## C3.2.11 Forms

Examples of forms to follow:

**Bridge Cost Estimate for Concept Statement**

**Location:**

| | |
|---|---|
| County: Lucas | Proj. No.: BRF-014-2(34)--38-59 |
| Des. No.: 1054 | Pin No.: 09-59-014-010 |
| Maint. No.: 5927.3S014 | FHWA No.: 34460 |
| On IA 14 over English Creek | Sta.: 502+19.1 |
| Section 13,T73N,R21W | |
| Functional Class: | ADT: 2580 vpd |
| By: D. Claman | Date: 5/17/2010 |

**Existing Bridge:**

| | |
|---|---|
| Type: I-Beam | Length x Width: 60' x 30' |
| Pier Type: N/A | Abut. Type: Stub |
| Spans: 60 | Approach Pavement Width: 30 |
| Skew: 0 | Design Loading: |

Drainage Area: 7.8 sq. mi.
Existing Bridge Width Acceptable: No
New/Reconstructed Roadway Width: 44.0'
Repair/Remodel by Staging Traffic: Yes

**General Comments: Existing bridge is a 4-beam single span structure that could be staged. Stage 1 lane width would be 15' wide and Stage 2 lane width would be approximately 12 feet wide with an additional 2' wide bridge. Staging a slab bridge may create constructability issues due to deflection and false-work.**

**Option A - Stage 110' x 46' CCS Bridge**

| | |
|---|---|
| Type: CCS | Length x Width: 110' x 46' |
| Pier Type: Pile Bent | Abutment Type: Integral |
| Spans: 1 @ 35', 2@27.5' | Skew: 0.0 |

Stage Traffic: Yes, One 15' Lane - Stage 1, One 12' Lane - Stage 2

Costs:

| | |
|---|---|
| Bridge - 110' x 46' @ $75/sf | = $ 379,500 |
| Remove Exist. Bridge -60' x 30' @ $7.00/sf | = $ 12,600 |
| Riprap Berms | = $ 50,000 |
| Staged Construction (10%) | = $ 44,210 |
| Mobilization (10%) | = $ 44,210 |
| Contingency (15%) | = $ 66,315 |
| Total Option A | $ 596,835 |

Comments: Staged CCS bridges may have constructability issues depending upon the contractor.

**Page 1 of 2**

**Bridge Concept Statement** 4/12/2011

**Lucas County**
**BRF-014-2(34)—38-59**

**Option B - 110' x 44' CCS Bridge - Detour**

| | |
|---|---|
| Type: CCS | Length x Width: 110' x 44' |
| Pier Type: Pile Bent | Abutment Type: Integral |
| Spans: 1@35.0, 2@ 27.5' | Skew: 0.0 |
| Stage Traffic: No | |

Costs:

| | |
|---|---|
| Bridge - 110' x 44' @ $75/sf | = $ 363,000 |
| Remove Exist. Bridge 60' x 30' @ $7.00/sf | = $ 12,600 |
| Riprap Berms | = $ 50,000 |
| Mobilization (10%) | = $ 42,560 |
| Contingency (15%) | = $ 63,840 |
| Total Option B | $ 532,000 |

Comments: Detour reduces construction time and eliminates constructability issues staging slab bridges.

**Revisions:**
None

**Page 2 of 2**

Iowa Department of Transportation
Form 532001wd 11-2003

## RECORD OF COORDINATION
## FLOODPLAIN DEVELOPMENT

The purpose of this form is to document Iowa Department of Transportation coordination with the local community for projects which are not within the Iowa Department of Natural Resources' permitting jurisdiction and which are in a community that is participating in the National Flood Insurance Program.

1. Highway Number: US 69 Stream Keigley Branch Project Number BRFN-069-5(98)--39-85

   File No.: 31080 Design No. 116 Project Location: ____ ¼, ____ ¼, T 85N ,S 26/27 ,R 24W

   Description of Location: On US 69 over Keigley Branch, 1.1 Miles South of Co. Rd. E18

   City/County: Story County

2. Flood Insurance Rate Map/Floodway Map:

   Panel Number: 19169C0040E , Effective Date of Map: February 20, 2008

3. Type of Development: ☐ Filling ☐ Grading ☐ Excavation ☒ Bridge Construction ☒ Road Construction

   Channel Improvement: Lining upstream bank with riprap on outside of bend

   Description of Development: Remove existing bridge. Replace with a new 120' x 44' Continuous Concrete Slab bridge.

   Line upstream channel on outside of bend for channel migration and to protect the roadway embankment.

4. Is project located in a designated 100-year floodplain?

   ☒ Yes (check the appropriate zone: ☒ A ☐ A1-30 ☐ AE ☐ AO ☐ AH) ☐ No

5. Has a detailed Flood Insurance Study (FIS) been published? ☐ Yes ☒ No

   If yes, what is the Base Flood Elevation (BFE) at project site? ____

   If no, what is the estimated BFE at project site? 978.9 (includes the bridge backwater)

6. Is project located in designated floodway? ☐ Yes ☒ No

7. Does FIS need to be revised? ☐ Yes ☒ No

   If yes, describe type and extent of revision: ____

| | | |
|---|---|---|
| David R. Claman, P.E. | | |
| IDOT Preliminary Bridge Design Engineer | Signature | Date |
| Scott Dockstader, P.E. | | |
| IDOT District Engineer | Signature | Date |

Community Official Concurrence:

| | | |
|---|---|---|
| | | |
| Community Official | Signature | Date |

NOTE: Office of Bridges and Structures to submit copy to:
Bill Cappuccio
NFIP State Coordinator
Iowa Department of Natural Resources
Wallace State Office Building
502 East Ninth Street
Des Moines, IA 50319
515-281-8942

Form 621004wd
06-95

# Iowa Department of Transportation

EXAMPLE

## FIELD NOTES FOR BRIDGES AND LARGE CULVERTS (20' SPAN) PRIMARY ROAD SYSTEM

### LOCATION

1. County Boone Civil Twp. Worth Sec. 21 Twp. 83N Range 26W
2. Over (☐River, ☒Cr., ☐Dr. Ditch) Peese Creek Highway No. Oriole Road
3. Proj. No. ER-624-0(8)--28-08 Sta. Pres. Struct. 8+28.00 Aerial Map No.
   Sta. Prop. Struct. 8+28.00

### GENERAL DATA (FIELD)

4. Drainage Area 8.75 sq-mi Character Hilly to flat Approx. length and width 4.8 mi. x 2.8 mi
5. Extreme highwater: Date of occurrence 1993 Information from Ledges State Park Flood Pole
   (Elev. near site 892.5 Location STA 6+47.21, RT 152.27' ) (Elev. Upstream
   Location ) (Elev. downstream Location )
6. Typical highwater: Elev. 863.5 Occurs every 2 Years. Date of last occurrence Unknown
7. Average low water: (Elev. at site 862.47 Average streambed 862.27 ) (Water elev. 862.47 on date of survey 12/10/2010 )
   (Water elev. 865.52 upstream 582 Ft.) (Water elev. 858.31 downstream 494 Ft.) Fall in stream 35.38 Ft./mi.
8. List buildings in flood plain None Location Floor Elev.
9. Upstream Land Use State Park Anticipate any Change? No
10. Is stream deepening or filling? Filling Approx. amount per year Unknown
11. Is stream widening? No Show direction, rate and amount)
12. Does stream carry appreciable amount of ice? No Elev. Of high ice
13. Does stream carry appreciable amount of large driftwood? Yes
14. Bench Mark No. BM503 RR Spike in West Face of Flood Pole Northwest of G001 STA 6+47.21, RT. 152.27'

### PRESENT OR OLD STRUCTURE

15. Superstructure: Type Dual 20.5' x 7.25' Aluminum Box Culvert Skew angle 27.42° L.A.
16. Substructure: Type N/A
17. Span lengths N/A Roadway width 22' Type of floor N/A
18. Culvert: Span 20.5' Ht. 7.25' Length B-B Ppts. 59' Flowline Lt. 859.0 Rt. 859.0
19. Grade elev. 868.0 Date built 2000 IDOT Design No. SP-624-0(5)--7C-06
20. Condition of superstructure Damaged beyond repair
21. Condition of substructure
22. Remarks: Existing dual culverts damaged beyond repair from August 2010 flood.

### PROPOSED STRUCTURE (OFFICE)

23. Superstructure: Type 120' x 30' Continuous Concrete Slab Bridge Skew angle 30° L.A.
24. Substructure: Type P10L, Integral Abutments
25. Span lengths (Bridge): 36.5', 47.0',36.5' Culvert B-B Ppts.
26. Culvert: Span Ht. Flowline Lt. Rt. Length Lt. Rt.
27. Roadway width 30' Type of floor Concrete Class of loading HL-93
28. Type of railing TL-4, Open Rail Option Type of curb
29. Grade elev. 871.96 Abut. Footing elev. 865.66 Pier footing elev. 858.25
30. Length and type of pilings: Abuts. HP10x42 - 45' Piers HP10x42 - 50' (P1), 55' (P2)
31. Design highwater: Elev. 867.00 Frequency 50 Year Area 8.75 sq-mi Discharge 2,272 cfs
32. What provision is made for overflow? None
33. Can channel be cleared to provide more waterway? No Are wing dikes to be provided? No
34. Is excessive local scour probable? No Probable max. depth of scour below streambed 4.40 ft.
35. Disposition of existing structure Remove
36. 2007 ADT = 530 VPD
37. Remarks:

County Boone
Project. No. ER-624-0(8)--28-08
File No. 30586 PIN 11-08-624-010
Design No. 211 Maint. No. 0800.3S624

Field Notes by Adam Bullerman, P.E. Date 2-25-11

Title Project Engineer

*(over)*


VALLEY CROSS SECTION DATA

The submittal of a bridge type structure will include a right angle valley section. This section should be taken downstream from the crossing. It shall be noted whether it is an average section or a control section. Enough ground shots will be taken to outline the valley to an elevation well above extreme highwater. Special care will be taken to accurately outline the main channel. Each shot should be identified; that is (FP) flood plain, (TB) top of bank, (ES) edge of stream, etc. Mannings equation roughness factors will be assigned each shot. Include site photos with this information.

Remarks: Refer to HEC-RAS model for valley cross section data

| Distance | Elevation | (N) Roughness | Remarks |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| Distance | Elevation | (N) Roughness | Remarks |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

PLAT OF DRAINAGE AREA

The drainage area is to be platted as completely and accurately as possible and to the largest practicable scale on a separate sheet. Use a definite scale, as 1" equals ¼, ½, 1 or 2 miles, and indicate what scale has been used. In addition to the outlines of the watershed, indicate the positions of the streams and, roughly, the character of the soil and the relative locations of the steep and flat portions. Whenever practicable, the above information should be secured by going over the area either on foot or in a car. For most watersheds the information may be secured from the best existing data, soil maps, U.S.G.S. maps and Bulletin No. 7-1.H.R.B. No plat is necessary if the area is listed in Bulletin Number 7.

**Remarks:**

Give additional information by reference to marginal number on reverse side of this sheet.

| Marginal No. | |
|---|---|
| 5 | Extreme highwater due to backwater from Saylorville Lake |
| 10 | Excessive silt deposition at this site is due to backwater from Saylorville Lake |
| 18 | Culvert flowline data based on construction plans since flow-line data could not be obtained due to culvert damage |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

IMPORTANT NOTE

The information given on this form must in all cases be supplemented by complete plat and profile of the site, drawn to a convenient scale on a separate sheet.

The information as shown on this form is essential and must be supplied in detail before the plans can be prepared or approved. It will be necessary to return this form for correction unless the data supplied is complete.