GEOHAZARDS IN TRANSPORTATION IN THE APPALACHIAN REGION

CHARACTERIZATION AND REMEDIATION OF A CREEPING SLOPE

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NOTE:
1. Base map adapted from USGS 7.5 Minute Quadrangle Map of Portageville, NY dated 1972.
• BACKGROUND
• SITE CONDITIONS
• EFFECT ON TRACKS
• SUBSURFACE EXPLORATION PROGRAM & CONDITIONS
• INSTRUMENTATION
• DATA COLLECTED
• REMEDIATION OPTIONS
• REMEDIATION LIMITATIONS
• SELECTED REMEDIATION
• CONSTRUCTION
• RESULTS TO DATE
Distorted Tracks,
Periodic Resurfacing, & 24-Hour Watch

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WATER LEVELS AND INCREMENTAL DISPLACEMENT

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• CONSTRUCTION
• RESULTS TO DATE
SOLUTION OPTION #1 - LOWER HEEL

DRIVING SIDE

W_{DRIVING}

RESISTING SIDE

W_{RESISTING}
SOLUTION OPTION #3 - RAISE TOE

DRIVING SIDE

RESISTING SIDE

W_{DRIVING}

W_{RESISTING}
SOLUTION OPTION #4 - REINFORCE SLOPE

DRIVING SIDE

W_{DRIVING}

RESISTING SIDE

W_{RESISTING}
SOLUTION OPTION #5 - LOWER GROUNDWATER

DRIVING SIDE

W_{DRIVING}

RESISTING SIDE

W_{RESISTING}
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Remediation Limitations

• Railroad Right-of-Way
• Topography
• Cost
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• Subsurface Exploration Program & Conditions
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