**Bridge Bureau Attachment for Concept Statement**

**Date:** October 12, 2017

**By:** John Q. Engineer

**Location:** U.S. 65 over East Branch Beaverdam Creek

County: Cerro Gordo

Project No.: BRFN-065-8(68)—39-17

Pin No.: 17-17-065-010

1. Regulatory/Coordination
   1. Iowa DNR Flood Plain permit = No
   2. Iowa DNR Sovereign Lands permit = No
   3. Local Record of Coordination = Yes
   4. Flood Insurance Study = Yes. Zone A Panel 19033C0275C, May 16, 2012
   5. Drainage District = No (March 2012 D.D. Map prepared by Cerro Gordo County Auditor’s Office)
   6. Corps of Engineers Section 408 = No
2. Hydrologic/Hydraulic Analysis/RIDB Dataset
   1. Design discharges determined = Yes (USGS 13-5086)
   2. Hydraulic analysis done = No (2D model recommended)
   3. Riverine Infrastructure Database (RIDB) = Yes, an RIDB dataset will be developed as part of this project. The RIDB network location is BeaverdamC\_EB\_Cer\_9.9. (Assigned by BSB Staff)
   4. Project development hydraulic analysis will comply with the RIDB Guidelines at a minimum.
3. Structure/Roadway Layout Considerations
   1. A grade raise of 0.3-0.6’ will keep low beam at the same level as existing. Recommend the maximum possible roadway profile grade raise that can be obtained within the approach roadway.
   2. A slight channel shift is considered to center the channel within the bridge.
   3. Stream morphology: There is a 1.5’ head cut located 60’ downstream which is being controlled and held by revetment. The replacement bridge length will allow for its potential upstream migration.
4. Special construction issues
   1. Shallow bedrock may require consideration of wall piers with spread footing on rock in lieu of pile bent piers.
   2. It is desirable for new structure foundations to avoid existing foundations when possible.
5. Special survey = Yes. See below.
6. Aesthetic enhancements = No.
7. Other
   1. The roadway will be closed during construction with traffic placed on an off-site detour.
   2. Use of wing dikes on the north side was reviewed and not carried forward due to ground geometry upstream of the bridge.

**Special Survey:**

We request the following in addition to the routine survey data-

1. Lowest ground and floor elevations for the 3 agricultural structures located on the north side of 170th Street and west of U.S. 65 (upstream of the project). A description of the contents within the buildings is also requested to determine level of damage potential.

Link to KMZ =

[Survey 3 Ag Buildings Upstream of U.S. 65 MP86.3 Bridge Replacement.kmz](pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1706501017\BRPrelim\DOT\Support\Survey%203%20Ag%20Buildings%20Upstream%20of%20U.S.%2065%20MP86.3%20Bridge%20Replacement.kmz)

1. Survey of the quad culvert downstream of the bridge on Pheasant Ave. (For each barrel:
   1. rise and span
   2. structure headwall inlet and outlet flowlines
   3. obvert
   4. if silted record silted thalweg in addition to structure flowline.
   5. Observation top of parapet at facia.

Link to KMZ =

[Survey County Quad RCB.kmz](pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1706501017\BRPrelim\DOT\Support\Survey%20County%20Quad%20RCB.kmz)

1. Roadway centerline profile on U.S. 65 between B55 (170th Street) and the project location capturing the low roadway overtopping elevation at the low point.
2. Roadway centerline profile on B55 (170th Street) between the 3 Agricultural buildings and proceeding to the intersection with U.S. 65.
3. For the purpose of determining any needed LiDAR bias correction to the project datum, follow RIDB data guidelines, Part 6B.3). The recommended procedure includes collection of XYZ observations for 20+ points divided between at least 2 discrete locations.
4. Project development data collection will comply with the RIDB Guidelines at a minimum.