

# Application of GPR on Forensic and Rehab Projects



**Dar-Hao Chen, John Bilyeu**  
**Tom Scullion, Andrew Wimsatt, Lee Gustavus**































Two out of 13

4 8:55 AM





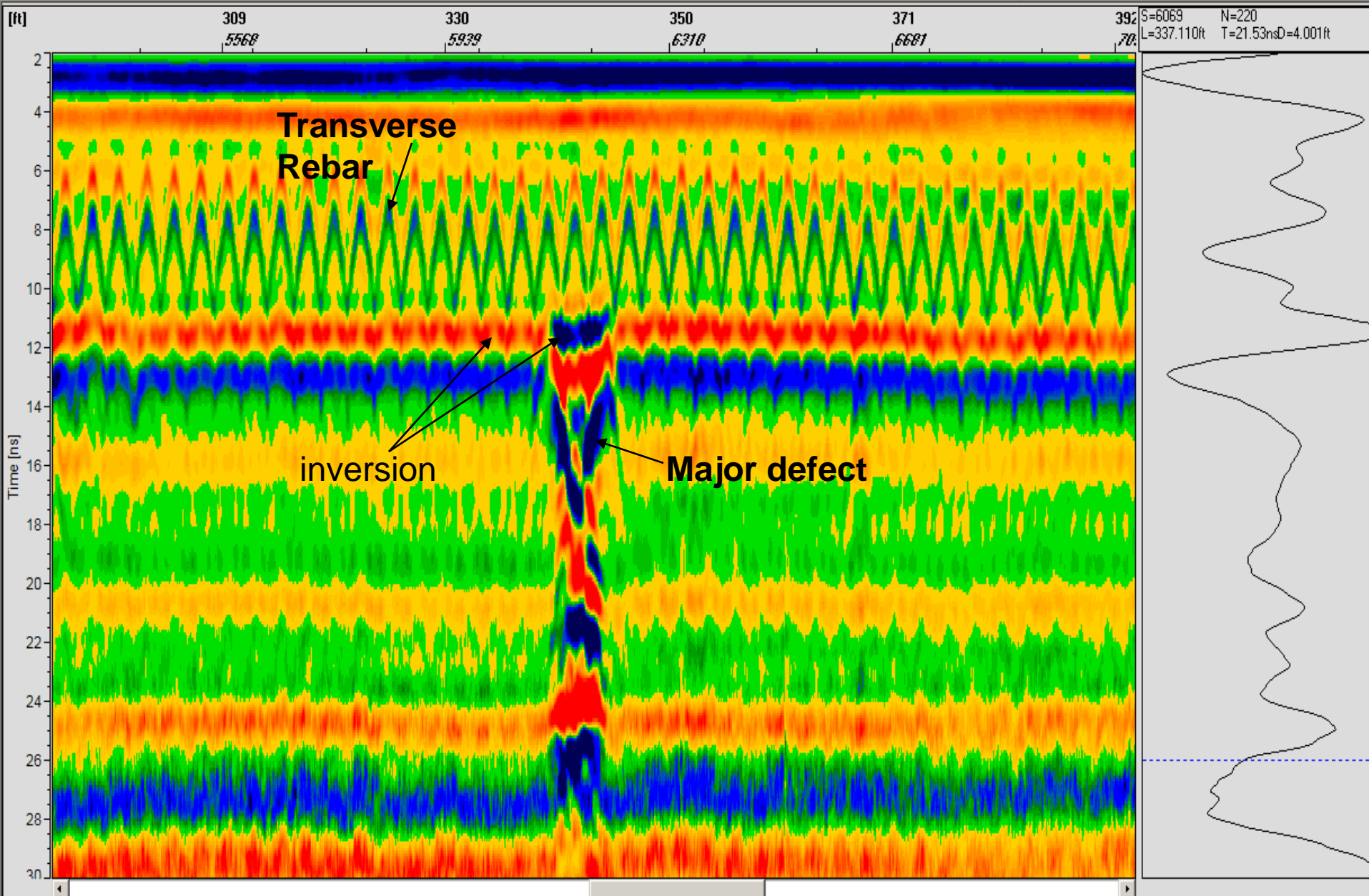














JUL 18 2007







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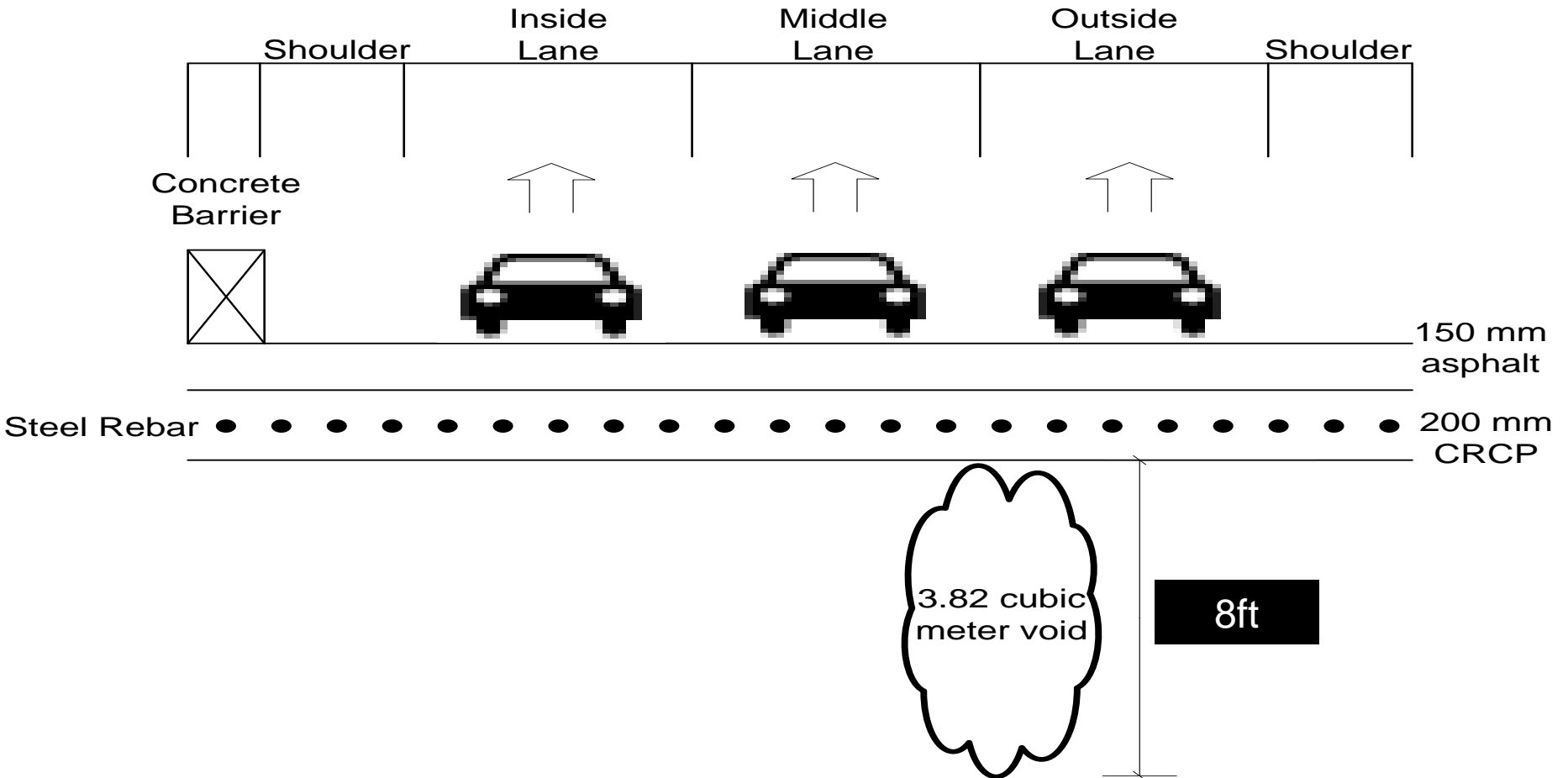
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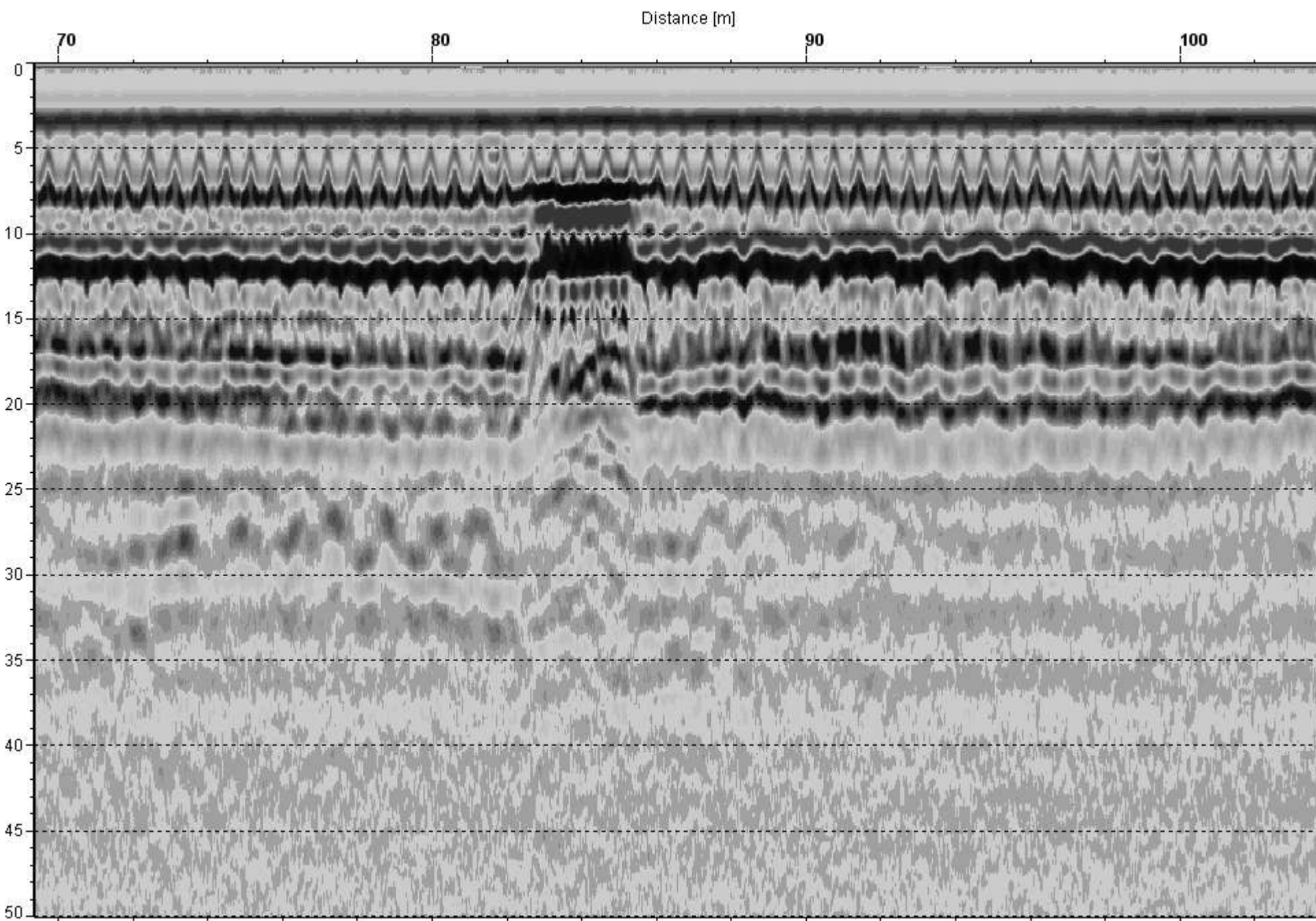
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Brodie Ln  
Southwest Pkwy  
EXIT ↓ ONLY

NOT  
POTABLE  
WATER

818-963



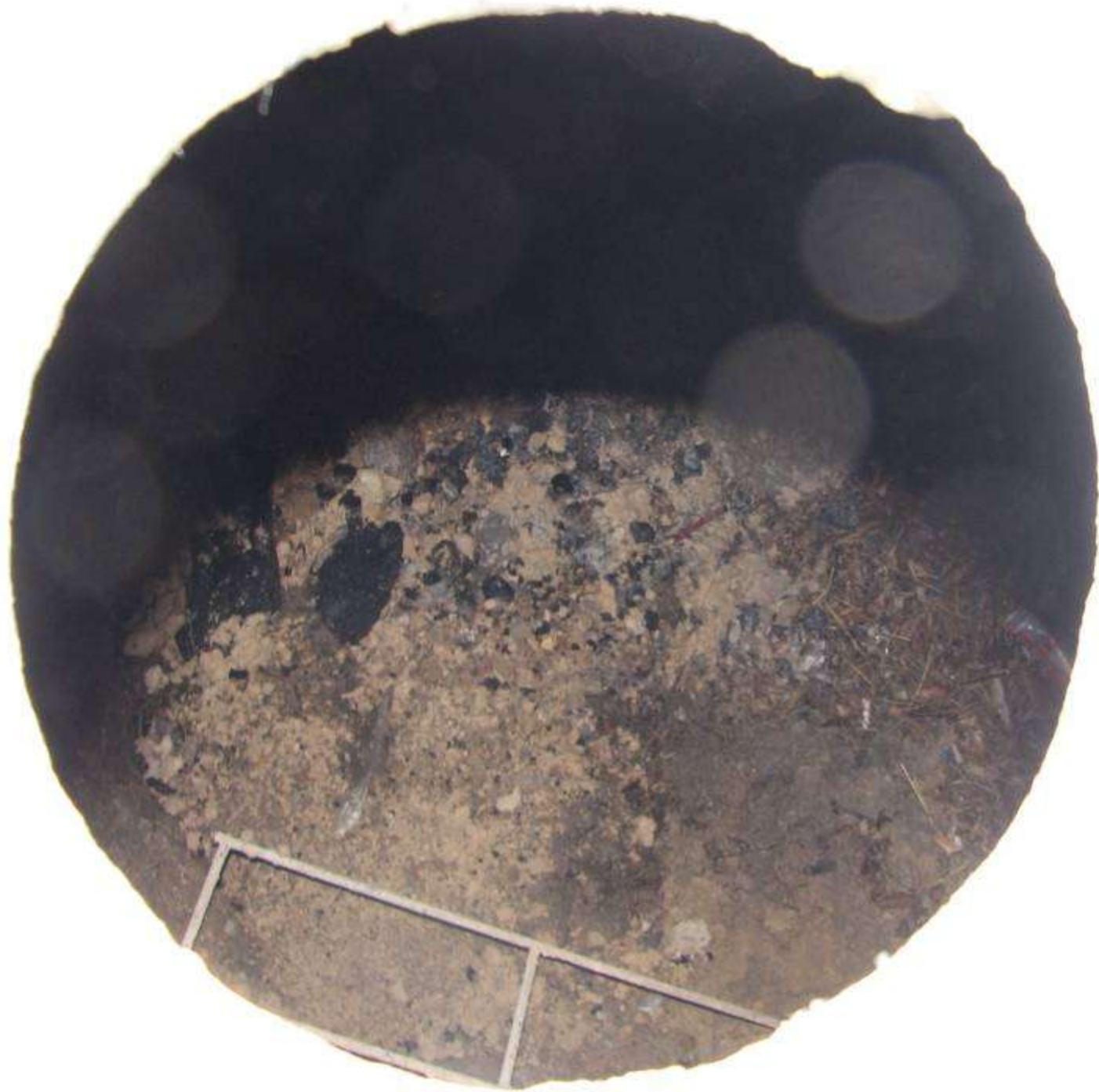














Void Area



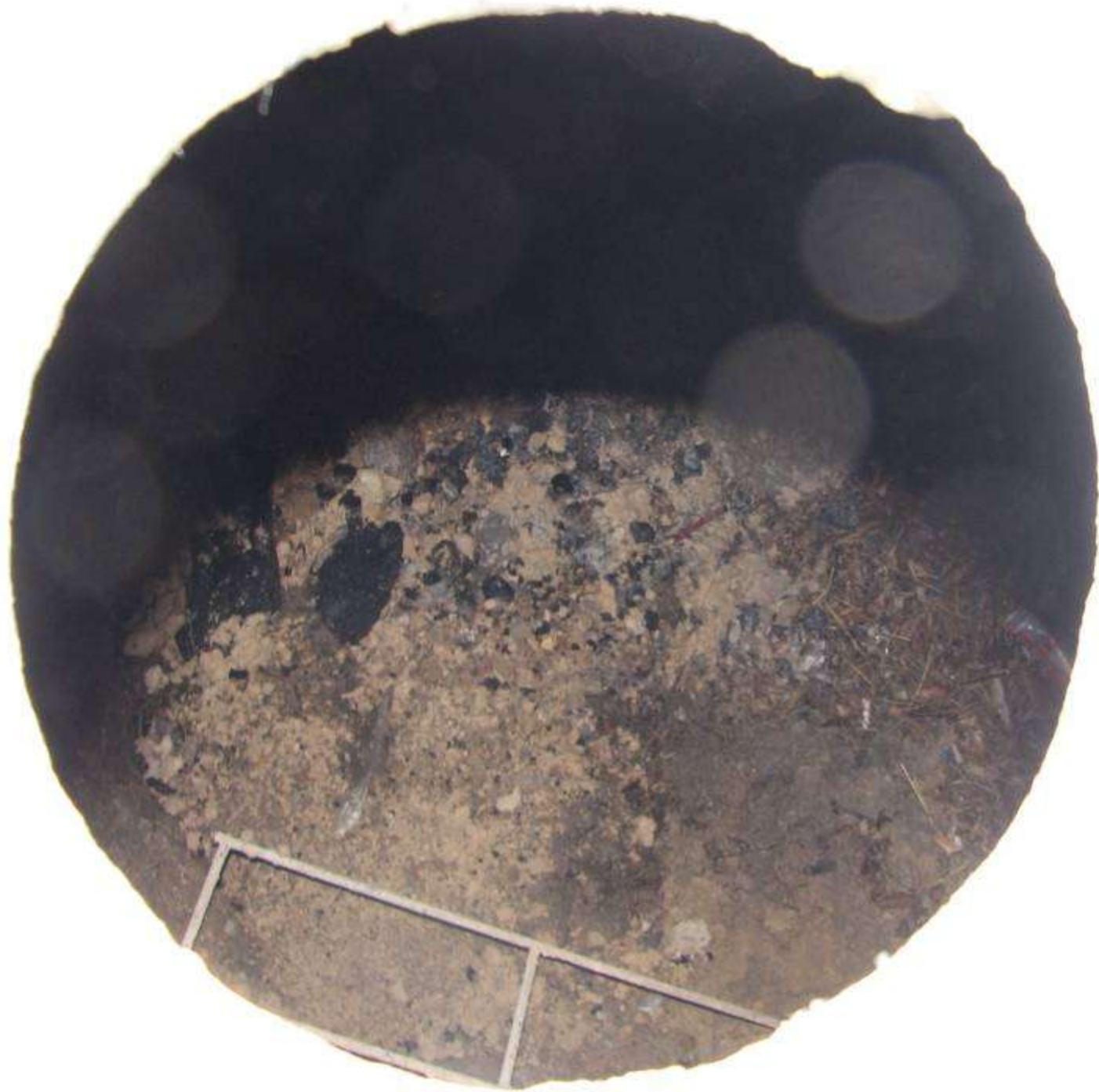







0005.1F

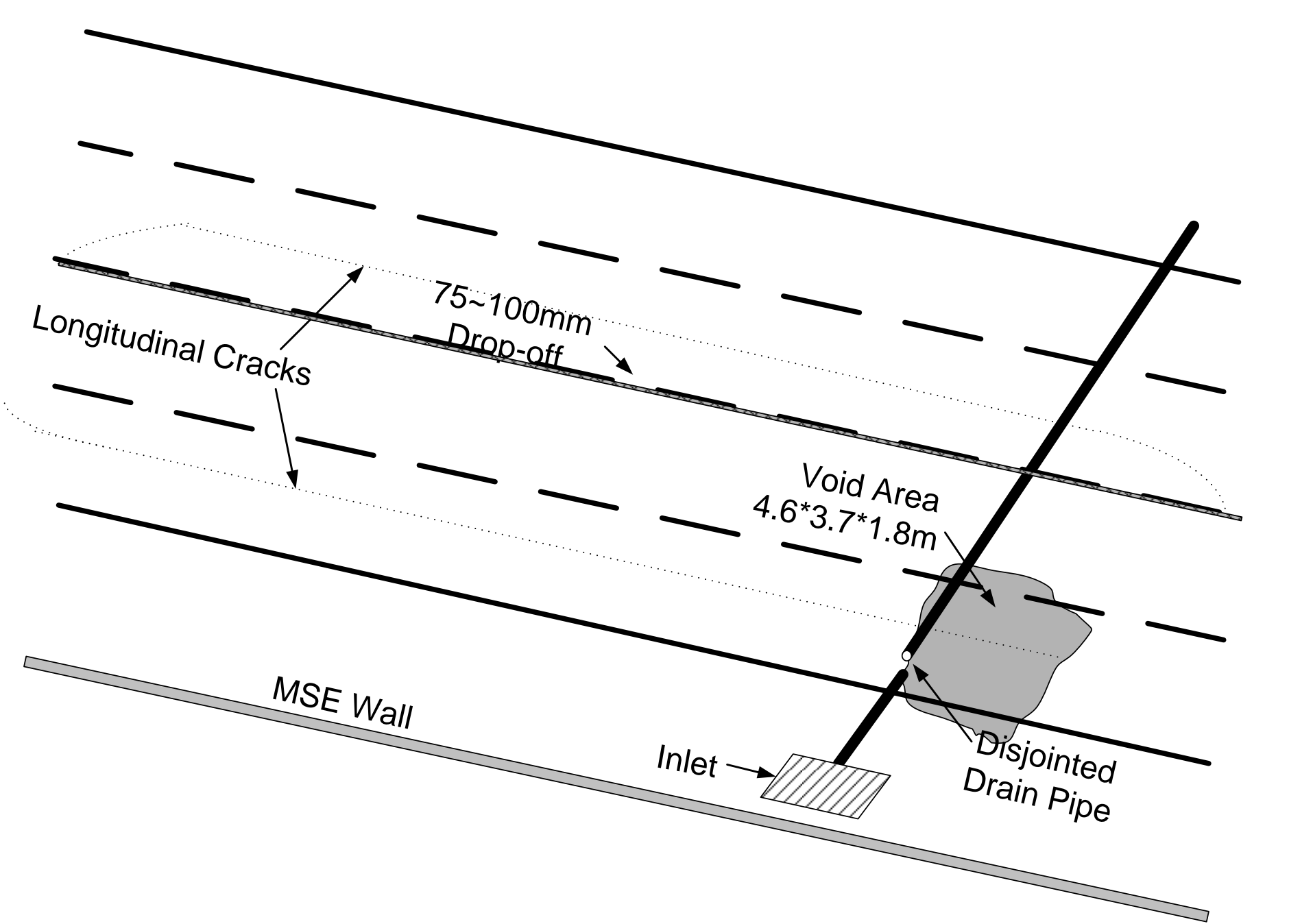






6'\*12'\*15'





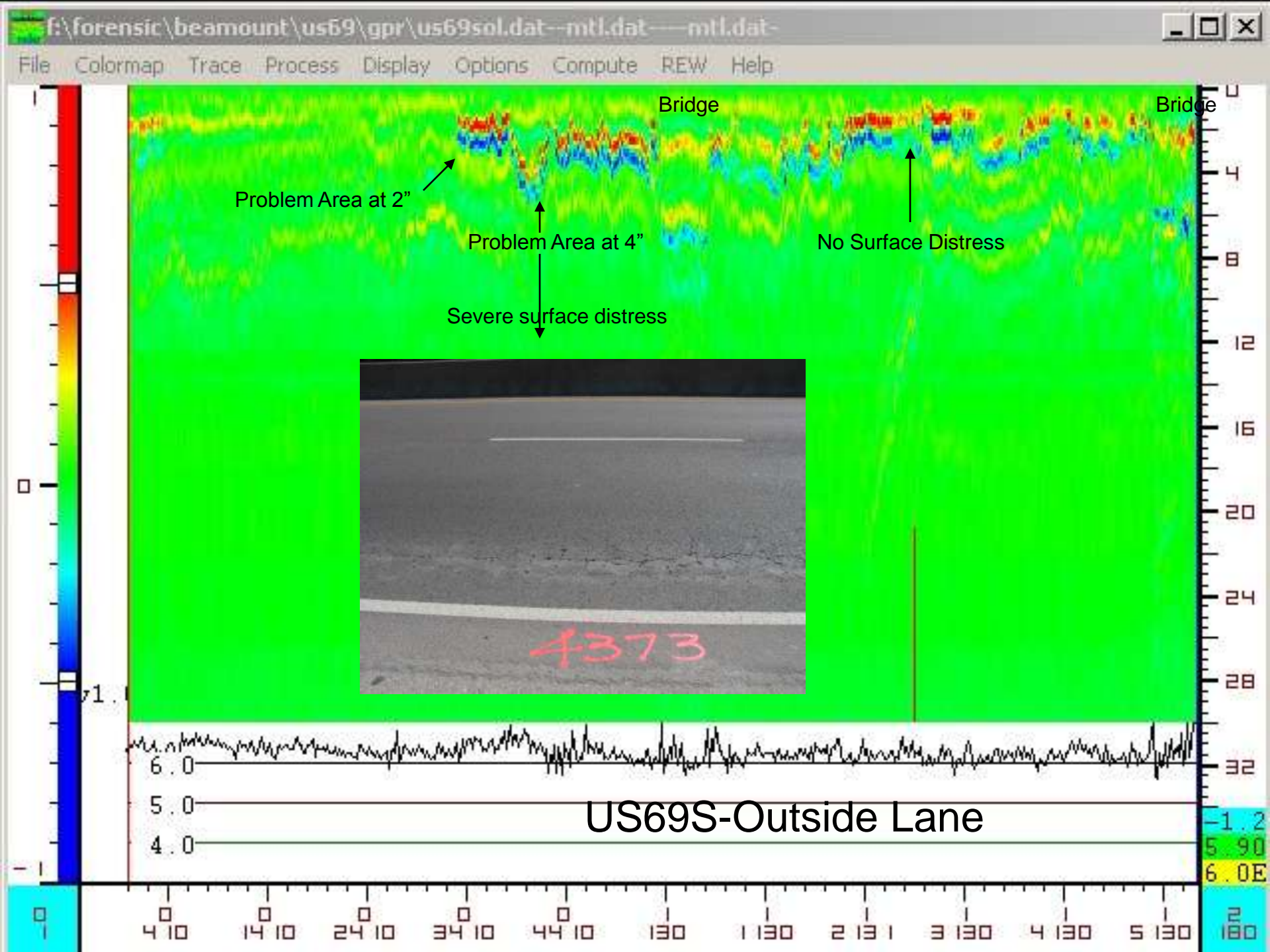
# Chronic Pavement Distress

Rehabs: 1996, 2001 (top 2 inch AC)

- (1) Total AC 4.5-8.5 inch
- (2) 11 inch sand shell base
- (3) 8 " select material
- (4) 6" lime treated subgrade

Condition in 2004





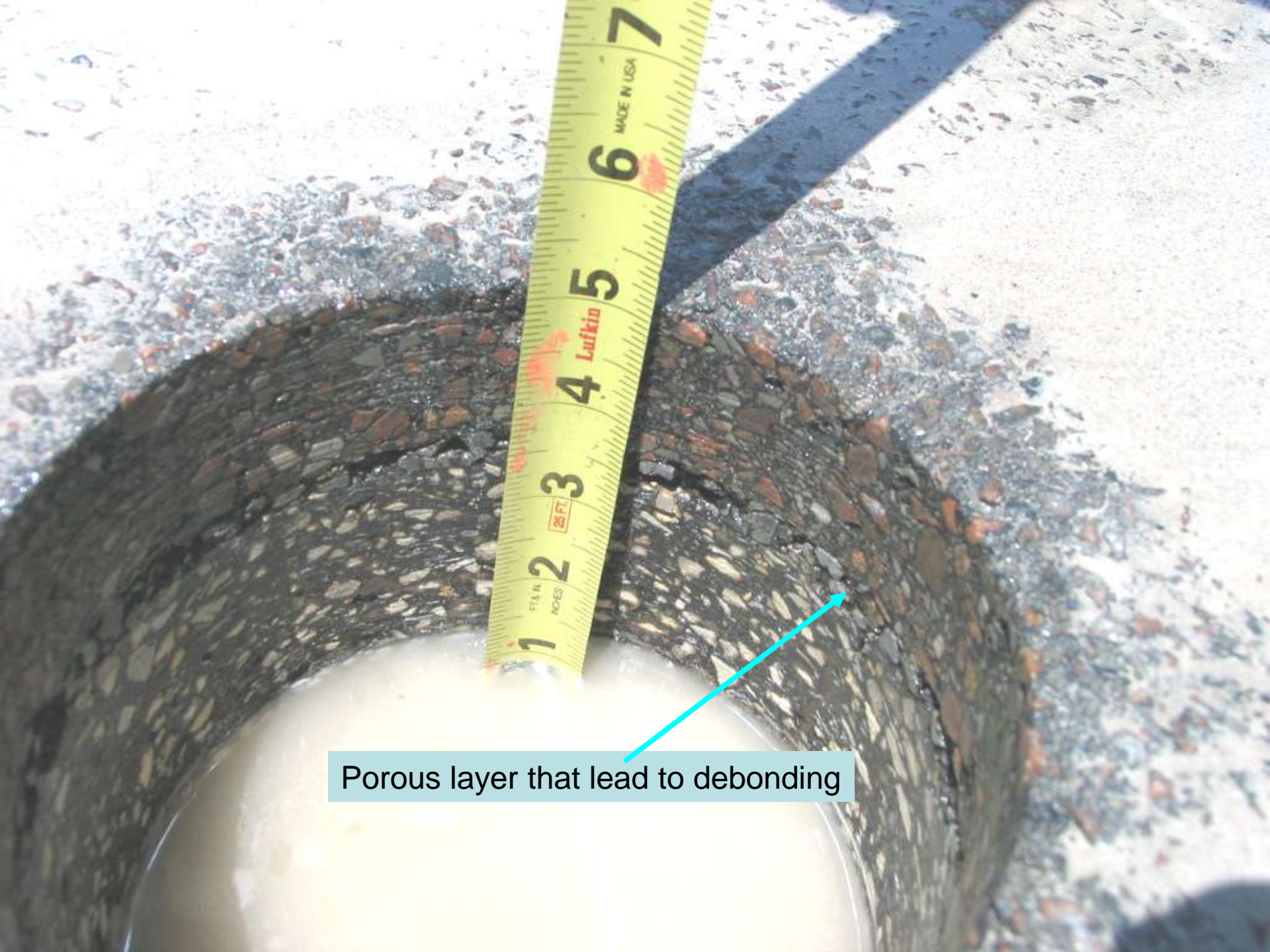


Location 750

Porous layer that lead to debonding







Porous layer that lead to debonding



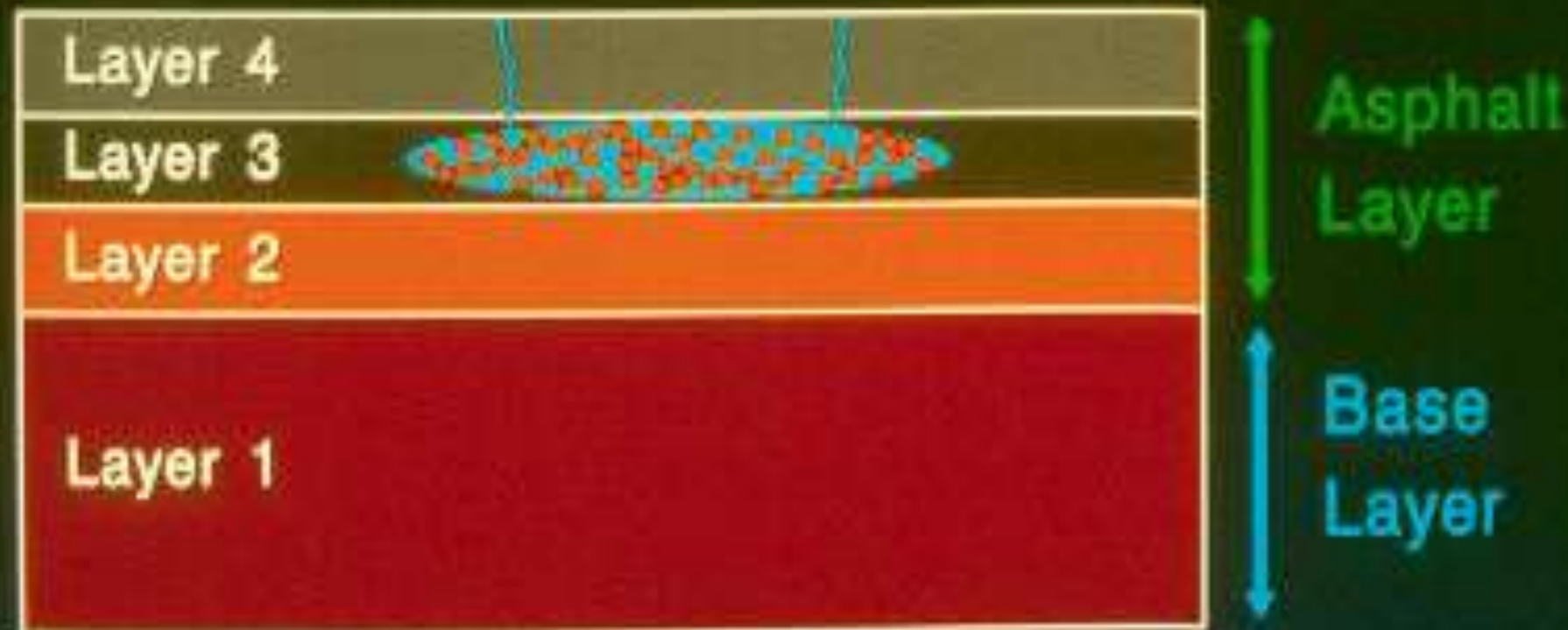


Debonded at 2.75 inch



# STRIPPING PROBLEM

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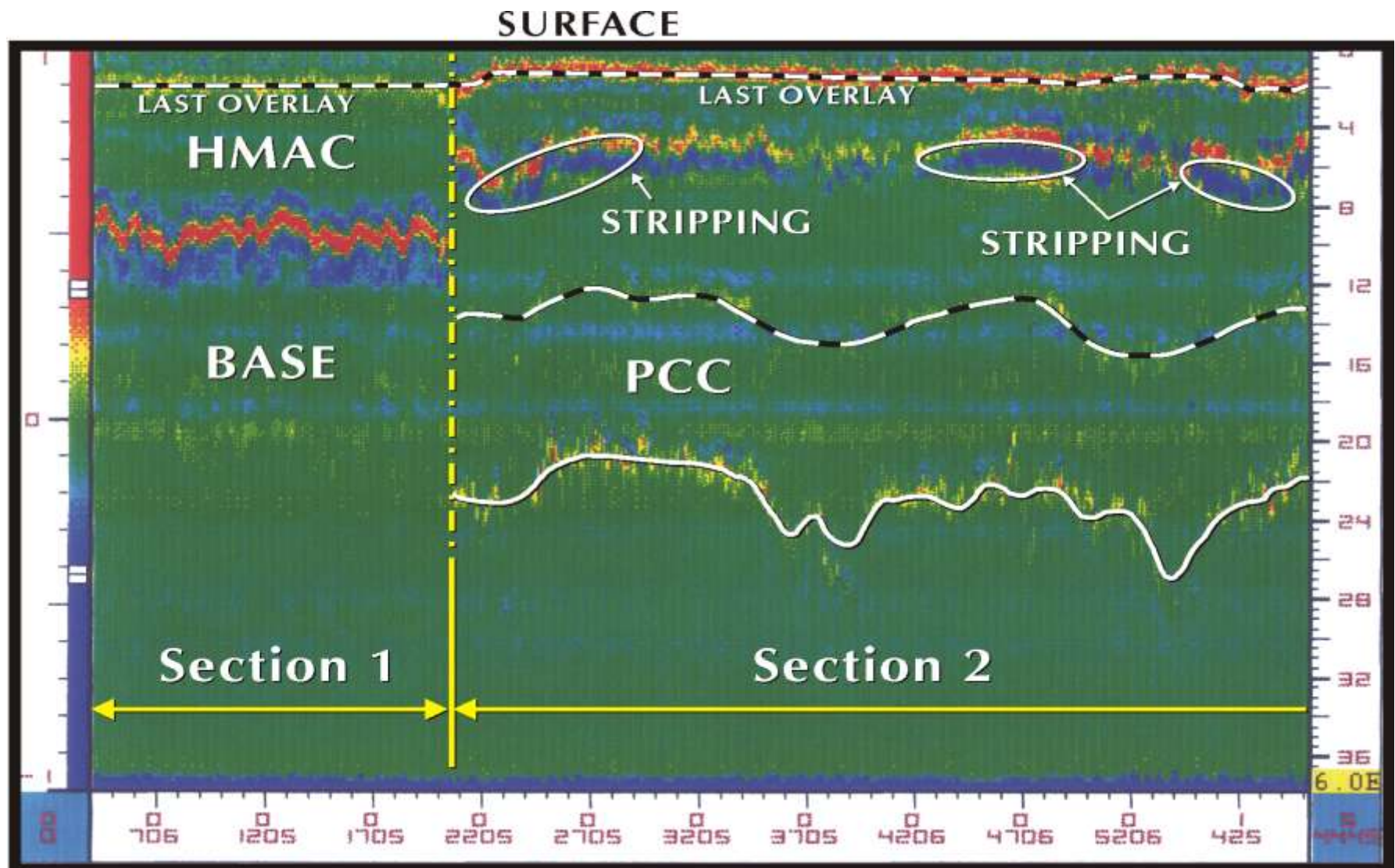


Stripping on US 175





# Annotated results for US 175



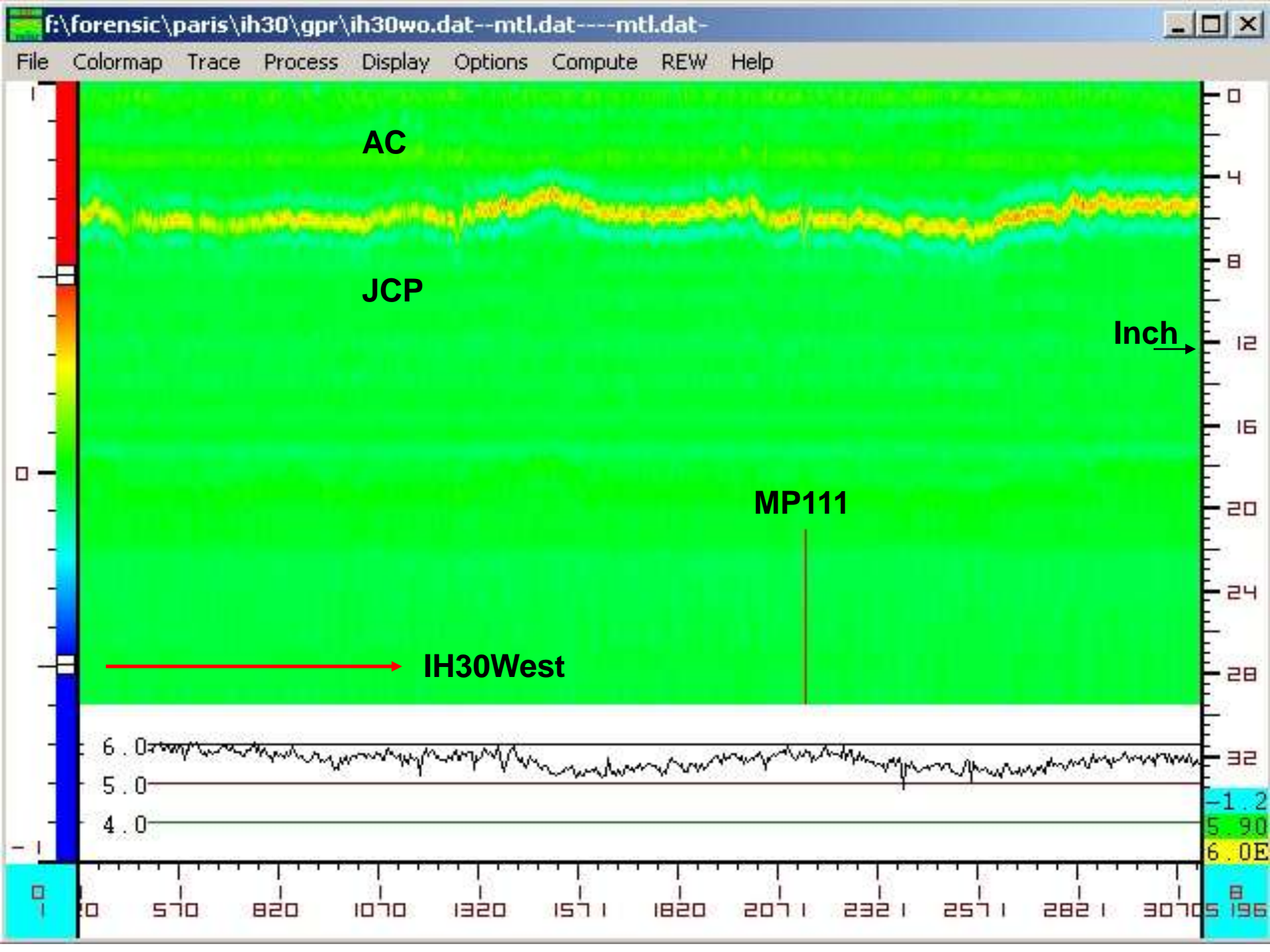


8 mile +2050ft

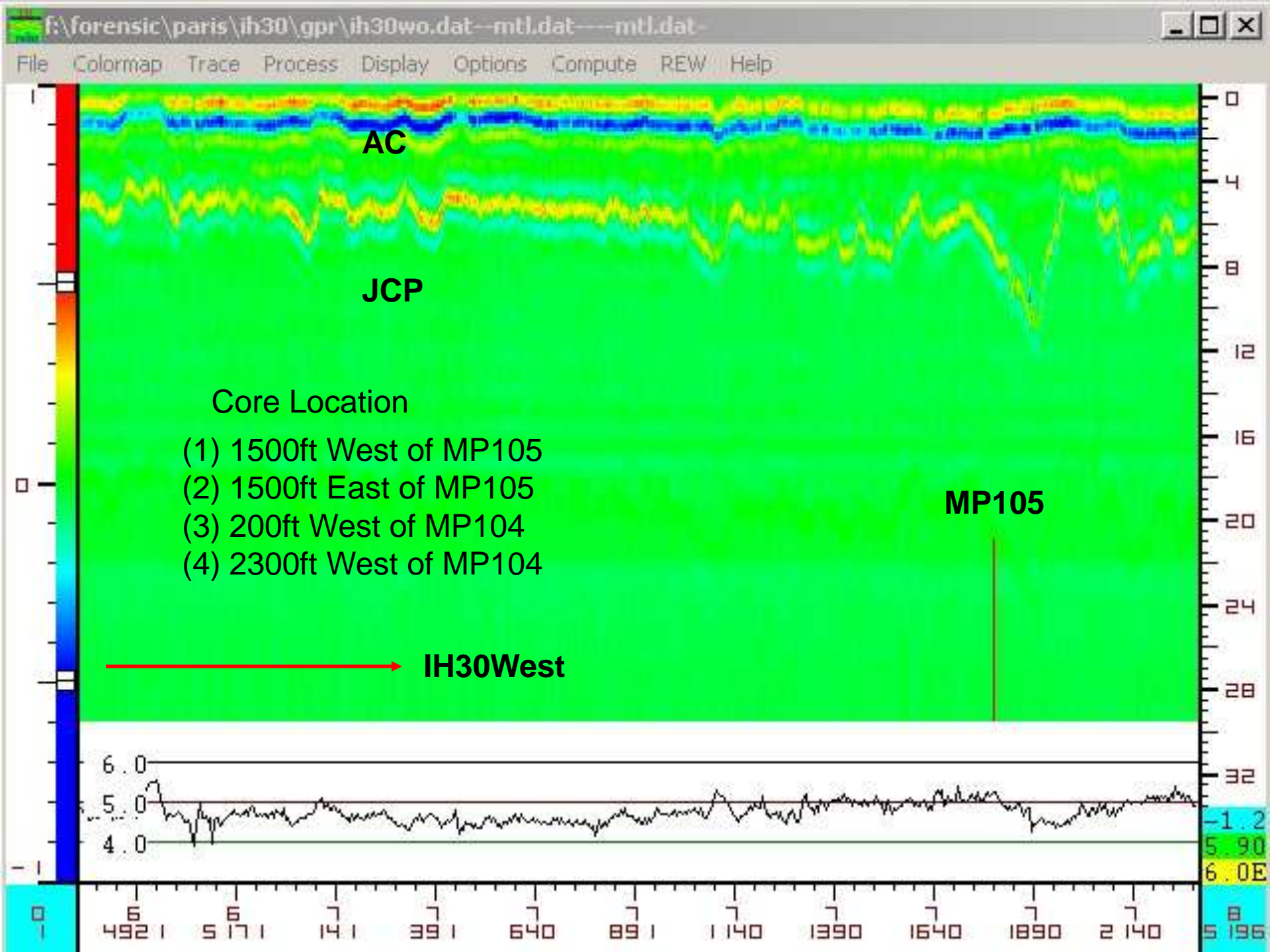




MP109 WB









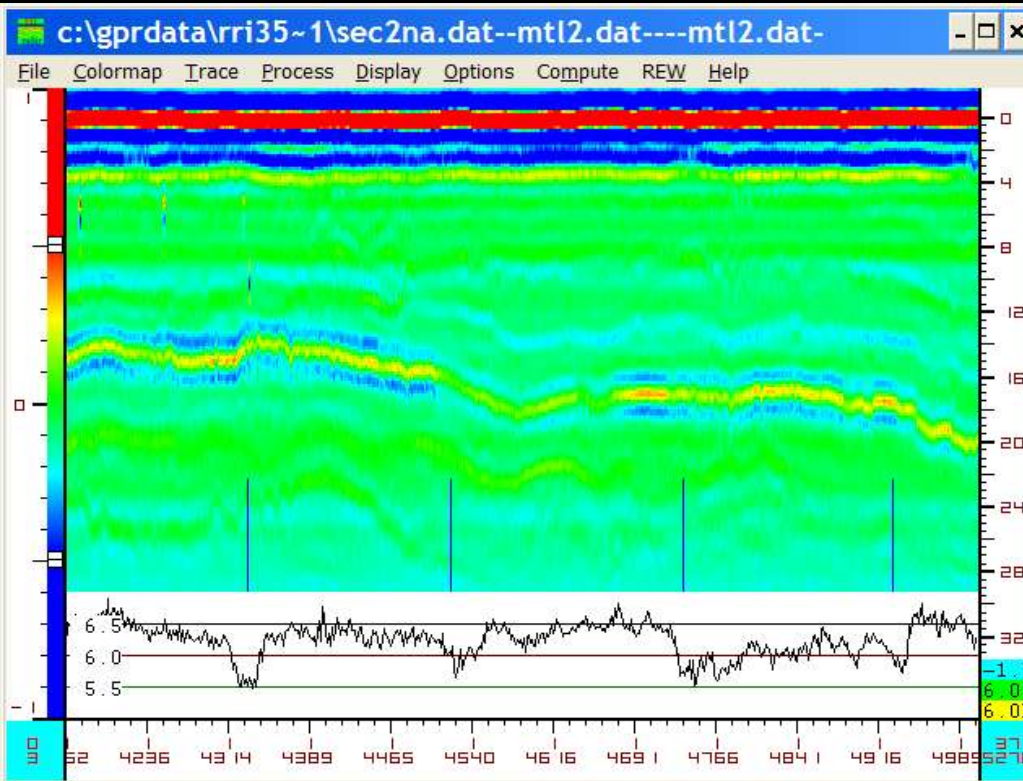


200ft West of MP104

05.17.2005



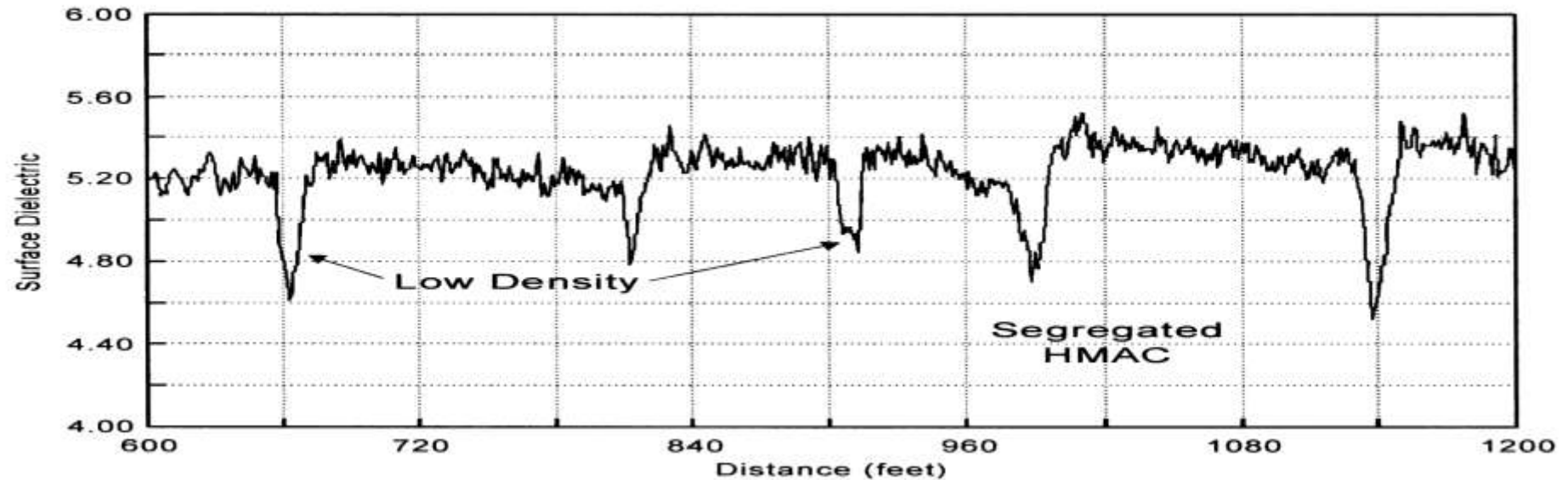
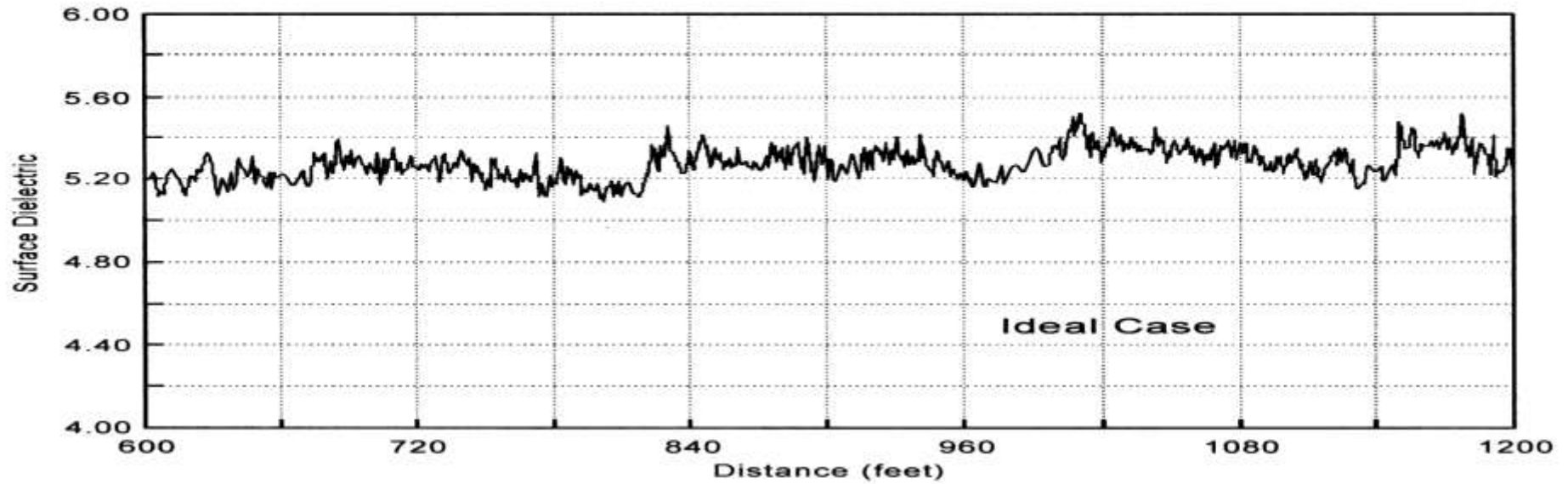
# Use of GPR to detect Segregation



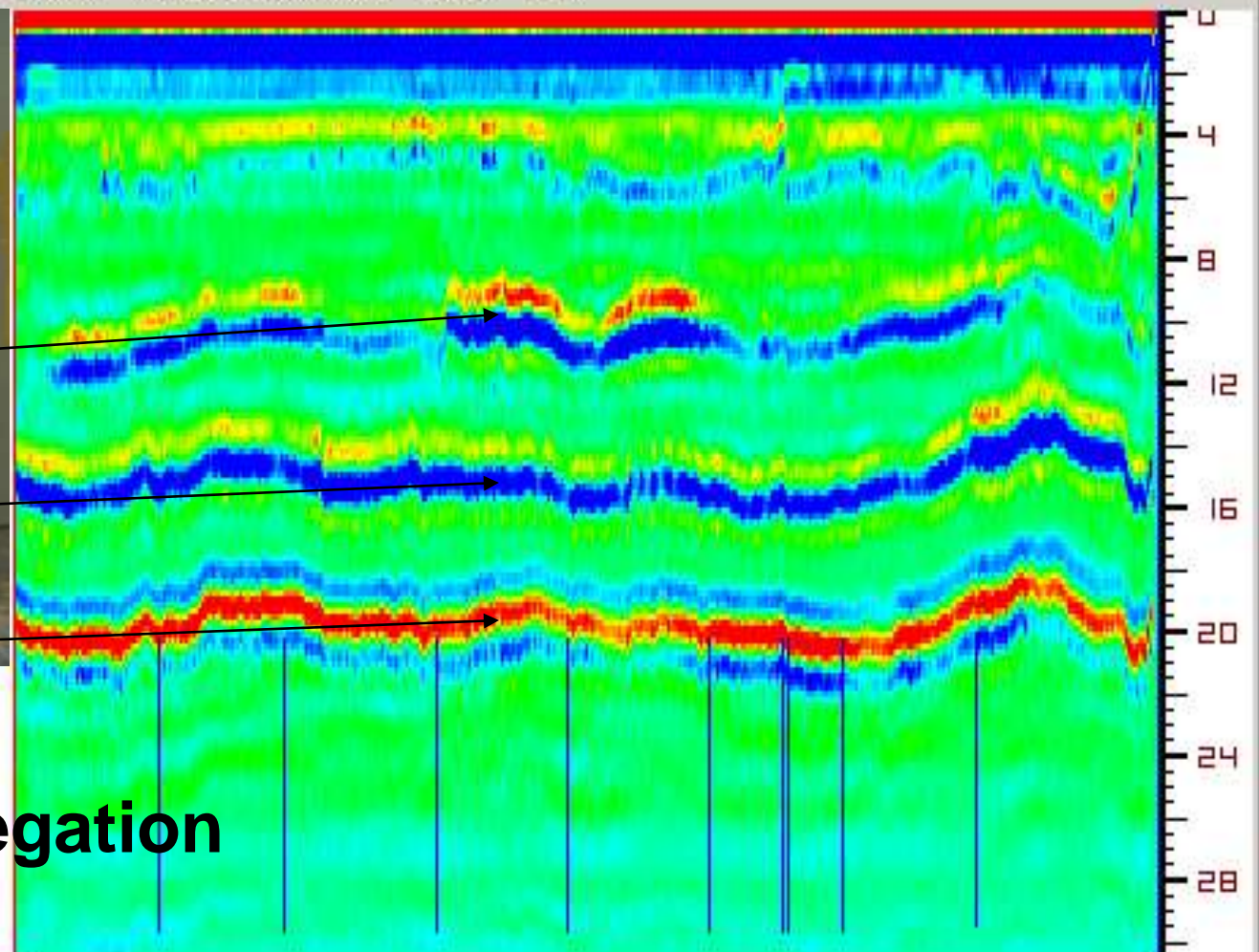
Changes  $> 0.4$  out of spec on air  
voids for Dense Texas mixes  
 $> 0.8$  for Open graded mixes



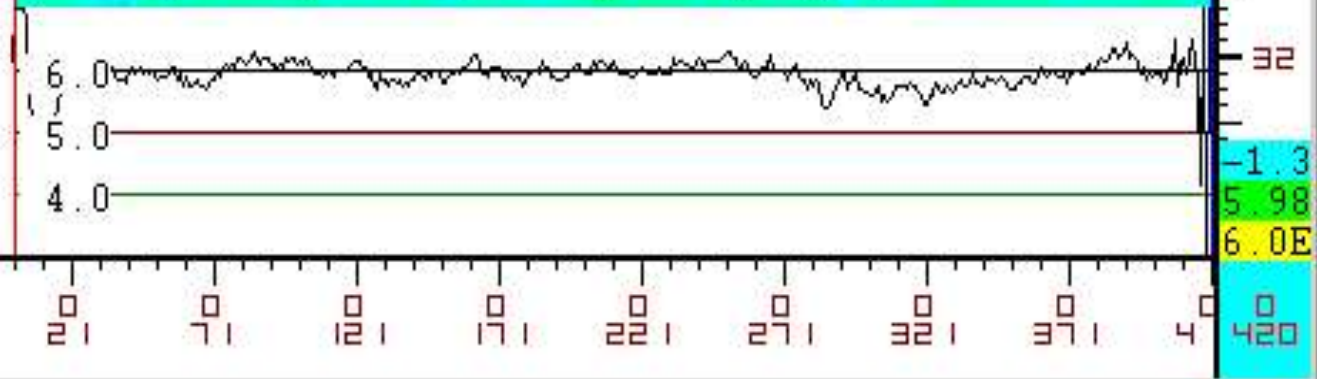
## GPR Detection of HMA Segregation Surface Dielectric Plots





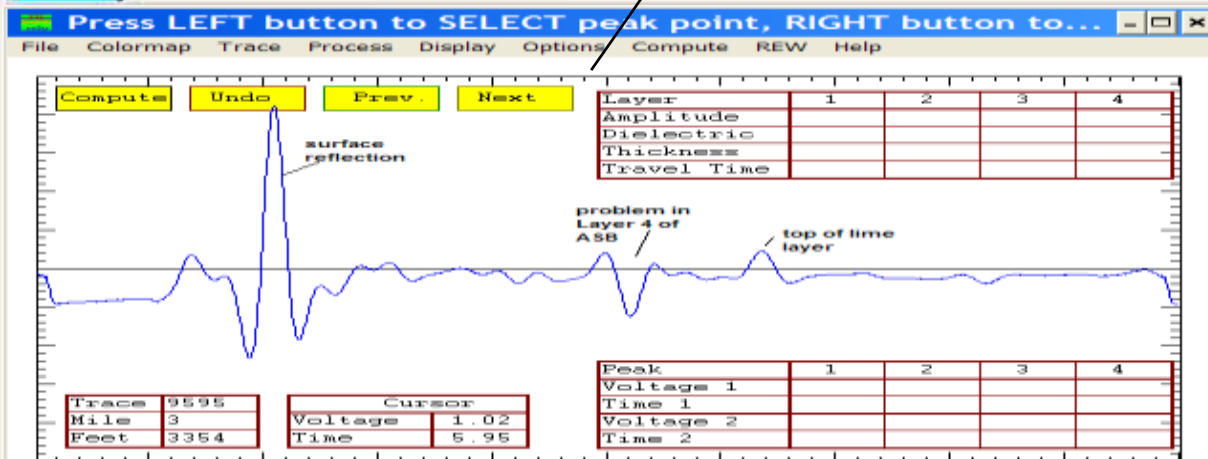
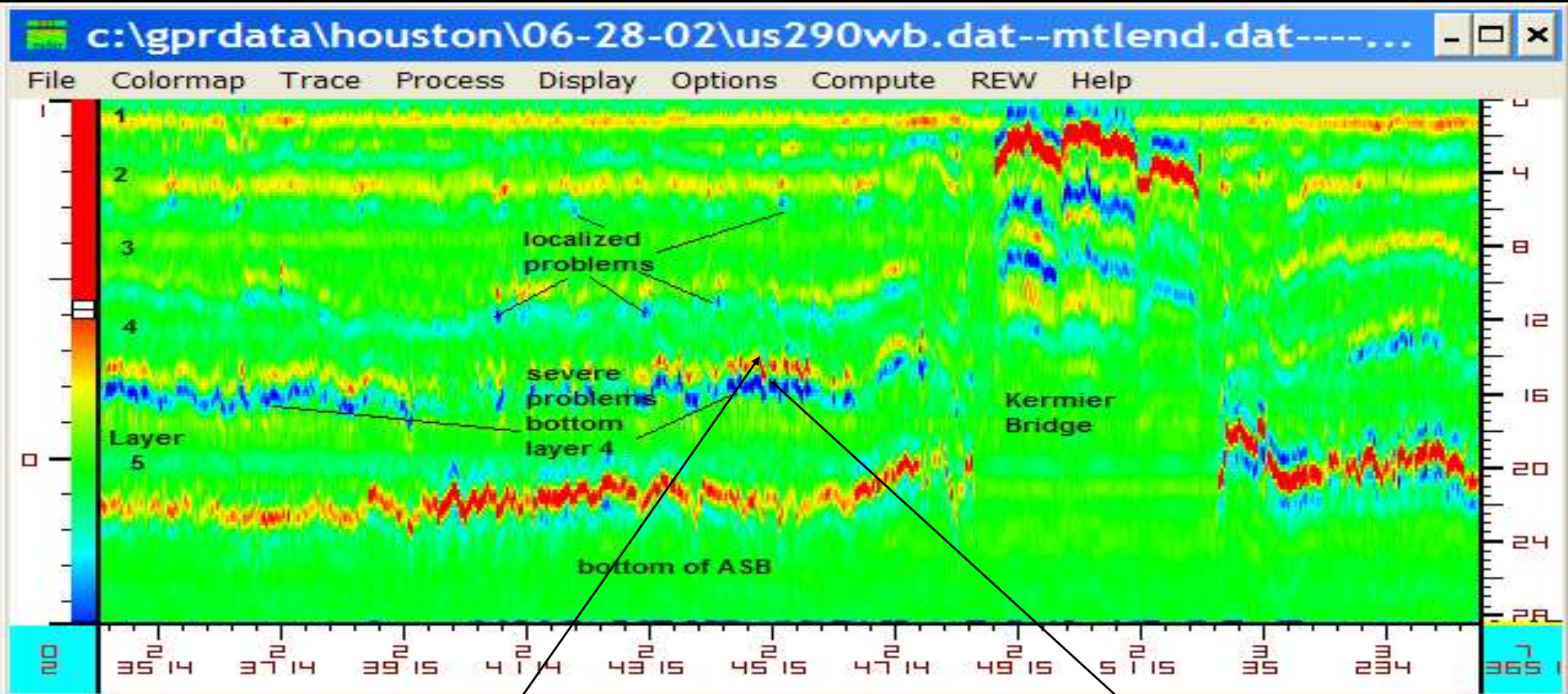


**Vertical Segregation**





# GPR data from thick HMA section with subsurface damage





# US 290 Condition after 5 years

## INITIAL DEFECTS


- Segregation all layers
- Burnt binder
- Poor tack



**Surface  
de-bonding**



**Continued  
subsurface  
deterioration**



3 yr old  
5 inch Ty B, PG76-22-plant 40 mile away  
16inch (lime treated base)  
Lime treated subgrade



