
HYDRAULIC ACTIVITIES
IN THE MIDWEST
Western Hydraulics
Conference
April 15-17, 2003

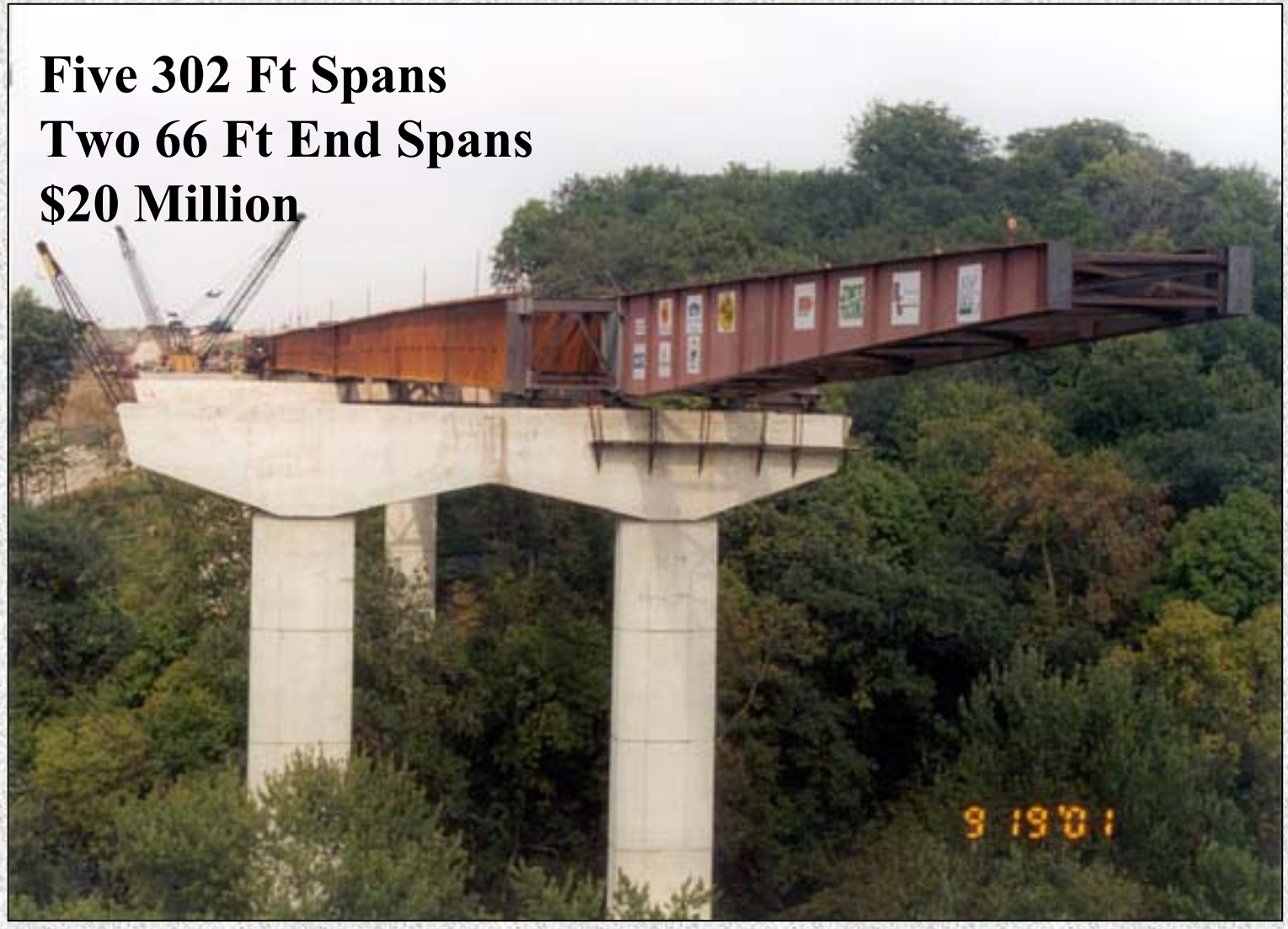
Proposed Interstate 70 Bridge at St. Louis

BLUE CABLES – RIVER VIEW


Toledo, Ohio
Interstate 280
Maumee River
$220 Million
400 ft Navigation Span
120 ft Vertical Clearance

Aerial Photo - 10/15/02

Launching Nose Accommodates Deflection



Aerial Photo – 3/25/02


I 494 – Minneapolis
Existing Tied Arch


I 494 – Minneapolis
Proposed


Historic Julien Dubuque Bridge
US 20 – Mississippi River


Proposed Companion Bridge
$165 Million
Scour Issues

SCOUR COUNTERMEASURES

- RIPRAP
- ARTICULATED FLOWABLE MATTRESSES
- A-JACKS


A-Jacks Installation
in Illinois

Freeze/Thaw Test Results


Spread Footing
on Rock

2002 Midwestern Floods

US 40 in Illinois

Overflow Bridge


Contraction
Scour

Interstate 80 - Nebraska


500 + Year Flood
11-12 inches of rainfall


northAmerican

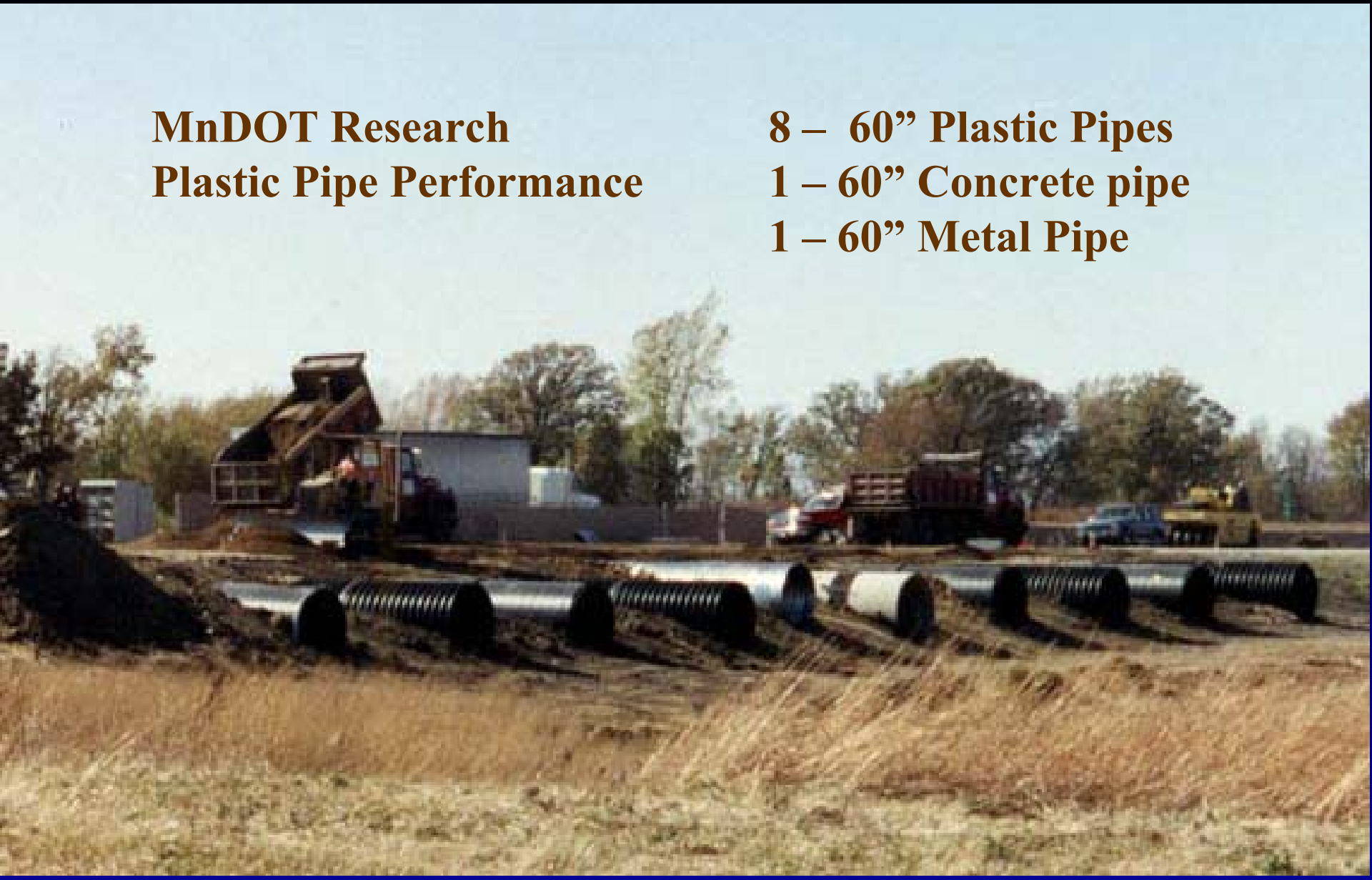
CULVERT HYDRAULICS

RESEARCH PROJECTS

- MnDOT – Performance of Plastic Pipe
- InDOT – Video Monitoring of Debris
- NeDOT – Estimate Channel Migration /Degradation Rate
- NeDOT – Hydrology of Sand Hill area
- MiDOT – Rainfall Study – Intensity Duration Frequency Curves

MnDOT Research
Plastic Pipe Performance

8 – 60” Plastic Pipes
1 – 60” Concrete pipe
1 – 60” Metal Pipe



SGH

Indiana - Video Monitoring of Debris Flow

PIPELINE

OFFICE OF BRIDGES & STRUCTURES
Hydraulic Automation Unit

Hydraulic Automation Newsletter **December 2002** **Issue: 33**

Articles in this issue

HYDINFRA 2002 Collection Season Summary

Thomas Martin, Hydraulic Automation Unit

The 2002 hydraulic infrastructure data collection season was another good year even with fewer districts and field inspectors collecting. The third phase of the HYDINFRA enhancements, maintenance and additions was implemented and the number of records increased to a whopping 45,409 (a 38% increase this season). Ryan Thilges of D7 collected the second highest number of records with 1,692 from Jan. 1, 2002 to the time this article was written. This increase for District 7 was a Herculean 51% increase of total HYDINFRA records.

District 3 was third with their data collection. Laurie Havron, (aka Harris) collected 1,164 records this year increasing D3's total number of records 11% to 10,978. Kevin Coyle of District 4 also had a great collection year, albeit truncated by early spring duties, collecting 726. Kevin's 700 plus records was a 22% increase of the district's HYDINFRA records collected and inspected. Also collecting data this year were D6 and D1 with 364 and 164 records, respectively.

Districts 2 and 8 lost their data collectors due to budgetary cutbacks. Todd Campbell, District 1, also was unable to hire (more correctly, unable to keep) his student worker for HYDINFRA data collection. District 1 had all of this season's data collected prior to the end of the school year allowing them to register as a 2002 data-collecting district.

Following are several graphics e aining the status of the district's efforts within HYDINFRA:

Training News

Hydraulics Workshop

Mark your calendars, the 2003 Spring Hydraulics Workshop will be held at the Arden Hill Training Facility on May 6th and 7th. Right now we are looking for agenda topics and ideas for interactive training seminars. Also, Bonnie Peterson has offered to host a picnic on Tuesday evening at her house if people are interested.

Please contact Sheila Kauppi if you have items you would like to see presented at the Workshop.

Urban Drainage Design Course

The National Highway Institute's Urban Drainage Design Course is scheduled for March 4 – 6, 2003 at the MnDOT Training Center. Registration for the class will be through Employee Development once the class has been posted. This course provides a detailed introduction to urban roadway drainage design. Design guidance for solving basic problems encountered in urban roadway drainage design is provided. Topics to be discussed:

- HYDROLOGY - Rational Equation - Soil Conservation Method - Regression Equations - Synthetic Hydrographs
- HIGHWAY DRAINAGE - Gutter Flow - Roadway Inlet Interception - Storm Drain Systems - Energy and Hydraulic Grade Lines
- Detention Ponds - Storm Water Management

Fluvial Geomorphology

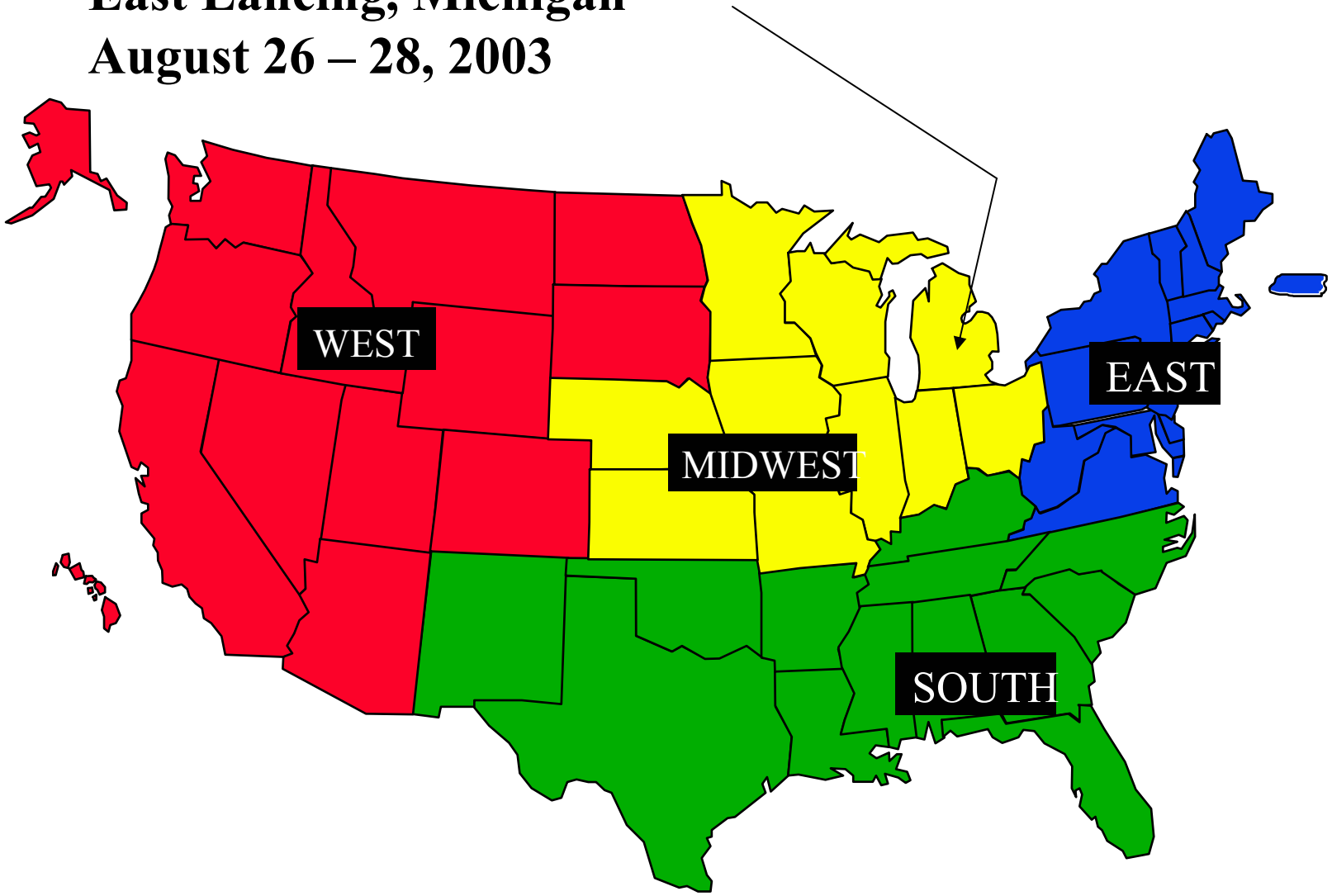
Around 30 MnDOT personnel attended the Fluvial Geomorphology class at the end of October. An important part of the class was learning to classify streams based on geomorphic criteria. The photo shows class members learning to do a pebble count in the **COLD** water to determine the appropriate channel material type.

Once the stream has been classified, we have a much better understanding of the processes that are forming the stream and potentially causing instability. We should also then have a better understanding of what measures may be effective for restoring stream stability.

Fluvial Geomorphology: The study of earth forms and shapes associated with rivers.

inde

Midwestern Hydraulic Engineering Conference
East Lancing, Michigan
August 26 – 28, 2003



Rm block: FHWA Hydraulics Conference
ph. 1-800-875-5090 or (517) 432-4000
http://www.hfs.msu.edu/kellogg

FOR ADDITIONAL INFORMATION

Contact Dan Ghere

dan.ghere@fhwa.dot.gov

(708) 283-3557