GENERAL NOTES

SPECIFICATIONS:

1. THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY AASHTO, 2014, 7TH EDITION INCLUDING THE 2016 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

   ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED 2016 AND THE SPECIAL PROVISIONS.

2. THE ANSI / AASHTO / AWS (CURRENT EDITION) BRIDGE WELDING CODE.

MATERIAL SPECIFICATIONS:

1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709 GRADE 50W.

2. STRUCTURAL STEEL NOTED CVN INDICATES MATERIAL WHICH IS SUBJECT TO CHARPY V-NOTCH TESTING PER 711.01 OF STATE OF OHIO CMS.

3. HIGH STRENGTH BOLTS:
   - HIGH STRENGTH BOLTS SHALL BE ASTM A325 TYPE 3 WITH ONE ASTM A563 TYPE 3 HEAVY HEX NUT AND ONE OR TWO F436-3 HARDENED WASHERS. ALL TO BE WEATHERING HARDWARE.

   - ALL HIGH STRENGTH BOLTS SHALL BE ROTATIONAL CAPACITY TESTED PRIOR TO USE. DO NOT MIX NUTS AND BOLTS FROM DIFFERENT LOTS.

4. SHOP CLEANING AND PAINTING OF STRUCTURAL STEEL TO BE IN ACCORDANCE WITH ODOT CMS 514.
   * SOLVENT CLEAN PER SSPC-SP 1/ SHOP BLAST CLEAN PER SSPC-SP 6 AT UNPAINTED AREAS.
   * SOLVENT CLEAN PER SSPC-SP 1/ SHOP BLAST CLEAN PER SSPC-SP 10 AT THE FINAL 10 FEET OF THE BEAMS AT ABUTMENTS ONLY.
   * FINAL 10 FEET OF THE BEAMS AT ABUTMENTS SHALL RECEIVE SHERWIN-WILLIAMS DOT INORGANIC ZINC PRIMER APPLIED AT 3.0 TO 5.0 MILS DFT.

5. INTERMEDIATE & FINISH COATS ARE TO BE FIELD APPLIED BY OTHERS.

FABRICATION:

1. ALL RE-ENTRANT CUTS SHALL HAVE A MINIMUM RADIUS OF 1".

2. ALL FLAME CUT OR SHEARED EDGES SHALL BE DEBURRED AND BROKEN WITH A SINGLE PASS OF A GRINDER CREATING A 1/16"± RADIUS.

WELDING:

1. WELDING SHALL BE IN ACCORDANCE WITH THE AASHTO / AWS D1.5-2002 BRIDGE WELDING CODE AS AMENDED BY O.D.O.T. 1011 AND SECTION 513.21 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, DATED JANUARY 1, 2016 AND AS MODIFIED BY THE CONTRACT PLANS.

GENERAL:

1. FABRICATED PIECES ARE TO BE MARKED WITH THE SHIPPING MARKS ON THE LEFT END AS SHOWN ON THESE SHOP DRAWINGS. THE PIECES ARE ORIENTED IN THE FIELD WITH THE SHIPPING MARKS AT THE END AS SHOWN ON THESE SHOP DRAWINGS.

1. CONTRACTOR TO APPROVE ALL INFORMATION & DIMENSIONS PRIOR TO COMMENCING FABRICATION.

DRAWING INDEX

SHEET NO.	DWG. NO.	DESCRIPTION
1	GN1	GENERAL NOTES, DRAWING INDEX, HARDWARE LIST & MISC. DETAILS
2	E1	PARTIAL FRAMING PLAN (1 OF 2)
3	E2	PARTIAL FRAMING PLAN (2 OF 2)
4	E3	DETAILS OF FIELD SPLICES A & E
5	E4	DETAILS OF FIELD SPLICES B, C & D
6	D1	DETAIL OF BEAM 6B1A
7	D2	DETAIL OF BEAM 7B1B
8	D3	DETAIL OF BEAM 8B1C
9	D4	DETAIL OF BEAM 9B1D
10	D5	DETAIL OF BEAM 10B1E
11	D6	DETAIL OF BEAM 11B1F
12	D7	DETAIL OF BEAM 12B2A
13	D8	DETAIL OF BEAM 13B2B
14	D9	DETAIL OF BEAM 14B2C
15	D10	DETAIL OF BEAM 15B2D
16	D11	DETAIL OF BEAM 16B2E
17	D12	DETAIL OF BEAM 17B2F
18	D13	DETAIL OF BEAM 18B3A
19	D14	DETAIL OF BEAM 19B3B
20	D15	DETAIL OF BEAM 20B3C
21	D16	DETAIL OF BEAM 21B3D
22	D17	DETAIL OF BEAM 22B3E
23	D18	DETAIL OF BEAM 23B3F
24	D19	DETAIL OF BEAM 24B4A
25	D20	DETAIL OF BEAM 25B4B
26	D21	DETAIL OF BEAM 26B4C
27	D22	DETAIL OF BEAM 27B4D
28	D23	DETAIL OF BEAM 28B4E
29	D24	DETAIL OF BEAM 29B4F
30	D25	DETAIL OF BEAM 30B5A
31	D26	DETAIL OF BEAM 31B5B
32	D27	DETAIL OF BEAM 32B5C
33	D28	DETAIL OF BEAM 33B5D
34	D29	DETAIL OF BEAM 34B5E
35	D30	DETAIL OF BEAM 35B5F
36	X1	FIELD SPLICE PLATE DETAILS
37	X2	TYPE 1 CROSS FRAME PART DETAILS
38	X3	TYPE 2 CROSS FRAME PART DETAILS & BILL OF MATERIAL
39	BD1	VERTICAL BLOCKING DIAGRAM

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

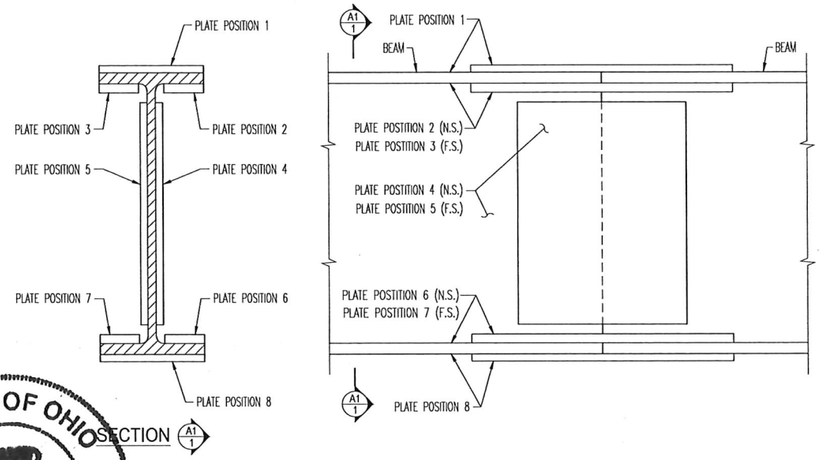
HARDWARE LIST

HARDWARE ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	STL SPEC	WT PER (IN LBS)	NET WT (IN LBS)	HEAT #	LOCATION
1		* 672	aa	7/8x2-1/4 HEX HEAD BOLT	A325 TYPE 3	0.60	403.87		CROSS FRAMES
2		* 672	na	7/8 HEAVY HEX NUT	A563 TYPE 3	0.30	201.60		CROSS FRAMES
3		* 1,344	wa	7/8 FLAT WASHER	F436 TYPE 3	0.06	86.02		CROSS FRAMES
4		* 540	bb	1x3-1/2 HEX HEAD BOLT	A325 TYPE 3	1.10	594.00		FIELD SPLICES A & E
5		* 1,080	cc	1x3-3/4 HEX HEAD BOLT	A325 TYPE 3	1.15	1,242.00		FIELD SPLICES B, C & D
6		* 480	dd	1x4 HEX HEAD BOLT	A325 TYPE 3	1.20	576.00		FIELD SPLICES A & E
7		* 1,200	ee	1x4-1/4 HEX HEAD BOLT	A325 TYPE 3	1.26	1,512.00		FIELD SPLICES B, C & D
8		* 3,300	nb	1 HEAVY HEX NUT	A563 TYPE 3	0.43	1,419.00		FIELD SPLICES
9		* 3,300	wb	1 FLAT WASHER	F436 TYPE 3	0.08	270.60		FIELD SPLICES

*INDICATES AN ITEM THAT WILL BE SHIPPED LOOSE

TOTAL WT 6,305.09



BEAM MATCH MARKING SYSTEM

LOOKING NORTH

1 A 1
BEAM LINE NO. / FIELD SPLICE LOCATION / PLATE POSITION

MATCH MARKING LEGEND

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

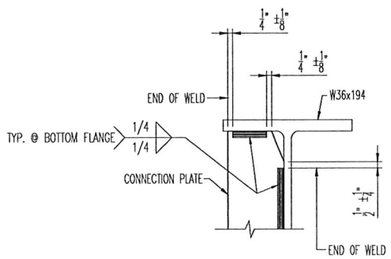
Date 11-9-18 By DFT

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

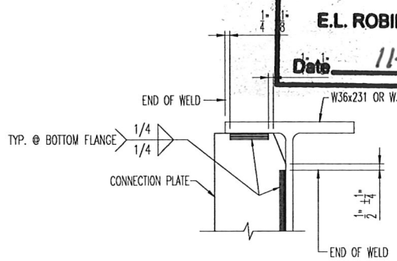
Dave Traini

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT



WELD DETAILS @ BEAM W36x194



WELD DETAILS @ BEAMS W36x231 & W36x247

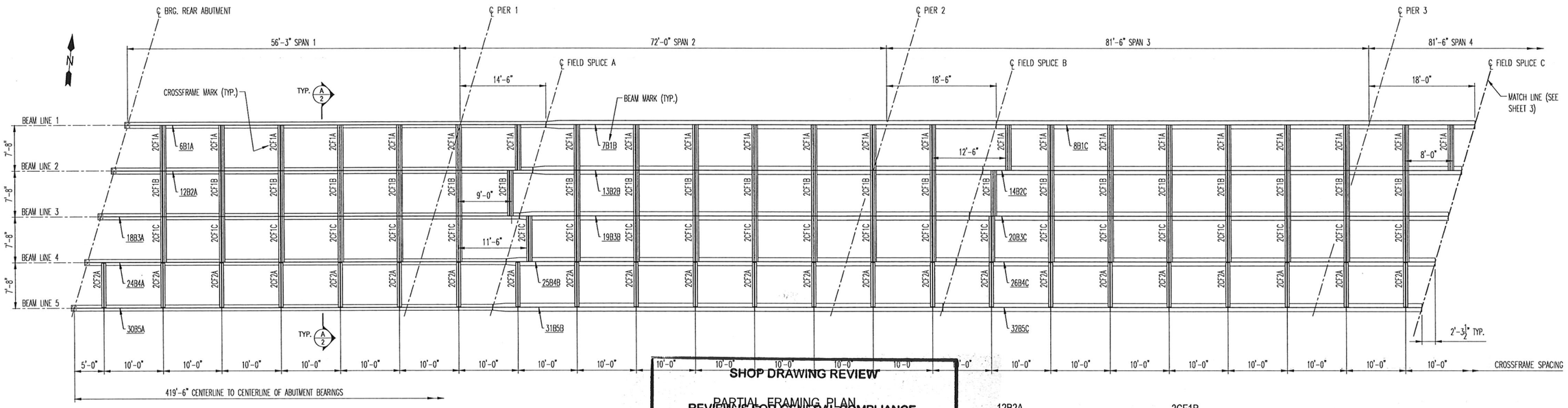
REV. No.	REVISION
A	CHANGED NOTE 1 UNDER SPECIFICATIONS 11/9/2018
SHOP INSPECTED BY:	

APPROVAL

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
GENERAL NOTES, DRAWING INDEX, HARDWARE LIST & MISC. DETAILS		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: GN1
SFN: 2531526	OSI PROJ. NO.: 18-25	1 OF 39



BOTTOM OF BOTTOM BEAM FLANGE ELEVATIONS							
BEAM LINE	REAR ABUT.	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	FORWARD ABUT.
B1	924.94	925.32	925.29	924.53	923.03	921.07	919.13
B2	925.07	925.47	925.45	924.72	923.23	921.29	919.36
B3	925.13	925.54	925.55	924.84	923.37	921.45	919.54
B4	924.95	925.38	925.40	924.71	923.27	921.37	919.47
B5	924.78	925.22	925.26	924.58	923.17	921.28	919.40

ELEVATIONS ARE TAKEN AT THE CENTERLINE OF BEARINGS

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

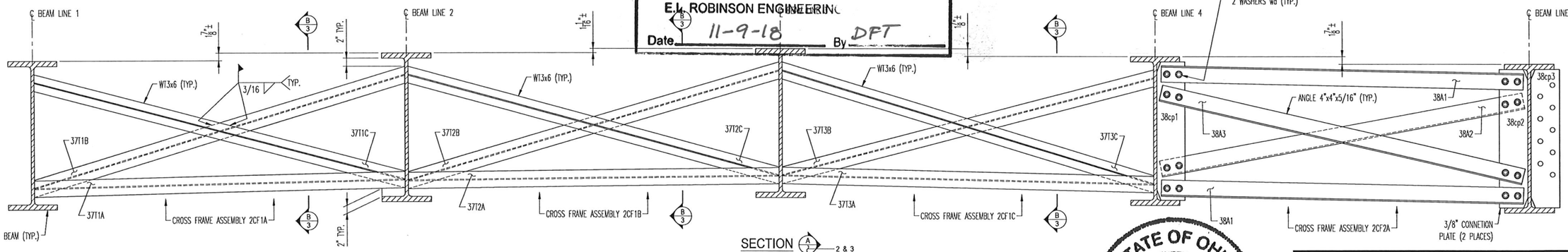
Date 11-9-18 By DFT

PARTIAL FRAMING PLAN
THE TOP FLANGES OF THE BEAMS ARE NOT SHOWN FOR CLARITY
ALL DIMENSIONS ARE HORIZONTAL

12B2A
SHEET NUMBER — BEAM LETTER — BEAM LINE
BEAM MARK SYSTEM

2CF1B
SHEET NUMBER — CROSS FRAME LETTER — CROSS FRAME TYPE — INDICATES A CROSS FRAME
CROSS FRAME MARK SYSTEM

SECTION LETTER — SHEET LOCATION
SECTION SYMBOL LEGEND



37T1A
SHEET NUMBER — TEE LETTER — TEE NUMBER — INDICATES A STRUCTURAL TEE
WT CROSS FRAME MEMBER MARK SYSTEM
TYPE 1 CROSS FRAMES

38A3
SHEET NUMBER — ANGLE NUMBER — INDICATES AN ANGLE
ANGLE CROSS FRAME MEMBER MARK SYSTEM
TYPE 2 CROSS FRAMES

ALL CROSS FRAME MEMBERS ARE TO BE SHOP MARKED AS SHOWN ON SHEETS 37 & 38. THE SHEET NUMBER WILL BE OMITTED.
FOR EXAMPLE: PART NUMBER 37T1A WILL BE SHOP MARKED T1A

NOTES:
SEE SHEETS 4 & 5 FOR FIELD SPLICE DETAILS
SEE SHEETS 37 & 38 FOR CROSS FRAME PART DETAILS

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

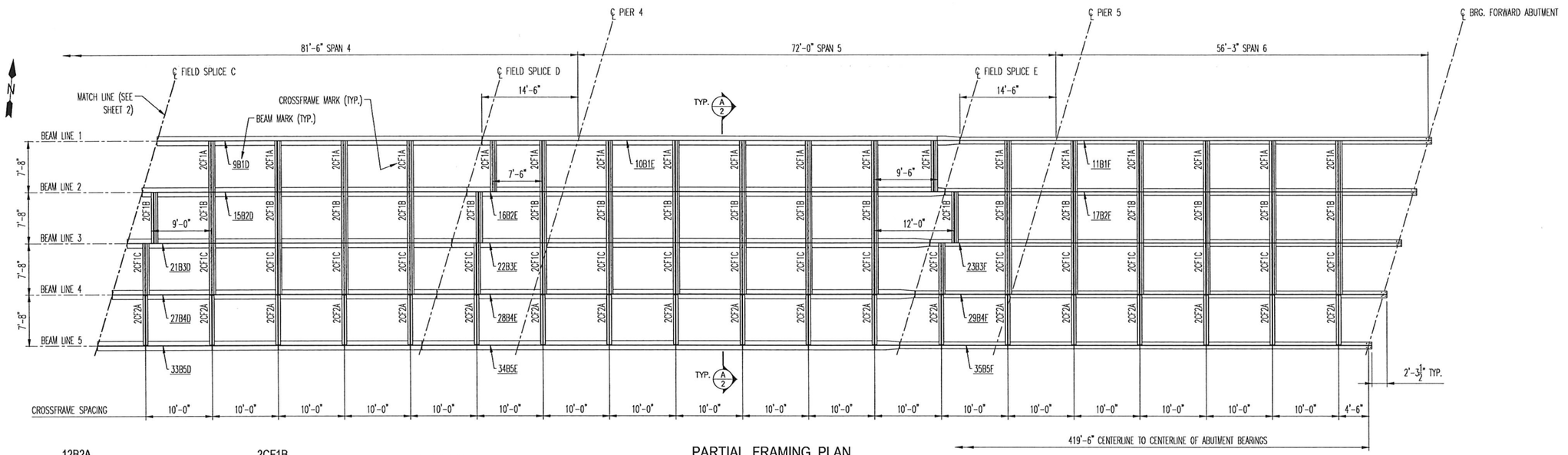
REV. No.	REVISION
A	CHANGED B5 PIER 3 ELEVATION 11/9/2018
SHOP INSPECTED BY:	

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER
APPROVAL
Dft

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

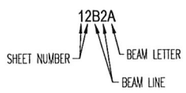
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
PARTIAL FRAMING PLAN (1 OF 2)		
REF NO.: 10	ITEM NO.: 513 LEVEL 2	
PID NO.: 15125		DWG. NO.: E1
SFN: 2531526	OSI PROJ. NO.: 18-25	2 OF 39

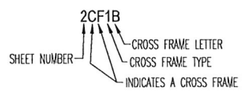


PARTIAL FRAMING PLAN

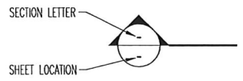
THE TOP FLANGES OF THE BEAMS ARE NOT SHOWN FOR CLARITY
ALL DIMENSIONS ARE HORIZONTAL DIMENSIONS



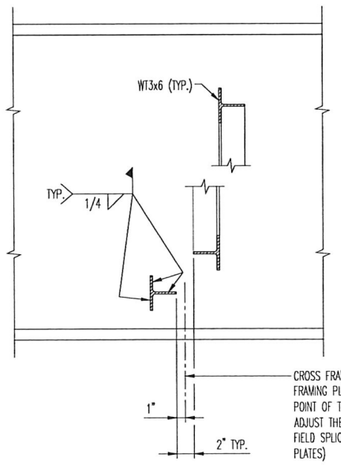
BEAM MARK SYSTEM



CROSS FRAME MARK SYSTEM



SECTION SYMBOL LEGEND



CROSS FRAME SPACING SHOWN ON THE FRAMING PLANS ARE GIVEN TO THIS POINT OF THE CROSS FRAMES (IF REQUIRED ADJUST THE CROSS FRAME LOCATIONS AT THE FIELD SPLICES TO CLEAR THE FIELD SPLICE PLATES)

SECTION B 3

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

NOTES:

SEE SHEETS 4 & 5 FOR FIELD SPLICE DETAILS
SEE SHEETS 37 & 38 FOR CROSS FRAME PART DETAILS

REV. No.	REVISION
SHOP INSPECTED BY:	

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

DFA 2

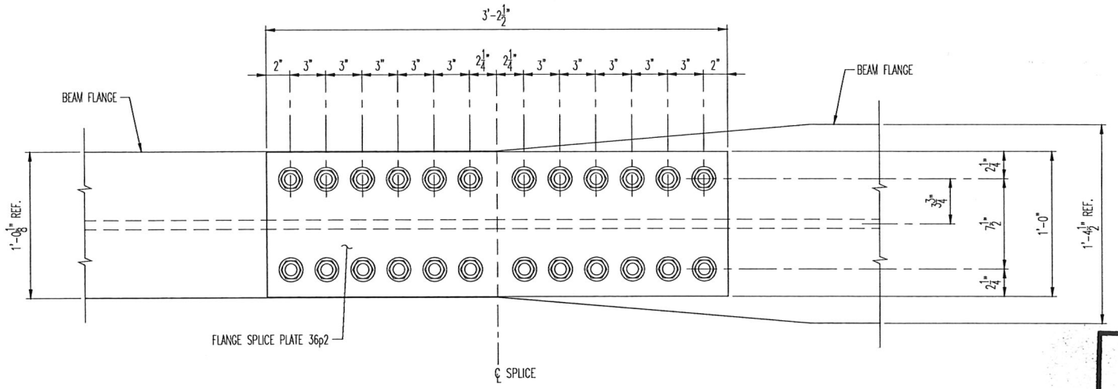
APPROVAL

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

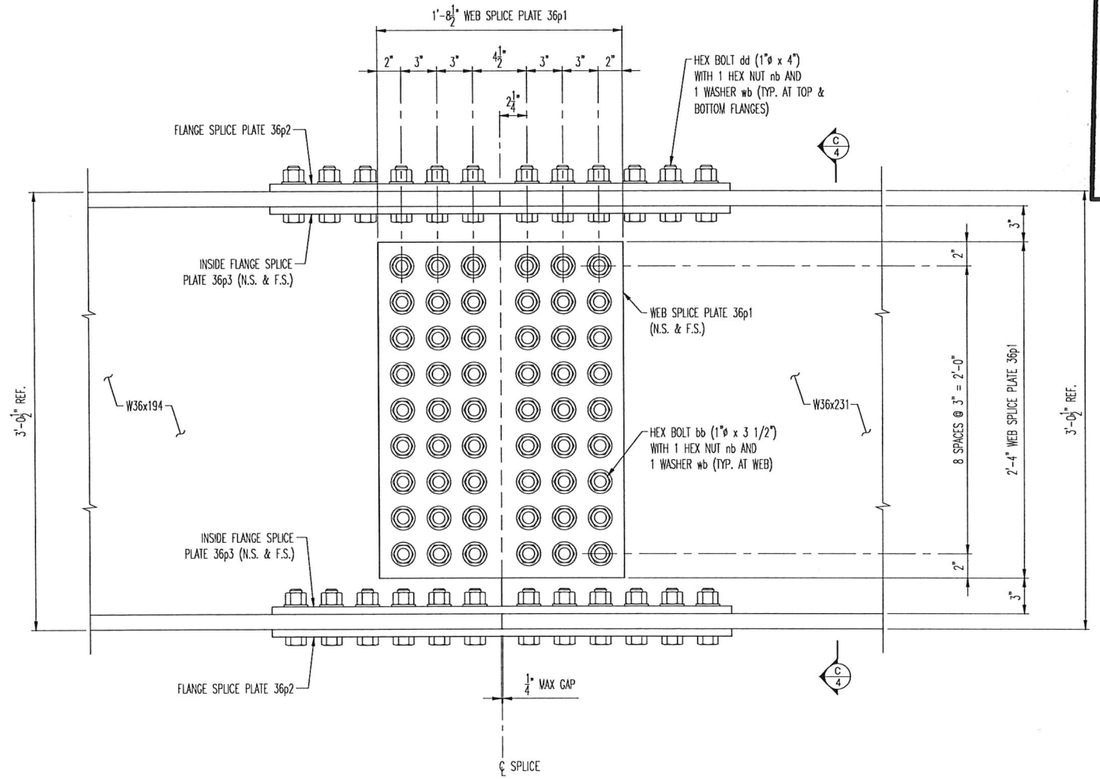
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
PARTIAL FRAMING PLAN (2 OF 2)		
REF NO.: 10	ITEM NO.: 513 LEVEL 2	
PID NO.: 15125		DWG. NO.: E2
SFN: 2531526	OSI PROJ. NO.: 18-25	3 OF 39



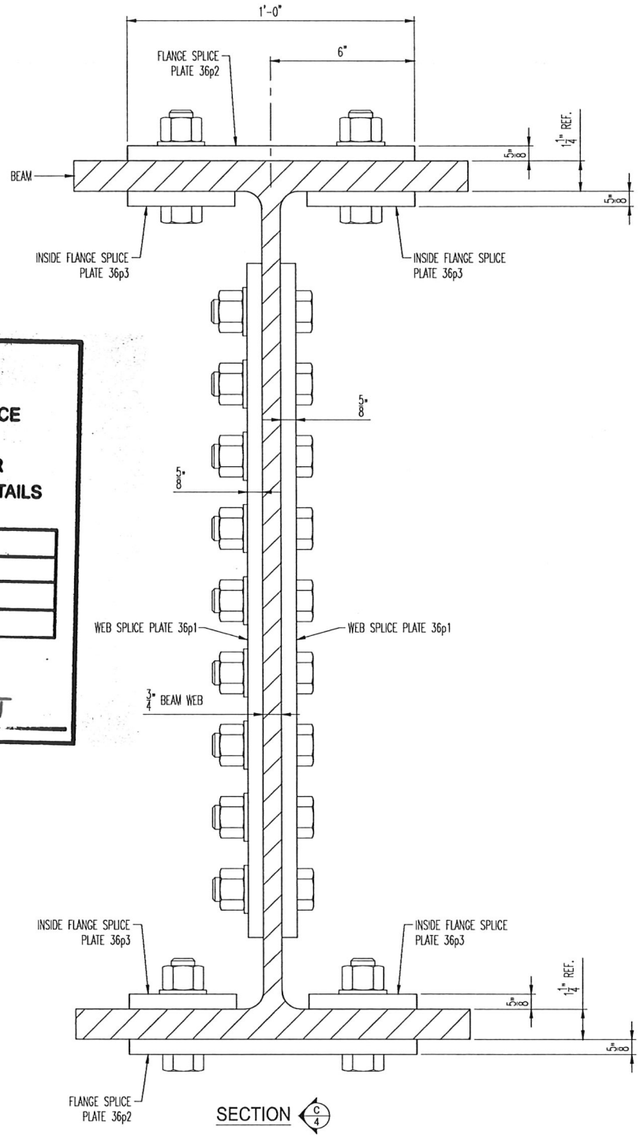
TOP VIEW

BOTTOM VIEW IS SIMILAR



ELEVATION VIEW (LOOKING NORTH)

FIELD SPLICE A SHOWN (FIELD SPLICE E IS OPPOSITE HAND)



SECTION C 4

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

APPROVAL

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED PROFESSIONAL ENGINEER

Dat 7.

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLAN

SEE SHEET 36 FOR SPLICE PLATE DETAILS

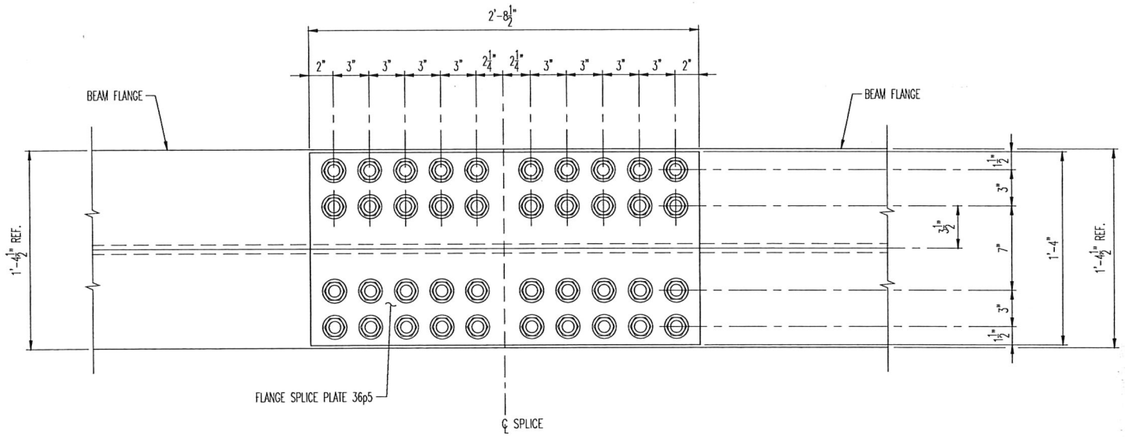
REV. No.	REVISION

SHOP INSPECTED BY:

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

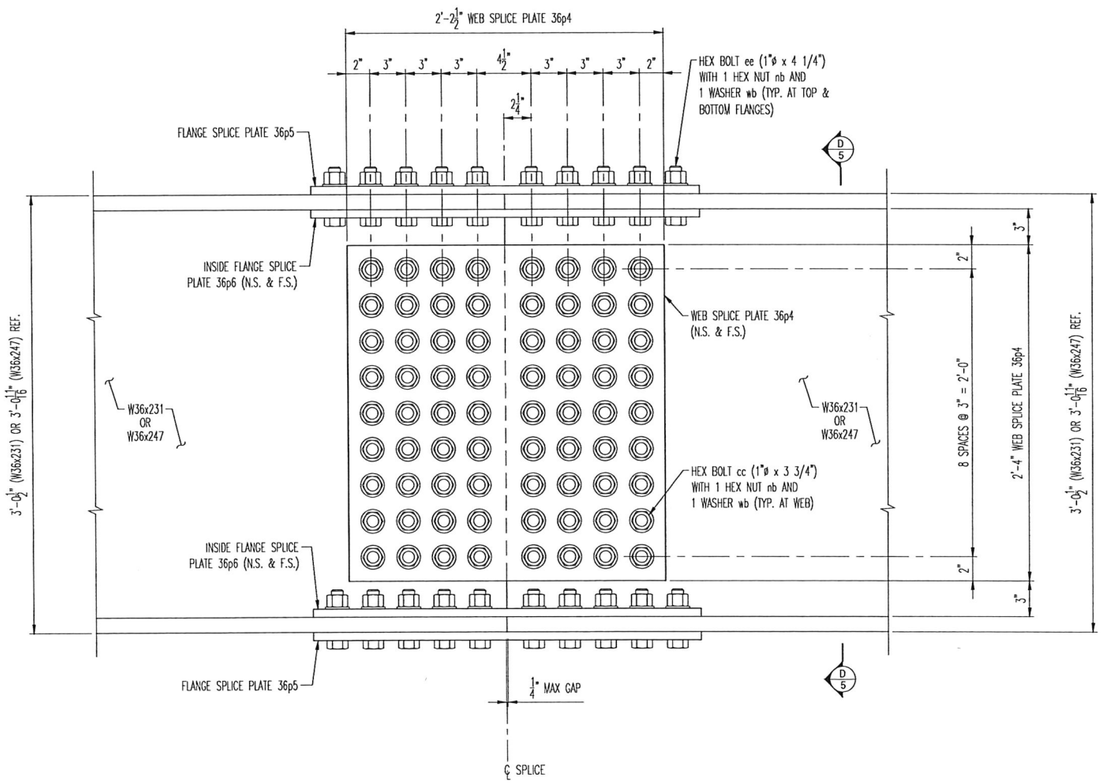
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAILS OF FIELD SPLICES A & E		
REF NO.: 10	ITEM NO.: 513 LEVEL 2	
PID NO.: 15125		DWG. NO.: E3
SFN: 2531526	OSI PROJ. NO.: 18-25	4 OF 39



TOP VIEW

BOTTOM VIEW IS SIMILAR



ELEVATION VIEW (LOOKING NORTH)

SHOWING FIELD SPLICES B, C & D

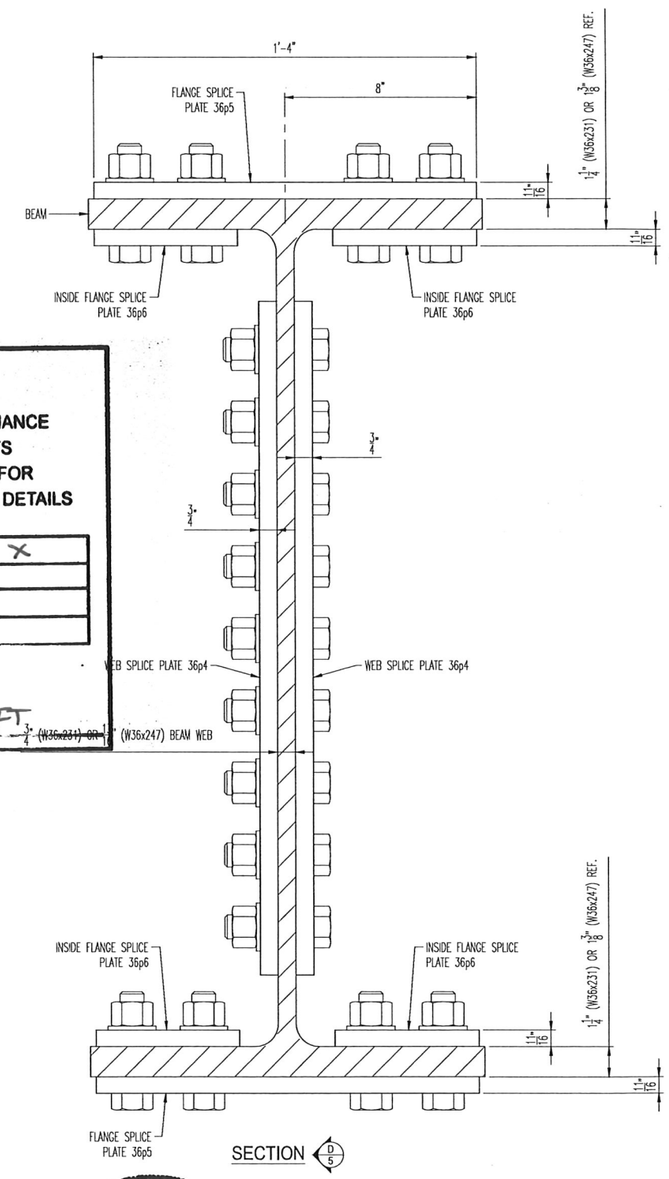
SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT



SECTION D/5

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

STATE OF OHIO APPROVAL DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

DFT

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLAN

SEE SHEET 36 FOR SPLICE PLATE DETAILS

REV. No.	REVISION

SHOP INSPECTED BY:

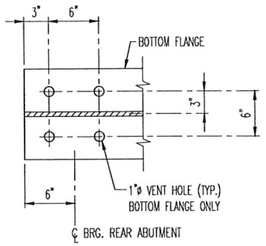
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY

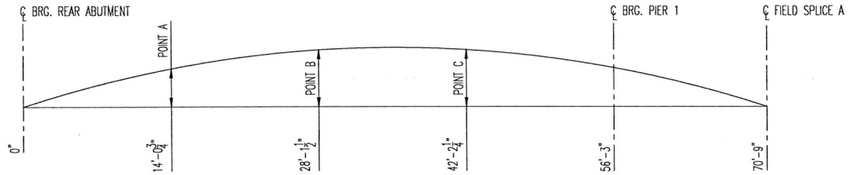
BRIDGE: FRA-CR27-0785

TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAILS OF FIELD SPLICES B, C & D		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: E4
SFN: 2531526	OSI PROJ. NO.: 18-25	5 OF 39



VENT HOLE DETAIL



CAMBER DIAGRAM FOR BEAM 6B1A

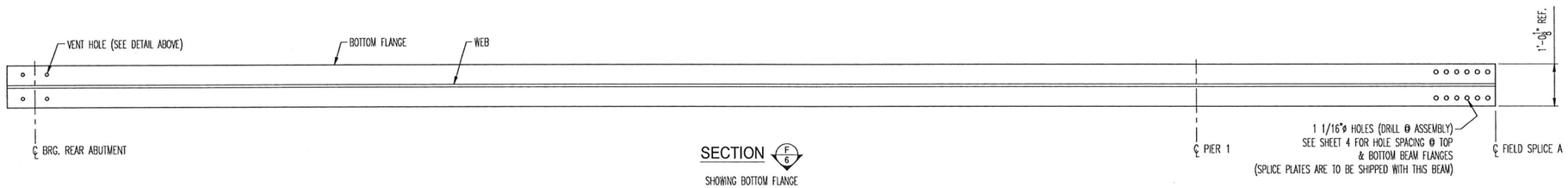
REAR ABUTMENT	POINT A	POINT B	POINT C	PIER 1	FIELD SPLICE A
0"	13/16"	1 3/16"	15/16"	7/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

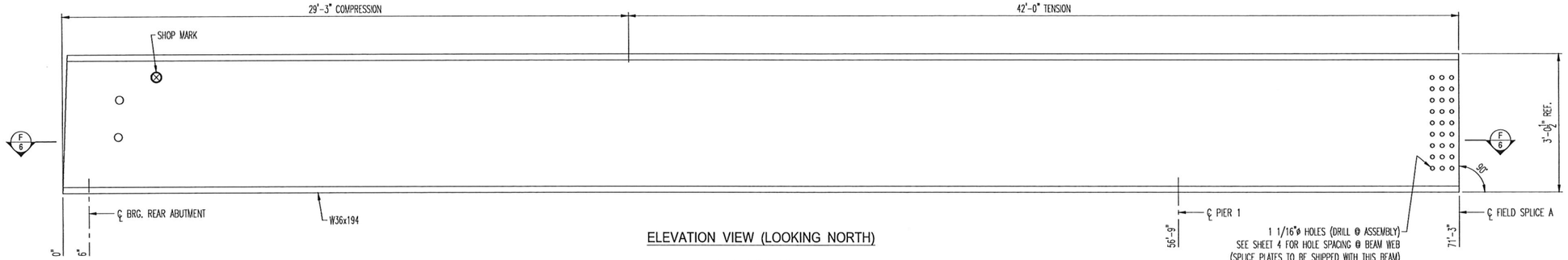
BEAM 6B1A

MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	6B1A	W36x194	71	3	A709-50-W-CVN	13,822.50	13,822.50		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
								TOTAL WT	14,312.52		



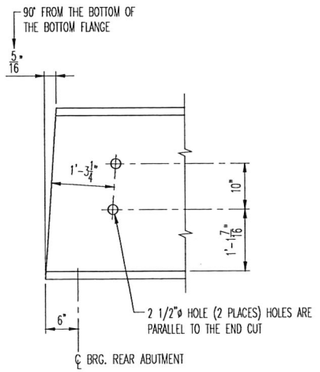
SECTION F6
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 6B1A

SPLICE PLATES FOR FIELD SPLICE "A" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 &
INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY



BEAM END ELEVATION @ THE REAR ABUTMENT

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES &
COMPLEX STEEL BLDG. STRUCTURES
WITH PAINT ENDORSEMENT

REV. No.	REVISION
A	REVISED TENSION ZONE DIMENSION 11/9/2018
SHOP INSPECTED BY:	

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Dd 7. 2

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

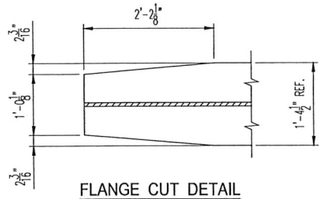
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

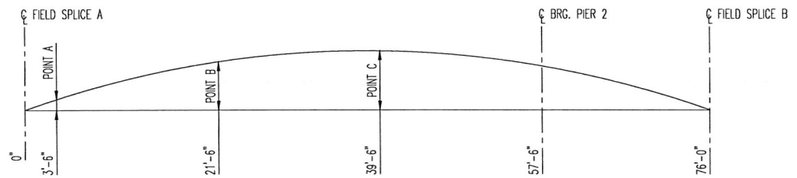
DETAIL OF BEAM 6B1A

REF NO.: 10	ITEM NO.: 513 LEVEL 2
PID NO.: 15125	DWG. NO.: D1
SFN: 2531526	OSI PROJ. NO.: 18-25 — 6 OF 39



FLANGE CUT DETAIL

BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME



CAMBER DIAGRAM FOR BEAM 7B1B

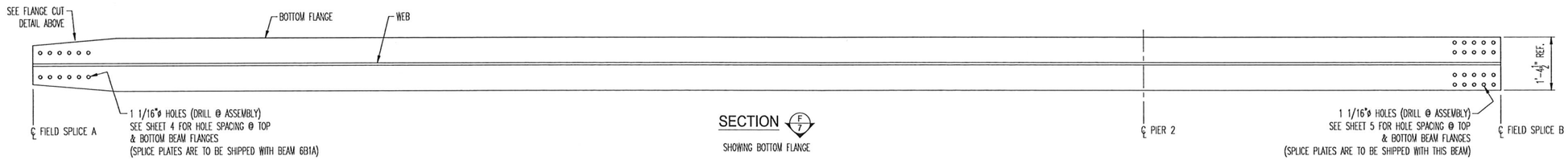
FIELD SPLICE A	POINT A	POINT B	POINT C	PIER 2	FIELD SPLICE B
0"	1/4"	15/16"	1"	7/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 7B1B

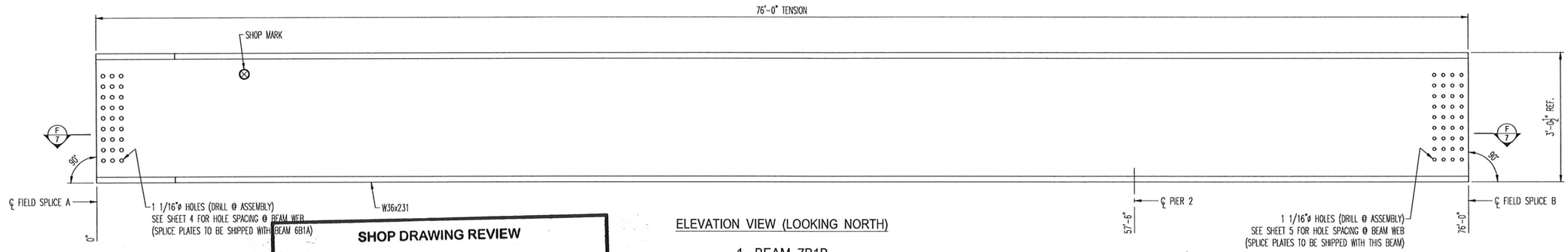
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	7B1B	W36x231	76	0	A709-50-W-CVN	17,556.00	17,556.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	18,226.58		



SECTION F/7

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 7B1B

SPLICE PLATES FOR FIELD SPLICE "B" ARE TO BE SHIPPED WITH THIS BEAM (WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 & INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO APPROVAL DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

Dat 2

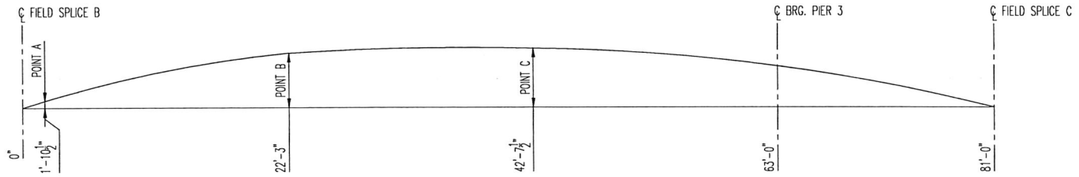
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY

BRIDGE: FRA-CR27-0785

TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 7B1B		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D2
SFN: 2531526	OSI PROJ. NO.: 18-25	7 OF 39



CAMBER DIAGRAM FOR BEAM 8B1C

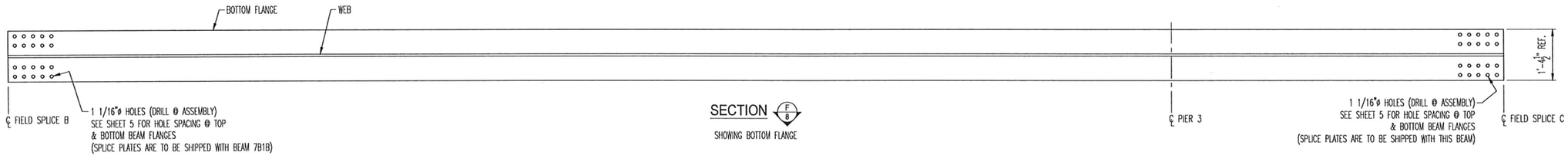
FIELD SPLICE B	POINT A	POINT B	POINT C	PIER 3	FIELD SPLICE C
0"	1/8"	1 3/16"	1 3/16"	7/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

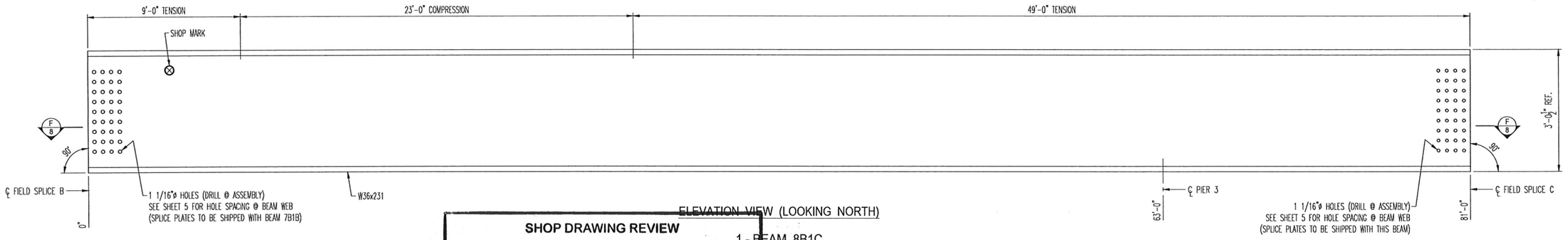
BEAM 8B1C

MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	8B1C	W36x231	81	0	A709-50-W-CVN	18,711.00	18,711.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	19,381.58		



SECTION F8
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 8B1C

SPLICE PLATES FOR FIELD SPLICE "C" ARE TO BE SHIPPED WITH THIS BEAM (WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 & INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO APPROVAL DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

Del 7. 2

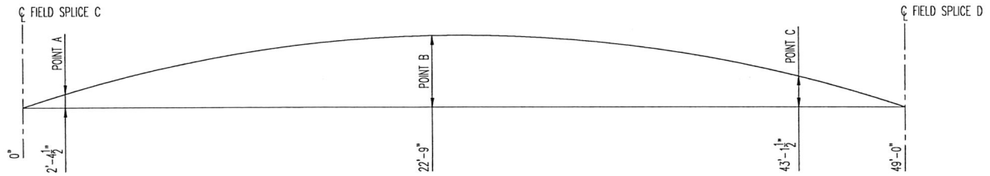
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

DETAIL OF BEAM 8B1C

REF NO.: 10	ITEM NO.: 513 LEVEL 2
PID NO.: 15125	DWG. NO.: D3
SFN: 2531526	OSI PROJ. NO.: 18-25 — 8 OF 39



CAMBER DIAGRAM FOR BEAM 9B1D

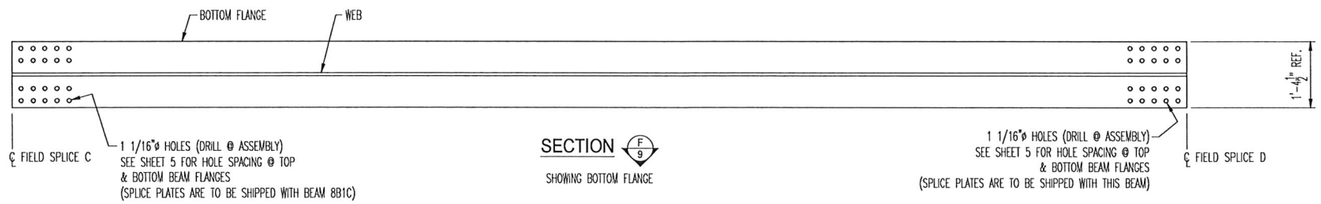
FIELD SPLICE C	POINT A	POINT B	POINT C	FIELD SPLICE D
0"	3/16"	3/4"	1/4"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 9B1D

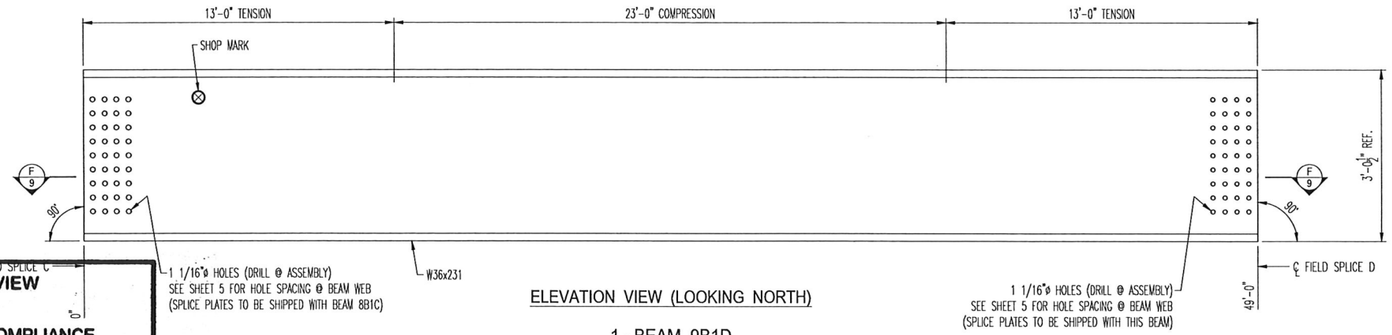
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	9B1D	W36x231	49	0	A709-50-W-CVN	11,319.00	11,319.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	11,989.58		



SECTION F 9

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 9B1D

SPLICE PLATES FOR FIELD SPLICE "D" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO APPROVAL DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

Dft

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

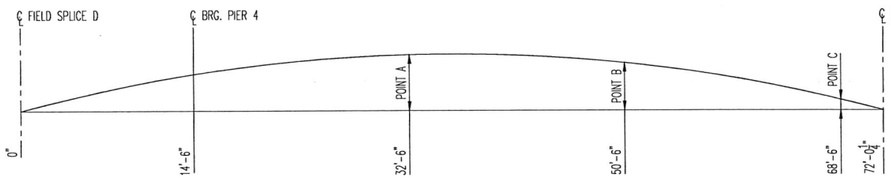
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY

BRIDGE: FRA-CR27-0785

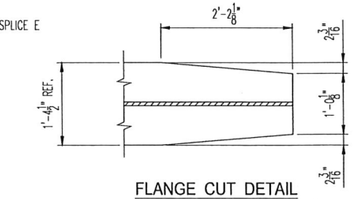
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 9B1D		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D4
SFN: 2531526	OSI PROJ. NO.: 18-25	9 OF 39



CAMBER DIAGRAM FOR BEAM 10B1E

FIELD SPLICE D	PIER 4	POINT A	POINT B	POINT C	FIELD SPLICE E
0"	5/16"	3/4"	13/16"	1/4"	0"



FLANGE CUT DETAIL

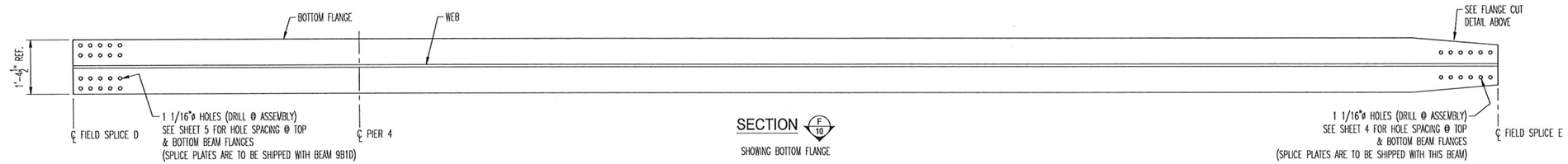
BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 10B1E

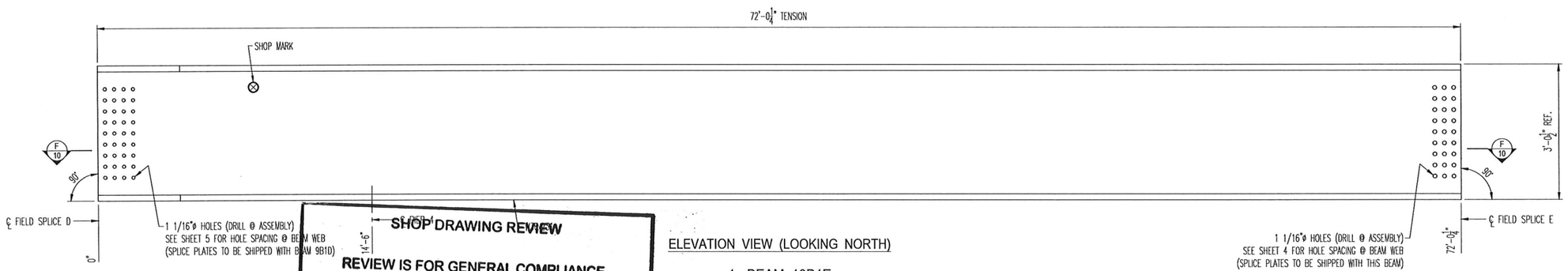
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	10B1E	W36x231	72	1/4	A709-50-W-CVN	16,636.81	16,636.81		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
								TOTAL WT	17,126.83		



SECTION F 10

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 10B1E

SPLICE PLATES FOR FIELD SPLICE "E" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 &
INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES &
COMPLEX STEEL BLDG. STRUCTURES
WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Dft

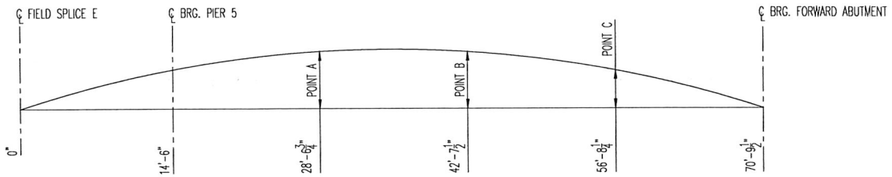
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

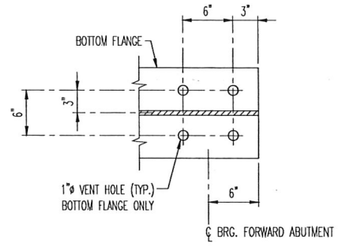
DETAIL OF BEAM 10B1E

REF NO.: 10	ITEM NO.: 513 LEVEL 2
PID NO.: 15125	DWG. NO.: D5
SFN: 2531526	OSI PROJ. NO.: 18-25 — 10 OF 39



CAMBER DIAGRAM FOR BEAM 11B1F

FIELD SPLICE E	PIER 5	POINT A	POINT B	POINT C	FORWARD ABUTMENT
0"	7/16"	13/16"	1 1/8"	7/8"	0"



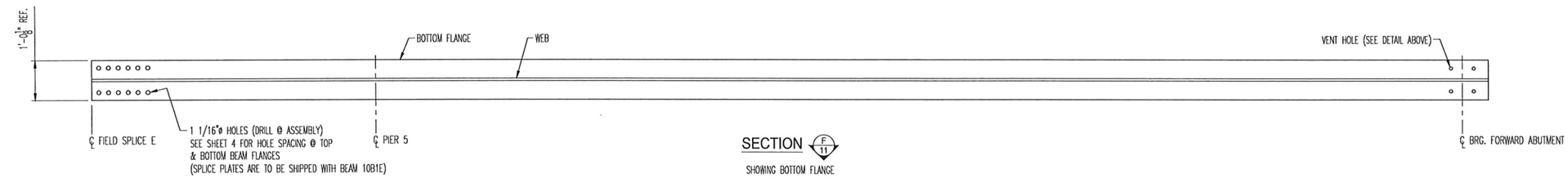
VENT HOLE DETAIL

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 11B1F

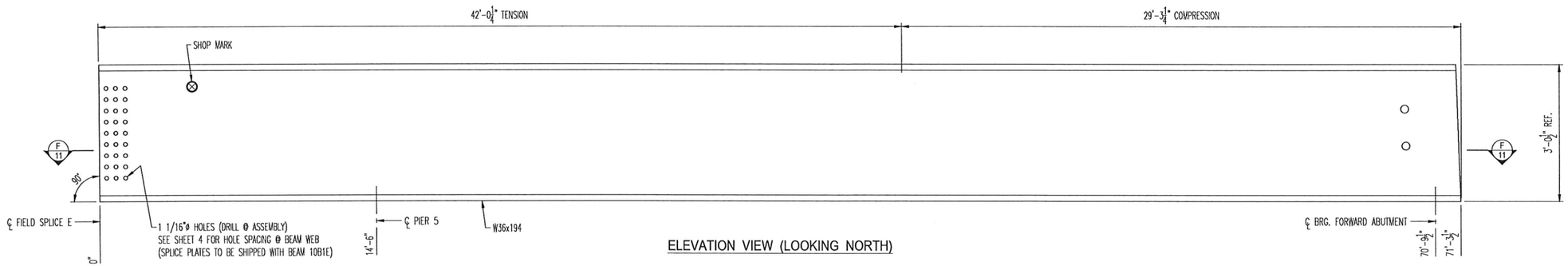
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	11B1F	W36x194	71	3 1/2	A709-50-W-CVN	13,830.58	13,830.58		
								TOTAL WT	13,830.58		



SECTION (F 11)

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 11B1F

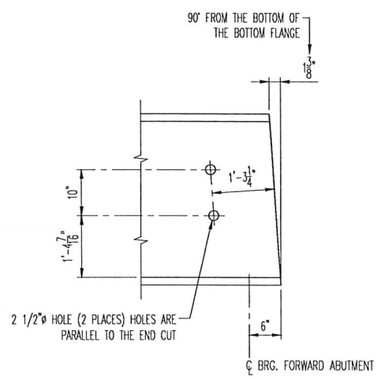
SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

11-9-18 By DFT



BEAM END ELEVATION @ THE FORWARD ABUTMENT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

APPROVAL

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Dft

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

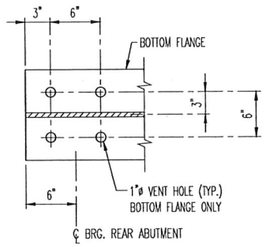
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

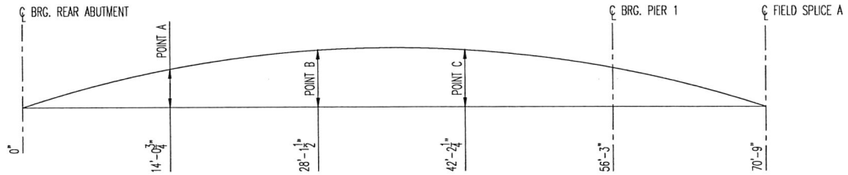
SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

DETAIL OF BEAM 11B1F

REF NO.: 10	ITEM NO.: 513 LEVEL 2
PID NO.: 15125	DWG. NO.: D6
SFN: 2531526	OSI PROJ. NO.: 18-25 — 11 OF 39



VENT HOLE DETAIL



CAMBER DIAGRAM FOR BEAM 12B2A

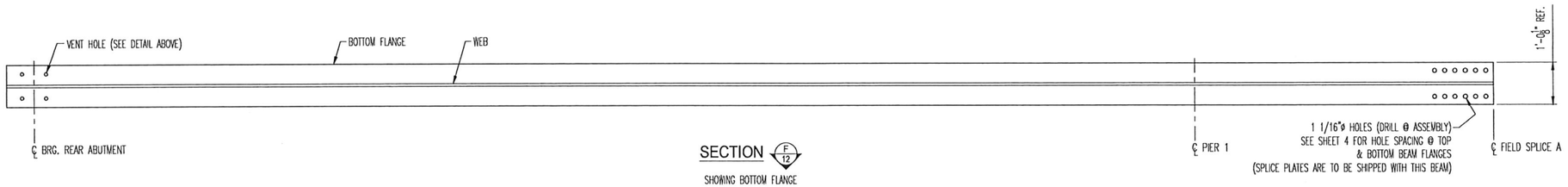
REAR ABUTMENT	POINT A	POINT B	POINT C	PIER 1	FIELD SPLICE A
0"	3/4"	1 1/8"	7/8"	1/2"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 12B2A

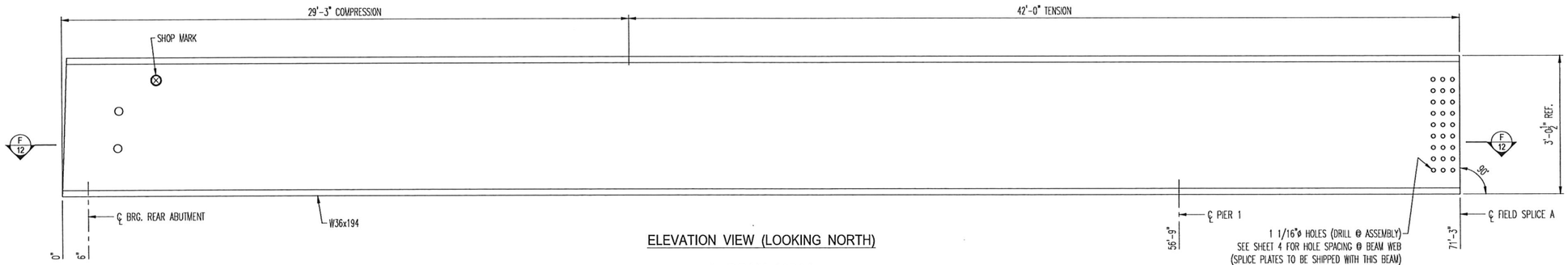
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	12B2A	W36x194	71	3	A709-50-W-CVN	13,822.50	13,822.50		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
								TOTAL WT	14,312.52		



SECTION F 12

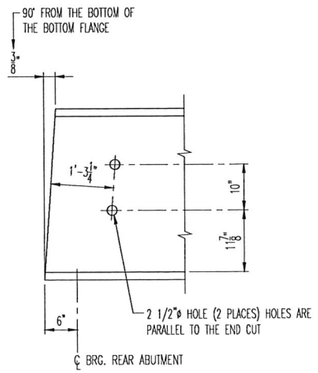
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 12B2A

SPLICE PLATES FOR FIELD SPLICE "A" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 &
INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY



BEAM END ELEVATION @ THE REAR ABUTMENT

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES &
COMPLEX STEEL BLDG. STRUCTURES
WITH PAINT ENDORSEMENT

REV. No.	REVISION
A	REVISED TENSION ZONE DIMENSION 11/9/2018
SHOP INSPECTED BY:	

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER
Dal 7. T

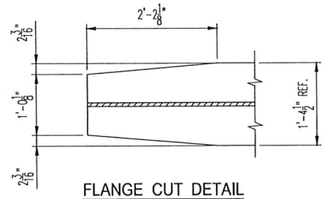
NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

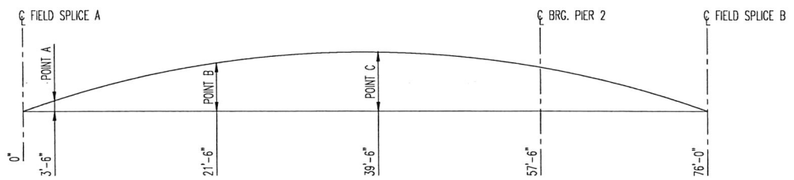
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18	DETAIL OF BEAM 12B2A	CHECK: TJK
REF NO.: 10	ITEM NO.: 513 LEVEL 2	
PID NO.: 15125		DWG. NO.: D7
SFN: 2531526	OSI PROJ. NO.: 18-25	12 OF 39



FLANGE CUT DETAIL

BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME



CAMBER DIAGRAM FOR BEAM 13B2B

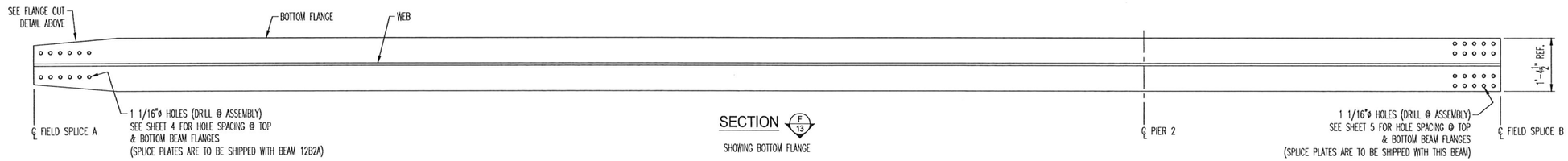
FIELD SPLICE A	POINT A	POINT B	POINT C	PIER 2	FIELD SPLICE B
0"	1/4"	15/16"	1"	7/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 13B2B

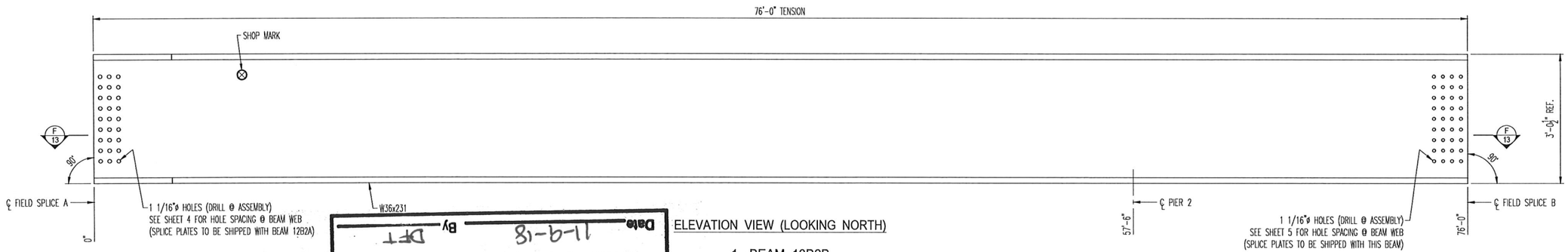
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	13B2B	W36x231	76	0	A709-50-W-CVN	17,556.00	17,556.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	18,226.58		



SECTION F 13

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 13B2B

SPLICE PLATES FOR FIELD SPLICE "B" ARE TO BE SHIPPED WITH THIS BEAM (WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 & INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS

NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

By DPT Date 11-9-18

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

APPROVAL

Date

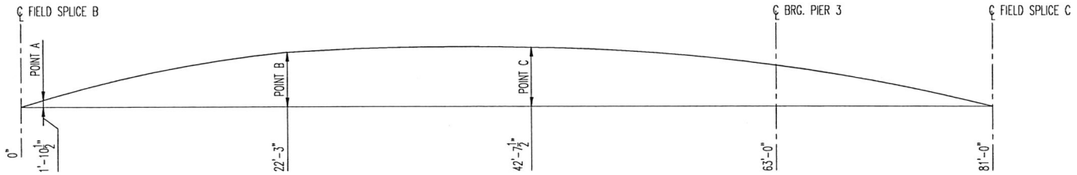
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

DETAIL OF BEAM 13B2B

REF NO.: 10	ITEM NO.: 513 LEVEL 2
PID NO.: 15125	DWG. NO.: D8
SFN: 2531526	OSI PROJ. NO.: 18-25 13 OF 39



CAMBER DIAGRAM FOR BEAM 14B2C

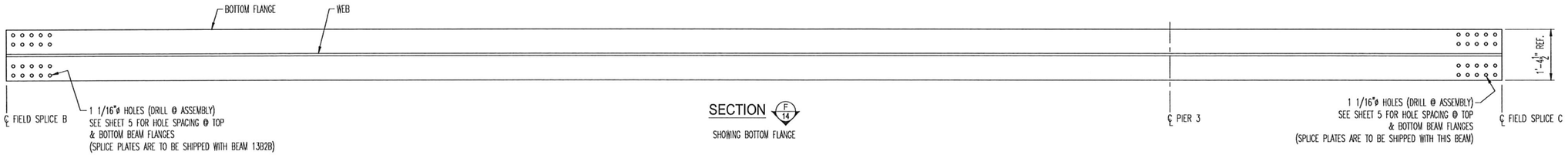
FIELD SPLICE B	POINT A	POINT B	POINT C	PIER 3	FIELD SPLICE C
0"	3/16"	1 3/16"	1 1/8"	1/2"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

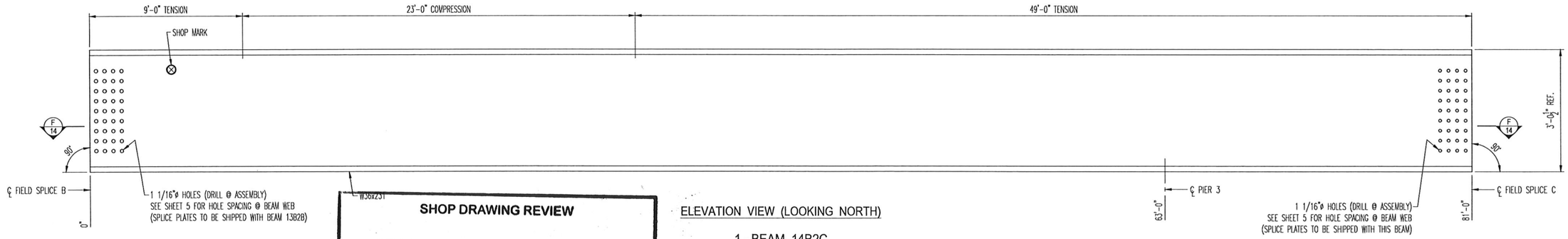
BEAM 14B2C

MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	14B2C	W36x231	81	0	A709-50-W-CVN	18,711.00	18,711.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	19,381.58		



SECTION F 14
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 14B2C

SPLICE PLATES FOR FIELD SPLICE "C" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

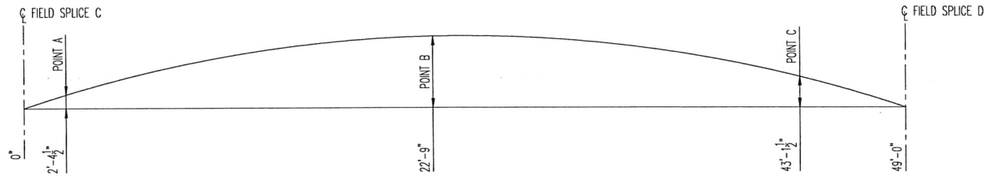
SHOP INSPECTED BY:

APPROVAL
STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER
Dal F. Traini

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 14B2C		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D9
SFN: 2531526	OSI PROJ. NO.: 18-25	14 OF 39



CAMBER DIAGRAM FOR BEAM 15B2D

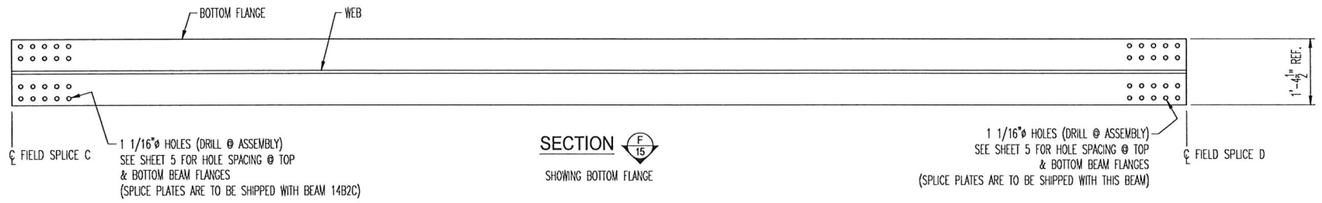
FIELD SPLICE C	POINT A	POINT B	POINT C	FIELD SPLICE D
0"	1/8"	3/4"	5/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 15B2D

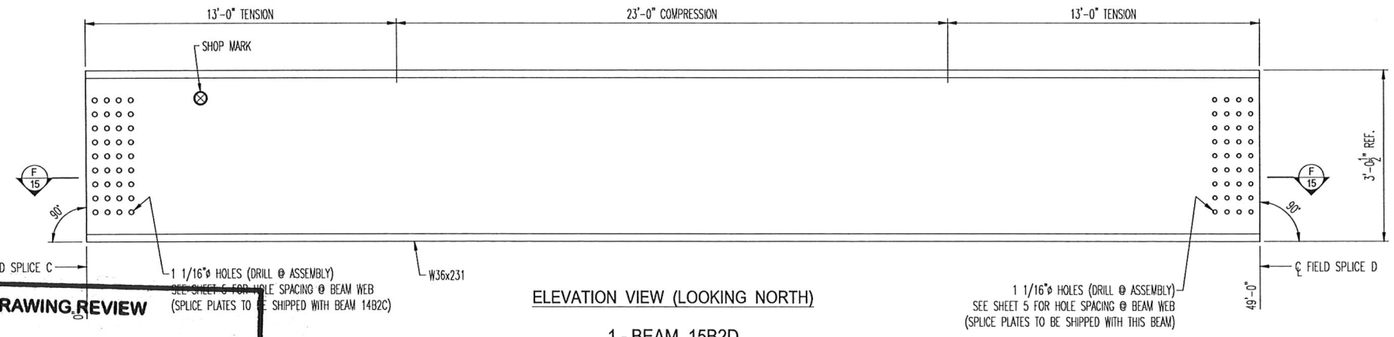
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	15B2D	W36x231	49	0	A709-50-W-CVN	11,319.00	11,319.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	11,989.58		



SECTION F 15

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 15B2D

SPLICE PLATES FOR FIELD SPLICE "D" ARE TO BE SHIPPED WITH THIS BEAM (WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 & INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO APPROVAL DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

Dal 7. 2.

NOTES:

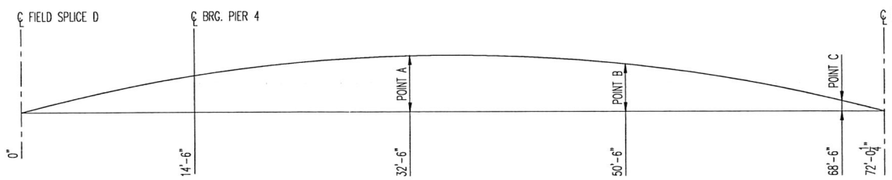
SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

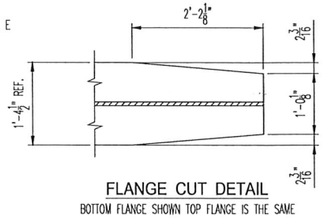
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 15B2D		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D10
SFN: 2531526	OSI PROJ. NO.: 18-25	15 OF 39



CAMBER DIAGRAM FOR BEAM 16B2E

FIELD SPLICE D	PIER 4	POINT A	POINT B	POINT C	FIELD SPLICE E
0"	5/16"	13/16"	13/16"	3/16"	0"



FLANGE CUT DETAIL

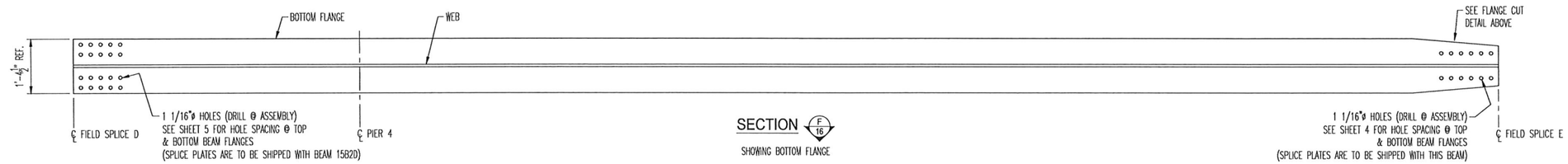
BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 16B2E

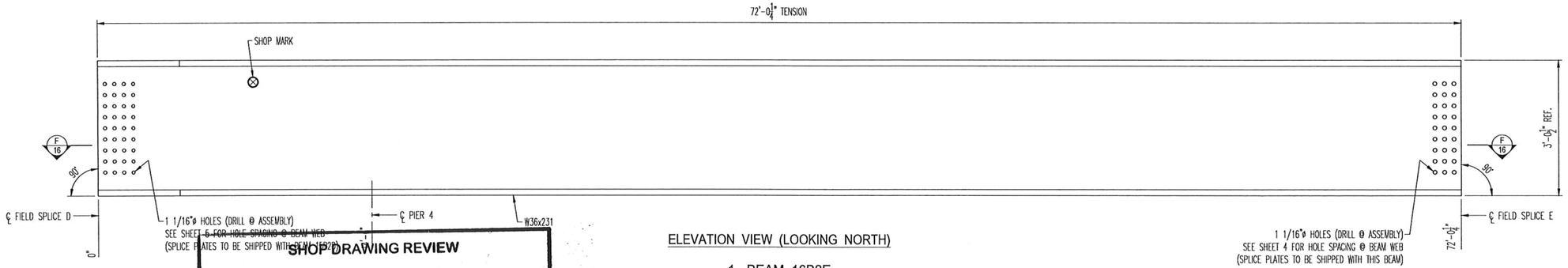
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	16B2E	W36x231	72	1/4	A709-50-W-CVN	16,636.81	16,636.81		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
								TOTAL WT	17,126.83		



SECTION F 16

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 16B2E

SPLICE PLATES FOR FIELD SPLICE "E" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 &
INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES &
COMPLEX STEEL BLDG. STRUCTURES
WITH PAINT ENDORSEMENT

REV. No.:	REVISION

SHOP INSPECTED BY:

STATE OF OHIO
APPROVED
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

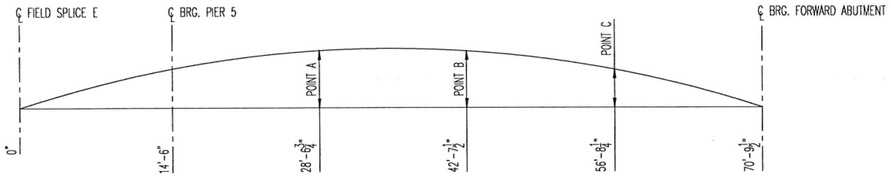
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

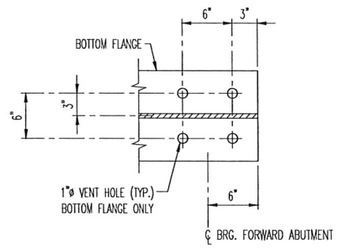
DETAIL OF BEAM 16B2E

REF NO.: 10	ITEM NO.: 513 LEVEL 2
PID NO.: 15125	DWG. NO.: D11
SFN: 2531526	OSI PROJ. NO.: 18-25 — 16 OF 39



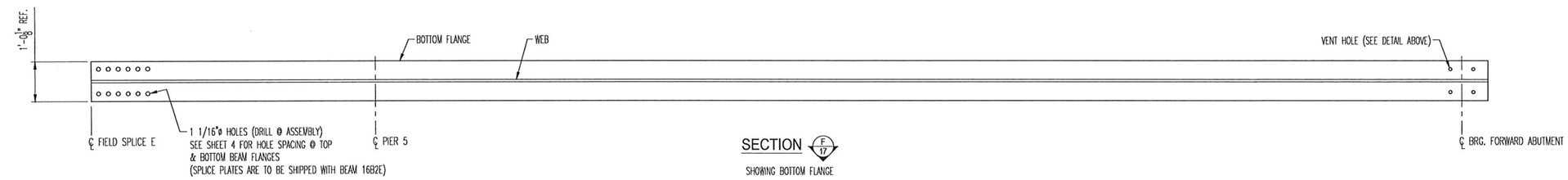
CAMBER DIAGRAM FOR BEAM 17B2F

FIELD SPLICE E	PIER 5	POINT A	POINT B	POINT C	FORWARD ABUTMENT
0"	7/16"	13/16"	1 1/16"	7/8"	0"



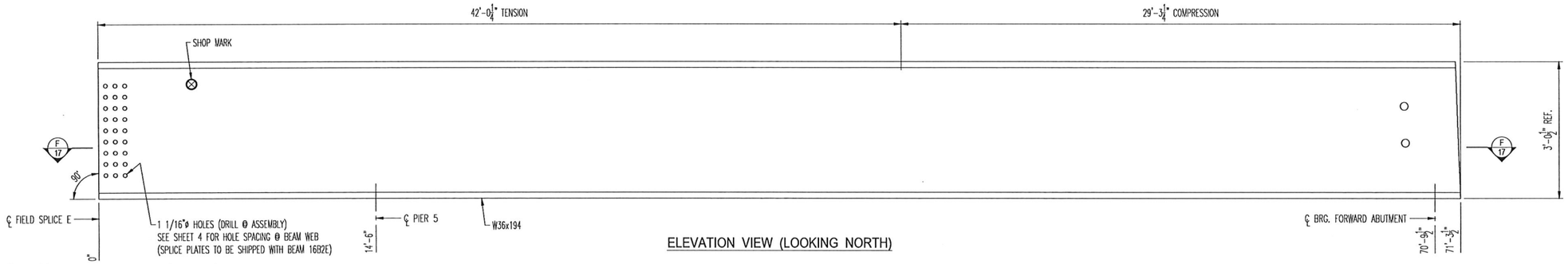
VENT HOLE DETAIL

TRABUE ROAD OVER NSRR		PID NO.: 15125		OSI PROJ. NO.: 18-25		REF NO.: 10		ITEM NO.: 513 LEVEL 2
BEAM 17B2F								
MATERIALS ONLY:								
LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	17B2F	W36x194	71	3 1/2	A709-50-W-CVN	13,830.58	13,830.58		
							TOTAL WT	13,830.58			



SECTION F/17

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 17B2F

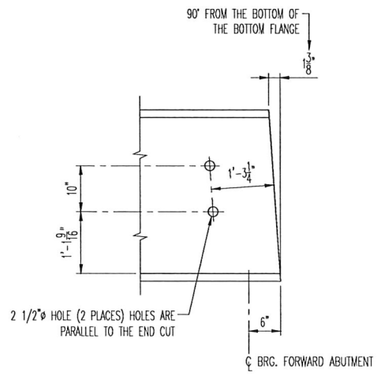
SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT



BEAM END ELEVATION @ THE FORWARD ABUTMENT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Date

NOTES:

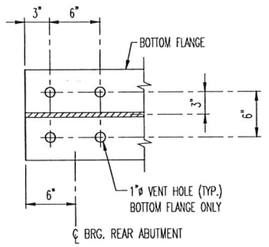
SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

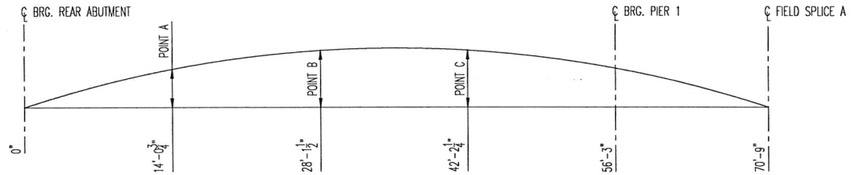
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 17B2F		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D12
SFN: 2531526	OSI PROJ. NO.: 18-25	17 OF 39



VENT HOLE DETAIL



CAMBER DIAGRAM FOR BEAM 18B3A

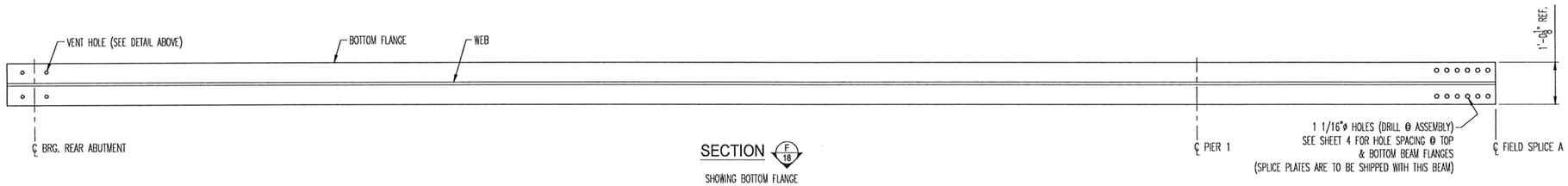
REAR ABUTMENT	POINT A	POINT B	POINT C	PIER 1	FIELD SPLICE A
0"	3/4"	1 1/8"	7/8"	1/2"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 18B3A

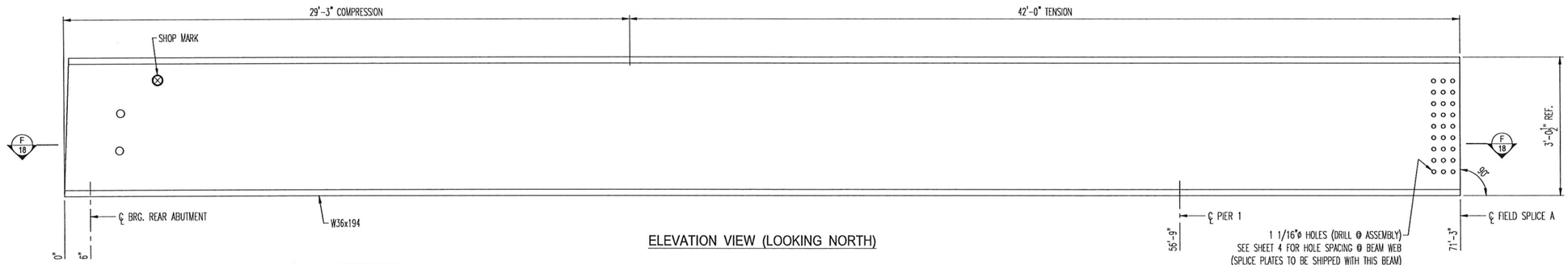
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	18B3A	W36x194	71	3	A709-50-W-CVN	13,822.50	13,822.50		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
								TOTAL WT	14,312.52		



SECTION F 18

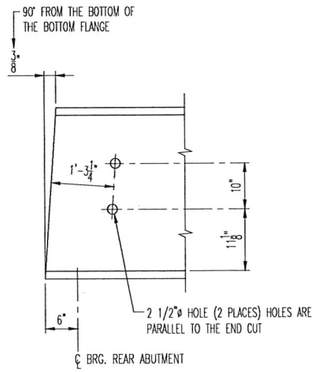
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 18B3A

SPLICE PLATES FOR FIELD SPLICE "A" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 &
INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY



BEAM END ELEVATION @ THE REAR ABUTMENT

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES &
COMPLEX STEEL BLDG. STRUCTURES
WITH PAINT ENDORSEMENT

REV. No.	REVISION
A	REVISED TENSION ZONE DIMENSION 11/9/2018
SHOP INSPECTED BY:	

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

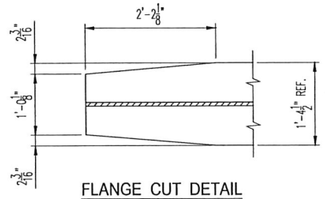
NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

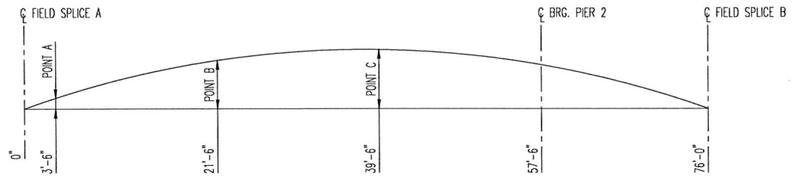
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 18B3A		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D13
SFN: 2531526	OSI PROJ. NO.: 18-25	18 OF 39



FLANGE CUT DETAIL

BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME



CAMBER DIAGRAM FOR BEAM 19B3B

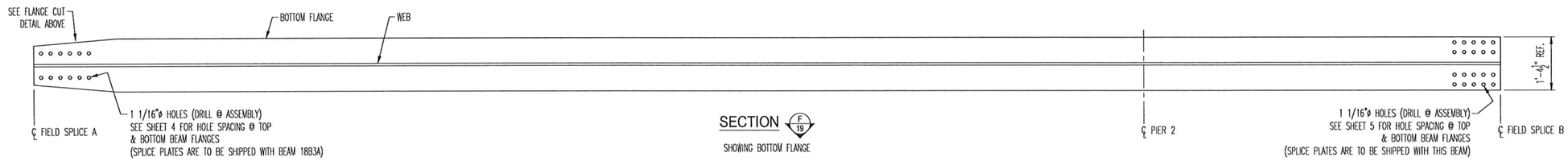
FIELD SPLICE A	POINT A	POINT B	POINT C	PIER 2	FIELD SPLICE B
0"	1/4"	15/16"	1"	7/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 19B3B

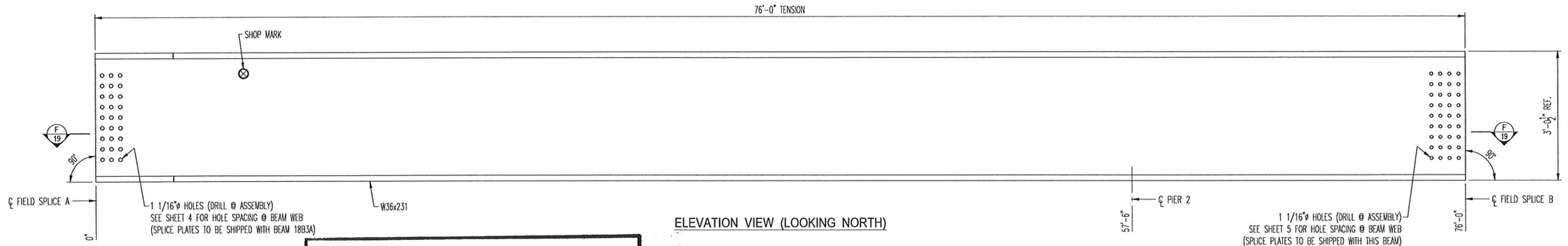
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	19B3B	W36x231	76	0	A709-50-W-CVN	17,556.00	17,556.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	18,226.58		



SECTION F 19

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 19B3B

SPLICE PLATES FOR FIELD SPLICE "B" ARE TO BE SHIPPED WITH THIS BEAM (WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 & INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 **By** DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

APPROVAL

STATE OF OHIO DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

Dat

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY

BRIDGE: FRA-CR27-0785

TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

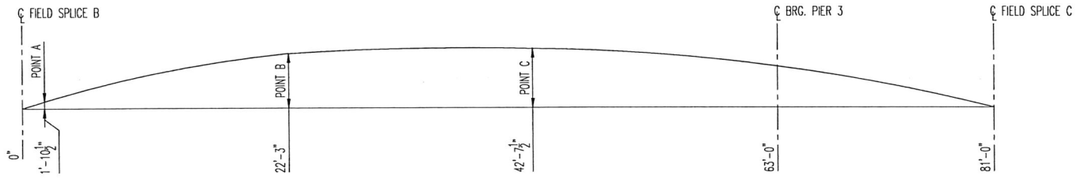
SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

DETAIL OF BEAM 19B3B

REF NO.: 10 ITEM NO.: 513 LEVEL 2

PID NO.: 15125 DWG. NO.: D14

SFN: 2531526 OSI PROJ. NO.: 18-25 19 OF 39



CAMBER DIAGRAM FOR BEAM 20B3C

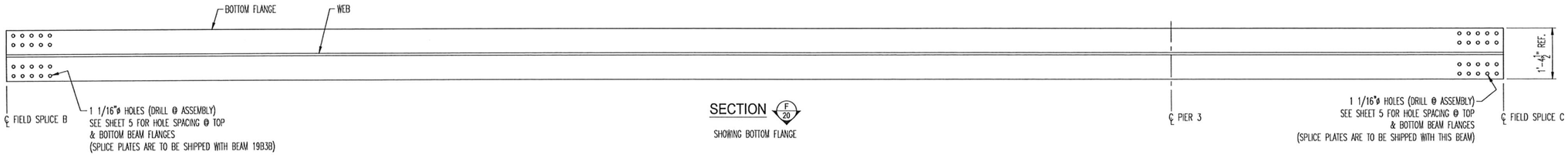
FIELD SPLICE B	POINT A	POINT B	POINT C	PIER 3	FIELD SPLICE C
0"	3/16"	1 3/16"	1 3/16"	9/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

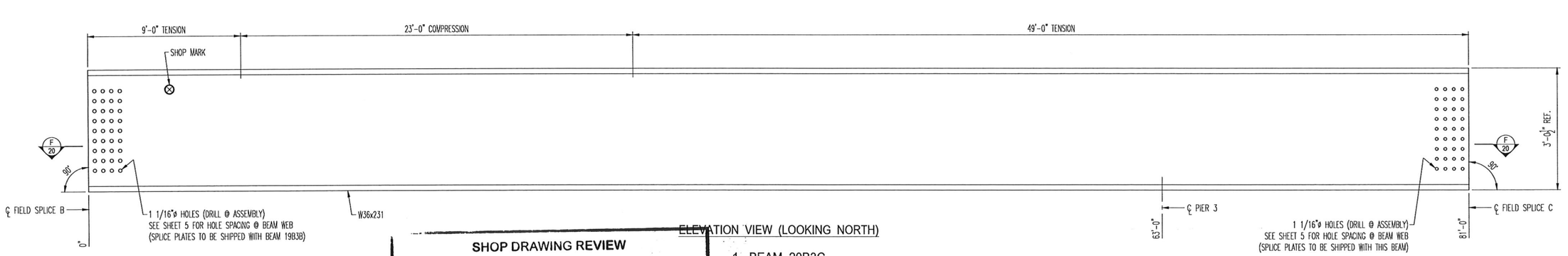
BEAM 20B3C

MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	20B3C	W36x231	81	0	A709-50-W-CVN	18,711.00	18,711.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	19,381.58		



SECTION F 20
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 20B3C

SPLICE PLATES FOR FIELD SPLICE "C" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES &
COMPLEX STEEL BLDG. STRUCTURES
WITH PAINT ENDORSEMENT

REV. No.	REVISION

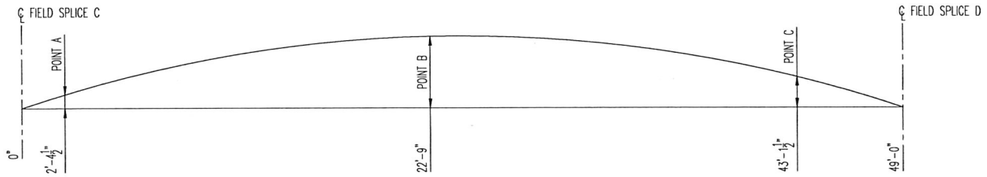
SHOP INSPECTED BY:

APPROVAL
STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 20B3C		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D15
SFN: 2531526	OSI PROJ. NO.: 18-25	20 OF 39



CAMBER DIAGRAM FOR BEAM 21B3D

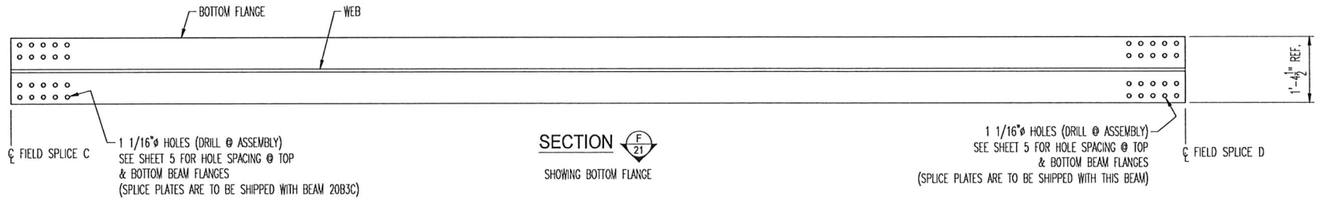
FIELD SPLICE C	POINT A	POINT B	POINT C	FIELD SPLICE D
0"	3/16"	3/4"	5/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 21B3D

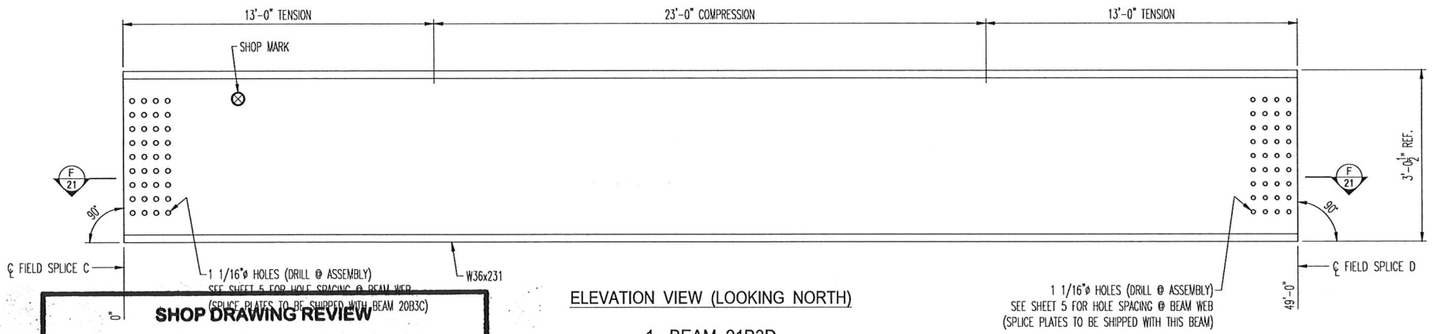
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	21B3D	W36x231	49	0	A709-50-W-CVN	11,319.00	11,319.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
								TOTAL WT	11,989.58		



SECTION F 21

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 21B3D

SPLICE PLATES FOR FIELD SPLICE "D" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Dal 2-2

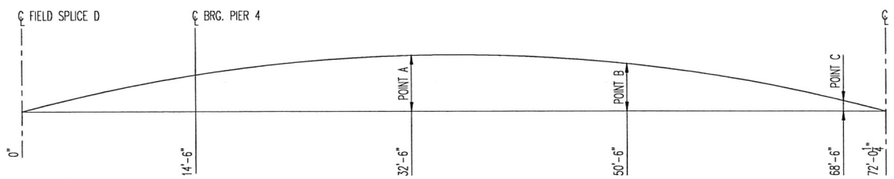
NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

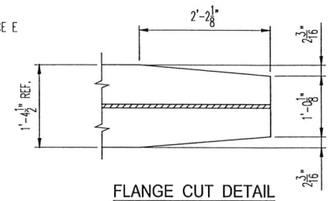
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 21B3D		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D16
SFN: 2531526	OSI PROJ. NO.: 18-25	21 OF 39



CAMBER DIAGRAM FOR BEAM 22B3E

FIELD SPLICE D	PIER 4	POINT A	POINT B	POINT C	FIELD SPLICE E
0"	5/16"	13/16"	13/16"	3/16"	0"



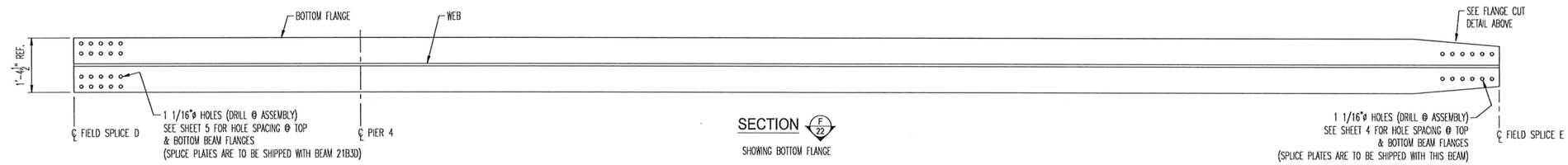
FLANGE CUT DETAIL
BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

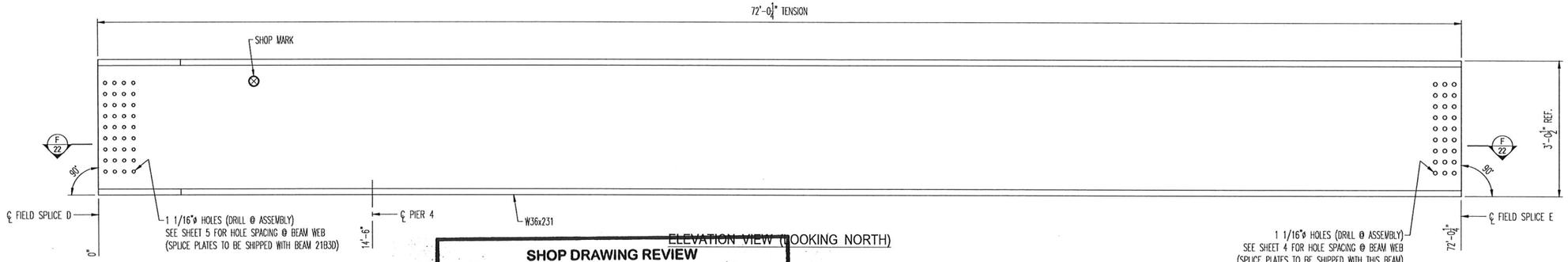
BEAM 22B3E

MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	22B3E	W36x231	72	1/4	A709-50-W-CVN	16,636.81	16,636.81		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
							TOTAL WT		17,126.83		



SECTION F 22
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)
1 - BEAM 22B3E

SPLICE PLATES FOR FIELD SPLICE "E" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 &
INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

APPROVAL
STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED PROFESSIONAL ENGINEER

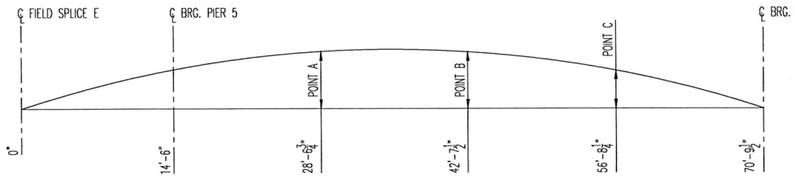
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

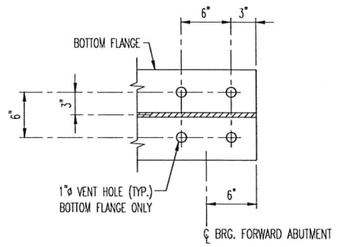
DETAIL OF BEAM 22B3E

REF NO.: 10	ITEM NO.: 513 LEVEL 2
PID NO.: 15125	DWG. NO.: D17
SFN: 2531526	OSI PROJ. NO.: 18-25 — 22 OF 39



CAMBER DIAGRAM FOR BEAM 23B3F

FIELD SPLICE E	PIER 5	POINT A	POINT B	POINT C	FORWARD ABUTMENT
0"	7/16"	13/16"	1 1/16"	7/8"	0"



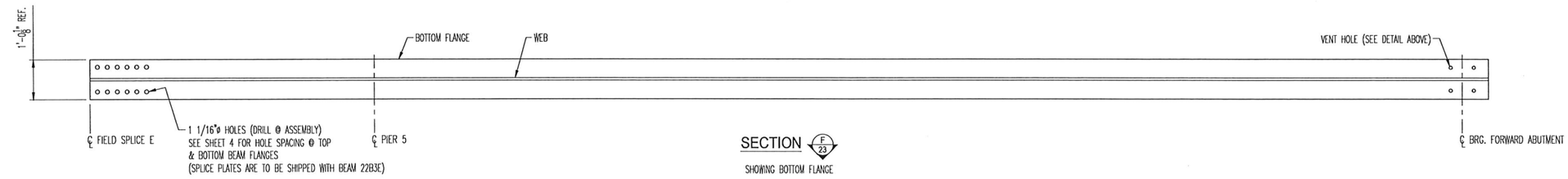
VENT HOLE DETAIL

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 23B3F

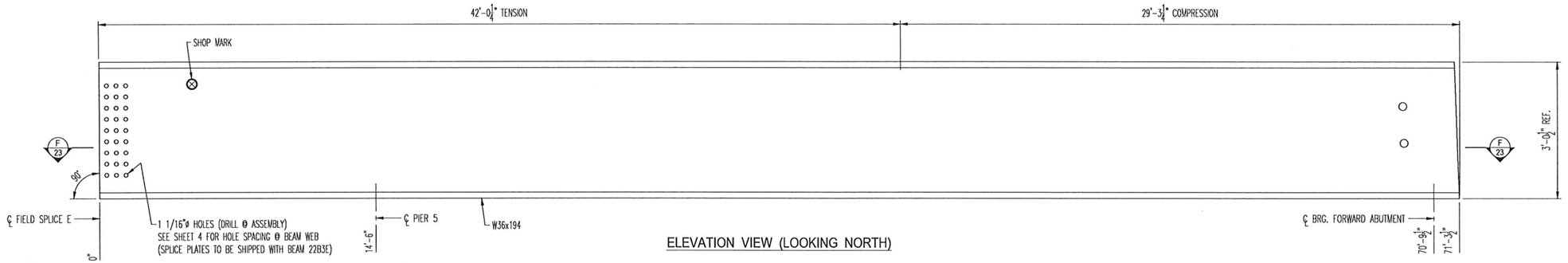
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	23B3F	W36x194	71	3 1/2	A709-50-W-CVN	13,830.58	13,830.58		
								TOTAL WT	13,830.58		



SECTION F 23

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 23B3F

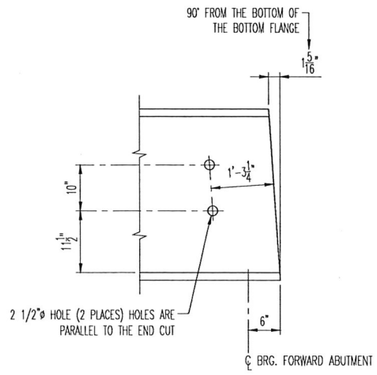
SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT



BEAM END ELEVATION @ THE FORWARD ABUTMENT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO APPROVAL DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

David F. Traini

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

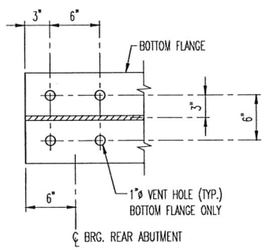
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

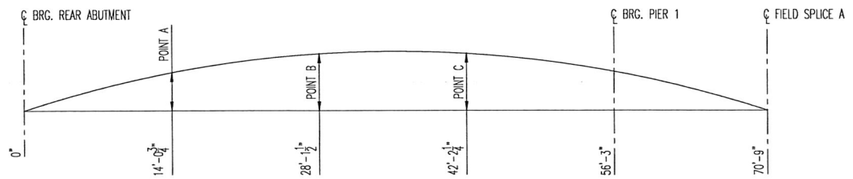
SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

DETAIL OF BEAM 23B3F

REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D18
SFN: 2531526	OSI PROJ. NO.: 18-25	23 OF 39



VENT HOLE DETAIL



CAMBER DIAGRAM FOR BEAM 24B4A

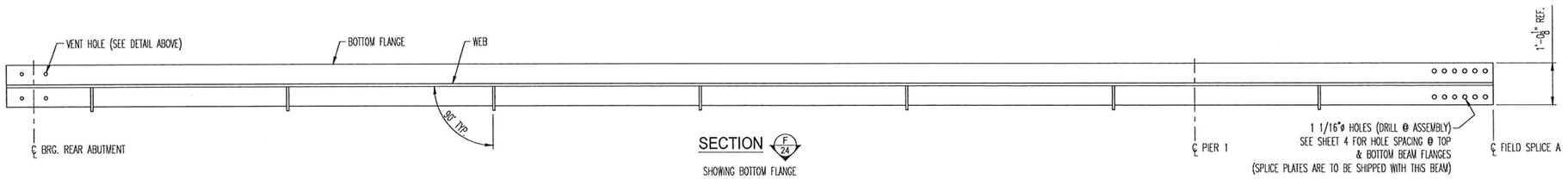
REAR ABUTMENT	POINT A	POINT B	POINT C	PIER 1	FIELD SPLICE A
0"	13/16"	1 3/16"	7/8"	1/2"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

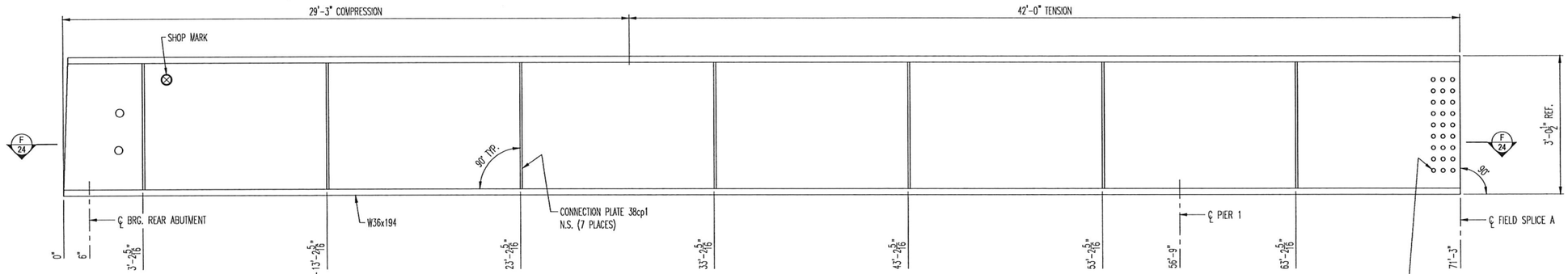
BEAM 24B4A

MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	24B4A	W36x194	71	3	A709-50-W-CVN	13,822.50	13,822.50		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
5		7	38cp1	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
								TOTAL WT	14,487.66		

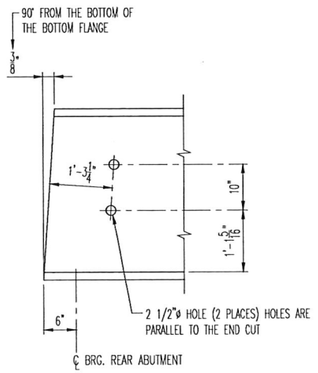


SECTION F 24
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)
1 - BEAM 24B4A

SPLICE PLATES FOR FIELD SPLICE "A" ARE TO BE SHIPPED WITH THIS BEAM (WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 & INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY



BEAM END ELEVATION @ THE REAR ABUTMENT

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION
A	REVISED TENSION ZONE DIMENSION 11/9/2018
SHOP INSPECTED BY:	

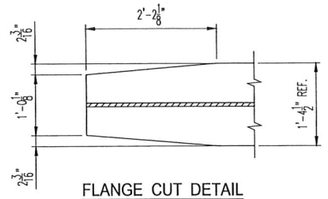
STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER
APPROVED
Dave T.

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

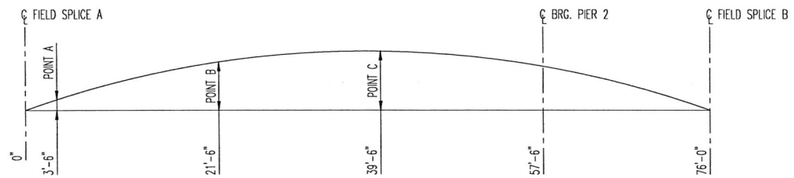
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18	DETAIL OF BEAM 24B4A	CHECK: TJK
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D19
SFN: 2531526	OSI PROJ. NO.: 18-25	24 OF 39



FLANGE CUT DETAIL

BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME



CAMBER DIAGRAM FOR BEAM 25B4B

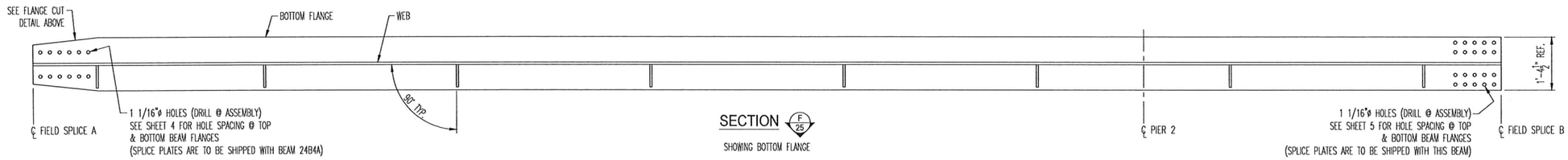
FIELD SPLICE A	POINT A	POINT B	POINT C	PIER 2	FIELD SPLICE B
0"	1/4"	15/16"	15/16"	3/8"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 25B4B

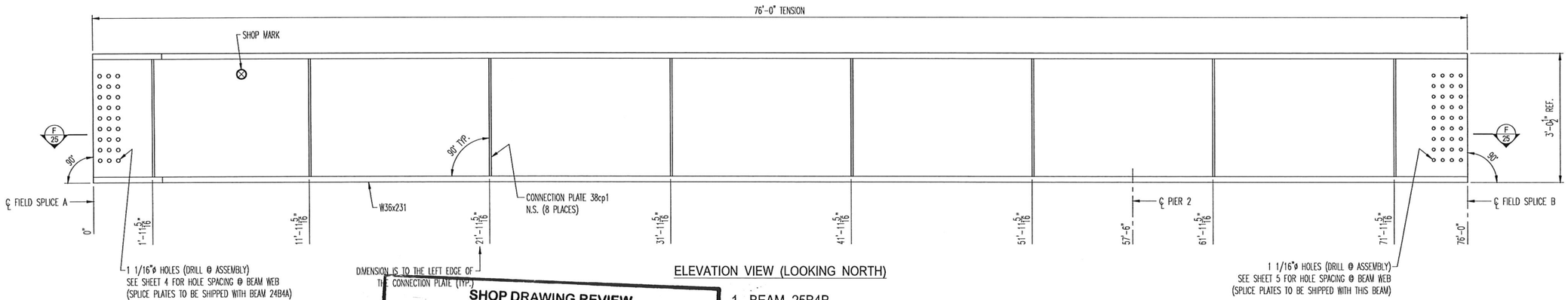
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	25B4B	W36x231	76	0	A709-50-W-CVN	17,556.00	17,556.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
5		8	38cp1	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	200.16		CONNECTION PLATE
								TOTAL WT	18,426.74		



SECTION F 25

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 25B4B

SPLICE PLATES FOR FIELD SPLICE "B" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES &
COMPLEX STEEL BLDG. STRUCTURES
WITH PAINT ENDORSEMENT

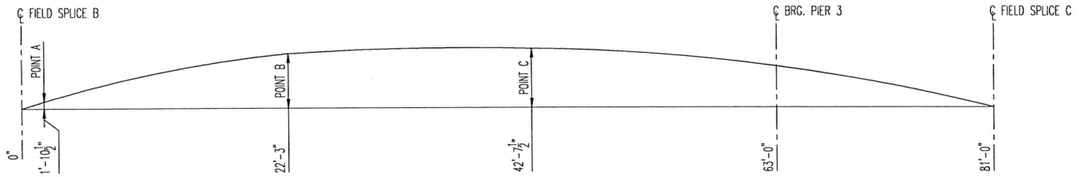
REV. No.	REVISION
SHOP INSPECTED BY:	

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 25B4B		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D20
SFN: 2531526	OSI PROJ. NO.: 18-25	25 OF 39



CAMBER DIAGRAM FOR BEAM 26B4C

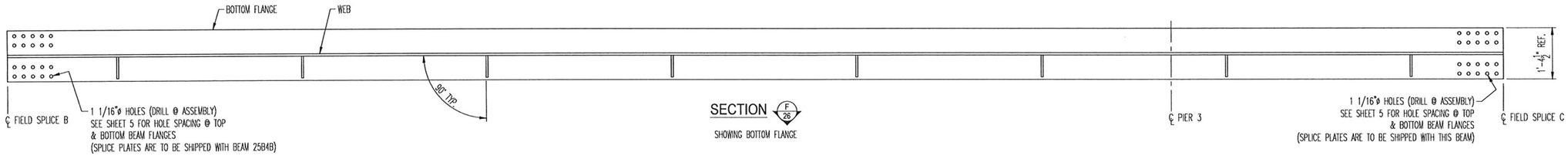
FIELD SPLICE B	POINT A	POINT B	POINT C	PIER 3	FIELD SPLICE C
0"	1/8"	1 1/8"	1 3/16"	7/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 26B4C

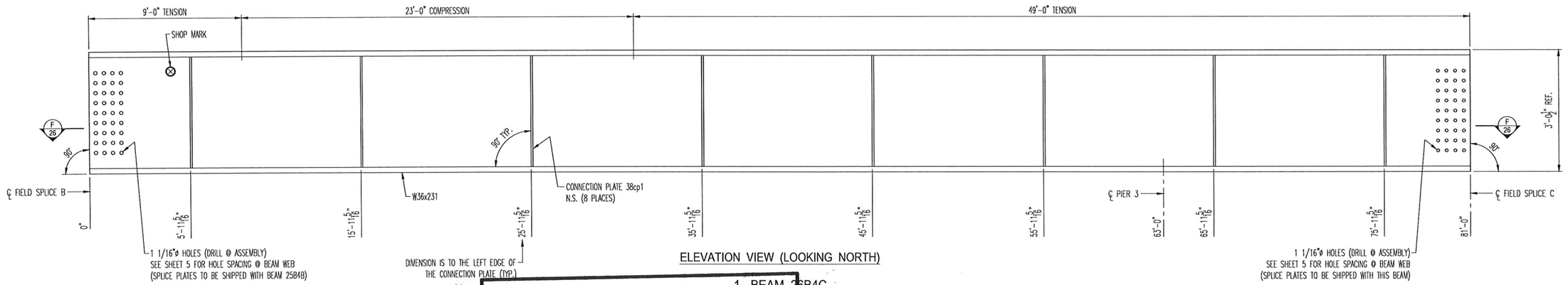
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	26B4C	W36x231	81	0	A709-50-W-CVN	18,711.00	18,711.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
5		8	38cp1	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	200.16		CONNECTION PLATE
								TOTAL WT	19,581.74		



SECTION F 26

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

SPLICE PLATES FOR FIELD SPLICE "C" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW 1 - BEAM 26B4C

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

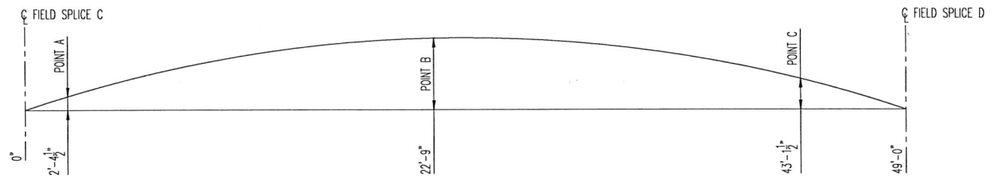
APPROVAL

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 26B4C		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D21
SFN: 2531526	OSI PROJ. NO.: 18-25	26 OF 39



CAMBER DIAGRAM FOR BEAM 27B4D

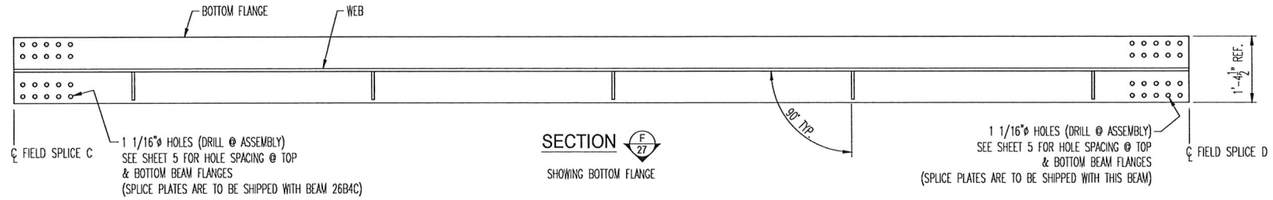
FIELD SPLICE C	POINT A	POINT B	POINT C	FIELD SPLICE D
0"	3/16"	13/16"	5/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 27B4D

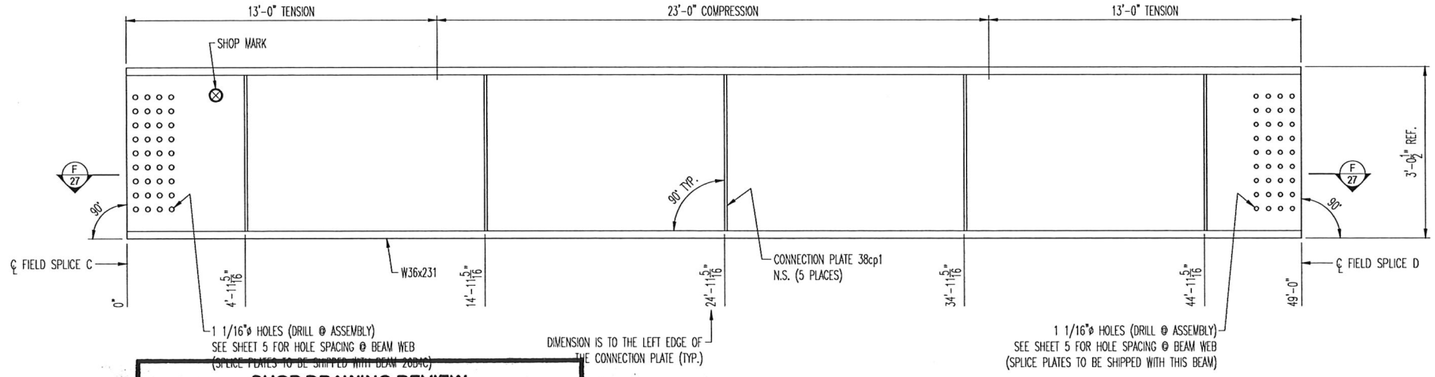
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	27B4D	W36x231	49	0	A709-50-W-CVN	11,319.00	11,319.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
5		5	38cp1	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	125.10		CONNECTION PLATE
								TOTAL WT	12,114.68		



SECTION F 27

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 27B4D

SPLICE PLATES FOR FIELD SPLICE "D" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION
SHOP INSPECTED BY:	

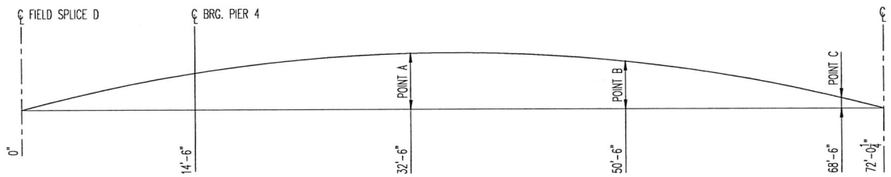
STATE OF OHIO
APPROVED
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Dd F T

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

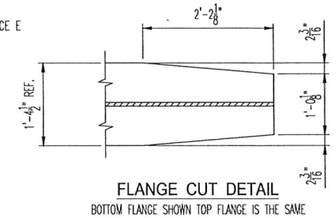
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 27B4D		
REF NO.: 10	ITEM NO.: 513 LEVEL 2	
PID NO.: 15125		DWG. NO.: D22
SFN: 2531526	OSI PROJ. NO.: 18-25	27 OF 39



CAMBER DIAGRAM FOR BEAM 28B4E

FIELD SPLICE D	PIER 4	POINT A	POINT B	POINT C	FIELD SPLICE E
0"	5/16"	7/8"	13/16"	3/16"	0"



FLANGE CUT DETAIL

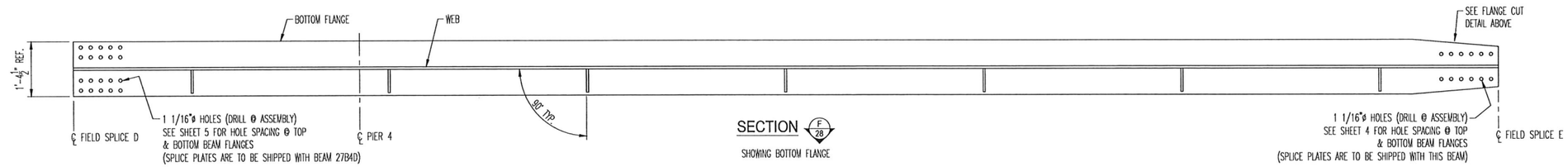
BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 28B4E

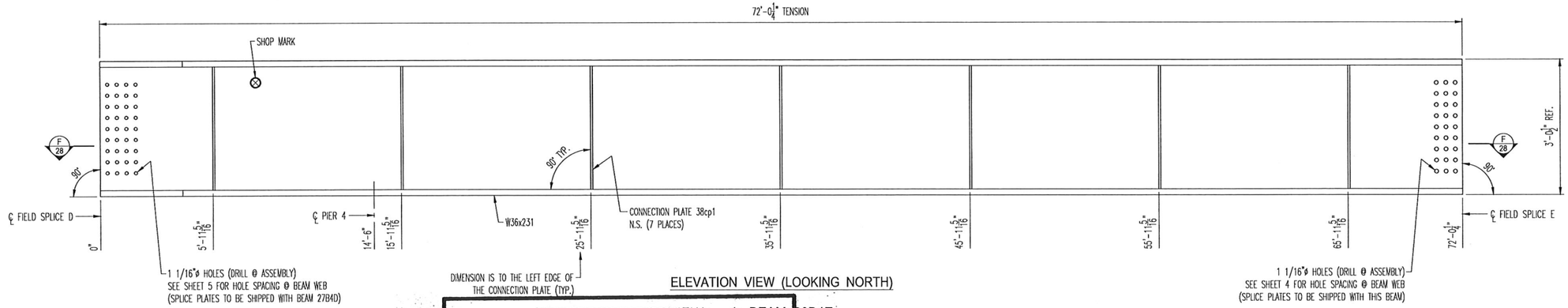
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	28B4E	W36x231	72	1/4	A709-50-W-CVN	16,636.81	16,636.81		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
5		7	38cp1	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
								TOTAL WT	17,301.97		



SECTION (F 28)

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

SPLICE PLATES FOR FIELD SPLICE "E" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 & INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW 1 - BEAM 28B4E

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

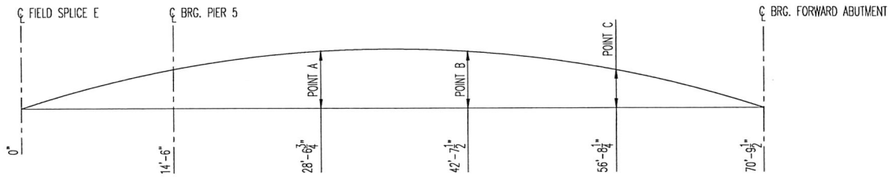
REV. No.	REVISION
SHOP INSPECTED BY:	

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

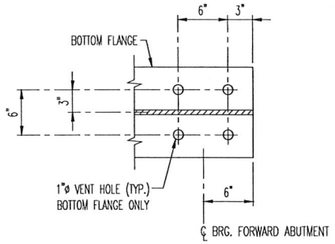
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 28B4E		
REF NO.: 10	ITEM NO.: 513 LEVEL 2	
PID NO.: 15125		DWG. NO.: D23
SFN: 2531526	OSI PROJ. NO.: 18-25	28 OF 39



CAMBER DIAGRAM FOR BEAM 29B4F

FIELD SPLICE E	PIER 5	POINT A	POINT B	POINT C	FORWARD ABUTMENT
0"	7/16"	13/16"	1 3/16"	7/8"	0"



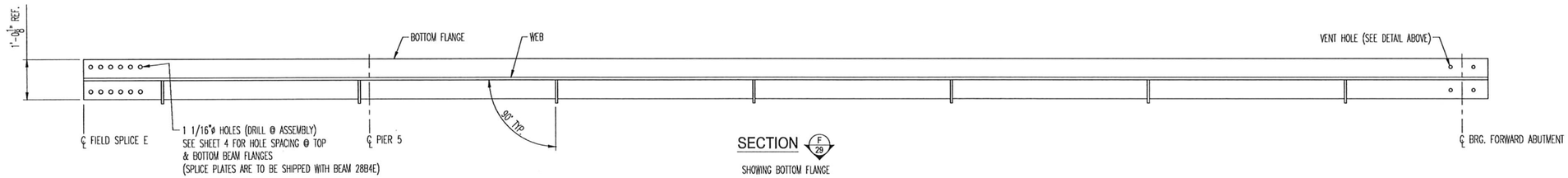
VENT HOLE DETAIL

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 29B4F

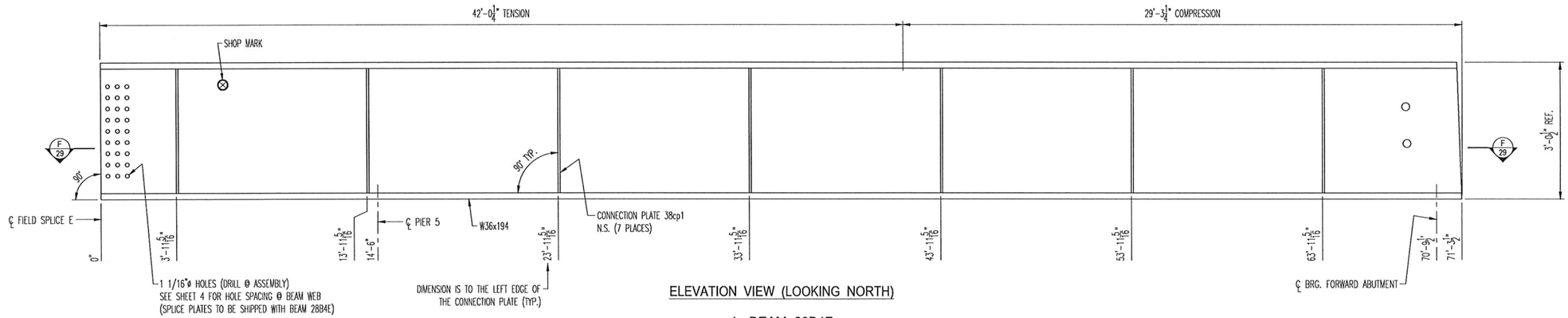
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	29B4F	W36x194	71	3 1/2	A709-50-W-CVN	13,830.58	13,830.58		
2		7	38cp1	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
								TOTAL WT	14,005.72		



SECTION F 29

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 29B4F

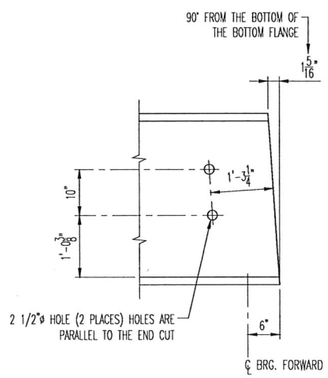
SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT



BEAM END ELEVATION @ THE FORWARD ABUTMENT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO APPROVAL DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

David F. Traini

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY

BRIDGE: FRA-CR27-0785

TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

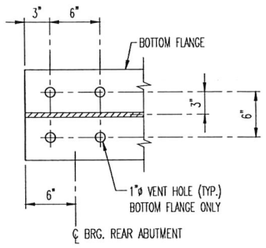
SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

DETAIL OF BEAM 29B4F

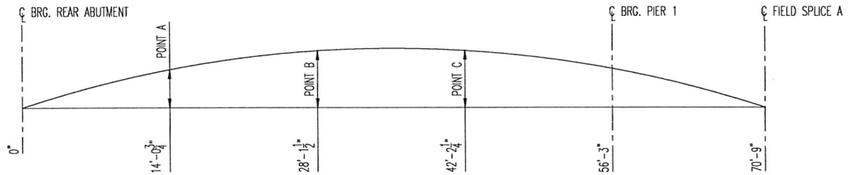
REF NO.: 10 ITEM NO.: 513 LEVEL 2

PID NO.: 15125 DWG. NO.: D24

SFN: 2531526 OSI PROJ. NO.: 18-25 29 OF 39



VENT HOLE DETAIL



CAMBER DIAGRAM FOR BEAM 30B5A

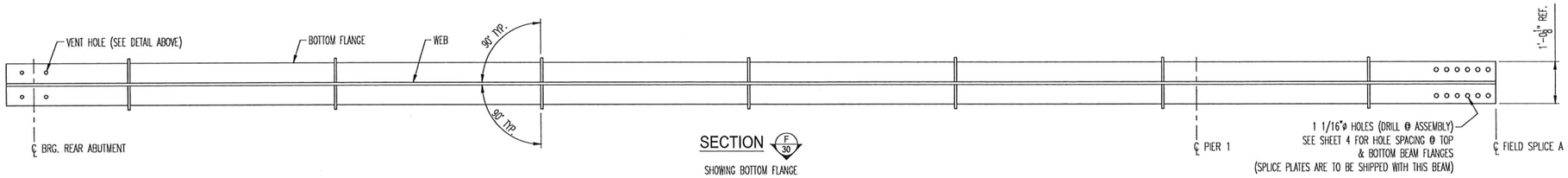
REAR ABUTMENT	POINT A	POINT B	POINT C	PIER 1	FIELD SPLICE A
0"	7/8"	1 1/4"	15/16"	1/2"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 30B5A

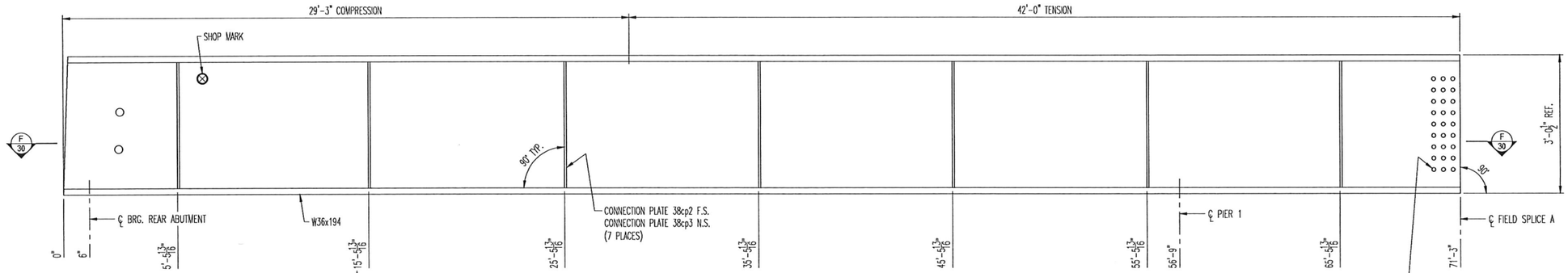
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	30B5A	W36x194	71	3	A709-50-W-CVN	13,822.50	13,822.50		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
5		7	38cp2	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
6		7	38cp3	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
								TOTAL WT	14,662.80		



SECTION F 30

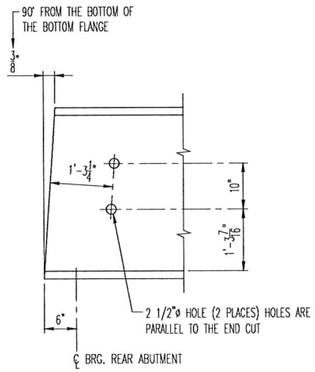
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

BEAM 30B5A

SPLICE PLATES FOR FIELD SPLICE "A" ARE TO BE SHIPPED WITH THIS BEAM (WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 & INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY



BEAM END ELEVATION @ THE REAR ABUTMENT

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION
1	REVISED TENSION ZONE DIMENSION 11/9/2018

SHOP INSPECTED BY:

APPROVED

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Dal F. Traini

NOTES:

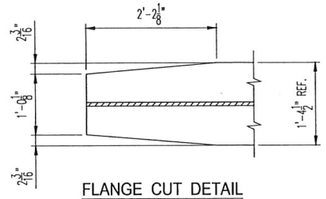
SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

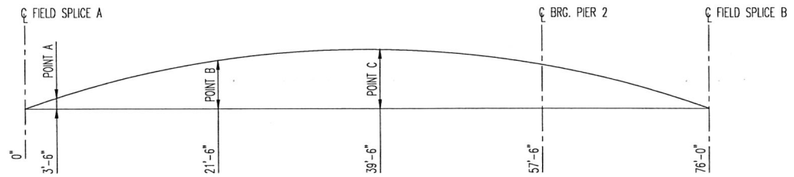
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18	DETAIL OF BEAM 30B5A	CHECK: TJK
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D25
SFN: 2531526	OSI PROJ. NO.: 18-25	30 OF 39



FLANGE CUT DETAIL

BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME



CAMBER DIAGRAM FOR BEAM 31B5B

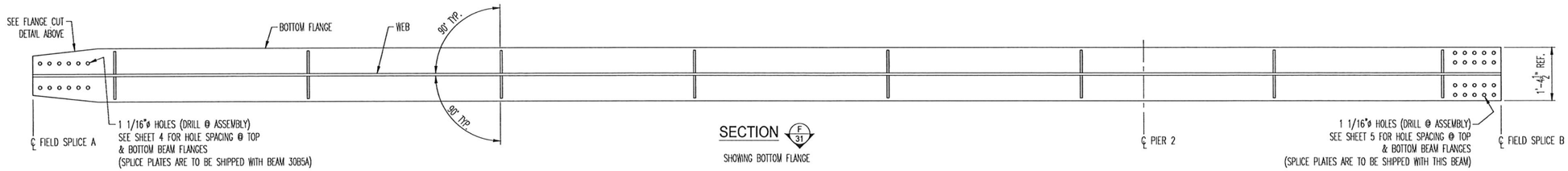
FIELD SPLICE A	POINT A	POINT B	POINT C	PIER 2	FIELD SPLICE B
0"	5/16"	1 1/16"	1"	7/16"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 31B5B

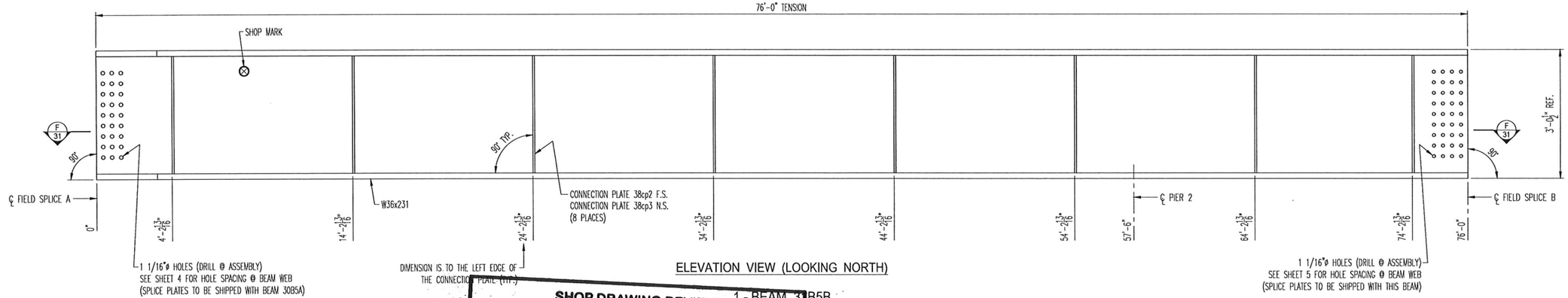
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	31B5B	W36x231	76	0	A709-50-W-CVN	17,556.00	17,556.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
5		8	38cp2	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	200.16		CONNECTION PLATE
6		8	38cp3	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	200.16		CONNECTION PLATE
								TOTAL WT	18,626.90		



SECTION F 31

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

SPLICE PLATES FOR FIELD SPLICE "B" ARE TO BE SHIPPED WITH THIS BEAM (WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 & INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW 1 - BEAM 31B5B

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

APPROVAL

STATE OF OHIO DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

Del

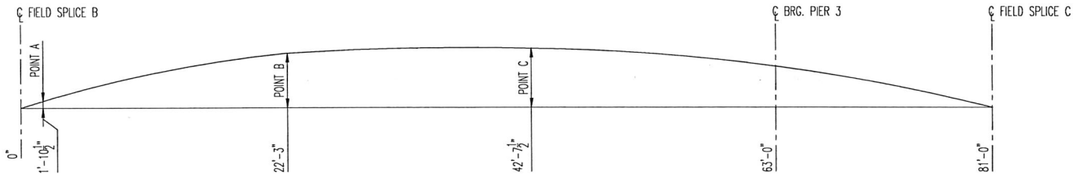
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

DETAIL OF BEAM 31B5B

REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D26
SFN: 2531526	OSI PROJ. NO.: 18-25	31 OF 39



CAMBER DIAGRAM FOR BEAM 32B5C

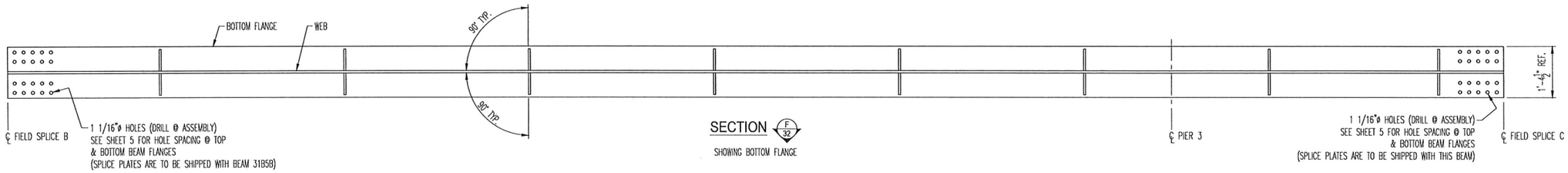
FIELD SPLICE B	POINT A	POINT B	POINT C	PIER 3	FIELD SPLICE C
0"	1/8"	1 3/16"	1 1/16"	1/4"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 32B5C

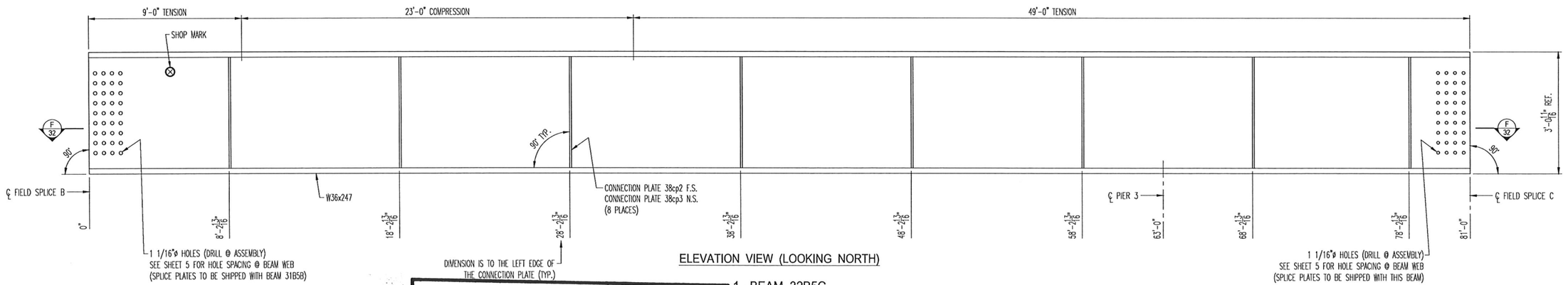
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	32B5C	W36x247	81	0	A709-50-W-CVN	20,007.00	20,007.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
5		8	38cp2	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	200.16		CONNECTION PLATE
6		8	38cp3	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	200.16		CONNECTION PLATE
								TOTAL WT	21,077.90		



SECTION F 32

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 32B5C

SPLICE PLATES FOR FIELD SPLICE "C" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

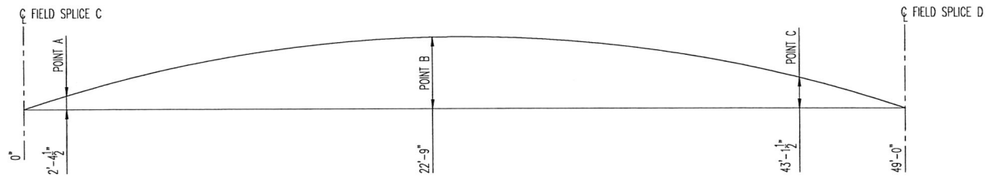
STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Dcl 7 2

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 32B5C		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D27
SFN: 2531526	OSI PROJ. NO.: 18-25	32 OF 39



CAMBER DIAGRAM FOR BEAM 33B5D

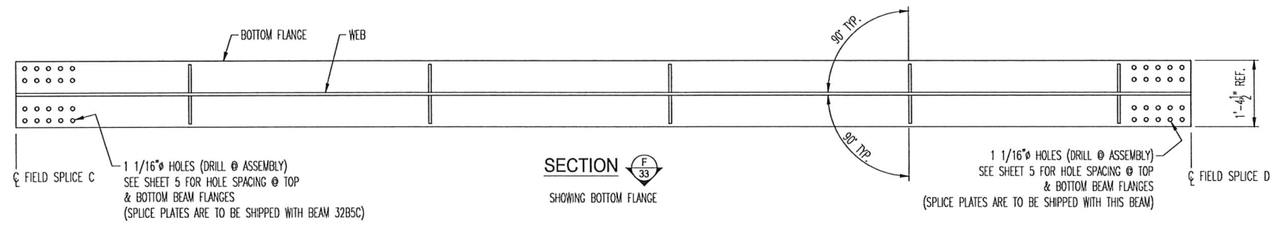
FIELD SPLICE C	POINT A	POINT B	POINT C	FIELD SPLICE D
0"	3/16"	7/8"	3/8"	0"

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 33B5D

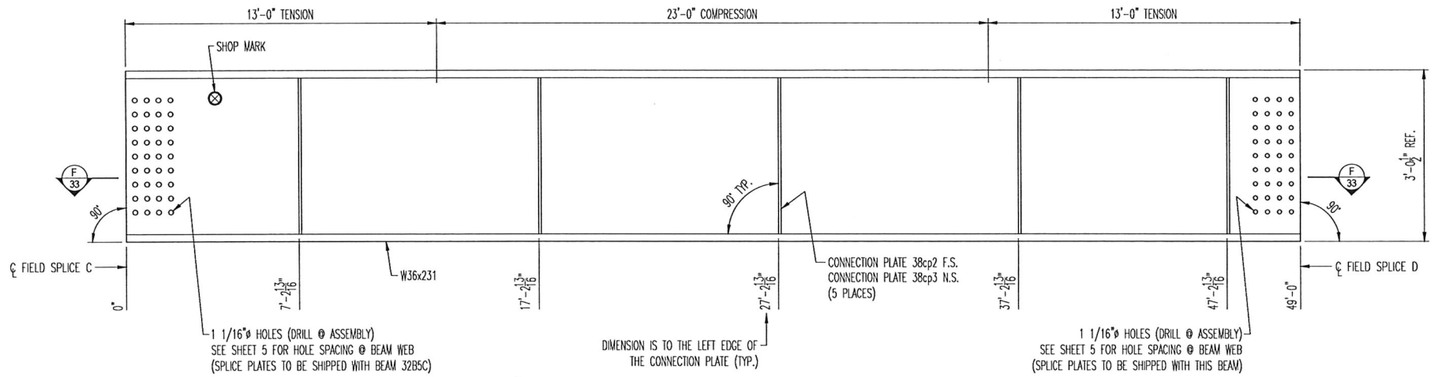
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	33B5D	W36x231	49	0	A709-50-W-CVN	11,319.00	11,319.00		
2		2	36p4	PLATE 3/4 x 28	2	2 1/2	A709-50-W-CVN	157.83	315.66		WEB SPLICE PLATE
3		2	36p5	PLATE 11/16 x 16	2	8 1/2	A709-50-W-CVN	101.40	202.80		OUTSIDE FLG. SPLICE PLATE
4		4	36p6	PLATE 11/16 x 6	2	8 1/2	A709-50-W-CVN	38.03	152.12		INSIDE FLG. SPLICE PLATE
5		5	38cp2	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	125.10		CONNECTION PLATE
6		5	38cp3	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	125.10		CONNECTION PLATE
								TOTAL WT	12,239.78		



SECTION F 33

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 33B5D

SPLICE PLATES FOR FIELD SPLICE "D" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p4, OUTSIDE FLANGE SPLICE PLATES 36p5 &
INSIDE FLANGE SPLICE PLATES 36p6) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DPT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

APPROVED

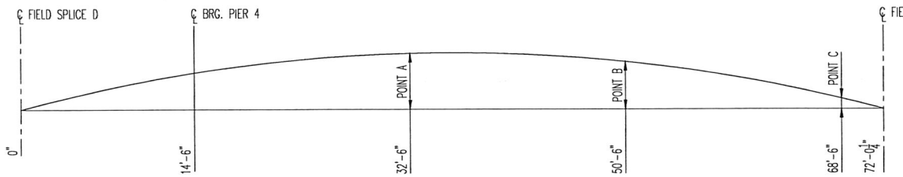
STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

Dan F. T.

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

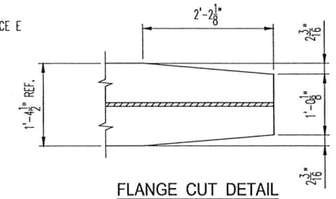
FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 33B5D		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D28
SFN: 2531526	OSI PROJ. NO.: 18-25	33 OF 39



CAMBER DIAGRAM FOR BEAM 34B5E

FIELD SPLICE D	PIER 4	POINT A	POINT B	POINT C	FIELD SPLICE E
0"	5/16"	7/8"	15/16"	3/16"	0"



FLANGE CUT DETAIL

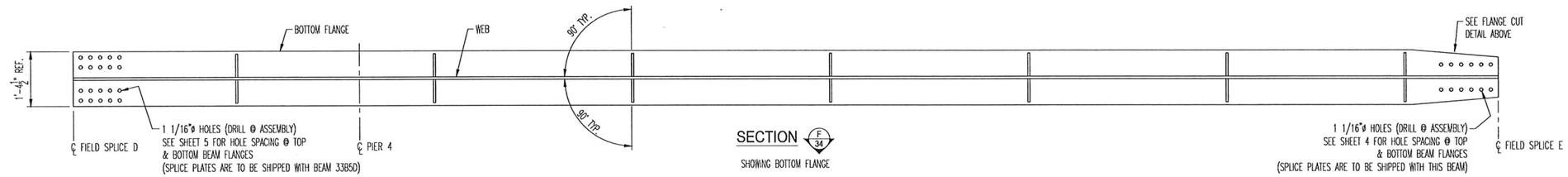
BOTTOM FLANGE SHOWN TOP FLANGE IS THE SAME

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

BEAM 34B5E

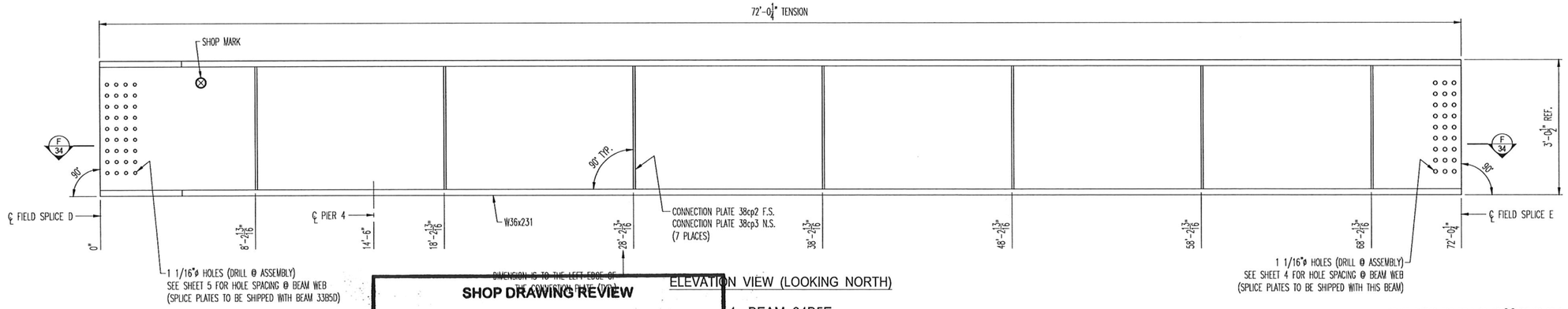
MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	34B5E	W36x231	72	1/4	A709-50-W-CVN	16,636.81	16,636.81		
2		2	36p1	PLATE 5/8 x 28	1	8 1/2	A709-50-W-CVN	101.73	203.46		WEB SPLICE PLATE
3		2	36p2	PLATE 5/8 x 12	3	2 1/2	A709-50-W-CVN	81.88	163.76		OUTSIDE FLG. SPLICE PLATE
4		4	36p3	PLATE 5/8 x 4 1/2	3	2 1/2	A709-50-W-CVN	30.70	122.80		INSIDE FLG. SPLICE PLATE
5		7	38cp2	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
6		7	38cp3	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
								TOTAL WT	17,477.11		



SECTION (F 34)

SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 34B5E

SPLICE PLATES FOR FIELD SPLICE "E" ARE TO BE SHIPPED WITH THIS BEAM
(WEB SPLICE PLATES 36p1, OUTSIDE FLANGE SPLICE PLATES 36p2 &
INSIDE FLANGE SPLICE PLATES 36p3) MATCH MARK ACCORDINGLY

NOTES:

SEE SHEETS 2 & 3 FOR FRAMING PLANS

SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO — APPROVED — DAVID F. TRAINI E-48751 REGISTERED PROFESSIONAL ENGINEER

Dan F. Traini

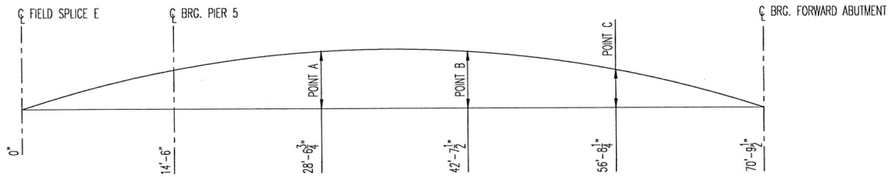
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

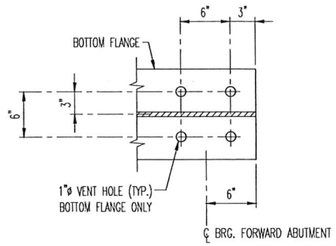
DETAIL OF BEAM 34B5E

REF NO.: 10	ITEM NO.: 513 LEVEL 2
PID NO.: 15125	DWG. NO.: D29
SFN: 2531526	OSI PROJ. NO.: 18-25 — 34 OF 39



CAMBER DIAGRAM FOR BEAM 35B5F

FIELD SPLICE E	PIER 5	POINT A	POINT B	POINT C	FORWARD ABUTMENT
0"	3/8"	13/16"	1 3/16"	7/8"	0"



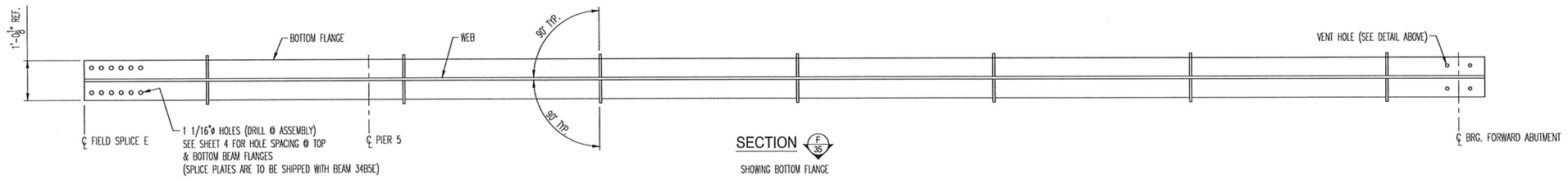
VENT HOLE DETAIL

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

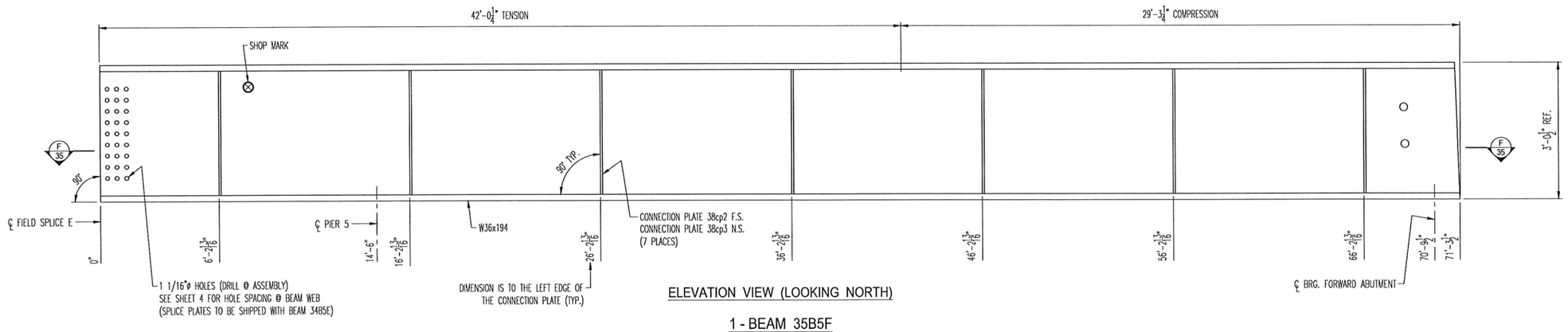
BEAM 35B5F

MATERIALS ONLY:

LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		1	35B5F	W36x194	71	3 1/2	A709-50-W-CVN	13,830.58	13,830.58		
2		7	38cp2	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
3		7	38cp3	PLATE 3/8 x 7	2	10	A709-50-W-CVN	25.02	175.14		CONNECTION PLATE
							TOTAL WT		14,180.86		



SECTION F 35
SHOWING BOTTOM FLANGE



ELEVATION VIEW (LOOKING NORTH)

1 - BEAM 35B5F

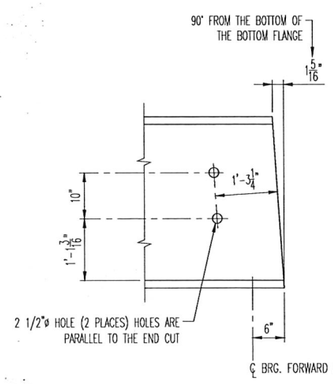
SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT



BEAM END ELEVATION @ THE FORWARD ABUTMENT

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

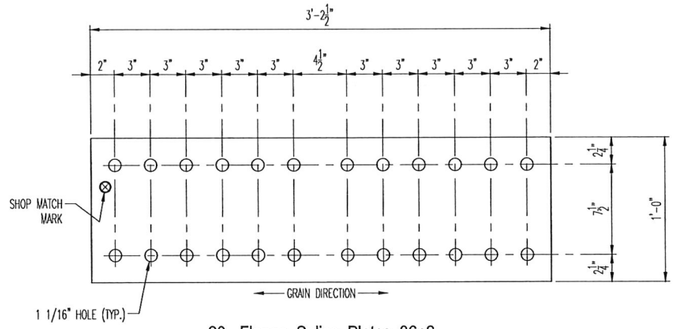
STATE OF OHIO
APPROVED
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 39 FOR VERTICAL BLOCKING DIAGRAM

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

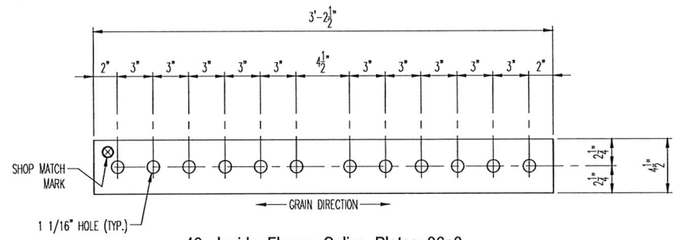
SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
DETAIL OF BEAM 35B5F		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: D30
SFN: 2531526	OSI PROJ. NO.: 18-25	35 OF 39



20 - Flange Splice Plates 36p2

MATERIAL: 5/8" PLATE (CVN)

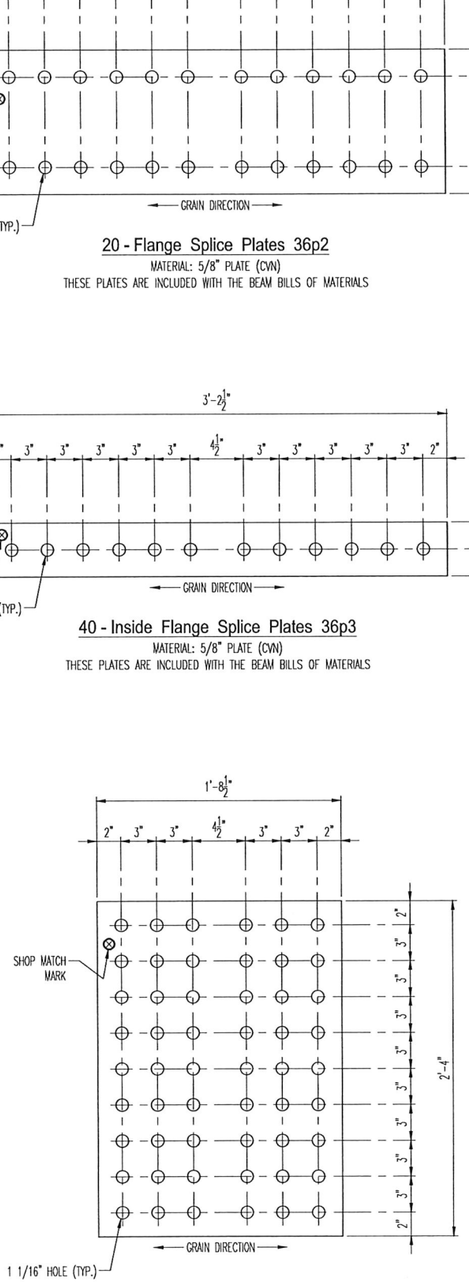
THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS



40 - Inside Flange Splice Plates 36p3

MATERIAL: 5/8" PLATE (CVN)

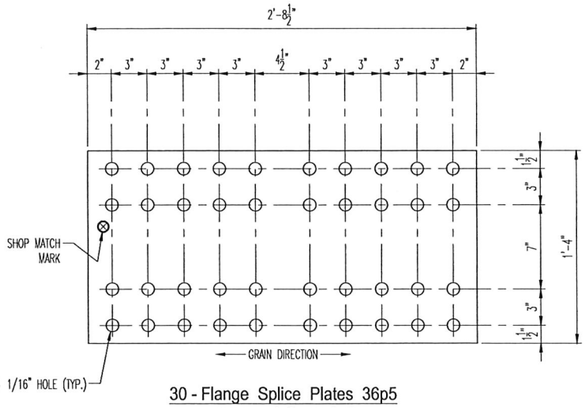
THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS



20 - Web Splice Plates 36p1

MATERIAL: 5/8" PLATE (CVN)

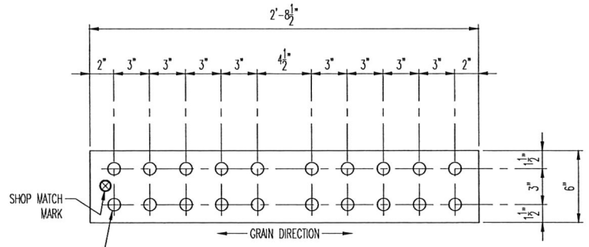
THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS



30 - Flange Splice Plates 36p5

MATERIAL: 11/16" PLATE (CVN)

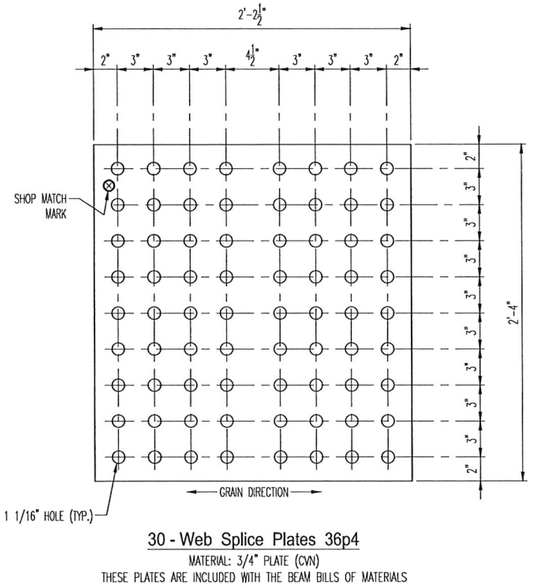
THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS



60 - Inside Flange Splice Plates 36p6

MATERIAL: 11/16" PLATE (CVN)

THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS



30 - Web Splice Plates 36p4

MATERIAL: 3/4" PLATE (CVN)

THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DPT

NOTES:

SEE SHEETS 1 FOR BEAM MATCH MARKING SYSTEM

SEE SHEETS 4 & 5 FIELD SPLICE DETAILS

AISC CERTIFIED FABRICATOR

MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

STATE OF OHIO PROFESSIONAL ENGINEER

APPROVAL:

DAVID F. TRAINI E-48751 REGISTERED

Dal 7. 2

OHIO STRUCTURES INC.

535 NORTH BROAD STREET SUITE 5

CANFIELD, OHIO 44406

(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY

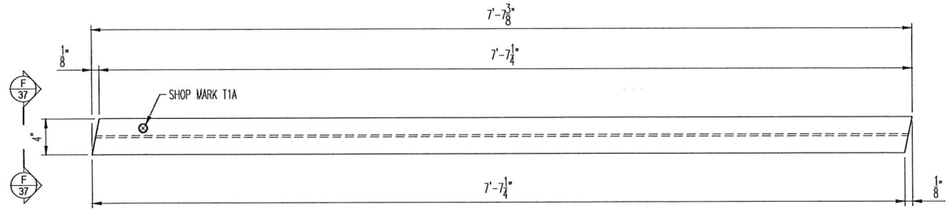
BRIDGE: FRA-CR27-0785

TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

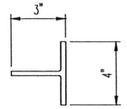
SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

FIELD SPLICE PLATE DETAILS

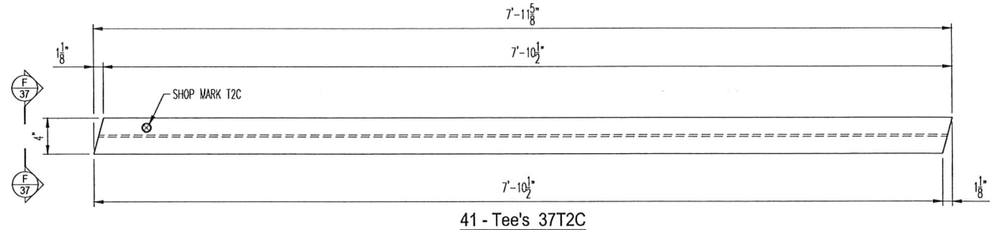
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: X1
SFN: 2531526	OSI PROJ. NO.: 18-25	36 OF 39



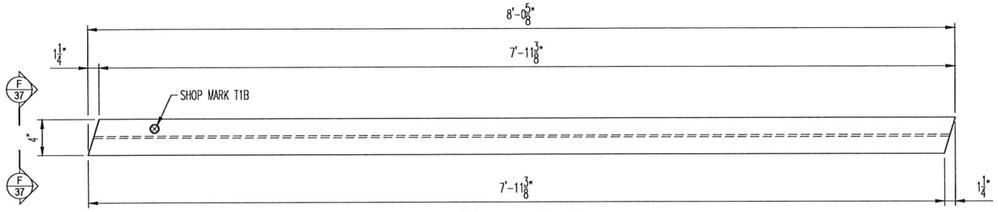
41 - Tee's 37T1A
MATERIAL: WT 3x6



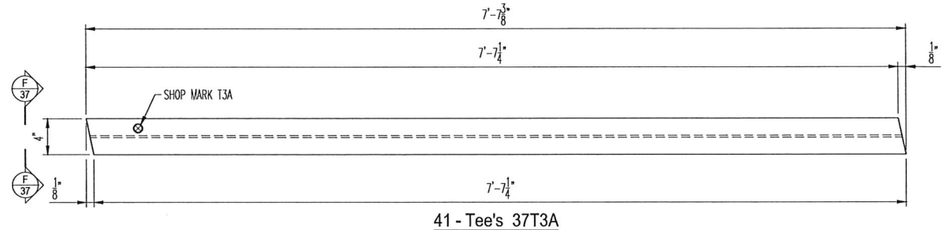
VIEW F 37



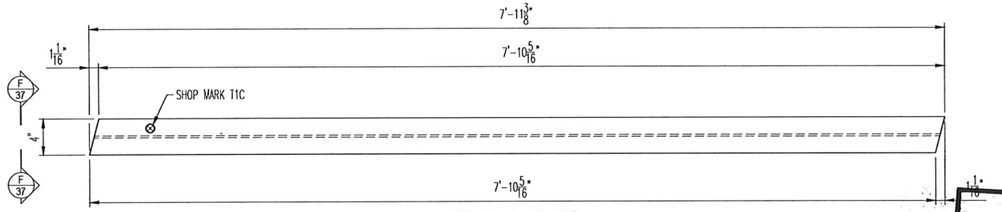
41 - Tee's 37T2C
MATERIAL: WT 3x6



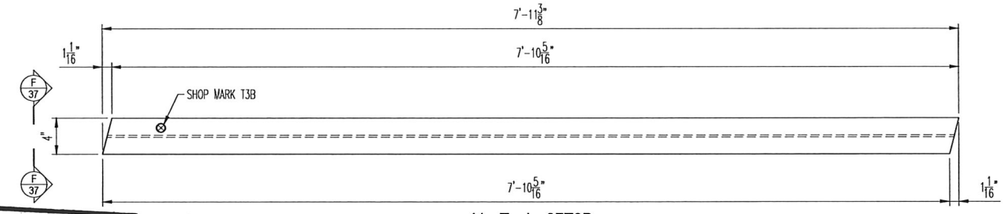
41 - Tee's 37T1B
MATERIAL: WT 3x6



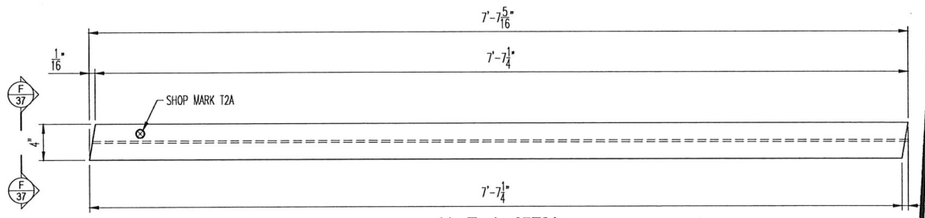
41 - Tee's 37T3A
MATERIAL: WT 3x6



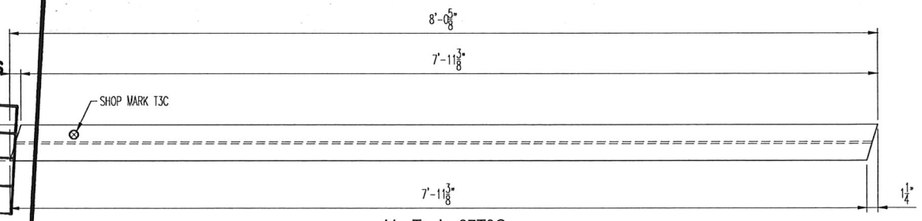
41 - Tee's 37T1C
MATERIAL: WT 3x6



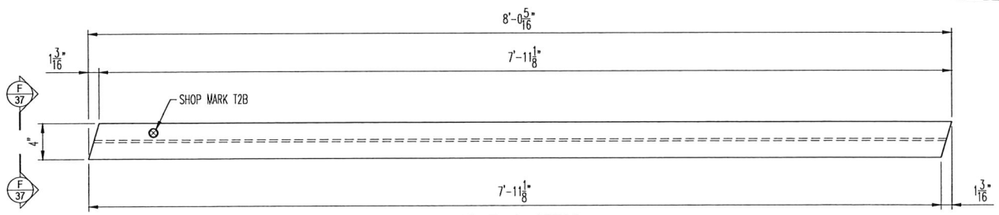
41 - Tee's 37T3B
MATERIAL: WT 3x6



41 - Tee's 37T2A
MATERIAL: WT 3x6



41 - Tee's 37T3C
MATERIAL: WT 3x6



41 - Tee's 37T2B
MATERIAL: WT 3x6

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	
MAKE CORRECTIONS NOTED	X
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING
Date 11-9-18 By DFT

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS
SEE SHEET 38 FOR BILL OF MATERIAL

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION
SHOP INSPECTED BY:	

STATE OF OHIO
APPROVAL
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER
Date

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
TYPE 1 CROSS FRAME PART DETAILS		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: X2
SFN: 2531526	OSI PROJ. NO.: 18-25	37 OF 39

TRABUE ROAD OVER NSRR	PID NO.: 15125	OSI PROJ. NO.: 18-25	REF NO.: 10	ITEM NO.: 513 LEVEL 2

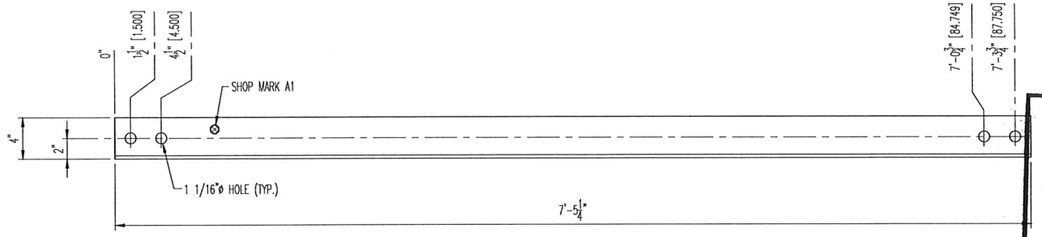
PARTS FOR CROSS FRAMES (TYPE 1 & TYPE 2)

MATERIALS ONLY:

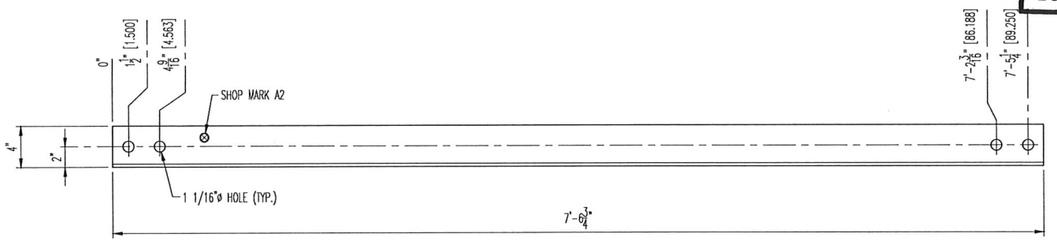
LINE	PO#	QTY	MARK	DESCRIPTION	LENGTH (FEET)	LENGTH (INCHES)	STL SPEC	PC WT (IN LBS)	NET WT (IN LBS)	HEAT #	REMARKS
1		* 41	37T1A	WT 3x6	7	7 3/8	A709-50-W	45.63	1,870.83		
2		* 41	37T1B	WT 3x6	8	5/8	A709-50-W	47.69	1,955.29		
3		* 41	37T1C	WT 3x6	7	11 3/8	A709-50-W	47.16	1,933.56		
4		* 41	37T2A	WT 3x6	7	7 5/16	A709-50-W	45.63	1,870.83		
5		* 41	37T2B	WT 3x6	8	5/16	A709-50-W	47.56	1,949.96		
6		* 41	37T2C	WT 3x6	7	11 5/8	A709-50-W	47.25	1,937.25		
7		* 41	37T3A	WT 3x6	7	7 3/8	A709-50-W	45.63	1,870.83		
8		* 41	37T3B	WT 3x6	7	11 3/8	A709-50-W	47.16	1,933.56		
9		* 41	37T3C	WT 3x6	8	5/8	A709-50-W	47.69	1,955.29		
10		* 84	38A1	ANGLE 4x4x5/16	7	5 1/4	A709-50-W	60.68	5,097.12		
11		* 42	38A2	ANGLE 4x4x5/16	7	6 3/4	A709-50-W	61.70	2,591.40		
12		* 42	38A3	ANGLE 4x4x5/16	7	7 1/2	A709-50-W	62.22	2,613.24		

* INDICATES AN ITEM THAT WILL BE SHIPPED LOOSE

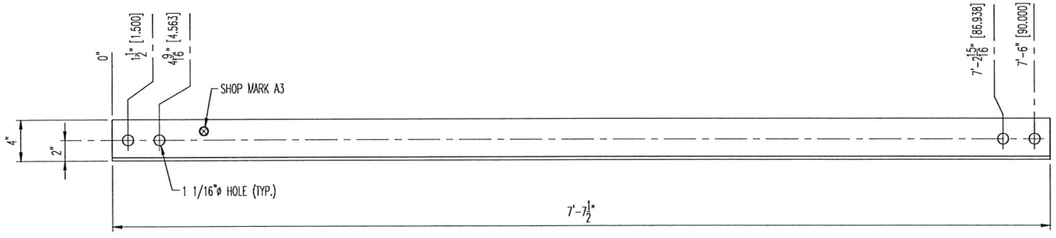
TOTAL WT 27,579.16



84 - Angles 38A1
MATERIAL: ANGLE 4"x4"x5/16"



42 - Angles 38A2
MATERIAL: ANGLE 4"x4"x5/16"



42 - Angles 38A3
MATERIAL: ANGLE 4"x4"x5/16"

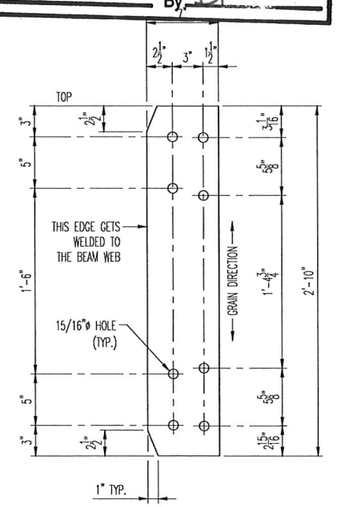
SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

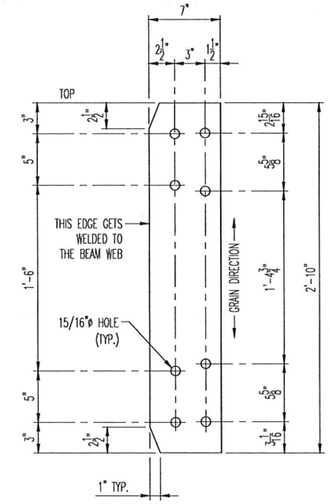
NO EXCEPTIONS TAKEN	X
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

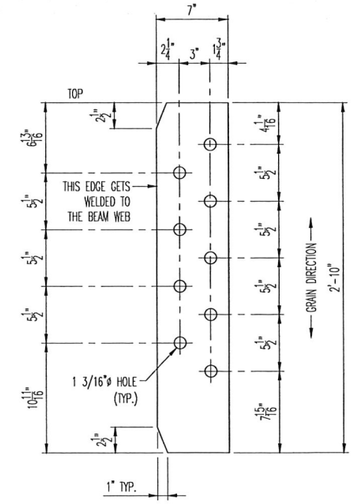
Date 11-9-18 By DFT



42 - Connection Plates 38cp1
MATERIAL: 3/8" PLATE
THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS



42 - Connection Plates 38cp2
MATERIAL: 3/8" PLATE
THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS



42 - Connection Plates 38cp3
MATERIAL: 3/8" PLATE
THESE PLATES ARE INCLUDED WITH THE BEAM BILLS OF MATERIALS

NOTES:
SEE SHEETS 2 & 3 FOR FRAMING PLANS

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

APPROVED
STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

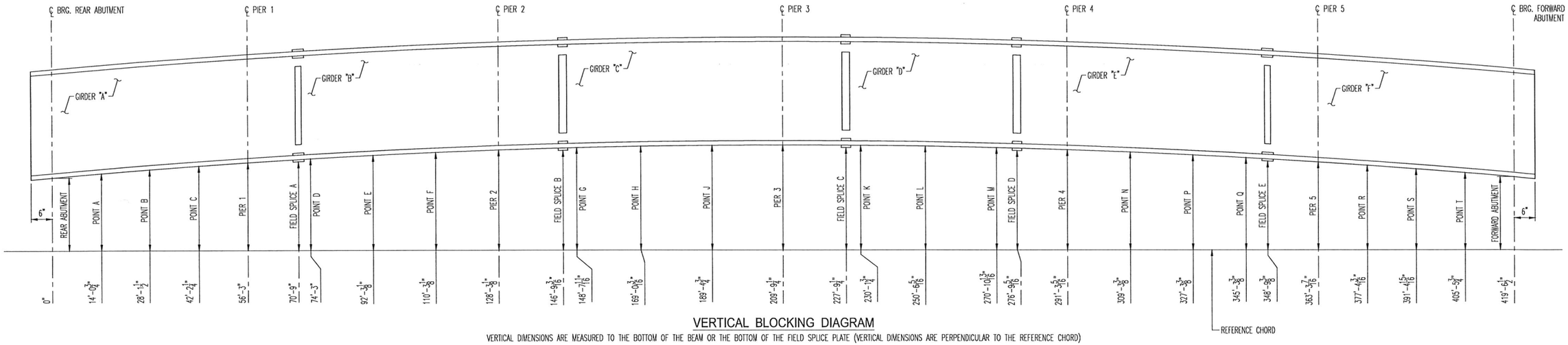
OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK

TYPE 2 CROSS FRAME PART DETAILS & BILL OF MATERIAL

REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: X3
SFN: 2531526	OSI PROJ. NO.: 18-25	38 OF 39



VERTICAL BLOCKING DIAGRAM

VERTICAL DIMENSIONS ARE MEASURED TO THE BOTTOM OF THE BEAM OR THE BOTTOM OF THE FIELD SPLICE PLATE (VERTICAL DIMENSIONS ARE PERPENDICULAR TO THE REFERENCE CHORD)

	REAR ABUTMENT	POINT A	POINT B	POINT C	PIER 1	FIELD SPLICE A	POINT D	POINT E	POINT F	PIER 2	FIELD SPLICE B	POINT G	POINT H	POINT J	PIER 3	FIELD SPLICE C	POINT K	POINT L	POINT M	FIELD SPLICE D	PIER 4	POINT N	POINT P	POINT Q	FIELD SPLICE E
BEAM LINE 1	12	16 3/16	19 15/16	23 1/16	26	28 3/8	29 3/4	33	35 9/16	37 9/16	39 1/8	39 15/16	41 5/8	42 3/16	42	41 7/16	42 3/16	41 5/8	39 15/16	38 11/16	37 9/16	35 1/2	33	29 7/8	28 1/2
BEAM LINE 2	12	16 1/8	19 15/16	23 1/16	26 1/16	28 7/16	29 13/16	33	35 9/16	37 9/16	39 1/16	39 15/16	41 9/16	42 3/16	42 1/8	41 7/16	42 1/8	41 9/16	39 15/16	38 9/16	37 1/2	35 7/16	32 15/16	29 3/4	28 7/16
BEAM LINE 3	12	16 1/8	19 7/8	23 1/16	25 15/16	28 3/8	29 3/4	32 15/16	35 9/16	37 5/8	39 1/16	40	41 5/8	42 3/16	42 1/8	41 7/16	42 3/16	41 9/16	39 15/16	38 9/16	37 1/2	35 7/16	32 15/16	29 3/4	28 7/16
BEAM LINE 4	12	16 3/16	19 15/16	23	26	28 3/8	29 3/4	32 15/16	35 9/16	37 9/16	39 1/16	39 15/16	41 9/16	42 3/16	42 1/16	41 7/16	42 3/16	41 5/8	39 15/16	38 5/8	37 9/16	35 7/16	33	29 13/16	28 1/2
BEAM LINE 5	12	16 1/4	20	23 1/8	26 1/16	28 7/16	29 7/8	33 1/8	35 5/8	37 5/8	39	39 7/8	41 7/16	41 15/16	41 5/8	41 3/16	42	41 9/16	40	38 5/8	37 9/16	35 5/8	33 1/16	29 13/16	28 7/16
TOLERANCE	±0"	+7/16"/-0"	+3/4"/-0"	+7/16"/-0"	±1/8"	+1/2/-0"	+9/16"/-0"	+3/4"/-0"	+9/16"/-0"	±1/8"	+1/2/-0"	+9/16"/-0"	+3/4"/-0"	+9/16"/-0"	±1/8"	+1/2/-0"	+9/16"/-0"	+3/4"/-0"	+9/16"/-0"	+7/16/-0"	±1/8"	+9/16"/-0"	+3/4"/-0"	+9/16"/-0"	+1/2/-0"

TOTAL CAMBER IN LAY DOWN POSITION
ALL DIMENSIONS IN THIS TABLE ARE GIVEN IN INCHES

	PIER 5	POINT R	POINT S	POINT T	FORWARD ABUTMENT
BEAM LINE 1	26 1/16	23 1/16	19 15/16	16 1/4	12
BEAM LINE 2	26	23	19 7/8	16 1/4	12
BEAM LINE 3	26	23	19 7/8	16 1/4	12
BEAM LINE 4	26 1/16	23 1/16	19 15/16	16 1/4	12
BEAM LINE 5	26	23 1/16	20	16 5/16	12
TOLERANCE	±1/8"	+7/16"/-0"	+3/4"/-0"	+7/16"/-0"	±0"

TOTAL CAMBER IN LAY DOWN POSITION
ALL DIMENSIONS IN THIS TABLE ARE GIVEN IN INCHES

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	X AS BUILT DIMENSION CHART
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED – SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 11-9-18 By DFT

	REAR ABUTMENT	POINT A	POINT B	POINT C	PIER 1	FIELD SPLICE A	POINT D	POINT E	POINT F	PIER 2	FIELD SPLICE B	POINT G	POINT H	POINT J	PIER 3	FIELD SPLICE C	POINT K	POINT L	POINT M	FIELD SPLICE D	PIER 4	POINT N	POINT P	POINT Q	FIELD SPLICE E
BEAM LINE 1																									
BEAM LINE 2																									
BEAM LINE 3																									
BEAM LINE 4																									
BEAM LINE 5																									

AS BUILT DIMENSION CHART

	PIER 5	POINT R	POINT S	POINT T	FORWARD ABUTMENT
BEAM LINE 1					
BEAM LINE 2					
BEAM LINE 3					
BEAM LINE 4					
BEAM LINE 5					

AS BUILT DIMENSION CHART

AISC CERTIFIED FABRICATOR
MAJOR STEEL BRIDGES & COMPLEX STEEL BLDG. STRUCTURES WITH PAINT ENDORSEMENT

REV. No.	REVISION

SHOP INSPECTED BY:

APPROVED
STATE OF OHIO
DAVID F. TRAINI E-48751 REGISTERED
PROFESSIONAL ENGINEER
Dave F. Traini

OHIO STRUCTURES INC.
535 NORTH BROAD STREET SUITE 5
CANFIELD, OHIO 44406
(330) 533-0084 FAX: 533-0191

FRANKLIN COUNTY
BRIDGE: FRA-CR27-0785
TRABUE ROAD OVER NORFOLK SOUTHERN RAILROAD

SCALE: N.T.S.	Franklin County Engineer	DRAWN: JDC
DATE: 10/18		CHECK: TJK
VERTICAL BLOCKING DIAGRAM		
REF NO.: 10		ITEM NO.: 513 LEVEL 2
PID NO.: 15125		DWG. NO.: BD1
SFN: 2531526	OSI PROJ. NO.: 18-25	39 OF 39