

C3.2.9 Type, Size, and Location (TS&L) plans

PRELIMINARY BRIDGE DESIGN TS&L PLAN SHEET(S) LAYOUT GUIDELINES

Refer to the PLAN REVIEW CHECKLIST or PRELIMINARY DESIGN GUIDELINES available on the Bridge Web Site which include required information for the TS&L Plan sheet(s). The following guidelines are intended to provide consistency for placing information when additional plan sheet(s) are needed.

The first sheet shall show a typical bridge layout per guidelines and be labeled SITUATION PLAN below the plan view and in the title block.

Bridge sites typically have areas of interest such as stream meanders, interchanges, etc. which do not fit on a single Situation Plan sheet. To show these areas, a SITE PLAN sheet shall be created. This second plan sheet shall be labeled as SITE PLAN below the plan layout and the title block shall be labeled as SITUATION PLAN - SITE. The scale of the site plan layout may be changed (labeled with a Scale Legend) to adequately show conditions outside of the proposed structure area. Typically, the SITE PLAN shall be shown on one sheet. The SITE PLAN sheet may also be used to place information when insufficient room remains on the SITUATION PLAN sheet.

Any additional sheet(s) showing details or other preliminary information shall be labeled as MISCELLANEOUS DETAILS and the title block(s) should be labeled as SITUATION PLAN - MISC.

In general, additional plan sheets shall be created except for relatively small bridges where limited additional information is needed.

All items required by the PLAN REVIEW CHECKLIST or PRELIMINARY DESIGN GUIDELINES which are not listed in the mandatory or preferred item guidelines shall be placed at the designer's discretion. The designer shall follow the guidelines of the mandatory and preferred items listed for both situation plan layout and site plan layout sheets when placing information.

Topography is defined as information typically obtained from the project survey such as ground features and utilities, excluding ground shots and contours.

The mandatory items listed below shall be shown on the situation plan layout sheet(s).

Mandatory Items for the Situation Plan layout sheet(s)

1. Situation Plan
 - SITUATION PLAN heading under plan view layout
 - Dimensions of Proposed Structure(s)
 - North Arrow
 - Centerline Roadway Alignments and labels
 - Centerline Stationing labels
 - Profile Grade Line labels
 - Existing Structure(s) (A)
 - Proposed Grading Slope Lines (not proposed contours) (A)
 - Retement (A)
 - Slope Protection Note (A)
 - Guardrail Indicated

- Topography (A)
 - Minimum Vertical Clearance Location (overhead bridges)
 - Scale Legend
 - Horizontal Clearance to Piers (overhead bridges)
2. Longitudinal Section
 3. Typical Approach Section
 4. Location Data
 5. Bench Mark

(A) These items to be edited as required prioritizing clarity of other mandatory items or text. More comprehensive treatment of these items can be made on the site plan sheet in cases where extensive editing is required on the situation plan layout sheet(s).

The preferred items listed are expected to be shown on the situation plan layout sheet(s) but due to space restrictions may be shown on the site plan layout sheet.

Preferred Items for the Situation Plan layout sheet(s) (In order of preference)

1. Proposed Grade
2. Hydraulic Data
3. Traffic Estimate
4. Utilities Legend
5. Spiral Curve Data
6. Horizontal Curve Data
7. Minimum Vertical Clearance note
8. Staging Widths

The mandatory items listed below shall be shown on the site plan layout sheet. Some duplication is necessary for references between the multiple SITUATION PLAN sheets.

Mandatory Items for the Site Plan layout sheet

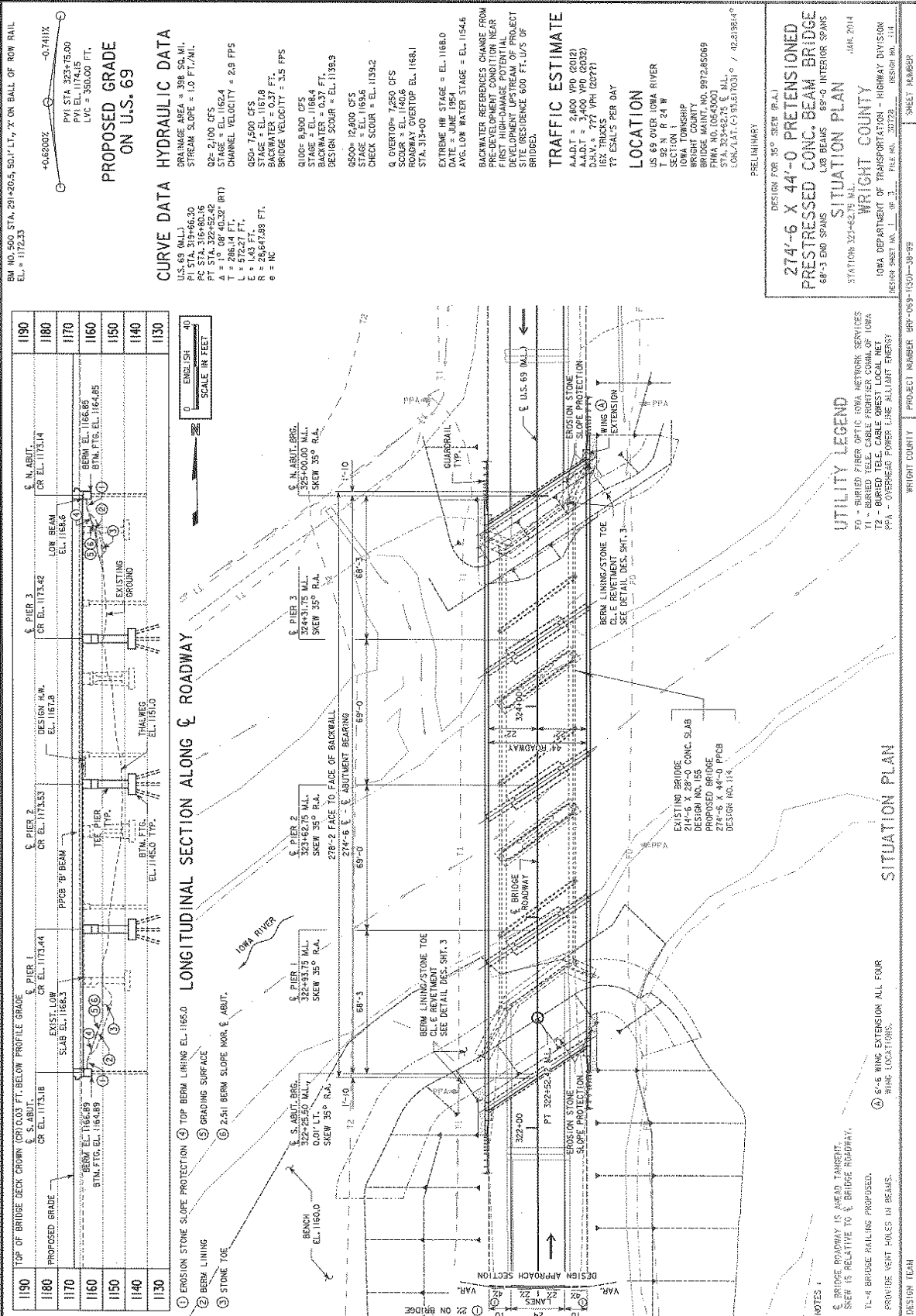
1. Site Plan
 - SITE PLAN heading under plan view layout
 - North Arrow
 - Centerline Roadway Alignments and labels
 - Centerline Stationing labels
 - Proposed Structure(s) (B)
 - Existing Structure(s) (B)
 - Proposed Grading Slope Lines (not proposed contours) (B)
 - Revetment (B)
 - Guardrail Indicated
 - Topography (B)
 - Scale Legend
 - Beginning & End Bridge Stations at Centerline Abutment Bearings

(B) These items should not be edited extensively on the site plan layout sheet and a more comprehensive treatment of these items should be shown on this sheet where extensive editing may have been necessary on the situation plan layout sheet(s).

The preferred items listed are expected to be shown on the site plan layout sheet but due to space restrictions may be shown on the situation plan layout sheet(s).

Preferred Items for the Site Plan layout sheet

1. Berm Slope Location Table & Associated Point I.D. Labels (Show together on the sheet)
2. Revetment Limits & Typical Section Details
3. Survey Ground Shots or Contours of existing ground supplemented with Ground Shots (not proposed contours)



CURVE DATA

U.S. 69 (M.L.)
 BRIDGE AREA = 398 SQ. MI.
 PT STA. 319+46.30
 PI STA. 319+46.30
 PT STA. 322+52.42
 QZ = 2,100 CFS
 STAGE = EL. 1162.4
 CHANNEL VELOCITY = 2.8 FPS
 T = 1.0 08' 40.32" (RT)
 A = 286.14 FT.
 L = 572.27 FT.
 S = 28.67488 FT.
 e = NC

HYDRAULIC DATA

Q = 1,500 CFS
 STAGE = EL. 1161.8
 BACKWATER = 0.37 FT.
 BRIDGE VELOCITY = 3.5 FPS

Q100 = 8,500 CFS
 STAGE = EL. 1168.4
 BACKWATER = 0.37 FT.
 DESIGN SCOUR = EL. 1138.9

Q500 = 12,000 CFS
 STAGE = EL. 1175.0
 CHECK SCOUR = EL. 1138.2

Q OVERTOP = 7,250 CFS
 SCOUR = EL. 1140.8
 OVERTOP EL. 1168.1
 STA. 313+00

EXTREME HW STAGE = EL. 1168.0
 DATE = JUNE 1984
 AVE. LOW WATER STAGE = EL. 1154.6

BACKWATER REFERENCES CHANGE FROM PRE-DEVELOPMENT CONDITION NEAR FIRST HIGH-DAMAGE POTENTIAL DEVELOPMENT UPSTREAM OF PROJECT
 REFERENCE 600 FT. U.S. 69 BRIDGED.

TRAFFIC ESTIMATE

A.A.D.T. = 2,800 VPH (2013)
 A.A.D.T. = 3,400 VPH (2032)
 D.H.V. = 777 VPH (2027)
 16X TRUCKS
 ?? ESALS PER DAY

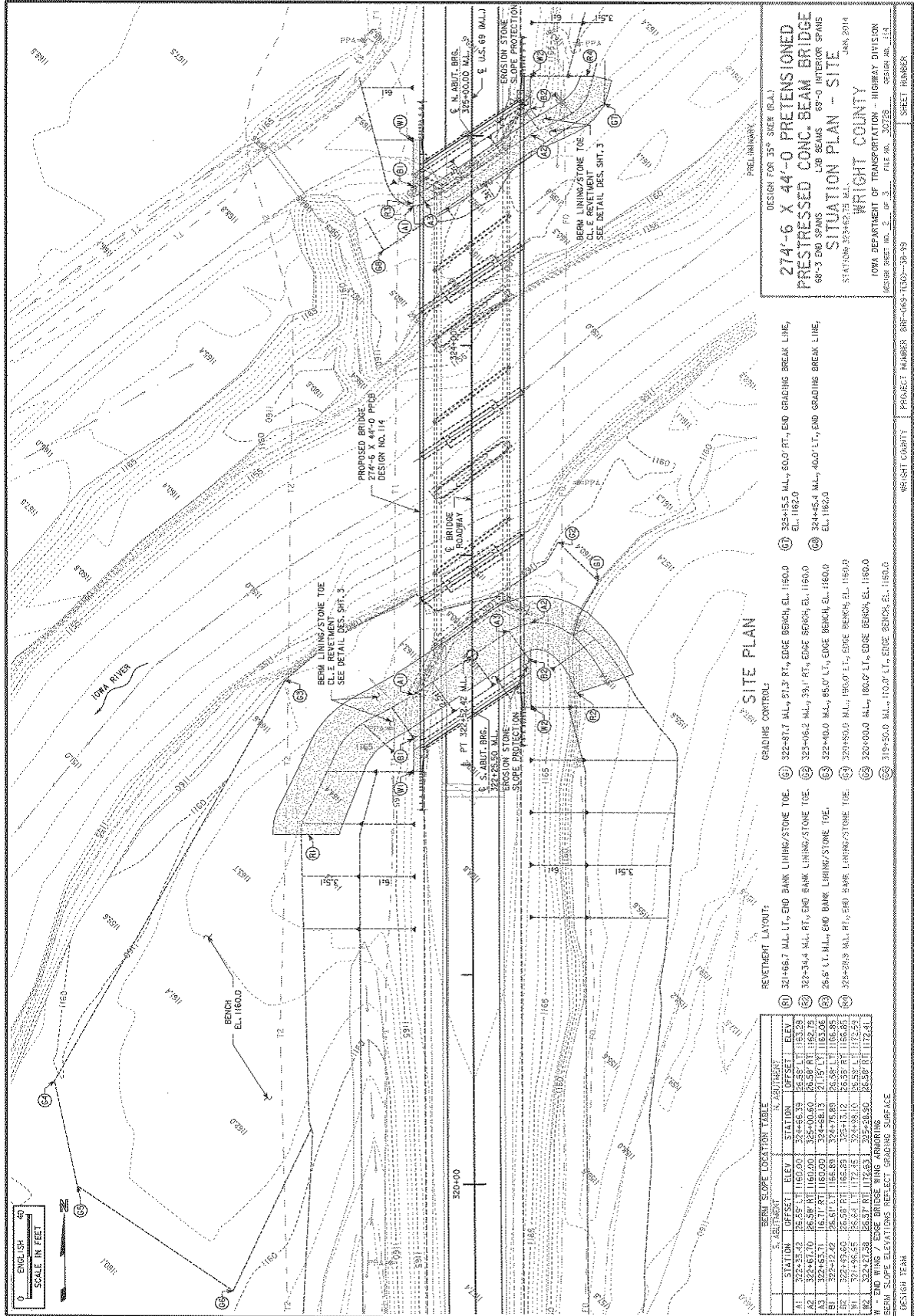
LOCATION

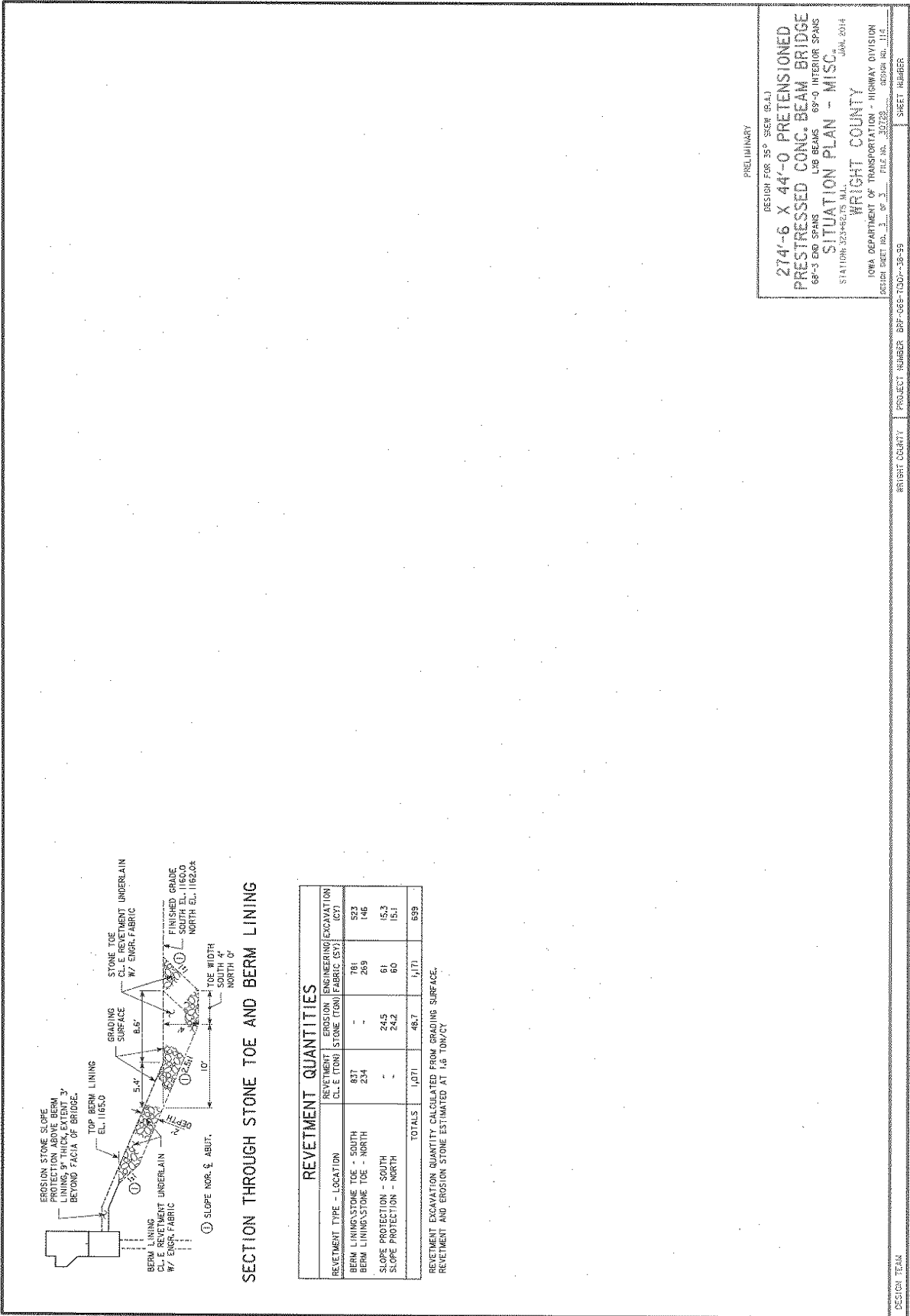
US 69 OVER IOWA RIVER
 T 52 N R 24 W
 IOWA COUNTY
 BRIDGE MAINT. NO. 991245669
 FHWA NO. 10643001
 STA. 323+62.75 E. M.L.
 LONG. 91° 53' 17.03" W / 42.319614°

PRELIMINARY

DESIGN FOR 15° SKEW (R.A.)
**274'-6" X 44'-0" PRETENSIONED
 PRESTRESSED CONC. BEAM BRIDGE**
 68'-3" END SPANS 69'-0" INTERIOR SPANS
SITUATION PLAN
 STATION: 327+62.75 M.L.
WRIGHT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 RESER. SHEET NO. 1 OF 3 FILE NO. 33728 DESIGN NO. 114

PROJECT NUMBER: BR-1039-1000-30-69
 BRIDGE NUMBER: 11K17
 FILE NO.: 03114.01
 DATE: 11/17/2017





SECTION THROUGH STONE TOE AND BERM LINING

REVETMENT QUANTITIES				
REVETMENT TYPE - LOCATION	REVETMENT (CL. E. (TON))	EROSION STONE (TON)	ENGINEERING FABRIC (SQ. YD.)	EXCAVATION (CY)
BERM LINING-STONE TOE - SOUTH	837	-	781	523
BERM LINING-STONE TOE - NORTH	234	-	269	146
SLOPE PROTECTION - SOUTH	-	24.5	61	15.3
SLOPE PROTECTION - NORTH	-	24.2	60	15.1
TOTALS	1,071	48.7	1,171	699

REVETMENT QUANTITY CALCULATED FROM GRADING SURFACE. REVETMENT AND EROSION STONE ESTIMATED AT 145 TON/CY.

PRELIMINARY
 DESIGN FOR 35° SKEW (R.L.)
**274'-6" X 44'-0" PRETENSIONED
 PRESTRESSED CONC. BEAM BRIDGE**
 68'-3" END SPANS 178 BEAMS 69'-0" INTERIOR SPANS
 SITUATION PLAN - MISC.
 STATION 523+82.55 M.A.L.
 WRIGHT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 ACTION MEET NO. 11-18-11 FILE NO. 31228
 JUN. 2014
 PROJECT NUMBER BRF-666-T00P-35-39
 SHEET NUMBER

DESIGN TEAM
 5/6/2012 11:34:49 AM wau/ma
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