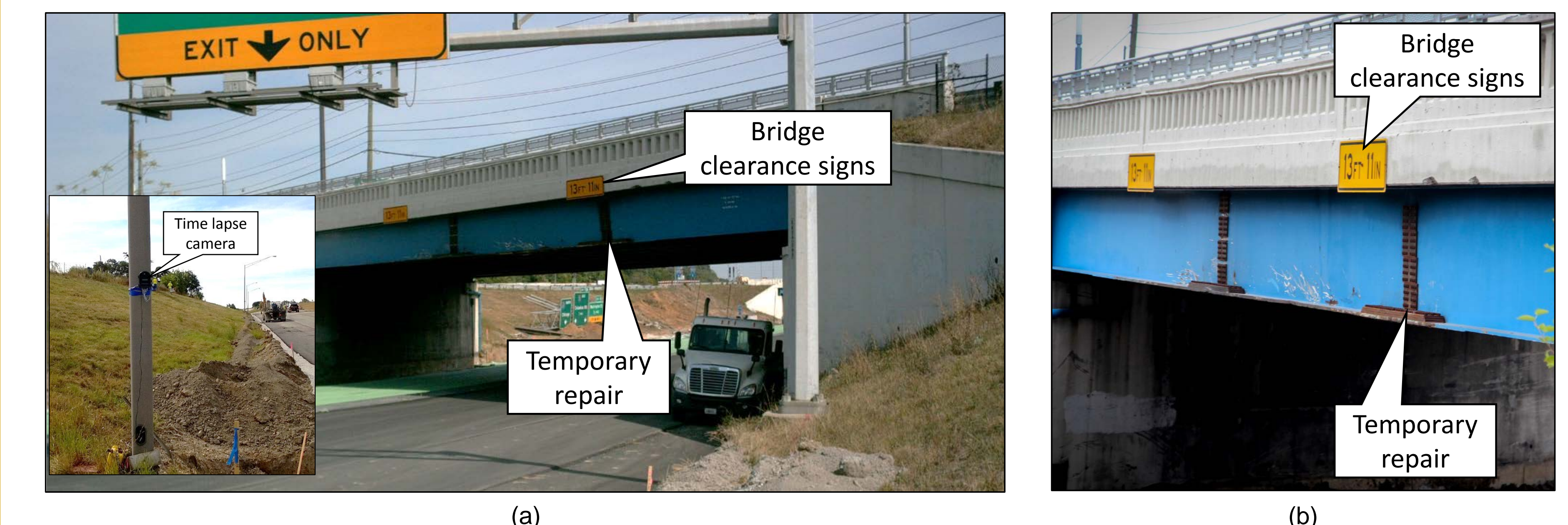


Steven Lavrenz, Teresa Morris, Darcy Bullock

CAMERA SETUP

1 – Corridor North End, SB Lanes Facing South
 2 – Calvary St. Bridge, SB Lanes Facing South
 3 – Fletcher Ave. Bridge, SB Lanes Facing North
 4a – Virginia Ave. Bridge, NB Lanes Facing North
 4b – Virginia Ave. Bridge, NB Lanes Facing North
 5 – Corridor South End, SB Lanes Facing North

Layout of the I-65/I-70 south split corridor, showing the locations of time lapse cameras



Documenting shots for the camera installation, showing (a) the camera's field of view (Camera 4a), (b) close-up of bridge repairs and low clearance signs which precipitated the project

ACTIVITIES & QUANTITY ESTIMATION

Activity	Real Time Duration	Video Segment Duration	Time in Video
a. Excavation	5:21:00	0:00:20	0:01:25
b. Drainage Installation	7:50:00	0:00:18	0:01:47
c. Subgrade Treatment	3:13:00	0:00:14	0:02:10
d. Geotextile Fabric Installation	8:00:00	0:00:26	0:02:34
e. Asphalt Base Paving	6:00:00	0:00:22	0:03:07
f. Rebar Installation	12:00:00	0:01:13	0:03:30
g. Concrete Paving	7:30:00	0:00:26	0:04:44
h. NB Bridge Girder Replacement	23:00:00	0:00:49	0:05:21
i. SB Bridge Girder Replacement	23:00:00	0:00:51	0:06:21
j. Cantilever Sign Foundation	16:15:00	0:01:13	0:06:45
k. Guardrail Installation	2:00:00	0:00:16	0:07:42
l. NB Bridge Girder Painting	11:30:00	0:00:50	0:07:59
m. Box Truss Overhead Sign	2:00:00	0:00:24	0:08:27
n. Lane Striping	17:30:00	0:00:12	0:08:51
o. Bridge Clearance Sign Removal	0:30:00	0:00:14	0:09:06
p. Interstate Reopening	3:00:00	0:00:31	0:09:20

Final compilation of construction activities and engineering quantities documented with the time lapse cameras

Activity	Units	Total Project Quantity	Quantity Shown in Video	% Total Project Quantity	Total Project Bid Amount	Approximate Cost Shown in Video
a. Excavation	yds ³	92,204	1,280	1.4	\$1,117,335	\$16,511
b. Drainage Installation	ft	144	---	---	\$7,096	---
c. Subgrade Treatment	yds ²	75,541	2,435	3.2	\$472,367	\$15,116
d. Geotextile Fabric Installation	yds ²	80,340	2,950	3.7	\$126,134	\$4,667
e. Asphalt Base Paving	tons	10,609	540	5.1	\$572,886	\$29,217
f. Rebar Installation	lbs	2,171,500	54,721	2.5	---	---
g. Concrete Paving	yds ²	64,056	1,628	2.5	\$4,547,976	\$113,699
h. NB Bridge Girder Replacement	lump	1	1	100.0	\$250,000	\$250,000
i. SB Bridge Girder Replacement	lump	1	1	100.0	\$250,000	\$250,000
j. Cantilever Sign Foundation	ea	2	1	50.0	\$13,690	\$6,845
k. Guardrail Installation	ft	6,413	138	2.1	\$109,021	\$2,289
l. NB Bridge Girder Painting	lump	---	---	---	---	---
m. Box Truss Overhead Sign	ea	3	1	33.0	\$262,563	\$87,521
n. Lane Striping	ft	42,611	2,280	5.4	\$23,184	\$1,292
o. Bridge Clearance Sign Removal	lump	---	---	---	---	---
p. Interstate Reopening	---	---	---	---	---	---

Final compilation of project economic values, including bid items totals and percentage of project shown in video



e. HMA BASE SEP.20,13 04:57 PM
 Major activities are identified, and quantities are estimated, from a combination of video and project documents. The example shown here is from Camera 2.

VIDEO COMPILATION

9/12/2013 12:22:00
 9/17/2013 10:28:00
 9/23/2013 10:58:00
 9/24/2013 12:00:00
 9/24/2013 15:27:00
 9/25/2013 12:17:00
 9/25/2013 15:44:00
 10/17/2013 10:00:00

CONT. REINFORCED PCC SEP.25,13 01:20 PM

Time lapse photos can simplify complicated activities which may not otherwise be accessible.

CONCLUSIONS

- Documentation of construction projects, such as the I-65/I-70 South Split corridor, using time lapse photography can be an effective method of public outreach and education
- Integrating video of construction activities, bid item quantities, quantitative estimates of project progression and dollar values of activities provides unique educational tools for integration into Purdue Civil Engineering classes.
- Time lapse photography is emerging as an important tool for providing supplemental information and training for contractors and agency personnel.
- A link to the complete project can be found at <http://youtu.be/SSTM25fPiZU>

