promoting the establishment of vegetation on soils where vegetation is difficult to establish. **The contractor shall ensure the target location has a uniform coverage of 1-2 inch thick Compost Blanket applied from a pneumatic (blower) truck delivery hose.** Grass seed shall be applied in compost discharge or post compost discharge per contract specifications.



1

How to separate Compost Blanket/Seeding from other “materials on trial”...

Materials on Trial

Coal Combustion By Product (Coal Ash)
Medicinal Manufacturing By Product (MASL)
Animal/Municipal Sludge
Poultry Litter
Concrete Grinding Slurry



COMPOST BLANKET/SEEDING IS...

Intentional use of Compost to address a Construction Industry *Need*. Developed for a Purpose

An effective tool for non typical situations

- // Stream relocation
- // Steep terrain around Environmentally Sensitive Areas
- // Accessibility issues
- // Soils with poor fertility/pH



PREPARE, PARTNER & DEMONSTRATE

INVESTIGATE

- // What DOT Unit is responsible for Statewide Construction Management
- // What DOT Unit is responsible for Erosion Control/Stormwater Control Specifications and Plan development
- // What Vegetation Establishment challenges exist on Highway Projects
- // What Standard Operating Procedures exist for Permanent Vegetation Establishment
- // Who are Contractors that can perform Compost Blanket/Seeding (Pneumatic Truck)

EDUCATE

- // Partner with Contractors (Prime and Sub) to establish efficient process/protocol
- // Partner with US Composting Council for support and guidance

COMMUNICATE

- // Meet with State Environmental Regulatory Agency to discuss Compost Blanket/Seeding process
- // Meet with DOT Unit responsible for Specifications to define Compost Blanket/Seeding and share how it can help meet *Need*
- // Meet with community of Contractors (sub) to share opportunity

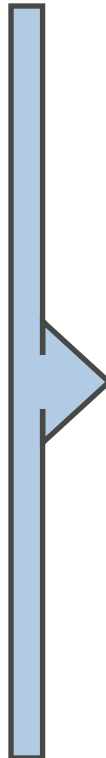
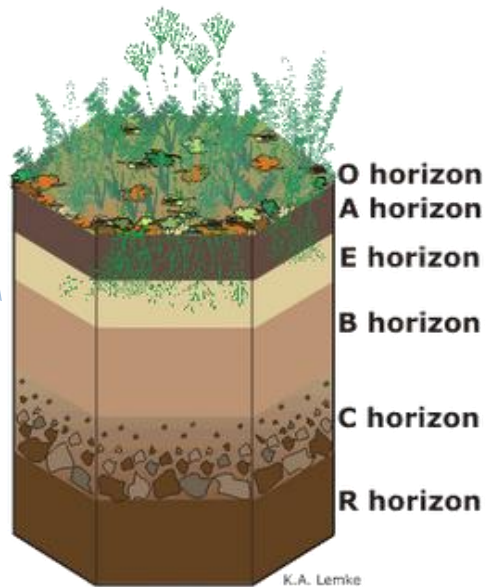
PERFORM

- // Demonstrate Process
- // Stay Engaged

Be Intentional!

INDUSTRY NEED

Highway construction typically occurs in the B and C horizons, which often leaves the contractor working in soils with...
...poor fertility



INDUSTRY NEED

Land Disturbance/Land Development
requires Permanent Vegetation Stabilization

Federal (EPA)

National Pollutant Discharge Elimination System (NPDES)

// General Construction Permit

- **70%** Density of Permanent Vegetation

State of North Carolina

// 401 Permit

// Riparian Buffer Zone Rules (North Carolina)

// NC General Construction Permit

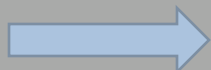
- **80%** Density of Permanent Vegetation

Your State

// ?



Reduce Erosion



Reduce Sedimentation



Reduce Sediment Loss Risk

2

Inform Contractors that Compost Blanket/Seeding is an option for establishing permanent vegetation establishment on their projects



Vegetation Establishment BMP's (Typical)

Traditional Seeding and Mulching

Traditional Seeding and Matting

Hydraulic Seeding and Mulching

Sodding/Sprigging





Traditional Seeding/Mulching or Matting

- // Limestone application
- // Seed bed preparation
- // Seed and fertilizer application
- // Drag harrow to ensure good seed/soil contact
- // Application of Mulch
- // Apply appropriate Binding Agent to Mulch
- // Application of Matting
 - Roll onto surface
 - Overlap, Trench and Pin



Hydraulic Seeding

- // Limestone application
- // Seed bed preparation
- // Seed/fertilizer application via Hydraulic Seeder
- // Application of Mulch or Matting to protect seed and cover soil
- // Apply appropriate binding agent to Mulch





Compost Blanket/Seeding

- // Soil Roughening as needed
- // Pneumatic Blower Truck
- // Compost Material Supply
- // Seed infused or broadcast





POSITIVES

- Desired pH/fertility
- Improve soil structure
 - Biologically
 - Chemically
 - Physically
- **Direct placement / "Turnkey Operation"**
- Groundcover *

* Check with State Regulatory Authority

Traditional Seeding/Mulching/Matting

- // Limestone application
- // Seed bed preparation
- // Seed and fertilizer application
- // Drag harrow to ensure good seed/soil contact
- // Application of Mulch/Matting
- // Apply appropriate binding agent to Mulch

~2019 Seeding/Mulching Cost

- ~\$.05/SF
- ~\$2000/Ac

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- ~\$.20/SF
- ~\$8500/Ac

~2019 Erosion Control Matting Cost

- ~\$.15/SF
- ~\$6500/Ac

Hydraulic Seeding

- // Limestone application
- // *Seed bed preparation*
- // Seed and fertilizer application via Hydraulic Seeder
- // Application of Mulch or Matting to protect seed and cover soil
- // Apply appropriate binding agent to Mulch

~ Hydraulic Seeding Cost

- ~\$.08/SF
- ~\$3500/Ac

* Hydraulic Mulch Type affects cost

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- ~\$.11/SF
- ~\$4800/Ac

~ Temporary Mulching Cost

- ~\$.03/SF
- ~\$1300/Ac

* Hydraulic Mulch Type affects cost

Compost Blanket/Seeding

- // Soil preparation (optional)
- // Compost and seed application

2019 Compost Seeding Cost

- ~\$0.14/SF
- ~\$6,100/Ac



- ~\$0.14/SF
- ~\$6,100/Ac



WAKE COUNTY, NC – PIEDMONT AREA

~ 3000 Square Foot

~ 2.5:1 Cut Slope

- Sandy Loam Soil

Traditionally Seeded June 2013

- 55 lbs/Ac Tall Fescue
- 35 lbs/Ac Bermudagrass
- 5lbs/Ac Centipedegrass
- 25 lbs/Ac Sericea Lespedeza
- 2 Tons/Ac Wheat Straw Mulch
- Emulsified Asphalt Tack



WAKE COUNTY, NC – PIEDMONT AREA

~ 10 CY of Compost...

- 1" Avg Depth
- Applied February 2014

Seeded with...

- 55 lbs/Ac Tall Fescue
- 25 lbs/Ac Sericea Lespedeza
- 35 lbs/Ac Bermudagrass
- 15 lbs/Ac Browntop Millet

February 2014



April 2014



September 2021



WAKE COUNTY, NC – PIEDMONT AREA

~ 22,500 Square Foot

~ 1.5:1 Cut Slope

- Behind Noise Wall
- Silty Clay Soil
- Platypus Anchor System with Pyramat
- Permanent Soil Reinforcement Matting



WAKE COUNTY, NC – PIEDMONT AREA

~140 CY compost...

- 2" Depth
- Applied in November

Seeded with...

- 55 lbs/Ac Tall Fescue
- 35 lbs/Ac Bermudagrass
- 25 lbs/Ac Sericea Lespedeza
- 20 lbs/Ac Rye Grain



WAKE COUNTY, NC – PIEDMONT AREA

~13,765 Square Foot

- Clay Soil
- Excavated Flood Plain for Jurisdictional Stream



WAKE COUNTY, NC – PIEDMONT AREA

~42.5 CY Compost...

- 1" Depth
- Applied in November

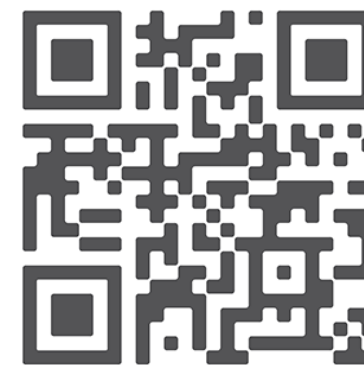
Seeded with...

- 18 lbs/Ac Creeping Red Fescue
- 6 lbs/Ac Indiangrass
- 8 lbs/Ac Little Bluestem
- 4 lbs/Ac Switchgrass
- 35 lbs/Ac Rye Grain





Want More Information?



SCAN ME

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