

105-232

NO.	REVISION	DATE

**HIGH STEEL STRUCTURES, INC.**

1905 Old Philadelphia Pike  
Lancaster, PA 17606-0008  
Phone 717/299-5211  
A Division of High Industries, Inc.

**WORK SHEET - FIGURING PLAN**

SOUTH WARREN BRIDGE (RTE. 11) OVER THE ST. GEORGE RIVER

SOUTH WARREN BRIDGE STA. 397+99.00

BETWEEN TOWNS OF WARREN AND THOMASTON

KNOX COUNTY, MAINE

STATE OF MAINE, DEPT. OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BR-026-1(61)

CONTRACTOR CALLAHAN BROTHERS, INC.

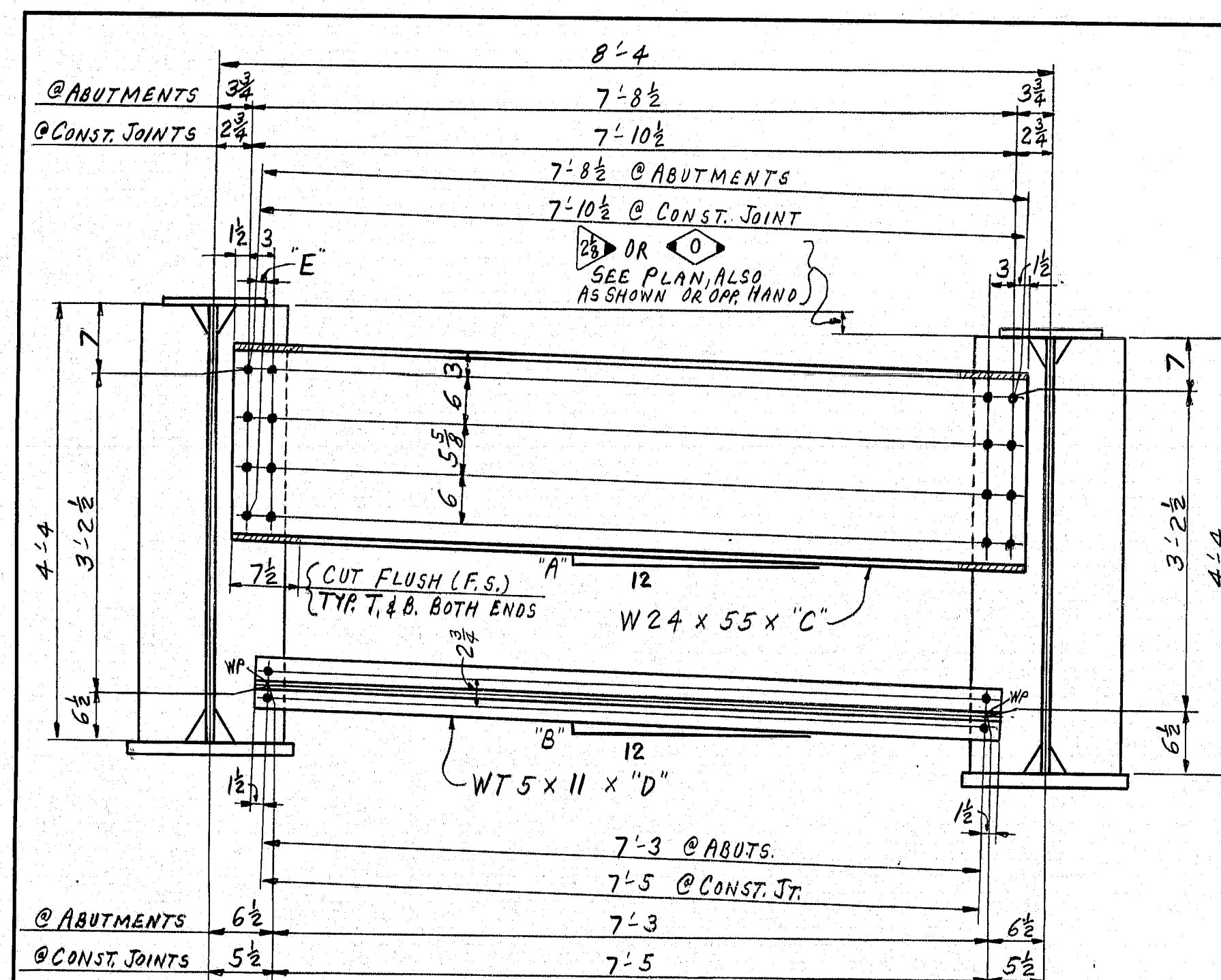
IN CHARGE: HINKLE

MADE BY: P.H.S. CHK'D BY: R.S. DATE: 1-23-90

CONTRACT NUMBER: ME-89148

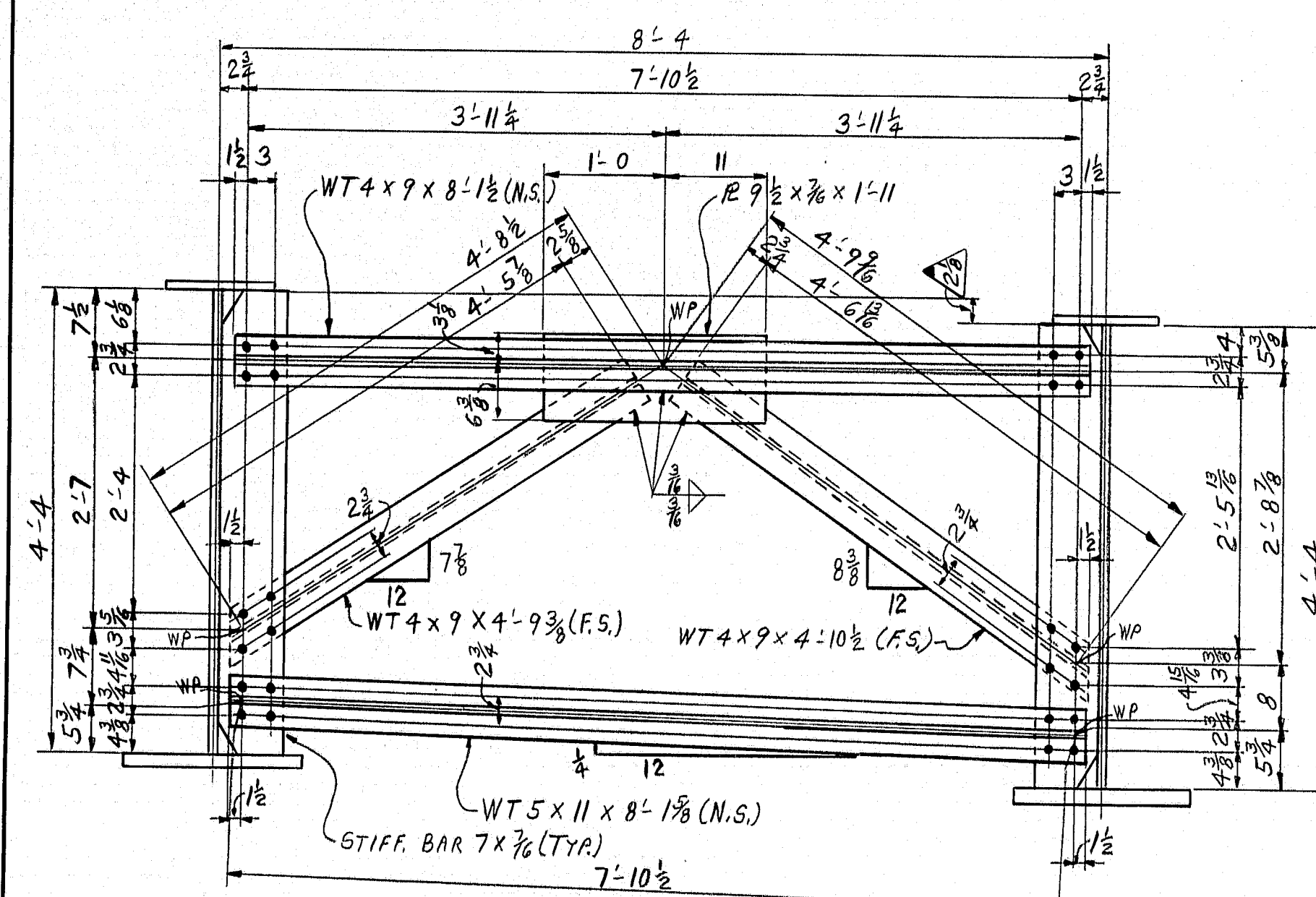
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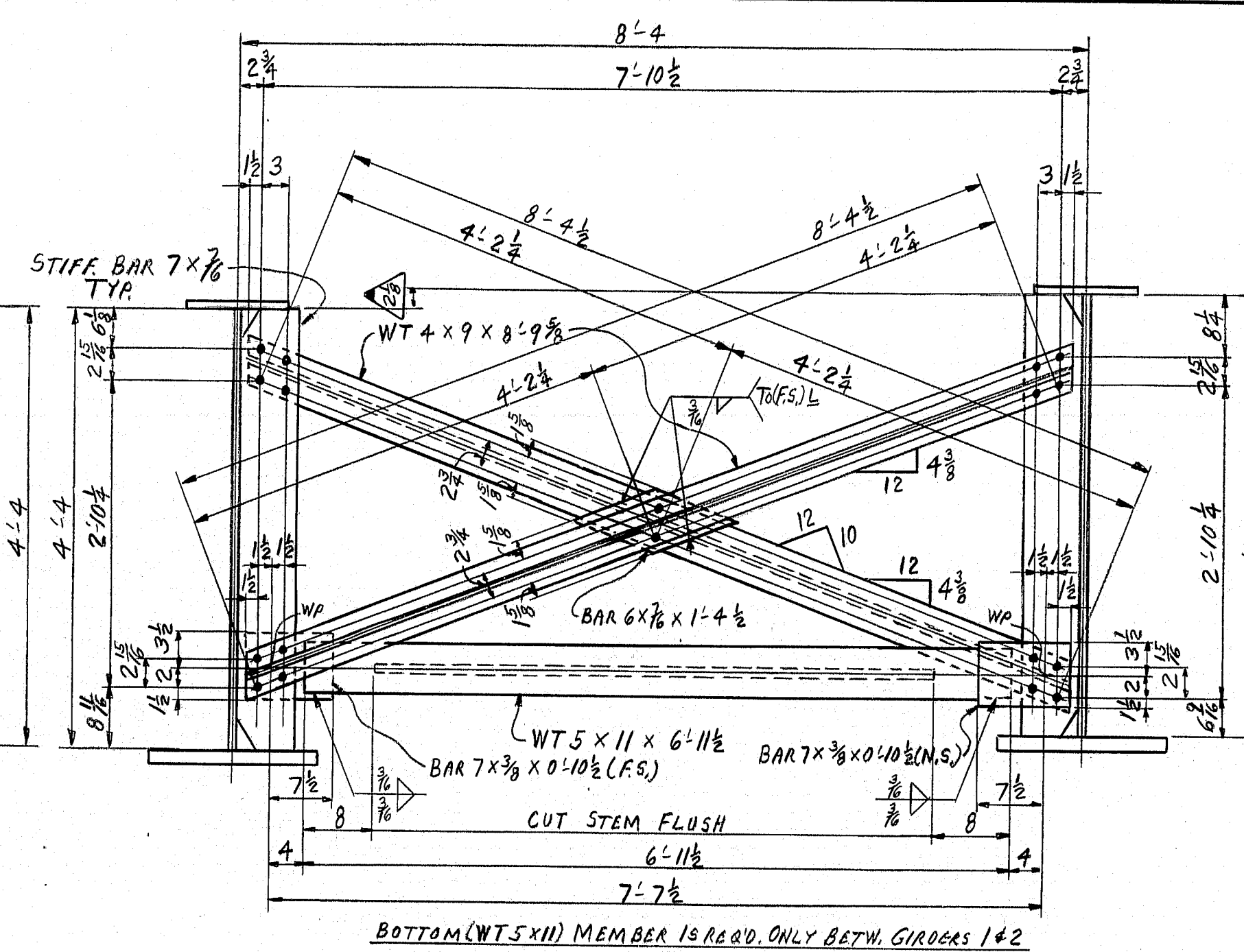


DIAPHRAGMS AT ABUTMENTS AND CONSTRUCTION JOINTS  
BETWEEN GIRDERS 1 & 5

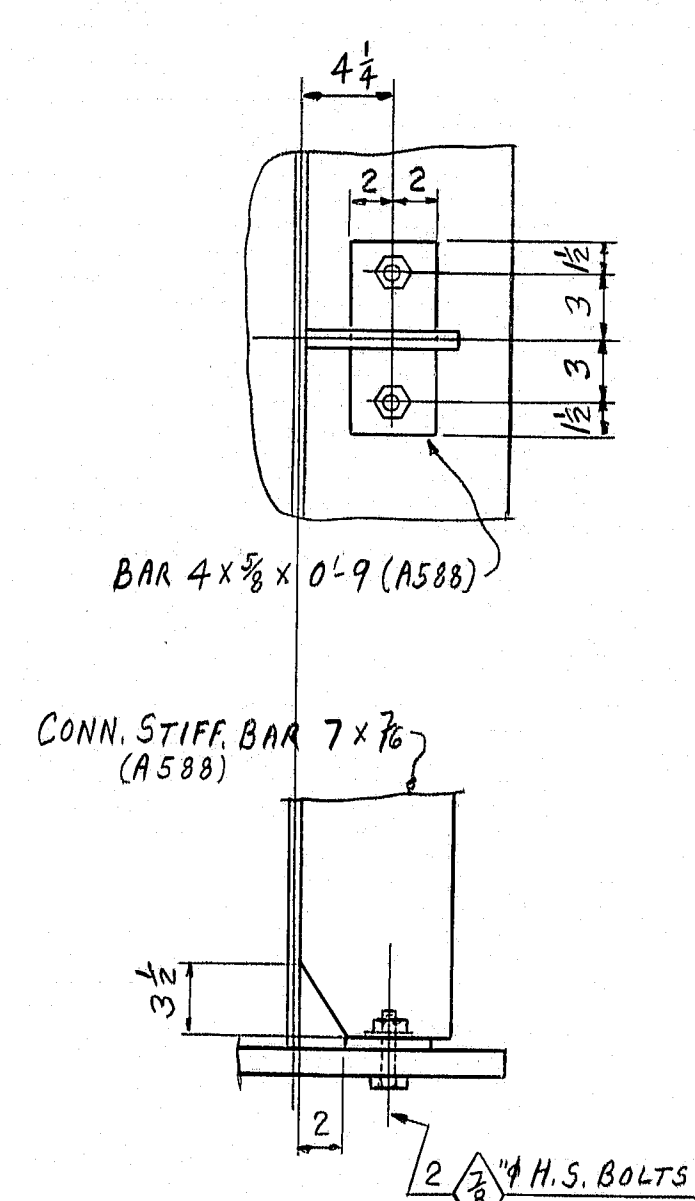
LOCATION	"A"	"B"	STIFF.	"C"	"D"	"E"
ABUTMENT	1/4	3/8	BAR 8 x 3/8	8'-0 1/2	7'-6	3/8
ABUTMENT	0	0	BAR 8 x 3/8	7'-11 1/2	7'-6	0
CONST. JT.	1/4	3/8	BAR 7 x 7/8	8'-2 1/2	7'-8	3/8
CONST. JT.	0	0	BAR 7 x 7/8	8'-1 1/2	7'-8	0



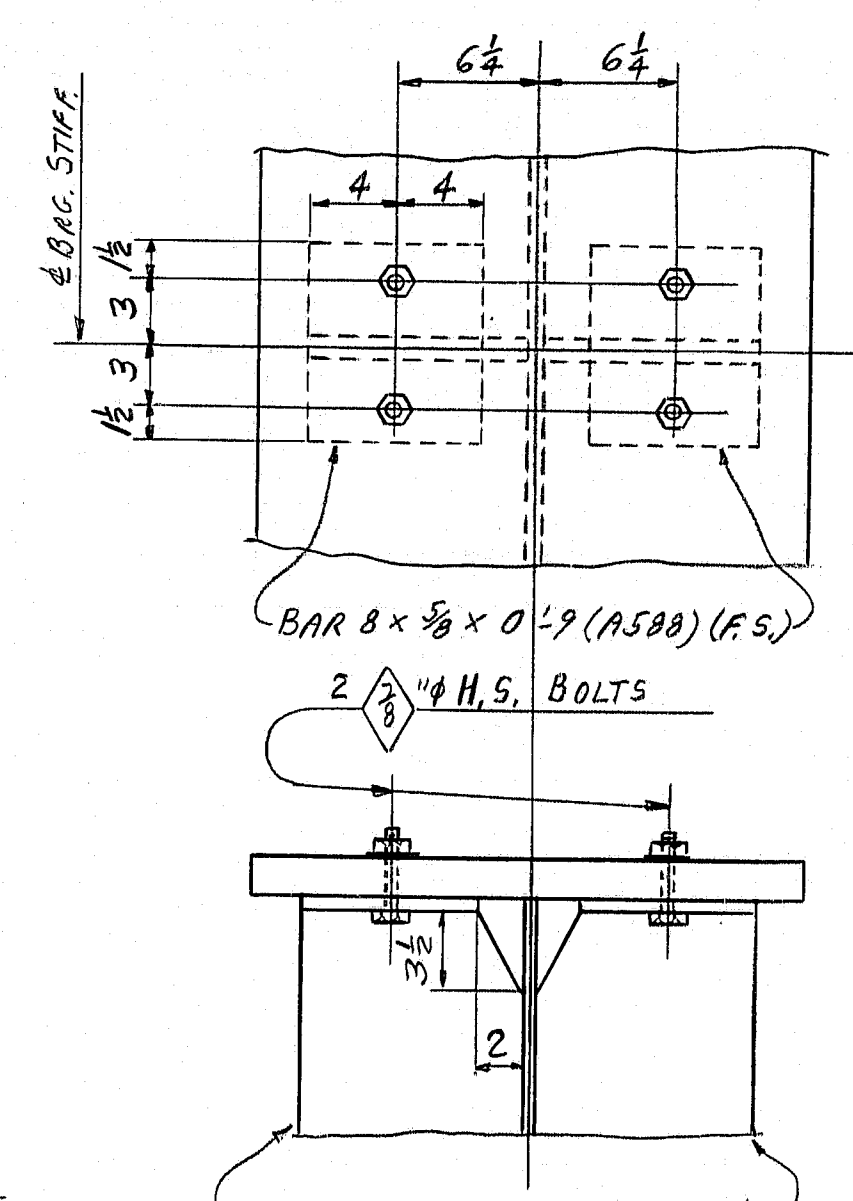
INTERMEDIATE CROSS FRAMES (UTILITY BAY BETW. GIRD. 5 & 6)  
(LOOKING EAST)



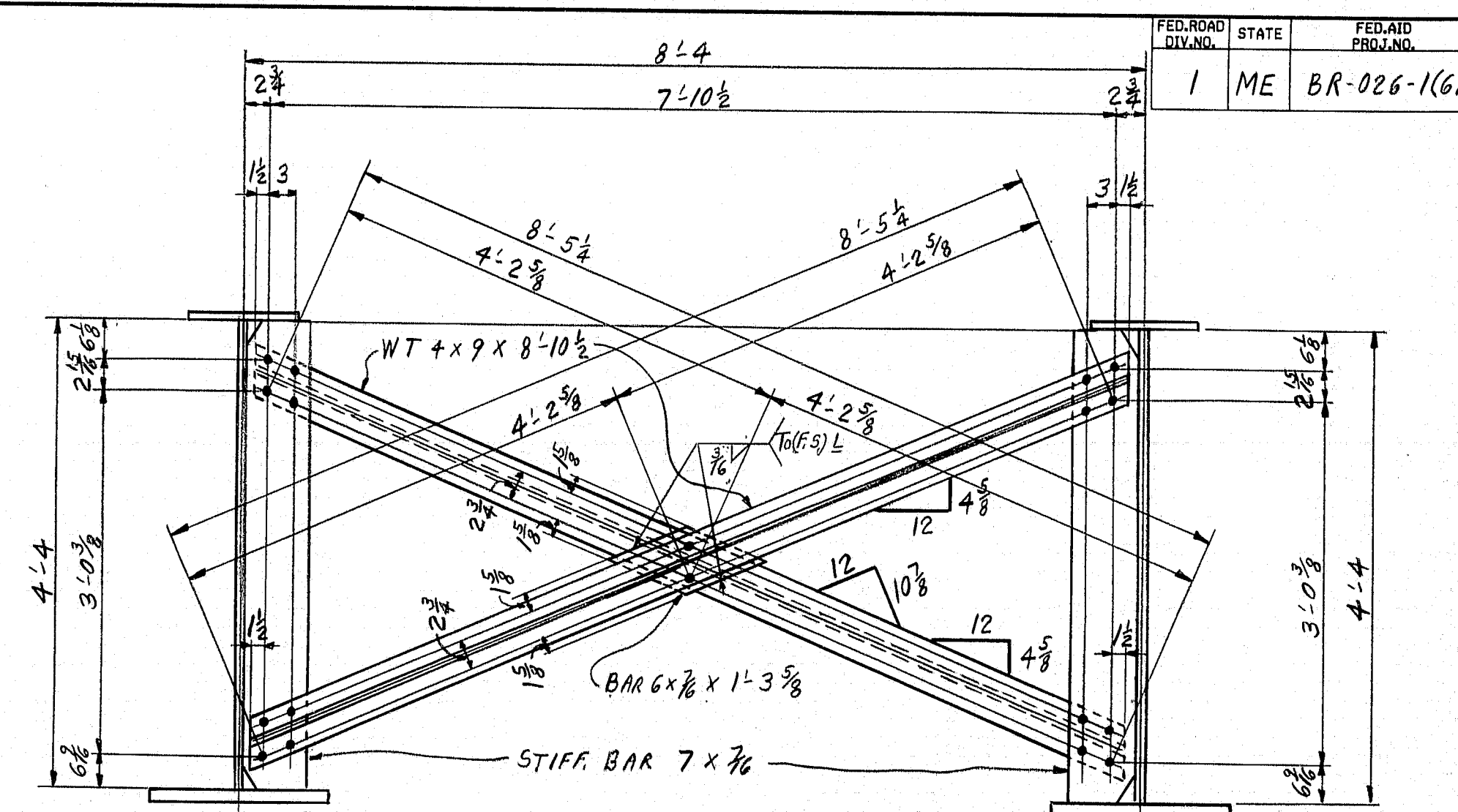
TYPICAL INTERMEDIATE CROSS FRAMES (UNLESS NOTED)  
BETW. GIRDERS 1 & 3; BETW. 4 & 5 CROSS FRAMES SAME  
BUT LOW GIRDER AT RIGHT.  
LOOKING EAST FOR ALL CROSS FRAMES.



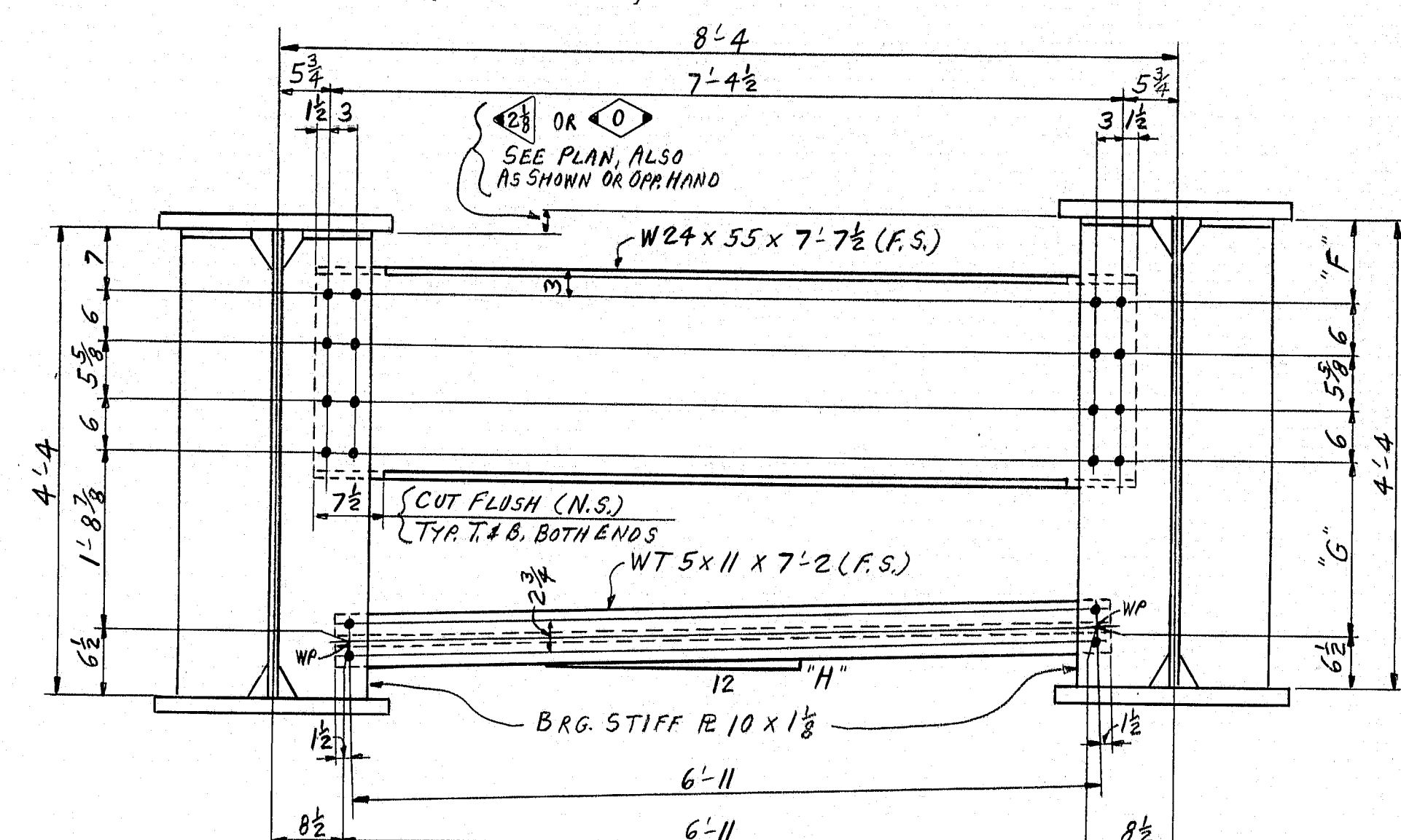
TYPICAL STIFFENER CONN.  
AT TENSION FLANGES  
BOTTOM OR TOP OR BOTH  
SEE PLAN FOR LOCATIONS



PIER BEARING STIFFENER  
CONN. AT TENSION FLANGE



INTERMEDIATE CROSS FRAMES (BETW. GIRDERS 3 & 4 U.N.)  
(LOOKING EAST)



DIAPHRAGMS AT PIER (BETWEEN GIRDERS 1 & 5)  
(LOOKING EAST)

LOC.	"F"	"G"	"H"
ABUTMENT	9 1/8	1'-6 3/4	5/8
CONST. JT.	7	1'-8 3/8	0

#### NOTES:

STIFFENER CONNECTIONS AT TENSION FLANGES  
ARE NOT SHOWN IN CROSS FRAME LAYOUTS.  
WORK WITH SPECIAL DETAILS FOR CONNS. AT  
TENSION FLANGES.  
ALL CROSS FRAMES ARE A36 STEEL, GALVANIZED.  
WORK THIS DWG. WITH DRAWINGS WS1 & WS3,  
FOR OTHER NOTES, SEE DWG. WS1.

FED. ROAD DIST. NO.		STATE	FED. AID PROJ. NO.
1		ME	BR-026-1(61)

NO.	REVISION:	DATE:

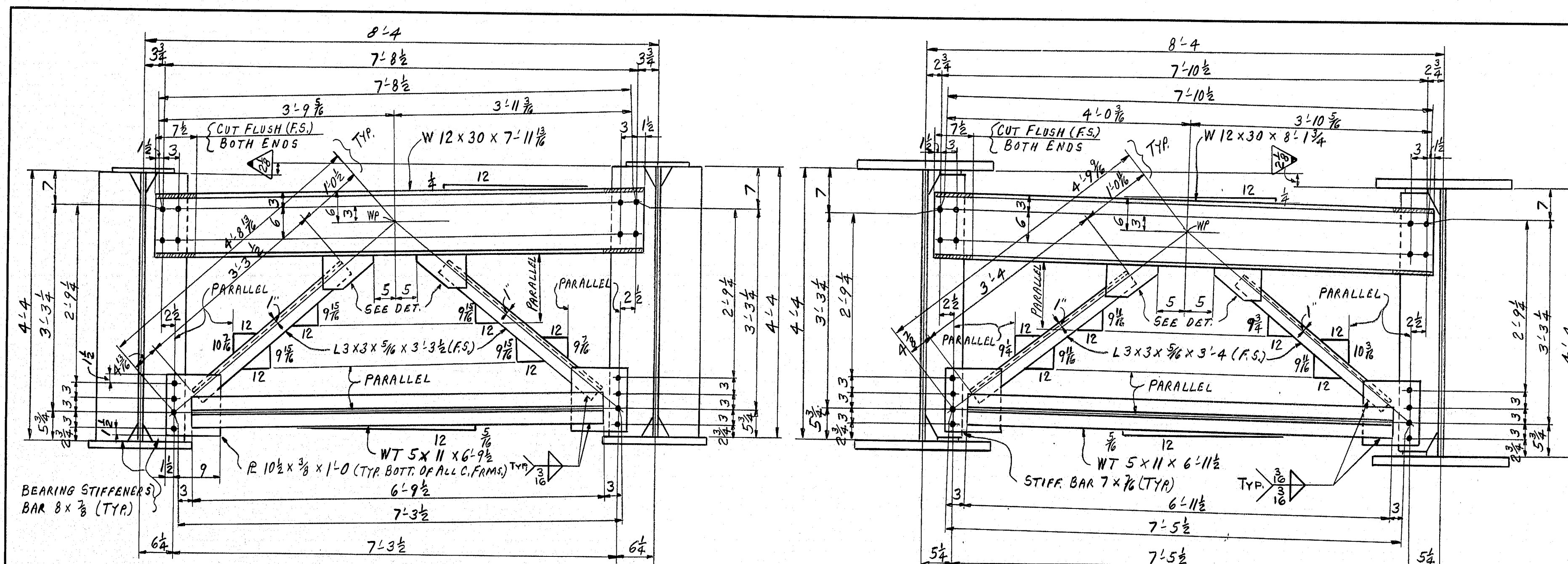
**HIGH STEEL STRUCTURES, INC.**

1005 Old Philadelphia Pike  
Lancaster, Pennsylvania 17603  
Phone 717/299-521

WORK SHEET - CROSS FRAME CONNECTIONS  
SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER  
SOUTH WARREN BRIDGE STA. 397+99.00  
BETWEEN TOWNS OF WARREN AND THOMASTON  
KNOX COUNTY, MAINE  
STATE OF MAINE, DEPT. OF TRANSPORTATION  
STATE CONTRACT OR REF. NO. BR-026-1(61)  
CONTRACTOR CALLAHAN BROTHERS, INC.  
IN CHARGE HINKLE MADE BY P.H.S. BY RB DATE 1-23-90  
CONTRACT NUMBER ME-89148 DRAWING NUMBER WS2

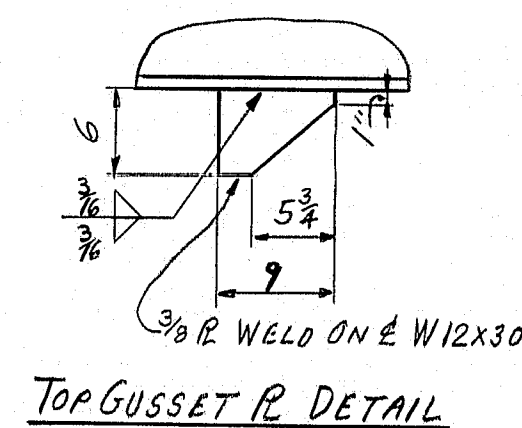
105-233



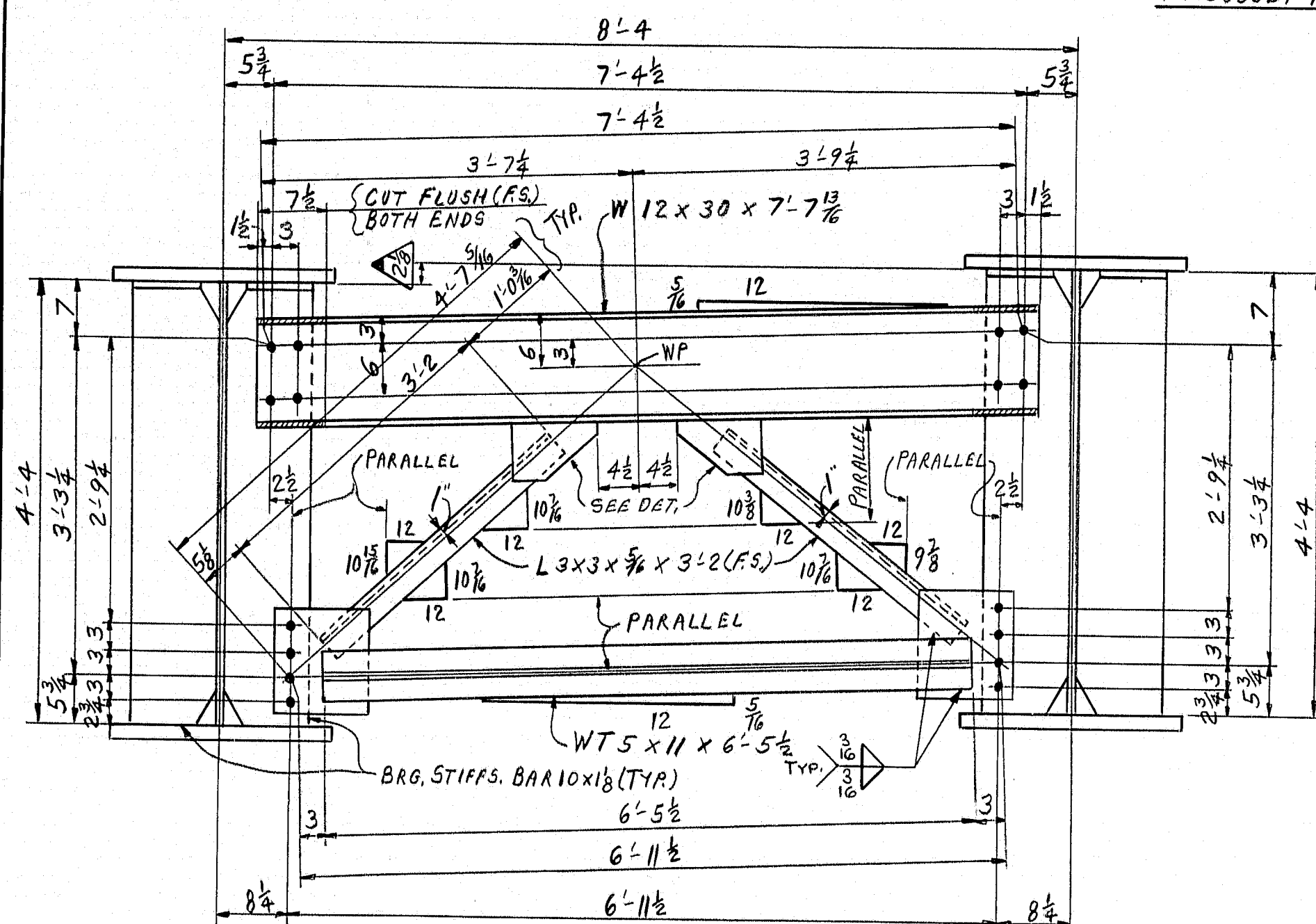


CROSS FRAMES AT ABUTMENTS (UTILITY BAY BETW. GIDS 5#6)  
AS SHOWN AT ABUT. #1; OPA. HAND AT ABUT. #2  
(LOOKING WEST AT ABUT. #1; LOOKING EAST AT ABUT. #2)

CROSS FRAMES AT CONSTRUCTION JOINTS (BETW. GIDS 5#6)  
(LOOKING EAST)



TOP GUSSET PLATE DETAIL



CROSS FRAME AT PIER (BETWEEN GIRDERS 5#6)  
(LOOKING WEST)

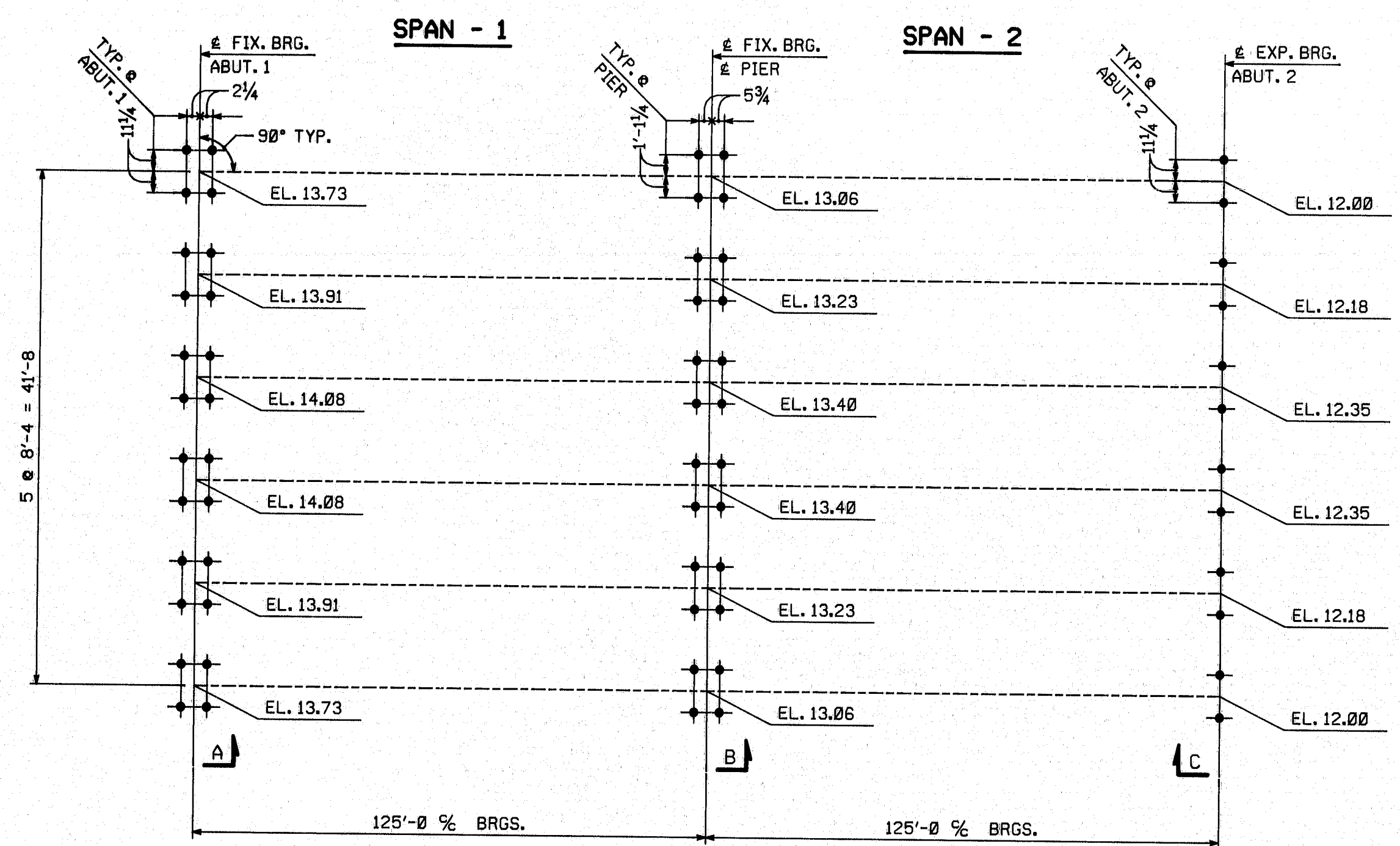
NOTES:  
WORK THIS DWG. WITH DRAWINGS WS1 & WS2.  
FOR OTHER NOTES, SEE DWGS. WS1 & WS2.

105-234

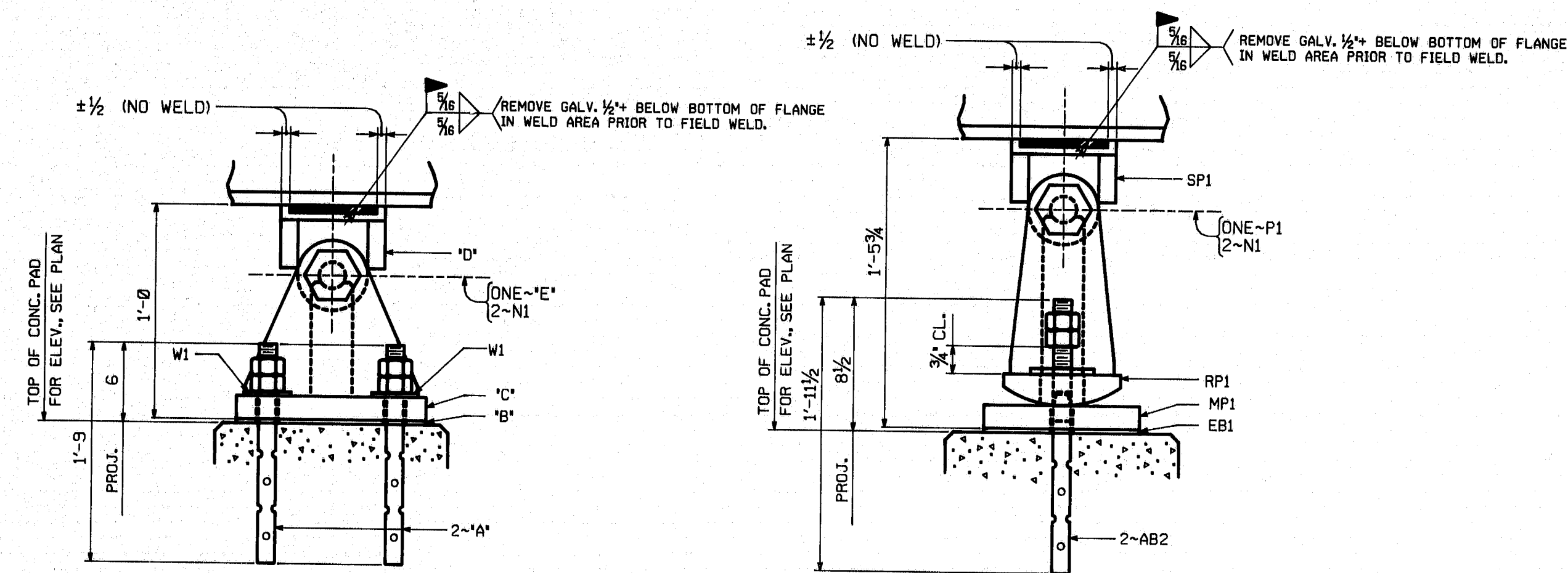
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.
1	ME	BR-026-1(61)

NO.	REVISION:	DATE:
<b>HIGH STEEL STRUCTURES, INC.</b> <small>1905 Old Philadelphia Pike Lancaster, Pennsylvania 17603 Phone 717/299-528 A Subsidiary of High Industries, Inc.</small>		
WORK SHEET - CROSSFRAME CONNECTIONS		
SOUTH WARREN BRIDGE (RT. 1) OVER WEST GEORGE RIVER		
SOUTH WARREN BRIDGE STA 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE HINKLE	MADE BY P.H.S.	CHECKED BY RB DATE 1-23-90
CONTRACT NUMBER ME-89148		DRAWING NUMBER WS3

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
1	ME	BR-026-1(61)



ANCHOR BOLT PLAN



SECTIONS A & B

SECTION	*A*	*B*	*C*	*D*	*E*
A	AB1	EB2	MP2	SP1	P1
B	AB1	EB3	MP3	SP2	P2

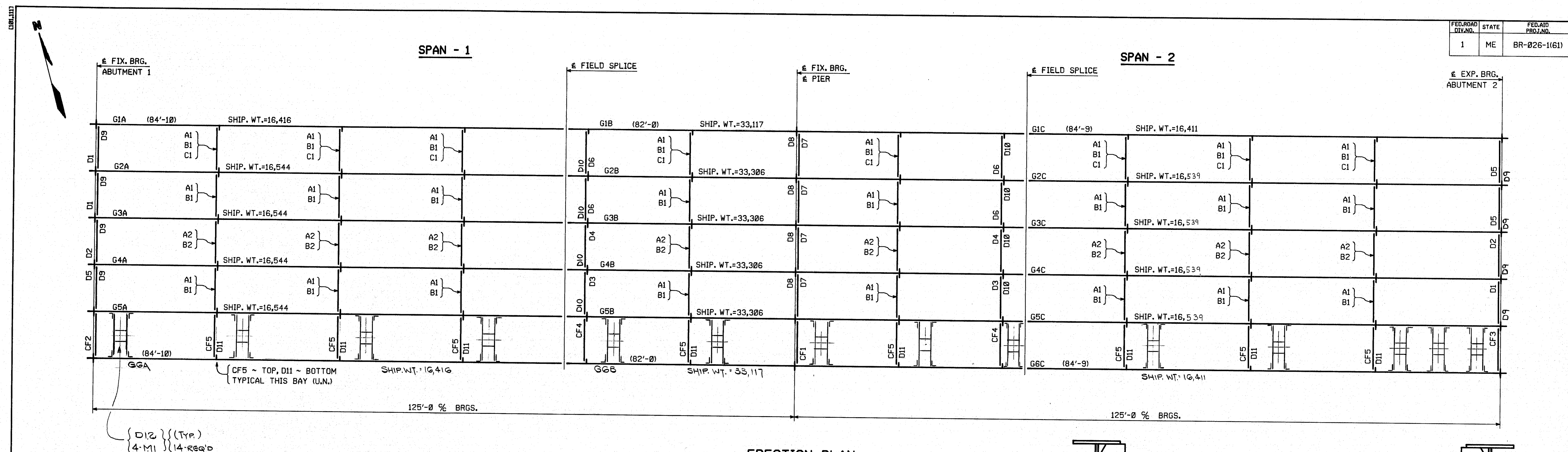
SECTION C

**NOTES:**  
ALL DIMENSIONS ARE GIVEN HORIZONTALLY.  
ELEVATIONS ARE GIVEN TO TOP OF CONCRETE PAD.  
ANCHOR BOLT SETTINGS MUST BE EXACT IN EVERY DETAIL IN ACCORDANCE WITH THIS DRAWING.  
ANCHOR BOLTS ARE FURNISHED BY HIGH STEEL STRUCTURES, INC. AND SET BY OTHERS.  
WORK THIS DRAWING WITH DRAWING E2.

NO.	REVISION	DATE
<p>105 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5201</p> <p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>A Division of High Industries, Inc.</p>		
<p>ANCHOR BOLT PLAN</p> <p>SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER</p> <p>SOUTH WARREN BRIDGE STA. 397+99.00</p> <p>BETWEEN TOWNS OF WARREN AND THOMASTON</p> <p>KNOX COUNTY, MAINE</p> <p>STATE OF MAINE, DEPT. OF TRANSPORTATION</p>		
<p>STATE CONTRACT OR REF. NO. BR-026-1(61)</p> <p>CONTRACTOR CALLAHAN BROTHERS, INC.</p> <p>IN CHARGE HINKLE MADE BY OPS CHK'D BY RB DATE 3-12-90</p> <p>CONTRACT NUMBER ME-89148 DRAWING NUMBER E1</p>		

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ERECTOR PLAN

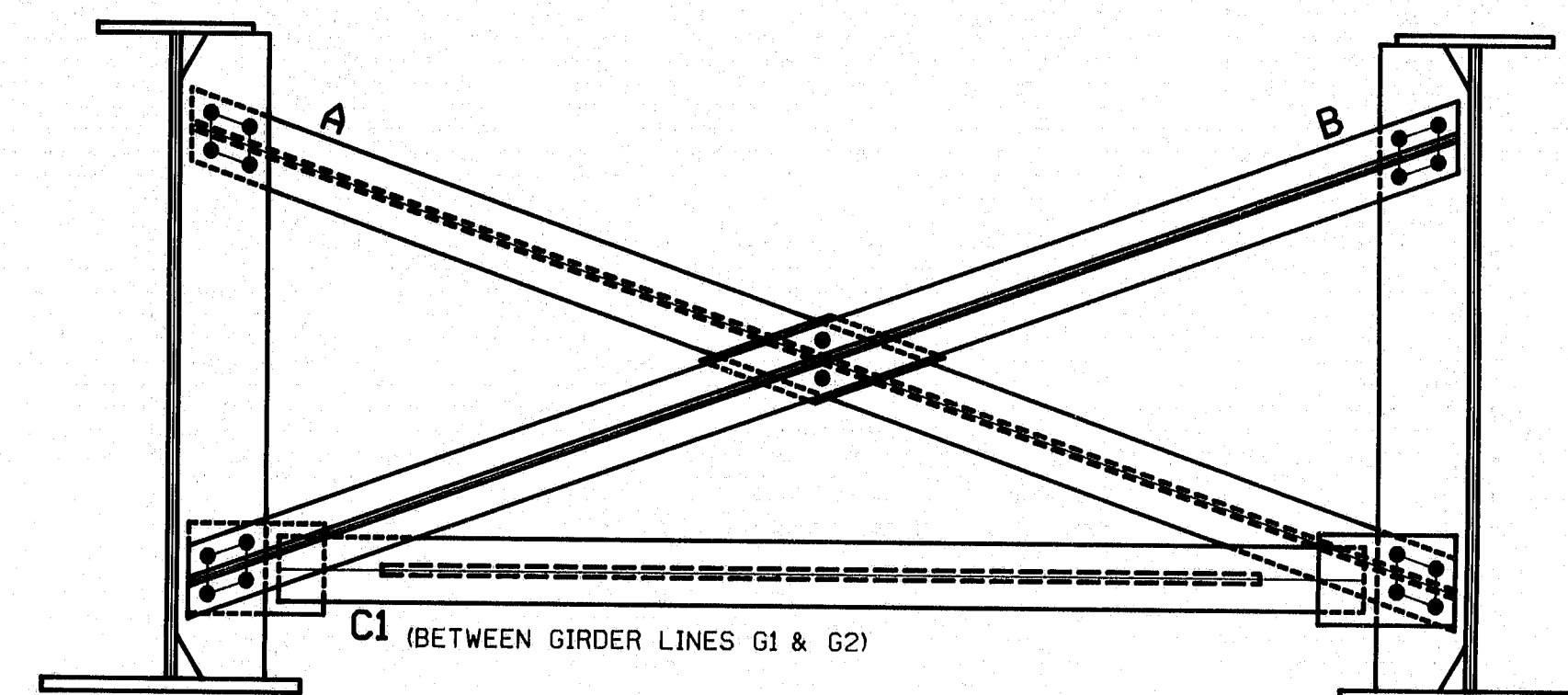
**ERECTOR NOTE:** ALL BOLTS MUST BE LOCATED IN ACCORDANCE WITH THE LIST OF FIELD CONNECTIONS. HIGH STEEL STRUCTURES WILL NOT BE RESPONSIBLE FOR FURNISHING ADDITIONAL BOLTS OR FOR ANY OTHER RELATED COSTS OR DAMAGES RESULTING FROM IMPROPER LOCATION OF BOLTS.

**LIST OF FIELD CONNECTIONS**

LINE	ACTUAL NO. REQ'D	BOLT DIA.	BOLT LENGTH	BOLTS / CONN.	* OF CONNS.	GRIP	THICKNESS OF PCS. CONNECTED	PIECES CONNECTED AND REMARKS
1	1152	3/4"	2 1/2"	96	12	1 1/2"	1/2" 1/2"	GIRDER WEB SPLICES
2	432	3/4"	4"	36	12	2 1/2"	1/2" 1 1/2"	GIRDER TOP FLANGE SPLICES
3	1008	3/4"	4"	84	12	2 1/2"	1/2" 1 1/2"	GIRDER BOTTOM FLANGE SPLICES
4	128	3/4"	2 1/2"	8	16	1 1/4"	3/8" 3/8"	END DIAPH. TOP (W24x55) TO BRG. STIFF.
5	32	3/4"	2 1/2"	2	16	1 1/4"	3/8" 3/8"	END DIAPH. BOTT. (W24x55) TO BRG. STIFF.
6	16	3/4"	2 1/2"	4	4	1 1/4"	3/8" 3/8"	END CROSSFRAME TOP (W12x30) TO BRG. STIFF.
7	16	3/4"	2 1/2"	4	4	1 1/4"	3/8" 3/8"	END CROSSFRAME BOTT. (W12x30) TO BRG. STIFF.
8	64	3/4"	2 1/2"	8	8	1 1/2"	1 1/4" 3/8"	DIAPH. PIER TOP (W24x55) TO BRG. STIFF.
9	16	3/4"	2 1/2"	2	8	1 1/2"	1 1/4" 3/8"	DIAPH. PIER BOTT. (W24x55) TO BRG. STIFF.
10	8	3/4"	2 1/2"	4	2	1 1/2"	1 1/4" 3/8"	CROSSFRAME PIER TOP (W12x30) TO BRG. STIFF.
11	8	3/4"	2 1/2"	4	2	1 1/2"	1 1/4" 3/8"	CROSSFRAME PIER BOTT. (W12x30) TO BRG. STIFF.
12	128	3/4"	2 1/2"	8	16	1 1/4"	3/8" 3/8"	DIAPH. TOP (W24x55) TO BRG. STIFF.
13	32	3/4"	2 1/2"	2	16	1 1/4"	3/8" 3/8"	DIAPH. BOTT. (W24x55) TO BRG. STIFF.
14	16	3/4"	2 1/2"	4	4	1 1/4"	3/8" 3/8"	CROSSFRAME TOP (W12x30) TO BRG. STIFF.
15	16	3/4"	2 1/2"	4	4	1 1/4"	3/8" 3/8"	CROSSFRAME BOTT. (W12x30) TO BRG. STIFF.
16	448	3/4"	2 1/2"	4	112	3/4"	3/8" 3/8"	TYP. CROSSFRAME WT4x9 TO CONN. R
17	64	3/4"	2 1/2"	4	16	1 1/4"	3/8" 3/8"	TYP. CROSSFRAME WT4x9 & GUSS. R TO CONN. R
18	64	3/4"	2 1/2"	2	32	1 1/4"	3/8" 3/8"	TYP. CROSSFRAME WT4x9 TO WT4x9 & GUSS. R TO CONN. R
19	128	3/4"	2 1/2"	4	32	3/4"	3/8" 3/8"	CROSSFRAMES UTILITY BAY W4x9 TO CONN. R
20	64	3/4"	2 1/2"	4	16	1 1/4"	3/8" 3/8"	CROSSFRAMES UTILITY BAY W4x9 TO CONN. R
21								
22	112	3/4"	2 1/2"	8	14	3/8"	3/8" 3/8"	CONN. R TO CB
23	112	3/4"	2 1/2"	8	14	3/8"	3/8" 3/8"	CONN. R TO GIRDER WEB
24								
25								

**FIELD BOLT SUMMARY**

(ADDITIONAL BOLTS ADDED)  
ALL FIELD BOLTS ARE MECHANICALLY GALVANIZED TO (ASTM B695) CLASS 50, TYPE 1  
ASTM A325 TYPE 1 BOLTS WITH HVY. HEX HEAD AND  
ASTM A563 GRADE DH HVY. HEX NUT  
622 - 3/4" HIGH STRENGTH BOLTS x 0'-2"  
252 - 3/4" HIGH STRENGTH BOLTS x 0'-2 1/4"  
336 - 3/4" HIGH STRENGTH BOLTS x 0'-2 1/2"  
1310 - 3/4" HIGH STRENGTH BOLTS x 0'-2 3/4"  
1512 - 3/4" HIGH STRENGTH BOLTS x 0'-4"  
4032 HARD, FLAT F436 WASHERS FOR 3/4" H.S. BOLTS  
120 - 3/4" HIGH STRENGTH BOLTS x 0'-1 1/4"  
120 - 3/4" HIGH STRENGTH BOLTS x 0'-2"  
240 HARD, FLAT F436 WASHERS FOR 3/4" H.S. BOLTS



INTERMEDIATE CROSSFRAMES  
LOOKING EAST

**NOTES:**

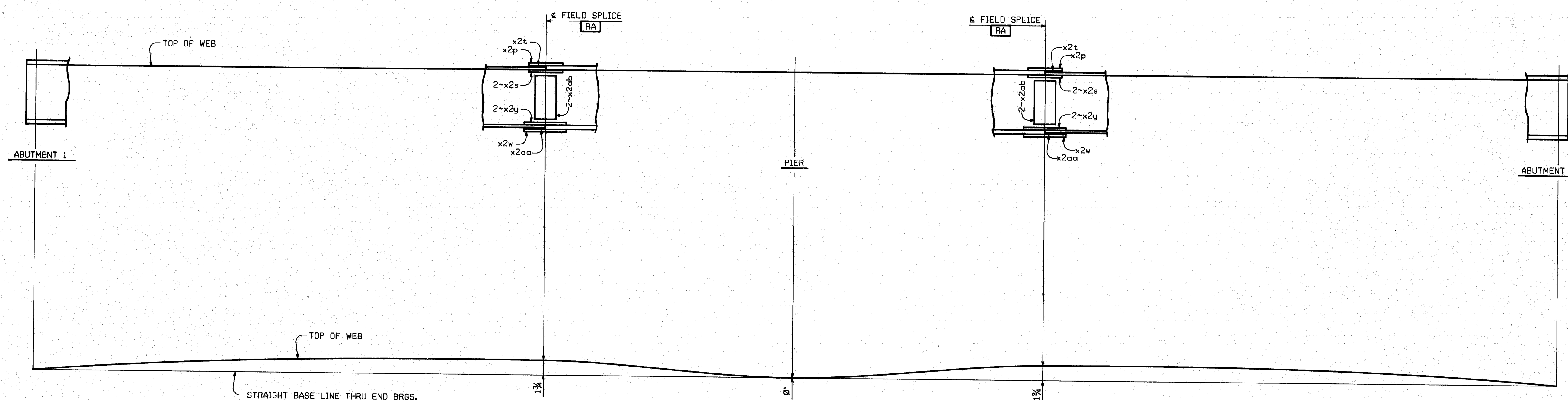
NO CREDIT WILL BE ALLOWED FOR WORK PERFORMED BY OTHERS IN REPLACING OR CORRECTING MATERIALS OR WORKMANSHIP COVERED BY THIS DRAWING UNLESS EXPRESSLY AUTHORIZED BY HIGH STEEL STRUCTURES, INC.  
ALL FIELD CONNECTIONS TO BE MADE WITH 3/4" HIGH STRENGTH (A325, TYPE 1) BOLTS (U.N.).  
NOTICE: WEIGHTS OF MEMBERS LISTED ON THESE DRAWINGS ARE ESTIMATED WEIGHTS AND ACTUAL WEIGHTS WILL VARY. HIGH STEEL STRUCTURES, INC. WILL NOT BE RESPONSIBLE FOR ANY ERECTION PROCEDURES, SHIPPING PROCEDURES, ETC. DEVELOPED USING ESTIMATED WEIGHTS AS SHOWN.  
ALL DIMENSIONS ARE GIVEN HORIZONTALLY (U.N.).  
DIMENSIONS GIVEN THUS: (84'-10") ARE THE SHIPPING LENGTHS OUT TO OUT OF FASCIA GIRDERS.  
HIGH STEEL STRUCTURES, INC. DOES NOT SUPPLY SHEAR STUDS, ROD HANGERS, HARDWARE AT UTILITY SUPPORTS, EXPANSION DAM MATERIALS OR ANY BRIDGE DRAINAGE ITEMS.  
FOR BEARING ASSEMBLIES, SEE DRAWING E1.  
FOR SHOP ASSEMBLY DIAGRAM, SEE DRAWING S41.

NO.	REVISION	DATE
<b>HIGH STEEL STRUCTURES, INC.</b> 1005 Old Philadelphia Pike Lancaster, PA 17606-0008 Phone 717/299-5211 A Division of High Industries, Inc.		
ERECTOR PLAN		
SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE: HINKLE	MADE BY: KG	CHKD. BY: RB
CONTRACT NUMBER: ME-89148	DRAWING NUMBER: E2	
DATE: 3-12-90		

105-236

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FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
1	ME	BR-026-1(61)

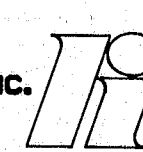


SHOP REAMING DIAGRAM

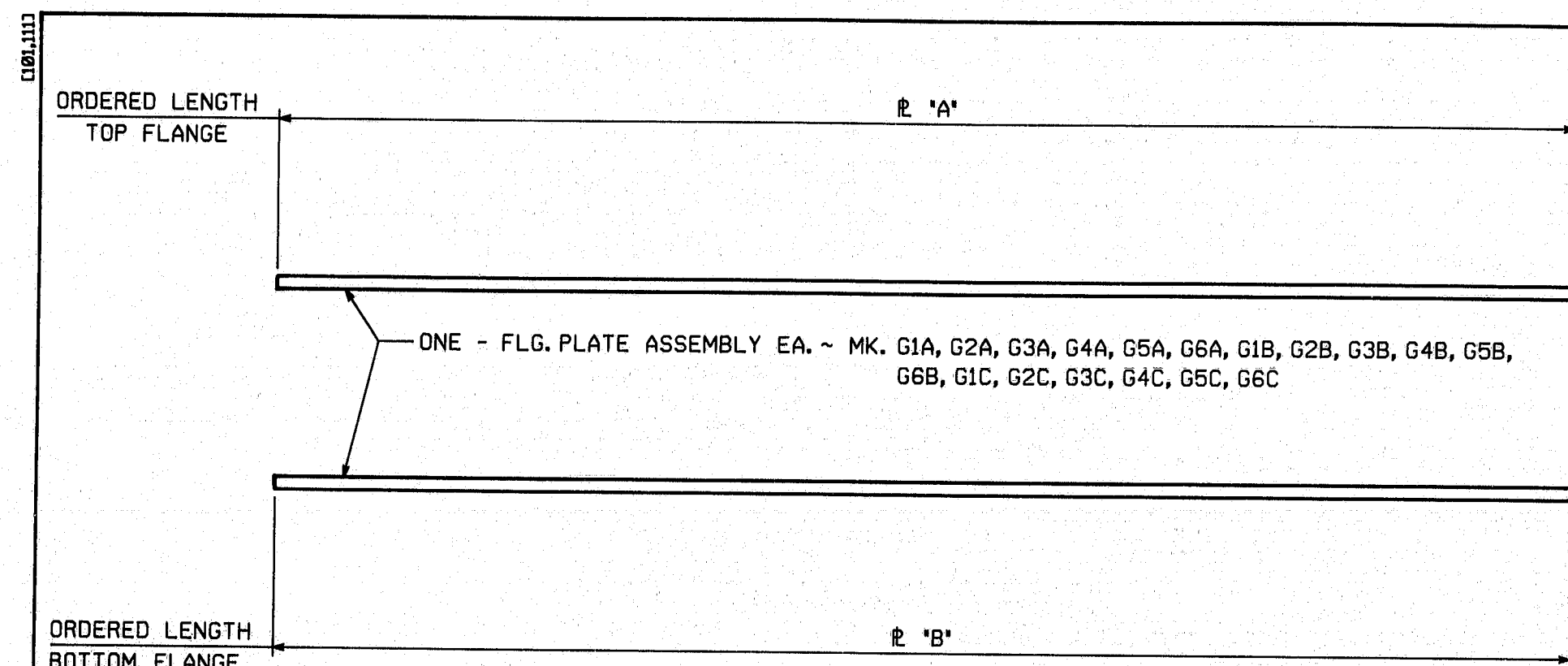
**NOTES:**

HOLES MARKED [RA] ARE TO BE SUB-PUNCHED/SUB-DRILLED  $\frac{1}{4}$ " UNDER SIZE AND REAMED TO FULL SIZE OR DRILLED FROM SOLID WITH CONNECTING PARTS ASSEMBLED AND MATCH MARKED. HOLES TO BE  $\frac{5}{16}$ "  $\phi$ .

105-237

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NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b>  1005 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5201 A Division of High Industries, Inc.</p>		
SHOP REAMING DIAGRAM		
SOUTH WARREN BRIDGE (RTE.#1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE: HINKLE	MADE BY: KG	CHK'D BY: RB DATE: 3-12-90
CONTRACT NUMBER: ME-89148		DRAWING NUMBER: SAI



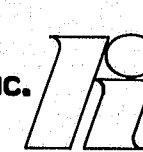


MARK	"A"	"B"
G1A THRU G6A	12 x 3/4 x 84'-11 (3/4)	20 x 1 x 84'-10 (3/3)
G1B THRU G6B	26 x 1 1/8 x 82'-1 (3/2)	26 x 1 1/8 x 82'-1 (3/2)
G1C THRU G6C	12 x 3/4 x 84'-11 (3/4)	20 x 1 x 84'-10 (3/3)

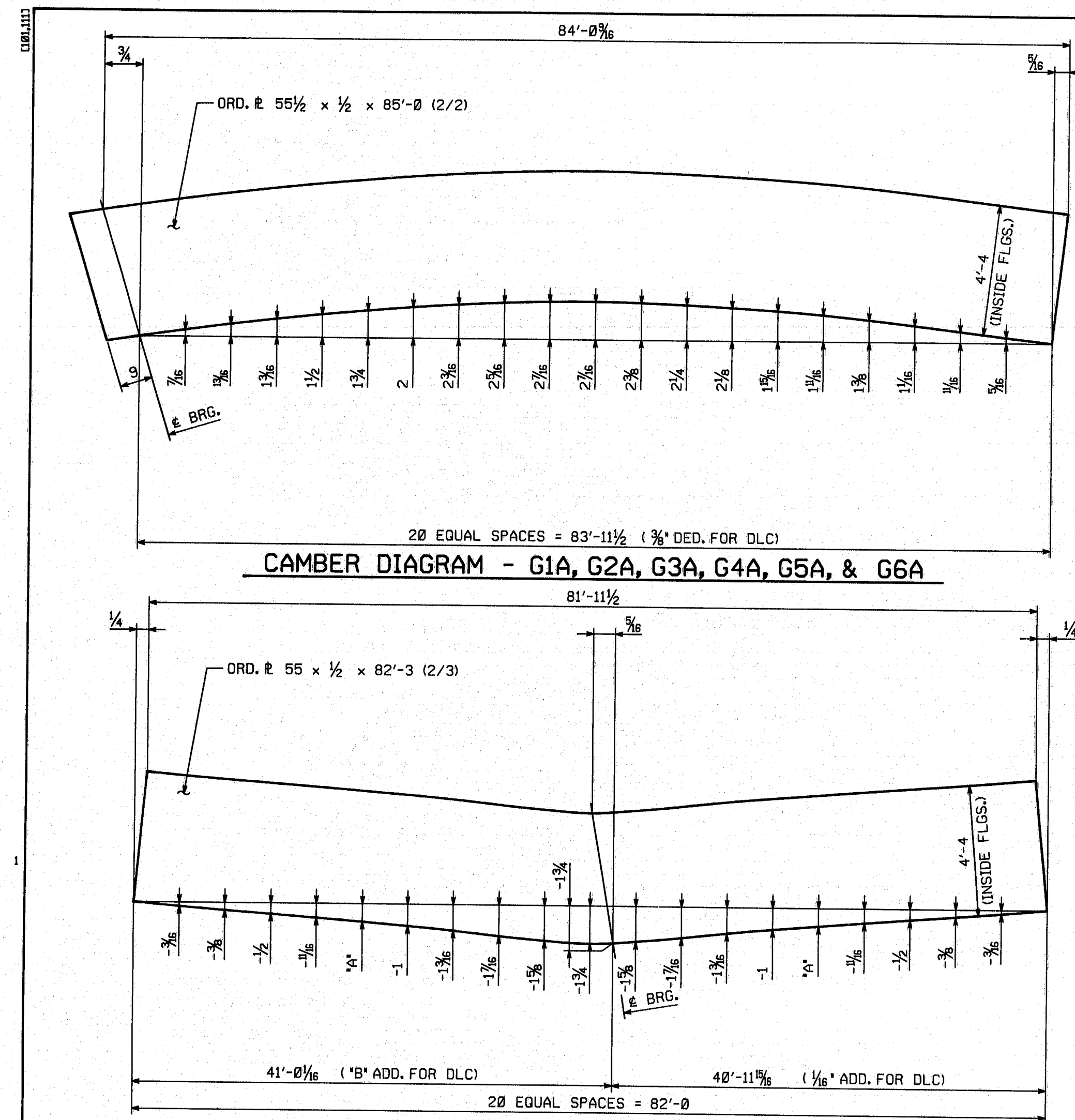
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
1	ME	BR-026-1(61)

# NOTES:

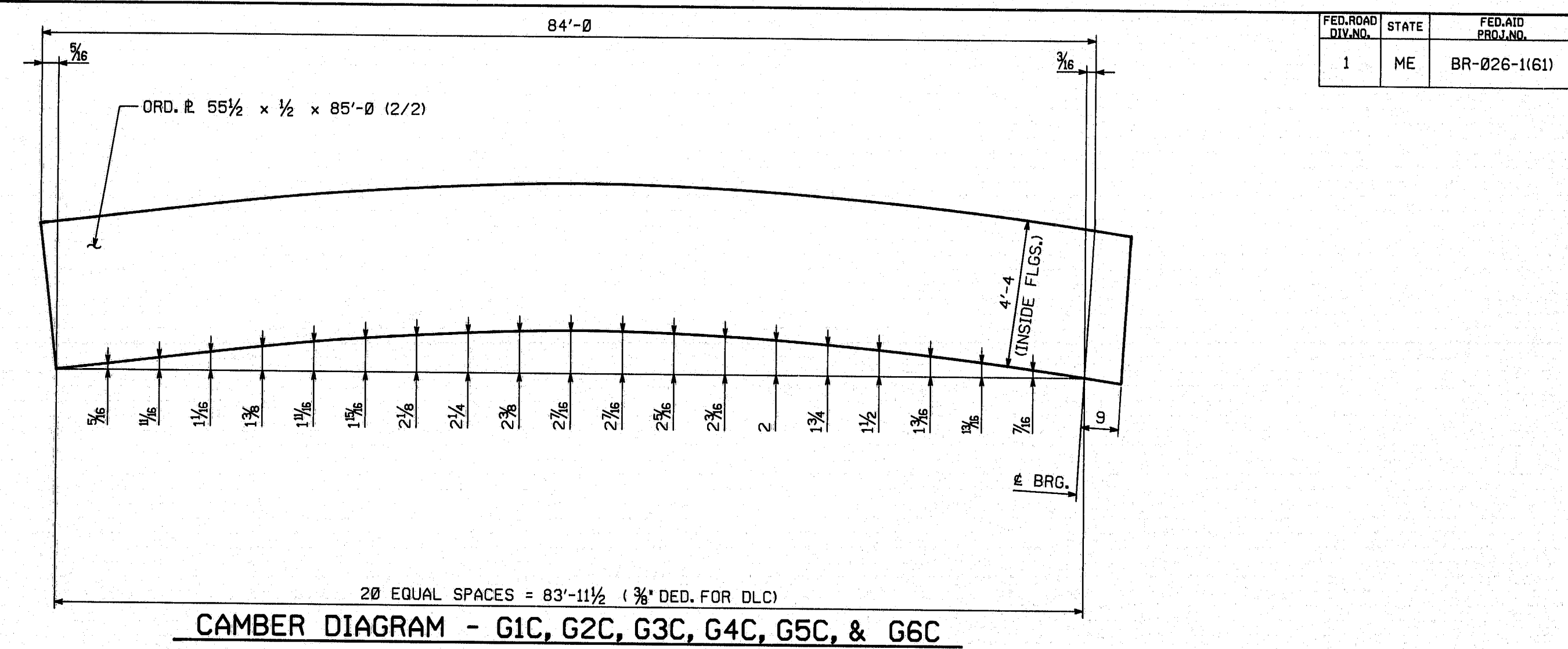
FOR GENERAL SHOP NOTES, SEE DRAWING N1.  
ALL FLANGE PLATES REQUIRE CHARPY V-NOTCH TEST.

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NO.	REVISION	DATE
HIGH STEEL STRUCTURES, INC.  855 Old Philadelphia Pike Lancaster, PA 17602-0008 Phone 717/299-5201 A Division of High Industries, Inc.		
FLANGE SPLICE DETAILS		
SOUTH WARREN BRIDGE (RTE.*1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE: HINKLE	MADE BY: PHS	CHK'D BY: RB DATE: 1-4-90
CONTRACT NUMBER: ME-89148		DRAWING NUMBER: FS1

105-238



MARK	"A"	"B"
G1B	-1/8	1/8
G2B, G4B	-7/8	3/8
G3B, G5B	-7/8	1/8
G6B	-1/8	3/8



FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
1	ME	BR-026-1(61)

#### NOTES:

FOR GENERAL SHOP NOTES, SEE DRAWING N1.  
NEGATIVE CAMBER ORDINATES INDICATE CURVE IS BELOW BASELINE.  
ALL WEB PLATES REQUIRE CHARPY V-NOTCH TEST.

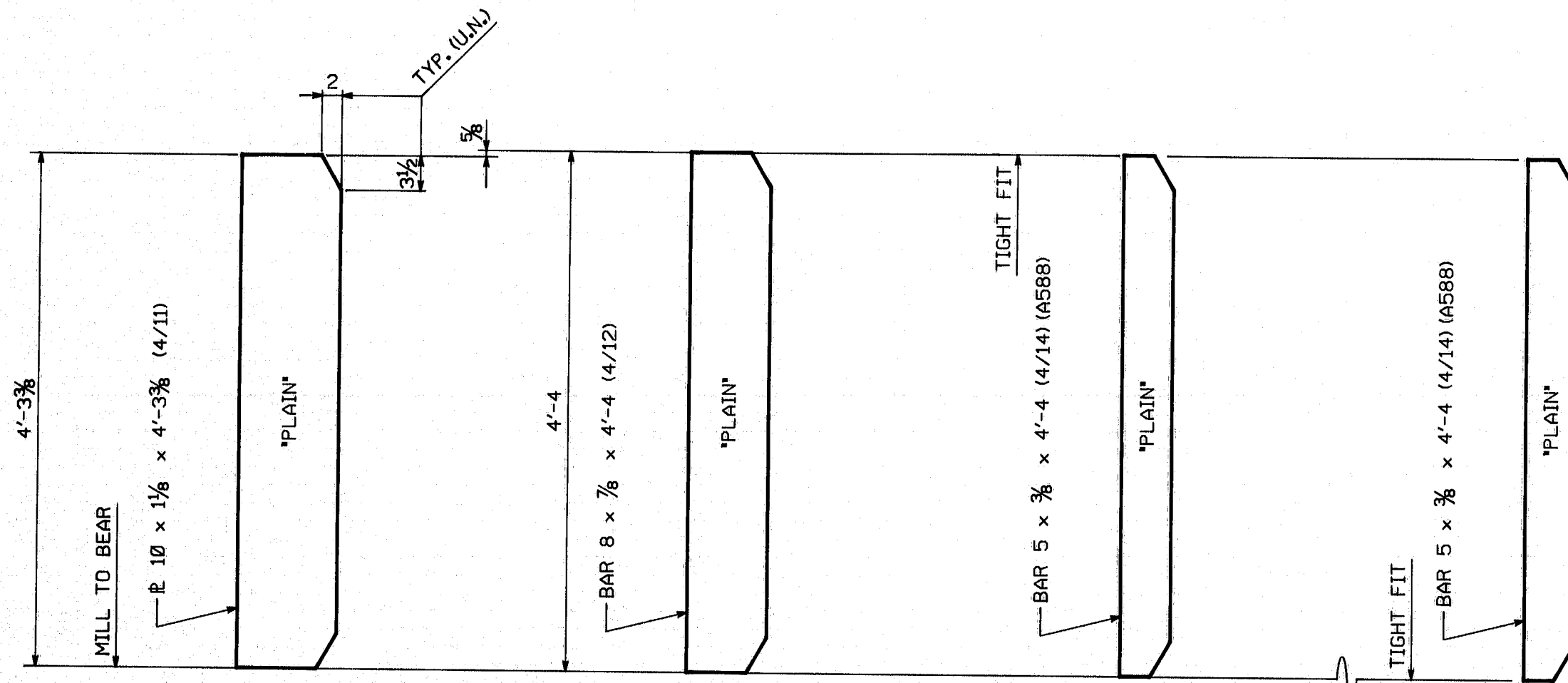
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NO.	REVISION	DATE
<b>HIGH STEEL STRUCTURES, INC.</b> 805 Old Philadelphia Pike Lancaster, PA 17602-0008 Phone 717/299-9231 <i>A Division of High Industries, Inc.</i>		
WEB CAMBER DIAGRAMS		
SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT BR-026-1(61)		
OR REF. NO.		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE	HINKLE	MADE BY PHS
CONTRACT NUMBER	ME-89148	DATE 1-4-90
DRAWING NUMBER	WC1	

105-239

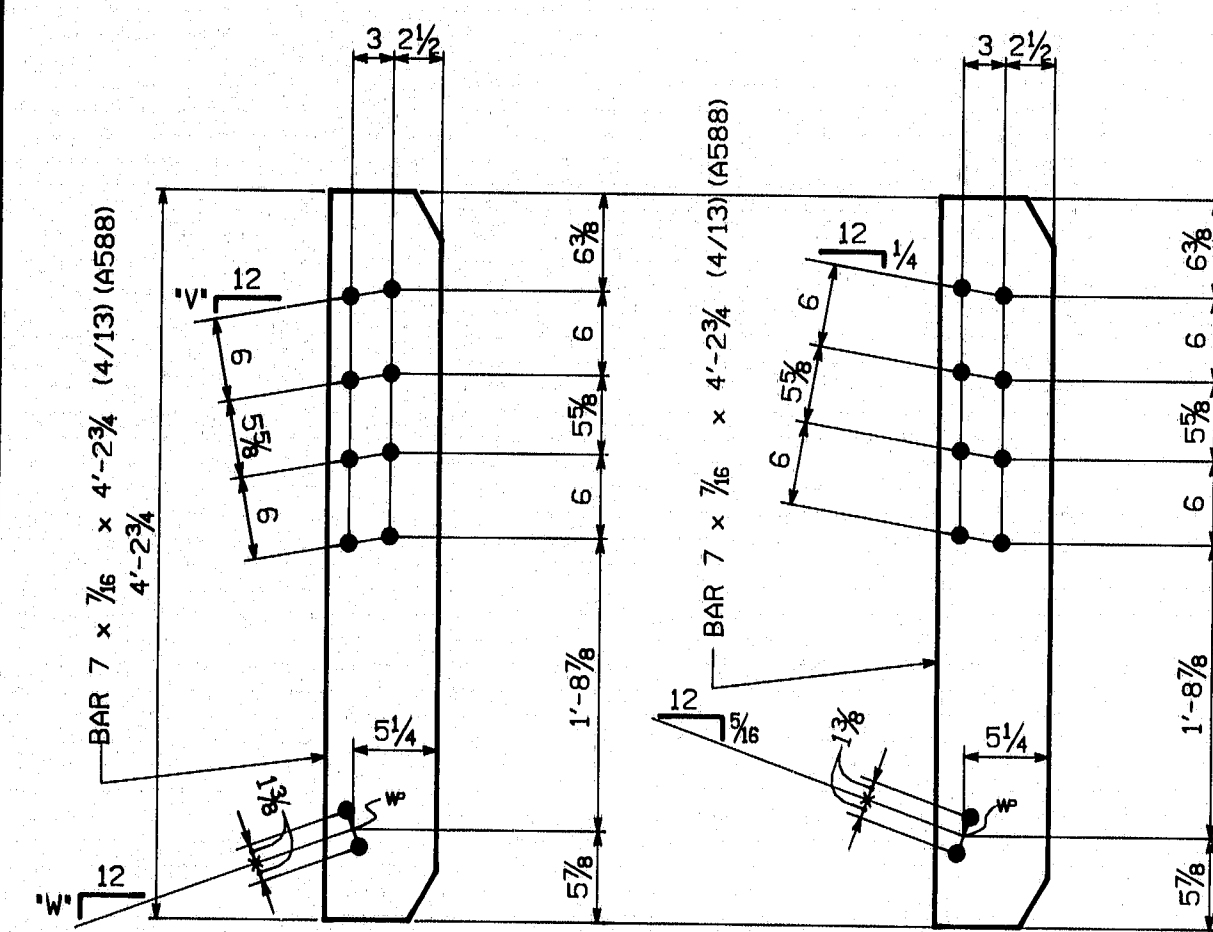
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(06.111)

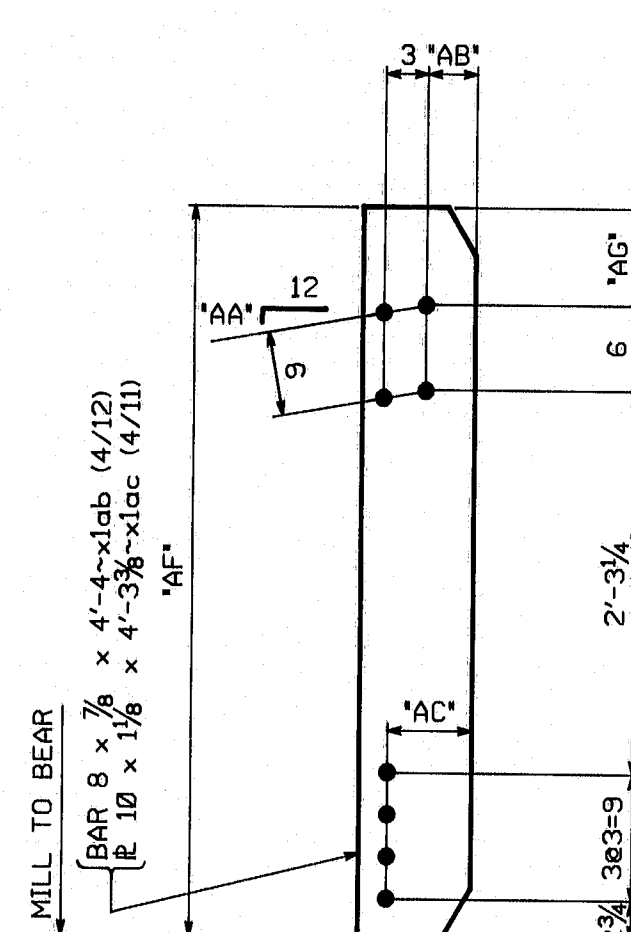


2~BRG. STIFF. MK. x1a 4~BRG. STIFF. MK. x1b 24~INT. STIFF. MK. x1c 24~INT. STIFF. MK. x1d  
(A588)

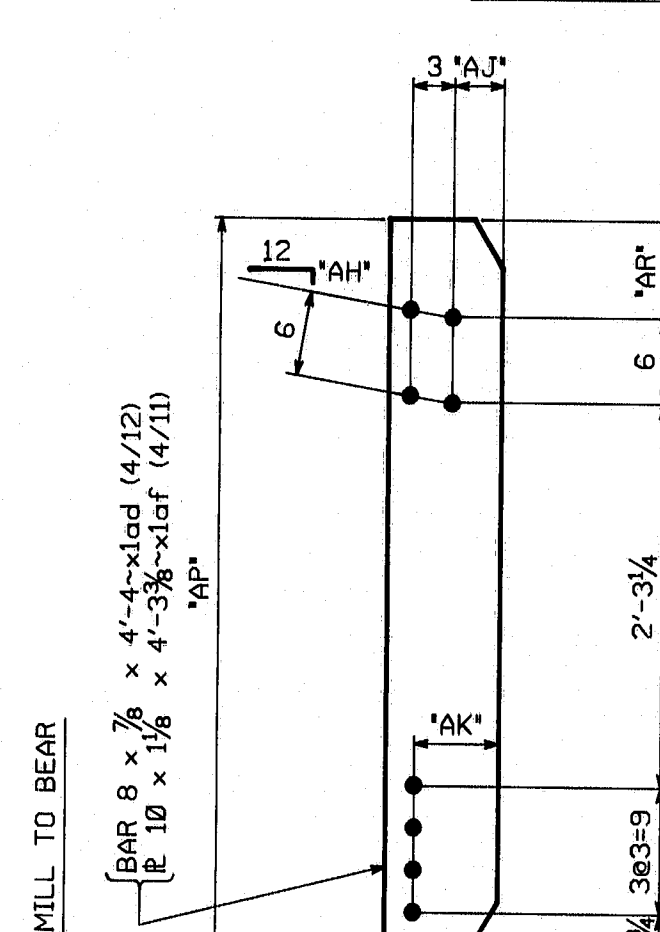


CONN. R			
NO. REQ'D.	MARK	"V"	"W"
6	x1t	1/4	5/8
4	x1w	0	0

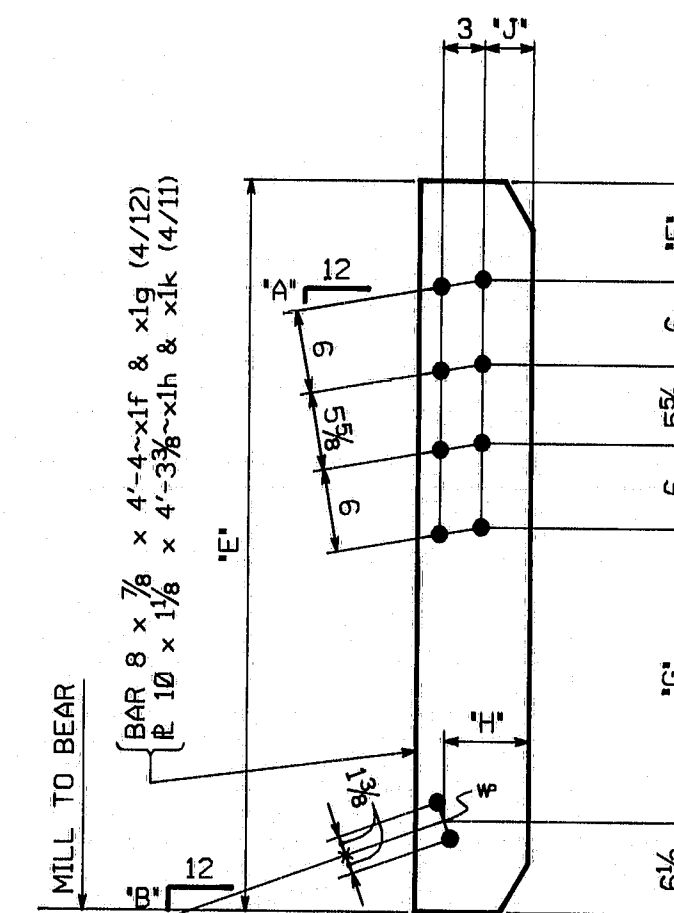
6~CONN. R MK. x1y



BRG. STIFF.							
NO. REQ'D.	MARK	"AA"	"AB"	"AC"	"AF"	"AG"	
2	x1ab	1/4	3 1/2	6	4'-4"	7	
ONE	x1ac	5/8	5 1/2	8	4'-3 3/8"	6 3/8	

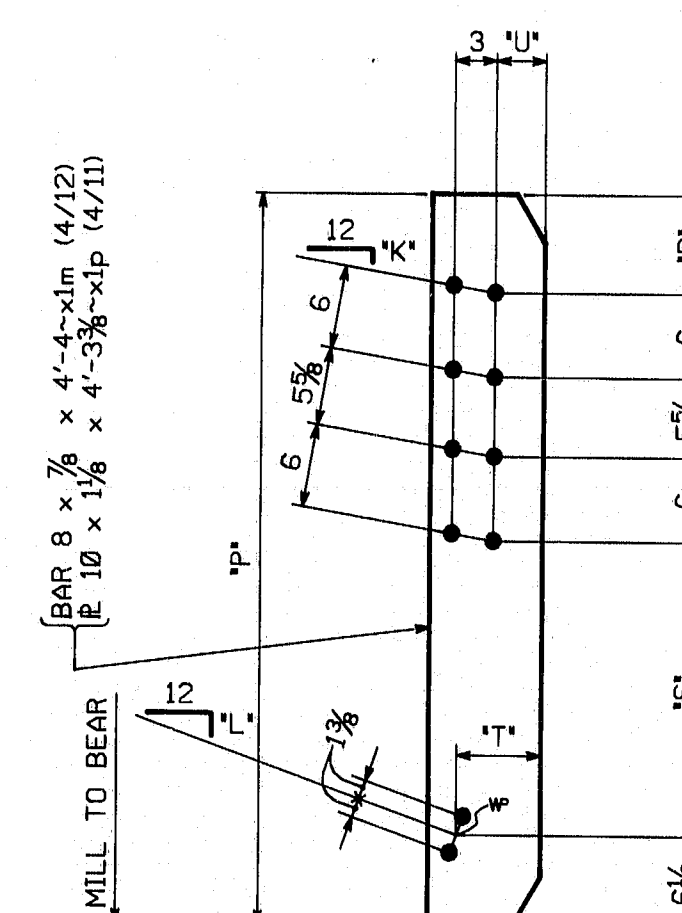


BRG. STIFF.							
NO. REQ'D.	MARK	"AH"	"AJ"	"AK"	"AP"	"AR"	
2	x1ad	1/4	3 1/2	6	4'-4"	7	
ONE	x1af	5/8	5 1/2	8	4'-3 3/8"	6 3/8	



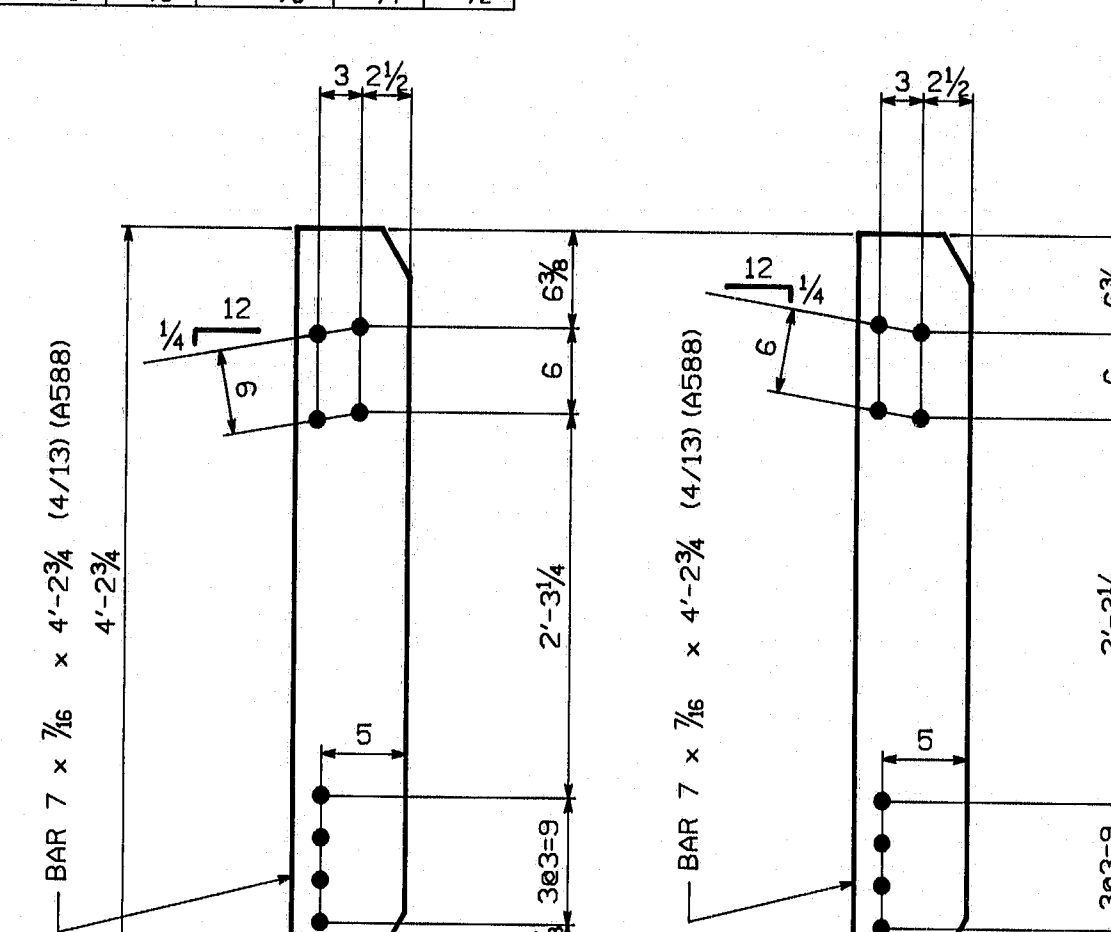
BRG. STIFF.

NO. REQ'D.	MARK	"A"	"B"	"E"	"F"	"G"	"H"	"J"
6	x1f	1/4	5/8	4'-4"	7	1'-8 7/8"	6 1/4	3 1/2
4	x1g	0	0	4'-4"	7	1'-8 7/8"	6 1/4	3 1/2
3	x1h	0	5/8	4'-3 3/8"	8 1/2	1'-6 3/4"	8 1/4	5 1/2
2	x1k	0	0	4'-3 3/8"	6 3/8	1'-8 7/8"	8 1/4	5 1/2



BRG. STIFF.

NO. REQ'D.	MARK	"K"	"L"	"P"	"R"	"S"	"T"	"U"
6	x1m	1/4	5/8	4'-4"	7	1'-8 7/8"	6 1/4	3 1/2
3	x1p	0	5/8	4'-3 3/8"	6 3/8	1'-8 7/8"	8 1/4	5 1/2



2~CONN. R MK. x1ag 2~CONN. R MK. x1ah

SHOP NOTE

HOLES: 5/8" (U.N.)

BOLTS: NONE

PAINT: NONE

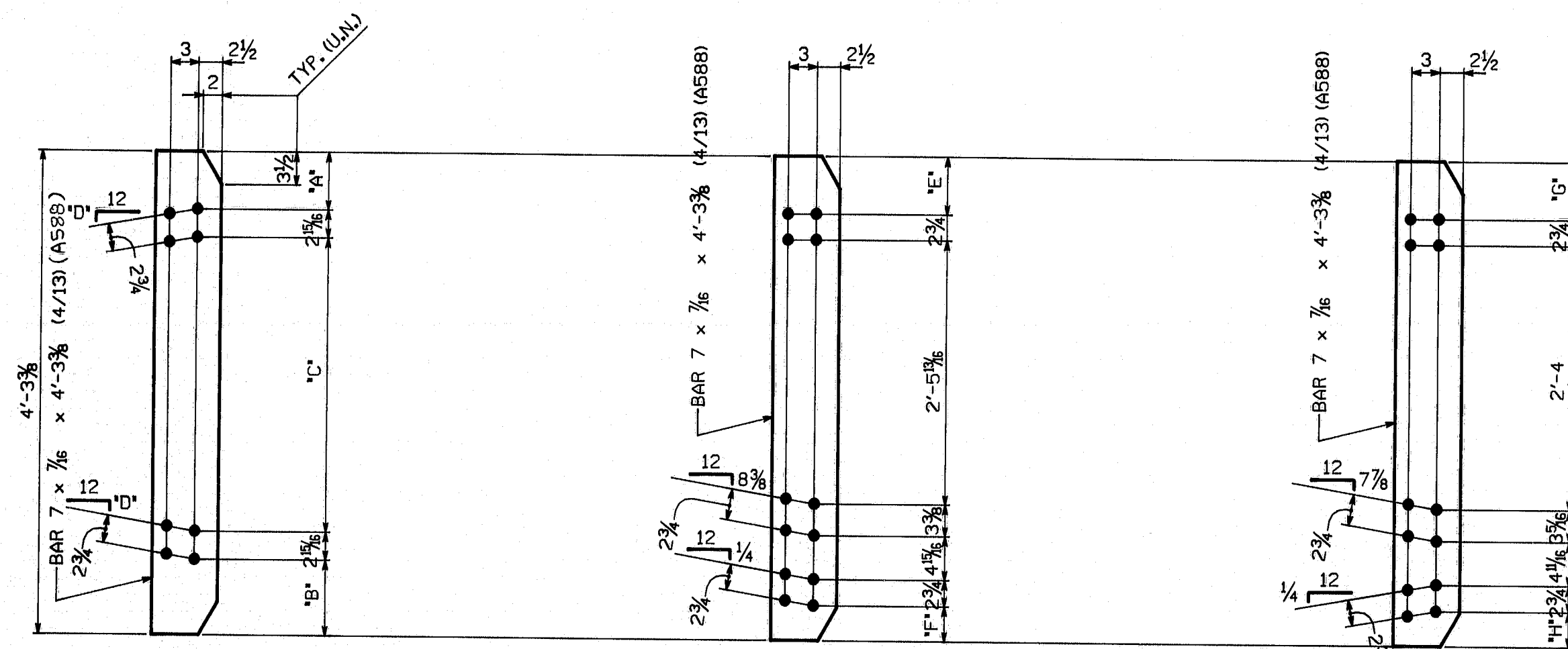
FOR GENERAL SHOP NOTES, SEE DWG. N1.

105-290

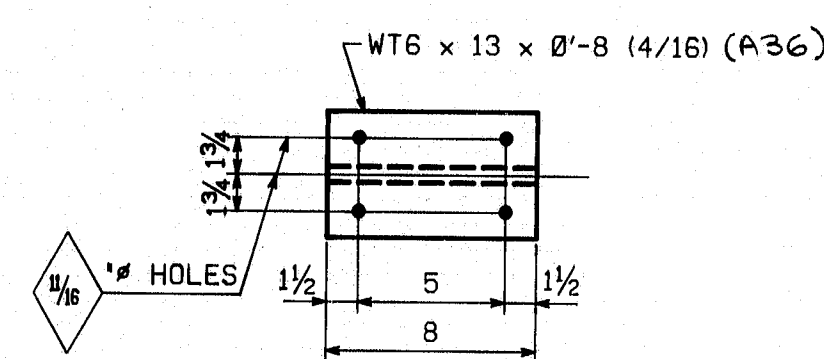
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NO.	REVISION	DATE
HIGH STEEL STRUCTURES, INC. 1905 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/295-5201 A Division of High Industries, Inc.		
GIRDER JOB STANDARDS		
SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE, HINKLE	MADE BY, CAS	CHK'D BY, RB DATE, 3-12-90
CONTRACT NUMBER, ME-89148	DRAWING NUMBER, X1	

CODE:30

001111

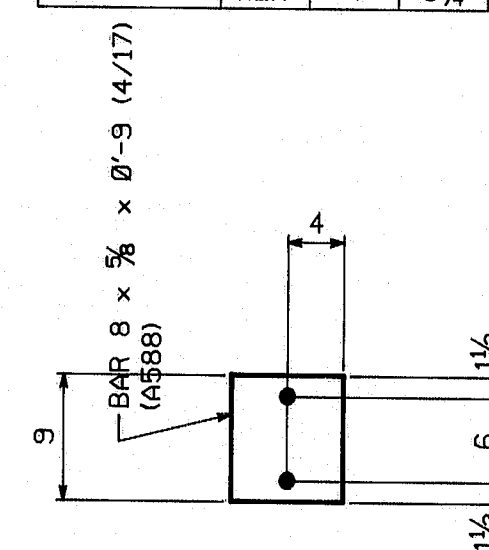


CONN. R				
NO. REQ'D.	MARK	'A'	'B'	'D'
6	x2a	5 1/2	8 1/8	2'-7 7/8
6	x2b	7 1/8	6 1/8	2'-7 7/8
18	x2c	6 1/8	8 1/8	2'-7 7/8
18	x2d	8 1/4	5 1/8	2'-7 7/8
4	x2f	5 1/2	6 1/8	2'-9 7/8
12	x2g	6 1/8	5 1/8	2'-9 7/8



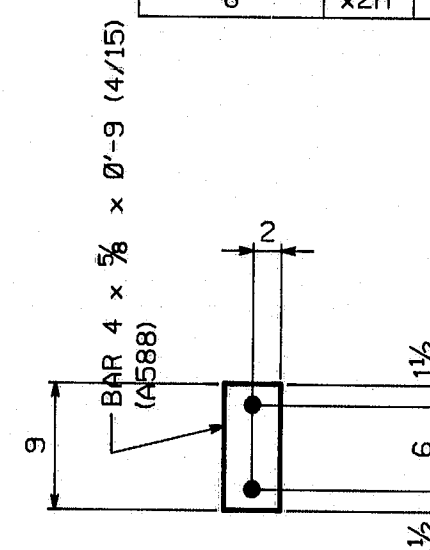
20 ~SCUPPER SUPPORT CONN. MK. x2ac

CONN. R				
NO. REQ'D.	MARK	'E'	'F'	
2	x2h	3 3/8	4 3/8	
6	x2k	4	3 3/4	

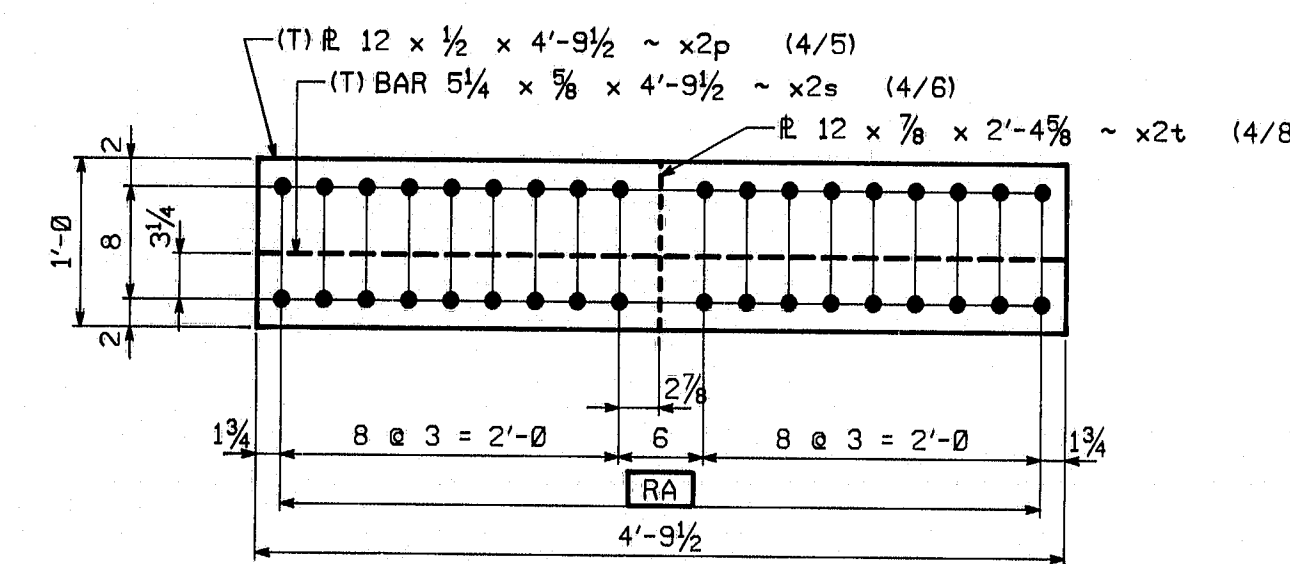


12~CONN. R MK. x2ad

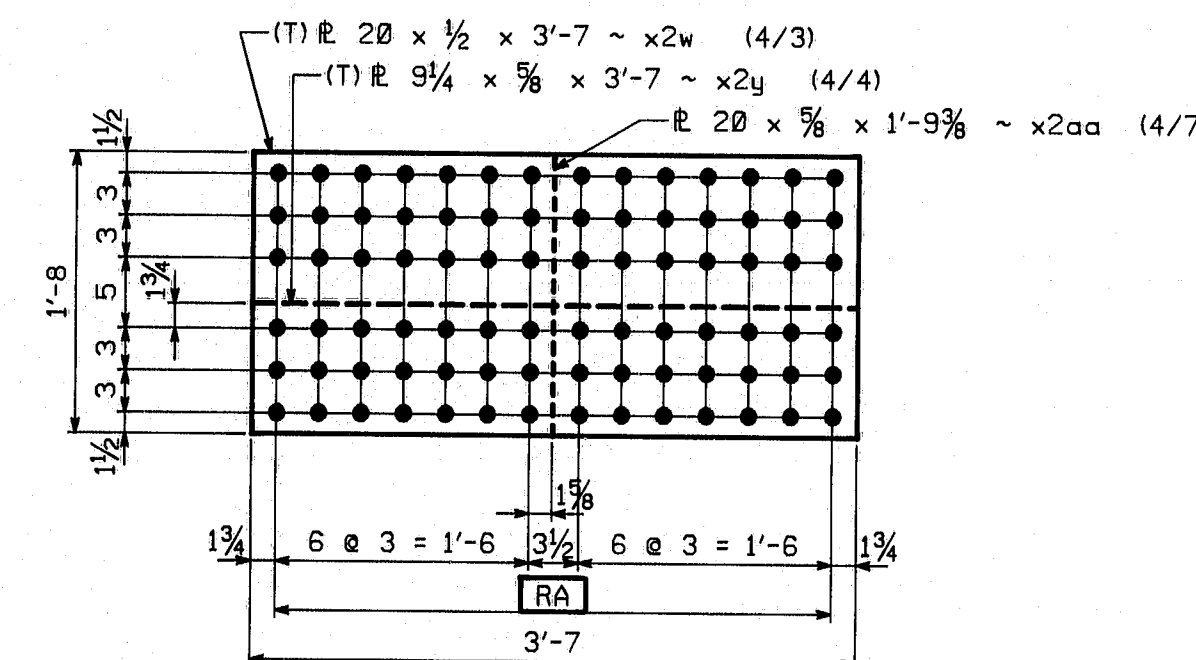
CONN. R				
NO. REQ'D.	MARK	'G'	'H'	
2	x2m	5 1/2	4 3/8	
6	x2n	6 1/8	3 3/4	



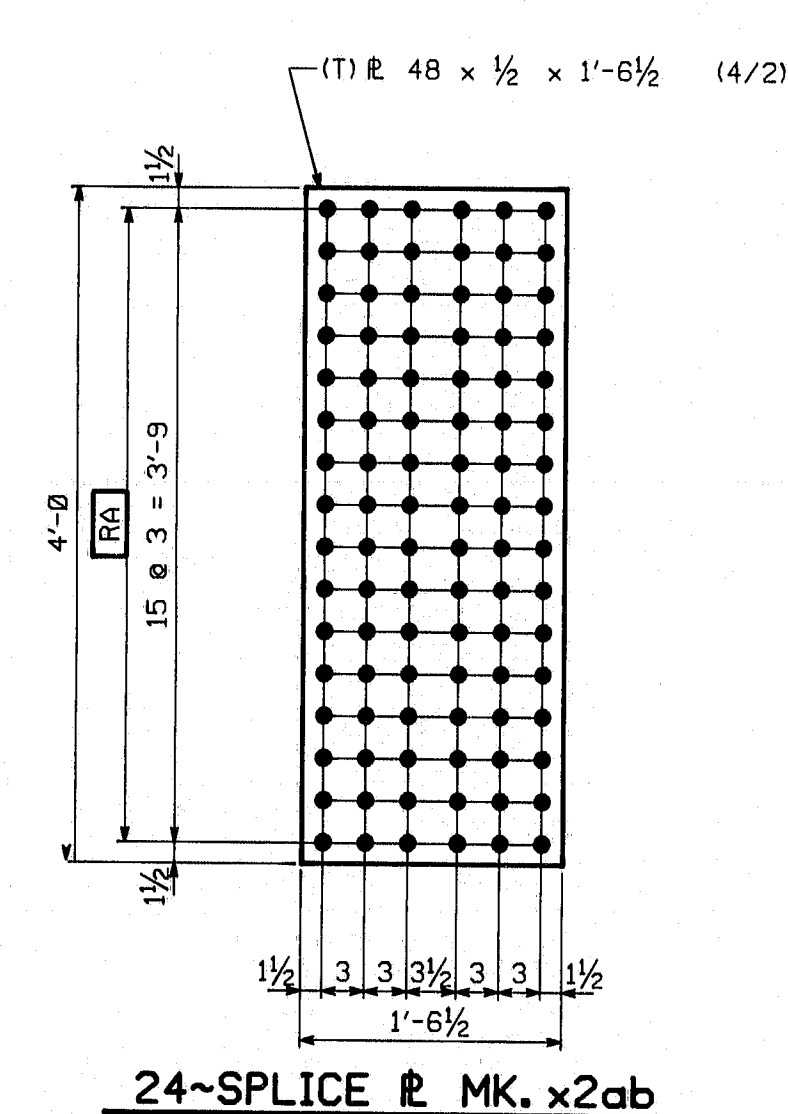
120~CONN. R MK. x2af



12~SPlice R MK. x2p  
24~SPlice R MK. x2s  
12~FILL R MK. x2t



12~SPlice R MK. x2w  
24~SPlice R MK. x2u  
12~FILL R MK. x2aa



24~SPlice R MK. x2ab

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
1	ME	BR-026-1(61)

SHOP NOTE

HOLES: 5/8" (U.N.)  
BOLTS: NONE  
PAINT: NONE  
FOR GENERAL SHOP NOTES, SEE DWG. N1.

105-249

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NO.	REVISION	DATE
<p>1805 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5211</p> <p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>A Division of High Industries, Inc.</p>		
GIRDER JOB STANDARDS		
SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE	MADE BY	DATE
HINKLE	CPS	RB 3-12-90
CONTRACT NUMBER	DRAWING NUMBER	
ME-89148	X2	

CODE:30



000-1111

# GENERAL SHOP NOTES

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
1	ME	BR-026-1(61)

SPECIFICATIONS:  
MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, HIGHWAYS AND BRIDGES  
(REVISION OF JULY, 1988) AND SUPPLEMENTALS THERETO, EXCEPT AS MODIFIED ON THE  
PLANS AND IN THE SPECIAL PROVISIONS.

MATERIAL:  
UNLESS NOTED OTHERWISE, ALL STEEL TO BE ASTM A572 GRADE 50.  
(T) INDICATES CHARPY V-NOTCH TESTING REQUIRED.

SHOP BOLTS TO BE HIGH STRENGTH ASTM A325 TYPE 1 (FRICTION) WITH HEAVY HEX HEAD  
AND ASTM A563 GRADE DH HEAVY HEX NUT, WITH ONE ASTM F436 ROUND WASHER PER  
BOLT. (BOLTS, NUTS AND WASHERS TO BE MECHANICALLY GALVANIZED TO ASTM B695.)

SHOP PROCEDURE:  
ALL FLANGE AND WEB PLATE SPLICES TO BE MADE BEFORE FINAL FITTING AND WELDING  
INTO GIRDER.  
CAMBER TOLERANCE:  $(-0 + \frac{1}{2} \text{ TO } \frac{1}{8})$  FOR EACH 10' IN EXCESS OF 50'.  
ALL RE-ENTRANT CUTS TO HAVE 1" MIN. RADIUS.

NO DIE STAMPING IS PERMITTED.

INSPECTION:  
SHOP INSPECTION BY: TO BE DETERMINED.

WELDING:  
ALL WELDING IS TO CONFORM TO AWS D1.1-80 AS MODIFIED BY THE 1981 AASHTO  
SPECIFICATIONS.  
NOTATIONS W1, W2, ETC. FOLLOWING WELDING SYMBOLS ON DETAIL DRAWINGS, REFER TO  
THE CORRESPONDING WELDING PROCEDURE TO BE USED FOR THAT JOINT.  
ENDS OF FLANGE PLATES TO BE BUTT WELDED SHALL BE SCANNED FOR LAMINATION.  
FOR WELDING STIFFENERS AND CONNECTION PLATES TO GIRDERS, SEE TYPICAL WELDING  
DETAIL.

## NON-DESTRUCTIVE TESTING:

MAGNETIC PARTICLE INSPECTION IS REQUIRED ON 10% OF ALL FILLET WELDS GREATER  
THAN 10'-0" AND 1'-0" OF ALL FILLET WELDS LESS THAN 10'-0".

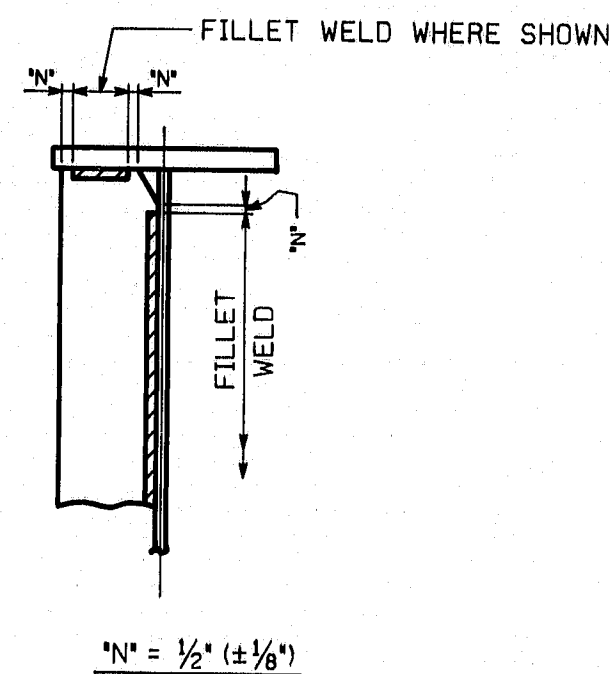
[RA] NOTE:  
HOLES MARKED [RA] ON DETAIL DRAWINGS TO BE SUB-PUNCHED/SUB-DRILLED  $\frac{1}{4}"$  UNDER  
SIZE AND REAMED TO FULL SIZE OR DRILLED FROM SOLID WITH CONNECTING PARTS  
ASSEMBLED AND MATCH MARKED.

CLEANING:  
BLAST CLEAN TO SSPC-SP6 (COMMERCIAL) PRIOR TO GALVANIZING, ALL DIAPHRAGMS,  
CROSSFRAMES AND BEARINGS.  
BLAST CLEAN TO SSPC-SP10 (NEAR WHITE), ALL OTHER STEEL.

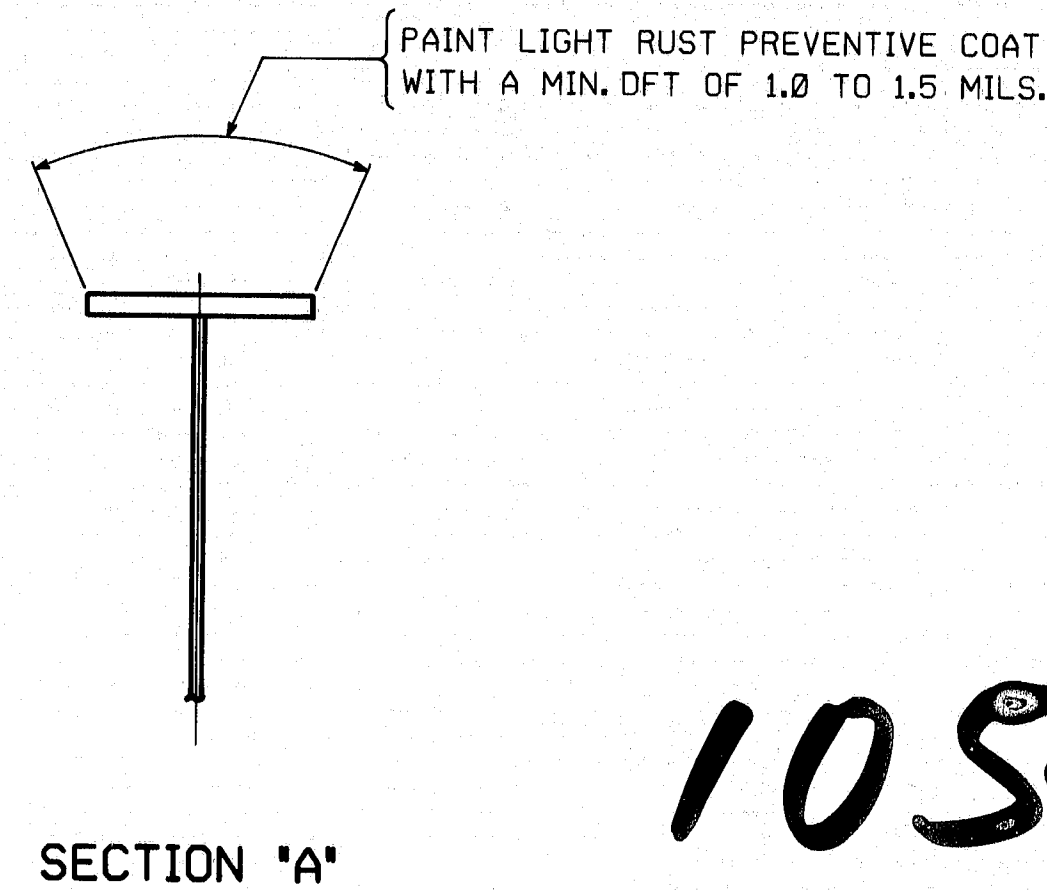
PAINTING:  
ALL GIRDERS TO BE PAINTED (UNLESS NOTED) WITH ONE SHOP COAT OF INORGANIC ZINC  
WITH A MINIMUM DRY FILM THICKNESS OF 4 MILS. PAINT TO BE AS FOLLOWS:  
GIRDERS SUFFIXED 'A'- PAINT WITH HEMPEL WATER BASE #1562.  
GIRDERS SUFFIXED 'B'- PAINT WITH INORGANIC COATINGS WATER BASE #531.  
GIRDERS SUFFIXED 'C'- PAINT WITH PORTER WATER BASE #371N.  
TOP FLANGE OF GIRDERS AS SHOWN IN SECTION 'A' SHALL RECEIVE A LIGHT RUST  
PREVENTIVE COATING OF PAINT WITH A MINIMUM DRY FILM THICKNESS OF 1.0 TO 1.5  
MILS.  
ALL AREAS WITHIN 3' OF OPEN HOLES TO BE PAINTED WITH A MINIMUM DRY FILM  
THICKNESS OF 1.0 TO 1.5 MILS, UNLESS NOTED (C).

DRAWING REFERENCE:  
FLANGE SPLICES -PREFIXED 'FS'  
WEB CAMBERS -PREFIXED 'WC'  
GIRDER JOB STANDARDS -PREFIXED 'X'


SHOP ASSEMBLY -PREFIXED 'SA'  
WELDING PROCEDURE -DWG. 'WP1'



STIFFENER WELDING DETAIL



105-242

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NO.	REVISION	DATE
HIGH STEEL STRUCTURES, INC.  1805 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-528 A Division of High Industries, Inc.		
GENERAL SHOP NOTES		
SOUTH WARREN BRIDGE (RTE.#1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE: HINKLE	MADE BY: PHS	CHK'D BY: RB DATE: 2-20-90
CONTRACT NUMBER: ME-89148	DRAWING NUMBER: N1	

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS										WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS										WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS										FED. ROAD DIV. NO. STATE FED. AID PROJ. NO.																																																																	
<b>W2</b> <b>PROCEDURE SPECIFICATIONS</b> MATERIAL SPECIFICATION: ASTM A-36, A-572 WELDING PROCESS: SMAW MANUAL OR MACHINE: MANUAL POSITION OF WELDING: 1F, 2F, 3F AND 4F FILLER METAL SPECIFICATION: AWS A5.1-78 WELD METAL CLASSIFICATION: E70B8 FLUX: DANA POLARITY: DC+ OR AC ROOT TREATMENT: MANUAL CLEANING PREHEAT AND INTERPASS TEMPERATURE: SEE PREHEAT CHART										<b>W6</b> <b>PROCEDURE SPECIFICATIONS</b> MATERIAL SPECIFICATION: ASTM A36, A572, A588 WELDING PROCESS: FCAW MANUAL OR MACHINE: SEMIAUTOMATIC POSITION OF WELDING: 1G OR 2G FILLER METAL SPECIFICATION: AWS A5.28-79 FILLER METAL CLASSIFICATION: E70T-1 WIRE: HOBART RAR POLARITY: DC+ ROOT TREATMENT: GOUGE BEFORE WELDING OTHER SIDE PREHEAT AND INTERPASS TEMPERATURE: SEE PREHEAT CHART SHIELDING GAS: 100% CO <sub>2</sub>										<b>W20</b> <b>PROCEDURE SPECIFICATIONS</b> MATERIAL SPECIFICATION: ASTM A-36, A-572 WELDING PROCESS: SAW, SINGLE ELECTRODE MANUAL OR MACHINE: SEMIAUTOMATIC POSITION OF WELDING: 1G FILLER METAL SPECIFICATION: AWS A5.17-80 WELD METAL CLASSIFICATION: F702-EM12K FLUX/WIRE: LINCOLN 860/L61 POLARITY: DC+ ELECTRICAL STICK OUT: STANDARD 1" ROOT TREATMENT: GOUGE BEFORE WELDING OTHER SIDE PREHEAT AND INTERPASS TEMPERATURE: SEE PREHEAT CHART																																																																											
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<b>W11A</b> <b>PROCEDURE SPECIFICATIONS</b> MATERIAL SPECIFICATION: ASTM A-36, A-572, A-441 WELDING PROCESS: SUBMERGED ARC MANUAL OR MACHINE: MACHINE (SQUINT) SEMI-AUTOMATIC POSITION OF WELDING: 2F (HORIZONTAL) FILLER METAL SPECIFICATION: AWS A5.17-80 FILLER METAL CLASSIFICATION: F702-EM12K FLUX: LINCOLN 761 OR 860 SINGLE OR MULTIPLE ARC: SINGLE ELECTRODE L 61 POLARITY: DC ELECTRICAL STICK OUT: STANDARD 1" ROOT TREATMENT: REMOVE ALL MILL SCALE PREHEAT AND INTERPASS TEMPERATURE: SEE PREHEAT CHART										<b>W12</b> <b>PROCEDURE SPECIFICATIONS</b> MATERIAL SPECIFICATION: ASTM A-36, A-572, A-441 WELDING PROCESS: SUBMERGED ARC MANUAL OR MACHINE: MACHINE (SQUINT) POSITION OF WELDING: 2F (HORIZONTAL) FILLER METAL SPECIFICATION: AWS A5.17-80 FILLER METAL CLASSIFICATION: F702-EM12K FLUX: LINCOLN 761 SINGLE OR MULTIPLE ARC: SINGLE ELECTRODE L 61 POLARITY: DC ELECTRICAL STICK OUT: STANDARD 1" ROOT TREATMENT: REMOVE ALL MILL SCALE PREHEAT AND INTERPASS TEMPERATURE: SEE PREHEAT CHART										<b>MINIMUM PREHEAT AND INTERPASS TEMPERATURE</b> <table border="1"> <thead> <tr> <th>THICKNESS OF THICKEST PART AT POINT OF WELDING - INCHES</th> <th>ASTM A36, A441, A572 GRADES 42 AND 50, A588</th> </tr> </thead> <tbody> <tr> <td>TO 1/8 INCL.</td> <td>50° F</td> </tr> <tr> <td>OVER 1/8 TO 1/4 INCL.</td> <td>70° F</td> </tr> <tr> <td>OVER 1/4 TO 1/2 INCL.</td> <td>150° F</td> </tr> <tr> <td>OVER 1/2</td> <td>225° F</td> </tr> </tbody> </table>										THICKNESS OF THICKEST PART AT POINT OF WELDING - INCHES	ASTM A36, A441, A572 GRADES 42 AND 50, A588	TO 1/8 INCL.	50° F	OVER 1/8 TO 1/4 INCL.	70° F	OVER 1/4 TO 1/2 INCL.	150° F	OVER 1/2	225° F																																																								
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<b>W5</b> <b>PROCEDURE SPECIFICATIONS</b> MATERIAL SPECIFICATION: ASTM A-36, A-572 WELDING PROCESS: SAW, SINGLE ELECTRODE MANUAL OR MACHINE: SEMIAUTOMATIC POSITION OF WELDING: 1G OR 2G FILLER METAL SPECIFICATION: AWS A5.17-80 WELD METAL CLASSIFICATION: F702-EM12K FLUX/WIRE: LINCOLN 860/L61 POLARITY: DC+ ELECTRICAL STICK OUT: STANDARD 1" ROOT TREATMENT: GOUGE BEFORE WELDING OTHER SIDE PREHEAT AND INTERPASS TEMPERATURE: SEE PREHEAT CHART										<b>W13</b> <b>PROCEDURE SPECIFICATIONS</b> MATERIAL SPECIFICATION: ASTM A-36, A-572, A-441 WELDING PROCESS: SUBMERGED ARC MANUAL OR MACHINE: MACHINE (SQUINT) POSITION OF WELDING: 2F (HORIZONTAL) FILLER METAL SPECIFICATION: AWS A5.17-80 FILLER METAL CLASSIFICATION: F702-EM12K FLUX: LINCOLN 761 SINGLE OR MULTIPLE ARC: SINGLE ELECTRODE L 61 POLARITY: DC+ ELECTRICAL STICK OUT: STANDARD 1" ROOT TREATMENT: REMOVE MILL SCALE PREHEAT AND INTERPASS TEMPERATURE: SEE ATTACHED PREHEAT CHART										<b>WELDING PROCEDURE</b> <table border="1"> <thead> <tr> <th>PASS NO.</th> <th>WIRE SIZE</th> <th>WELDING CURRENT (AMPS)</th> <th>WIRE FEED SPEED</th> <th>VOLTS</th> <th>TRAVEL IPM</th> <th>JOINT DETAIL</th> </tr> </thead> <tbody> <tr> <td>ALL</td> <td>3/32</td> <td>485-495</td> <td>81-105</td> <td>31.7-36.3</td> <td>14.5-19.5</td> <td>TC-US-G</td> </tr> </tbody> </table>										PASS NO.	WIRE SIZE	WELDING CURRENT (AMPS)	WIRE FEED SPEED	VOLTS	TRAVEL IPM	JOINT DETAIL	ALL	3/32	485-495	81-105	31.7-36.3	14.5-19.5	TC-US-G	<b>WELDING PROCEDURE</b> <table border="1"> <thead> <tr> <th>PASS NO.</th> <th>WIRE SIZE</th> <th>WELDING CURRENT (AMPS)</th> <th>VOLTS</th> <th>TRAVEL IPM</th> <th>JOINT DETAIL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1/8</td> <td>400</td> <td>32</td> <td>17</td> <td>1/4" FILLET</td> </tr> <tr> <td>1</td> <td>1/8</td> <td>400</td> <td>32</td> <td>11</td> <td>3/4" FILLET</td> </tr> </tbody> </table>										PASS NO.	WIRE SIZE	WELDING CURRENT (AMPS)	VOLTS	TRAVEL IPM	JOINT DETAIL	1	1/8	400	32	17	1/4" FILLET	1	1/8	400	32	11	3/4" FILLET	<b>TOLERANCES:</b> AMPS: 360-440 VOLTS: 29.0-34.2 TRAVEL SPEED: 17: 14.5-19.5 11: 9.5-12.5																							
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NOTE: 45 PASSES REQUIRED FOR A 2" PLATE.  SEE X-1 DRAWING FOR ACTUAL JOINT PREPARATION										* ELECTRODE ANGLE 84° IN DIRECTION OF TRAVEL																																																																																					

105-246

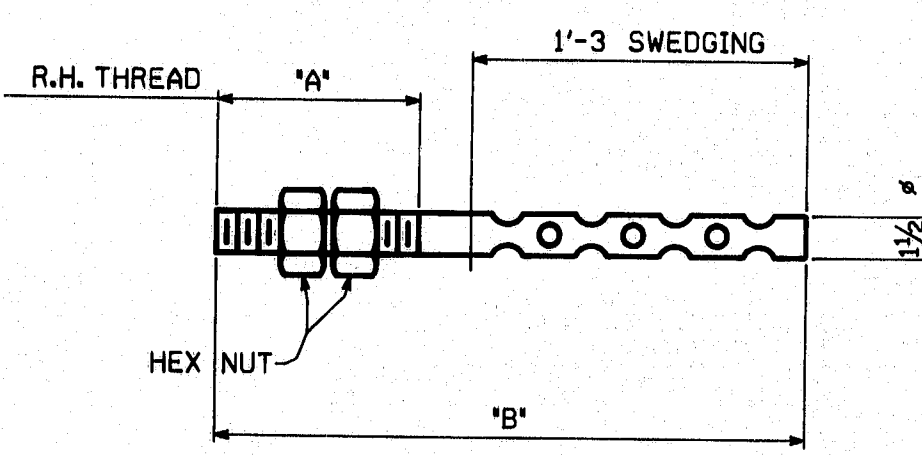
Δ		
Δ		
Δ	REVISED ALL WELDING PROCEDURES	5-21-90
NO.	REVISION	DATE

**HIGH STEEL STRUCTURES, INC.**  
 1905 Old Philadelphia Pike  
 Lancaster, PA 17602-0008  
 Phone 717/299-3311  
*A Division of High Industries, Inc.*

**WELDING PROCEDURES**  
 SOUTH WARREN BRIDGE OVER ST. GEORGE RIVER  
 F.A.P. NO. BR-026-1(61) 72  
 KNOX COUNTY, MAINE  
 STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
 BR-026-1(61)

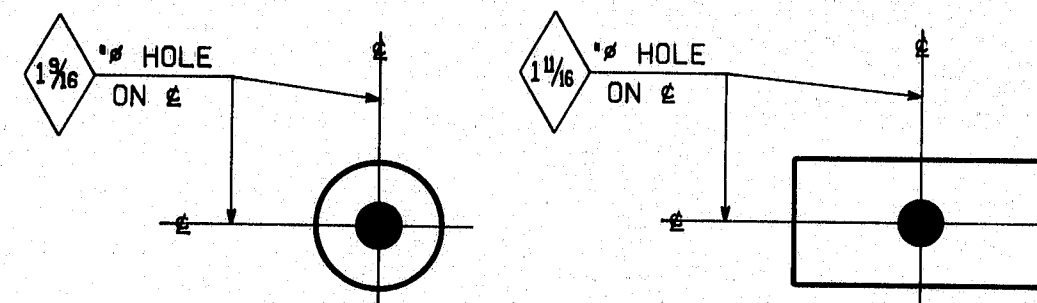
STATE CONTRACT OR REF. NO. \_\_\_\_\_  
 CONTRACTOR: CALLAHAN BROTHERS, INC.  
 IN CHARGE: KOPP      MADE BY: SWK      CHG.D. BY: KWS      DATE: 3-10-90  
 CONTRACT NUMBER: ME-89148      DRAWING NUMBER: WP-1





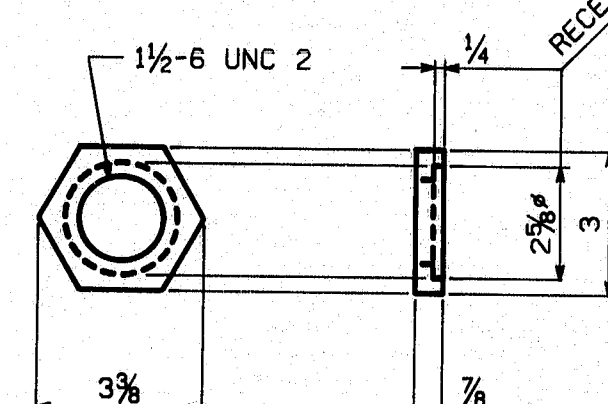
**ANCHOR BOLTS ~ MK. AB1 & AB2**

MARK	"A"	"B"
AB1	5	1'-9
AB2	5	1'-11 1/2

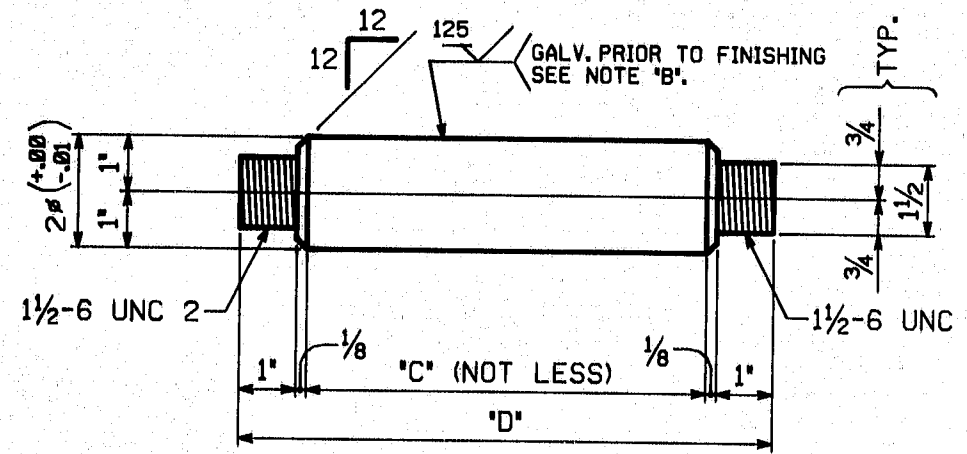


**WASHERS ~ MK. W1**

**WASHERS ~ MK. W2**

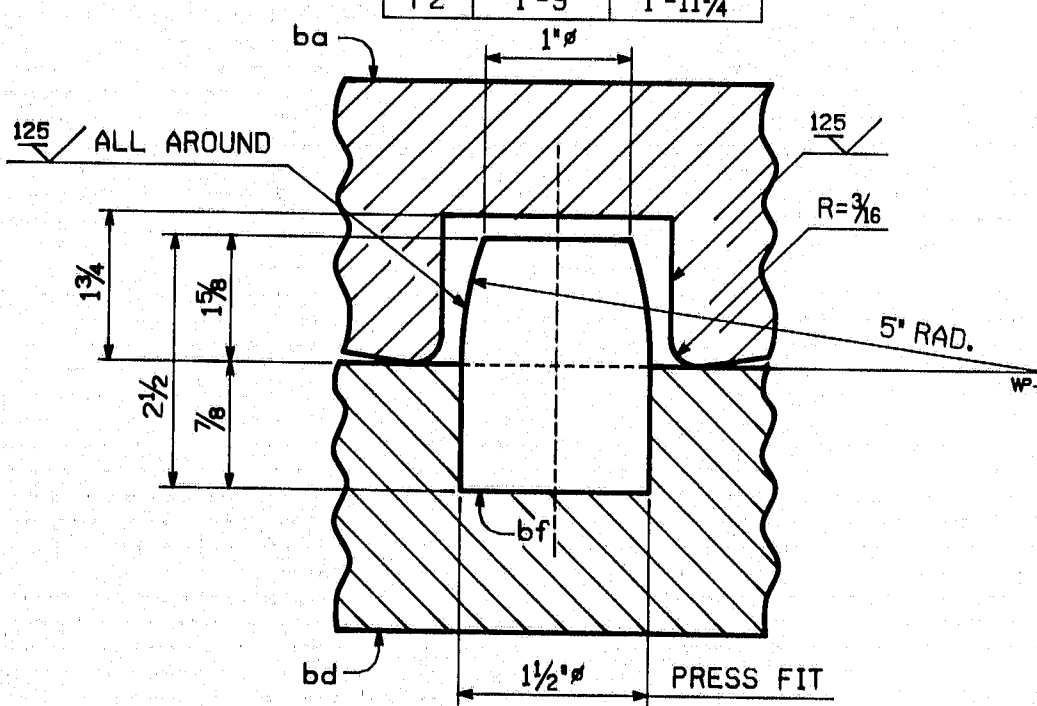


**36 ~ RECESSED NUTS MK. N1**

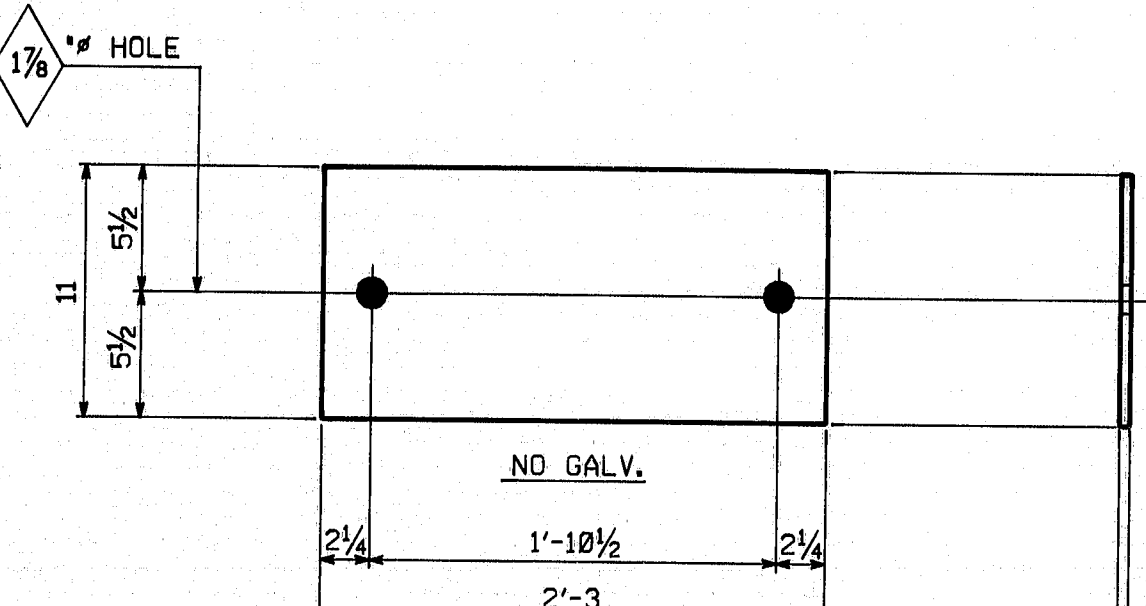


**PINS ~ MK. P1 & P2**

MARK	"C"	"D"
P1	1'-5	1'-7 1/4
P2	1'-9	1'-11 1/4

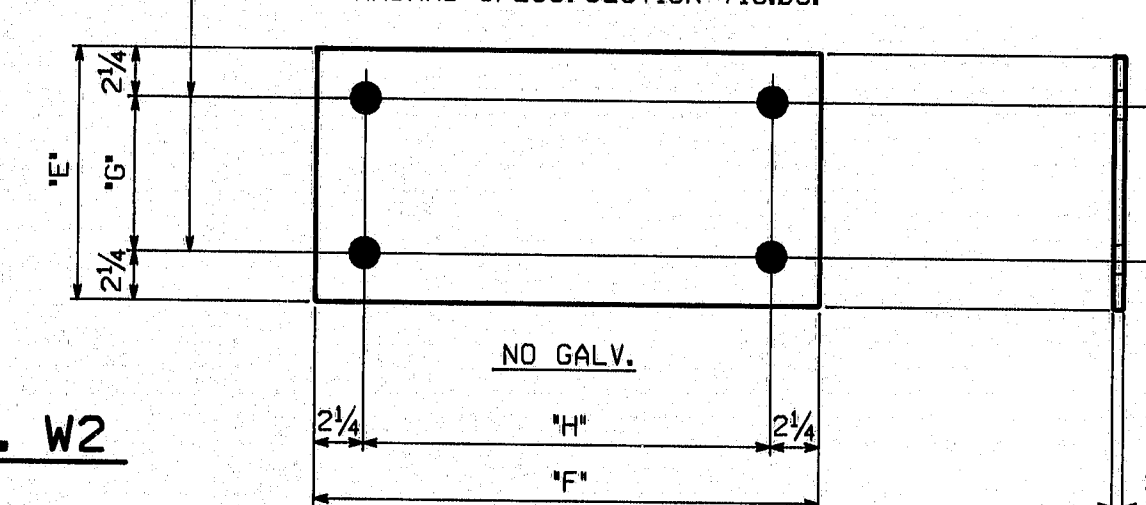


**DETAIL 'A'**



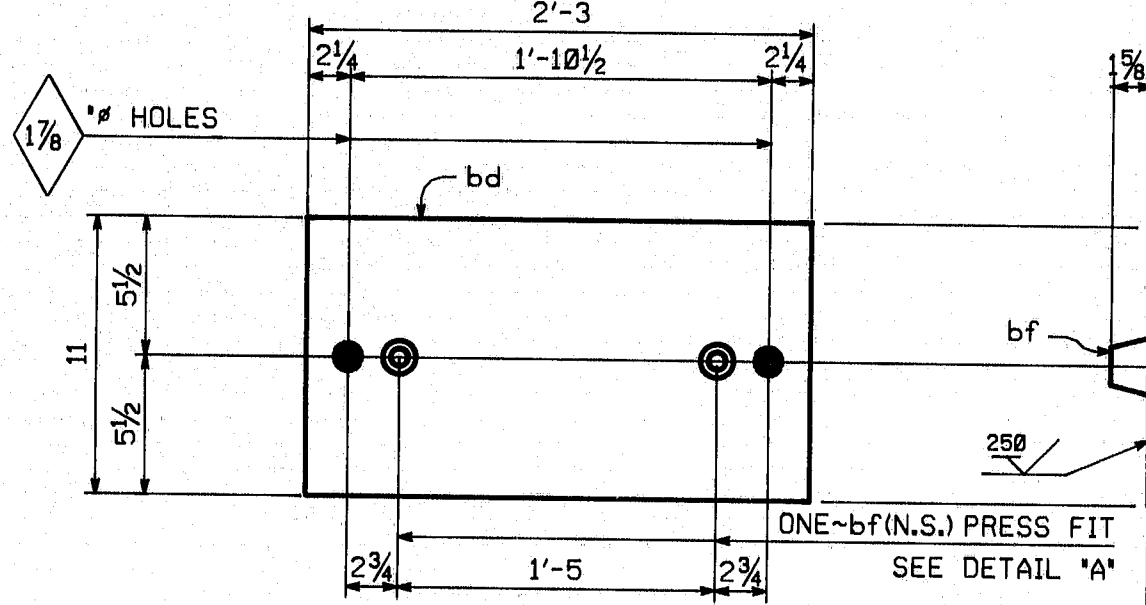
**FABRIC PADS ~ MK. EB1**

MATERIAL SPECS. AS PER MAINE D.O.T. 1988 STANDARD SPECS. SECTION 713.03.

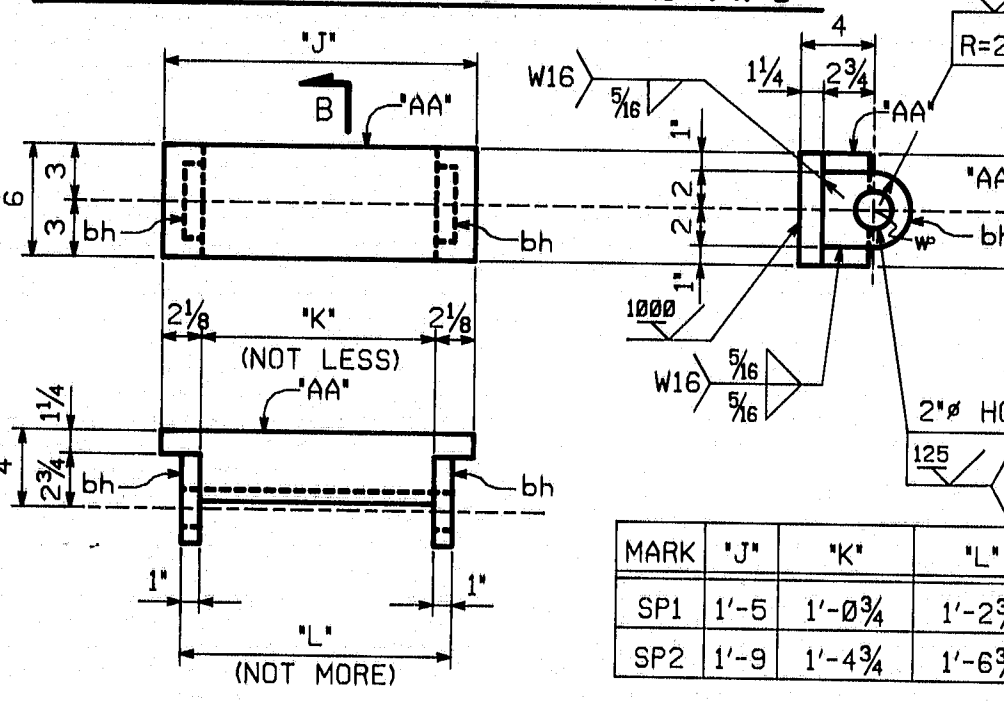


**FABRIC PADS ~ MK. EB2 & EB3**

MATERIAL SPECS. AS PER MAINE D.O.T. 1988 STANDARD SPECS. SECTION 713.03.

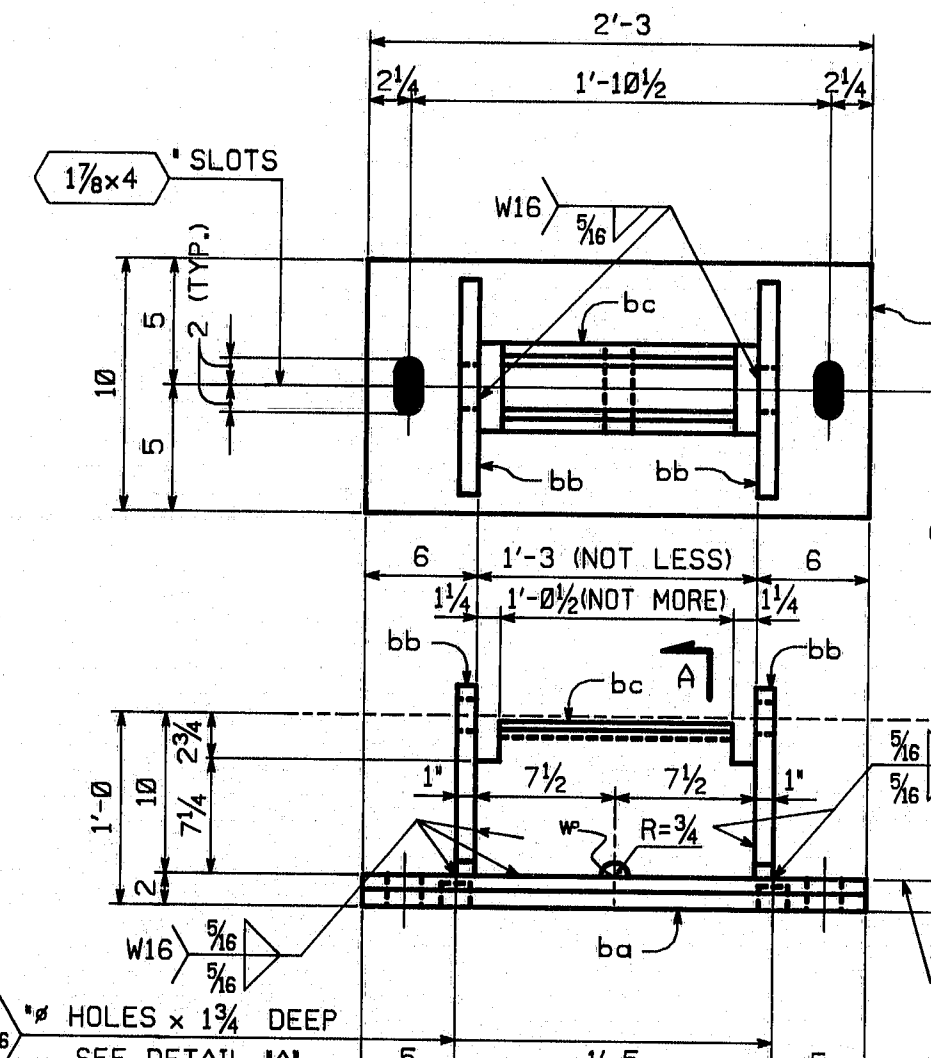


**MASONRY PLATES ~ MK. MP1**

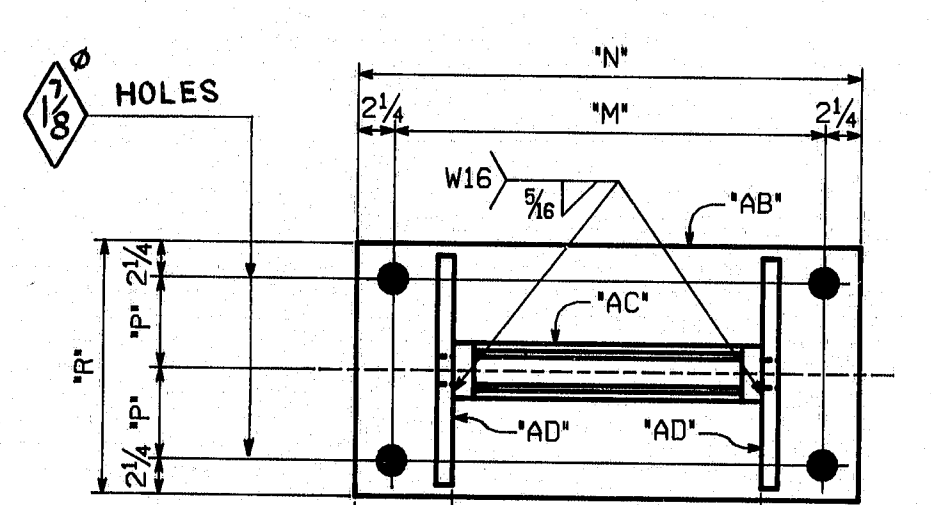


**SOLE PLATES ~ MK. SP1 & SP2**

MARK	"J"	"K"	"L"	"AA"
SP1	1'-5	1'-0 3/4	1'-2 3/4	bg
SP2	1'-9	1'-4 3/4	1'-6 3/4	bp



**ROCKER PLATES ~ MK. RP1**



**MASONRY PLATES ~ MK. MP2 & MP3**

MARK	"M"	"N"	"P"	"R"	"S"	"T"	"V"	"W"	"AB"	"AC"	"AD"
MP2	1'-10 1/2	2'-3	2 1/4	9	1'-0 1/2	1'-3	3 1/4	4 1/2	bk	bm	bn
MP3	2'-2 1/2	2'-7	5 3/4	1'-4	1'-4 1/2	1'-7	7 1/4	8	bs	bt	bu

**NOTES:**

NOTE 'B': APPLY ONE COAT OF NEVERSEIZE TO NO. 125 FINISHED SURFACES.  
BEARING ASSEMBLIES SHALL BE SHOP ASSEMBLED AND MATCH MARKED, OR SHOP ASSEMBLED AND SHIPPED AS A UNIT.

**SHOP NOTE**

HOLES: AS NOTED  
BOLTS: AS NOTED  
PAINT: GALVANIZE ASTM A123 (U.N.) FOR GENERAL SHOP NOTES, SEE DWG. N1. MATERIAL TO BE ASTM A588 (U.N.).

105-247

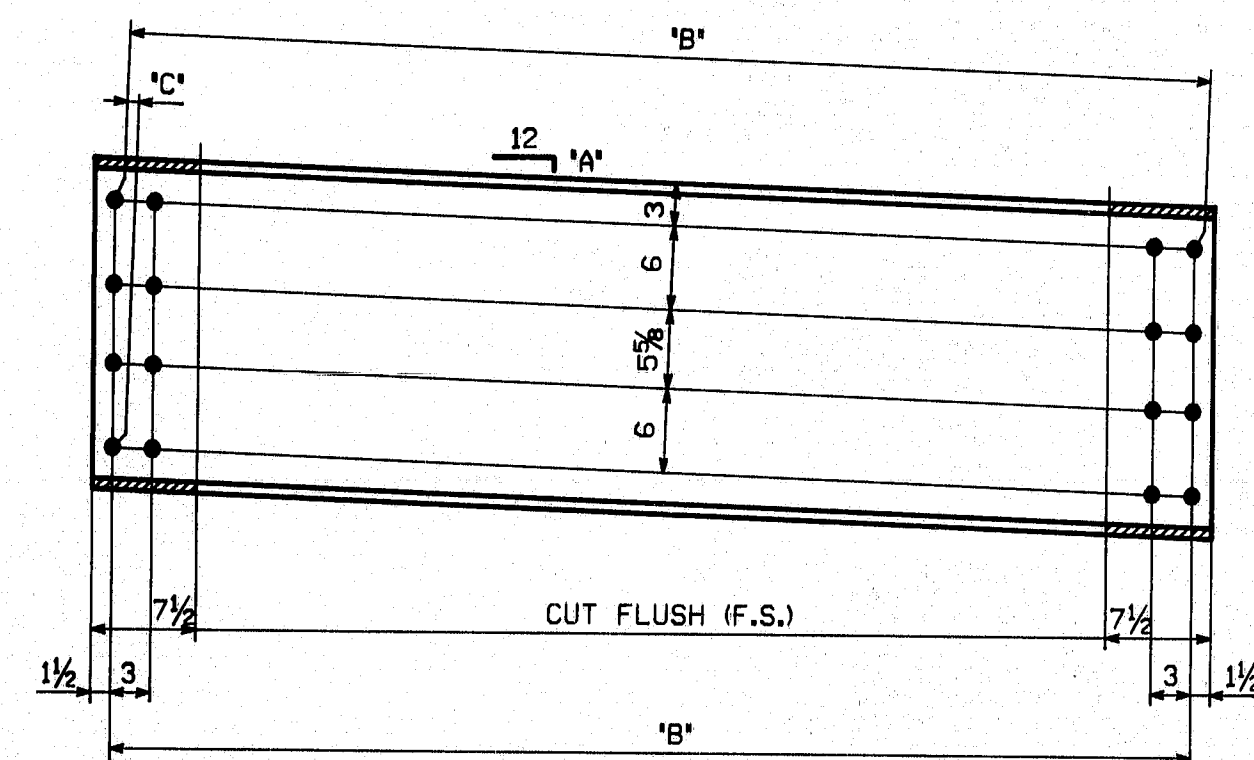
		FED.ROAD DIV.NO.		STATE		FED.AID PROJ.NO.		
		1		ME		BR-026-1(61)		
BILL OF MATERIAL								
NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	QTY.	SUP. WEIGHT EA.	
48	AB1	1½" SWEDGE BOLTS	1	9	W/ 2-A563 GR. A	A1	2	11
					HYV. HEX NUTS-			
12	AB2	1½" SWEDGE BOLTS	1	11½	(GALV. A153	A1	3	12
48	W1	STD. WASHER FOR 1½" H.S. BOLTS			F436-GALV. A153	A1	5	1
12	W2	BAR 4 x ¼	0	7	GALV. A153	A1	6	2
36	N1	RECESSED PIN NUT FOR 2" PIN					15	3
12	P1	2" PIN	1	7¼			14	17
6	P2	2" PIN	1	11¼			13	21
6	EB1	PAD 11 x ⅛	2	3		A1	14	~
6	EB2	PAD 9 x ⅛	2	3		A1	14	~
6	EB3	PAD 16 x ⅛	2	7		A1	14	~
12	SP1	SOLE PL						119
12	bg	BAR 6 x 3¼	1	5			10	
24	bh	BAR 4 x 1	0	4¾			11	
6	SP2	SOLE PL						145
6	bp	BAR 6 x 3¼	1	9			9	
12	bh							
6	RP1	ROCKER PL						356
6	ba	PL 10 x 2	2	3			18	
12	bb	PL 8½ x 1	1	0			11	
6	bc	PL 9¾ x 3½	1	3			7	
6	MP1	MASONRY PL						150
6	bd	PL 11 x 1¼	2	3			4	
12	bf	1½" ROD	0	2½			12	
6	MP2	MASONRY PL						258
6	bk	PL 9 x 2	2	3			13	
6	bm	PL 5¾ x 3½	1	3			6	
12	bn	PL 7½ x 1	0	8			11	
6	MP3	MASONRY PL						455
6	bs	PL 16 x 2	2	7			12	
6	bt	PL 5¾ x 3½	1	7			6	
12	bu	PL 8 x 1	1	2½			11	

NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>1925 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5251</p> <p>A Division of High Industries, Inc.</p>		
<p>ANCHOR BOLTS, PINS, PADS &amp; BEARINGS</p> <p>SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER</p> <p>SOUTH WARREN BRIDGE STA. 397+99.00</p> <p>BETWEEN TOWNS OF WARREN AND THOMASTON</p> <p>KNOX COUNTY, MAINE</p> <p>STATE OF MAINE, DEPT. OF TRANSPORTATION</p>		
<p>STATE CONTRACT OR REF. NO. BR-026-1(61)</p>		
<p>CONTRACTOR CALLAHAN BROTHERS, INC.</p>		
IN CHARGE, HINKLE	MADE BY, CAS	CHK'D. BY, RB
DATE, 3-12-90		
CONTRACT NUMBER, ME-89148	DRAWING NUMBER, 1 OF 17	



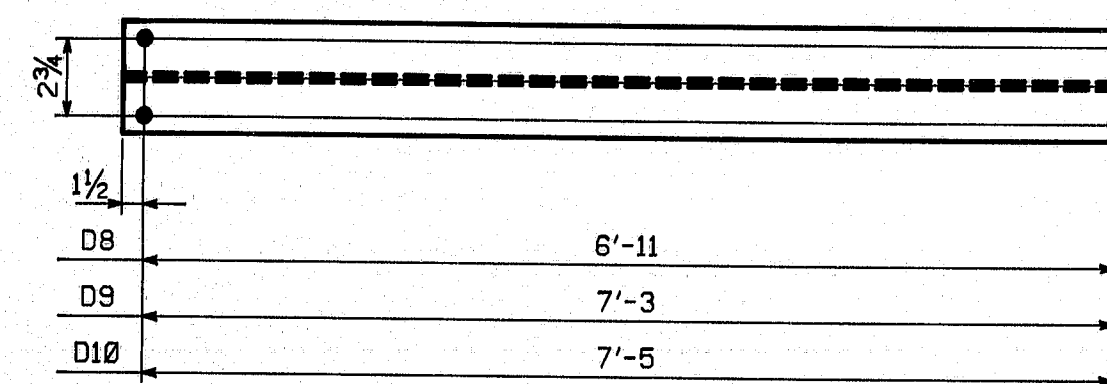




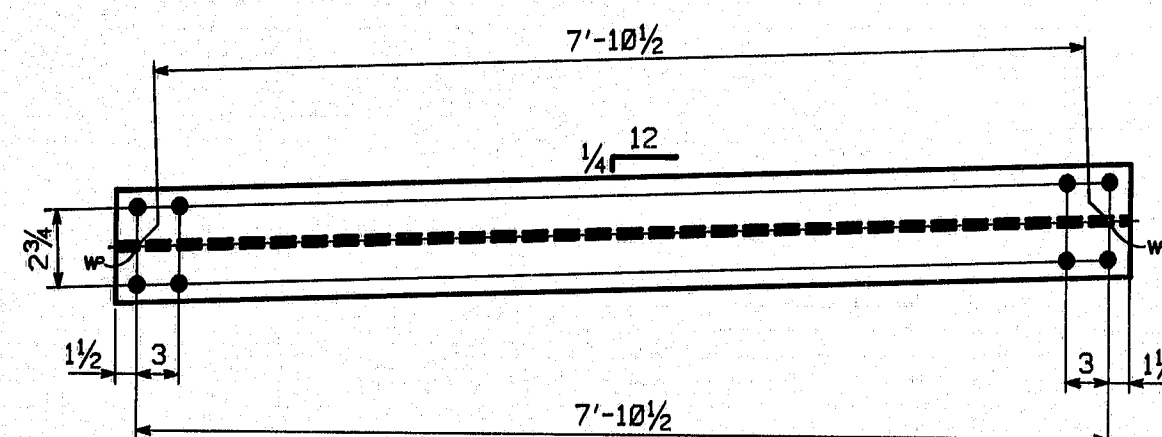


DIAPHRAGMS

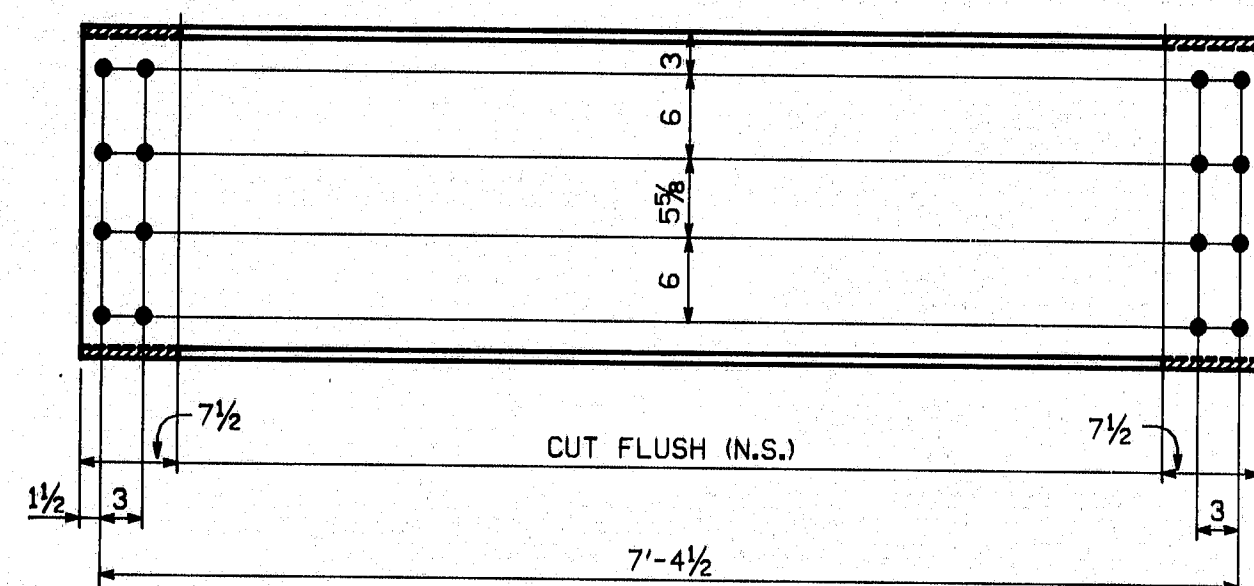
NOTE:	MARK	'A'	'B'	'C'
--	D1	1/4	7'-8 1/2"	3/8"
--	D2	0	7'-8 1/2"	0
--	D3	1/4	7'-10 1/2"	3/8"
--	D4	0	7'-10 1/2"	0
OPP. HAND	D5	1/4	7'-8 1/2"	3/8"
OPP. HAND	D6	1/4	7'-10 1/2"	3/8"



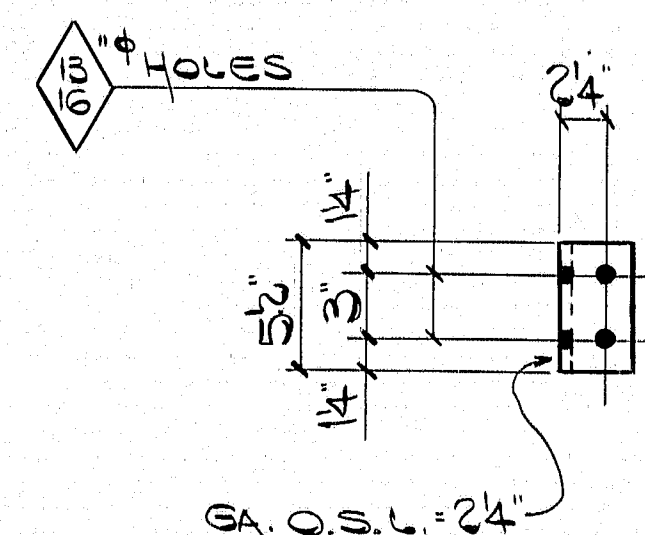
DIAPHRAGMS



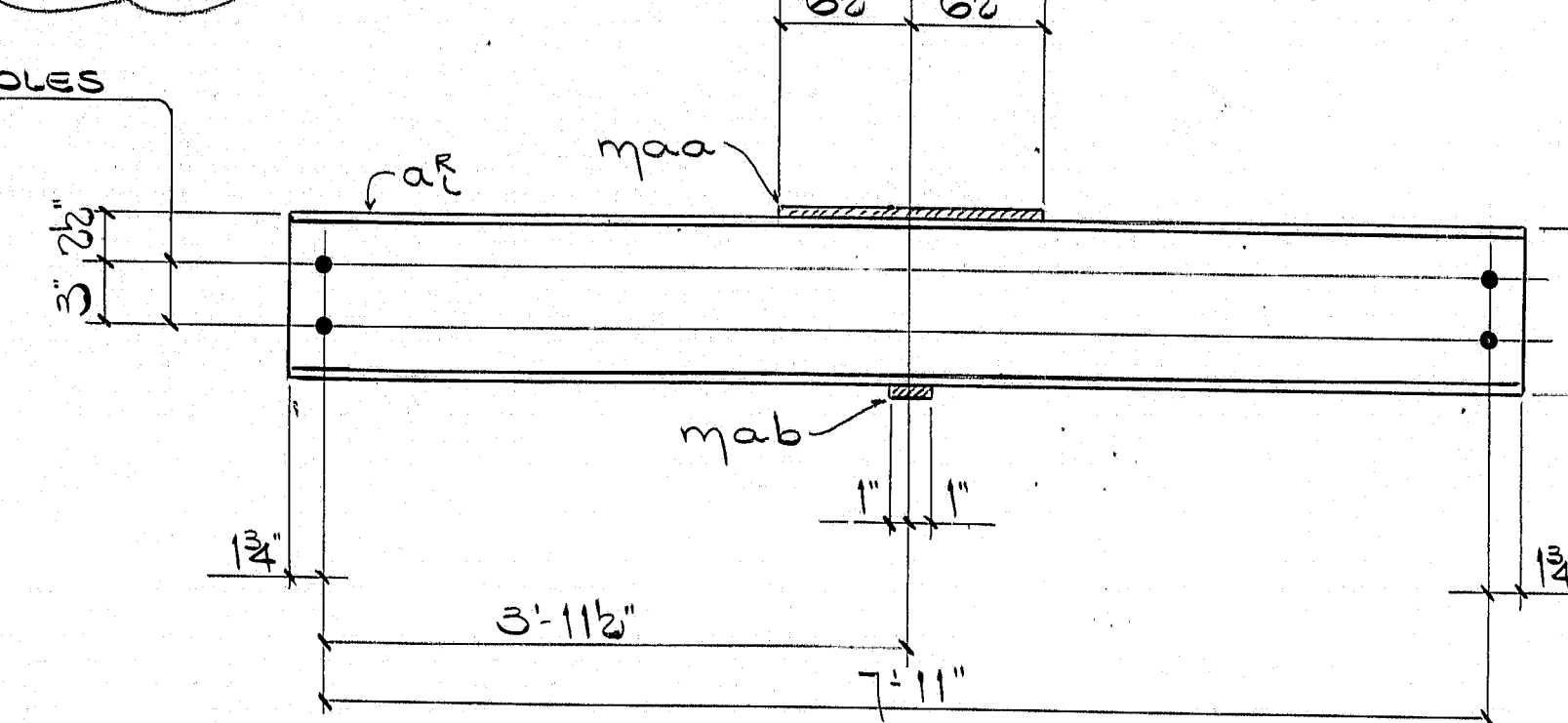
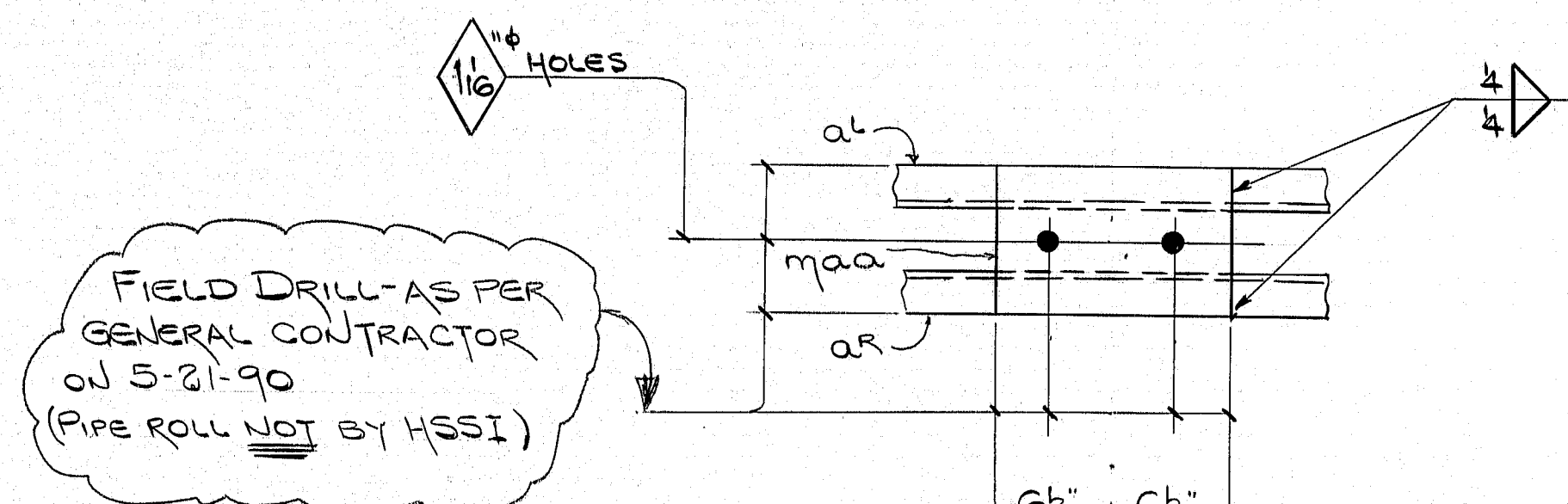
DIAPHRAGMS ~ MK. D11



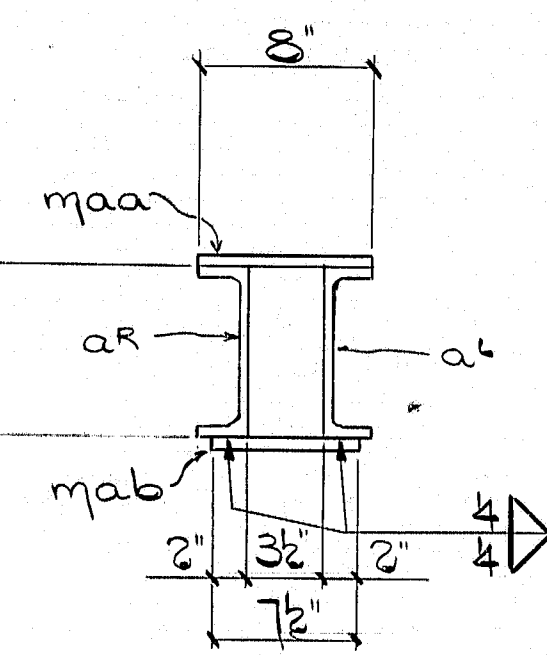
DIAPHRAGMS ~ MK. D7



CONNECTION ANGLES ~ MK. M1



UTILITY SUPPORTS ~ MK. D12



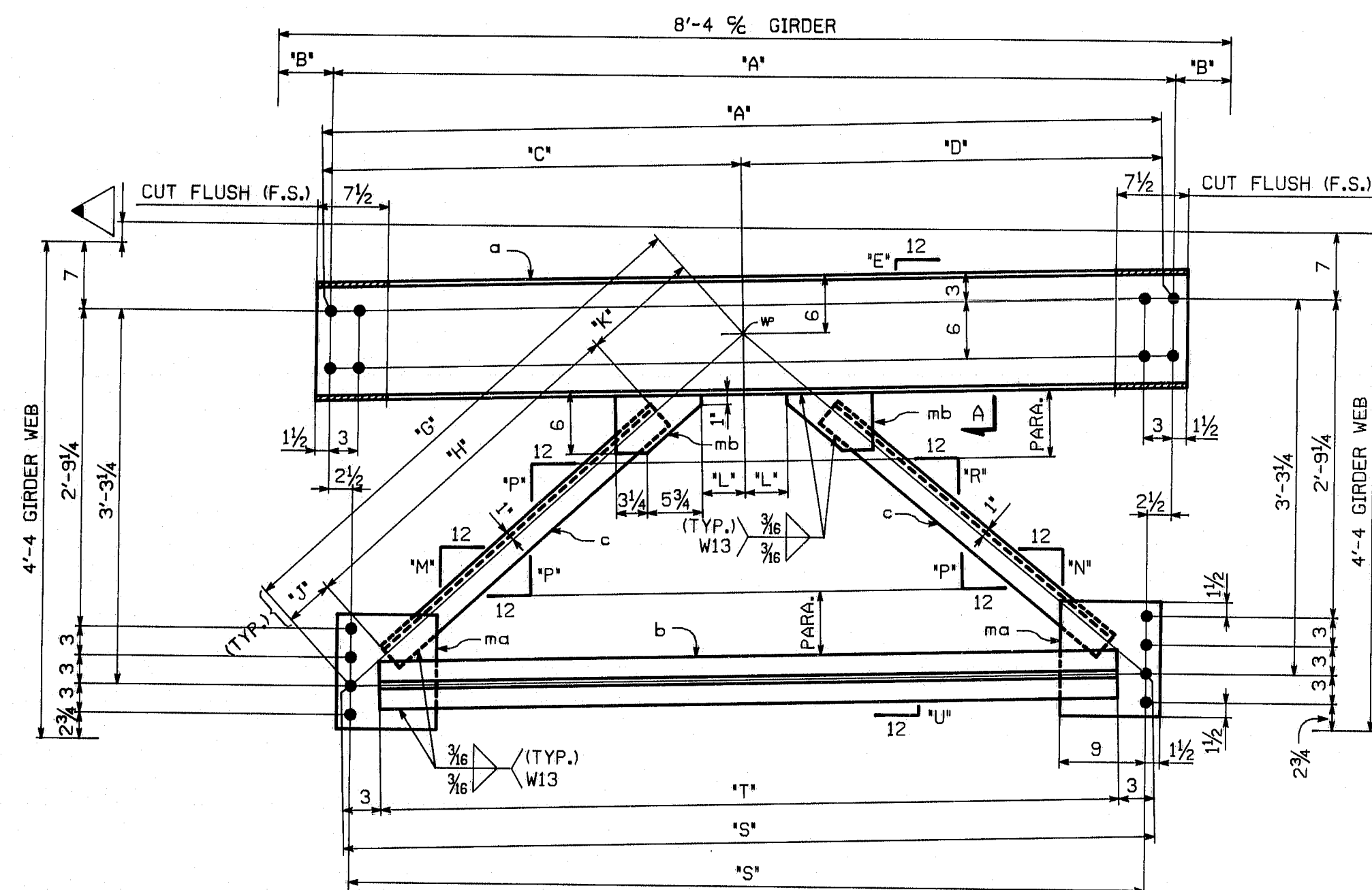
SHOP NOTE

HOLES: 3/8" (UNLESS NOTED)  
 BOLTS: NONE  
 PAINT: GALVANIZE TO ASTM A123, SEE DWG. N1  
 FOR GENERAL SHOP NOTES, SEE DWG. N1.  
 MATERIAL TO BE ASTM A36.

		FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		
		1	ME	BR-026-1(61)		
BILL OF MATERIAL						
NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SUP. WEIGHT EA.
		DIAPHRAGMS				
3	D1	W24 x 55	8 0 <sup>1</sup> / <sub>8</sub>		5 <sup>2</sup> / <sub>2</sub>	440
2	D2	W24 x 55	7 11 <sup>1</sup> / <sub>2</sub>		5 <sup>2</sup> / <sub>2</sub>	438
2	D3	W24 x 55	8 2 <sup>1</sup> / <sub>8</sub>		5 <sup>2</sup> / <sub>2</sub>	450
2	D4	W24 x 55	8 1 <sup>1</sup> / <sub>2</sub>		5 <sup>2</sup> / <sub>2</sub>	447
3	D5	W24 x 55	8 0 <sup>1</sup> / <sub>8</sub>	OPP. HAND	5 <sup>2</sup> / <sub>2</sub>	440
4	D6	W24 x 55	8 2 <sup>1</sup> / <sub>8</sub>	OPP. HAND	5 <sup>2</sup> / <sub>2</sub>	450
4	D7	W24 x 55	7 7 <sup>1</sup> / <sub>2</sub>		5 <sup>2</sup> / <sub>2</sub>	419
4	D8	WT5 x 11	7 2		5 <sup>5</sup> / <sub>5</sub>	79
8	D9	WT5 x 11	7 6		5 <sup>5</sup> / <sub>5</sub>	83
8	D10	WT5 x 11	7 8		5 <sup>5</sup> / <sub>5</sub>	84
8	D11	WT5 x 11	8 1 <sup>1</sup> / <sub>2</sub>		5 <sup>5</sup> / <sub>5</sub>	90
14 UTILITY SUPPORTS ~ MK D12						
28	a <sup>c</sup>	C8 x 11.5	8 2 <sup>1</sup> / <sub>2</sub>		5 <sup>10</sup> / <sub>10</sub>	111
14	mab	2 x 2	1 1		5 <sup>10</sup> / <sub>10</sub>	
14	mab	2 x 2	0 7 <sup>1</sup> / <sub>2</sub>		5 <sup>10</sup> / <sub>10</sub>	
56	M1	1/2 x 3/4 x 24	0 5 <sup>1</sup> / <sub>2</sub>		5 <sup>11</sup> / <sub>11</sub>	4
				</		

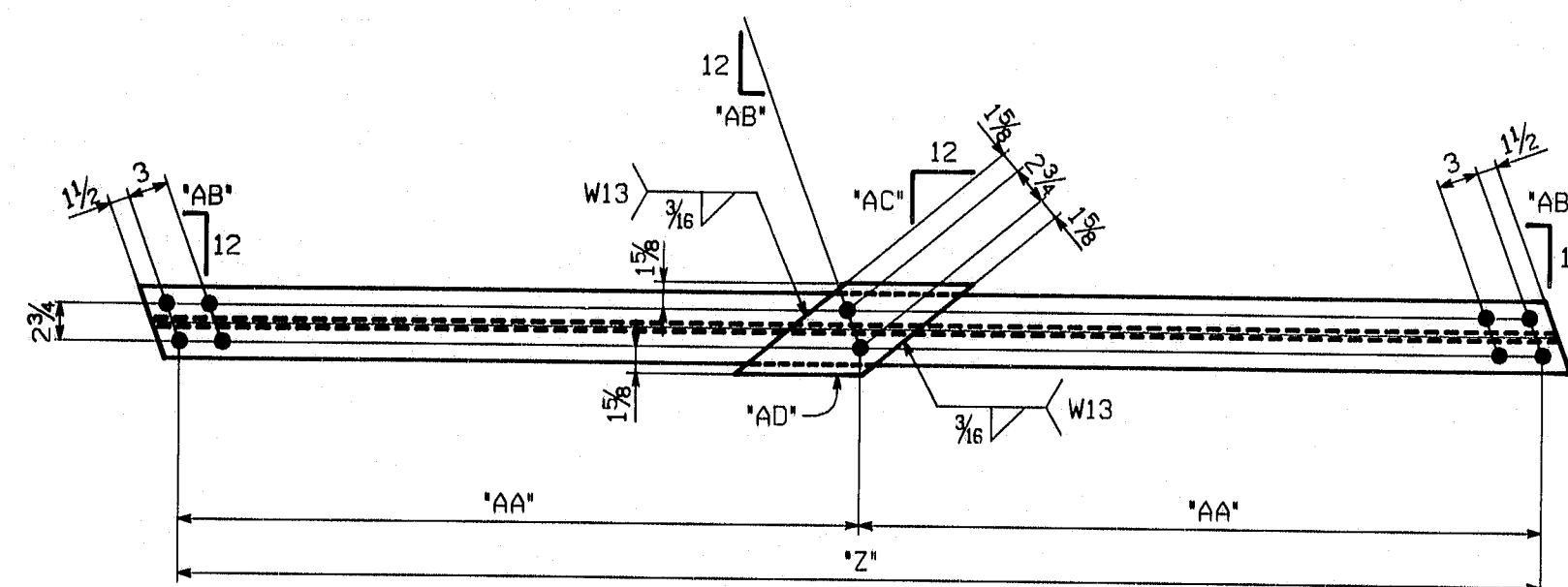
105-249

NO.	REVISION	DATE
HIGH STEEL STRUCTURES, INC. 1025 Old Philadelphia Pike Lancaster, PA 17606-0008 Phone 717/299-5251 A Division of High Industrial, Inc.		
DIAPHRAGMS D1 THRU D11		
SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE	HINKLE	MADE BY KG
CONTRACT NUMBER	ME-89148	DRAWING NUMBER 2 OF 17

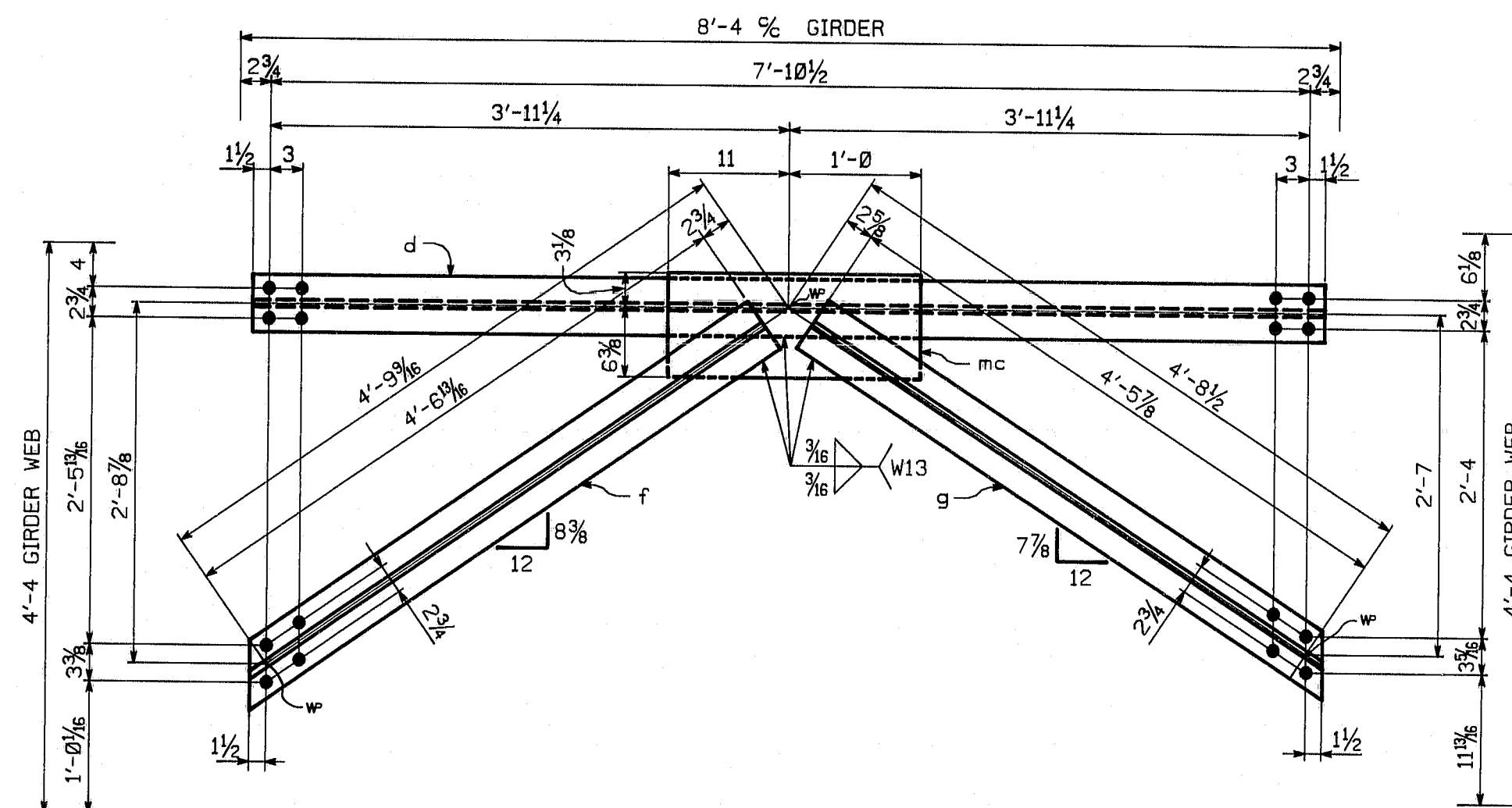


CROSSFRAMES

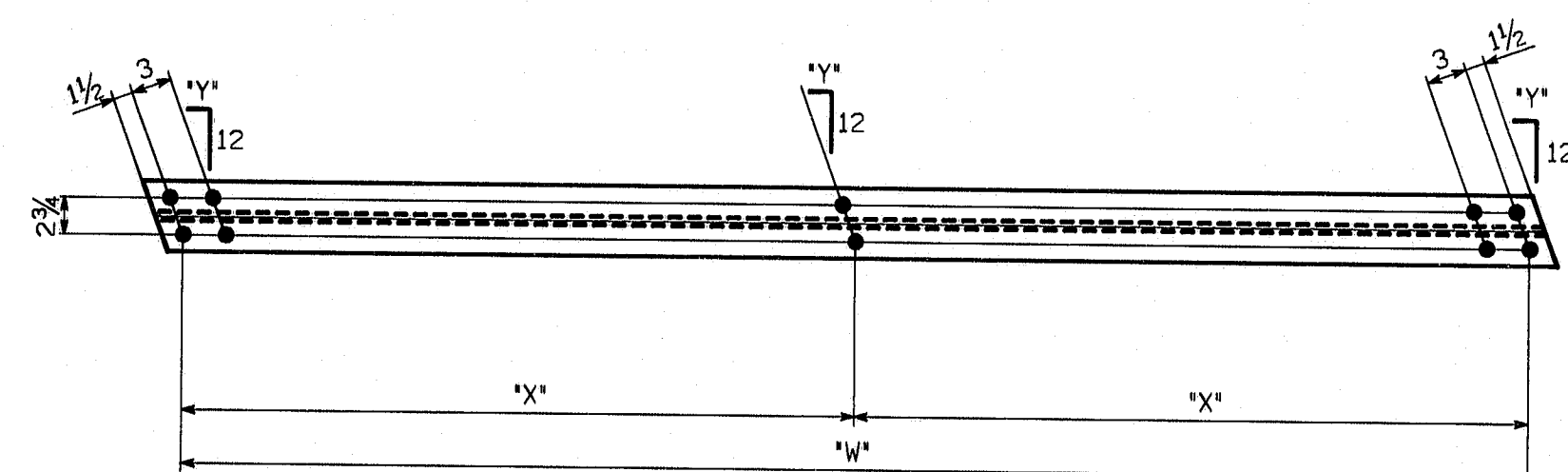
SECTION A



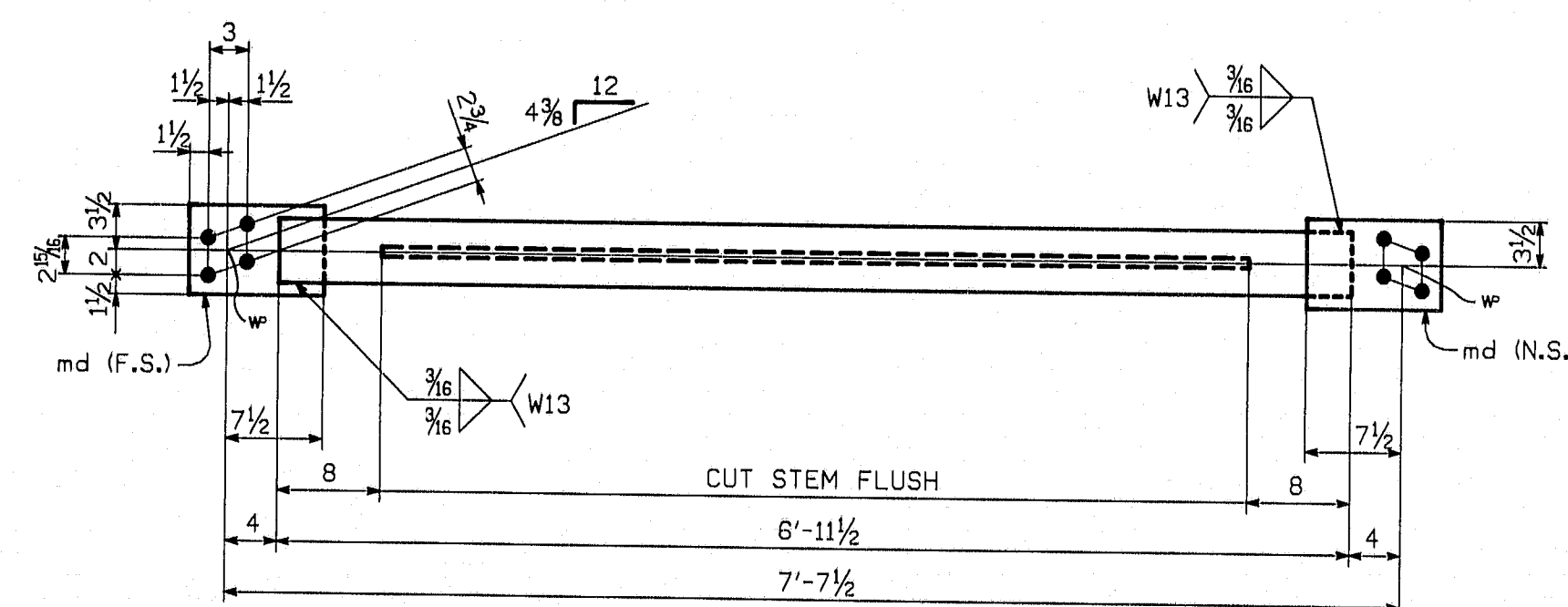
CROSSFRAME TEES



CROSSFRAMES ~ MK. CF5



CROSSFRAME TEES



CROSSFRAME TEE ~ MK. C1

SHOP NOTE

HOLES: 5/8" x 1/2"  
 BOLTS: NONE  
 PAINT: GALVANIZE TO ASTM A123, SEE DWG. N1  
 FOR GENERAL SHOP NOTES, SEE DWG. N1.  
 MATERIAL TO BE ASTM A36.

				FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	
				1	ME	BR-026-1(61)	
BILL OF MATERIAL							
NO.	MARK	DESCRIPTION	LENGTH	REMARKS		ITEM	SHIP WEIGHT LB.
1	CF1	CROSSFRAME					379
1	CF2	CROSSFRAME					394
1	CF3	CROSSFRAME					394
2	CF4	CROSSFRAMES					401
1	a	W12 x 30	7	7 1/8	CF1	5	3
2	a	W12 x 30	7	11 1/8	CF2 & CF3	5	3
2	a	W12 x 30	8	1 3/4	CF4	5	3
1	b	WT5 x 11	6	5 1/2	CF1	5	5
2	b	WT5 x 11	6	9 1/2	CF2 & CF3	5	5
2	b	WT5 x 11	6	11 1/2	CF4	5	5
2	c	L3 x 3 x 5/8	3	2	CF1	5	6
4	c	L3 x 3 x 5/8	3	3 1/2	CF2 & CF3	5	6
4	c	L3 x 3 x 5/8	3	4	CF4	5	6
10	ma	R 10 1/2 x 3/8	1	0		5	7
10	mb	BAR 6 x 3/8	0	9		5	7
8	CF5	CROSSFRAMES					187
8	d	WT4 x 9	8	1 1/2		5	4
8	f	WT4 x 9	4	10 1/2		5	4
8	g	WT4 x 9	4	9 1/2		5	4
8	mc	R 9 1/2 x 7/8	1	11		5	8
24	A1	WT4 x 9	8	9 1/8		5	4
8	A2	WT4 x 9	8	10 1/2		5	4
24	mf	BAR 6 x 7/8	1	4 1/2	A1	5	8
8	mg	BAR 6 x 7/8	1	3 1/2	A2	5	8
24	B1	WT4 x 9	8	9 1/8		5	4
8	B2	WT4 x 9	8	10 1/2		5	4
8	C1	WT5 x 11	6	11 1/2		5	5
16	md	BAR 7 x 3/8	0	10 1/2		5	7

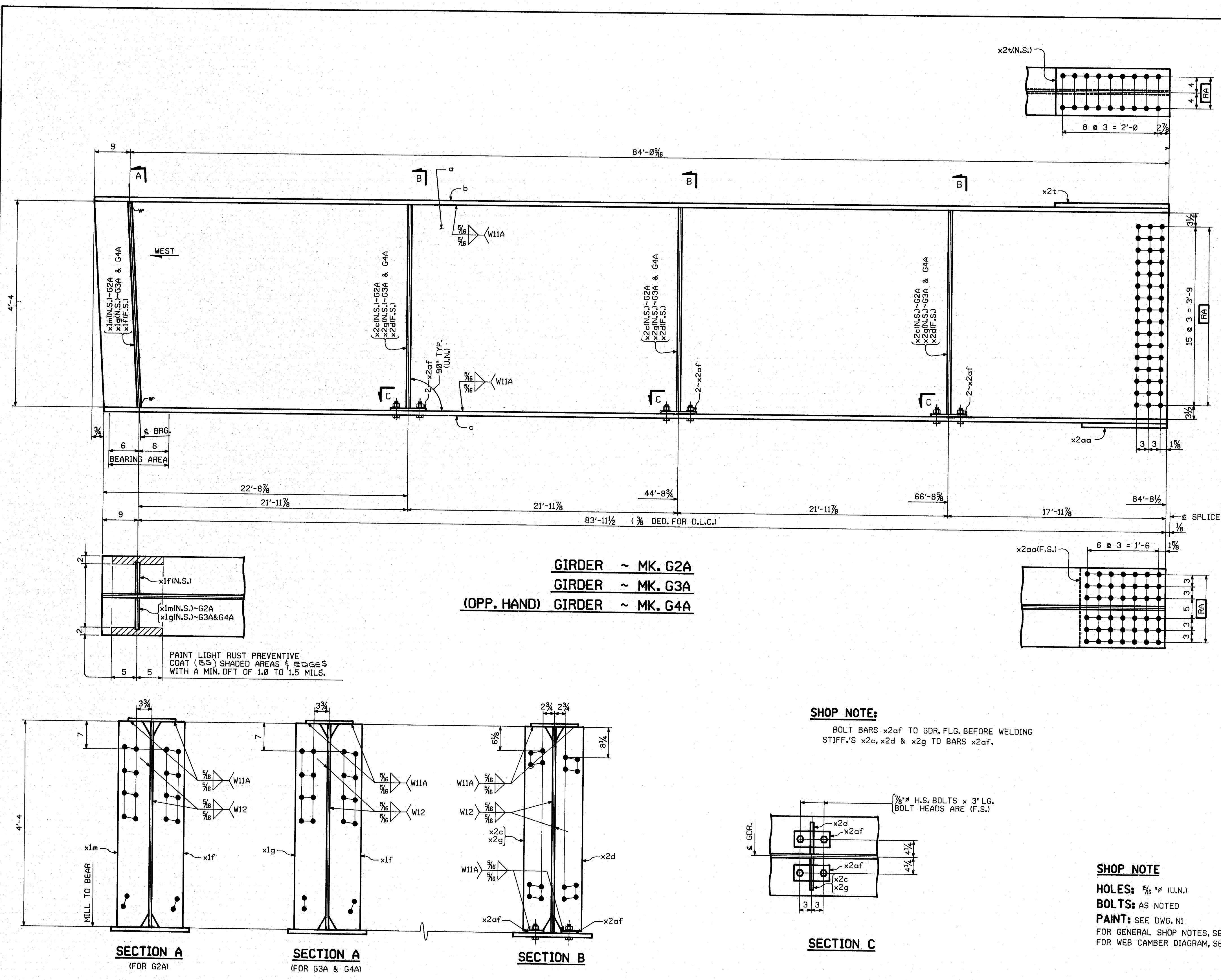
105-250

NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>1005 Old Philadelphia Pike          Lancaster, PA 17605-0008          Phone 717/299-5201</p> <p>A Division of High Industries, Inc.</p>		
<p>CROSSFRAMES</p> <p>SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER</p> <p>SOUTH WARREN BRIDGE STA. 397+99.00</p> <p>BETWEEN TOWNS OF WARREN AND THOMASTON</p> <p>KNOX COUNTY, MAINE</p> <p>STATE OF MAINE, DEPT. OF TRANSPORTATION</p>		
<p>STATE CONTRACT OR REF. NO. BR-026-1(61)</p> <p>CONTRACTOR CALLAHAN BROTHERS, INC.</p> <p>IN CHARGE HINKLE MADE BY RB DATE 3-12-90</p> <p>CONTRACT NUMBER ME-89148 DRAWING NUMBER 3 OF 17</p>		





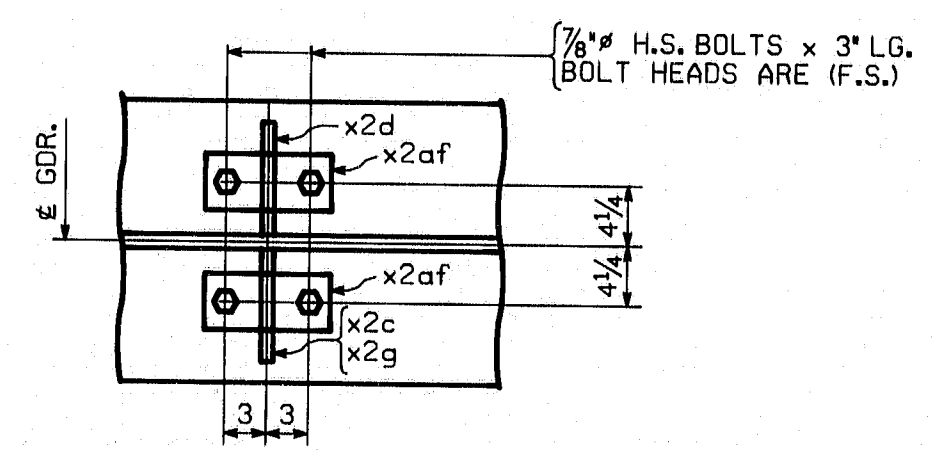
UB-111



GIRDER ~ MK. G2A  
GIRDER ~ MK. G3A  
(OPP. HAND) GIRDER ~ MK. G4A

**SHOP NOTE:**

BOLT BARS x2af TO GDR. FLG. BEFORE WELDING  
STIFF'S x2c, x2d & x2g TO BARS x2af.



**SECTION C**

**SHOP NOTE**

HOLES: 5/8" (U.N.)  
BOLTS: AS NOTED  
PAINT: SEE DWG. N1  
FOR GENERAL SHOP NOTES, SEE DWG. N1.  
FOR WEB CAMBER DIAGRAM, SEE DWG. WCI.

FED. ROAD DIV.	STATE	FED. AID PROJ. NO.
1	ME	BR-026-1(61)

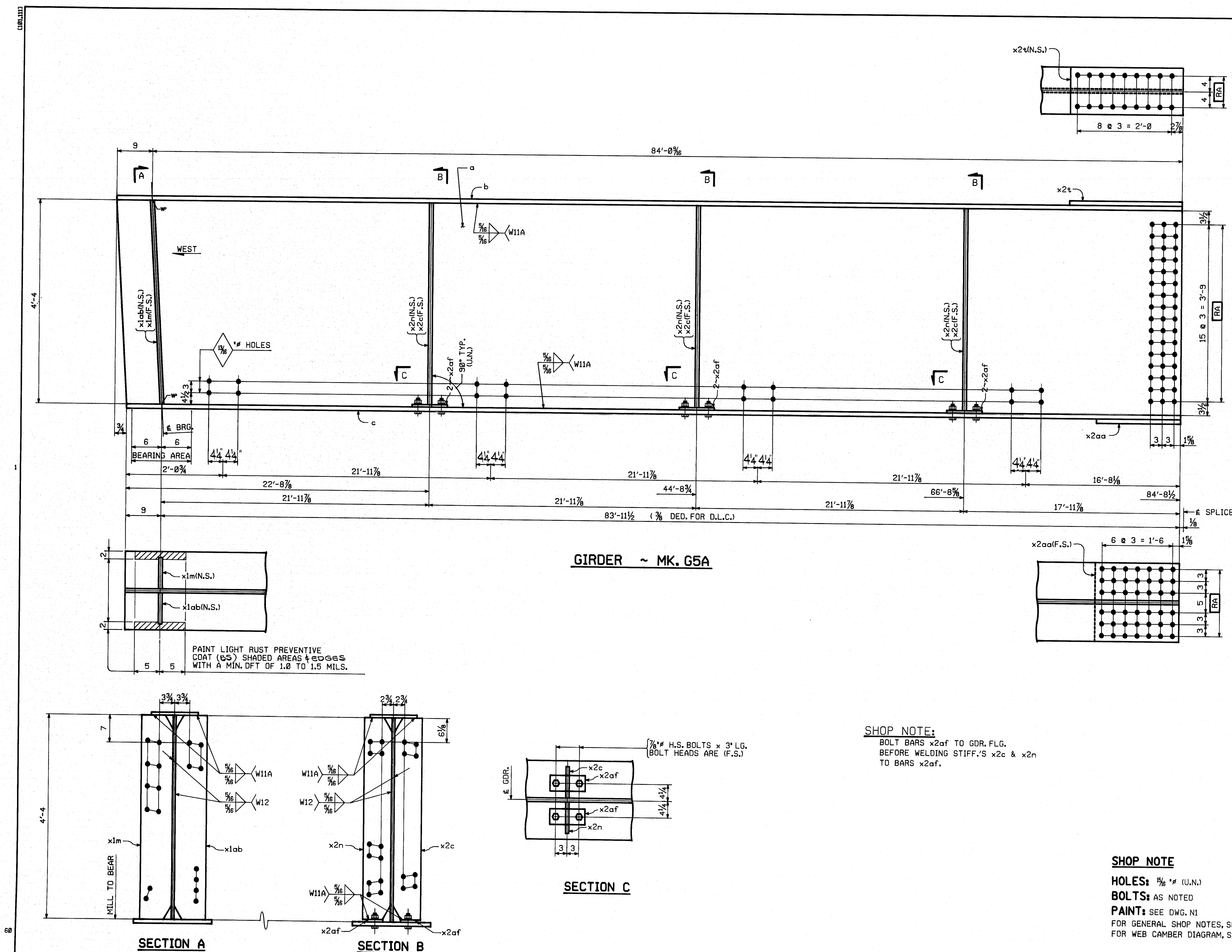
BILL OF MATERIAL						
NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHR. WT.
ONE	G2A	GIRDER		OPP. HAND		16,544
ONE	G3A	GIRDER				16,544
ONE	G4A	GIRDER		OPP. HAND		16,544
3	a	52 x 1/2	84	9 3/8 (T)		2 2
3	b	12 x 3/4	84	9 3/8 (T)		3 4
3	c	20 x 1	84	8 1/2 (T)		3 3
3	x2t	12 x 7/8	2	4 5/8 FILL		4 8
3	x2aa	20 x 5/8	1	9 3/8 FILL		4 2
ONE	x1m	BAR 8 x 7/8	4	4 G2A		4 12
2	x1g	BAR 8 x 7/8	4	4 G3A & G4A		4 12
3	x1f	BAR 8 x 7/8	4	4		4 12
3	x2c	BAR 7 x 7/8	4	3 3/8 G2A A588		4 13
6	x2g	BAR 7 x 7/8	4	3 3/8 G3A & G4A-A588		4 13
9	x2d	BAR 7 x 7/8	4	3 3/8 A588		4 13
18	x2af	BAR 4 x 5/8	0	9 A588		4 15
36	7/8"	H.S. BOLTS	0	3		B1 2
36		WASHERS FOR 7/8" H.S. BOLTS				B1 4




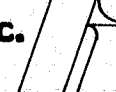
105-252

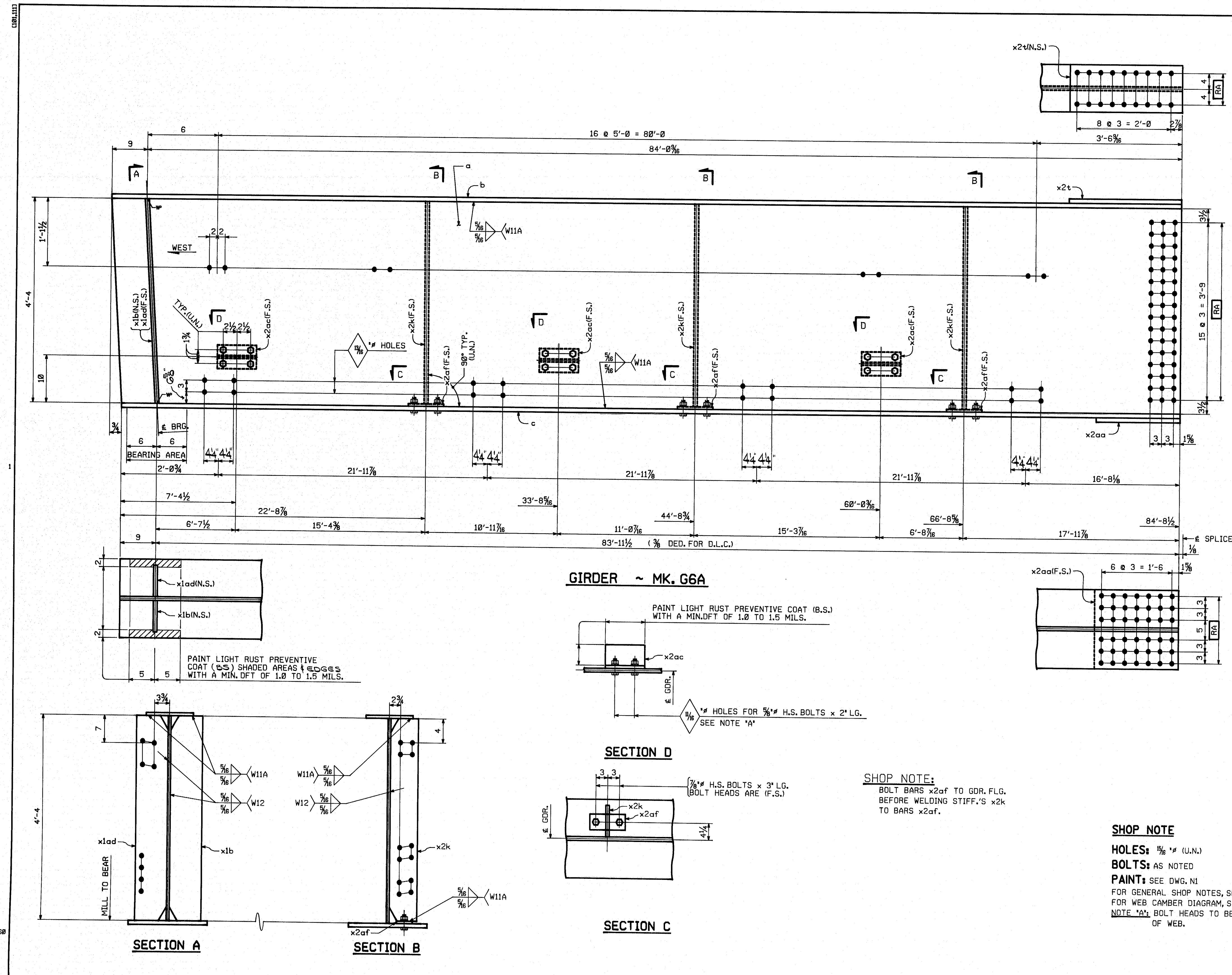
NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>805 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5211</p> <p>A Division of High Industries, Inc.</p>		
<p>GIRDERS G2A, G3A &amp; G4A</p> <p>SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER</p> <p>SOUTH WARREN BRIDGE STA. 397+99.00</p> <p>BETWEEN TOWNS OF WARREN AND THOMASTON</p> <p>KNOX COUNTY, MAINE</p> <p>STATE OF MAINE, DEPT. OF TRANSPORTATION</p>		
<p>STATE CONTRACT OR REF. NO. BR-026-1(61)</p> <p>CONTRACTOR CALLAHAN BROTHERS, INC.</p> <p>IN CHARGE: HINKLE MADE BY: OGS CHK'D BY: RB DATE: 3-12-90</p> <p>CONTRACT NUMBER: ME-89148 DRAWING NUMBER: 5 OF 17</p>		

CODE:30



[illegible]

		
		
		
NO.	REVISION	DATE
<b>HIGH STEEL STRUCTURES, INC.</b>  1905 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5501 <i>A Division of High Industries, Inc.</i>		
GIRDER		65A
SOUTH WARREN BRIDGE (RTE.#1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE: HINKLE	MADE BY: CPG	CHK.D. BY: RB DATE: 3-12-90
CONTRACT NUMBER: ME-89148		DRAWING NUMBER: 6 OF 17



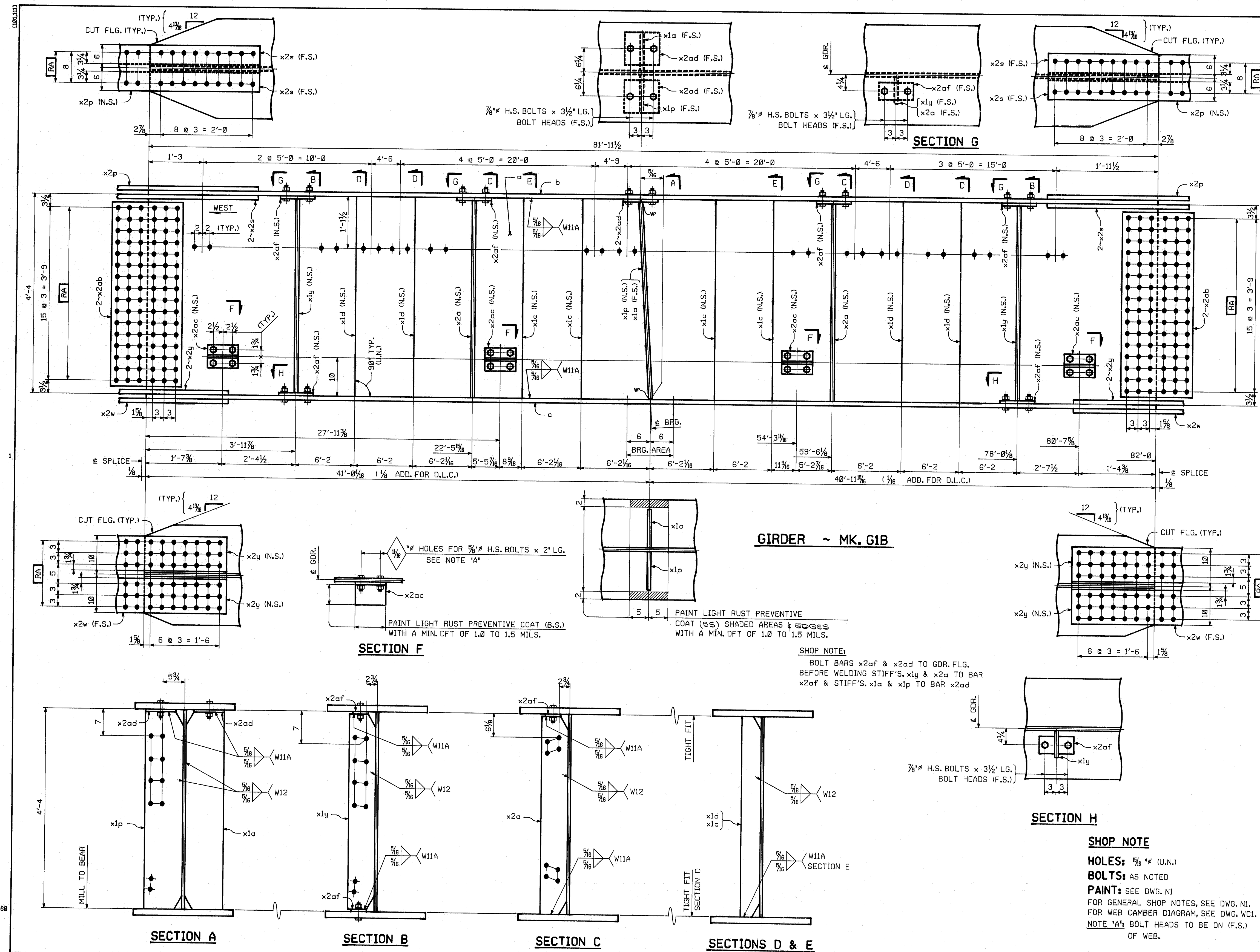
FED. ROAD DIV. NO.		STATE		FED. AID PROJ. NO.			
1		ME		BR-026-1(61)			
BILL OF MATERIAL							
NO.	MARK	DESCRIPTION	LENGTH		REMARKS	ITEM	SHP. WEIGHT EA.
ONE	G6A	GIRDER					16,416
ONE	a	2 52 x 1/2	84	9%	(T)	2	
ONE	b	2 12 x 3/4	84	9%	(T)	3	
ONE	c	2 20 x 1	84	8 1/2	(T)	3	
ONE	x2t	2 12 x 7/8	2	4%	FILL	4	
ONE	x2aa	2 20 x 5/8	1	9%	FILL	4	
ONE	x1b	BAR 8 x 7/8	4	4		4	
ONE	x1ad	BAR 8 x 7/8	4	4		4	
3	x2k	BAR 7 x 7/8	4	3%	A588	4	
3	x2af	BAR 4 x 5/8	0	9	A588	4	
3	x2ac	WT 6 x 13	0	8	A36	4	
6	7/8" #	H.S. BOLTS	0	3		B1	
6		WASHERS FOR 7/8" # H.S. BOLTS				B1	
	5/8" #	H.S. BOLTS	0	2		B1	
12		WASHERS FOR 5/8" # H.S. BOLTS				B1	

105-254

NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>1805 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5281</p> <p>A Division of High Industries, Inc.</p>		
GIRDER G6A		
SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE: HINKLE	MADE BY: O'S	CHK'D BY: RB
CONTRACT NUMBER: ME-89148	DRAWING NUMBER: 7	DATE: 3-12-90

CODE:30





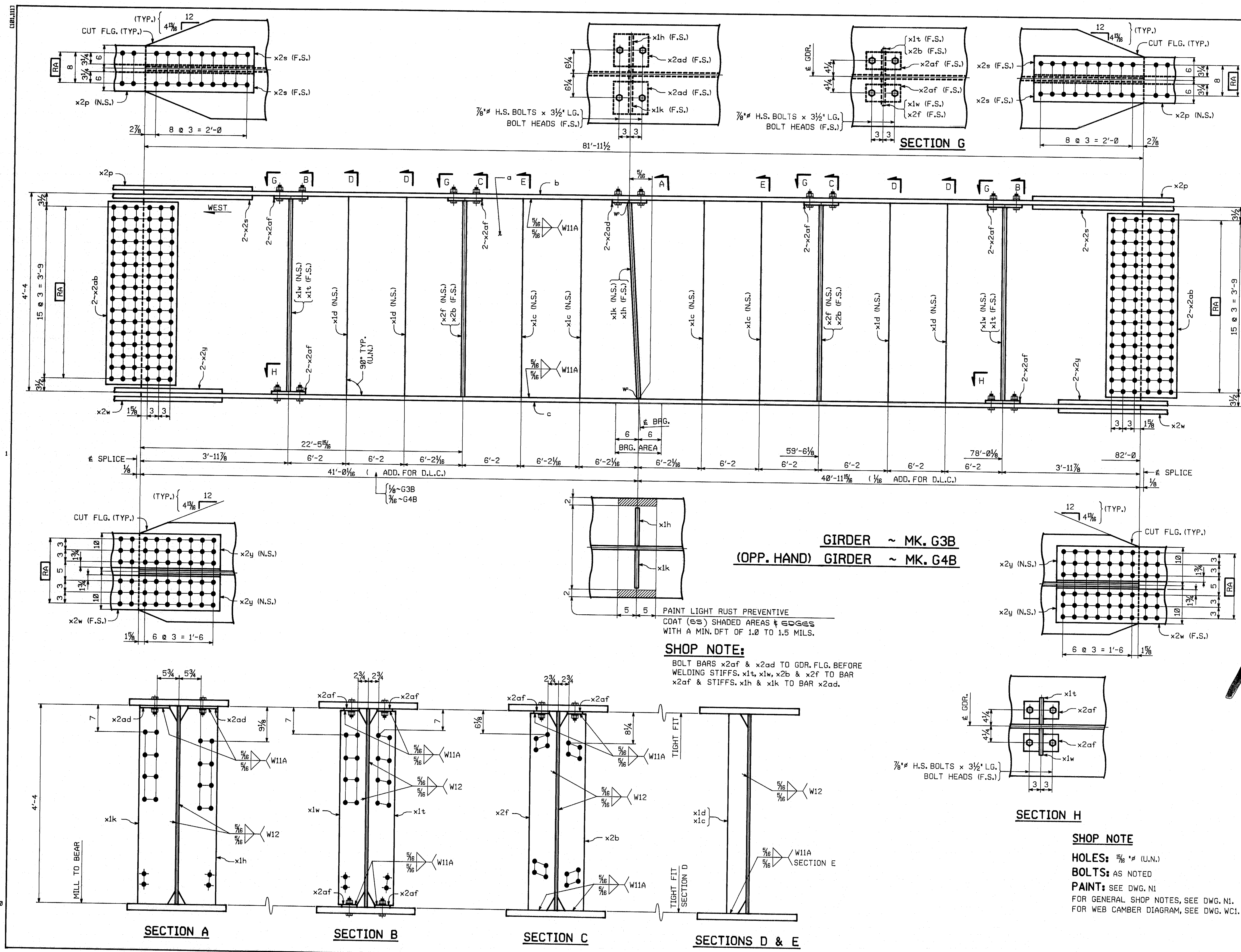
		FED. ROAD DIV. NO.		STATE		FED. AID PROJ. NO.	
		1		ME		BR-026-1(61)	
BILL OF MATERIAL							
NO.	MARK	DESCRIPTION	LENGTH	REMARKS		ITEM	SHIP- WEIGHT EAL
ONE	G1B	GIRDER					33,117
1	a	# 52 x 1/2	82	0	(T)	23	
1	b	# 26 x 1 1/8	81	11 1/2	(T)	32	
1	c	# 26 x 1 1/8	82	0	(T)	32	
1	x1a	# 10 x 1 1/8	4	3 3/8		4	11
1	x1p	# 10 x 1 1/8	4	3 3/8		4	11
2	x1y	BAR 7 x 7/8	4	2 3/4	A588	4	13
2	x2a	BAR 7 x 7/8	4	3 3/8	A588	4	13
4	x1c	BAR 5 x 3/8	4	4	A588	4	14
4	x1d	BAR 5 x 3/8	4	4	A588	4	14
2	x2p	# 12 x 1/2	4	9 1/2	(T)	4	5
4	x2s	BAR 5 1/4 x 5/8	4	9 1/2	(T)	4	6
2	x2w	# 20 x 1/2	3	7	(T)	4	3
4	x2y	# 9 1/4 x 3/8	3	7	(T)	4	4
4	x2ab	# 48 x 1/2	1	6 1/2	(T)	4	2
4	x2ac	WT6 x 13	0	8	A36	4	16
2	x2ad	BAR 8 x 5/8	0	9	A588	4	17
6	x2af	BAR 4 x 5/8	0	9	A588	4	15
16		3/8" H.S. BOLTS	0	3 1/2		B1	3
16		WASHERS FOR 3/8" H.S. BOLTS				B1	4
16		3/8" H.S. BOLTS	0	2		B1	5
16		WASHERS FOR 3/8" H.S. BOLTS				B1	6

105-255

NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>1505 Old Philadelphia Pike Lancaster, PA 17606-0008 Phone 717/299-521</p> <p>A Division of High Industries, Inc.</p>		
<p>GIRDER G1B</p> <p>SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER</p> <p>SOUTH WARREN BRIDGE STA. 397+99.00</p> <p>BETWEEN TOWNS OF WARREN AND THOMASTON</p> <p>KNOX COUNTY, MAINE</p> <p>STATE OF MAINE, DEPT. OF TRANSPORTATION</p> <p>STATE CONTRACT BR-026-1(61)</p> <p>CONTRACTOR CALLAHAN BROTHERS, INC.</p> <p>IN CHARGE HINKLE MADE BY KG DATE 3-12-90</p> <p>CONTRACT ME-89148 DRAWING NUMBER 8 OF 17</p>		



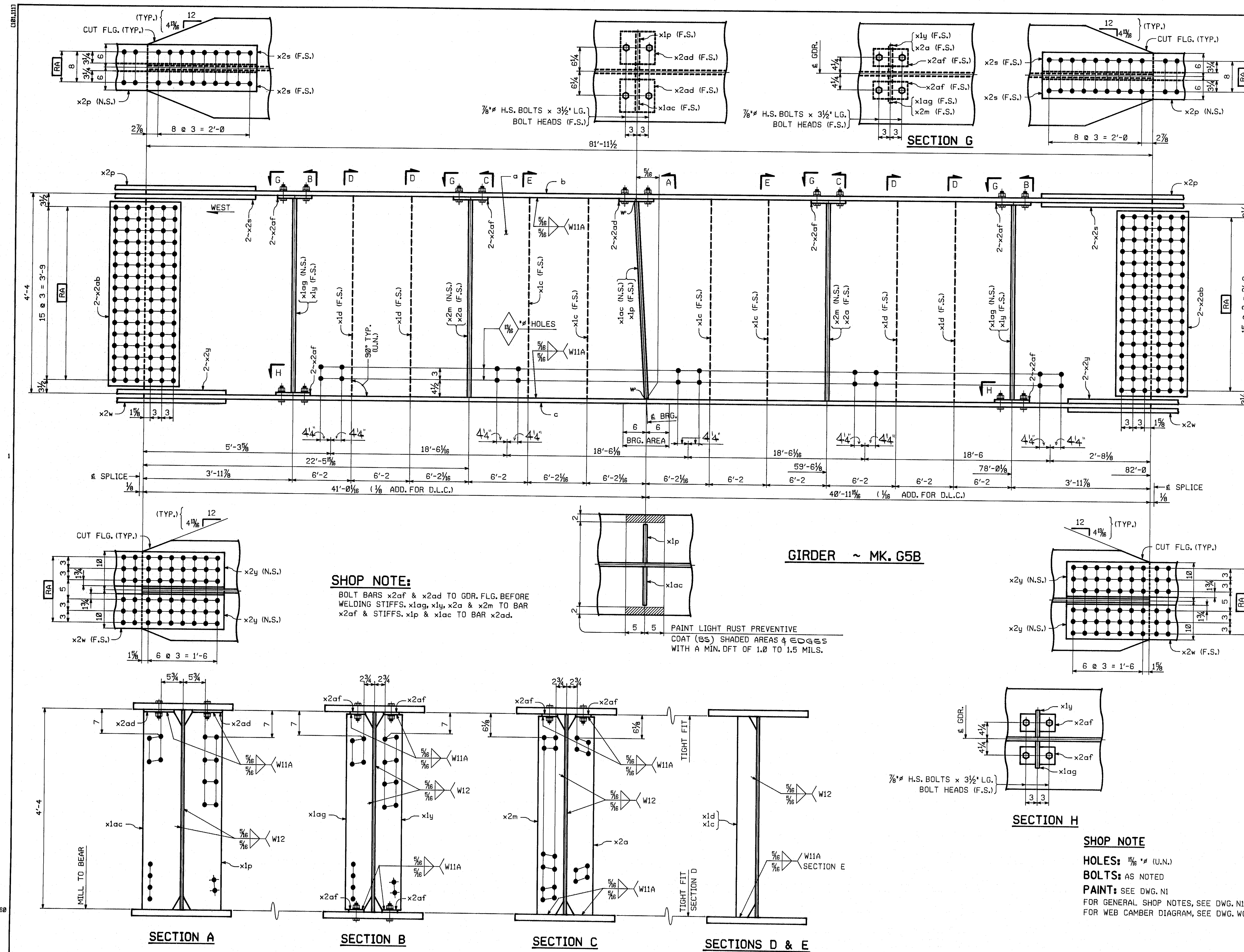




				FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
				1	ME	BR-026-1(61)
BILL OF MATERIAL						
NO.	MARK	DESCRIPTION	LENGTH	REMARKS		ITEM
ONE	G3B	GIRDER				33,386
ONE	G4B	GIRDER		OPP. HAND		33,386
2	a	ℓ 52 x ½	82	0	(T)	23
2	b	ℓ 26 x 1⅞	81	11½	(T)	32
2	c	ℓ 26 x 1⅞	82	0	(T)	32
2	x1h	ℓ 10 x 1⅞	4	3%		411
2	x1k	ℓ 10 x 1⅞	4	3%		411
4	x1t	BAR 7 x 7⅞	4	2¾	A588	413
4	x1w	BAR 7 x 7⅞	4	2¾	A588	413
4	x2b	BAR 7 x 7⅞	4	3%	A588	413
4	x2f	BAR 7 x 7⅞	4	3%	A588	413
8	x1c	BAR 5 x ¾	4	4	A588	414
8	x1d	BAR 5 x ¾	4	4	A588	414
4	x2p	ℓ 12 x ½	4	9½	(T)	415
8	x2s	BAR 5¼ x ⅝	4	9½	(T)	416
4	x2w	ℓ 20 x ½	3	7	(T)	417
8	x2y	ℓ 9¼ x ⅝	3	7	(T)	418
8	x2ab	ℓ 48 x ½	1	6½	(T)	419
4	x2ad	BAR 8 x ⅝	0	9	A588	417
24	x2af	BAR 4 x ⅝	0	9	A588	415
56		¾" H.S. BOLTS	0	3½		B13
56		WASHERS FOR ¾" H.S. BOLTS				B14

105-257

NO.	REVISION	DATE
HIGH STEEL STRUCTURES, INC.		
GIRDERS G3B & G4B		
SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE: HINKLE	MADE BY: MGK	CHKD. BY: RB
CONTRACT NUMBER: ME-89148		DATE: 3-12-90
DRAWING NUMBER: 10 OF 17		

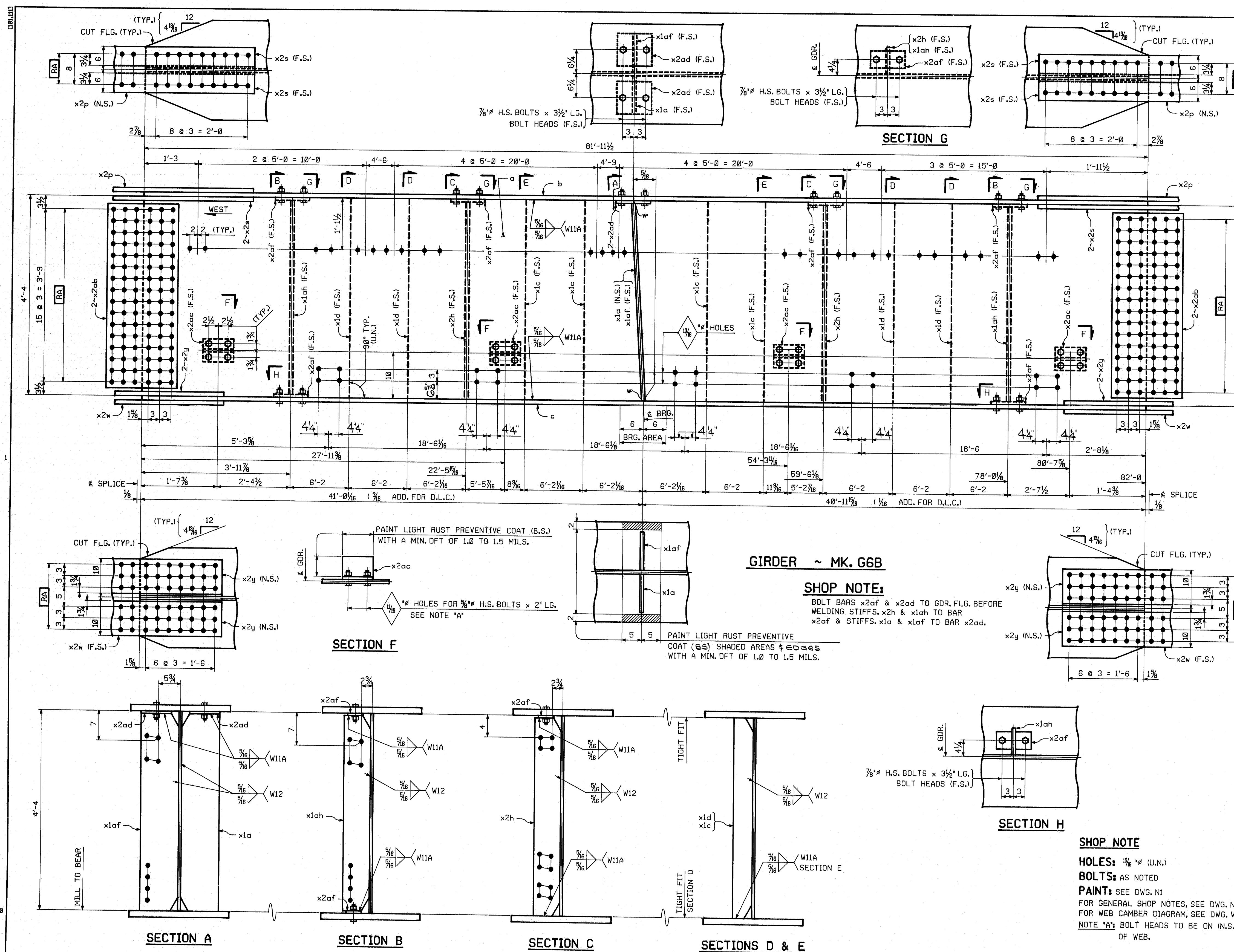


		FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		
		1	ME	BR-026-1(61)		
BILL OF MATERIAL						
NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHP. WEIGHT Ea.
ONE	G5B	GIRDER				33,386
1	a	£ 52 x ½	82	Ø (T)	2	3
1	b	£ 26 x 1½	81	11½ (T)	3	2
1	c	£ 26 x 1½	82	Ø (T)	3	2
1	x1p	£ 10 x 1½	4	3%	4	11
1	x1ac	£ 10 x 1½	4	3%	4	11
2	x1y	BAR 7 x 7⁄₁₆	4	2¾ A588	4	13
2	x1ag	BAR 7 x 7⁄₁₆	4	2¾ A588	4	13
2	x2a	BAR 7 x 7⁄₁₆	4	3% A588	4	13
2	x2m	BAR 7 x 7⁄₁₆	4	3% A588	4	13
4	x1c	BAR 5 x ¾	4	4 A588	4	14
4	x1d	BAR 5 x ¾	4	4 A588	4	14
2	x2p	£ 12 x ½	4	9½ (T)	4	6
4	x2s	BAR 5¼ x ⅝	4	9½ (T)	4	6
2	x2w	£ 20 x ½	3	7 (T)	4	3
4	x2y	£ 9¼ x ⅝	3	7 (T)	4	4
4	x2ab	£ 48 x ½	1	6½ (T)	4	2
2	x2ad	BAR 8 x ⅝	Ø	9 A588	4	17
12	x2af	BAR 4 x ⅝	Ø	9 A588	4	15
28		⅞" H.S. BOLTS	Ø	3½	B1	3
28		WASHERS FOR ⅞" H.S. BOLTS			B1	4

105-258

NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b> 1805 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/298-5211 A Division of High Industries, Inc.</p>		
<p>GIRDER G5B</p>		
<p>SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER</p>		
<p>SOUTH WARREN BRIDGE STA. 397+99.00</p>		
<p>BETWEEN TOWNS OF WARREN AND THOMASTON</p>		
<p>KNOX COUNTY, MAINE</p>		
<p>STATE OF MAINE, DEPT. OF TRANSPORTATION</p>		
<p>STATE CONTRACT OR REF. NO. BR-026-1(61)</p>		
<p>CONTRACTOR CALLAHAN BROTHERS, INC.</p>		
IN CHARGE:	HINKLE	DATE: 3-12-90
CONTRACT NUMBER:	ME-89148	DRAWING NUMBER: 11 OF 17





FED. ROAD DIV. NO.		STATE		FED. AID PROJ. NO.	
1		ME		BR-026-1(61)	

BILL OF MATERIAL						
NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHIP. WEIGHT
ONE	G6B	GIRDER				33,117
1	a	2 52 x 1/2	82 0	(T)	2	3
1	b	2 26 x 1 1/2	81 11 1/2	(T)	3	2
1	c	2 26 x 1 1/2	82 0	(T)	3	2
1	x1a	2 10 x 1 1/2	4 3		4	11
1	x1af	2 10 x 1 1/2	4 3		4	11
2	x1ah	BAR 7 x 7/8	4 2 3/4	A588	4	13
2	x2h	BAR 7 x 7/8	4 3	A588	4	13
4	x1c	BAR 5 x 3/8	4 4	A588	4	14
4	x1d	BAR 5 x 3/8	4 4	A588	4	14
2	x2p	2 12 x 1/2	4 9 1/2	(T)	4	5
4	x2s	BAR 5 1/4 x 5/8	4 9 1/2	(T)	4	6
2	x2w	2 20 x 1/2	3 7	(T)	4	3
4	x2y	2 9 1/4 x 5/8	3 7	(T)	4	4
4	x2ab	2 48 x 1/2	1 6 1/2	(T)	4	2
4	x2ac	WT 6 x 13	8 8	A36	4	16
2	x2ad	BAR 8 x 5/8	8 9	A588	4	17
6	x2af	BAR 4 x 5/8	8 9	A588	4	15
16		7/8\" H.S. BOLTS	0 3 1/2		B1	3
16		WASHERS FOR 7/8\" H.S. BOLTS	0 3 1/2		B1	4
16		5/8\" H.S. BOLTS	0 2		B1	5
16		WASHERS FOR 5/8\" H.S. BOLTS	0 2		B1	6

105-259

NO.	REVISION	DATE

**HIGH STEEL STRUCTURES, INC.**

1905 Old Philadelphia Pike  
Lancaster, PA 17603-0008  
Phone 717/299-5201

A Division of High Industries, Inc.

**GIRDER** G6B

SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER

SOUTH WARREN BRIDGE STA. 397+99.00

BETWEEN TOWNS OF WARREN AND THOMASTON

KNOX COUNTY, MAINE

STATE OF MAINE, DEPT. OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BR-026-1(61)

CONTRACTOR CALLAHAN BROTHERS, INC.

IN CHARGE HINKLE

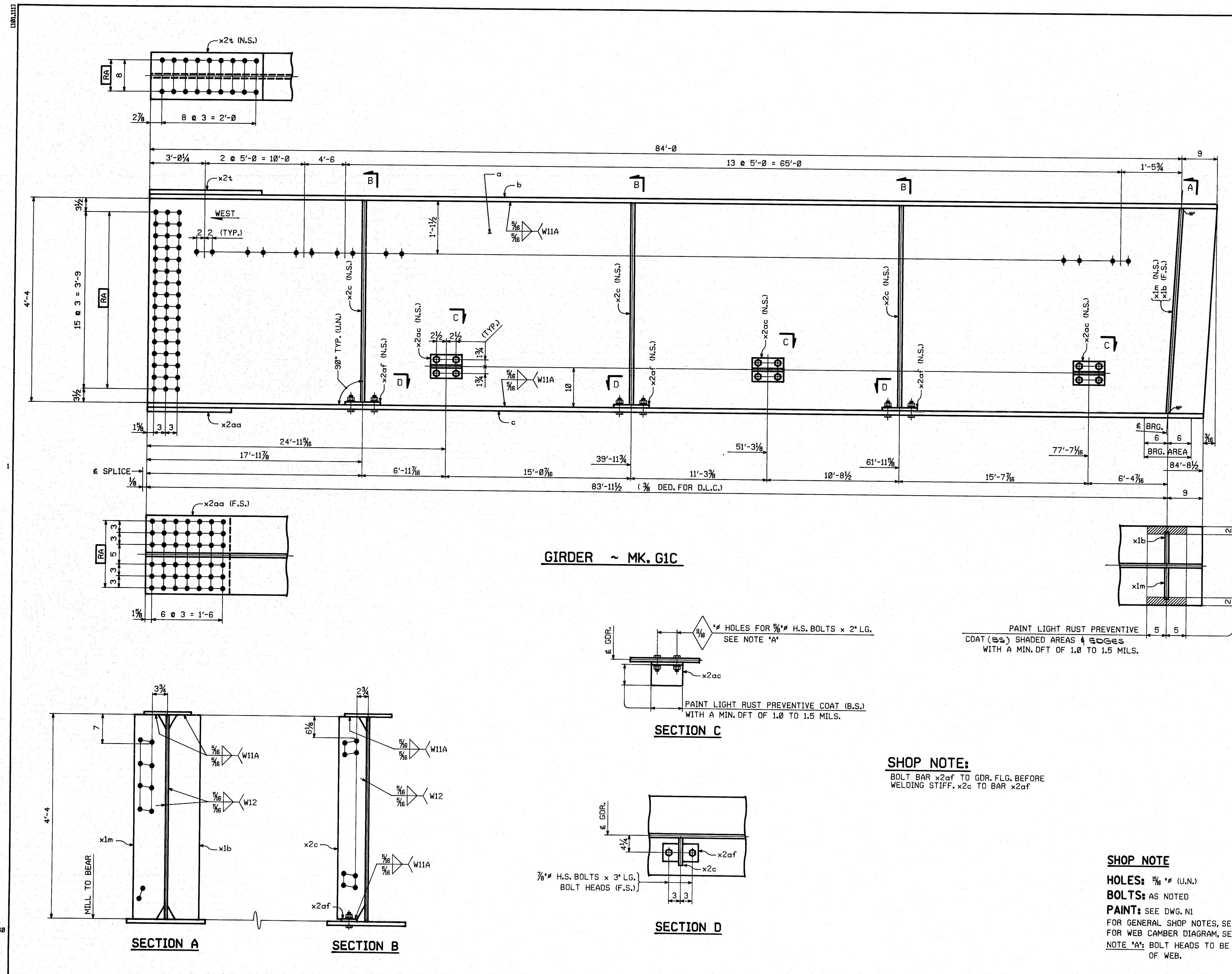
MADE BY MGK

CHK'D BY RB

DATE 3-12-90

CONTRACT NUMBER ME-89148

DRAWING NUMBER 12 OF 17



				FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	
				1	ME	BR-026-1(61)	
BILL OF MATERIAL							
NO.	MARK	DESCRIPTION	LENGTH		REMARKS	ITEM	SUB- WEIGHT EAL
ONE	G1C	GIRDER					16,411
1	a	R 52 x 1/2	84	9	(T)	2	
1	b	R 12 x 3/4	84	9	(T)	3	
1	c	R 20 x 1	84	8 1/2	(T)	3	
1	x1b	BAR 8 x 7/8	4	4		4	12
1	x1m	BAR 8 x 7/8	4	4		4	12
3	x2c	BAR 7 x 7/8	4	3 3/4	A588	4	13
1	x2t	R 12 x 7/8	2	4 3/4	FILL	4	8
1	x2aa	R 20 x 5/8	1	9 3/4	FILL	4	7
3	x2ac	WT6 x 13	0	8	A36	4	16
3	x2af	BAR 4 x 5/8	0	9	A588	4	15
6		7/8" H.S. BOLTS	0	3		B1	2
6		WASHERS FOR 7/8" H.S. BOLTS				B1	4
12		5/8" H.S. BOLTS	0	2		B1	5
12		WASHERS FOR 5/8" H.S. BOLTS				B1	6

105-260

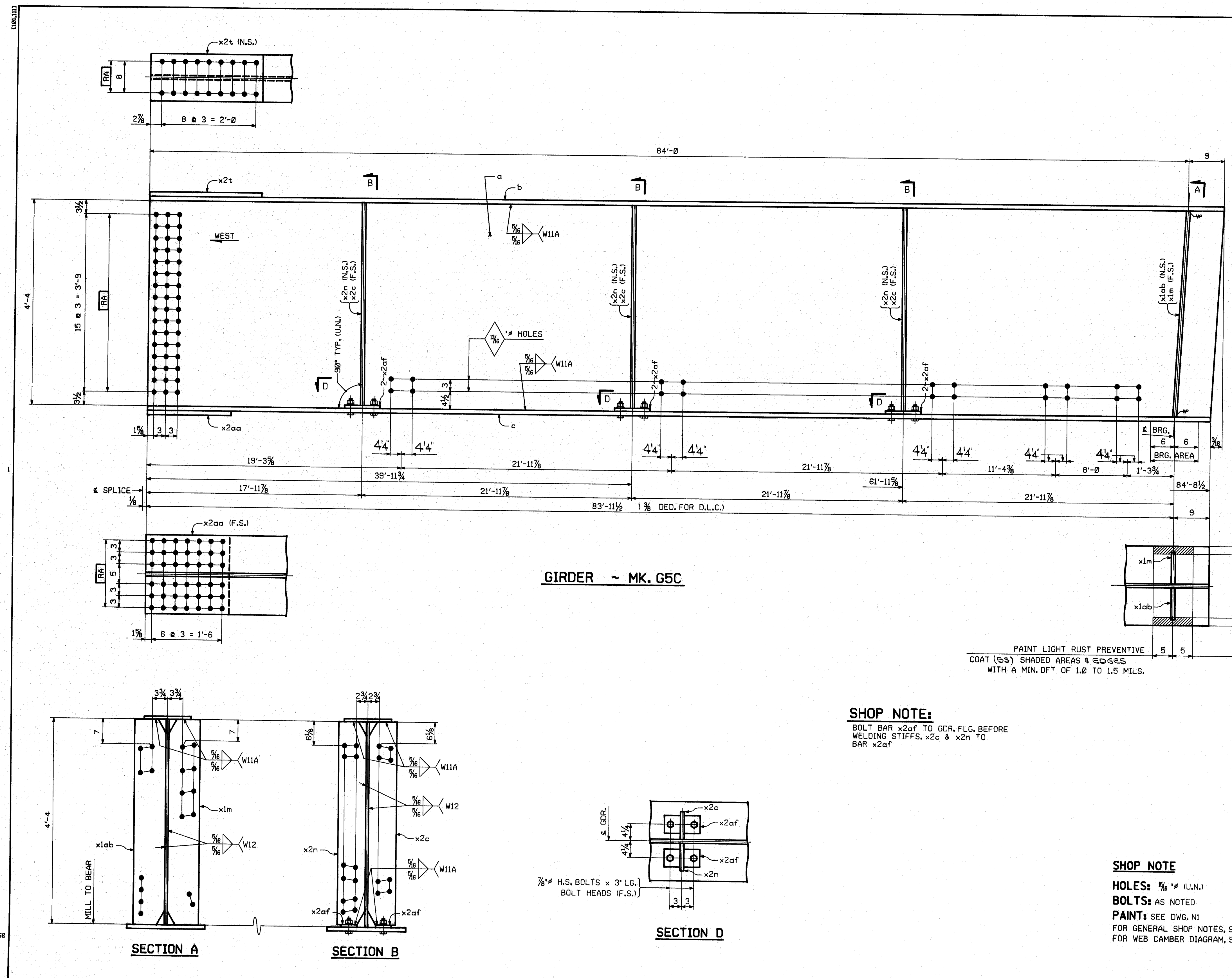
NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>1905 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5281 A Division of High Industries, Inc.</p>		
GIRDER G1C		
SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO. BR-026-1(61)		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE: HINKLE	MADE BY: MGK	CHKD. BY: RB DATE: 3-13-90
CONTRACT NUMBER: ME-89148		DRAWING NUMBER: 13 OF 17







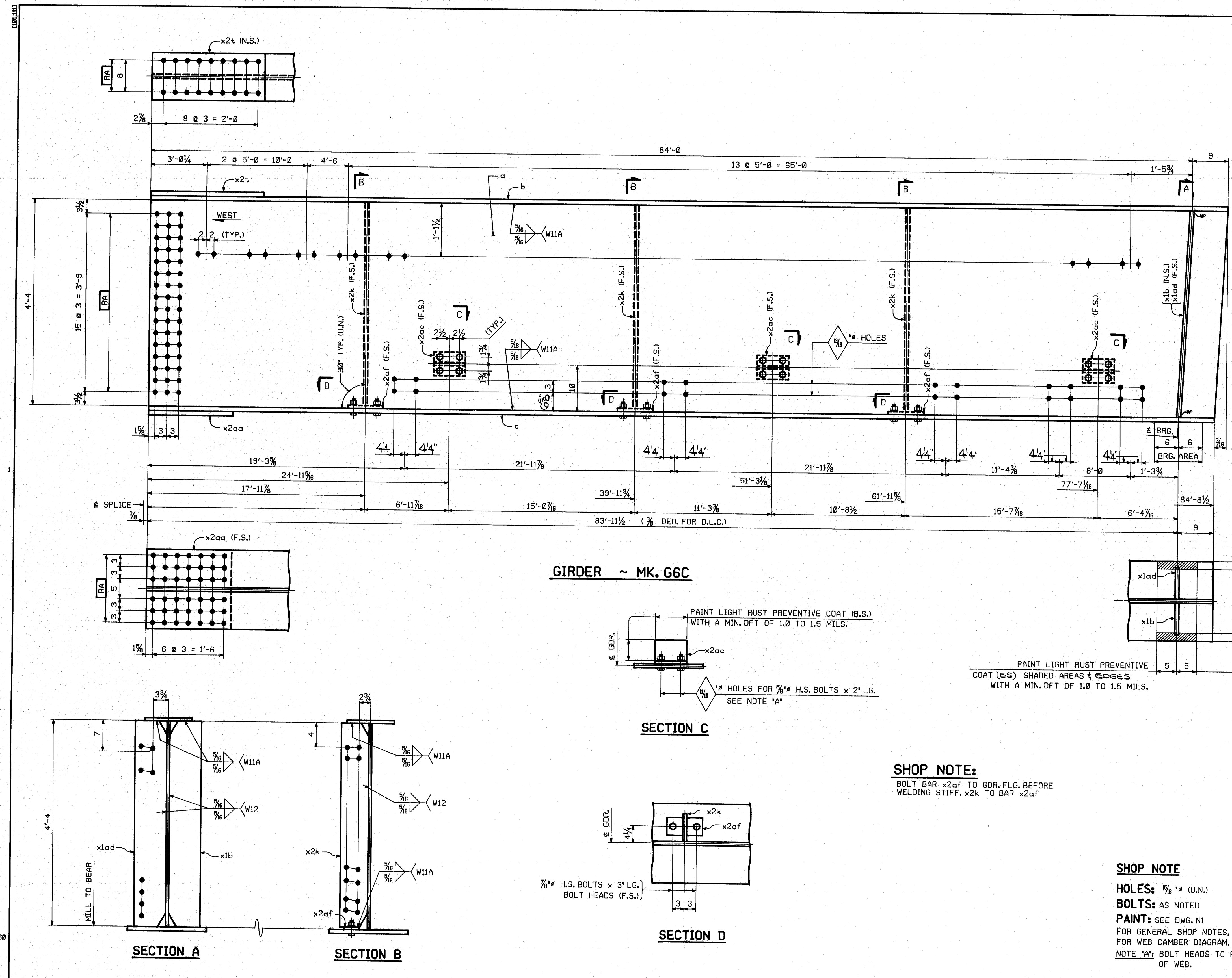




FED. ROAD DIV. NO.		STATE		FED. AID PROJ. NO.			
1		ME		BR-026-1(61)			
BILL OF MATERIAL							
NO.	MARK	DESCRIPTION	LENGTH		REMARKS	ITEM	SHP- WIGHT EAL
ONE	G5C	GIRDER					16,599
1	a	2 52 x 1/2	84	9	(T)	2	2
1	b	2 12 x 3/4	84	9	(T)	3	4
1	c	2 20 x 1	84	8 1/2	(T)	3	3
1	x1m	BAR 8 x 7/8	4	4		4	12
1	x1ab	BAR 8 x 7/8	4	4		4	12
3	x2c	BAR 7 x 7/8	4	3 3/4	A588	4	13
3	x2n	BAR 7 x 7/8	4	3 3/4	A588	4	13
1	x2t	2 12 x 7/8	2	4 1/2	FILL	4	8
1	x2aa	2 20 x 5/8	1	9 1/2	FILL	4	7
6	x2af	BAR 4 x 5/8	0	9	A588	4	15
12		7/8" H.S. BOLTS	0	3		B1	2
12		WASHERS FOR 7/8" H.S. BOLTS				B1	4

105-263

NO.	REVISION	DATE
<p><b>HIGH STEEL STRUCTURES, INC.</b></p> <p>1005 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5251</p> <p>A Division of High Industries, Inc.</p>		
GIRDER G5C		
SOUTH WARREN BRIDGE (RTE. #1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT BR-026-1(61)		
OR REF. NO.		
CONTRACTOR CALLAHAN BROTHERS, INC.		
IN CHARGE	MADE BY	CHK'D BY
HINKLE	MGK	RB
DATE	3-13-90	
CONTRACT NUMBER	ME-89148	
DRAWING NUMBER	16 OF 17	



FED. ROAD DIV. NO.		STATE	FED. AID PROJ. NO.
1		ME	BR-026-1(61)

BILL OF MATERIAL						
NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	QTY.
ONE	G6C	GIRDER				16,411
1	a	E 52 x 1/2	84	9 (T)		2
1	b	E 12 x 3/4	84	9 (T)		3
1	c	E 20 x 1	84	8 1/2 (T)		3
1	x1b	BAR 8 x 7/8	4	4		4
1	x1ad	BAR 8 x 7/8	4	4		4
3	x2k	BAR 7 x 7/8	4	3 3/4	A588	4
1	x2t	E 12 x 7/8	2	4 1/4	FILL	4
1	x2aa	E 20 x 5/8	1	9 3/4	FILL	4
3	x2ac	WT 6 x 13	0	8	A36	4
3	x2af	BAR 4 x 5/8	0	9	A588	4
6		7/8" H.S. BOLTS	0	3		B1
6		WASHERS FOR 7/8" H.S. BOLTS				B1
12		5/8" H.S. BOLTS	0	2		B1
12		WASHERS FOR 5/8" H.S. BOLTS				B1

105-264

NO.	REVISION	DATE

HIGH STEEL STRUCTURES, INC.		1005 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone 717/299-5201
GIRDER		G6C
SOUTH WARREN BRIDGE (RTE. 1) OVER THE ST. GEORGE RIVER		
SOUTH WARREN BRIDGE STA. 397+99.00		
BETWEEN TOWNS OF WARREN AND THOMASTON		
KNOX COUNTY, MAINE		
STATE OF MAINE, DEPT. OF TRANSPORTATION		
STATE CONTRACT OR REF. NO.		BR-026-1(61)
CONTRACTOR		CALLAHAN BROTHERS, INC.
IN CHARGE	HINKLE	MADE BY MGK CHK'D BY RE DATE: 3-13-90
CONTRACT NUMBER	ME-89148	DRAWING NUMBER 17 OF 17