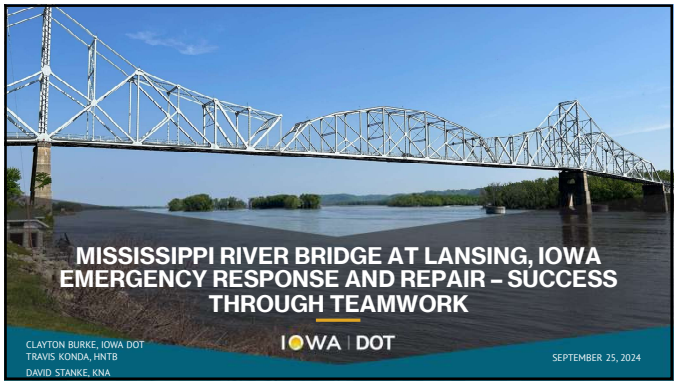
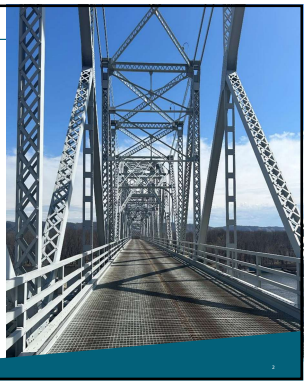


AGENDA

- PROJECT DETAILS & HISTORY
- PROJECT TECHNOLOGY
- PROJECT PARTNERING
- EMERGENCY REPAIR RESPONSE
- OVERLAP OF TECH AND RELATIONSHIPS



PROJECT PARTNERS

IOWA | DOT

Lansing
CPKC
DNR
US Army Corps of Engineers
WISCONSIN DEPARTMENT OF TRANSPORTATION
KRAEMER NORTH AMERICA
IOWA
FREEDOM TO FLOURISH
U.S. Department of Transportation Federal Highway Administration
PARSONS
Stanley Consultants
SEH
HNTB
WJE
HEADLIGHT

IOWA | DOT

PROJECT DETAILS

Background

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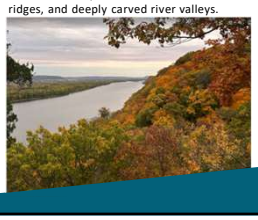
- Soil in the area is mainly sand with underlying sandstone bedrock

DRIFTLESS REGION

- Untouched by glaciers during the last ice age.
- Known for steep hills/bluffs, forested ridges, and deeply carved river valleys.



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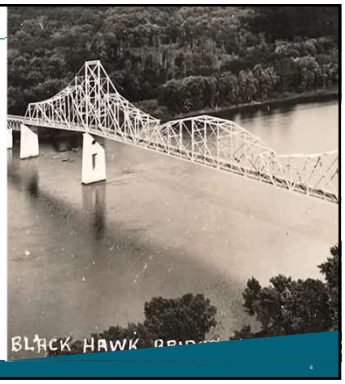
HISTORICAL SIGNIFICANCE

- Built 1929 – 1931.
- Cantilever Through Truss.
- Originally a privately owned and operated toll bridge owned by the Iowa-Wisconsin Bridge Company.
- Closed from 1945 to 1957 due to damage from ice and the Bridge Company lacked the funds to repair.
- In 1957 Iowa and Wisconsin repaired and reopened the bridge for a cost of $1.3M.



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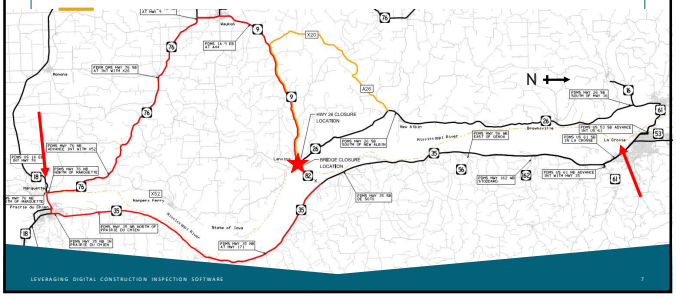
RIVER CROSSINGS

Vital Connection



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CONSTRUCTION

Shown below is the cantilevered style erection when the bridge was being constructed in 1930. The construction of the new bridge will look similar, with barges and cranes placed on the water, rather than on the bridge deck.

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PROJECT DETAILS

New Bridge Design

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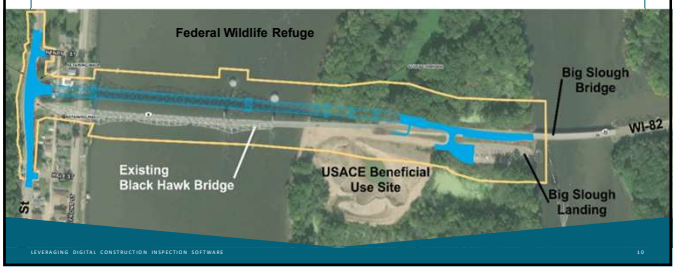
NEW BRIDGE

Alignment of the new bridge is adjacent to the existing bridge.



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NEW BRIDGE

The new bridge will be a 3-span continuous truss with internal and system redundant design with a 100-year service life. Aesthetic and historical details drove the design decisions of the bridge.

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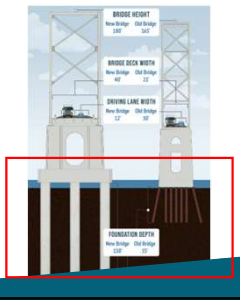
NEW BRIDGE

The new bridge will be larger, stronger, and more durable.

New Lansing Bridge: Pier 2 (east side of river span)



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BARGE IMPACT

Protective cells ("dolphins") were built North of the existing bridge to protect from barge impact. The new bridge is designed to withstand barge impact loading. The protective cells will be removed during demolition of the existing bridge.

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PROJECT TECHNOLOGY

3-D Model
Bridge Monitoring
Instrumentation
Drone Photography

I-TWIN 3-D MODEL

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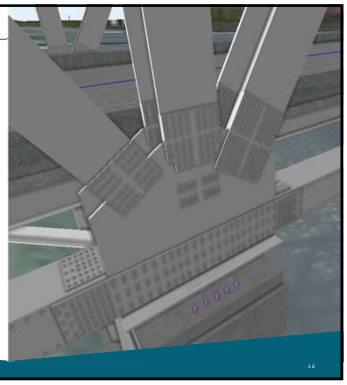
I-TWIN 3-D MODEL

- Image & Text Slide



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EXISTING BRIDGE MONITORING

- Bridge has a history of movement – undermining the foundation.
- Potential for additional movement and settlement due to the soil profile under the bridge.
- Contractual limits meant to protect existing bridge.

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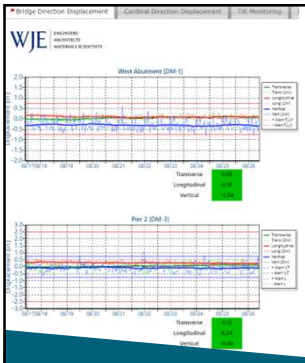

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EXISTING BRIDGE MONITORING

- Vibration sensors being used to keep activities below threshold that could potentially cause damage.
- Tilt meters measure the movement of the bridge from vertical.
- GPS sensors measure the displacement of the bridge transversely and longitudinally.
- Data is averaged over 24 hours.
- Consideration for thermal effects.
- Monitoring for changes caused by construction.

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PROJECT PARTNERING

Semi-Annual Meetings
Partnering Ladder
Risk Matrix
Weekly Meetings
Daily Field Collaboration

Project Risk Assessment and Tracking
Probability (High/Medium/Low)

	RISK	Impact 3	2	1
1	Subsurface unknown's	X		
2	Material supply	X		
3	High Water	X		
4	Patty Shack	X		
5	Steel Sub/Setup/FAB		X	
6	Procurement materials		X	
7	Coordination of designers		X	
8	Weather / rain / high water + flow / wind	X		
9	Safety		X	
10	Timely submittals + Review		X	
11	Vibration on existing BR		X	
12	High water		X	
13	Drilled shaft unknown's		X	
14	Pier 1 construction	X		
15	Rock Quality		X	
16	Impacts to Nav / River traffic		X	
17	Existing Structures			X
18	Staffing - Contractor			X
19	Subsurface conditions	X		
20	Steel fab schedule			X
	Existing structure stability / integrity			X
				X

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PROJECT PARTNERING

- Partnering Ladder
- Risk Matrix
- Weekly Meetings
- Daily Collaboration in the Field

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PROJECT INSPECTION

Construction Inspection
Contract Payment
Document Control
Contract Modifications
Schedule Review

HISTORICAL INSPECTION SOFTWARE

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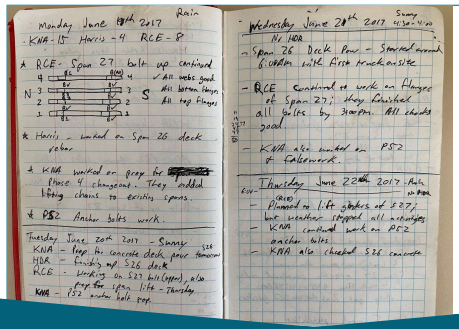

- **"Recreate the Day"**
- Non-uniform formatting of reports.
- No photos linked to daily observations.
- Audio, visual, and video are not integrated
- Difficult to share observation with others, especially leadership.
- Observations are not searchable.

DIGITAL INSPECTION SOFTWARE

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DIGITAL INSPECTION SOFTWARE

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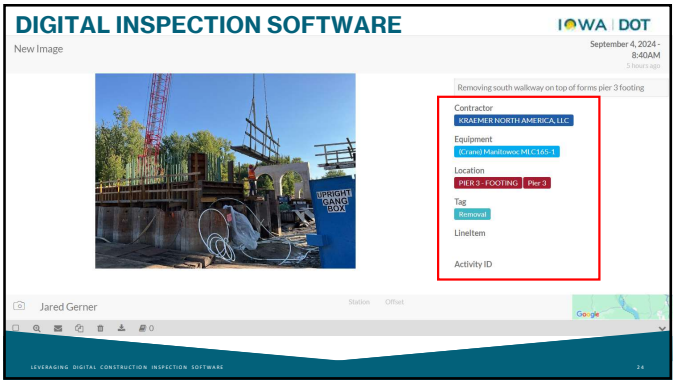
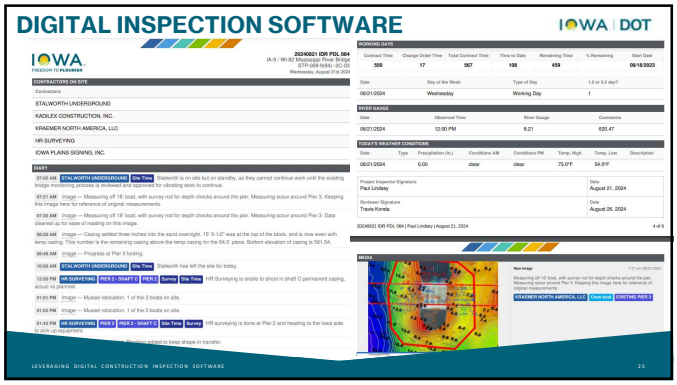
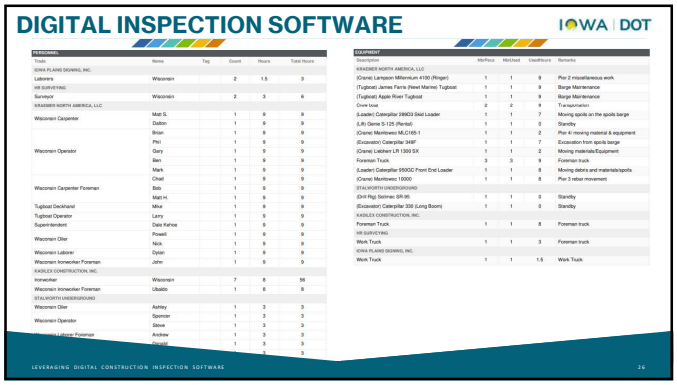



DIGITAL INSPECTION SOFTWARE
IOWA | DOT
LEVERAGING DIGITAL CONSTRUCTION INSPECTION SOFTWARE
25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26


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CONSTRUCTION PROGRESS
East Abutment
Pier 4
Pier 5
Demonstration Drilled Shaft

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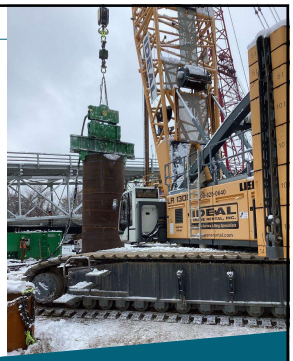
CONSTRUCTION SCHEDULE

- Bid Date – August 01, 2023
- Contract Award – August 16, 2023
- Construction Start – September 18, 2023
- New Bridge Open to Traffic – November 2026
- Demolition of Old Bridge – November 2026
- Project Complete – October 2027
- **Current Working Day Duration = 586 Days**



PIPE PILE DRIVING

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- East Abutment
  - 14 piles
  - ~100ft ea.
- Pier 4
  - 18 piles
  - ~105ft ea.
- Pier 5
  - 18 piles
  - ~105ft ea.
- Diesel hammer used to drive pile.

PIPE PILE DRIVING

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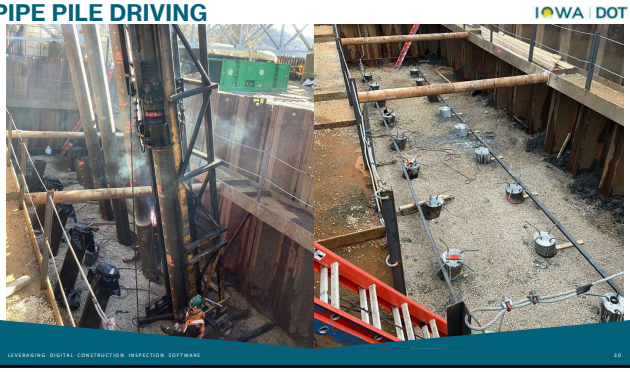

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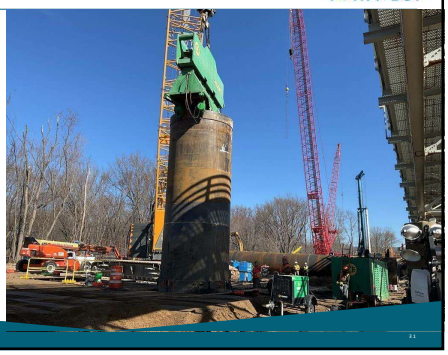
DEMO SHAFT

Before the Contractor can construct production shafts, the means and methods of drilled shaft installation must be proven by constructing a demonstration shaft.

The Contractor used an ICE 200 vibratory hammer to install the steel casing of the drilled shafts



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EMERGENCY REPAIR

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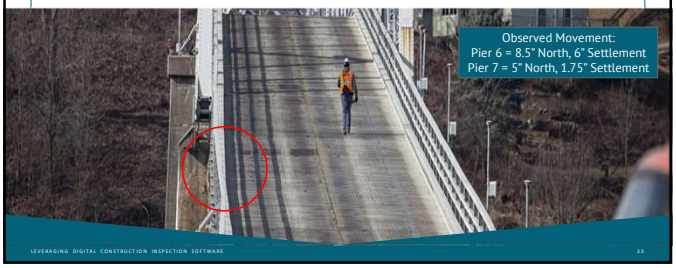
FEBRUARY 2024

On February 25, 2024 an observable displacement was noticed in the existing bridge at Piers 6 and 7. The bridge was closed to traffic and the Emergency Repair began.



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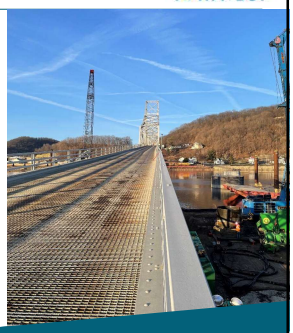
CRITICAL RELATIONSHIPS & EMERGENCY RESPONSE

- Communicating with decision makers and stakeholders
- Rapid and informed decision making
- Understanding the gravity of the situation
- Leveraging pre-established relationships to expedite completion of the repair



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EMERGENCY RESPONSE

- Executive Level - Restore Bridge
- Technical - Develop Repair Plan
  - Remove Affected Spans
  - Install Temporary Piers
  - Replace Affected Spans
- Contractual – Force Account
  - Labor
  - Equipment
  - Materials

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FEBRUARY 2024

- Iowa DOT, CEI and Kraemer worked together to develop a repair plan.
- Kraemer to provide materials and construct temporary bents
- WJE provided engineering for temporary bents.
- HNTB tracking ER work via force account

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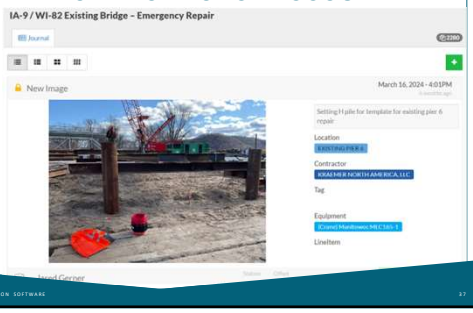
TRACKING ER WORK FOR FORCE ACCOUNT

- HNTB with the help of the digital inspection software developed a project for the ER work.
- Kept the Contract and ER work separated for the ease of tracking force account hours



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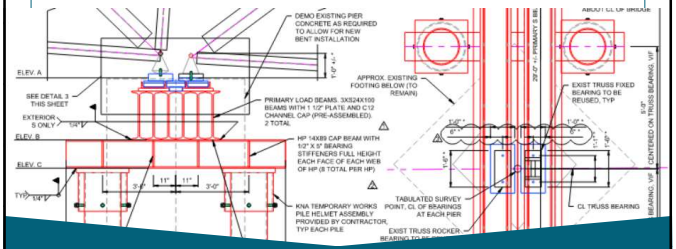
MARCH 2024

Design plans for the bents were submitted in 4 days.



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MARCH 2024

Equipment and materials were procured quickly and began arriving to the project within a week.

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MARCH 2024

On March 11, 2024 Kraemer began removing the truss spans from the existing bridge. All spans were removed on March 13, 2024.

Good slide for time-lapse of the truss removal.
Delete this box before presentation

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Communications

Internal use by decision makers.
External use for communication with the public.

Intro

Get the scoop on the construction of a new Mississippi River crossing connecting Iowa and Wisconsin.

Page · Government organization

IOWA DEPARTMENT OF TRANSPORTATION
is responsible for this Page

800 Lincoln Way, Ames, IA, United States, Iowa

(515) 239-1101

DOT-Iowa9bridge@iowadot.us

iowadot.gov/lansingbridge

Repair work on the existing bridge is moving along at a great pace! Kraemer North America has been working every day since the closure. They have removed the necessary pieces of the bridge deck and the old piers. They have also driven piling for one of the two new piers.
The pictures and videos included in this post give you a good look at the progress. We are still on track to have the bridge repaired and safe for traffic by the end of April.

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MARCH 2024

Removal of the existing approach truss spans.

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MARCH 2024

Demolition of the existing Piers 6 & 7 began on March 15, 2024 and only took two days to complete, one day for each pier.

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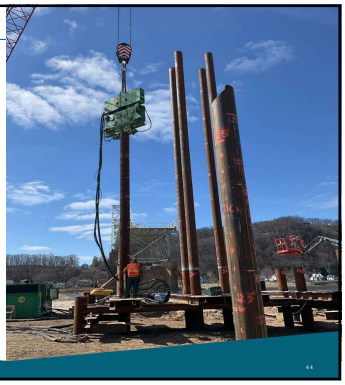
MARCH 2024

- Kraemer drove all the pipe pile for temporary bents at Piers 6 and 7.
- After installation of the pipe pile, the bent caps were constructed.



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MARCH 2024

After removal of the existing spans, Contract work could progress.

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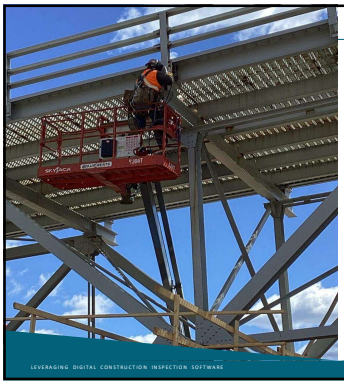
APRIL 2024

Span Re-assembly



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APRIL 2024

- Kraemer spent a week and a half bolting the trusses back together, welding the deck sections back in place, and prepping the bridge to reopen to the public.

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APRIL 20, 2024 - Re-opened

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MISSISSIPPI RIVER BRIDGE AT LANSING TO REOPEN AT 11 A.M. TODAY

Posted on: April 20, 2024

LANSING, Iowa – April 20, 2024 – Following repairs and rigorous safety testing, the existing Mississippi River Bridge connecting Lansing, Iowa, and Crawford County, Wisconsin, is expected to reopen at approximately 11 a.m. today.

The bridge has been closed since Feb. 25 after two of the piers moved, creating an unexpected buckle of the bridge. Our contracting partner, Kraemer North America, worked diligently to replace the piers. The new piers are supported by steel pipe pilings reaching more than 100 feet to bedrock compared to the previous pilings that were placed more than 90 years ago and reach approximately 40 feet deep.

The trusses removed and reset as part of the bridge pier repair project were inspected according to the National Bridge Inspection Standards. This inspection was performed by a qualified bridge inspector. The inspector was trained in the inspection of fracture-critical members and all other bridge components per national standards. No defects were found to restrict the reopening of the bridge to regular vehicular traffic.

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FORCE ACCOUNT RESOLUTION & PAYMENT

Form 181213 12-17

Iowa Department of Transportation
STATEMENT OF FORCE ACCOUNT

Date: 02/25/2024 to 04/30/2024
Project No. 03-00099-084 County Crawford Accounting I.D.
Contractor Kraemer
Address
Description of Work FA for Emergency Repair Work Type:
Charge Order No.

Legend:
L 1000 = Labor
E 2000 = Equipment
M 3000 = Materials
I 4000 = Invoices

= Duplicate
N = Not Approved
R To Be Removed
Row that have Qty for Selected Entry # = X

Labor: ST = Straight Time; OT = Overtime
Equipment: ST = Standby Time; OT = Operating Time

A	B	C	D	E	F	G	H
E	2408	Y	Rental	2		8352 Bucket (CAT 349) - Rental	
E	2500	Y	Kraemer	2		Gen Set 20kW Diesel on Trailer	
E	2501	Y	Kraemer	2	X	Miller Big Blue 400 Amp Welder 8271	
E	2502	Y	Kraemer	2	X	Miller Big Blue 400 Amp Welder 8301	
E	2503	Y	Rental	2	X	Miller Big Blue 400 Amp Welder - Rental	
E	2503.1	Y	Operating	2	X	Miller Big Blue 400 Amp Welder - Operating	
E	2504	Y	Rental	2	X	Miller Big Blue 400 Amp Welder - Rental	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Miller Big Blue 400 Amp Welder - Operating	

G	I (ST Hours)	J (OT Hours)	K (DT Hours)	L (Quantity or Total Hours)	M (Rate Per Hour Fringe or Estimated Operating Cost/Hr)	N (Base Salary Per Hour or Unit Rate)	O (L: (L×M) E: (J×M))	P (L: (I×N) +(J×(1.5×N))+(K×(2×N)) E: (I×N/2) +(J×N))	Q (Material)
8352 Bucket (CAT 349) - Rental	-	-	-	-	$ -	$ 9.66	$ -	$ -	$ -
Gen Set 20kW Diesel on Trailer	-	-	-	-	$ 11.63	$ 4.14	$ -	$ -	$ -
Miller Big Blue 400 Amp Welder 8271	-	191.50	-	191.50	$ 7.77	$ 4.84	$ 1,487.96	$ 926.86	$ -
Miller Big Blue 400 Amp Welder 8301	-	168.50	-	168.50	$ 7.77	$ 4.84	$ 1,309.25	$ 815.54	$ -
Miller Big Blue 400 Amp Welder - Rental	-	34.00	-	34.00	$ -	$ 2.84	$ -	$ 96.56	$ -
Miller Big Blue 400 Amp Welder - Operating	-	28.00	-	28.00	$ 7.77	$ -	$ 217.56	$ -	$ -
Miller Big Blue 400 Amp Welder - Rental	-	26.50	-	26.50	$ -	$ 2.84	$ -	$ 75.26	$ -
Miller Big Blue 400 Amp Welder - Operating	-	26.50	-	26.50	$ 7.77	$ -	$ [illegible]	[illegible]	[illegible]

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COMMUNITY OUTREACH

Monthly Meetings

LOCAL NEWSPAPER ARTICLES

IOWA | DOT

Wed 15 Nov — "Let's Talk Bridges": Meehan Memorial Lansing Public Library is hosting monthly series focused on learning about and celebrating the new bridge project

Memorial Lansing Public Library

Wed 17 Jan — Third session of "Let's Talk Bridges!" features a hands-on activity with a "mini cofferdam"

Wed 20 Mar — Attendees learn about cutting-edge inspection software, participate in hands-on demonstration during December "Let's Talk Bridges!" session

Wed 20 Mar — Working to bridge the gap ...

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CONTINUED CONSTRUCTION

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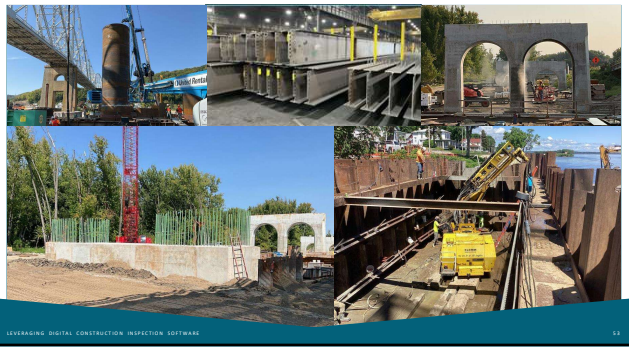

LEVERAGING DIGITAL CONSTRUCTION INSPECTION SOFTWARE 13

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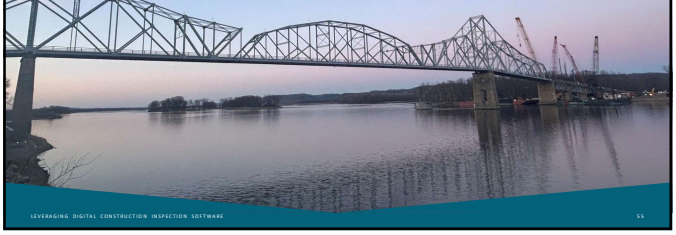
Daily partnering and relationship building is a project cornerstone and played a key role in limiting the closure to less than two months.

LEVERAGING DIGITAL CONSTRUCTION INSPECTION SOFTWARE 14

Questions?

CLAYTON BURKE	TRAVIS KONDA	DAVID STANKE
515-290-2376	612-328-3803	608-404-0699
Clayton.Burke@iowadot.us	tkonda@hntb.com	DJStanke@KraemerNA.com
iowadot.gov	HNTB.com	Kraemerna.com



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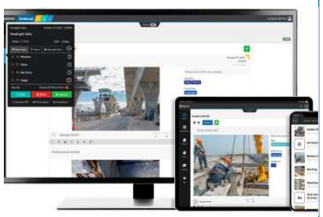
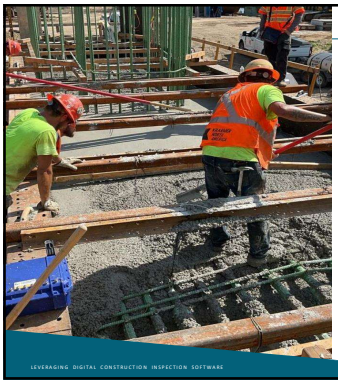
WHAT IS HEADLIGHT

- Cloud-based mobile platform that is highly configurable to meet your needs.
- Modern API-based platform that easily integrates with your systems.
- Interfaces designed to support your field and office teams in any location.





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WHY HEADLIGHT

- Easy to use, visual source of truth for any project
- Connecting the office and field with real-time data
- Take action on insights with trusted data
- Observations become supporting documentation for payments, claims defense, and potential audits.

I-TWIN 3-D MODEL

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LEVERAGING DIGITAL CONSTRUCTION INSPECTION SOFTWARE 58

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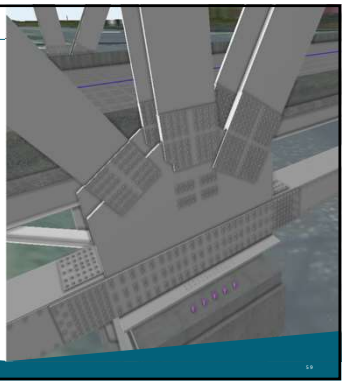
I-TWIN 3-D MODEL

- Image & Text Slide



LEVERAGING DIGITAL CONSTRUCTION INSPECTION SOFTWARE 59

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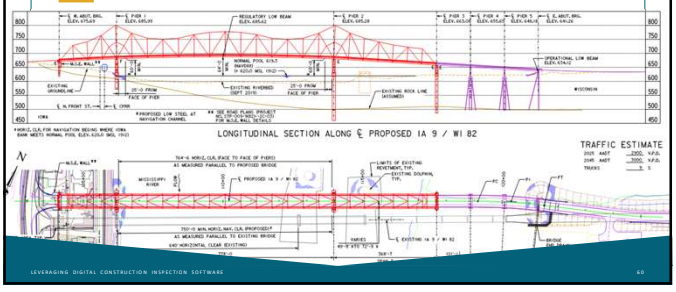
NEW BRIDGE

The new bridge maintains many aesthetic features of the existing bridge that has become an icon of the area and is beloved by the communities it serves.



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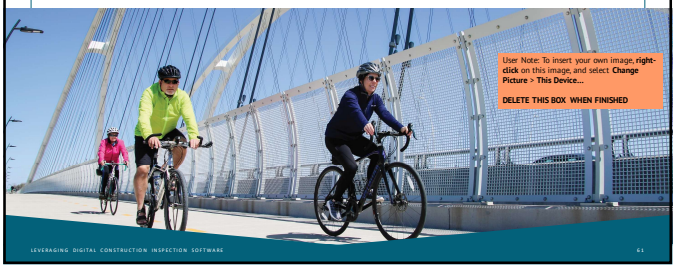
Headline

Use this layout if you have a small amount of text. Make sure the image you use is related to the text.



User Note: To insert your own image, **right-click** on this image, and select **Change Picture** > **This Device...**

DELETE THIS BOX WHEN FINISHED

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Headline Here

- Image & Text Slide
- Text about your topic can go here. Make sure the image you use is related to the text.
  - Use bullet points if you can.
  - Bullet points help break up your content, making it more digestible.
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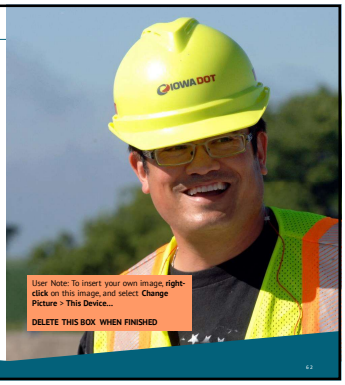

User Note: To insert your own image, **right-click** on this image, and select **Change Picture** > **This Device...**

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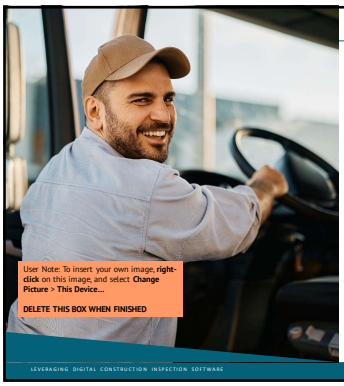

User Note: To insert your own image, **right-click** on this image, and select **Change Picture** > **This Device...**

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- Image & Text Slide
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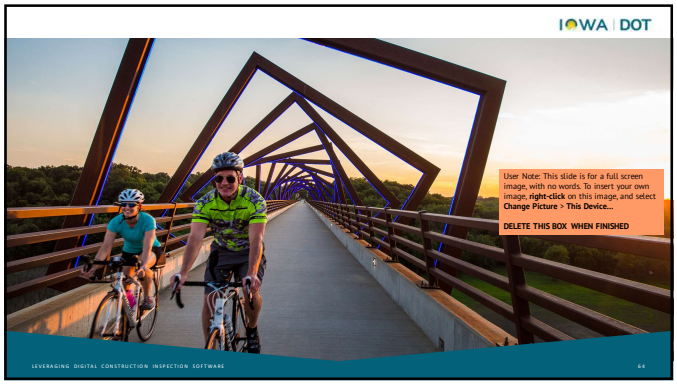
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User Note: This slide is for a full screen image, with no words. To insert your own image, right-click on this image, and select Change Picture > This Device...
DELETE THIS BOX WHEN FINISHED
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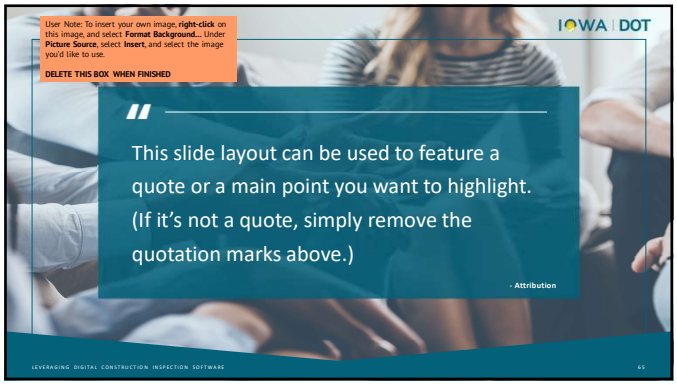
User Note: To insert your own image, right-click on this image, and select Format Background... Under Picture Source, select Insert, and select the image you'd like to use.
DELETE THIS BOX WHEN FINISHED
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This slide layout can be used to feature a quote or a main point you want to highlight. (If it's not a quote, simply remove the quotation marks above.)
- Attribution
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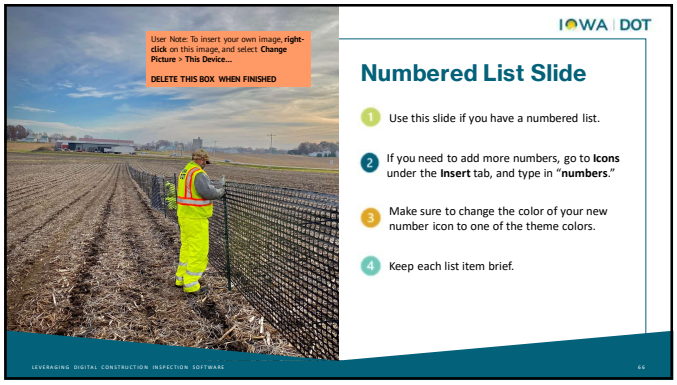
User Note: To insert your own image, right-click on this image, and select Change Picture > This Device...
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Numbered List Slide
1 Use this slide if you have a numbered list.
2 If you need to add more numbers, go to Icons under the Insert tab, and type in "numbers."
3 Make sure to change the color of your new number icon to one of the theme colors.
4 Keep each list item brief.
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Chart Slide

- Add bullet points supporting your chart or graph.
- To change the color of the slide, right-click, select **Layout**
  - Choose one of the other "**Color Block**" slide layouts.
- If the background color of your slide doesn't change, right-click select **Format Background**, and **Reset Background**.

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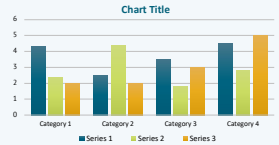

Chart Slide

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  - Choose one of the other "**Color Block**" slide layouts.
- If the background color of your slide doesn't change, right-click select **Format Background**, and **Reset Background**.

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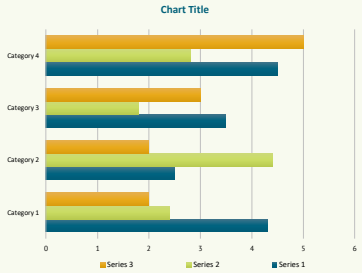

Table Slide

- To change the color of the slide, right-click, select **Layout**, and choose one of the other "**Color Block**" slide layouts.
  - If the background color of your slide doesn't change, right-click select **Format Background**, and **Reset Background**.
- Change the color of the table by selecting the table, go to the **Table Design tab,** and under **Table Styles** choose the color that corresponds with the color of the slide.

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Column 1	Column 2	Column 3	Column 4

Table Slide

- To change the color of the slide, right-click, select **Layout**, and choose one of the other "**Color Block**" slide layouts.
  - If the background color of your slide doesn't change, right-click select **Format Background**, and **Reset Background**.
- Change the color of the table by selecting the table, go to the **Table Design tab,** and under **Table Styles** choose the color that corresponds with the color of the slide.

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Column 1	Column 2	Column 3

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Donut Chart Slide Layout

Legend
Legend
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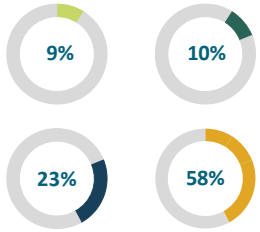
Legend



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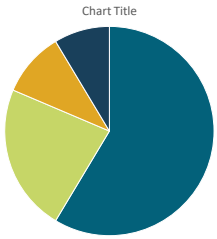
Pie Chart Slide

Legend
Legend
Legend
Legend



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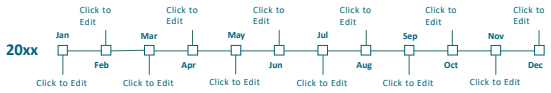
Timeline

Subheading



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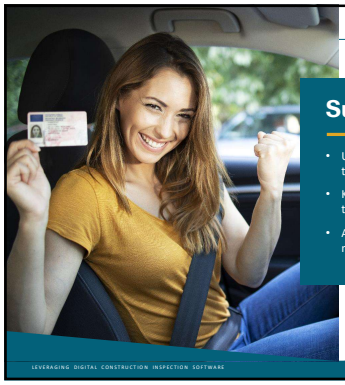

Summary Slide

- Use this slide at the end of your presentation to summarize what you've discussed.
- Keep it brief and make sure to mention key takeaways and action items.
- Adjust the size of the colored box if you need more space.

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Questions?

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###-###-####
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