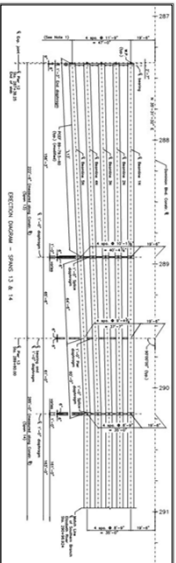


GIRDER REPAIR AND FABRICATION ISSUES

JP BARARD, PE
PRECISE SYSTEMS ENGINEERING
2021

1

THE GOAL



SUCCESSFULLY CONVERTING PLANS INTO A BRIDGE
COLLABORATION IS REQUIRED AT EVERY PHASE

2

WHAT COULD POSSIBLY GO WRONG?

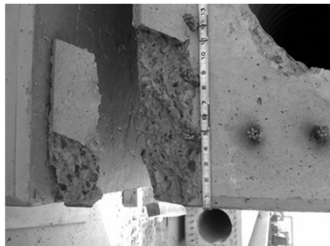


CRANE BRAKE FAILED + DROPPED SPREADER BEAM ON GIRDER



3

**FORKLIFT HIT CORNER
OF A PILING
CAUSING A SPALL**



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TRANSPORT ACCIDENTS



5

5

OR MAYBE EVEN THIS?!!



6

6

GAME TIME DECISIONS – FORM REMOVED



DAMAGE FOUND THAT APPEARS TO NEED REPAIR

7

7

WHAT IS AN ACCEPTABLE REPAIR?

THE BIG QUESTION:

- REPAIR BEFORE DETERIORATION OR UNCHANGED CONSIDERATIONS:
 - HOW WILL DAMAGE AFFECT THE GAME?
 - REPAIRS PRIOR TO DETERIORATING WILL BE MORE EXPENSIVE (LONGER DURATION)
 - ON REPAIRS DELAY PRODUCTION - AFFECTS SCHEDULES AND PROFITABILITY
- ANSWERS ARE NEEDED FAST!**



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PCI MANUAL 137



COMMITTEE MEMBERS (2006)

- Edward R. Weiserman, *Chairman*, Tennessee Department of Transportation
 Thomas M. Frey, *Alabama*, Michigan Technological University
 Neil V. Campbell, *California*, Saline Company
 Ronald Penning, *US & Overseas*
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 Amanda Givens, *Georgia*, Bentley Systems, PA
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 R. Jon Gordon, *Illinois*, T Corporation
 Chris Hill, *Tennessee*, Services Industries, L.L.C.
 Shanon Hino, *Tennessee*, Technological University
 Joe Vojak, *Southern*, Products, Inc.
 Chuck Woytek, *Federal Highway Administration*
 Chuck Prousek, *Central*, Pro-Mix, Products Co.
 Rita L. Srandstrom, *PCI West*, England Region
 Eric R. Strohberg, *Ohio*, University
 Richard Willison, *Mississippi*, Hill-Zollars, Inc.

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REVISION OF PCI MANUAL 137 NEW ITEMS BEING ADDED

- TS #11 TROUBLESHOOTING FOR PRODUCT SWEEP.....
- TS #12 TROUBLESHOOTING FOR PRODUCT CAMBER VARIABILITY.....
- TS #13 TROUBLESHOOTING SHORT PROJECTED STRAND OR REINFORCING BAR; MISSING PROJECTED REINFORCING BAR.....
- TS #14 TROUBLESHOOTING CORNER SPALLS IN PRECAST FULL-DEPTH DECK PANELS.....

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SWEEP

CAMBER

17

**TS 8XX
TROUBLESHOOTING FOR PRODUCT SWEEP**

Describe the product sweep in a sentence including on vertically from the center of the product.

CAUSES

- A. Casting
 1. Mixing water
 2. Segregation
 3. Displacement of strand during casting
- B. Formwork
 1. The mold surface being unclean during casting
 2. Excess concrete on mold surface
 3. Concrete wet from and from slope or overhang
 4. Shorting, uncleanliness, heavy loads, or heavy vibration
- C. Strand handling or temporary placement on
 1. Strand handling
 2. Misplacement from source or plant.

PREVENTION

- A. Casting
 1. Discharge carefully. Remove any air or dirt at discharge.
 2. Take care to ensure concrete is properly placed and consolidated.
 3. Take care to ensure concrete is properly placed and consolidated.
- B. Formwork
 1. Clean and oil formwork.
 2. Remove any concrete residue from formwork.
 3. Shorting being removed in a timely way.
 4. Heavy vibration.
- C. Strand handling or temporary placement on
 1. Strand handling
 2. Also use proper lifting of forces on the product.
 3. Careful inspection of the condition of the strand and the condition of the equipment used in order to ensure with proper care.
 4. Be used on steel to other substrate regions use appropriate care.
 5. Strand handling and other areas.
- D. Strand handling and other areas
 1. Proper use of equipment.
 2. Strand handling and other areas.
 3. Strand handling and other areas.
 4. Strand handling and other areas.
 5. Strand handling and other areas.

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EXAMPLE – CURRENT DESIGNS

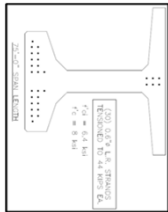


FIGURE 4
PARTIAL LISTING
REVISIONS

REV	DESCRIPTION	DATE	BY	CHKD
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