

# A d d e n d u m

Iowa Department of Transportation  
Office of Contracts

Date of Letting: July 18, 2017  
Date of Addendum: July 13, 2017

<b>B.O.</b>	<b>Proposal ID</b>	<b>Proposal Work Type</b>	<b>County</b>	<b>Project Number</b>	<b>Addendum</b>
011	77-0354-140	BRIDGE REPLACEMENT - PPCB	POLK	IM-NHS-035-4(140)92--03-77 IM-NHS-035-4(193)93--03-77 IM-NHS-035-4(194)94--03-77 IM-NHS-035-4(218)93--03-77 NHS-035-4(221)93--11-77	18JUL011A02

Make the following changes to the PLAN for Project # IM-NHS-035-4(194)94--03-77:

Replace SHEETS 33 and 60 with attached SHEETS 33 and 60.

Note: SHEET 33 - Removed Note regarding "Removals as per plan."

SHEET 60 - Update to the diaphragm spacing and quantities.

## SPECIFICATIONS:

DESIGN: AASHTO LRFD 7th Ed, SERIES OF 2014, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT, INCLUDING: DEVELOPMENTAL SPECIFICATIONS FOR HIGH PERFORMANCE CONCRETE FOR STRUCTURES, SPECIAL PROVISIONS FOR VIBRATION MONITORING.

## DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7th Ed, SERIES OF 2014, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60. CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5,  $f'_c = 4.0$  KSI, EXCEPT PRESTRESSED BEAM CONCRETE AS NOTED.

PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEETS 26 THRU 29. BRIDGE DECK CONCRETE  $f'_c = 4.0$  KSI.

STRUCTURAL STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 6. ASTM A709 GRADE 36 AND GRADE 50 (AASHTO M270 GRADE 36 AND GRADE 50).

## GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO WIDEN AN EXISTING 194'-0" x 15'-9" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE WITH A 15° R.A. SKEW (N.B. BRIDGE OF POLK COUNTY DESIGN 1018) AN ADDITIONAL 61'-2", WHICH IS STAGE B OF THE DUAL BRIDGE PROJECT (STAGE B OF THE DUAL BRIDGE PROJECT CORRESPONDS TO STAGE 3 OF THE ROADWAY PROJECT IM-NHS-035-4(140)92--03-77); STAGE C AND THE FINAL STAGE WILL BE COMPLETED UNDER A FUTURE SEPARATE DESIGN (POLK 1218). THE FINAL CONFIGURATION WILL BE DUAL 194'-0" x 75'-4" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES.

THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 159'-2" x 30'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE DESIGN NO. 1062 WITH A YEAR OF CONSTRUCTION OF 1964 (N.B. BRIDGE ONLY). ELECTRONIC PLANS OF THE EXISTING STRUCTURE ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING BRIDGE" SHALL INCLUDE REMOVAL OF THE EXISTING 159'-2" x 30'-0" PPCB BRIDGE.

REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS.

THE CITY AND UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

THIS BRIDGE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

REFER TO ROADWAY PLANS FOR TEMPORARY BARRIER DETAILS AND LOCATIONS.

IT SHALL BE THE BRIDGE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITES FOR EXCESS EXCAVATED MATERIAL. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

CLASS 20 EXCAVATION QUANTITIES ARE BASED ON THE ASSUMPTION THAT THE CLASS 10 ROADWAY WORK IS COMPLETED PRIOR TO STARTING CONSTRUCTION OF THE ABUTMENTS AND PIERS.

THE APPROACH FILLS AS SHOWN ARE INCLUDED IN THE GRADING PLANS FOR THE PROJECT IM-NHS-035-4(140)92--03-77 AND ARE TO BE IN PLACE BEFORE ABUTMENT PILES ARE DRIVEN. THE BRIDGE CONTRACTOR IS TO LEVEL OFF AND SHAPE THE BERMS TO THE ELEVATIONS AND DIMENSIONS SHOWN. DRESSING OF SLOPES OUTSIDE THE BRIDGE AREA NOT DISTURBED BY THE BRIDGE CONTRACTOR SHALL BE PAID FOR AS EXTRA WORK.

THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES. HOLES SHALL BE BORED TO THE ELEVATIONS SHOWN ON THE "LONGITUDINAL SECTION ALONG CENTERLINE ROADWAY" ON DESIGN SHEET 4. PILES SHALL BE DRIVEN THROUGH THE HOLES TO AT LEAST THE SPECIFIED DESIGN BEARING.

NOTE: SUBDRAIN SLOPED DOWNWARD 2% FROM  $\bar{C}$  N.B. 1-35 TO EXTEND THRU FILL (TYPICAL BOTH ABUTMENTS).

TEMPORARY SHORING SHALL BE PAID FOR AS A LUMP SUM. COST SHALL ONLY INCLUDE REMOVAL OF SHORING BETWEEN DESIGNS 1018 AND 1118. SHORING BETWEEN DESIGNS 1018 AND 1218 SHALL REMAIN IN PLACE AND BE REMOVED IN A FUTURE CONTRACT (DESIGN 1218). ALL MATERIAL USED FOR SHORING THAT IS REMOVED SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS, STILL APPLIES.

THE BRIDGE CONTRACTOR IS TO RETAIN EARTH AND/OR GRANULAR MATERIAL BEHIND THE PORTION OF ABUTMENTS SUBJECTED TO TRAFFIC DURING WIDENING BY METHODS APPROVED BY THE ENGINEER. ALL COSTS FOR RETAINING THE EARTH AND/OR GRANULAR MATERIAL SHALL BE INCLUDED IN THE PRICE BID FOR "CLASS 20 EXCAVATION".

CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USE OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICLE 2513.03, A, 2 OF THE STANDARD SPECIFICATIONS. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED FOR CONCRETE BARRIER RAILS (CAST-IN-PLACE OR SLIPFORMED METHOD).

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

GUARDRAIL WILL BE PLACED BY THE PAVING CONTRACTOR AS A PART OF THE PROJECT NHS-035-4(198)92--11-77.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (501 IS  $\frac{5}{8}$  INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

## BRIDGE DECK DIMENSIONS TABLE

NO.	ITEM	UNIT	QUANTITY
1	DECK LENGTH	L.F.	197.1
2	MINIMUM DECK WIDTH	L.F.	62.8
3	MAXIMUM DECK WIDTH	L.F.	62.8
4	DECK AREA	S.F.	12,378

1. DECK LENGTH IS MEASURED FROM FACE-TO-FACE OF PAVING NOTCHES ALONG THE CENTERLINE OF THE ROADWAY.
- 2, 3. DECK WIDTHS ARE MEASURED FROM OUT-TO-OUT OF DECK PERPENDICULAR TO THE CENTERLINE OF ROADWAY.
4. DECK AREA IS TO BE BASED ON THE FACE-TO-FACE PAVING NOTCH DISTANCE AND OUT-TO-OUT DECK DIMENSIONS.

DURING CONSTRUCTION OF THIS PROJECT THE BRIDGE CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF THE FOLLOWING PROJECTS:

REFER TO ROADWAY PLAN SHEET J.1 FOR LISTING OF OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME.

## DESIGN HISTORY AT THIS SITE

(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
1018	ORIGINAL DESIGN
1118	BRIDGE WIDENING

## SHOP DRAWING SUBMITTALS

SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS SHOWN IN THE TABLE BELOW. (NOTE ADDITIONAL SHOP DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS.)

SUBMITTAL REQUIREMENTS FOR SHOP DRAWINGS SHOULD BE IN ACCORDANCE WITH ARTICLE 1105.03, OF THE STANDARD SPECIFICATIONS, FOR HIGHWAY AND BRIDGE CONSTRUCTION OF THE IOWA DEPARTMENT OF TRANSPORTATION.

1	STEEL INTERMEDIATE DIAPHRAGMS
2	PRE-CONSTRUCTION CONDITION SURVEY REPORT
3	VIBRATION MONITORING PLAN
4	POST-CONSTRUCTION SURVEY REPORT

### NOTE:

THE POLLUTION PREVENTION PLAN IS NOT INCLUDED IN THESE PLANS, BUT IS INCLUDED IN THE GRADING PLANS FOR THE PROJECT IM-NHS-035-4(140)92--03-77 WHICH IS TIED TO THE BRIDGE PLANS THROUGH THE CONTRACT LETTING PROCESS.

## TRAFFIC CONTROL PLAN

NOTE: THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

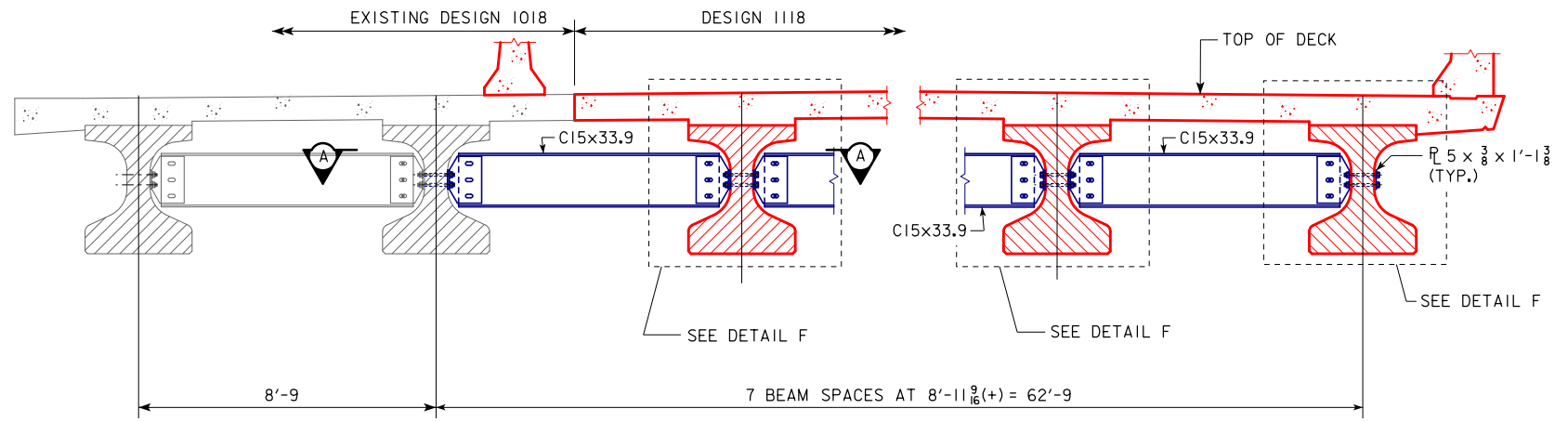
DESIGN FOR 15° SKEW (R.A.)  
**194'-0" x 15'-9" PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE**  
**WIDENING TO 194'-0" x 75'-4"**  
 41'-0" AND 61'-0" END SPANS 92'-0" INTERIOR SPAN  
**GENERAL NOTES**  
 STATION 330+02.44 41.00' RT. (STAGE B) MAY 2017  
**POLK COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 3 OF 36 FILE NO. 30451 DESIGN NO. 1118

# BULB TEE "B" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL

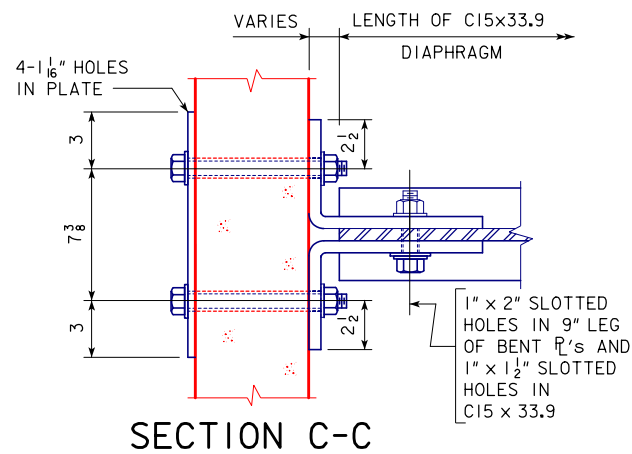
ONE BEAM CONNECTION (DETAIL "F")		NO. OF BEAM CONNECTIONS	WEIGHT
4 - $\frac{7}{8}$ " $\phi$ x $9\frac{1}{4}$ " H.S. BOLTS WITH NUTS & WASHERS = 9.6 LBS.		42	403
ONE DETAIL "F"	1 - BACKING $\frac{1}{2}$ " x $\frac{3}{8}$ " x $1'-1\frac{3}{8}$ " = 7.1 LBS.	42	298
	2 - BENT $\frac{1}{2}$ " x $9 \times 6 \times \frac{1}{2}$ x $0'-11$ " = 46.8 LBS.	42	1966
ONE DIAPHRAGM		NUMBER OF DIAPHRAGMS	
6 - $\frac{7}{8}$ " $\phi$ x 3" H.S. BOLTS WITH NUTS & WASHERS = 7.8 LBS.		21	164
LENGTH OF MEMBER			
1 - C15 x 33.9 = 33.9 LBS./FT.		21	5536
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)			8367

STRUCTURAL STEEL	
WEIGHT	8367 LBS.

NOTE: STRUCTURAL STEEL WEIGHT IS INCLUDED ON THE SUMMARY QUANTITIES SHEET.



SECTION SHOWING INTERMEDIATE DIAPHRAGMS



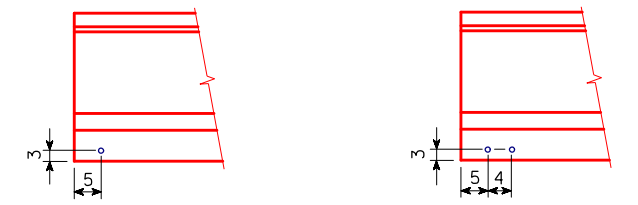
SECTION C-C

### NOTES:

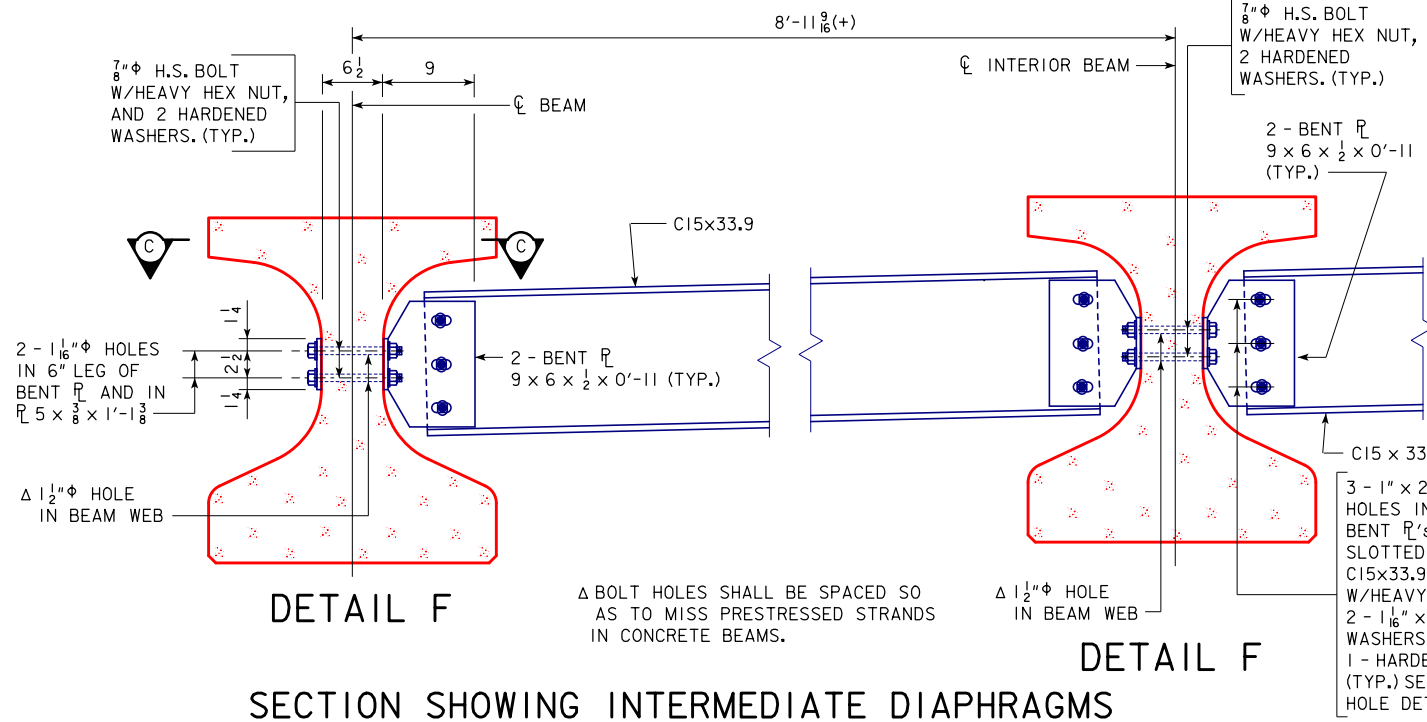
- ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.
- SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.
- ALL COSTS FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.
- THE  $\frac{1}{2}$ "  $\phi$  HOLES FOR THE  $\frac{7}{8}$ "  $\phi$  H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.
- THE  $\frac{7}{8}$ "  $\phi$  H.S. BOLTS THROUGH THE WEB SHALL HAVE A THREAD LENGTH OF 3" MIN. AND 4" MAX. AND SHALL MEET THE REQUIREMENTS OF ASTM A449.
- ALL BOLTS ARE TO BE TIGHTENED PRIOR TO PLACING BRIDGE FLOOR CONCRETE WITH THE FOLLOWING EXCEPTION: BOLTS IN DIAPHRAGMS LOCATED UNDER LONGITUDINAL BRIDGE FLOOR CONSTRUCTION JOINTS SHALL NOT BE TIGHTENED UNTIL STAGE TWO OF THE BRIDGE FLOOR HAS BEEN PLACED.

	BTB40	BTB60	BTB90
19'-1 7/8"	19'-1 7/8"	29'-1 7/8"	44'-1 7/8"
7 3/8"	7 3/8"	7 3/8"	7 3/8"
1'-9 1/2"	1'-9 1/2"	1'-9 1/2"	1'-9 1/2"
7 3/8"	7 3/8"	7 3/8"	7 3/8"

INTERMEDIATE DIAPHRAGM BOLT HOLE LOCATIONS

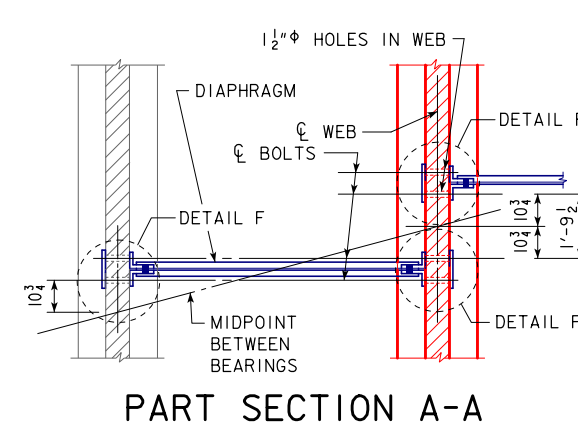


INTEGRAL ABUT. BEAM COIL TIE LOCATIONS      FIXED PIER BEAM COIL TIE LOCATIONS

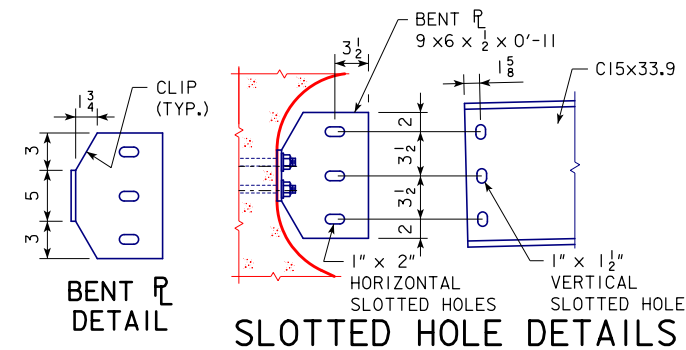


DETAIL F

SECTION SHOWING INTERMEDIATE DIAPHRAGMS



PART SECTION A-A



BENT PL DETAIL

SLOTTED HOLE DETAILS

DESIGN FOR 15° SKEW (R.A.)  
**194'-0 x 15'-9 PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE  
 WIDENING TO 194'-0 x 75'-4**  
 41'-0 AND 61'-0 END SPANS      92'-0 INTERIOR SPAN  
**STEEL DIAPHRAGM DETAILS**  
 STATION 330+02.44 41.00' RT. (STAGE B)      MAY 2017  
**POLK COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 30 OF 36      FILE NO. 30451      DESIGN NO. 1118