

8th GEOTECHNICAL, GEOPHYSICAL AND GEOENVIRONMENTAL
TECHNOLOGY TRANSFER (Geo³T²) CONFERENCE AND EXPO



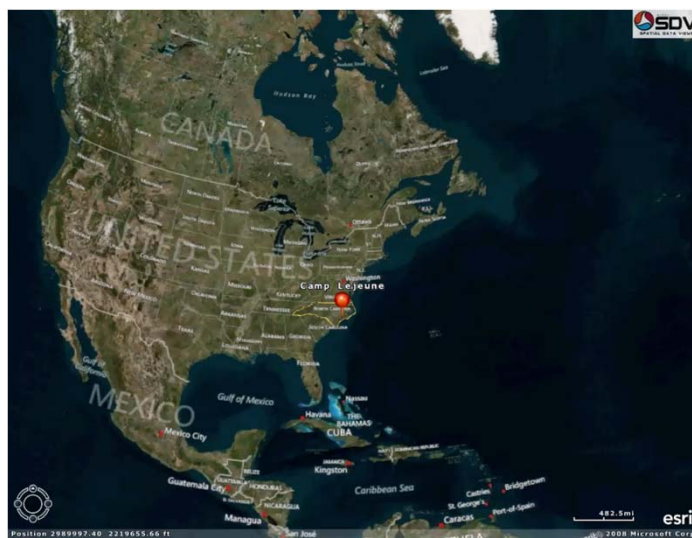
A Simple Solution: 'Going under cover' at the US 17 Western Parkway in Jacksonville, North Carolina

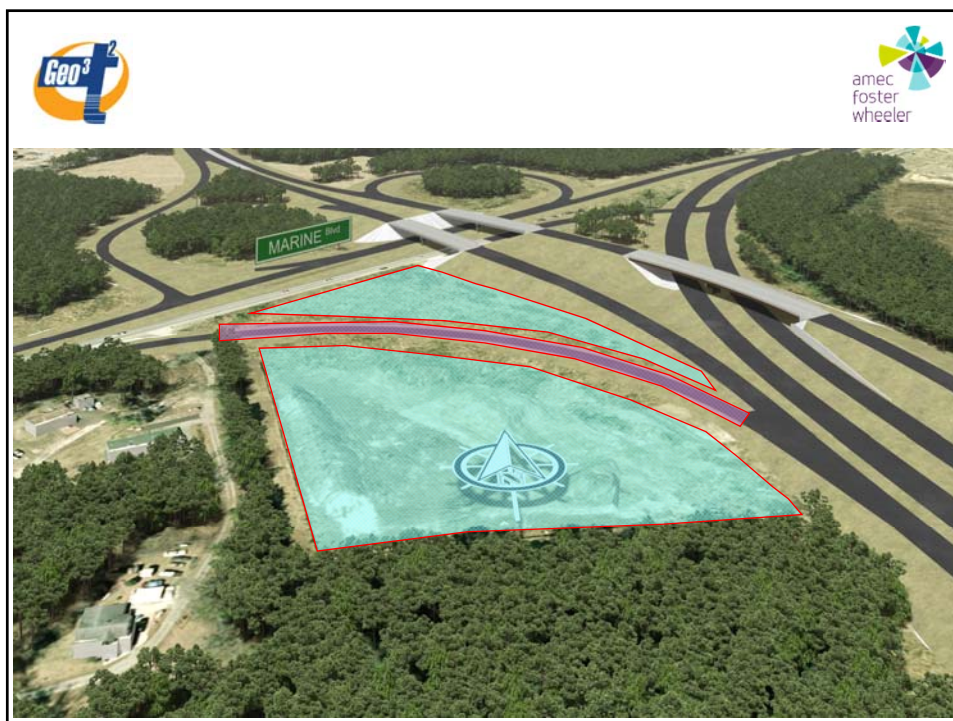
- NCDOT
- Amec Foster Wheeler
- A&D Environmental

Shirshant Sharma, PE
Amec Foster Wheeler Environment & Infrastructure, Inc.
Charlotte, North Carolina

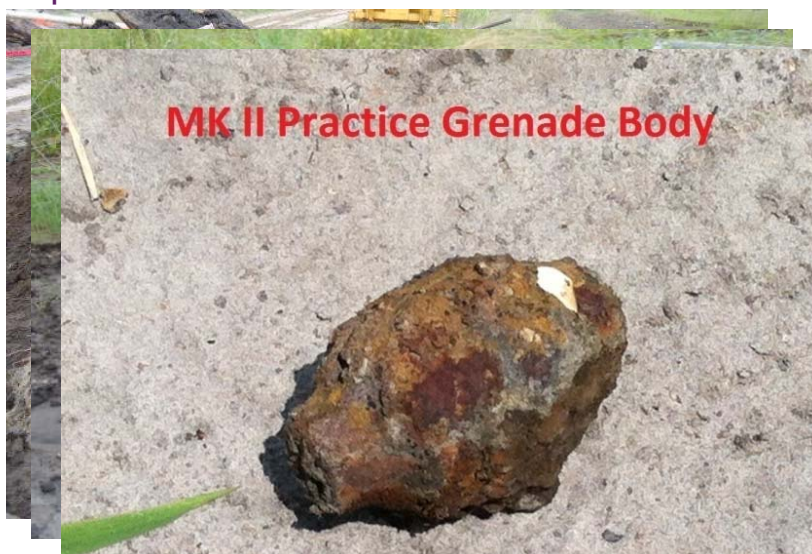


Project Location





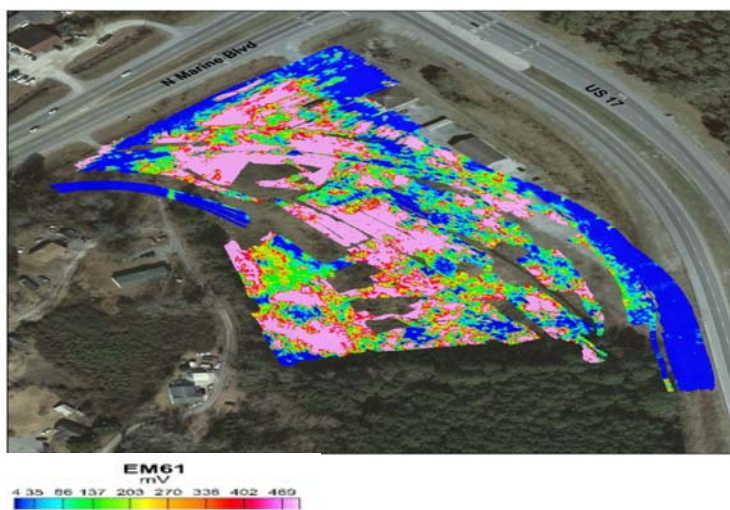
Spent Ordnance at the Site



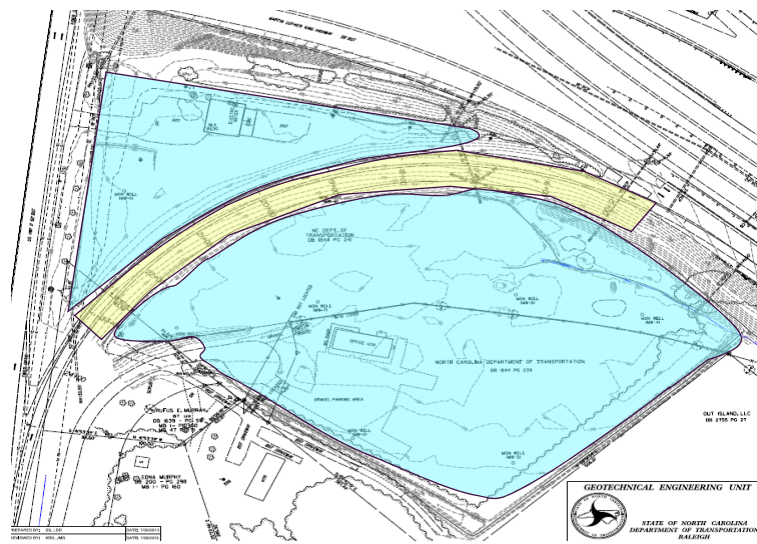
Spent Ordnance at the Site



Geophysical Survey Map



Project Area



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Equipment Used for Excavation



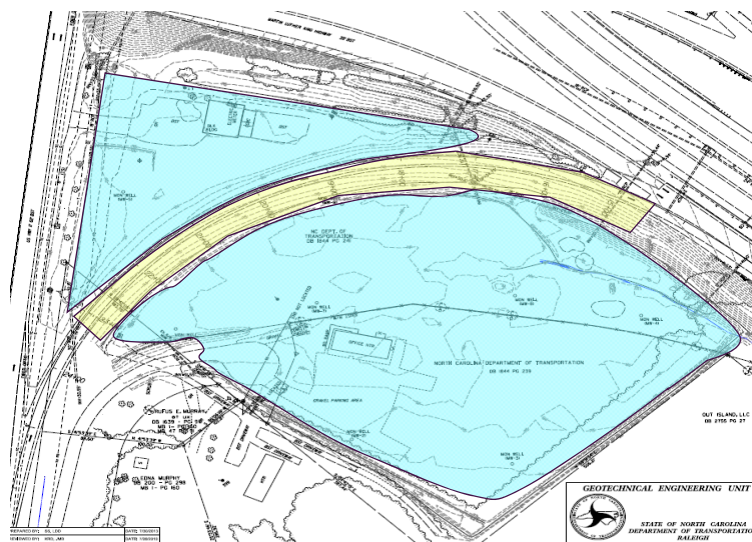
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Debris Removed



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Project Area



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Existing Condition



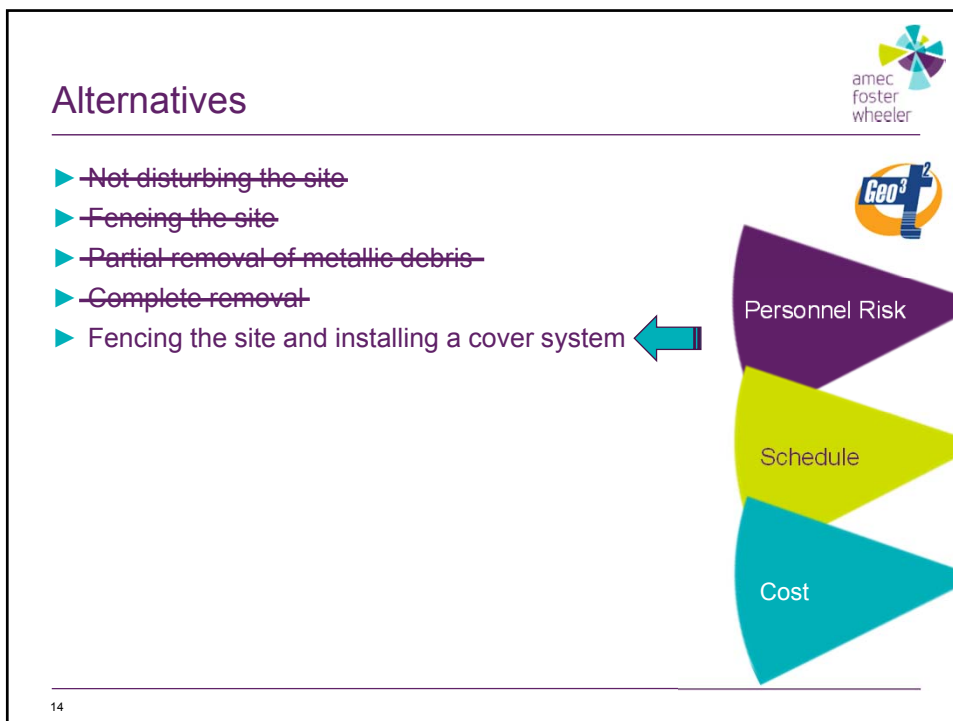
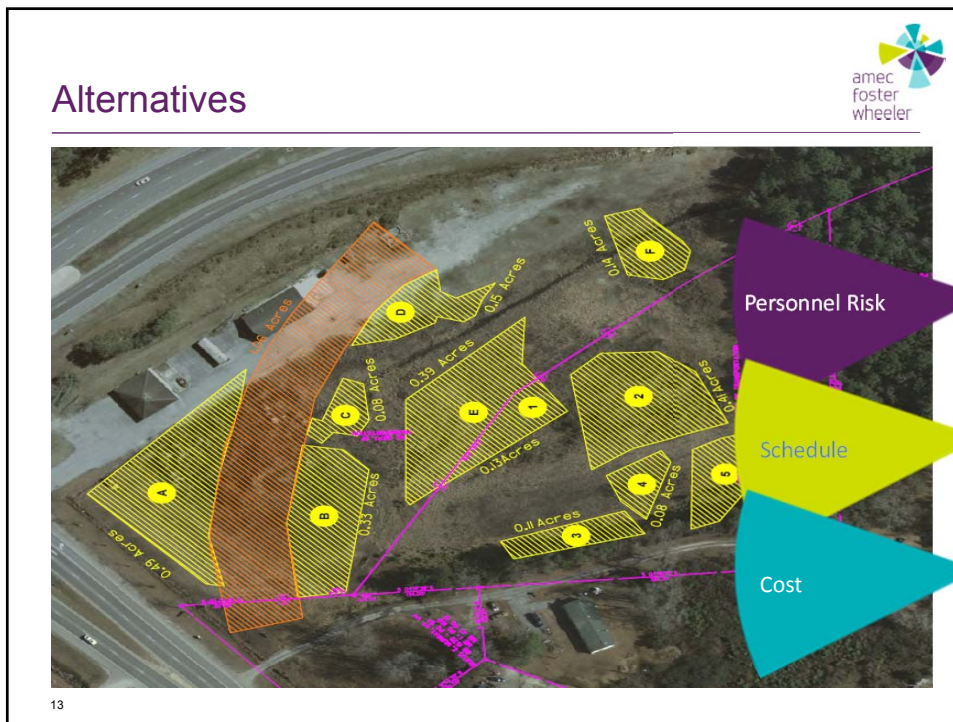
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Goals



- ▶ Access control
- ▶ Isolation from contact

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What is a Cover System?



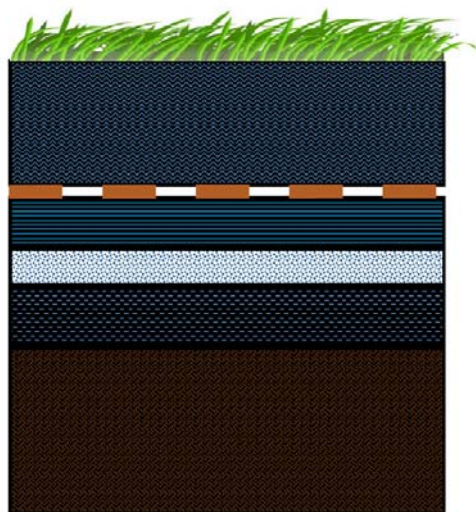
- ▶ Waste Containment
- ▶ Hydraulic Barrier
- ▶ Durability
- ▶ Long Term Performance



*Subtitle D, 40 CFR – Part 257-258 for MSW Landfill

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What is a Cover System?



- ← Vegetation
- ← Surface Layer
- ← Drainage Layer
- ← Composite Barrier
- ← Gas Collection
- ← Foundation
- ← Waste



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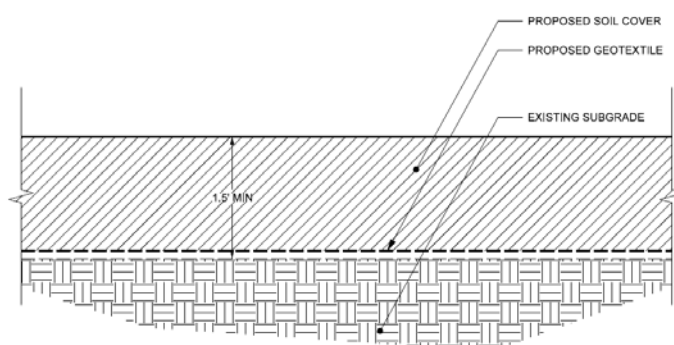
What is a Cover System?



- ▶ **Surface Layer**
 - ▶ Provides erosion protection
 - ▶ Supports vegetation growth
 - ▶ Pleasing to the eye
- ▶ **Drainage Layer**
 - ▶ Provides drainage for overlying layers
- ▶ **Composite Barrier**
 - ▶ Acts as a barrier for gases
 - ▶ Reduces seepage from the drainage layer
- ▶ **Gas Collection Layer**
 - ▶ Acts as a gas conduit, if needed
 - ▶ Helps in releasing pressure on underneath layers
- ▶ **Foundation Layer**
 - ▶ Provides stability for overlying layers
 - ▶ Helps in grade control

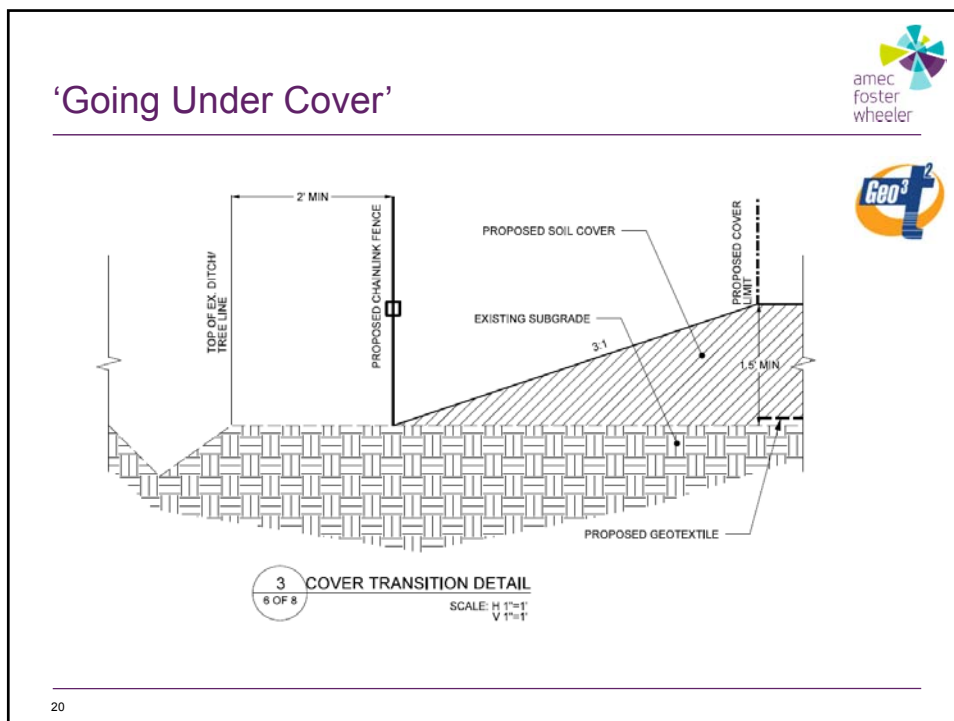
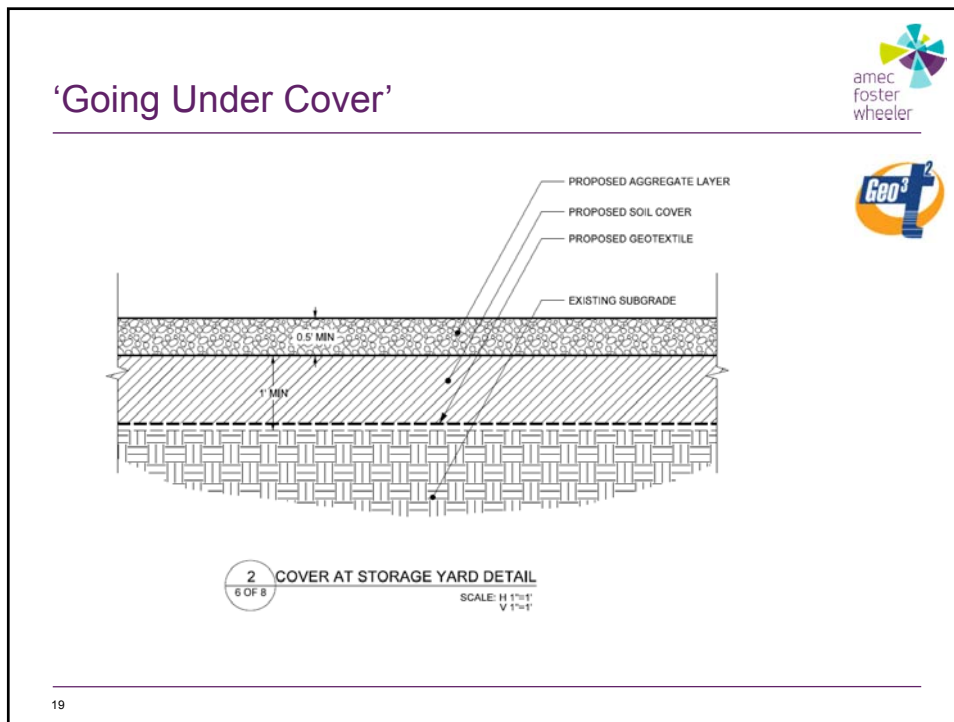
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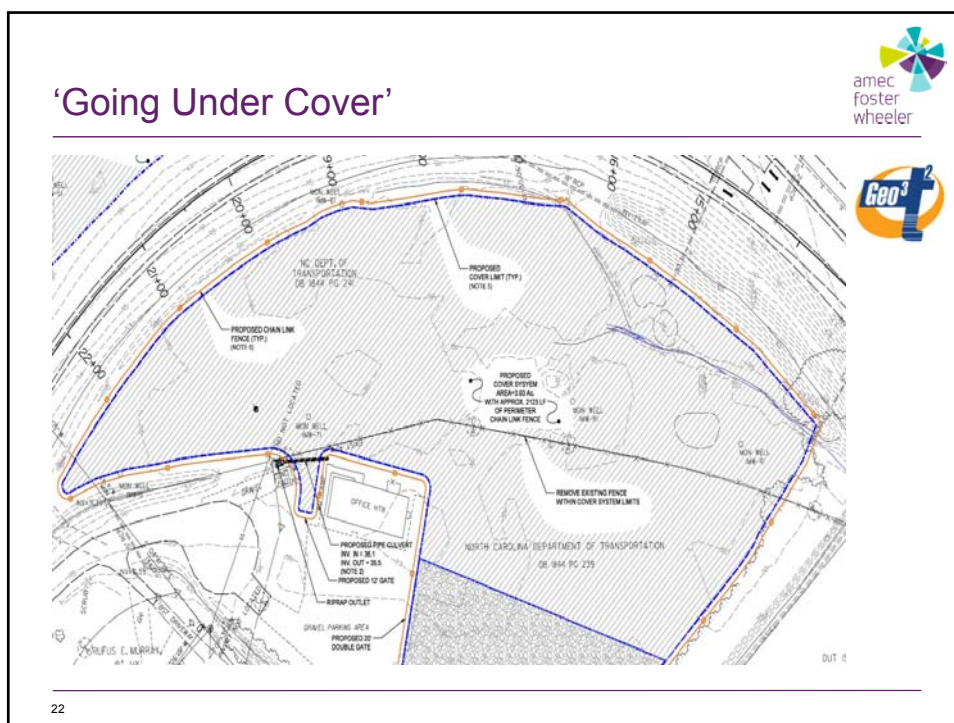
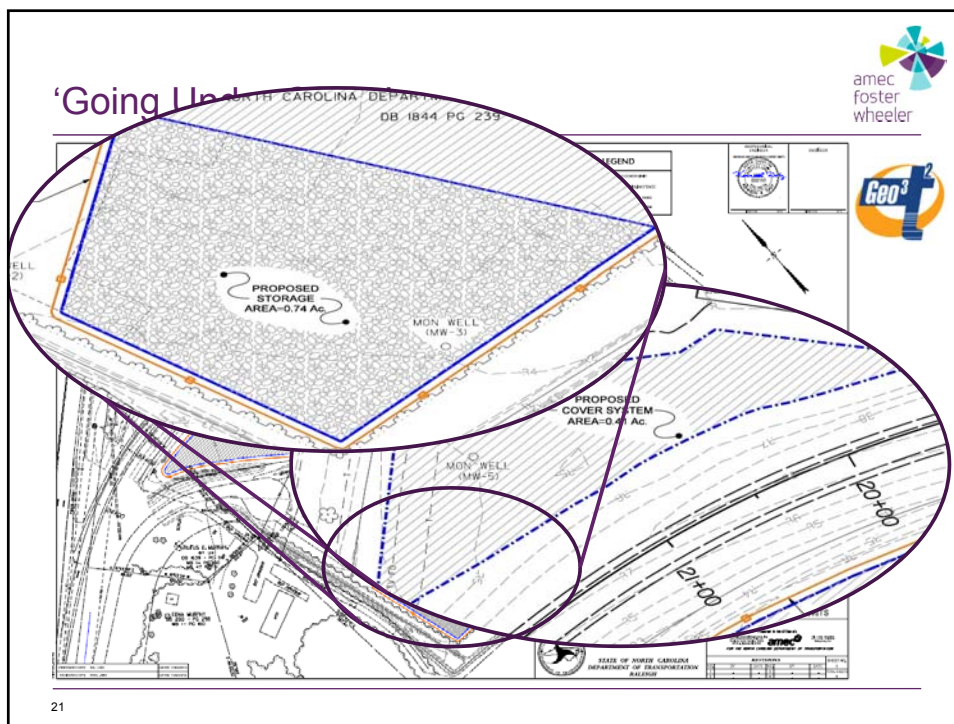
'Going Under Cover'



1 COVER DETAIL
6 OF 8
SCALE: H 1"=1'
V 1"=1'

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Challenges Faced



► Munition Debris



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Challenges Faced



► Could not level the existing ground



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Challenges Faced



► Managing flow patterns



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Challenges Faced



► Weather



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Challenges Faced



- ▶ Soil haul-in coordination



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Final Conditions



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Final Conditions



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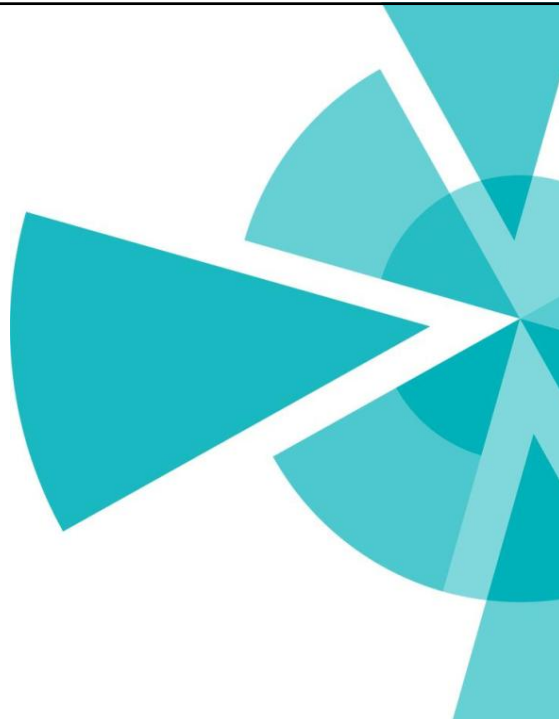
Final Conditions



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'A Simple Solution'

Q&A



Thank you!

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