The existing structure shall be removed.

Reinforcing bars covering shall be 3\(\frac{3}{4}\)" in top and 1\(\frac{1}{4}\)" in bottom of floor slabs and 2" in footings except bottom steel which shall be 4", and 2" in all other parts, unless noted.

Concrete in floor slab, and diaphragms, barriers, and end bents shall be an alternate Class C in accordance with the Technical Provisions.

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed to be braced against the intersection of the girder bottom flange and webs.

Deck falsework loads were assumed to be braced against the intersection of the girder bottom flange and webs.

Steel resistance against overturning was assumed to be provided by the concrete bridge approach.

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed to be braced against the intersection of the girder bottom flange and webs.

Deck falsework loads were assumed to be braced against the intersection of the girder bottom flange and webs.

Ultimate design strengths:
- Class "A" Concrete: \(f_c = 3,000 \text{ psi}\)
- Class "B" Concrete: \(f_c = 4,000 \text{ psi}\)
- Class "C" Concrete: \(f_c = 3,500 \text{ psi}\)
- Reinforcing Steel (Grade 60): \(f_y = 60,000 \text{ psi}\) (barrier)
- Reinforcing Steel (Grade 75): \(f_y = 75,000 \text{ psi}\) (all other locations)

Design stresses:
- PGA (g): 0.051
- S (g): 0.086
- D1: 0.12
- D2: 0.086
- Seismic Design Category: A

Construction live load:
- Designed for 20 psf for permanent metal stay-in-place deck forms, removable deck forms, and 2 ft. exterior walkway.

Construction line load:
- Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 ft. outside the face of coping over a 30 ft length of the deck centered with the finishing machine.

Construction machinery load:
- 4500 lb distributed over 10 ft. along the coping.

Wind load:
- Designed for 75 mph horizontal wind load in accordance with LRFD 3.0.1.
Composite, Prestressed Concrete
Bull-T Beam, (36"x49") (Typ.)

BEAM ERECTION PLAN
Scale: 1/8" = 1'-0"

Bearing Bent No.1
Bearing Bent No.2
Structure

Steel Channel
Diaphragm at Mid-Span
(Typ.)

Construction Chord

Profile Grade Line
Line "R_S65"

Dimensions along Construction Chord
Beam Spacing
1"Open Joint
6 @ 10'-6"=63'-0"

INTEGRAL
CHECKED:
DESIGN ENGINEER
CHECKED:
DESIGNED:
FOR APPROVAL:
DRAWN:
RECOMMENDED DATE

CONTRACT
VERTICAL SCALE
SURVEY BOOK
PROJECT
SHEET
OF
HORIZONTAL SCALE
BRIDGE FILE
BFS NO.
DEPARTMENT OF TRANSPORTATION
INDIANA
V. SATHIRAJU
B. WRIGHT
D. SHEETZ
B. WRIGHT
FRAMING PLAN
As Noted
N/A
ELECTRONIC
B-36910
I65-111-10617 BSBL
1901892
10
15
1600808
6412
INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS
FOR SPANS OVER 20 FEET
ROUTE: I-65 / I-70 S.B. CD AT: RP 111+95
PROJECT NO. 1600808 P.E.
1600808 CONST.

NO ADDITIONAL RIGHT OF WAY REQUIRED FOR THIS PROJECT

BRIDGE REPLACEMENT ON I-65 / I-70 S.B. CD OVER ST. CLAIR STREET
LOCATED 1.65 MILES NORTH OF I-70 (SOUTH SPLIT) INTERCHANGE
SECTION 1, TOWNSHIP 15 NORTH, RANGE 3 EAST
CENTER TOWNSHIP, MARION COUNTY INDIANA

LATITUDE: 39°46'39" N
LONGITUDE: 86°08'30" W

LOCATION MAP

MARION COUNTY

PROJECT LOCATION SHOWN BY

SCALE: 1" = 2000'

PROJECT LOCATION
BRIDGE FILE No. 99-111-12618 CD
I-65 / I-70 S.B. CD OVER ST. CLAIR STREET
STA. 115+75.89 LINE "R_CDS65"

LOCATION MAP
BRIDGE REPLACEMENT:
I-65 / I-70 S.B. CD OVER ST. CLAIR STREET
STA. 115+75.89 LINE "R_CDS65"

BEGIN PROJECT No. 1600808
STA. 113+00.00 LINE "P_ALG_I65/170"

END PROJECT No. 1600808
STA. 41+85.70 LINE "P_ALG_I70"

STAFF DRAWN:Butler Fairman and Saufley Inc. (317)793-4615
CERTIFIED:DATE:
APPROVED FOR LETTING:DATE:

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020 TO BE USED WITH THESE PLANS.

TRAFFIC DATA

FUNCTIONAL CLASSIFICATION
URBAN FREEWAY
55 M.P.H.
URBAN (BUILT-UP)
N/A
LOCAL ROAD
25 M.P.H.

LEVEL
FULL CONTROL
NONE

TRUCKS
4 % D.H.V.
4%

D.H.V. (2041)
3,982 V.P.H.
174%

A.D.T. (2041)
33,942 V.P.D.
60%

A.D.T. (2021)
33,183 V.P.D.
%

I-65 / I-70 S.B. CD
DIRECTIONAL DISTRIBUTION
URBAN (BUILT-UP)
LEVEL
LOCAL ROAD
URBAN FREEWAY

90%
10%

ST. CLAIR STREET
T. 15 N. R. 3 E.
R. 4 E.
T. 16 N.
R. 3 E.
R. 4 E.
T. 15 N.
EXISTING STRUCTURE

The existing structure was built in 1974. Structure was rehabilitated in 2003. The structure is a 3-span continuous composite 33" WF steel beam.

Span lengths: 1 @ 37'-0", 1 @ 68'-0", 1 @ 37'-0"

Clear roadway varies 51'-4" to 58'-6". Total length of 146'-0 1/8".

Existing structure to be removed.

Existing plans are on file with the Indiana Department of Transportation under Bridge File No. I-65-112-576 & I-65-112-575A.

EARTHWORK TABULATION

See Roadway Plans (DES #_____) for earthwork calculation.

1. For R/W and property information, see Location Control Route Survey (DES #______). For Horizontal & Vertical Control Data.
2. For alignment data, see Geometric Layout Sheets (DES #_______). See Road Plans (DES #_______) for earthwork calculation.
3. See Road Plans (DES #_______) for earthwork calculation.

PRESTRESSED COMPOSITE CONCRETE BULB-TEE BEAM BRIDGE

VARIES: 67'-2 5/8" TO 68'-6 1/8" CLEAR ROADWAY

SKEW 20°52'06" LT.

1-65 / I-70 S.B. CD OVER S. CLAIR STREET

MARION COUNTY

INDIANA DEPARTMENT OF TRANSPORTATION

LAYOUT
**GENERAL NOTES**

- Reinforcing bars covering shall be 3/8" in top and 1" min. in bottom of floor slabs and 2" in footings except bottom sheet which shall be 1/4" and 2" in all other parts, unless noted.
- Concrete in floor slabs, and diaphragms, barriers, and end bents shall be an alternate Class C in accordance with the Technical Provisions.
- Reinforcing Bars in Deck, Barrier, and End Bent Diaphragm Extending into the Deck shall be Stainless Steel. Reinforcing Bars in End Bent Diaphragm not extending into the Deck shall be Epoxy Coated.
- See Bridge Aesthetic Plan for Architectural Details.
- Designed for Actual Dead Load plus 35 psf of future wearing surface, and 15 psf for SIP Metal Deck Forms.
- Deck designed with a 1/2" structural depth and a 1/2" very early strength LMC wearing surface.

**DESIGN DATA**

**LOADS**
- **Live Loads:**
  - Superstructure and Substructure
- **Dead Load:**
  - Reinforcing Bars for Reinforced Concrete Bridge Approach Slabs shall receive surface seal.
- **Wind Load:**
  - Designed for 33 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 ft. outside the face of coping over a 30 ft. length of the deck centered with the finishing machine.

**CONSTRUCTION LOADING:**
- The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior beam. The finishing machine was assumed to be supported 6 in. from the vertical coping form. The top overhanging brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhanging brackets were assumed to be braced against the intersection of the girder bottom flange and web.

**FINISHING-MACHINE LOAD:**
- Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 ft. outside the face of coping over a 30 ft. length of the deck centered with the finishing machine.

**WIND LOAD:**
- Designed for 70 mph horizontal wind load in accordance with LRFD 3.8.1.

**DESIGN STRESSES**

**CONSTRUCTION LIVE LOAD:**
- Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 ft. outside the face of coping over a 30 ft. length of the deck centered with the finishing machine.

**WIND LOAD:**
- Designed for 70 mph horizontal wind load in accordance with LRFD 3.8.1.

**SEISMIC DESIGN DATA:**
- Seismic Site Class: C
- F ′c = 3,000 psi
- Fy = 60,000 psi
- f′c = 3,000 psi
- Fy = 75,000 psi
- F′c = 3,000 psi
- Fy = 60,000 psi

**GENERAL DESIGN DATA:**
- Concrete Bridge Railings, Type TT (Typ.)
- Stainless Steel: Reinforcing Steel (Grade 60) F′c = 3,000 psi
- Fy = 60,000 psi
- Fy = 75,000 psi
- Concrete Bridge Railings, Type TT (Typ.)
- Stainless Steel: Reinforcing Steel (Grade 60)

**DEPARTMENT OF TRANSPORTATION**

**PRESTRESSED COMPOSITE CONCRETE BULB-TEE BEAM BRIDGE**

1 SPAN: 88'-1 3/8"

VARIETY: 67'-2 5/8" to 68'-6 1/8"

65'-1 3/8" to 67'-2 5/8"

12'-0" Lane

6 Spa. @ 10'-6" = 63'-0" (Beam Spacing)

12'-0" Lane

Crown Point

Shoulder


**CONTRACT**

Proposed Conduit For Extending into the Deck and in the Cap shall be Epoxy Coated.

Concrete in floor slab, and diaphragms, barriers, and end bents shall be an alternate Class C in accordance with the Technical Provisions.

**GENERAL PLAN - TYPICAL SECTION**

**INDIANA**

DEPARTMENT OF TRANSPORTATION

**INNOVATION**

**RECOMMENDED DATE OF CONSTRUCTION**

**RECOMMENDED DATE OF COMPLETION**

**INNOVATION**

**DATE**

**DESIGNATION**

**LOCATION**

**BFS NO.**

**SCALE**

**BRIDGE FILE**

**PROJECT**

**SHEET**

**OF**

**SURVEY BOOK**

**ELECTRONIC**

**CONSTRUCTION LOADING:**
- The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior beam. The finishing machine was assumed to be supported 6 in. from the vertical coping form. The top overhanging brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhanging brackets were assumed to be braced against the intersection of the girder bottom flange and web.

**FINISHING-MACHINE LOAD:**
- Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 ft. outside the face of coping over a 30 ft. length of the deck centered with the finishing machine.

**WIND LOAD:**
- Designed for 70 mph horizontal wind load in accordance with LRFD 3.8.1.

**SEISMIC DESIGN DATA:**
- Seismic Site Class: C
- F ′c = 3,000 psi
- Fy = 60,000 psi
- f′c = 3,000 psi
- Fy = 75,000 psi
- F′c = 3,000 psi
- Fy = 60,000 psi
- Concrete Bridge Railings, Type TT (Typ.)
- Stainless Steel: Reinforcing Steel (Grade 60)

**DEPARTMENT OF TRANSPORTATION**

**PRESTRESSED COMPOSITE CONCRETE BULB-TEE BEAM BRIDGE**

1 SPAN: 88'-1 3/8"

VARIETY: 67'-2 5/8" to 68'-6 1/8"

65'-1 3/8" to 67'-2 5/8"

12'-0" Lane

6 Spa. @ 10'-6" = 63'-0" (Beam Spacing)

12'-0" Lane

Crown Point

Shoulder


**CONTRACT**

Proposed Conduit For Extending into the Deck and in the Cap shall be Epoxy Coated.

Concrete in floor slab, and diaphragms, barriers, and end bents shall be an alternate Class C in accordance with the Technical Provisions.

**GENERAL PLAN - TYPICAL SECTION**

**INDIANA**

DEPARTMENT OF TRANSPORTATION

**INNOVATION**

**RECOMMENDED DATE OF CONSTRUCTION**

**RECOMMENDED DATE OF COMPLETION**

**INNOVATION**

**DATE**

**DESIGNATION**

**LOCATION**

**BFS NO.**

**SCALE**

**BRIDGE FILE**

**PROJECT**

**SHEET**

**OF**

**SURVEY BOOK**

**ELECTRONIC**

**CONSTRUCTION LOADING:**
- The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior beam. The finishing machine was assumed to be supported 6 in. from the vertical coping form. The top overhanging brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhanging brackets were assumed to be braced against the intersection of the girder bottom flange and web.

**FINISHING-MACHINE LOAD:**
- Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 ft. outside the face of coping over a 30 ft. length of the deck centered with the finishing machine.

**WIND LOAD:**
- Designed for 70 mph horizontal wind load in accordance with LRFD 3.8.1.

**SEISMIC DESIGN DATA:**
- Seismic Site Class: C
- F ′c = 3,000 psi
- Fy = 60,000 psi
- f′c = 3,000 psi
- Fy = 75,000 psi
- F′c = 3,000 psi
- Fy = 60,000 psi
- Concrete Bridge Railings, Type TT (Typ.)
- Stainless Steel: Reinforcing Steel (Grade 60)
In this alternate, a 3/4"x1-3/4" long headed automatic welded stud may be used.

Setting Tolerance of Bottom Plate: Level with to not more than 3/8" below top of grout.

Don't construct Joint Type "A". See this sheet for Reinforced Edge detail.
DENOTES EPOXY COATED

NOTES:
- Bars 1" Clear unless noted.
- Surface Seal req'd on top of all Beams and Exterior Face of Exterior Beams.
- 3/4" Holes or 3/4" Inserts for Strands at Bent or Pier.
- (See Beam Plans)

Notes:
- Chamfer Corners of Angle 1"x1" (Typ.)
- Horiz. Slot 15/16"x2"x3'-2" at End Bent Ends only.
- MC9x23.9
- H.S. Bolt with Hardened Washer, (ASTM F436)
- Connect Channel to Angles with H.S. Bolt
- Vert. Slot in Angle (Typ.)
- Connect Angles to Beams with 3/4" H.S. Bolt with Hardened Washer, (ASTM F436)
- 2 Washers 3/16"x0'-3" (ASTM F436)

Notes:
The estimated weight of structural steel for one Diaphragm is 230 Lbs.

Note:
The estimated weight of structural steel for one Diaphragm is 230 Lbs.
TYPICAL BRIDGE SECTION

PRESTRESSED CONCRETE
BULB-TEE BEAM BRIDGE
1 SPAN @ 136+4 1/4" SKEW: 17° 33' 58" R.T. (EB 10TH ST.) & 0° 24' 0" R.T. (W 10TH ST.) CLEAR ROADWAY: 45' 0" I-65 N.B. OVER 10TH ST. MARION COUNTY

INFORMATION

RECIPIENT: 
INSTRUCTIONS:

INDIANA
DEPARTMENT OF TRANSPORTATION
TYPICAL SECTION

CONTRACTOR NAME: 
CONTRACTOR DECISION: 

ENGINEER:

HEMPLE:

NAVIGATION:

TOLERANCE:

SHEET:

DRAFTS: 
REVISED:

SIGNATURE:

DATE:

SCALE:

INCHES:

FOOT:

DIAGRAM:

TYPICAL SEC
APPRAOCH SLAB PLAN AT BENT NO. 1
Scale: 1" = 1'-0"

APPRAOCH SLAB PLAN AT BENT NO. 2
Scale: 1" = 1'-0"

SECTION THROUGH APPROACH
Scale: 1" = 1'-0"

NOTE:
1. For additional Timber or Joint information, see Tab. "Timber Slab Details." Type 1260.
2. Concrete railing Type PR & Concrete Railing Transition Type RT by新娘 Elements.

INDIANA
DEPARTMENT OF TRANSPORTATION
R.C. APPROACH SLAB DETAILS
PROJECT LOCATION SHOWN BY

PROJECT LOCATION

LOCATION MAP

BEGIN PROJECT No. 1600808

STATION 213+00.00 LINE "P_ALG_165/170"

LOCATION MAP

MARION COUNTY

BEGIN PROJECT No. 1600808

STATION 213+00.00 LINE "P_ALG_165/170"

END PROJECT No. 1600808

STATION 41+85.70 LINE "P_ALG_165/170"

END PROJECT No. 1600808

STATION 25+75.00 LINE "P_ALG_165"

SCALE: 1" = 2000'

INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS

FOR SPANS OVER 20 FEET

ROUTE: I-70 E.B. AT: RP 112+22

PROJECT NO. 1600808 P.E.

1600808 CONST.

NO ADDITIONAL RIGHT OF WAY REQUIRED FOR THIS PROJECT

BRIDGE REPLACEMENT ON I-70 E.B. OVER EAST 10TH STREET
LOCATED 1.92 MILES NORTH OF I-70 (SOUTH SPLIT) INTERCHANGE
SECTION 1, TOWNSHIPS 15 & 16 NORTH, RANGE 3 EAST
CENTER TOWNSHIP, MARION COUNTY INDIANA

PROJECT LOCATION SHOWN BY

LATITUDE: 33°46'29.5" N

LONGITUDE: 86°08'27.0" W

HUC: 05120301109020

INDIANA DEPARTMENT OF TRANSPORTATION

STANDARD SPECIFICATIONS DATED 2020 TO BE USED WITH THESE PLANS.

PREPARED BY: Butler Fairman and Sauter Inc. (317)793-4615

CERTIFIED BY:

APPROVED FOR LETTING:

DATE:

INDIANA DEPARTMENT OF TRANSPORTATION

STANDARD SPECIFICATIONS DATED 2020 TO BE USED WITH THESE PLANS.

HUC: 05120301109020

PREPARED BY: Butler Fairman and Sauter Inc. (317)793-4615

CERTIFIED BY:

APPROVED FOR LETTING:

DATE:

INDIANA DEPARTMENT OF TRANSPORTATION

STANDARD SPECIFICATIONS DATED 2020 TO BE USED WITH THESE PLANS.
INDEX

1. TOTAL
2. DESIGN ENGINEER
3. LEAD DESIGN
4. CHECKED
5. REVIEWED

PROJECT DESCRIPTION

KIN PROJECT INFORMATION

DESIGNATION

PROJECT

DESCRIPTION

COMPLETE ROAD RECONSTRUCTION OF I-65/SB FROM WASHINGTON STREET TO I-65/EB OVER DELAWARE STREET AND I-70/EB OVER VALLEY AVENUE

1060806

RECOMMENDED FOR APPROVAL

RECOMMENDED BY

M. EICHENAUER

DESIGN ENGINEER

B. WRIGHT

DATE

SHEET

OF

INDEX

BEAM DETAILS

APPROACH SLAB

LAYOUT

WALL LAYOUT

FRAMING PLAN

BENTS NO. 1 AND BENT NO. 2 DETAILS

GB-36910

I-70-083-10620 EBL

INDIANA DEPARTMENT OF TRANSPORTATION
Existing Structure Removed Phase 1B1

60'-3" Out to Out of Copings

58'-15 1/2" Out to Out of Copings

4 ½" Open Joint

...Existing 33" WF or W33 Beams (Typ.)

10 Spaces @ 5'-7" = 55'-10"

1'-7"

4'-6"

10 Spaces @ 5'-7" = 55'-10"

7'-6" Shoulder

6'-0" Median

™ of 1" Open Joint

™ of Roadway

™ of Structure

6'-0"

1'-0"

436" 2"

6'-0"

1'-6"

Varies

61'-0" Out to Out of Copings (Constructed Phase 1B1)

58'-0" Clear Roadway

12'-0" Traffic Lane

Line "R_E70"

Profile

Grade

12'-0" Traffic Lane

12'-0" Traffic Lane

10'-0" Shoulder

5 Spa. @ 10'-6" = 52'-8"

Beam Spacing

5 Spa. @ 10'-6" = 52'-8"

(Bean Spacing)
The existing structure was built in 1974. Structure was rehabilitated in 2003. The structure is a 2-span continuous composite steel beam bridge.

Clear roadway varies. Total length of 145'-10"

Existing structure to be removed.

Existing plans are on file with the Indiana Department of Transportation under Bridge File No. I-65-112-05738 BSB.

NOTE: ALL TOPOGRAPHY INFORMATION REFERENCED TO LINE "____" UNLESS NOTED.

ALL R/W ON THIS SHEET DESCRIBED FROM LINE "____" UNLESS OTHERWISE NOTED.

Notes:
1. For R/W and property information, see Location Control Route Survey (DES # ________).
2. For alignment data, see Geometric Layout & Vertical Control Data.
3. See Roadway Plans (DES # ________) for Horizontal & Vertical Control Data.

SIMPLE SPAN COMPOSITE PRE-STRESSED CONCRETE BOX-T BEAM BRIDGE
1 SPAN; 136'-9 3/4"
58'-0" CLEAR ROADWAY
SKEW: VARIES
I-70 E.B. OVER EAST 10TH STREET
MARION COUNTY

INDIANA DEPARTMENT OF TRANSPORTATION
LAYOUT
The existing structure shall be removed. Reinforcing bars covering shall be 3" in top and 1" min. in bottom of floor slabs except bottom steel which shall be 3" and 2" in all other parts, unless noted. Concrete in floor, diaphragms, barriers, and end bents shall be placed in accordance with the Technical Provisions.

Reinforcing Bars in Deck, Barrier, and End Bent Diaphragm Extending into the Deck shall be Stainless Steel. Reinforcing bars Extending into the Deck and in the Cap shall be Epoxy Coated. Slabs shall receive surface seal.

Concrete in floor slab, and diaphragms, barriers, and end bents shall be an alternate Class C in accordance with the Technical Provisions. Other parts, unless noted.

The existing structure shall be removed.

Reinforcing Bars in End Bent Diaphragm not to be located 6 in. past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the girder bottom flange and webs.

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed to be braced against the intersection of the girder bottom flange and webs.

The existing structure shall be removed. Reinforcing bars covering shall be 3" in top and 1" min. in bottom of floor slabs except bottom steel which shall be 3" and 2" in all other parts, unless noted. Concrete in floor, diaphragms, barriers, and end bents shall be placed in accordance with the Technical Provisions.

Reinforcing Bars in Deck, Barrier, and End Bent Diaphragm Extending into the Deck shall be Stainless Steel. Reinforcing bars Extending into the Deck and in the Cap shall be Epoxy Coated. Slabs shall receive surface seal.
BENTS NO. 1 AND BENT NO. 2 DETAILS

- Polyethylene 2 Layers of 6 Mil.
- MSE Wall
  - Cast in place
  - Concrete Cap
  - Styrofoam or Expanded Polystyrene
- Pile Sleeve
  - Backfill Sleeve
  - Bottom Plate (Cast in Beam)
- Concrete Bridge Slab
- Type I-A Joint (See Standards)
- Concrete Approach Slab
- Expanded Polystyrene
- Backfill Sleeve
- Bottom of End Bent
- 3'-0" Min. Steel Encased Concrete Pile (Typ.)
- 1'-10 1/2"
- 1'-6"
- 9" Structure Backfill
- 4'-6" Min.
- 1'-10 1/2"
- 1'-6"

- As an alternate a 5/8"x1-1/2" long headed Automatic Welded Stud may be used.
- Setting Tolerance of bottom plate surface with 5/8"narrow side
  - Skew nip of Concrete.
- #8 Reinf. Bars
- Threaded Tie Bar Assemblies @ 2'-0" spa.
  - (4#8 2" bar each side) (Stainless Steel) ( billed As plans)

- 1'-3"
- 1'-1"
- 3'-11"
- 1/8"
- 9"x1"x4'-3"
- 1'-3"
- 1'-0"x3'-8"
- 2"x1'-0"
- 1"x1'-0"
- S3x7.5
- 9"x1"x4'-3"
- 4'-3"x1"
- 3'-4"
- 3"x1"x4'
- 1"x1'

- Not to Scale
- Composite, Prestressed, Concrete T Beam, HPfwp
- Composite, Prestressed, Concrete T Beam, HPfwp
- See this Sheet for Pavement Ledge Detail
- Concrete Approach Slab
- End of Bridge Floor
- Optional Constr. Joint, Type "A"
Not to Scale
SHOWING DRAPED STRANDS

BEAM ELEVATION

Notes:
- Connect Angles to Beams with 1/2" x 1-1/4" H.S. Bolt with Lock Nut, one Hardened Washer and 2 Washers (3" x 1-1/4" x 3" (ASTM F436)).
- Connect Channel to Angles with 7/8" H.S. Bolt with Hardened Washer, (ASTM F436) 2 Washers 3" x 3" x 1.5"

Composite, Prestressed Concrete Hybrid Bulb-T Beam (Typ.)

Heron Slab 2" 27" Channel (Typ.)

Notes:
- Vertical Slot in Angle (Typ.)
- Chamfer Corners of Angle 1" x 1"
- Horizontal Slot in Channel (Typ.)

MC12x31.0

Section Showing Strands

Notes:
- Connect Angles to Beams with 1/2" x 1-1/4" H.S. Bolt with Lock Nut, one Hardened Washer and 2 Washers (3" x 1-1/4" x 3" (ASTM F436)).
- Connect Channel to Angles with 7/8" H.S. Bolt with Hardened Washer, (ASTM F436) 2 Washers 3" x 3" x 1.5"

Notes:
- The estimated weight of structural steel for one Diaphragm is 306 Lbs.
- Denotes Epoxy Coated
- Bars 1" Clear unless noted.

Bottom Strand Debonding

Appropriate Strand Shortening

- 55'-3"
- 27'-8"
- 44'-6" in Top
- 55'-3"
- 60'-9"

Notes:
- Connect Angles to Beams with 1/2" x 1-1/4" H.S. Bolt with Lock Nut, one Hardened Washer and 2 Washers (3" x 1-1/4" x 3" (ASTM F436)).
- Connect Channel to Angles with 7/8" H.S. Bolt with Hardened Washer and 2 Washers (3" x 1-1/4" x 3" (ASTM F436)).
Coping Line
Face Of Railing, Type FT

Bearing & Bent No. 2
Bearing & Bent No. 1

Structure
Coping Line
Face Of Railing, Type FT

SPAN "A"
Line "R_E70"

End of Bridge Floor (Typ.)
136'-9" Out-To-Out Bridge Floor Along Line "R_E70"
138'-5" Out-To-Out Bridge Floor Along Line "R_E70"

1'-6"
1'-4"
2"

61'-0" Out-To-Out Coping
9
1
2

NOTE:
See Sheet ___ For ____________
PROJECT LOCATION SHOWN BY

TOTAL LENGTH :
ROADWAY LENGTH :
BRIDGE LENGTH :

0.024 MI.

LATITUDE:
LONGITUDE:

MAX GRADE :

-0.81%

HUC:

05120201130020

DESIGN DATA

TERRAIN
RURAL/URBAN

55 M.P.H.

TRUCKS

FUNCTIONAL CLASSIFICATION
DESIGN SPEED

D.H.V. (2041)
A.D.T. (2041)
A.D.T. (2021)

TRAFFIC DATA

PROJECT DESIGN CRITERIA
ACCESS CONTROL

100%
7% D.H.V.

1,528 V.P.H.
18,925 V.P.D.
19,100 V.P.D.

4R (FREEWAY)
FREEWAY
URBAN
LEVEL
FULL CONTROL

10TH ST
35 M.P.H.
N/A
MINOR ARTERIAL
URBAN
LEVEL
NONE

55% (EB) 45% (WB)
2% (EB) 3% (WB)
9,494 (EB) 6,850 (WB) V.P.D.
9,253 (EB) 7,553 (WB) V.P.D.
1,037 (EB) 913 (WB) V.P.D.

I-65 S.B.

SEE ROAD PLANS
SEE ROAD PLANS

INDIANA DEPARTMENT OF TRANSPORTATION

PROJECT NO.
P.E.

1600808 P.E.

1600808 CONST.

INạngA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS
FOR SPANS OVER 20 FEET

ROUTE: I-65 S.B. AT: RP 112+22

PROJECT NO.

1600808 P.E.

1600808 CONST.

NO ADDITIONAL RIGHT OF WAY REQUIRED FOR THIS PROJECT

BRIDGE REPLACEMENT ON I-65 S.B. OVER EAST 10TH STREET
LOCATED 1.92 MILES NORTH OF I-70 (SOUTH SPLIT) INTERCHANGE
SECTION 1, TOWNSHIPS 15 & 16 NORTH, RANGE 3 EAST
CENTER TOWNSHIP, MARION COUNTY INDIANA

LOCATION MAP
MARION COUNTY

BEGIN PROJECT No. 1600808
STATION 213+00.00 LINE "P_ALG_165/170"

PROJECT LOCATION
BRIDGE FILE No. 565-112-10621 CSBL
I-65 S.B. OVER EAST 10TH STREET
STA. 125+85.52 LINE "R_565"

LOCATION MAP
MARION COUNTY

BEGIN PROJECT No. 1600808
STATION 25+75.00 LINE "P_ALG_165"

SCALE: 1" = 2000'

LATITUDE: 39°46'52.3" N
LONGITUDE: 86°08'27.0" W

HUC: 05120201130020

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020 TO BE USED WITH THESE PLANS.
BRIDGE REPLACEMENT ON I-65 SB OVER DELAWARE STREET AND I-70 WB OVER VALLEY AVENUE
BRIDGE REPLACEMENT ON I-65 SB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65 SB OVER WASHINGTON STREET
BRIDGE REPLACEMENT ON I-65 SB & DELAWARE ENTRANCE RAMP TO I-70 EB OVER THREE RAMPS
BRIDGE REPLACEMENT ON I-65 SB & SB CD RAMP OVER COLLEGE AVENUE
BRIDGE REPLACEMENT ON I-65 SB OVER EAST 10TH STREET
BRIDGE REPLACEMENT ON I-70 WB TO I-65 NB OVER COLLEGE AVENUE
BRIDGE REPLACEMENT ON I-65 SB OVER I-70 WB & RAMP
BRIDGE REPLACEMENT ON I-65 SB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65 SB OVER VERMONT STREET
BRIDGE REPLACEMENT ON I-65 SB OVER I-70 WB & SB CD RAMP
BRIDGE REPLACEMENT ON I-65 SB OVER CSX RAILROAD & OHIO STREET
BRIDGE REPLACEMENT ON I-65 SB OVER WASHINGTON STREET
BRIDGE REPLACEMENT ON I-70 WB TO I-65 NB OVER COLLEGE AVENUE
BRIDGE REPLACEMENT ON I-65 NB OVER CENTRAL AVENUE
NEW BRIDGE CONSTRUCTION ON I-70 EB OVER EAST 10TH STREET
NEW BRIDGE CONSTRUCTION ON I-65 NB CD EXIT RAMP OVER CENTRAL AVENUE
BRIDGE REPLACEMENT ON I-65 SB & PENNSYLVANIA EXIT RAMP OVER COLLEGE AVENUE
BRIDGE REPLACEMENT ON I-65 SB & PENNSYLVANIA EXIT RAMP
BRIDGE REPLACEMENT ON I-65 NB & PENNSYLVANIA EXIT RAMP OVER COLLEGE STREET & FIVE RAMPS
NEW BRIDGE CONSTRUCTION ON I-65 NB & PENNSYLVANIA EXIT RAMP OVER COLLEGE AVENUE & FIVE RAMPS
BRIDGE REPLACEMENT ON I-65 SB & PENNSYLVANIA EXIT RAMP OVER WASHINGTON STREET
BRIDGE REPLACEMENT ON I-65 NB OVER WASHINGTON STREET
BRIDGE REPLACEMENT ON I-65 NB OVER MARKET STREET
BRIDGE REPLACEMENT ON I-65 NB OVER WASHINGTON STREET
BRIDGE REPLACEMENT ON I-65 NB OVER DEPARTMENT AVENUE
BRIDGE REPLACEMENT ON I-65 NB OVER MARKET STREET
BRIDGE REPLACEMENT ON I-65 NB OVER GENERAL AVENUE
BRIDGE REPLACEMENT ON I-65 NB OVER¦10TH STREET
BRIDGE REPLACEMENT ON I-65 NB OVER I-70 WB & RAMP
BRIDGE REPLACEMENT ON I-65 NB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65 NB OVER I-70 WB & RAMP
BRIDGE REPLACEMENT ON I-65 NB OVER I-70 EB ENTRANCE RAMP
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BRIDGE REPLACEMENT ON I-70 WB TO I-65 NB OVER ST. CLAIR STREET
BRIDGE REPLACEMENT ON I-70 WB OVER ST. CLAIR STREET
BRIDGE REPLACEMENT ON I-65 NB OVER ST. CLAIR STREET
BRIDGE REPLACEMENT ON I-70 EB OVER ST. CLAIR STREET
BRIDGE REPLACEMENT ON I-65 NB OVER ST. CLAIR STREET
BRIDGE REPLACEMENT ON I-65 NB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65/I-70 SB CD OVER MICHIGAN STREET
BRIDGE REPLACEMENT ON I-65/I-70 NB OVER MICHIGAN STREET
BRIDGE REPLACEMENT ON I-65/I-70 EB OVER MICHIGAN STREET
BRIDGE REPLACEMENT ON I-65/I-70 SB OVER MICHIGAN STREET
BRIDGE REPLACEMENT ON I-65/I-70 SB CD OVER CSX RAILROAD & OHIO STREET
BRIDGE REPLACEMENT ON I-65/I-70 SB OVER CSX RAILROAD & OHIO STREET
BRIDGE REPLACEMENT ON I-65/I-70 NB OVER CSX RAILROAD & OHIO STREET
BRIDGE REPLACEMENT ON I-65/I-70 WB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65/I-70 WB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65/I-70 NB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65/I-70 WB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65/I-70 WB OVER I-70 EB ENTRANCE RAMP
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BRIDGE REPLACEMENT ON I-65/I-70 NB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65/I-70 WB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65/I-70 WB OVER I-70 EB ENTRANCE RAMP
BRIDGE REPLACEMENT ON I-65/I-70 NB OVER I-70 EB ENTRANCE RAMP
ELECTRONIC SURVEY BOOK 2 BFS NO. 16412 CSBL DESIGNATION"
EXISTING TYPICAL SECTION
Scale: 1" = 1'-0"

Existing Structure Removed (Phase 1B1)
Out to Out Coping Varies
Clear Roadway Varies

5'-9"
Varies
24'-0"
9'-0"

Existing WF 33
Beams (Typ.)

6 Variable Spaces for Chorded Beams

LEGEND
Limits of Removal

PROPOSED TYPICAL SECTION
Scale: 1" = 1'-0"

57'-6" Out to Out of Copings (Constructed Phase 1B1)
49'-0" Clear Roadway

Line "R Stainless Steel Strapping"
Profile
Grade
4 Spans @ 15'-3" = 45'-9" (Beam Spacing)

Composite Prestressed Concrete Bulb-T Beam, 54"x49" (Typ.)
EXISTING STRUCTURE

The existing structure was built in 1974. Structure was rehabilitated in 2003 with overlay and retrofitted railing. The structure is a 2-span continuous composite steel beam bridge.

Span lengths: 1 @ 81'-6", 1 @ 86'-9"

Clear roadway in variable width. Total length of 165'-8"

Existing structure to be removed.

Existing plans are on file with the Indiana Department of Transportation under Bridge File No. I-65-112-0578 BSB.

EARTHWORK TABULATION

See Roadway Plans (DES #_______) for earthwork tabulation.

1. For R/W and property information, see Location Control Route Survey (DES #_______).
2. For alignment data, see Geometric Layout Sheets (DES #_______).
3. See Road Plans (DES #_______) for Horizontal & Vertical Control Data.
GENERAL NOTES

The existing structure shall be removed.

Reinforcing bars covering shall be 3 1/2" in top and 1" min. in bottom of floor slabs and 2" in footings except bottom steel which shall be 4" and 2" in all other parts, unless noted.

Concrete in floor slabs, diaphragms, barriers, and end bents shall be an alternate Class C in accordance with the Technical Provisions.

Reinforcing Bars in Deck, Barrier, and End Bent Diaphragm Extending into the Deck shall be Stainless Steel. Reinforcing Bars in End Bent Capmembers not Extending into the Deck and in the Cap shall be Epoxy Coated.

All exposed faces of the MSE walls and reinforced concrete bridge approach slab shall receive surface seal.

See Bridge Aesthetic Plan for Architectural Details.

DESIGN DATA

LIVE LOAD


REAR LOAD

Designed for Actual Steel Load plus 35 psf of pavement wearing surface, and 15 psf for SIP Metal Deck Forms.

FLOOR SLAB

Slab designed with a 7 1/2" structural depth and a 1 1/2" very early strength LMC wearing surface.

CONSTRUCTION LOADING

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior beams. The finishing machine was assumed to be supported 6 in. outside the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the girder bottom flange and web.

DECK FALSEWORK LOADS

Designed for 15 psf for permanent metal stay-in-place deck forms, removable deck forms, and 2 ft. exterior walkway.

CONSTRUCTION LIVE LOAD

Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30 foot length of the deck centered with the finishing machine.

FINISHING-MACHINE LOAD

4500 lb distributed over 10 ft. along the coping.

WIND LOAD

Designed for 70 mph horizontal wind load in accordance with LRFD 3.8.1.

ULTIMATE DESIGN STRENGTHS

Class "A" Concrete  f'c = 3,500 p.s.i.
Class "B" Concrete  f'c = 3,000 p.s.i.
Class "C" Concrete  f'c = 4,000 p.s.i.
Reinforcing Steel (Grade 60)  Fy = 60,000 p.s.i. (barrier)
Reinforcing Steel (Grade 50)  Fy = 75,000 p.s.i. (all other loads)

SEISMIC DESIGN DATA

Seismic Site Class        C
PSA (g)                      0.051
S1 (g)                        0.12
S2 (g)                        0.033
Seismic Design Category A

E oven
As an alternate a 1/2" x 1" Long headed Automatic Welded Stud may be used.

Setting Tolerance of Bottom Plate - level with to not more than 3/16" below top of concrete.

Not to Scale
Beam Erection Plan

Composite, Prestressed Concrete
Bulb-T Beam, (54"x49") (Typ.)

Steel Channel Diaphragm (Typ.)

Diaphragm Spacing
4 spa.@ 10'-3" = 41'-0"

Bearing Bend No. 1
Bearing Bend No. 2

130'-30" @ Bearing to s. Bearing

CHECKED:
DESIGN ENGINEER

FOR APPROVAL:

DATE

INDIANA
DEPARTMENT OF TRANSPORTATION
FRAMING PLAN

RECOMMENDED FOR APPROVAL
EXECUTIVE DIRECTOR
ENGINEER

ELECTRONIC SHEET
INDIANA HIGHWAY PATROL B-36910
1901901
1600808
6412
**Notes:**

- Connect Channels to Angles with 1/4" U.S. Bolt with Lock Nut, one Hardened Washer and 2 Washers 3/16" (ASTM F436)

- Vert. Slot in Angle (Typ.)
- Horiz. Slot in Channel (Typ.)

**Note:**

The estimated weight of structural steel for one Diaphragm is 297 Lbs.

**Composite, Prestressed Beam Sections**

- Bars 1" Clear unless noted.
- Surface Seal req'd on top of all Beams and Exterior Faces of Exterior Beams

- 1/4" Holes or 1/4" Inserts for Dowels at Bent or Pier. (See Beam Plans)

**Beam Sections Not to Scale**

- 10'-3" (Typ.)
- 6"x4"x1'-2" (Typ.)

**Bottom Strand Debonding**

- Length from Each End of Beam

- APPLIES TO EACH END OF BEAM

**Beam Details**

- INDANA DEPARTMENT OF TRANSPORTATION

**Beam Elevations**

- SHOWING DRAPPED STRANDS

**Composite, Prestressed Concrete Hybrid Bulb-T Beam (Typ.)**

- Bars 1" Clear unless noted.
- Surface Seal req'd on top of all Beams and Exterior Faces of Exterior Beams

- 1/4" Holes or 1/4" Inserts for Dowels at Bent or Pier. (See Beam Plans)

- 2 equal spa.=1'-10"x1/2" at End Bent Ends

**Beam Sections**

- 4'-6" (Typ.)
- 3'-4"x12"x3'-2" at End Bent Ends

**Elevation Not to Scale**

- SHOWING STRANDS

- Bottom Strand Debonding

- Approximate Strand Shortening

- Denotes Epoxy Coated

- Draped Strands at End

- Draped Strands at Midspan

- Draped Strands at Joints

- 5" Chamfer (Typ.)

**Beam Elevations**

- SHOWING DRAPPED STRANDS

**Beam Sections**

- 4'-6" (Typ.)
- 3'-4"x12"x3'-2" at End Bent Ends

**Elevation Not to Scale**

- SHOWING STRANDS

- Bottom Strand Debonding

- Approximate Strand Shortening

- Denotes Epoxy Coated

- Draped Strands at End

- Draped Strands at Midspan

- Draped Strands at Joints

- 5" Chamfer (Typ.)
Concrete Bridge Railing
Transition, Type TFT
(Typ.)
Optional Keyway
Concrete Joint (Typ.)
Coping Line
Face of Railing
Type FT
Profile Grade
Line "R_S65"
Radial Line
Radial Dimensions
20'-6" (Typ.)
20'-0" (Typ.)
50'-0"
23'-6"
6°39'23"
89°32'23"
CHECKED:
DESIGN ENGINEER
CHECKED:
DESIGNED:
FOR APPROVAL:
DRAWN:
RECOMMENDED
DATE
INDIANA
DEPARTMENT OF TRANSPORTATION
APPROACH SLAB
BFS NO.
DEPARTMENT OF TRANSPORTATION
SHEET
PROJECT
SURVEY BOOK
OF
BRIDGE FILE
VERTICAL SCALE
HORIZONTAL SCALE
ELECTRONIC
B-36910
I65-112-10621 CSBL
1901901
13
1600808
6412
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**KIN PROJECT INFORMATION**

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**DEPARTMENT OF TRANSPORTATION**

**BEAM DETAILS**

**FRAMING PLAN**

**PIER DETAILS**

**BENTS NO. 1 AND NO. 3 DETAILS**

**LAYOUT**

**MAINTENANCE OF TRAFFIC**

**GENERAL PLAN - TYPICAL SECTION**

**WALL LAYOUT**

**WALL LAYOUT**

**COMPLETE ROAD RECONSTRUCTION OF I-65 OVER DELAWARE STREET AND I-70 OVER VALLEY AVENUE**
EXISTING STRUCTURE

The existing structure was built in 1974. Structure was rehabilitated in 2003 with overlay and retrofitted railing. The structure is a 2-span continuous prestressed steel beam bridge.

Span lengths: 1 @ 97'-0", 1 @ 97'-0"

Clear roadway is 41'-2". Total length of 196'-0".

Existing structure to be removed.

Existing plans are on file with the Indiana Department of Transportation under Bridge File No. I-70-083-05739 BWBL.

EARTHWORK TABULATION

See roadway plans (DES #_________) for earthwork tabulation.

CONTINUOUS COMPOSITE PRESTRESSED CONCRETE I

BEAM TYPE II BRIDGE

2 SPANS: 75'-4 1/2", 69'-3 1/2"

41'-0" CLEAR ROADWAY

SKewed 19°38'39" BT.

1-70 W.B. OVER EAST 10TH STREET

MARION COUNTY

NOTE: ALL TOPOGRAPHY INFORMATION REFERENCED TO LINE "______" UNLESS NOTED.

ALL R/W ON THIS SHEET DESCRIBED FROM LINE "______" UNLESS OTHERWISE NOTED.

1. For R/W and property information, see Location Control Route Survey (DES #__________).

2. For alignment data, see Geometric Layout Control Route Survey (DES #__________).

3. For R/W and property information, see Location

See Roadway Plans (DES #__________) for Horizontal & Vertical Control Data.

Notes:

- For R/W and property information, see Location
- For alignment data, see Geometric Layout
- See Roadway Plans (DES #__________) for Horizontal & Vertical Control Data.

NOTE: ALL TOPOGRAPHY INFORMATION REFERENCED TO LINE "______" UNLESS NOTED.

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2. For alignment data, see Geometric Layout Control Route Survey (DES #__________).

3. For R/W and property information, see Location

See Roadway Plans (DES #__________) for Horizontal & Vertical Control Data.

Notes:

- For R/W and property information, see Location
- For alignment data, see Geometric Layout
- See Roadway Plans (DES #__________) for Horizontal & Vertical Control Data.
GENERAL NOTES
The existing structure shall be removed.

- The minimum pile tip elevation noted is the elevation that the piles must reach.
- Epoxy coated reinforcing bars shall be required in various portions of the structure as shown.
- Reinforcing bars covering shall be 3" in top and 1" min. in bottom of floor slabs and 3" in all other parts, unless noted.
- Concrete in floor slab, and diaphragms, barriers, and end bents shall be an alternate Class C in accordance with the Technical Provisions.
- All exposed faces of the MSE walls and reinforced concrete bridge approach slabs shall receive surface seal.
- Concrete Bridge Decking, Type II (Typ.)
- Reinforcing Bars in End Bent Diaphragm Extending into the Deck and in the Cap shall be Epoxy Coated.

CONSTRUCTION LOADING:
- The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior beam. The finishing machine was assumed to be supported 6 in. outside the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the girder bottom flange and web.
- Deck Falsework Loads:
  - Designed for 15 psf for permanent metal stay-in-place deck forms, removable deck forms, and 2 ft. exterior walkway.
  - Designed for 35 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 36 ft. length of the deck continued with the finishing machine.
- Wind Loads:
  - Designed for 75 mph horizontal wind load in accordance with UHDR 2.0.1.

DESIGN DATA
- Live Load:
- Dead Load:
  - Designed for Actual Steel load plus 35 psf of future wearing surface, and 15 psf for SIP Metal Deck Forms.
- Floor Slab:
  - Slab designed with a 7" structural depth and a 1 3/4" very early strength LMC overlay.

FINISHING MACHINE LOAD:
- Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 36 ft. length of the deck continued with the finishing machine.

DECK FalseWORK LOADS:
- Designed for 15 psf for permanent metal stay-in-place deck forms, removable deck forms, and 2 ft. exterior walkway.

CONSTRUCTION LIVE LOAD:
- Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 36 ft. length of the deck continued with the finishing machine.
- Designed for 15 psf for permanent metal stay-in-place deck forms, removable deck forms, and 2 ft. exterior walkway.

DESIGN STRESSES
- Ultimate Design Strengths:
  - Class "B" Concrete
  - Class "C" Concrete
  - Class "D" Concrete
  - Reinforcing Steel (Grade 60) Fy = 60,000 p.s.i. (barrier)
  - Reinforcing Steel (Grade 50) Fy = 75,000 p.s.i. (all other locations)

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Seismic Design Category: A

DESIGN STRESSES
- PGA (g) = 0.051
- PGA (g) = 0.12
- PGA (g) = 0.051
- S (1) = 6.0
- S (1) = 6.0
- S (1) = 6.0
- D1 (1) = 0.86
- D1 (1) = 0.86
- D1 (1) = 0.86
- Seismic Design Category = A

CONTINUOUS COMPOSITE Prestressed CONCRETE I BEAM
TYPE II BRIDGE
2 SPANS: 75'-4 1/2", 69'-3 1/2" 41'-0" CLEAR ROADWAY; SKEW 19°38'39" RT. 1-70 W.B. OVER EAST 10TH STREET MARION COUNTY

INDIANA DEPARTMENT OF TRANSPORTATION
GENERAL PLAN - TYPICAL SECTION
Coping Line
Face Of Railing, Type FT
SPAN "A"
Line "R_W70"
Coping Line
Face Of Railing, Type FT
End of Bridge Floor (Typ.)

4. Bearing &
4. Bent No. 2

4. Bearing &
4. Bent No. 1

FLOOR PLAN
Scale: 1/8" = 1'-0"

NOTE:
See Sheet ___ For ____________

INDIANA
DEPARTMENT OF TRANSPORTATION
FLOOR DETAILS
**NOTE:** Elevation Looking At Back Face of Wall
**PROJECT LOCATION SHOWN BY**

- **TOTAL LENGTH:**
  - **ROADWAY LENGTH:**
  - **BRIDGE LENGTH:** 0.025 MI.

- **MAX GRADE:** 3.48%

- **LATITUDE:** 39°46'52" N
  - **LONGITUDE:** 86°08'28" W

---

**DESIGN DATA**

- **TERRAIN:** RURAL/URBAN
  - **FUNCTIONAL CLASSIFICATION:** FREEWAY
  - **TRAFFIC DATA**
    - **PROJECT DESIGN CRITERIA**
      - **ACCESS CONTROL:** 100%
      - **D.H.V. (2041):** 4% D.H.V.
      - **A.D.T. (2041):** 3,012 V.P.H.
      - **A.D.T. (2021):** 26,092 V.P.D.
      - **4R (FREEWAY):** 25,100 V.P.D.

---

**STRUCTURE INFORMATION**

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<td>EAST 10TH STREET</td>
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**BRIDGE REPLACEMENT ON I-65 S.B. CD & I-70 W.B. CD OVER EAST 10TH STREET**

- **LOCATED 1.92 MILES NORTH OF I-70 (SOUTH SPLIT) INTERCHANGE**
- **SECTION 1, TOWNSHIPS 15 & 16 NORTH, RANGE 3 EAST**
- **CENTER TOWNSHIP, MARION COUNTY INDIANA**

---

**LOCATION MAP**

- **BEGIN PROJECT No. 1600808**
  - STA. 122+69.66 LINE "R_W70_CD565"  
- **END PROJECT No. 1600808**
  - STA. 113+00.00 LINE "P_ALG_I65"  
  - STA. 41+85.70 LINE "P_ALG_I70"  

---

**TRAFFIC DATA**

- **I-65 S.B. CD**
- **I-70 W.B. CD**
- **10TH ST**

**NO ADDITIONAL RIGHT OF WAY REQUIRED FOR THIS PROJECT**
EXISTING TYPICAL SECTION

PROPOSED TYPICAL SECTION

LEGEND

- Limits of Removal

B. WRIGHT
M. EICHENAUER
M. SCOTT
B. WRIGHT

MAINTENANCE OF TRAFFIC

DEPARTMENT OF TRANSPORTATION

INDIANA
GENERAL NOTES

Reinforcing bars covering shall be 3 in. in top and 1 in. in bottom of floor slabs and 2 in. in footings except bottom steel which shall be 4 in. and 2 in. in all other parts, unless noted.

Concrete in floor slab, and diaphragms, barriers, and end bents shall be 4 in. and 2 in. in all other parts, unless noted.

Concrete Bridge Approach Slabs and 3 in. in footings except bottom steel which shall be 4 in. and 2 in. in all other parts, unless noted.

See Bridge Aesthetic Plan for Architectural Details.

DECK FALSEWORK LOADS:
- Designed for 15 psf for permanent metal stay-in-place deck forms, 4500 lb distributed over 10 ft. along the coping.
- Designed for 70 mph horizontal wind load in accordance with LRFD 3.8.1.
- Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30 foot length of the deck centered with the finishing machine.

FINISHING-MACHINE LOAD:
- Designed for 33 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30 foot length of the deck centered with the finishing machine.

WIND LOAD:
- Designed for 70 mph horizontal wind load in accordance with UFD 3.8.1.

CONSTRUCTION LIVE LOAD:
- The exterior girder has been checked for strength, deflection, and vertical stressing limits.

FINISHING-MACHINE LOAD:
- The finishing machine was assumed to be supported 8 in. outside the vertical coping form. The top-overhanging brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhanging brackets were assumed to be braced against the intersection of the girder bottom flange and web.

WIND LOAD:
- Designed for 70 mph horizontal wind load in accordance with UFD 3.8.1.

DESIGN STRESSES

ULTIMATE DESIGN STRENGTHS:
- Class "A" Concrete
  f'c = 3,500 psi
  Ey = 0.051 psi
  Fy = 75,000 psi (Deck)
  Fy = 40,000 psi (Barrier)
  Fy = 75,000 psi (All other locations)

- Class "B" Concrete
  f'c = 4,000 psi
  Ey = 0.12 psi
  Fy = 70,000 psi (Deck)
  Fy = 100,000 psi (Barrier)

- Class "C" Concrete
  f'c = 3,000 psi
  Ey = 0.05 psi
  Fy = 45,000 psi (Barrier)
  Fy = 75,000 psi (All other locations)

- Rebar Design Category A
  fc = 0.900 psi
  fy = 45,000 psi

GENERAL DATA

Concrete Bridge Approach Slabs and 3 in. in footings except bottom steel which shall be 4 in. and 2 in. in all other parts, unless noted.

See Bridge Aesthetic Plan for Architectural Details.

DESIGN DATA

Live loads:
- Superstructure and Substructure Designed for HS-93 loading in accordance with the AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and its subsequent revisions.
- Designed for Actual Dead Load plus 35 psf of future wearing surface, and 15 psf for SIP Metal Deck Forms.
- Deck designed with a 1 1/2" structural depth and a 1 1/2" very early strength LMC wearing surface.

CONSTRUCTION LOADS

- The exterior girder has been checked for strength, deflection, and vertical overloading using the construction loads shown below. Contractual overloading loads were increased for support of the deck overhang past the edge of the exterior beam.
- The finishing machine was assumed to be supported 8 in. outside the vertical coping form. The top-overhanging brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhanging brackets were assumed to be braced against the intersection of the girder bottom flange and web.
- Designed for 15 psf for permanent metal deck in place deck forms, removable deck forms, and 2 ft. exterior walkway.

THE TYPICAL SECTION - NARROW SIDE (SOUTH)
COPING LINE

FACE OF RAILING, TYPE FT

SPAN "A"

FLOOR PLAN

Scale: 1/8" = 1'-0"

NOTE:
See Sheet ___ For ________
BRIDGE PLANS
FOR SPANS OVER 20 FEET

ROUTE: 1-65 AT: RP 112+81
PROJECT NO. 1600808 (P.E. & CONSTR.)

LOCATION MAP
(MARION COUNTY)

PROJECT LOCATION SHOWN BY MARION COUNTY

LAPLATE: 39°42'55.9"N 86°19'33.7"W
HIDROLOGIC UNIT CODE: 051300130000

BRIDGE LENGTH: 0.016
ROADWAY LENGTH: 0
TOTAL LENGTH: 0
MAX. DEPTH: 0

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020 TO BE USED WITH THESE PLANS

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

INDIANA DEPARTMENT OF TRANSPORTATION

TRAFFIC DATA

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DESIGN DATA

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560 W. 22ND STREET
INDIANAPOLIS, INDIANA 46208
(317) 232-1111
IN Ihre spare Engineering

IN YOUR SPARE TIME
NOTE:
1. For typical section, see Sheet 11.
IN Indiana Department of Transportation

For Spans Over 20 Feet

ROUTE: I-70 W.B. TO I-65 N.B. AT: RP 112+55
PROJECT NO.: 1600808 (P.E. & Constr.)

Bridge Plans

IN ADDITION, ROADWAY-WAY REQUIRED FOR THIS PROJECT

Bridge Replacement on I-70 W.B. TO I-65 N.B. OVER COLLEGE AVE., LOCATED
2.06 MILES NORTH OF I-70 (SOUTH SPLIT) INTERCHANGE, IN SECTION 36, OF
TOWNSHIP 16 NORTH, RANGE 3 EAST, CENTER TOWNSHIP, IN MIONT COUNTY
INDIANA

END PROJECT NO. 1600808
STATION 25+75.00 LINE "P,AUG 355"
## INDIANA DEPARTMENT OF TRANSPORTATION

### BRIDGE PLANS

**FOR SPANS OVER 20 FEET**

**ROUTE:** I-65 N.B. & 12 St. CD  AT:  RP 112+55  
**PROJECT NO.:** 1600808 (P.E. & CONSTR.)

---

### Overview

Bridge replacement on I-65 S.B. and I-65 S.B. C.D. over College Avenue, Located 2.06 miles North of I-70 (South Split) Interchange, in Section 36, of Township 16 North, Range 3 East, Center Township, in Marion County Indiana.

---

### Design Data

- **Bridge Replacement on I-65 S.B.**
  - Over College Avenue
  - Located 2.06 miles North of I-70 (South Split) Interchange
  - In Section 36, of Township 16 North, Range 3 East, Center Township, in Marion County Indiana

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### Preliminary Plans

Not for Construction

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### Traffic Data

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### Location Map

**LOCATION MAP**

- Bridge Plan No. 1600808  
  - Station 113+00.00 Line "E," ALG 360.70

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### Additional Notes

- Required for this project

---

### Project Location

- Bridge Plan No. 1600808  
  - Station 25+75.00 Line "P," ALG 365.35

---

### Design Project No. 1600808

- Station 83+80.0 Line "P," ALG 365.35

---

### Bridge Plan No. 1600808  
- Station 25+75.0 Line "P," ALG 365.35

---

### Scale: 1" = 200'

---

### Hydrologic Unit Code: 0512000101000

---

### Project Location Shown by Marion County

---

### Design Project No. 1600808

- Bridge Plan No. 1600808  
  - Station 113+00.00 Line "E," ALG 360.70

---

### INDIANA DEPARTMENT OF TRANSPORTATION

STANDARD SPECIFICATIONS DATED 2020

TO BE USED WITH THESE PLANS

---

### Drawn By:

JARAM ILLE & SPARLING ENGINEERING

317-249-1768

---

### Prepared By:

SUPERIOR CONSTRUCTION

---

### Construction:

INDIANA DEPARTMENT OF TRANSPORTATION

---

### Sheet No:

1/3

---

### Sheet Size:

24" x 36"

---

### Elevations:

- INDIANA DEPARTMENT OF TRANSPORTATION

---

### Drawing Date:

7/23/2020

---

### Project No.: 1600808

---

### Sheet Rev:

10/12/2020
NOTE:
1. For additional Technical Joints information, see USDOT Terminal Joint Design Tool DOG.
2. Concrete Railing FT at end slab extension. For more details, see Std. Spec. 0803/0842/0201/14.

SECTION THROUGH APPROACH
Scale: 1" = 1'-0"
INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS
FOR SPANS OVER 20 FEET

I-65 SB TO I-70 EB OVER COLLEGE AVENUE AT: RP 112+81

PROJECT NO. 1600808 (P.E. & CONSTR.)

Bridge Replacement on I-65 N.B. and 12th St. CD over College Ave., Located 2.06 Miles North of I-70 (South Split) Interchange, in Section 36, of Township 16 North, Range 3 East, Center Township, in Marion County Indiana

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020
TO BE USED WITH THESE PLANS

PRELIMINARY PLANS
NOT FOR CONSTRUCTION