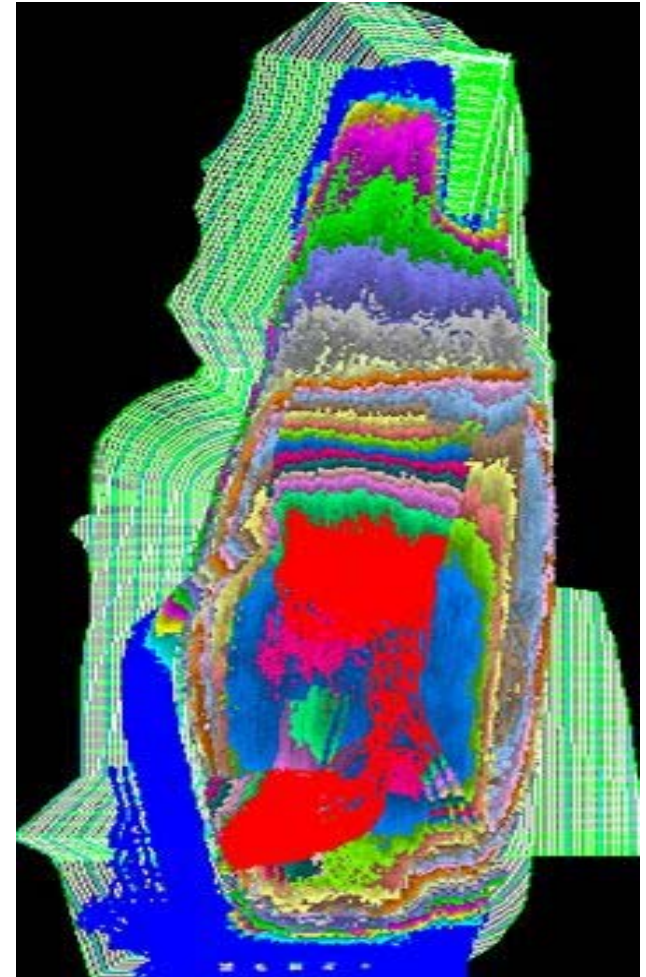


Roller Integrated Compaction Monitoring



Roller Integrated Compaction Monitoring

Machine Drive Power (MDP) RICM Overview



CS56 (84")

800-series



Roller Integrated Compaction Monitoring

MDP Principle: Stiffness Indicated by Rolling Resistance

Soft ground condition = **hard** to push

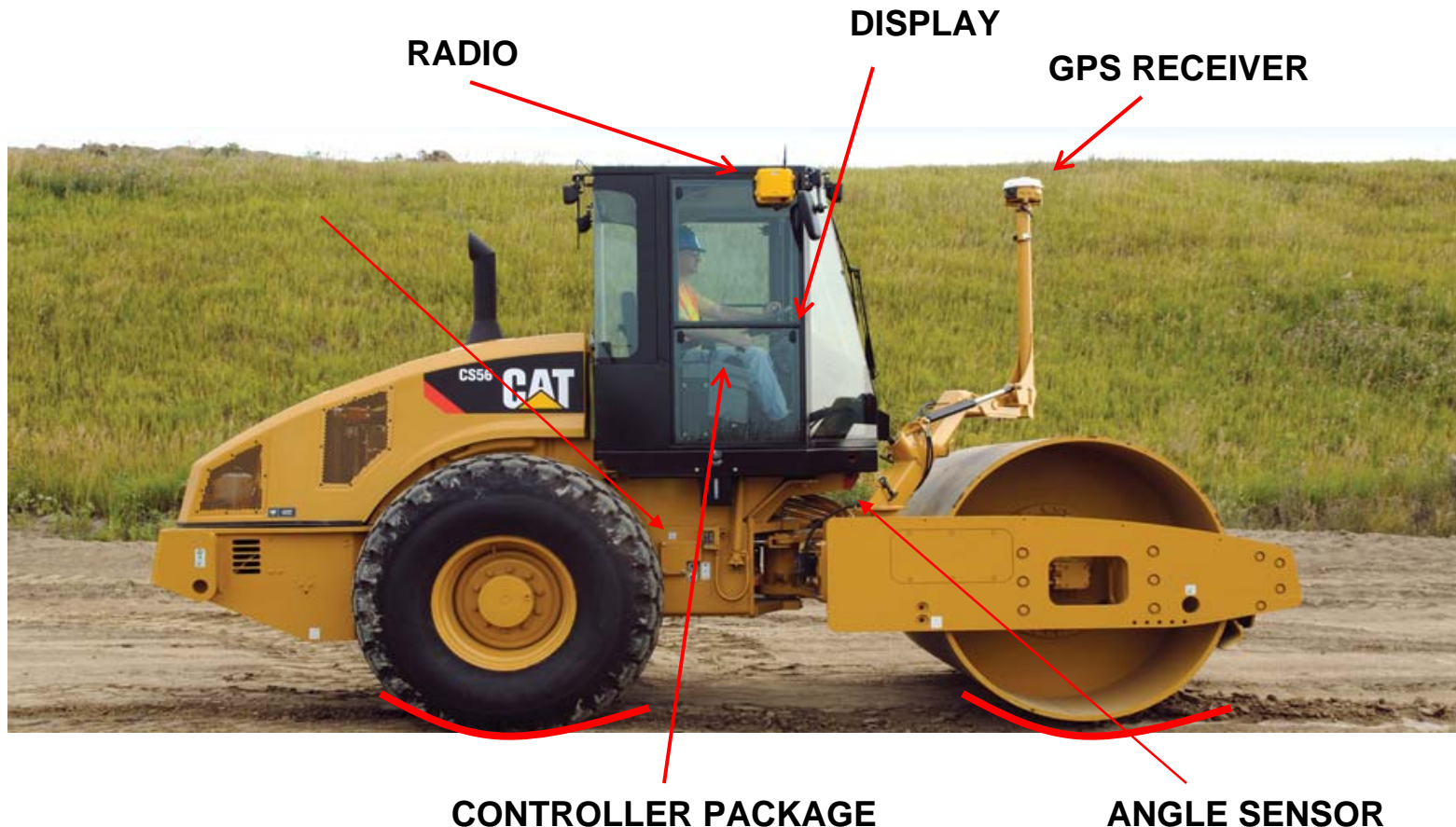


Firm ground condition = **easy** to push

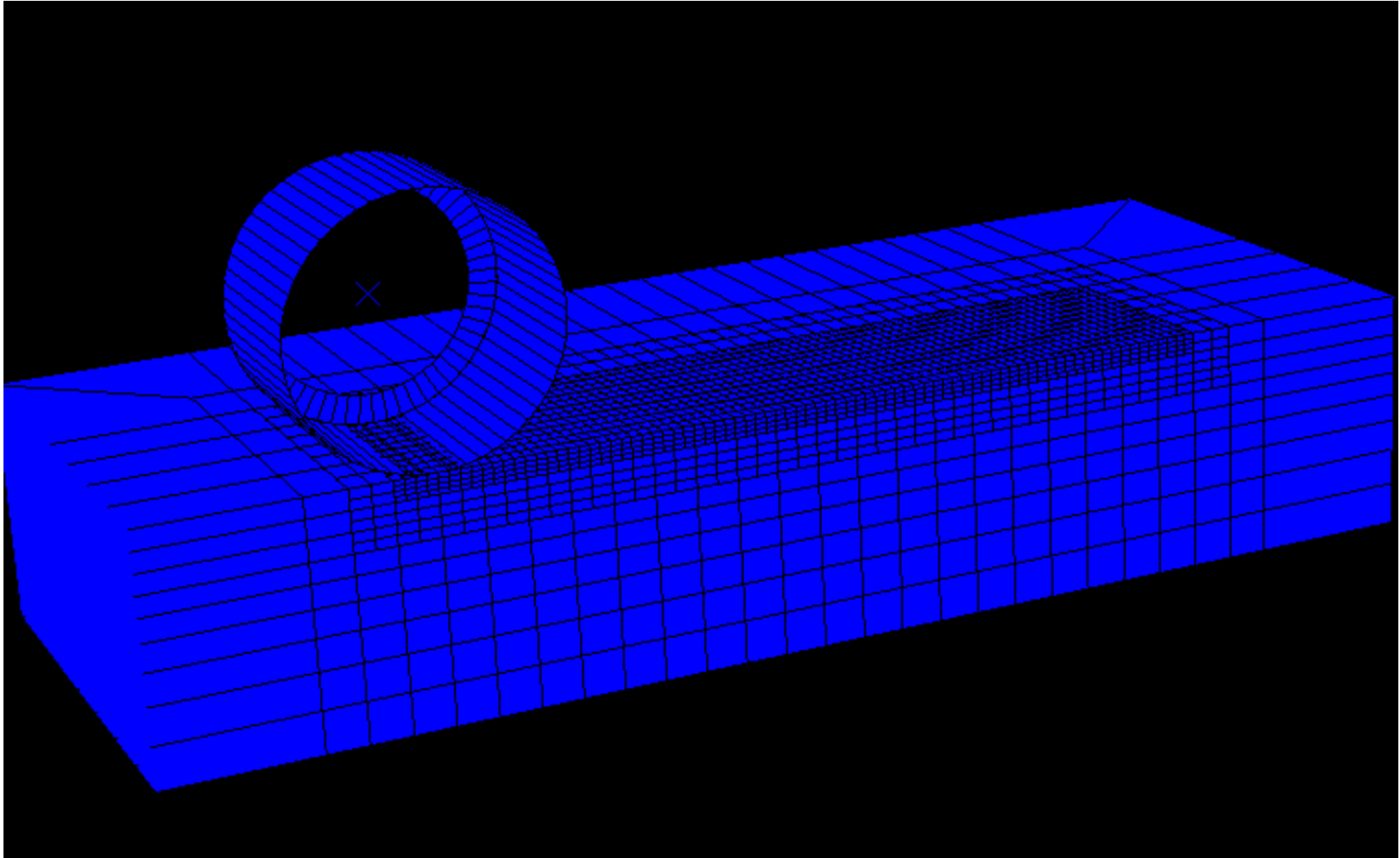


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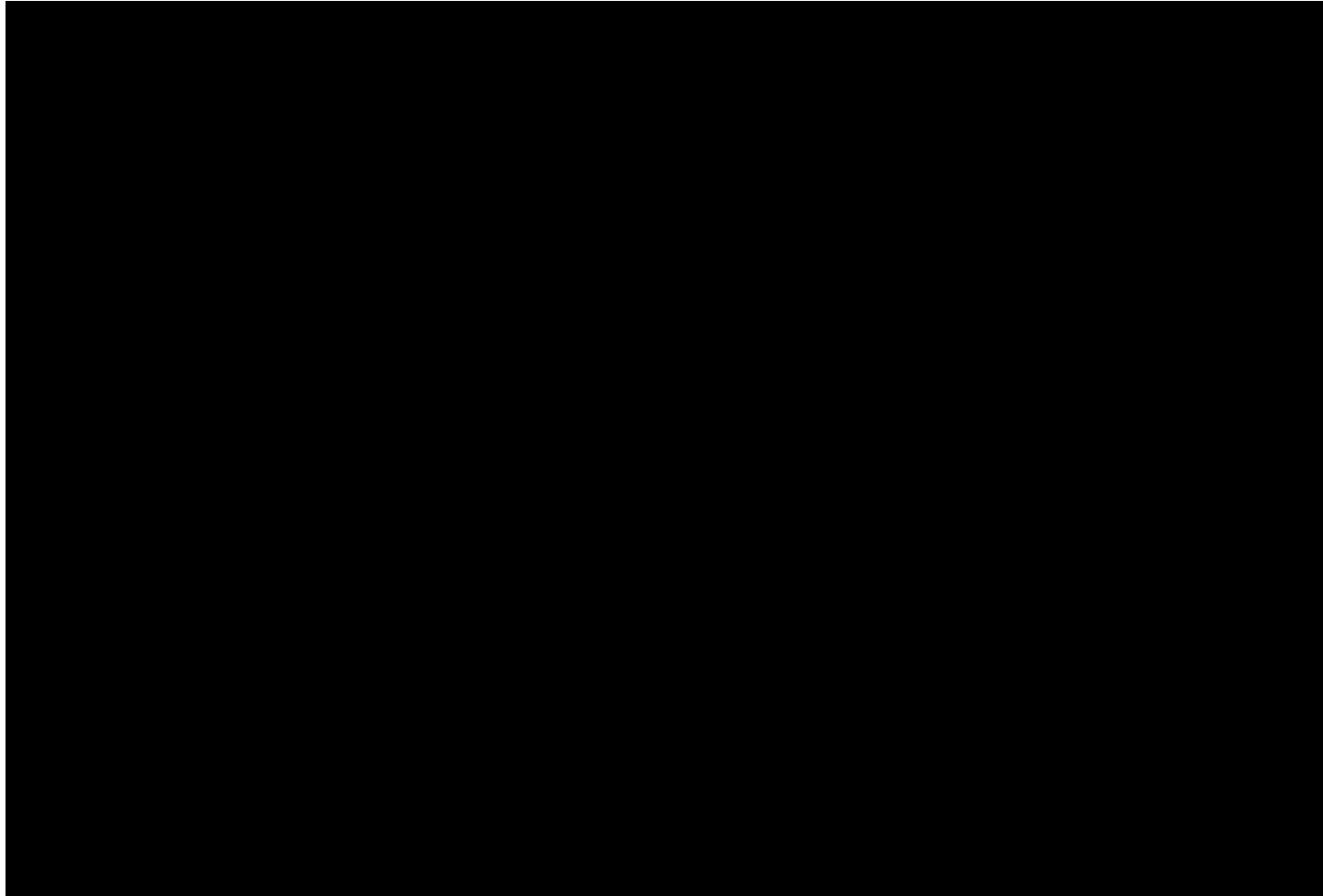
Soil Stiffness indicated by Vehicle Rolling Resistance.



RICM Compaction Model Simulation



Roller Integrated Compaction Monitoring



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RICM Specification - Meet the Pavement Design

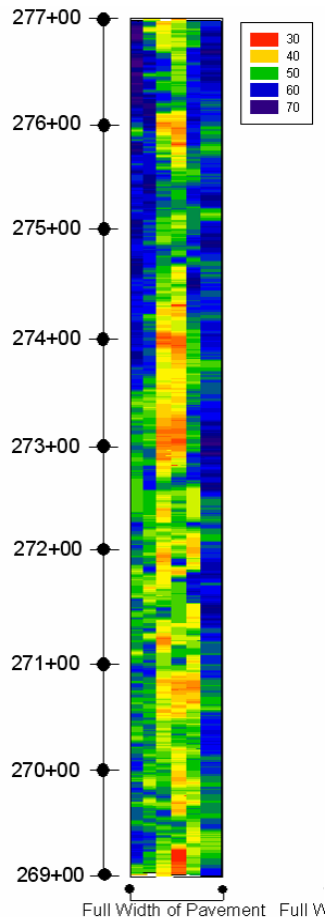
- ▶ Production Rolling
- ▶ Proof Mapping
- ▶ QC Testing (Process Control)
- ▶ QA Testing (Project Acceptance)

Roller Integrated Compaction Monitoring

Proof Mapping

Compaction Target Value (CTV) = 42

Current TxDOT QA



% Target	CCV	IC Data
>130%	55	26%
90-130%	38 - 55	68%
80-90%	34 - 38	4%
70-80%	29 - 34	1%
<70%	<<120	

Acceptance Criteria:

>90% of IC Data should be greater than 80% of CTV

Courtesy of Dr. David White – Iowa State University

Intelligent Compaction

Moisture Testing by Nuclear Gauge



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QC Testing

Light Weight Deflectometer



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QA Testing



Measures Modulus of Subgrade Reaction

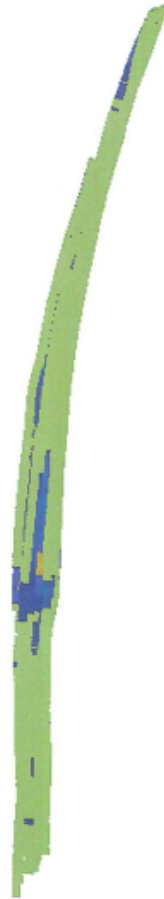
Strength not Density

Plate Load Testing



Roller Integrated Compaction Monitoring

Block 73 Compaction Summary



Compaction Report

Data Model: DFW SITE

Display: CCV %

Site: DFW SITE

Date: Monday, March 07, 2011

Compaction Analysis

> 115.0%	(24%)
100.0%	(62%)
80.0%	(13%)
50.0%	(0%)
0.0%	(0%)

Target CCV

☐ Decoupled

Target CCV

Target Range: 100% - 125%

Target CCV: 120.0

CCV % Summary

Overcompacted: 0%

Compacted: 87%

Undercompacted: 13%

Total Area Covered: 20038.3 sq FT

Duration: 0h:28m:8s

Filter Settings

Filter: <Not Specified>

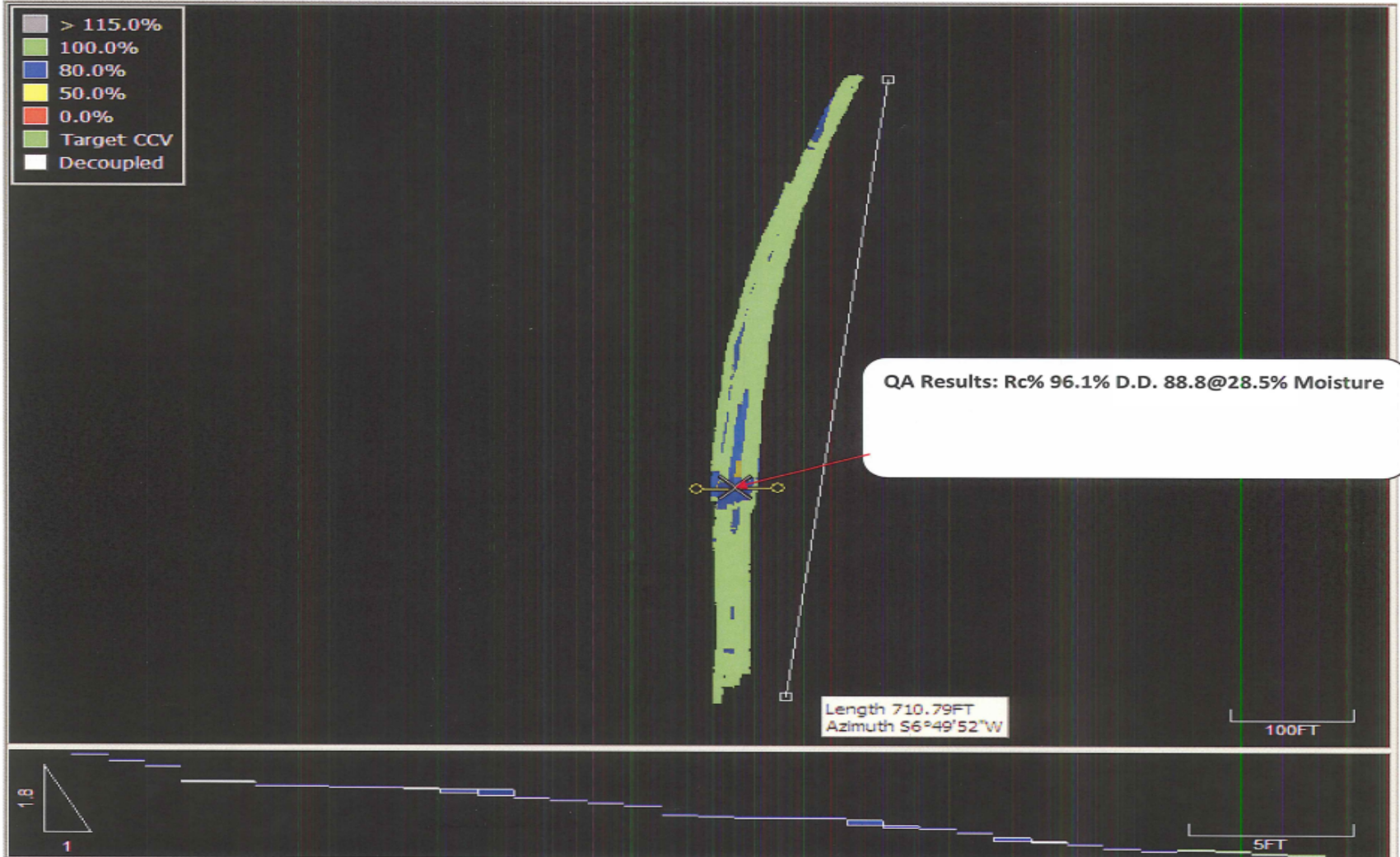
Machine: 2CS56 11-1753

Time Start: 3/7/2011 - 11:34:21 am

Time End: 3/7/2011 - 12:02:29 pm

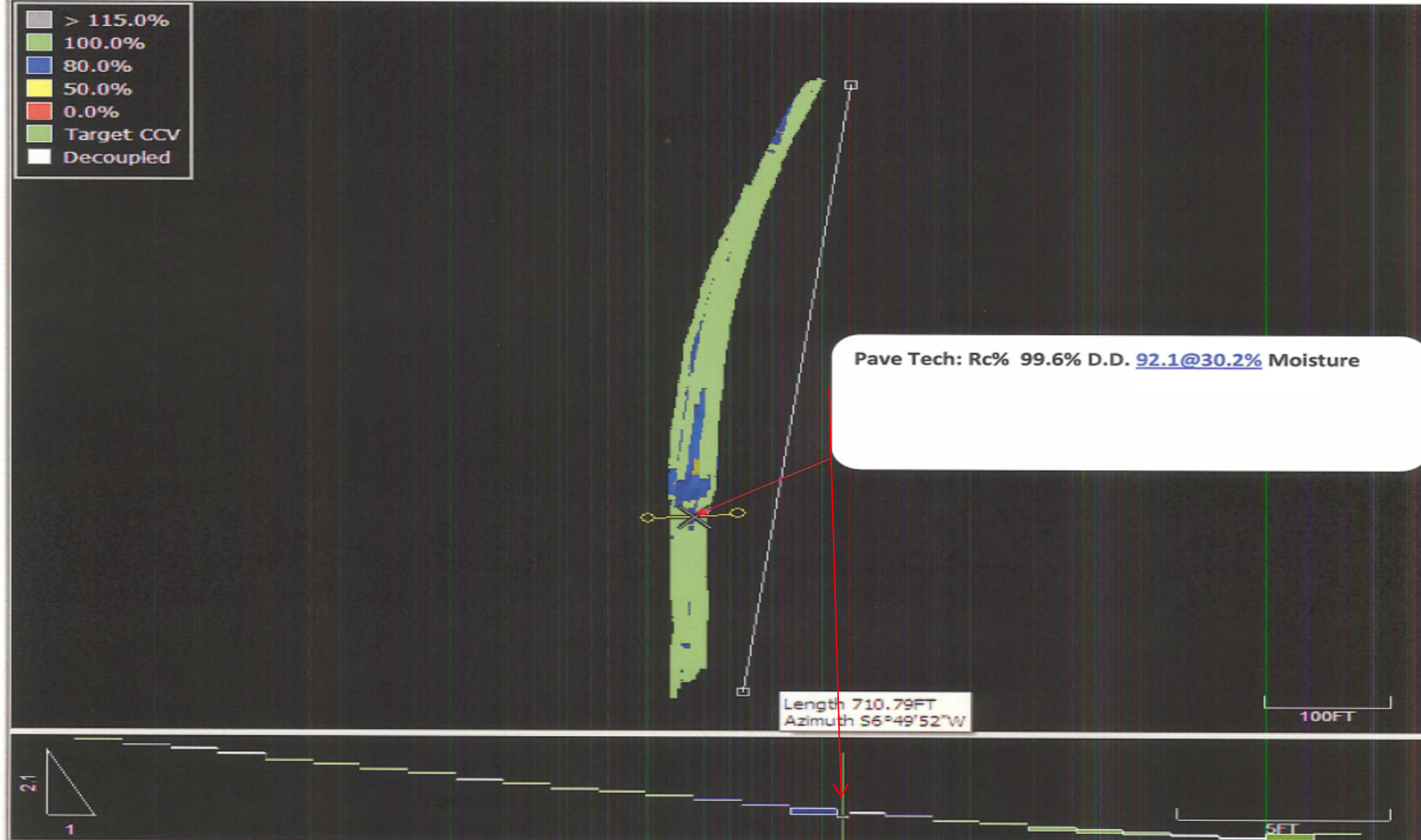
Roller Integrated Compaction Monitoring

Blk. 73 Lime 03/07/2011 Proctor D.D. 92.4 @ 28.0% Moisture



Roller Integrated Compaction Monitoring

Blk. 73 Lime 03/07/2011 Proctor D.D. 92.4 @ 28.0% Moisture



Intelligent Compaction

Questions?