





# Illinois Department of Transportation

## Memorandum

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To: M. Addis Attn: Michael Brand  
From: Kevin Marchek By: Dave Broviak  
Subject: Special Pavement Design  
Date: August 14, 2017

**BUREAU OF  
DESIGN & ENVIRONMENT**

FAI Route 55 (I-55)  
Section (53-2,1)ES  
Livingston County  
Job No. P-93-035-17  
Contract No. 66H50

As previously discussed with Mike Brand, attached for your approval is a special pavement design for the above referenced I-55 pavement replacement project from approximately 1.7 to 1.4 miles south of IL 17 near Dwight (see the attached location map).

### 1. Pavement History and Condition

Section 53-2 (to the south) was constructed in 1975 as 9" CRC pavement with 9" HMA shoulders (see typical sections). In 2000 a portion of the pavement and shoulders south of the project area was overlaid with 5" of HMA and has a 2016 CRS satisfactory rating of 6.8.

Section 53-1(to the north) was constructed in 1976 as 10" CRC pavement with 10" HMA shoulders. This section has a 2016 CRS satisfactory rating of 6.8 and is considered adequate to remain bare concrete for the foreseeable future.

The subject project includes portions of the existing bare 10" CRC pavement and the bare 9" CRC pavement and is approximately a quarter mile long. The pavement is in low-fair condition. The 2016 CRS rating was 4.8 with average rut depths of 0.11". Pavement distresses in the northbound lanes include infrequent transverse cracking (B2), frequent centerline deterioration (D3) and 12 percent to 18 percent patching (K3). Pavement distresses in the southbound lanes include medium centerline deterioration (D2), infrequent map cracking and scaling (I1) and 6 percent to 12 percent patching (K2).

In 2013 an investigation of the pavement, including pavement cores and Dynamic Cone Penetrometer (DCP) testing, revealed that the pavement segment from Station 150+05.99 to Station 164+00 was substantially worse than the rest of the bare CRC pavement to the north (section 53-1) and that the pavement underdrain system has failed. The District 3 Materials Section recommends complete replacement of this segment. See the attached October 25, 2013 memo with relevant portions underlined.

## 2. Special Pavement Design

The district views this as a special short segment pavement design per the attached BDE figure 54-1.A to match the existing CRC pavement to the north (Section 53-1).

## 3. Proposed Pavement

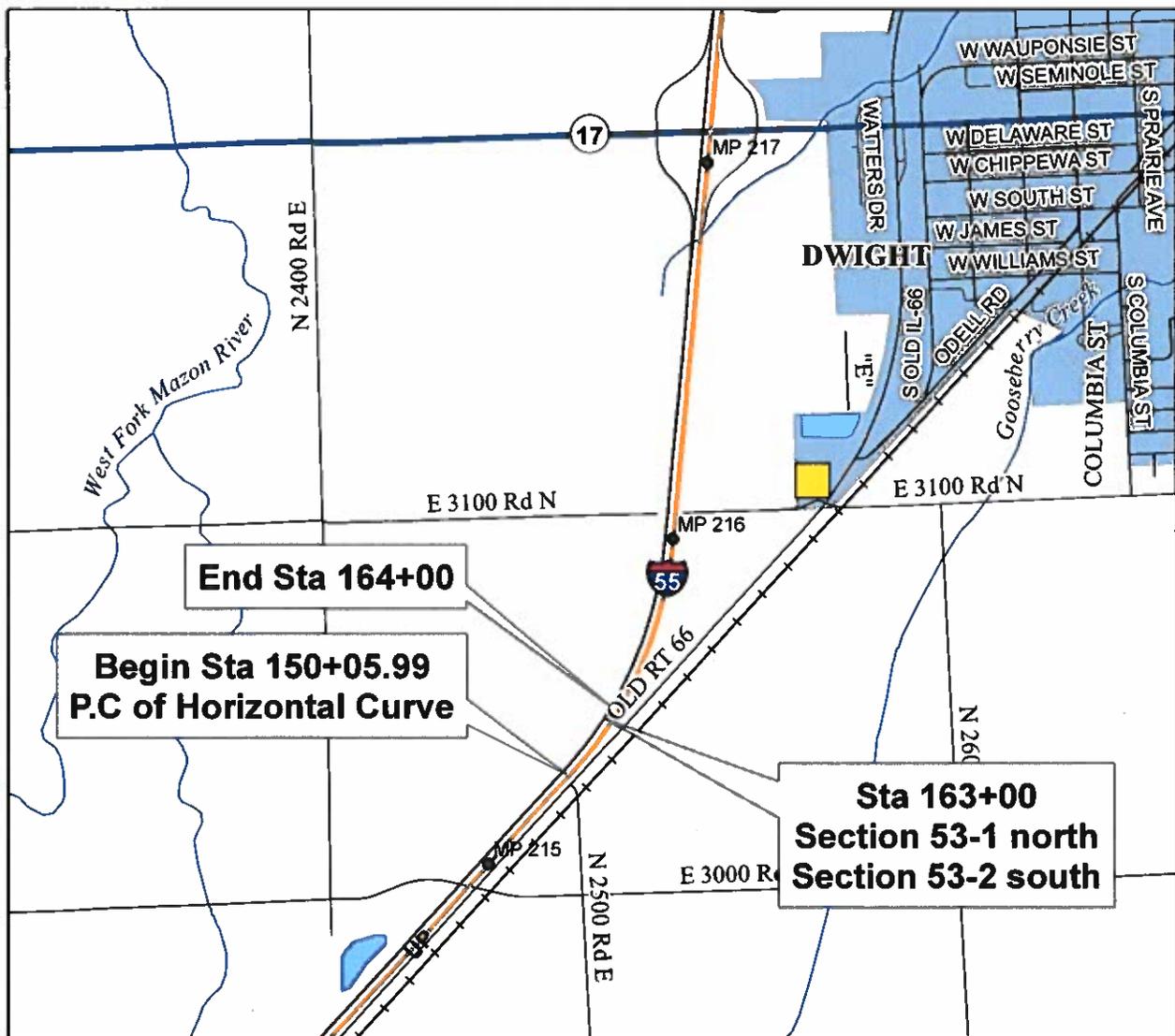
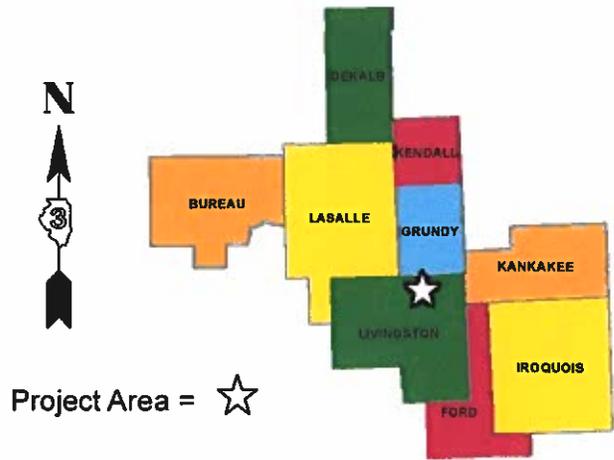
The proposed pavement consists of 10" CRC pavement with 4" stabilized sub-base over 12" modified sub-grade, pipe under-drain system, 10" HMA shoulders with rumble strips and aggregate shoulders to match the adjacent northern 10" CRC section. See the attached proposed typical section drawing.

The district requests BDE approval of the proposed special pavement design.

For additional information, contact Ted Fultz, Location and Environmental Studies Engineer, at 815-434-8469.

# Project Location Map

FAI 55 (I-55)  
Section (53-2,1)ES  
Livingston County  
Pavement Reconstruction  
1.7 miles south of IL 17 to  
1.4 miles south of IL 17  
Phase I Job No: P-93-035-17  
Contract No. 66H50



D3# 3351

