EVALUATION OF HEADLIGHT: AN E-CONSTRUCTION INSPECTION TECHNOLOGY

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Outline

- Background
- Scope
- Observations
- Documentation
- Initial findings
- Discussion
Background

- Project delivery (Current)
  - Resource intensive
  - Valuable information
  - Heavily paper based

- Project delivery (future)
  - Leverage existing technologies
  - Accumulated project intelligence = asset intelligence
Why do the study?

- Move Louisiana forward in state-of-the-art inspection procedures
- Potential for more timeliness submission of daily working reports (DWRs)
- Possibly lower the number of claims through more thorough inspection
- All leading to potential savings for the Department
Why do the study?

- Reduced risk
- Accelerated delivery
- Increased accountability
- Increased efficiency
Scope

- Pilot HeadLight on 12-18 projects across the state
  - Location
  - Size
  - Complexity
- 200 field inspectors
Scope

- 18 projects across the state
- Over 42 projects ongoing/completed currently
Equipment
Observations

H.009012.6: LA 10 & LA 67 INTERSECTION WIDENING

Storm drain

Measurements for 15" concrete storm drain pipe. 28 feet

Lineltems

0014 Storm Drain Pipe (15" Roughing)

Tags

02-General Remarks
Concrete
Drainage
Measurements

Equipment

Contractors

Barber Bros. Contracting Co.

Lester Fletcher

Station 110+95

Offset

Location 30.8657, -91.0151
Observations

H.009012.6: LA 10 & LA 67 INTERSECTION WIDENING

Dip in curb grade

Noticed a dip in curb grade while inspecting forms. Informed superintendent of issue. He stated the grade was per plans. After review of plans, I informed the superintendent about the finished asphalt grades in the area (in sheet 16) indicate a steady rise in elevation. Barry got the grade of the forms with a sight level and discovered a boil hidden under the dip. Contractor adjusted the elevation and corrected forms.
Observations

Set up
Merrick setting up truck. Plan is to pour.

Tags
Concrete Site 1

Steel issue
Merrick working to identify inconsistencies. Forms and the dirt the cage not sitting.

Tags
Does Not Meet Spec

First truck arrival
3:35 am
Contractors
Merrick, LLC

Batch 1 slump
Batch one tested 3 gallons of water.

Tags
Merrick, LLC

Batch 1 temperature

Contractors
Merrick, LLC

Batch 3 arrival
3:52 am
Contractors
Merrick, LLC

Batch 2 slump
Batch one tested 3 gallons of water.

Tags
Merrick, LLC

Batch 5 finishing
8:10 am
06/22/2018
Contractors
Merrick, LLC

Tags
Concrete Site 1 Decks

Lots for 6/22/18
8:14 am
06/22/2018

Tags
Lot

Span 1 placement
8:33 am
06/22/2018
Crew completed concrete placement in span 1 at 6:29am, 27 CUBIC.

Contractors
Merrick, LLC

Tags
Concrete Site 1 Decks

Span 5 finishing
8:45 am
06/22/2018
Time work completed for span 5.

Contractors
Merrick, LLC

Tags
Concrete Site 1 Decks
Documentation
Documentation

- Soft subgrade
- Fill hole for fuel tank
- Improper spacing
- 40’
- 8’
- 51’
- 16’
- 23.5’
- Removal of concrete drive
- 72’
- 30’
- 62’
- 125’
- 3.5’
- 4’
- 1.5’
- 1’
Documentation
The Contractor
When I pull out my IPAD
Below 35 degrees
Initial Findings

- More “eyes” on the work
  - 1.25 hours extra time on the jobsite per employee
- More complete documentation
  - Pictures and video
- Efficiencies
  - Problems and solutions conveyed more quickly
- Accountability
  - Contractor and DOTD personnel
Initial Findings

- Reduced claims
- Future asset management
  - Geo-located
  - Time and date stamped
- Training opportunities
  - Use captured data (videos, pictures, etc.)
Initial Findings

☐ Savings
  ▪ Personnel efficiencies ~$8M per year
  ▪ Claims / litigation ~$10M per year
  ▪ Total ~$20M per year

☐ Research cost
  ▪ ~$1.5M

☐ Recommendation to adopt
Questions