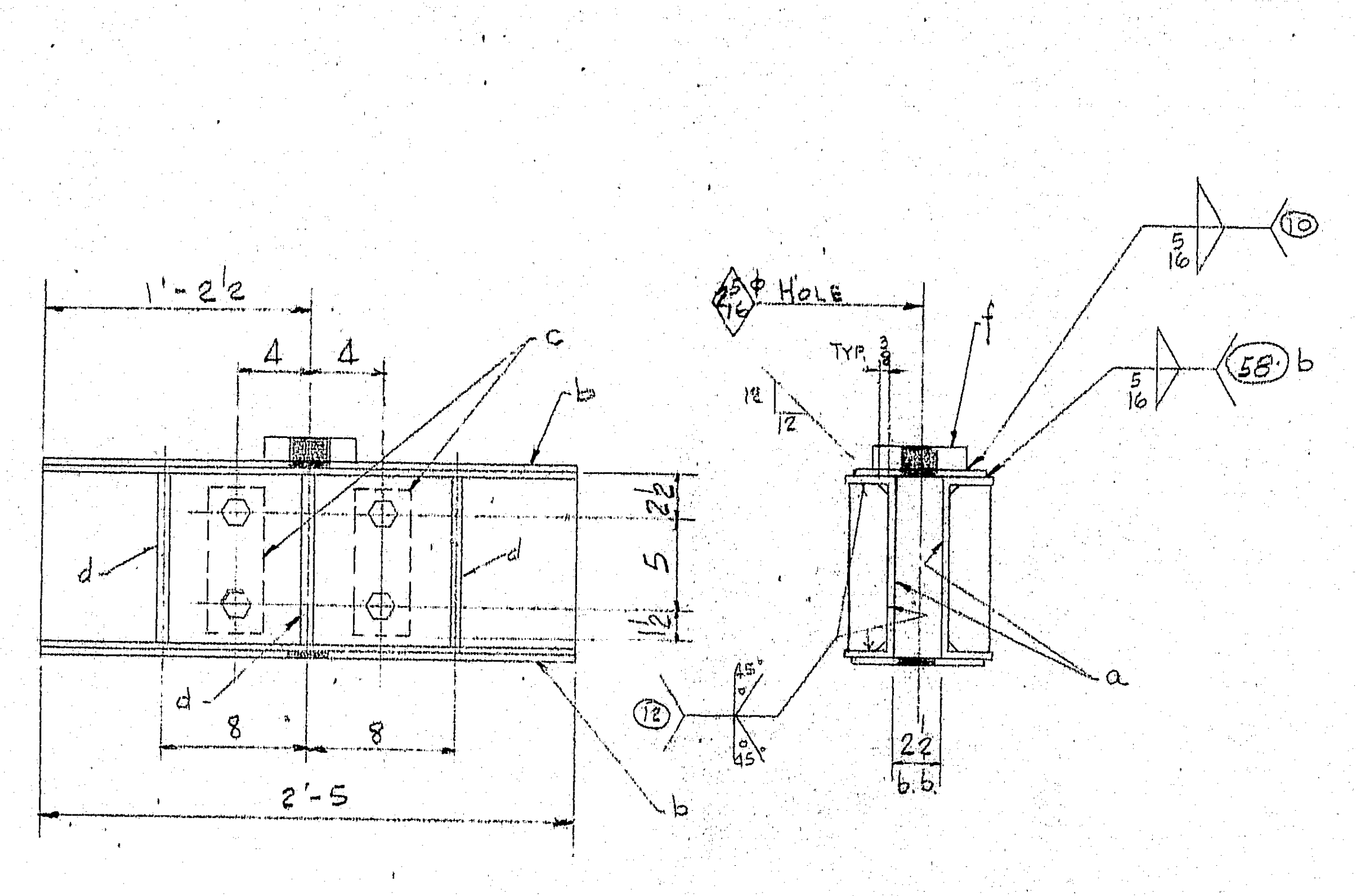
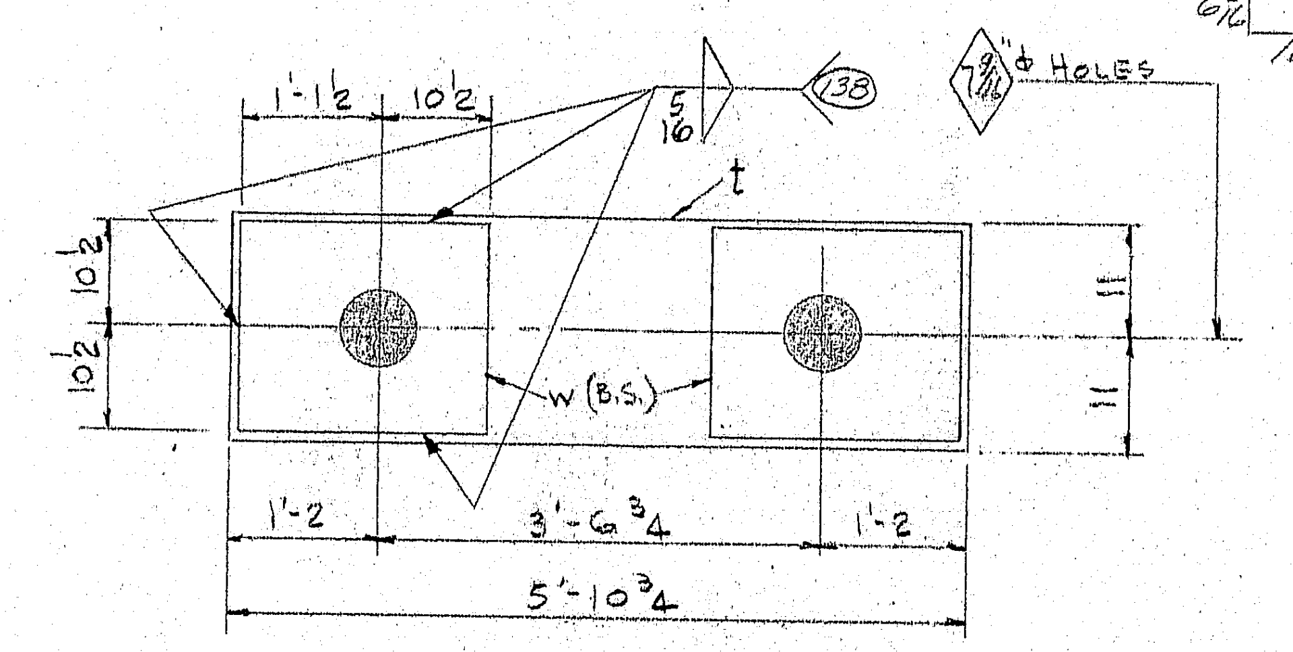
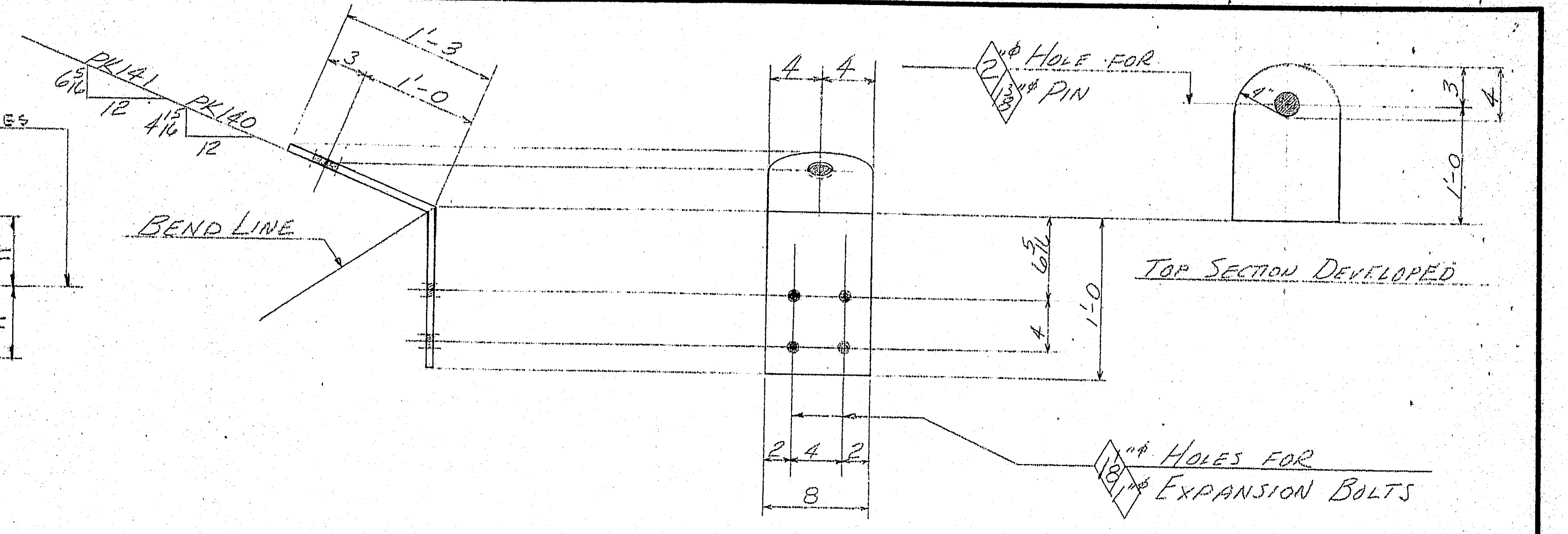


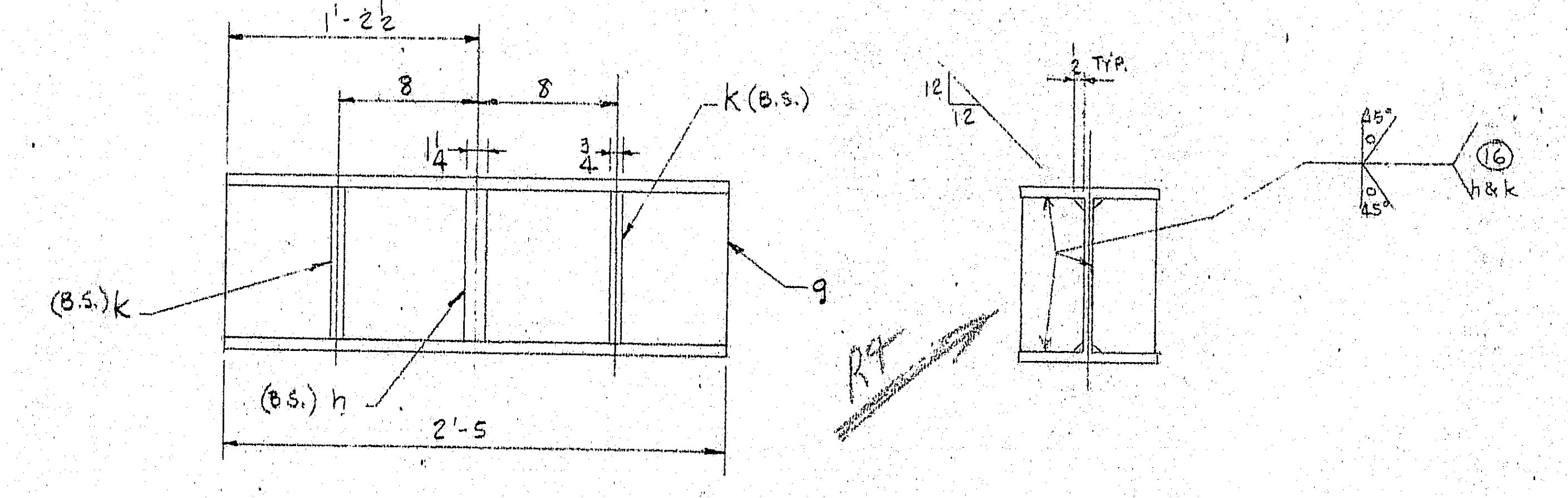
PK112 - YOKE



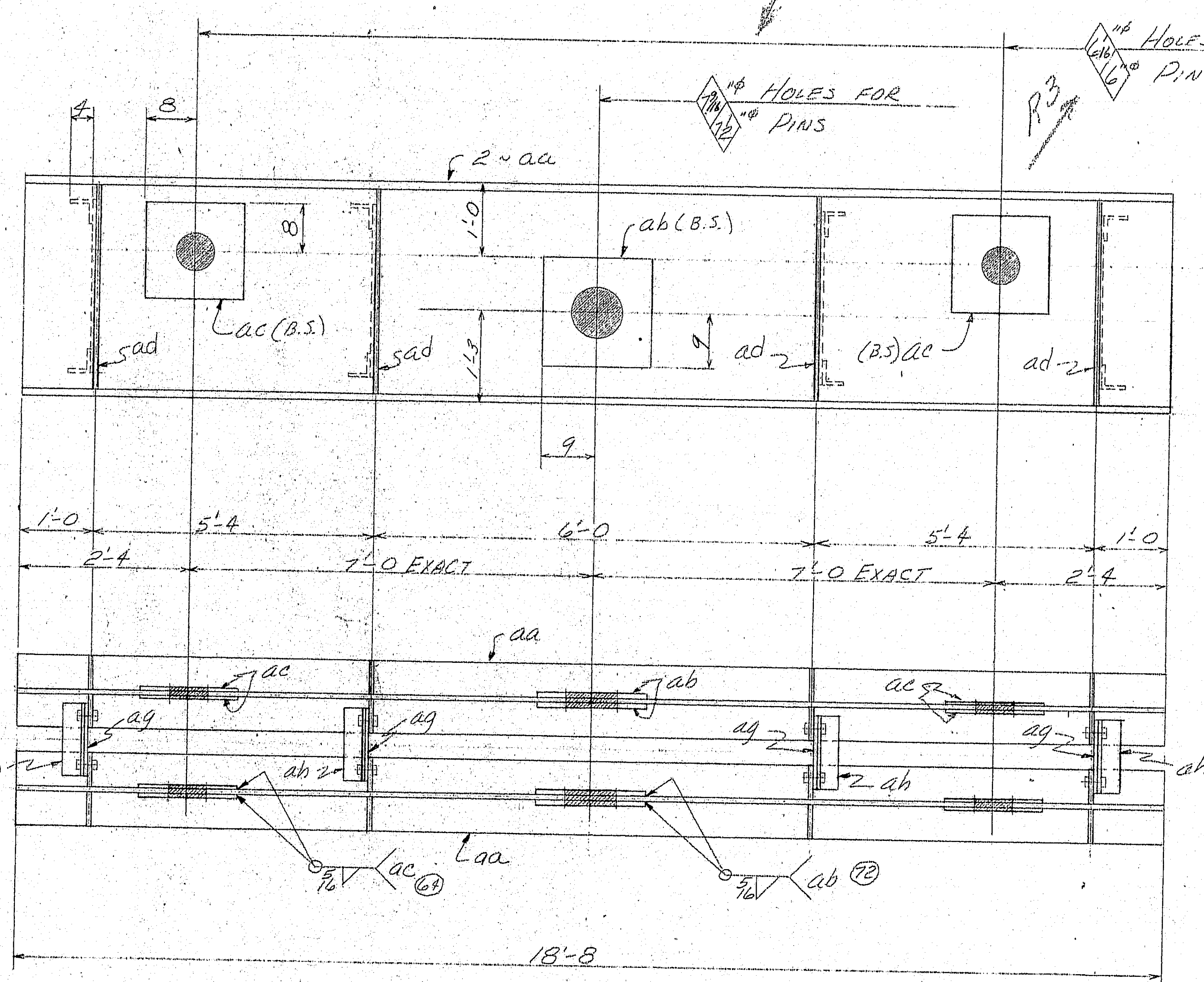
PK135 - LINK PLATE

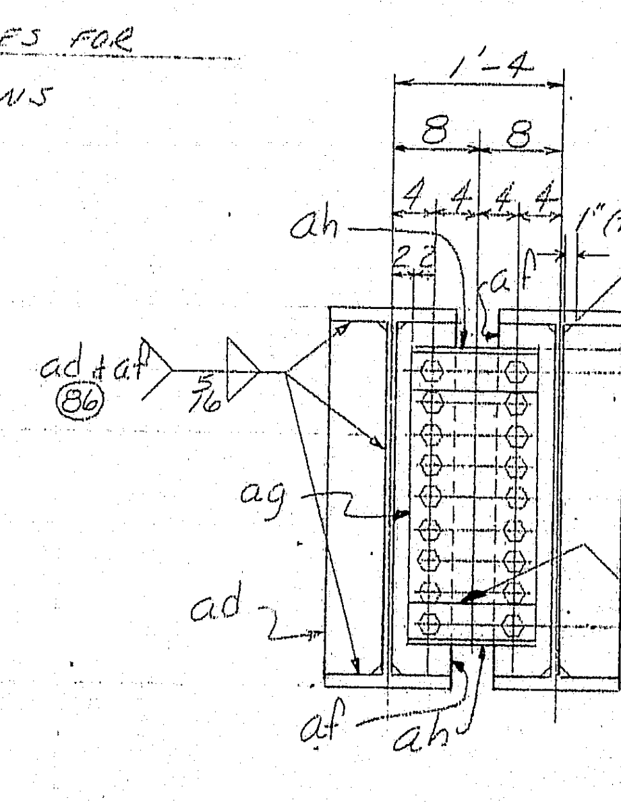


TIEBACK LUG ~ PK140
do do ~ PK141

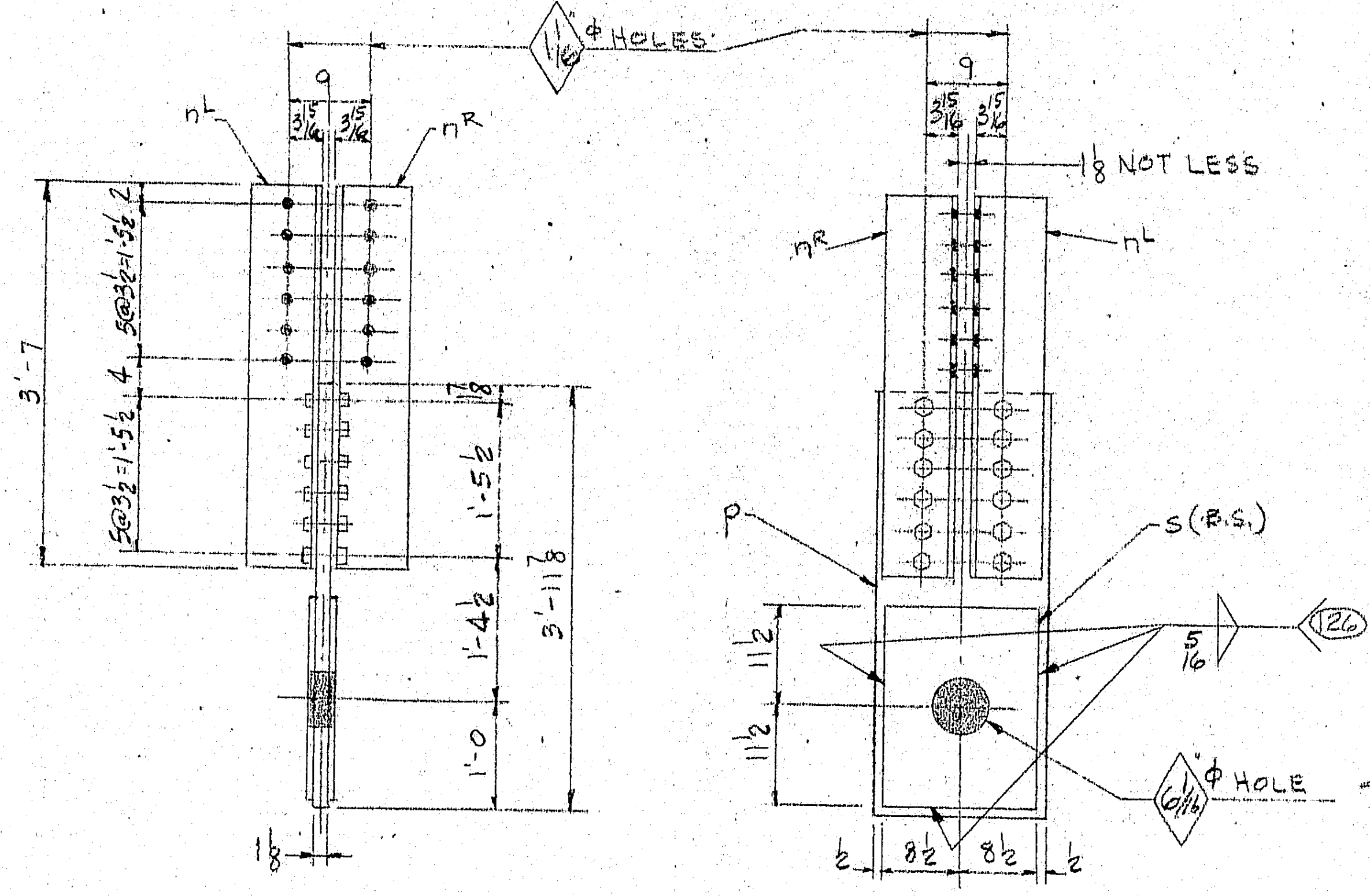


PK113 - PEDESTAL





PK136 ~ BALANCE BEAM



PK134 - ANGLE TIE

REQUIRED LIST					
NO. REQD	MARK	DESCRIPTION	REMARKS	WT. EA. PC.	DISPOSITION
32	PK112	YOKE		256	
4	PK113	PEDESTAL		208	
16	PK134	ANGLE TIE		875	R2
4	PK135	LINK PLATE		1095	
8	PK136	BALANCE BEAM		8561	
8	PK140	TIEBACK LUG		11	
8	PK141	do do		11	

193,112#

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY F.F.W. NOV 23 1970 org

[illegible] Bethlehem Steel Corporation [illegible] that is detrimental to the interest of Bethlehem Steel Corporation.

For location of details shown on this sheet refer to diagrams.

SENT TO	DATE
D.O.	6/29
FLD.	"
TH.	
E.D.	
Eac	
EIO	
SHP	

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS
1			32 - PK112 - YOKE								
2		72	a	64	C	10	30		2	5	
3		22	b	64	BRZ	7 1/4		3/8	2	5	
4		17	c	64	BRZ	3		2 1/2	0	8	
5		3	d	192	BRZ	2 1/4		1/2	0	9 1/4	
6		7	f	32	BRZ	5		1	0	5	
7		1.3		128	325	7/8			0	5 1/4	
8		—		128	HW	1 3/4	15/16	3/16			
9		2	V45	32	WD			1/2	6	0	
10		2	FW	32	WD			5/16	10	6	
11											
12											
13											
14			4 - PK113 - PEDESTAL								
15		145	g	4	B	10	60		2	5	
16		11	h	8	BRZ	4 1/2		1 1/4	0	8 15/16	
17		9	k	16	BRZ	4 1/2		3/4	0	8 15/16	
18		5	V45	4	WD			3/4	5	4	
19			V45	4	WD			1 1/4	2	8	
20	R2		16 - PK134 - ANGLE TIE								R3
21	468	117	nR/L	32/32	L	8	8	5/8	3	7	
22	275	275	p	16	PL	18		1 1/8	3	11 7/8	
23	110	55	s	32	PL	17		1/2	1	11	
24	11	1.6		192	325	1			0	4	
25		-		192	HW	2	1 1/16	3/16			
26	3	3	FW	32	WD			5/16	168	0'	
27	875										
44		11	PK141	8	PL	8		1/2	2	3	BEND AS SHOWN
45											
46		11	PK140	8	PL	8		1/2	2	3	BEND AS SHOWN
28			4 - PK135 - LINK PLATE								R3
29		662	t	4	PL	22		1 1/2	5	10 3/4	
30		107	w	16	PL	21		3/4	2	0	
31		5	FW	4	WD			5/16	92	0	
32											
33			8 - PK136 - BALANCE BEAM								R3
34		3620	aa	16	B	36	194		18	8	
35		69	ab	32	PL	18		3/4	1	6	
36		27	ac	64	PL	16		3/8	1	4	
37		27	ad	64	BRZ	5 5/8		1/2	2	10	
38		27	af	64	BRZ	5 5/8		1/2	2	10	
39		48	ag	32	PL	12		1/2	2	4	
40		12	ah	64	L	4	3 1/2	1/2	1	0	
41		37	FW	16	WD			5/16	190	2	
42		1		448	325	7/8			0	2 1/2	
43		1		128	325	7/8			0	3	

MILL ORDER: LENGTH FT. | IN. | ITEM PAGE | LINE

MATERIAL A36 U.N.
OPEN HOLES 15/16 ϕ U.N.
RIVETS
BOLTS 7/8 A325 U.N.
WELDING AS SHOWN E70xx ELECT.
PAINT SEE ERECT. PAINT SPECS. PARA #1 (OR #2)

NO.	DATE	INIT.
R4	11/14/70	RCF
R3	11/13/70	RCF
R2	10-6-70	DDP
R1	9/22/70	DDP RBD

REVISED

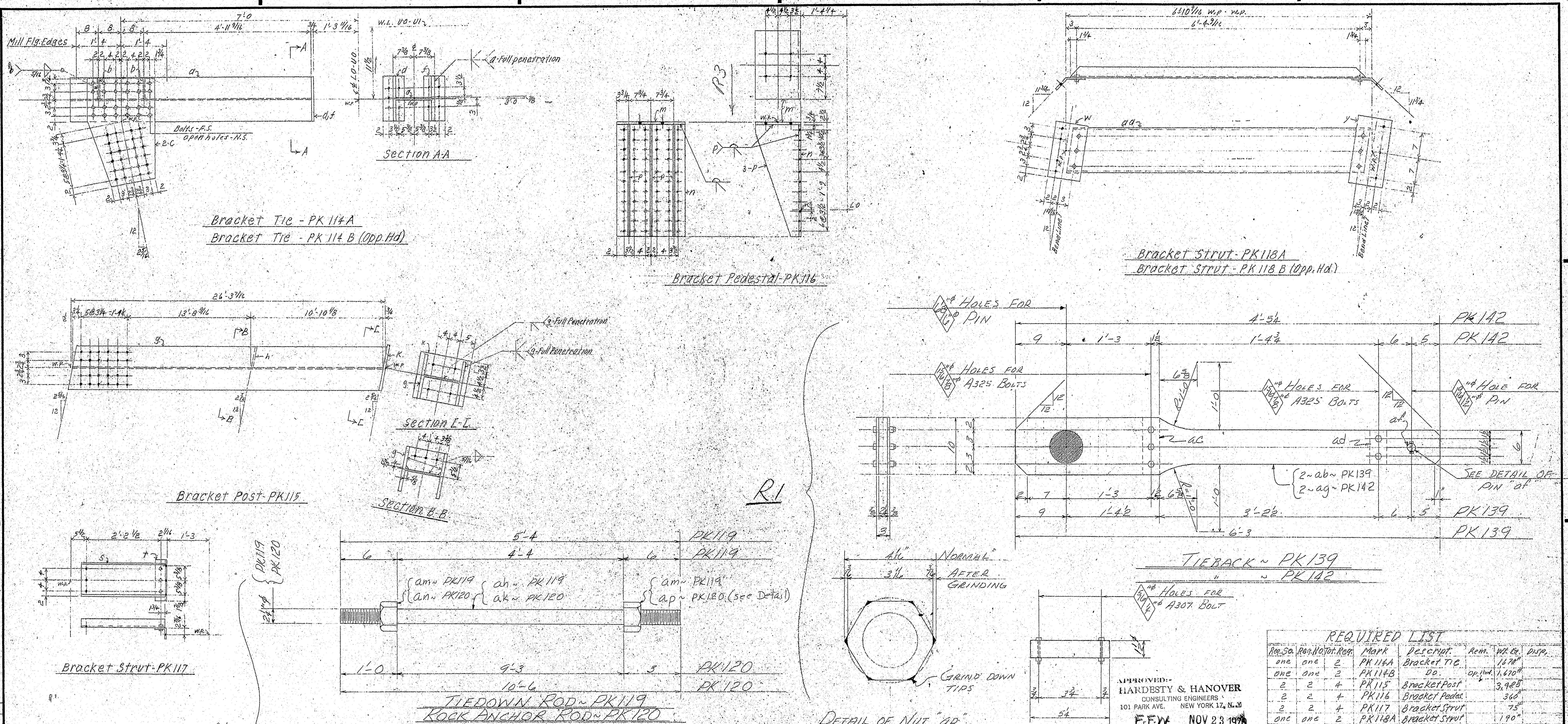
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. – KITTERY, ME.
TIE-DOWN AT L0 - DETAILS

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
~~ERECTION DIVISION~~
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C.G. / R.G.F.
☑ Erect. Engr. ☐ Proj. Engr.
APPROVED:
☐ Mgr. of Erect. ☐ District Mgr.
☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: D.D.P. / RBD DATE: 9-22-70
CHECKED BY: RBD / D.D.P DATE: 9-24-70
SCALE:
FILE NO.:
ERECTION CONTRACT NO.: CW 6290
DWG. NO.: ER 56 B

134:65

3855R (Rev.8, 9-68)



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CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N. Y.
BY F.F.W. NOV 23 1970

orig
R1

R3

Note: A4140 Steel, 2¼" dia.
Yield = 100.0 ksi; Tensile = 127.5 ksi

"This drawing contains information which is proprietary to Bethlehem Steel Corporation, Bethlehem, Pa., and is not to be used in any manner that is detrimental to the interest of Bethlehem Steel Corporation."

REQUIRED LIST

Req. So.	Req. No.	Tot. Req.	Mark	Descript.	Rem.	Wt. Ea.	Disp.
one	one	2	PK114A	Bracket Tie		1,670#	
one	one	2	PK114B	Do.	op. Hd.	1,670#	
2	2	4	PK115	Bracket Post		3,980#	
2	2	4	PK116	Bracket Pedes.		360#	
2	2	4	PK117	Bracket Strut		75#	
one	one	2	PK118A	Bracket Strut		190#	
one	one	2	PK118B	Do.	op. Hd.	190#	
16	16	32	PK119	Tiedown Rod		76#	
32	32	64	PK120	Rk. Anchor Rod		147#	
4	4	8	PK139	Tieback		146#	
4	4	8	PK142	Tieback		120#	

31,685# Lbs

Work this drawing w/ER56, ER56A, & ER56B

	a	b	c
a	✓		
b	✓		
c	✓		
d	✓		
f	✓		
g	✓		
h	✓		
k	✓		
m	✓		
n	✓		
p	✓		
s			
t			
w			
y			

For location of details shown on this sheet refer to diagrams:
EB5, ER55

R3

SENT TO	DATE
D.O.	1/5/9
FLD.	
TH.	
E.D.	
Eac	
EIO	
SHP	

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	MILL ORDER ITEM PAGE	MILL ORDER ITEM LINE
1				2-Bracket Tie-PK114A											
2				2-Bracket Tie-PK114B											
3		1000	a	4	B	14	142		7	1					
4		27	b	8	PL	7⅜		½	1	0⅝					
5		515	c	8	PL	23½		1"	3	2⅜					
6		25	d	4	PL	7½		¾	1	3½					
7		25	f	4	PL	7½		¾	1	3½					
8		60		176	325	1"φ				3½					
9		8	FW	4	WD			5/16	8	6½					
10		3	V45	4	WD			1 1/16	2	9					
11		7		176	HW	2	1 1/16	3/16							
12		1670													

TIEDOWN ROD~PK119
ROCK ANCHOR ROD~PK120

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS
				8~TIEBACK~PK139							
				8~TIEBACK~PK142							
		40	ag	16	PL	10		3/8	4	5¼	CUT AS SHOWN~PK142
		55	ab	16	PL	10		3/8	6	3	CUT AS SHOWN~PK139
		19	ac	16	BAR	3		2¼	0	10	
		11	ad	16	BAR	3		2¼	0	6	
		3	at	16	RD	1½			0	5¼	
		—		32	MB	4			0	2½	
		116		80	325	⅞			0	4¼	
				80	HW	1¾	1 5/16	5/16			
				32~TIEDOWN RODS~PK119							
				64-ROCK ANCHOR RODS~PK120							R3
		72	ah	32	RD	2¼	R2		5	4	4140, QUENCH & TEMPER, BHN255 to 302
		143	ak	64	RD	2¼			10	6	A306-64 GRADE 80 STEEL
		2	am	64	M	2¼					HHN~A194 GRADE 2
		2	an	64	M	2¼					HHN~A307 STEEL
		2	ap	64	M	2¼					HHN-A307~GRIND AS SHOWN
13											
14				4-Bracket Post-PK115							
15		3860	g	4	B	14	142		26	5 3/16	
16		10	h	4	PL	7½		3/8	1	0⅝	
17		60	k	4	PL	15¾		¾	1	6	
18		5	FW	4	WD			5/16	4	3	
19		15	V45	4	WD			11/16	1	1¼	
20		30	V45	4	WD			1 1/16	2	9	
21		3980									
22				4-Bracket Pedestal-PK116							
23		80	m	4	PL	15¾		¾	1	11	
24		129	n	4	PL	23		½	3	3½	
25		138	p	12	PL	15½		7/8	3	3½	
26		10	V45	4	WD			7/8	13	4½	
27		3	V45	4	WD			½	1	11	
		360									
28											
29				4-Bracket Strut-PK117							
30		52	s	4	L	12	20.7		2	6	
31		12	t	4	L	4	4	3/8	1	2½	
32		8		12	325	1"φ				2¼	
33		3		12	HW	2	1 1/16	3/16			
34		75		2-Bracket Strut-PK118A							
35				2-Bracket Strut-PK118B							
36		20	w	4	PL	9		½	1	3½	
37		23	y	4	PL	9		½	1	6	
38		138	aa	4	L	12	20.7		6	8 1/16	
39		9		24	325	1"φ				2¼	
40		190									
41											
42											

MATERIAL A36 Unless Noted
OPEN HOLES 1 1/16"φ Unless Noted
RIVETS
BOLTS 1"φ A325 Unless Noted
WELDING As Noted E70xx Elect.
PAINT See Erect. Paint Specs. Area #1 (or #2)

NO.	DATE	INIT.
R3	11/13/70	RCF
R2	6-7-70	DDP
R1	9/22/70	RBD

REVISED

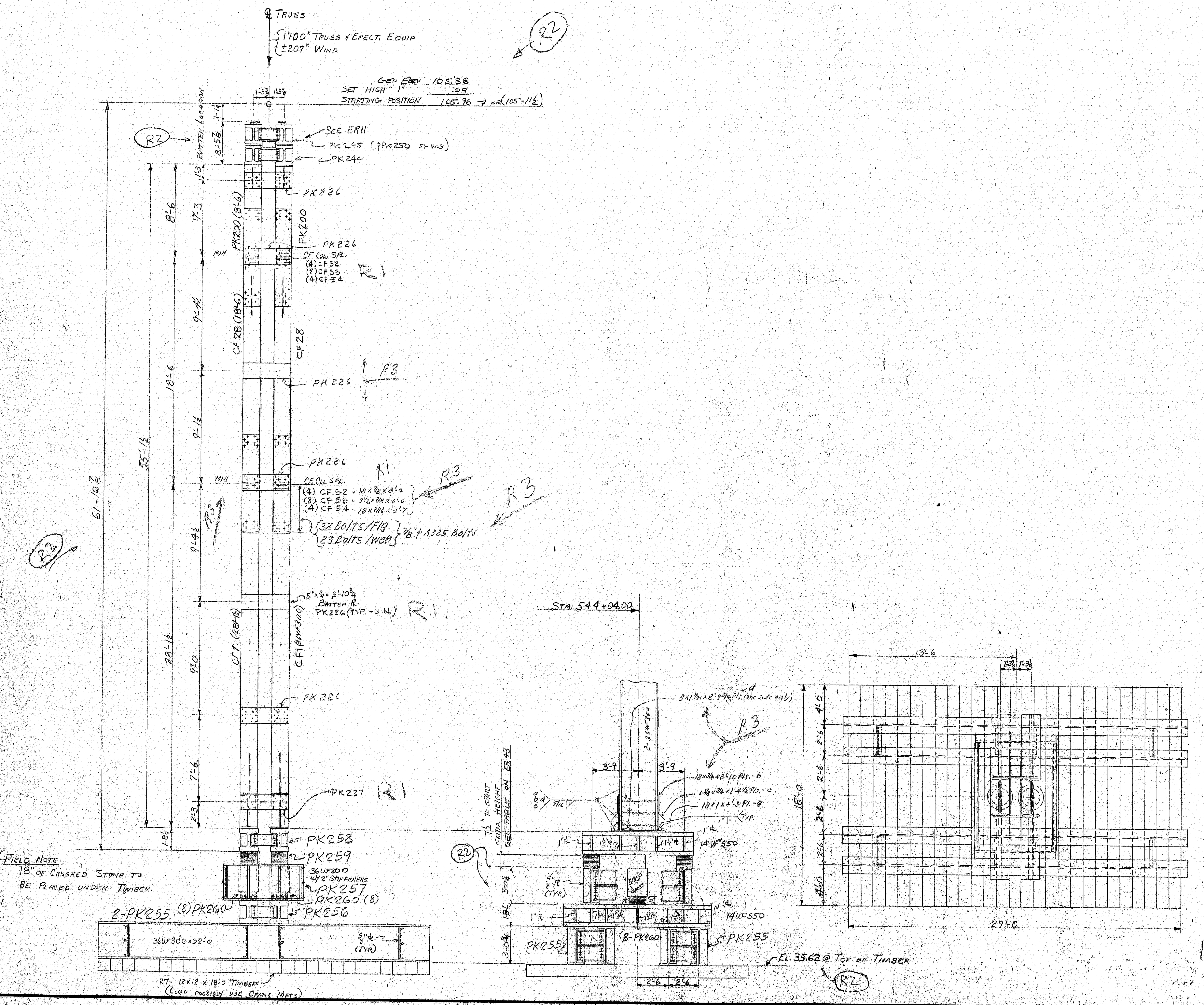
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H.-KITTERY, ME.
TIEDOWN BRACKET DETAIL

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: Creidenberg-R.C.F.
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☐ District Mgr. ☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: R.C.F. / RBD DATE: 5/26/70
CHECKED BY: D.D.P. DATE: 6-29-70
SCALE: ¾", 1" = 1'-0
FILE NO.:
ERECTION CONTRACT NO.: CW.6290
DWG. NO.: ER56C

38558 (Rev.8 9-68)

134:66



FIELD NOTE
18" OF CRUSHED STONE TO
BE PLACED UNDER TIMBER.

R3

"Members with CF prefix are B.S.C. standard falsework members having been used previously in similar falsework bents.

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HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY F.F.W. SEP 18 1970

APPROVED:
HARDESTY & HANOVER
CONSULTING ENGINEERS
NEW YORK, N.Y.
BY - F.F.W. 9-18-70

ALTERNATE TO USING PILING.
FWK. COLUMN @ L4 (SOUTH) (West)

Mat'l. CF - A7, others A36
Open Holes - 15/16 ⌀ Exc. as noted
Bolts - 7/8 ⌀ A325 Do
Weld - As noted
Paint -

R3

	a	b	c
a			
b			
c			
d			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

SENT TO	DATE
D.O.	9/11
FLD.	
TH.	
E.D.	
Eac	9/11
EIO	
SHP	

		NO.	DATE	INIT.
		R3	9/11/70	R.C.F.
ELEV. CHANGE		R2	7/16/70	JBB
ADDED Pc. MKS.		R1	6/8/70	DDP
		REVISED		

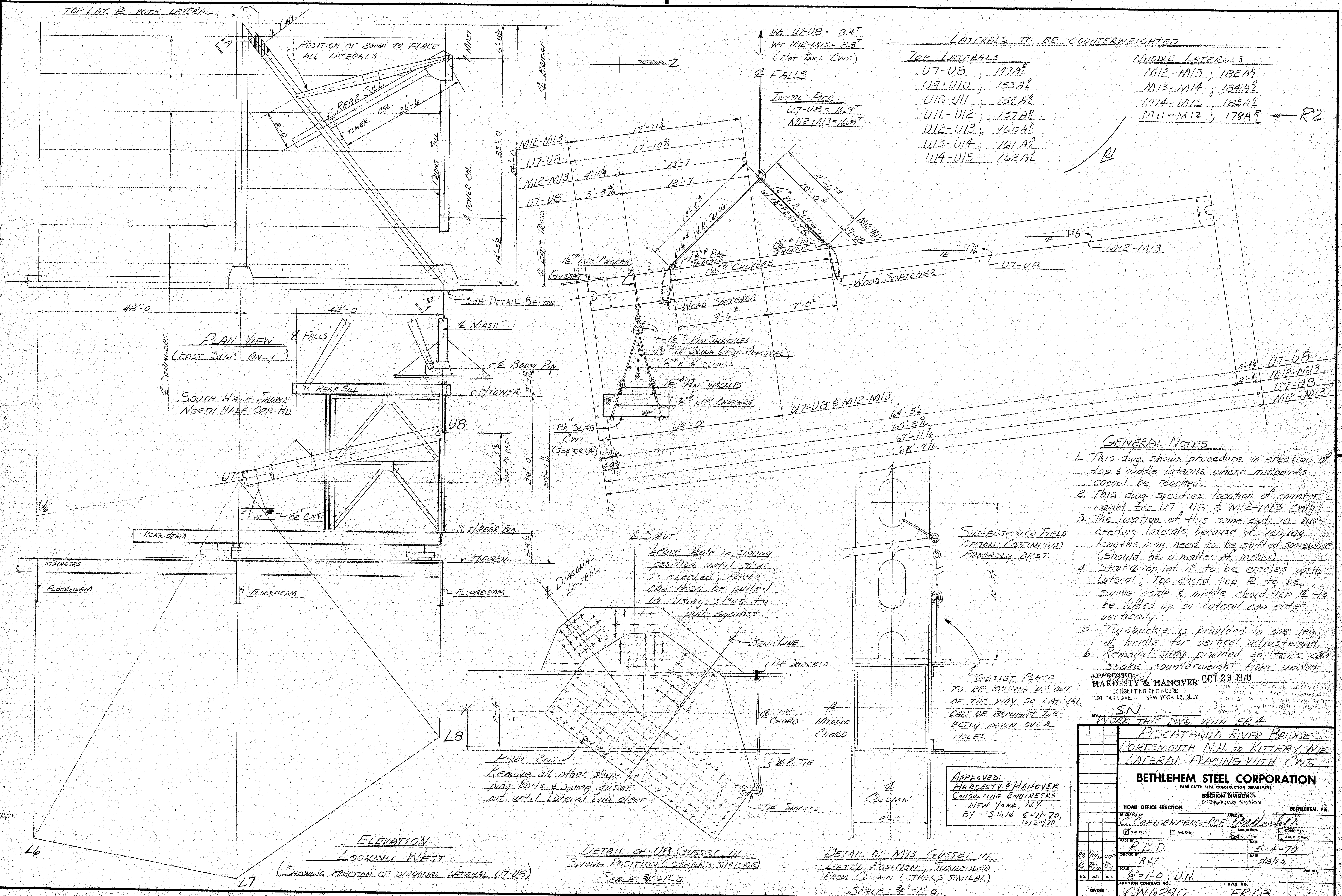
PISCATAQUA RIVER BRIDGE
PORTSMOUTH TO KITTERY

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
ENGINEERING DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG
☑ Erect. Engr. ☐ Proj. Engr.
APPROVED:
☐ Mgr. of Erect. ☒ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: CEG DATE: 4-30-70
CHECKED BY: DDP DATE: 5-26-70
SCALE:
FILE NO.:
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER 62

134.67

40318 (12-67)



ELEVATION
LOOKING WEST
(SHOWING ERECTION OF DIAGONAL LATERAL U7-U8)

DETAIL OF U8 GUSSET IN SWUNG POSITION (OTHERS SIMILAR)
SCALE: ¾"=1'-0

DETAIL OF M13 GUSSET IN LIFTED POSITION, SUSPENDED FROM COLUMN (OTHERS SIMILAR)
SCALE: ¾"=1'-0

LATERALS TO BE COUNTERWEIGHTED

TOP LATERALS		MIDDLE LATERALS	
U7-U8	147A^R_L	M12-M13	182A^R_L
U9-U10	153A^R_L	M13-M14	184A^R_L
U10-U11	154A^R_L	M14-M15	185A^R_L
U11-U12	157A^R_L	M11-M12	178A^R_L ← R2
U12-U13	160A^R_L		
U13-U14	161A^R_L		
U14-U15	162A^R_L		

GENERAL NOTES

1. This dwg. shows procedure in erection of top & middle laterals whose midpoints cannot be reached.
2. This dwg. specifies location of counterweight for U7-U8 & M12-M13 Only.
3. The location of this same cwt. in succeeding laterals, because of varying lengths, may need to be shifted somewhat (Should be a matter of inches).
4. Strut & top lat. ℞ to be erected with lateral; Top chord top ℞ to be swung aside & middle chord top ℞ to be lifted up so lateral can enter vertically.
5. Turnbuckle is provided in one leg of bridle for vertical adjustment.
6. Removal sling provided so falls can "snake" counterweight from under lateral.

APPROVED:
HARDESTY & HANOVER
CONSULTING ENGINEERS
NEW YORK, N.Y.
BY - S.S.N. 6-11-70, 10/29/70

APPROVED:
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
OCT 29 1970
BY SN

WORK THIS DWG. WITH ER4

PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. TO KITTERY, ME
LATERAL PLACING WITH CWT.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C. GREIDENBERG-RCF
☑ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☒ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: R.B.D. DATE: 5-4-70
CHECKED BY: R.C.F. DATE: 5/8/70
SCALE: ⅛"=1'-0, U.N.
FILE NO.:
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER63

NO.	DATE	INIT.
R2	8/29/70	DDF
R1	7/31/70	RBD

REVISED

40318 (12-67)

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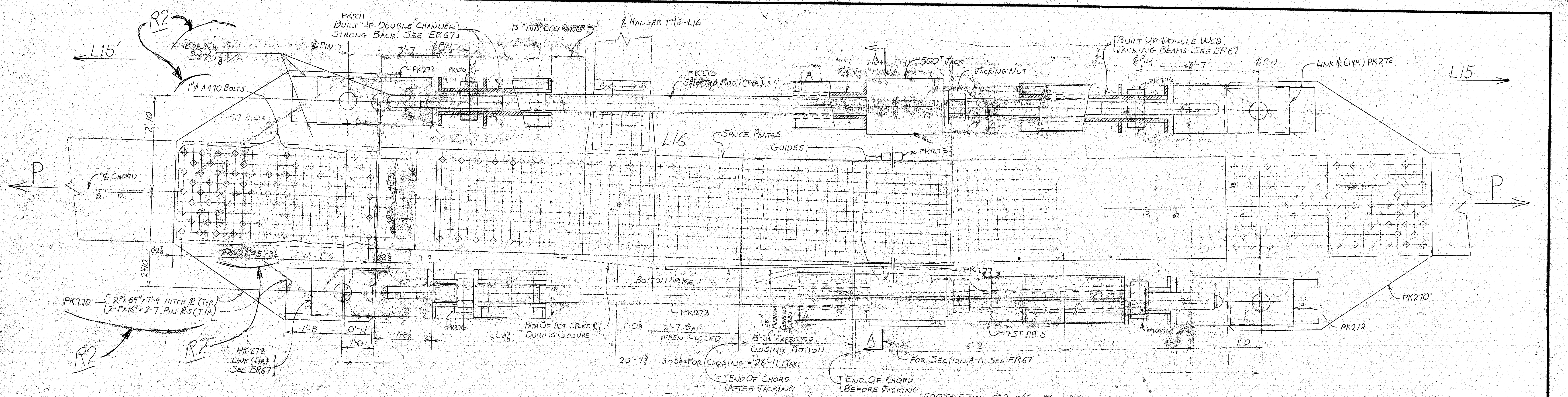
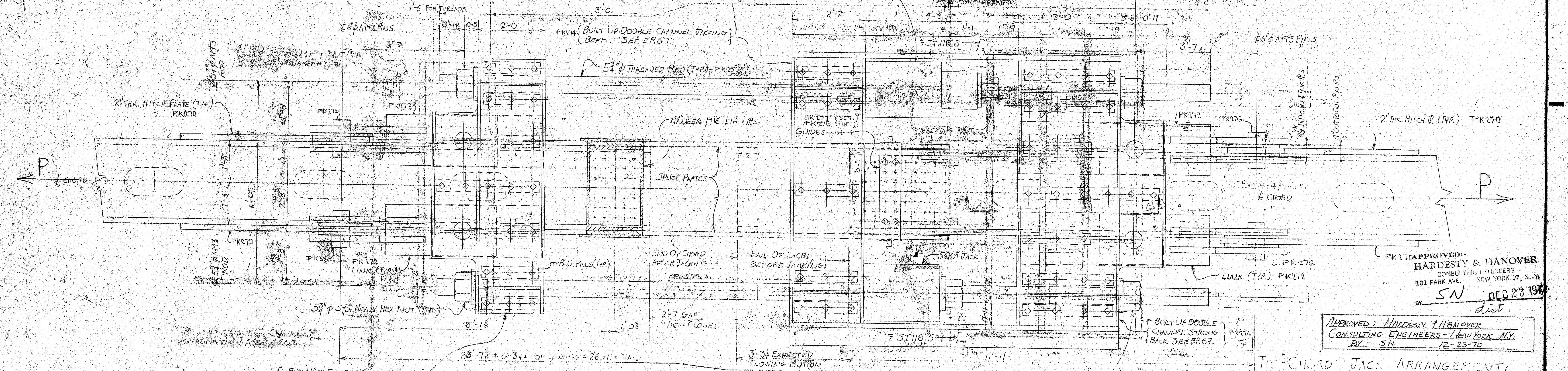


SIDE ELEVATION

(Chord Shown Before Jacking)


℄ 6"φ A193 Pins
1'-6 For Threads
℄ 6"φ A193 Pins
0'-11 0-5 2'-0
8'-0
3'-7
PK274 {Built Up Double Channel Jacking Beam. See ER67}
5¾"φ Threaded Rod (Typ.) - PK273
5¾"φ A193 Rod
2" Thk. Hitch Plate (Typ.) PK270
PK276
PK272
Hanger M16 L16 ℞s
P
℄ Chord
1'-3
1'-3
6'-0
2'-8
Splice Plates
PK270
5¾"φ A193 Rod
PK276
PK272 Link (Typ.)
B.U. Fills (Typ.)
End Of Chord After Jacking
PK273
End Of Chord Before Jacking
5¾"φ Std. Heavy Hex Nut (Typ.)
8'-1⅜
1'-0⅜
2'-7 Gap When Closed
23'-7¾ + 3'-3¼ For Closing = 26'-11 Max.
3'-3¼ Expected Closing Motion
PK271 {Built Up Double Channel Strong Back. See ER67}
500 Ton Jack, 12" Rise (Ram Shown Extended) With 6½"φ Center Hole
1'-6 For Threads
℄ 6"φ A193 Pins
2'-2
4'-6
1'-1
3'-0
0-5 0'-11
7ST 118.5
3'-7
℄ 6"φ A193 Pins
PK277 (Bot.) PK275 (Top) Guides
Jacking Nut
500T Jack
PK272
PK276
2" Thk. Hitch ℞ (Typ.) PK270
℄ Chord
P
PK276
Link (Typ.) PK272
PK270
Built Up Double Channel Strong-Back. See ER67. PK274
7ST 118.5
11'-11
6'-11

PLAN VIEW

(Chord Shown Before Jacking)

NOTE — {Safety Nut - Nut Must Be Kept Snug Against Washer At All Times During Jacking.}

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY SN DEC 23 1970
dist.

Approved: Hardesty & Hanover
Consulting Engineers - New York, N.Y.
By - SN. 12-23-70

Tie-Chord Jack Arrangement
Using 4-500 Ton Center Hole Jacks
To Close Mainspan Tie.

Analysis Of 5¾"φ Threaded Rods

Use ASTM A193-70, Grade B7, F_y = 75 ksi For Full 1"φ - 7"φ.

Use AISC Specification 2/12/69, Table 1.5.2.1 For Threaded Parts Of Steel.

$F_t = .60\,F_y = .60 \times 75 = 45$ ksi (Applied To Tensile Stress Area)

$P_{rod} = \frac{4000\,K}{4\ \text{Rods}} = 1000$ K/Rod

$f_t = \frac{P_{rod}}{A_T} = \frac{1000K}{23.8\,in^2} = 42.0$ ksi < 45 ksi OK

Tensile Stress Area For 5¾"φ Thd. Rod

Jacking Loads (P)

Estimated Max. Force = 3350K

Design For 3350K

Note: All Jacks On A Common Pump To Equalize Load

Materials

Erection Bolts 1"φ A490 U.N.

Steel A588 F_y = 50 ksi Thru 4" Thk. U.N.

Pins & Threaded Rod ASTM A193-70 Grade B7 (See ER68)

Open Holes - 1 1/16"φ U.N.

Welding - E70XX (Low Hydrogen) Electrodes

Nuts For Thd. Rod ASTM A194-69 Grade 2

Work With ER67

Refer To EB8 For Permanent Material.

"This drawing contains information which is property of Bethlehem Steel Corporation, Bethlehem, Pa., and is not to be used in any manner that is detrimental to the interest of Bethlehem Steel Corporation."

SENT TO	DATE
D.O.	1-4-71
FLD.	1-4-71
TH.	
E.D.	8/3/70
Eac	8/3/70
EIO	1-4-71
SHP	

NO.	DATE	INIT.
R2	12/18/70	RWB
R1	9/26/70	RWB

REVISED

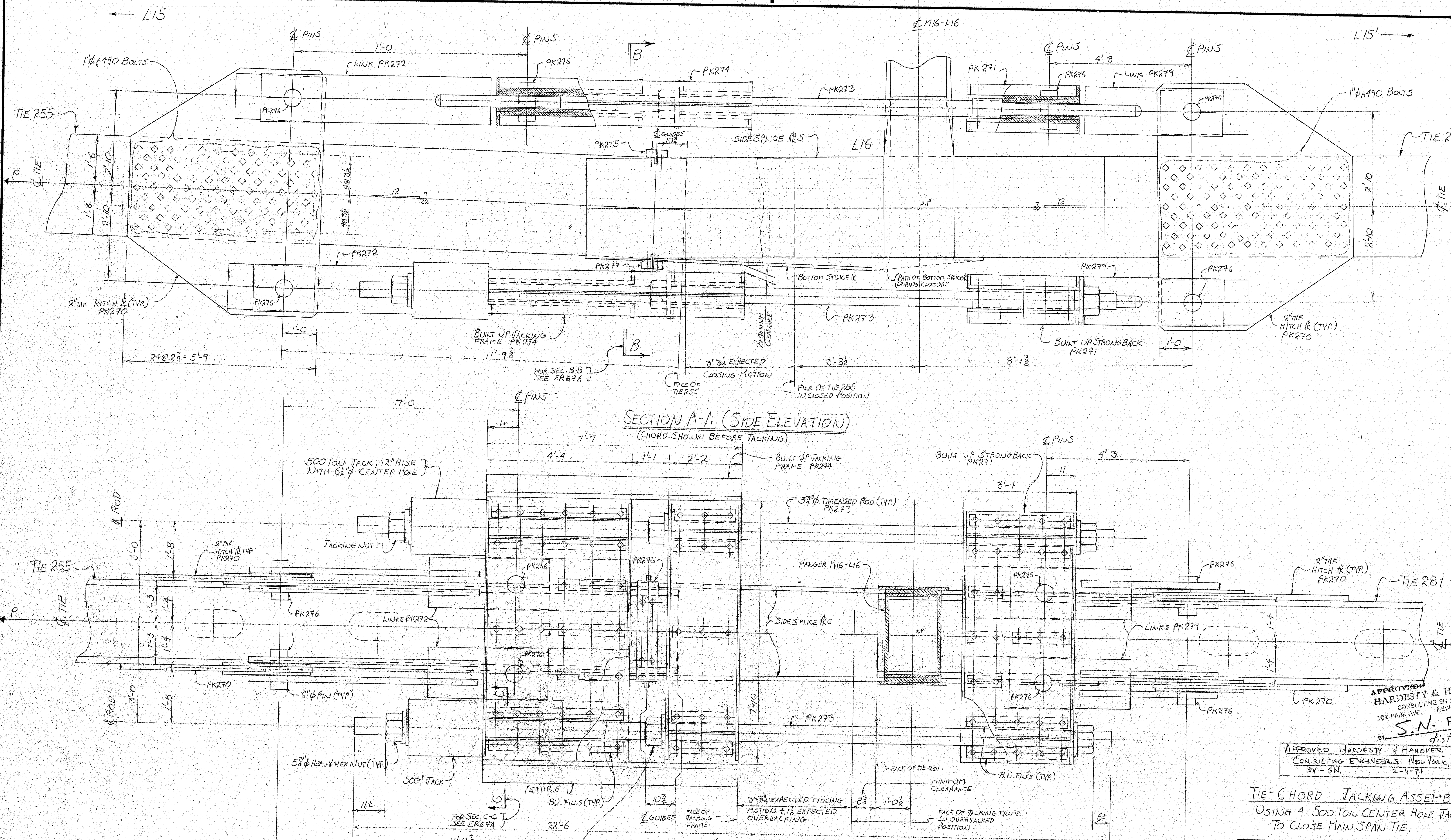
Piscataqua River Bridge
Portsmouth N.H. - Kittery Me.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C. Greidenberg
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☐ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: R. W. Barch DATE: 5/12/70
CHECKED BY: CEG DATE: 6-5-70
SCALE: ¾" = 1'-0
FILE NO.:
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER-66

134:69

40318 (12-67)



NOTE: SAFETY NUT MUST BE KEPT SNUG AGAINST WASHER AT ALL TIMES DURING JACKING

NOTE: ALL JACKS MUST BE ON A COMMON PUMP TO EQUALIZE LOAD.

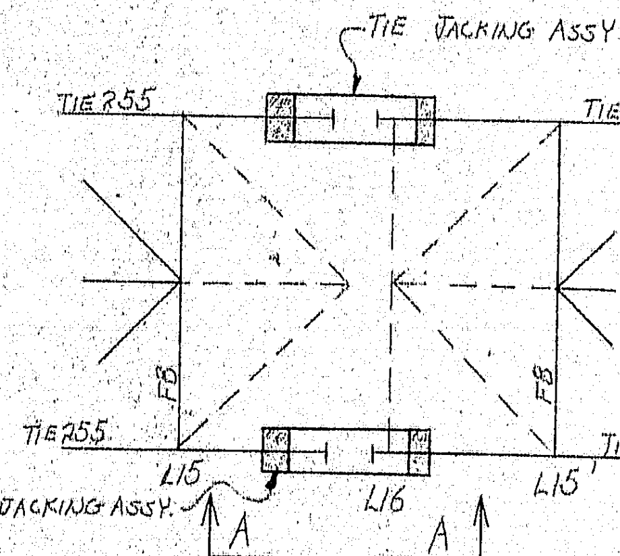
PLAN VIEW
(CHORD SHOWN BEFORE JACKING)

REFERENCES

FOR WELDS + MEMBER SIZES SEE DETAIL DWGS ER68A + ER69A
FOR SECTIONS B-B + CC SEE DWG. ER67A
FOR JACKING PROCEDURE SEE DWG. EB6
FOR MISC. DESIGN INFORMATION SEE DWG ER67A
FOR PERMANENT MEMBER DETAILS SEE DWGS 255 + 281
FOR SPLICE PLATE DETAILS SEE DWGS HG0121 #1,2,3

	a	b	c
a			
b			
c			
d			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

SENT TO	DATE
D.O.	
FLD.	
TH.	
E.D.	
Eac	
EIO	
SHP	



KEY (PLAN OF TIES)
NO SCALE

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101 PARK AVE. NEW YORK 17, N.Y.
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APPROVED HARDESTY & HANOVER
CONSULTING ENGINEERS NEW YORK, N.Y.
BY - SN. 2-11-71

TIE-CHORD JACKING ASSEMBLY
USING 4-500 TON CENTER HOLE JACKS
TO CLOSE MAIN SPAN TIE.

MATERIALS

ERECTION BOLTS - 1"φ A325 U.N.
STEEL - A588 (F_y=50 KSI THRU 4" THK) U.N.
OPEN HOLES - 1 1/16"φ U.N.
WELDING - E70XX (LOW HYDROGEN) ELECTRODES
PINS + THREADED RODS - ASTM A193-70 GRADE B7
NUTS FOR THD. RODS - ASTM A194-69 GRADE 2

WORK THIS SHEET WITH ER-67A

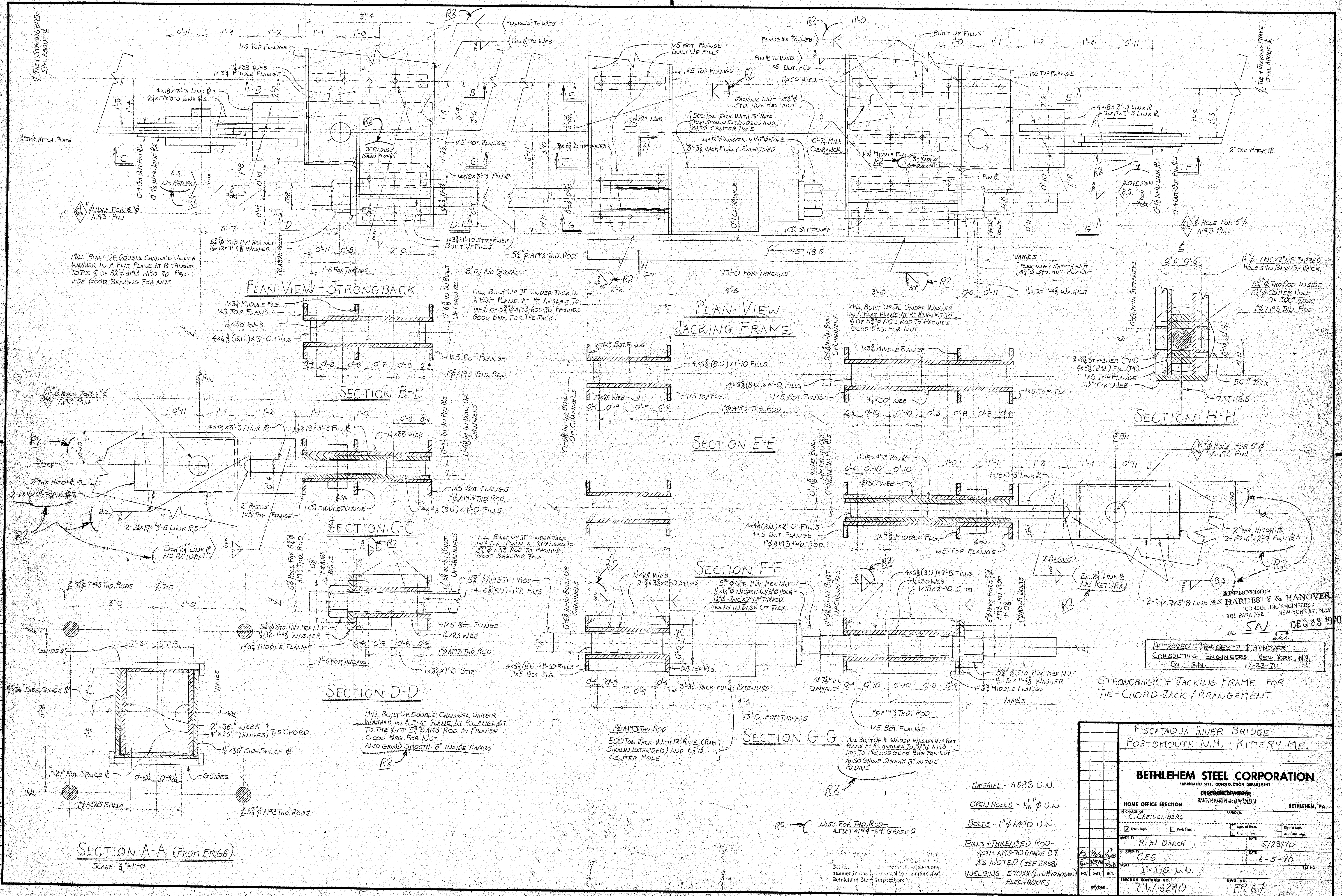
PISCATAQUA RIVER BRIDGE
PORTSMOUTH N.H. - KITTERY ME.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☐ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: R.W. BARCH DATE: 2/1/71
CHECKED BY: CEG DATE: 2-2-71
SCALE: ¾"=1'-0
FILE NO.
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER66A

NO.	DATE	INIT.
REVISED		

THIS DWG REPLACES CW6290 ER66-R2 134.70


PLAN VIEW - STRONGBACK
PLAN VIEW - JACKING FRAME
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
SECTION F-F
SECTION G-G
SECTION H-H
SECTION A-A (FROM ER66)
SCALE 3/4"=1'-0
℄ TIE + STRONGBACK SYM. ABOUT ℄
℄ TIE + JACKING FRAME SYM. ABOUT ℄
1x5 TOP FLANGE
1x38 WEB
1x3 3/4 MIDDLE FLANGE
4x18x3'-3 LINK ℙ
2 1/4x17x3'-5 LINK ℙS
2" THK HITCH PLATE
1 1/2x18x3'-3 PIN ℙ
1x5 BOT. FLANGE
1x3 3/4 STIFFENER
1x50 WEB
1x24 WEB
FLANGES TO WEB
PIN ℙ TO WEB
1x5 BOT. FLANGE BUILT UP FILLS
JACKING NUT - 5 3/4"ϕ STD. HVY HEX NUT
500 TON JACK WITH 12" RISE (RAM SHOWN EXTENDED) AND 6 1/2"ϕ CENTER HOLE
1 1/2x12"ϕ WASHER W/6"ϕ HOLE
3'-3 1/2 JACK FULLY EXTENDED
2'-7 1/2 MIN. CLEARANCE
0'-1 CLEARANCE
5 3/4"ϕ A193 THD. ROD
7ST118.5
13'-0 FOR THREADS
8'-0 NO THREADS
1'-6 FOR THREADS
3" RADIUS (GRIND SMOOTH)
6 1/16" HOLE FOR 6"ϕ A193 PIN
B.S. NO RETURN
VARIES
MEETING + SAFETY NUT 5 3/4"ϕ STD. HVY HEX NUT
1 1/2x12x1'-4 5/8 WASHER
MILL BUILT UP DOUBLE CHANNEL UNDER WASHER IN A FLAT PLANE AT RT. ANGLES TO THE ℄ OF 5 3/4"ϕ A193 ROD TO PROVIDE GOOD BEARING FOR NUT
MILL BUILT UP][UNDER JACK IN A FLAT PLANE AT RT. ANGLES TO THE ℄ OF 5 3/4"ϕ A193 ROD TO PROVIDE GOOD BRG. FOR THE JACK.
MILL BUILT UP][UNDER WASHER IN A FLAT PLANE AT RT. ANGLES TO ℄ OF 5 3/4"ϕ A193 ROD TO PROVIDE GOOD BRG. FOR NUT.
MILL BUILT UP DOUBLE CHANNEL UNDER WASHER IN A FLAT PLANE AT RT. ANGLES TO THE ℄ OF 5 3/4"ϕ A193 ROD TO PROVIDE GOOD BRG. FOR NUT ALSO GRIND SMOOTH 3" INSIDE RADIUS
MILL BUILT UP][UNDER WASHER IN A FLAT PLANE AT RT. ANGLES TO 5 3/4"ϕ A193 ROD TO PROVIDE GOOD BRG. FOR NUT ALSO GRIND SMOOTH 3" INSIDE RADIUS
4x6 5/8 (B.U.) x 3'-0 FILLS
4x6 5/8 (B.U.) x 1'-10 FILLS
4x6 5/8 (B.U.) x 4'-0 FILLS
4x6 5/8 (B.U.) x 1'-0 FILLS
4x6 5/8 (B.U.) x 2'-8 FILLS
1"ϕ A193 THD. ROD
0'-6 5/8 IN-IN BUILT UP CHANNELS
0'-4 7/8 IN-IN PIN ℙS
℄ PIN
2-1"x16"x2'-7 PIN ℙS
2-2 1/4x17x3'-8 LINK ℙS
EA. 2 1/4" LINK ℙ NO RETURN
2" RADIUS
1 3/4"-7NC x 2" DP TAPPED HOLES IN BASE OF JACK
5 3/4" THD. ROD INSIDE 6 1/2"ϕ CENTER HOLE OF 500 T JACK
1/4x8 STIFFENER (TYP)
14"THK WEB
500 T JACK
2"x36" WEBS
1"x26" FLANGES
TIE CHORD
1 1/2"x36" SIDE SPLICE ℙ
1"x27" BOT. SPLICE ℙ
GUIDES
℄ 5 3/4"ϕ A193 THD. RODS
℄ TIE
1"ϕ A325 BOLTS
R2

STRONGBACK + JACKING FRAME FOR TIE-CHORD JACK ARRANGEMENT.

R2 → NUTS FOR THD. ROD - ASTM A194-69 GRADE 2

MATERIAL - A588 U.N.

OPEN HOLES - 1 1/16"ϕ U.N.

BOLTS - 1"ϕ A490 U.N.

PINS + THREADED ROD - ASTM A193-70 GRADE B7 AS NOTED (SEE ER68)

WELDING - E70XX (LOW HYDROGEN) ELECTRODES

APPROVED:-
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CONSULTING ENGINEERS
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APPROVED - HARDESTY + HANOVER
CONSULTING ENGINEERS NEW YORK, N.Y.
BY - S.N. 12-23-70

PISCATAQUA RIVER BRIDGE
PORTSMOUTH N.H. - KITTERY ME.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
~~ERECTION DIVISION~~
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☐ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: R.W. BARCH DATE: 5/28/70
CHECKED BY: CEG DATE: 6-5-70
SCALE: 1"=1'-0 U.N.
FILE NO.:
ERECTION CONTRACT NO.: CW 6290
DWG. NO.: ER 67

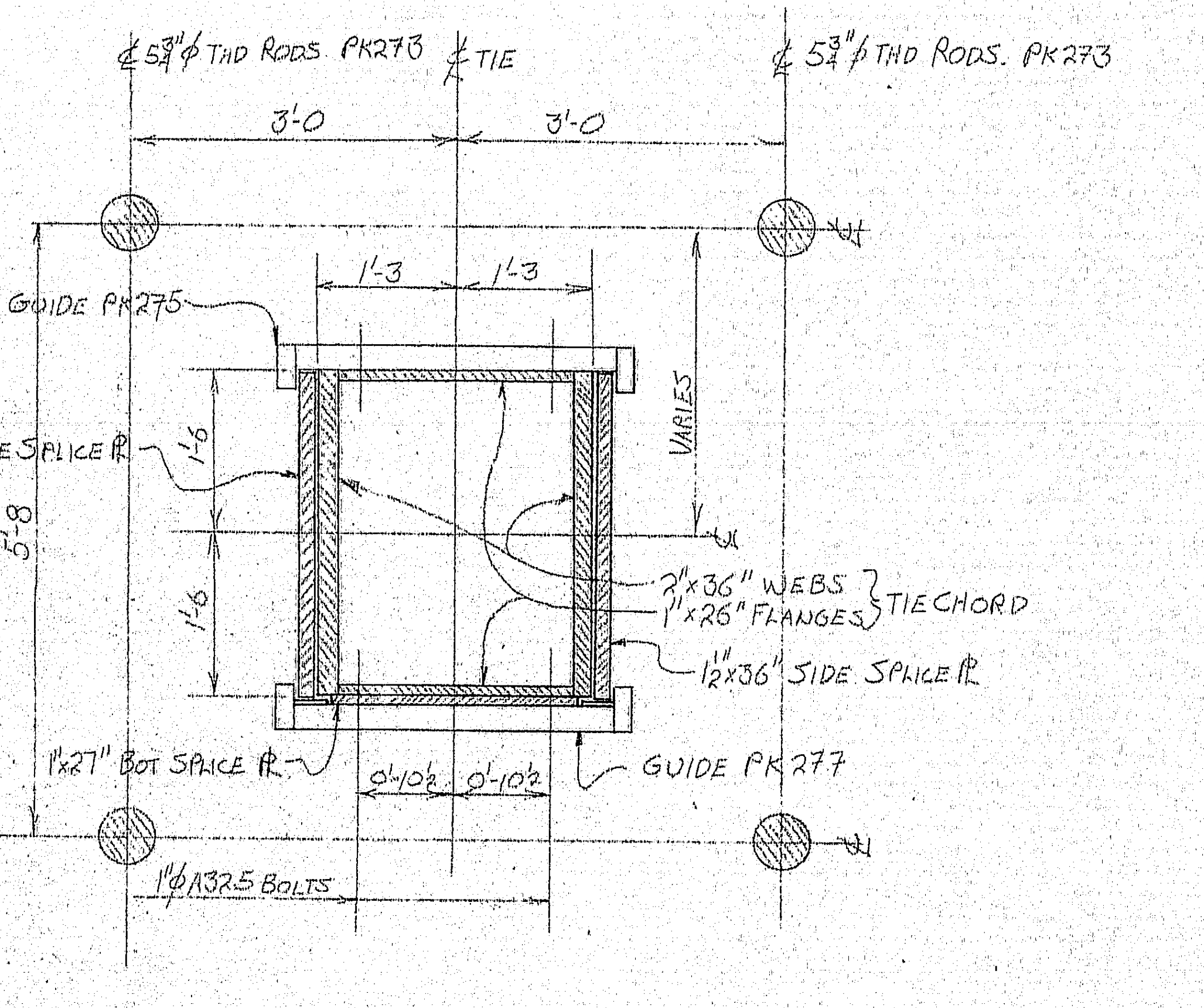
NO.	DATE	INIT.
R2	12/21/70	19 RWB
R1	9/25/70	2 RWB

REVISED

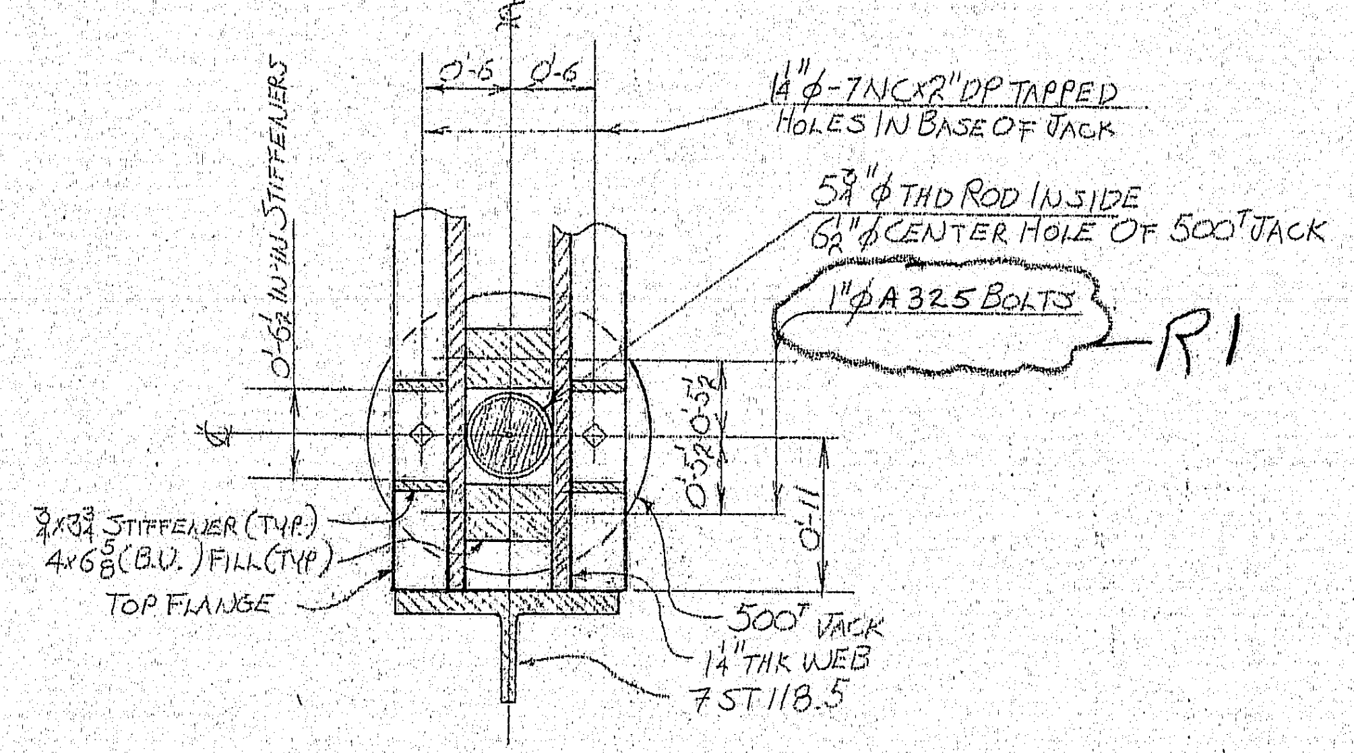
SENT TO	DATE
D.O.	1-4-71
FLD.	1-4-71
TH.	
E.D.	8/3/70
Eac	8/3/70
EIO	1-4-71
SHP.	

134:71

40318 (12-67)



SECTION B-B (FROM ER66A)
SCALE ¾"=1'-0



SECTION C-C (FROM ER66A)
SCALE 1"=1'-0

MISC. DESIGN INFORMATION

JACKING LOAD (P)

ESTIMATED MAX. FORCE = 3350K
(STAGE F, DWG EB6)

DESIGN FOR 3350K

NOTE: ALL JACKS ON A COMMON PUMP TO EQUALIZE LOAD

ANALYSIS OF 5¾"ϕ THREADED RODS

USE ASTM A193-70 GRADE B7, Fy=75 KSI FOR RODS 4"ϕ TO 7"ϕ
USE AISC SPECIFICATION (2/12/69) TABLE 1.5.2.1 FOR THREADED PARTS OF STEEL

$F_t = .60F_y = .60 \times 75 = 45^{KSI}$ (APPLIED TO TENSILE STRESS AREA)

DESIGN ROD FOR CAPACITY OF JACK = 1000K/ROD

$$f_t = \frac{P_{ROD}}{A_T} = \frac{1000^K}{23.8\ in^2} = 42.0^{KSI} < 45^{KSI}\ \underline{OK}$$

TENSILE STRESS AREA FOR 5¾"ϕ THD. ROD

MATERIAL

SAME AS ER 66A

APPROVED HARDESTY & HANOVER
CONSULTING ENGINEERS NEW YORK N.Y.
BY - S.N. 2-17-71

WORK THIS SHEET WITH ER-66A

DISTR.

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY S.N. FEB 17 1971

PISCATAQUA RIVER BRIDGE
PORTSMOUTH N.H. - KITTERY ME

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

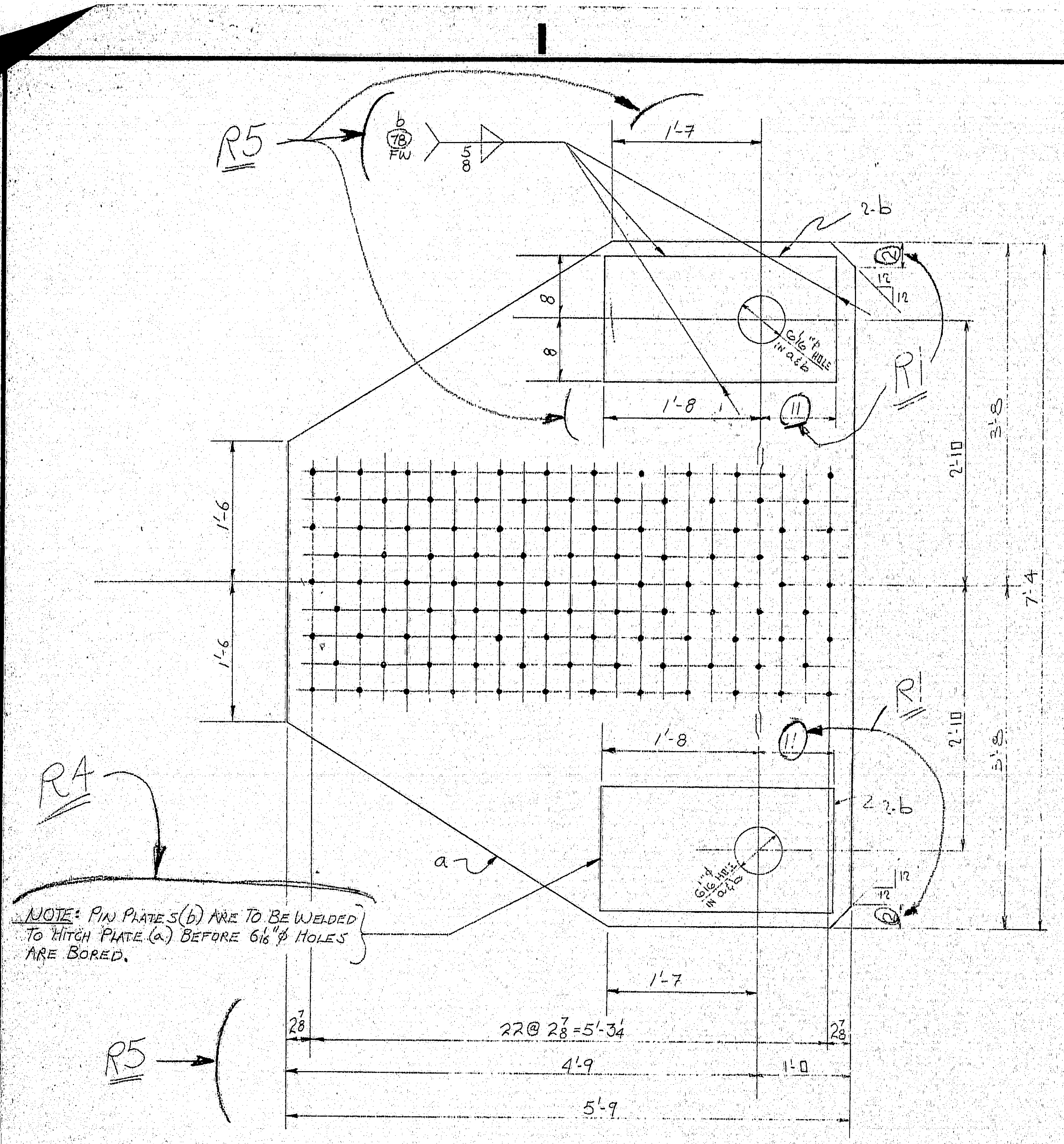
IN CHARGE OF: C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☐ District Mgr. ☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: P. W. BARCH DATE: 2/1/71
CHECKED BY: CEG DATE: 2-2-71
SCALE: AS NOTED
FILE NO.:
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER67A

NO.	DATE	INIT.
R1	2-12-71	CG

REVISED

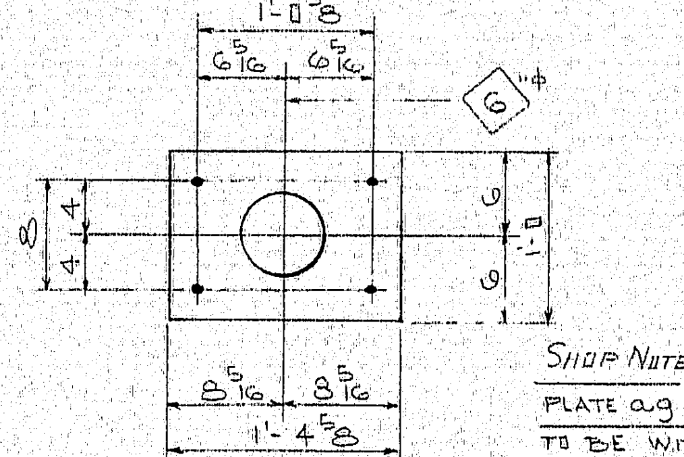
THIS DWG REPLACES CW6290 ER67-R2

134:72



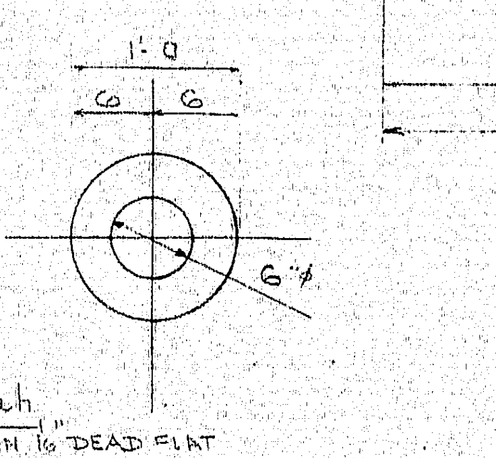
NOTE: PIN PLATES (b) ARE TO BE WELDED TO HITCH PLATE (a) BEFORE 6 1/16"φ HOLES ARE BORED.

HITCH PLATE - PK270

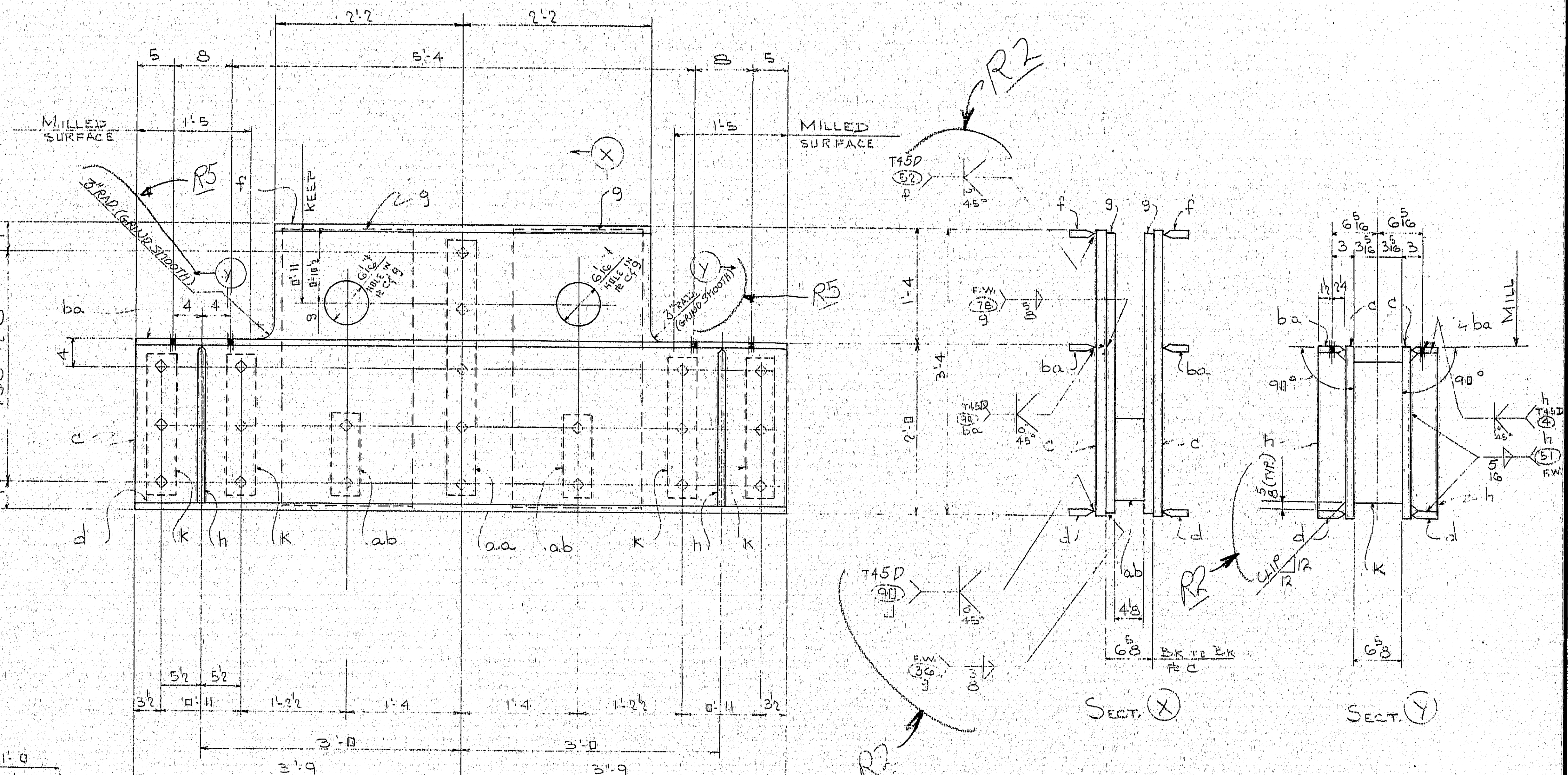


SHOP NOTE
PLATE ag & ah
TO BE WITHIN 1/16" DEAD FLAT

DETAIL OF PLATE WASHER - ag



DETAIL OF WASHER - ah



STRONGBACK - PK271

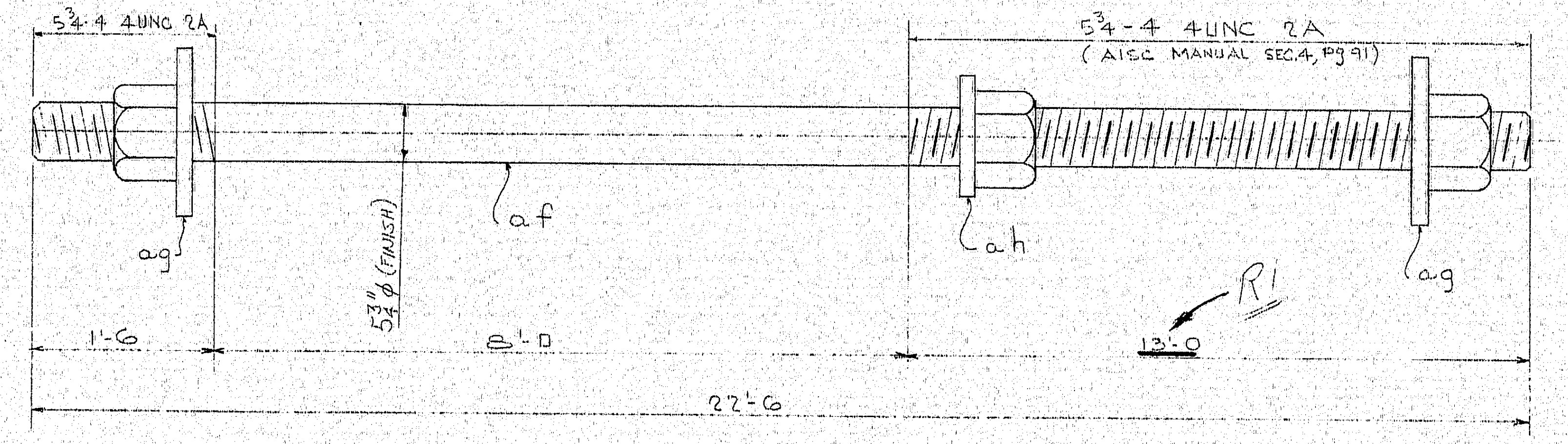
SECT. (X)

SECT. (Y)

SHOP NOTE

SONIC INSPECT ALL BUTT WELDS PER AWS BRIDGE SPEC.

R4



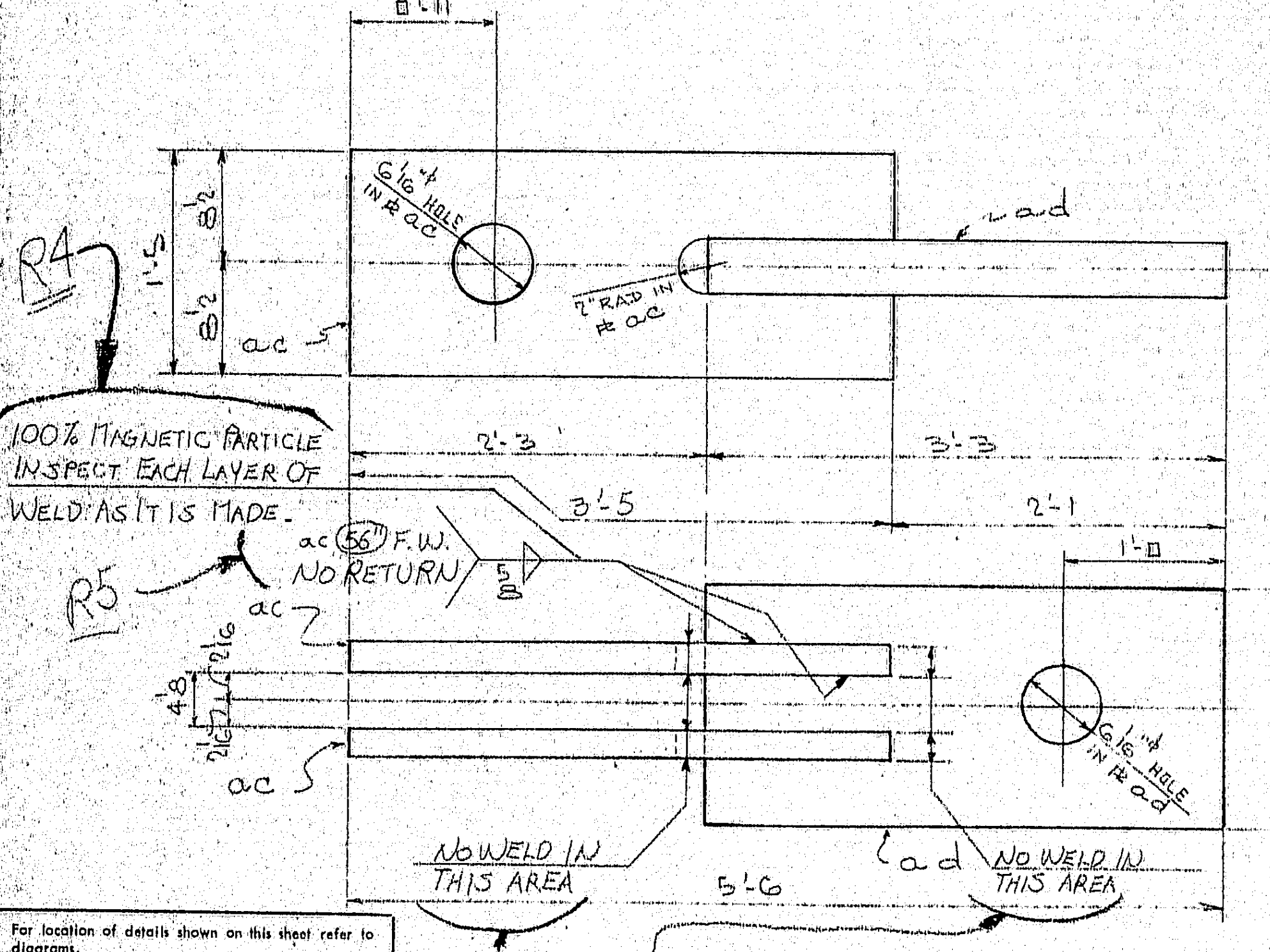
THREADED ROD - PK273

R3

NOTE:

THREADED RODS - PK273 - MATERIAL ASTM A193-B7 (HOT ROLLED)
ORDER 6 1/4"φ, TURN DOWN TO 5 3/4"φ BEFORE THREADING.
SUPPLIER TO FURNISH CERTIFICATE OF ANALYSIS AND HARDENABILITY.
ALL MATERIAL TO BE TESTED BY MAGNETIC PARTICLE TEST AFTER TURNING DOWN AND BEFORE THREADING. (AISI MANUAL, ALLOY STEEL, SEMI FINISHED, HOT ROLLED)
BEFORE SHIPPING TO JOB SITE EACH ROD IS TO BE TESTED BY OPERATIONS DEPT. IN THE TOOL HOUSE TO 1,000 KIPS.

NUTS FOR THREADED RODS - PK273 - TO CONFORM TO ASTM A194-69 GRADE 2 SPEC.



100% MAGNETIC PARTICLE INSPECT EACH LAYER OF WELD AS IT IS MADE.

LINK PLATE - PK272

APPROVE - HARDESTY & HANOVER
CONSULTING ENGINEERS NEW YORK, N.Y.
BY - SN. 12-23-70

REQUIRED LIST

NUMBER REQUIRED	MARK	DESCRIPTION	REMARKS	WEIGHT EA. PC.	DISPOSITION
8	PK270	HITCH PLATES		3127	
4	PK271	STRONG BACK		4793	
16	PK272	LINK PLATE		1684	
8	PK273	THREADED RODS		2299	

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY SN. DEC 23 1970

For location of details shown on this sheet refer to diagrams.

SENT TO	DATE
D.O.	1-4-71
FLD.	1-4-71
TH.	
E.D.	
Edc	
EIO	1-4-71
SHP	

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	MILL ORDER ITEM PAGE	MILL ORDER ITEM LINE
1						8 - HITCH PLATES - PK270									
2															
3		2815	a	8	PL	69		2	7	4	R5				
4		78	b	32	PL	16		1	2	7					
5			F.W.	8	WD			5/8	26	0					
6															
7						4 - STRONGBACKS - PK271									
8		1059	c	8	PL	40		1 1/4	7	6					
9		96	d	8	BR	3 3/4		1	7	6					
10		55	f	8	BR	3 3/4		1	4	4					
11		249	g	16	PL	18		1 1/4	3	3					
12		24	h	16	BR	3 3/4		1	1	10					
13B			T45	4	WD			1 1/4	8	8					
13A			T45D	4	WD			1	1	4					
13		147	K	16	BR	4		6 5/8	1	7 1/2	(B.U.)				
14		266	aa	4	BR	4		6 5/8	2	11 1/2	(B.U.)				
15		54	ab	8	BR	4		4 1/8	0	11 1/2	(B.U.)				
16		128	ba	8	BR	4		1 1/4	7	6					
17		32		84	490	1"φ			1	0	R1				
18				84	H.W.	2 1/4	1 1/16	3/16							
19															
20			F.W.	4	WD			5/16	17	0	R2				
21			T45D	4	WD			1	23	8					
21A			F.W.	4	WD		5/8		12	0					
22			F.W.	4	WD		5/8		26	0					
23						16 - LINK PLATES - PK272									
24		444	ac	32	PL	17		2 1/4	3	5					
25		796	ad	16	PL	18		4	3	3					
26			F.W.	16	WD			5/8	8	0					
27															
28						8 - THREADED RODS - PK273									
29															
30		2031	af	8	RDZ	6 1/4"φ			22	6	A193-B7 (SEE NOTE)				
31		85	ag	16	PL	12		1 1/2	1	4 5/8					
32		49	ah	16	M	12"φ		1 1/2			ROUND PLATE				
33				24	M	5 3/4					HVY. HEX. NUT A194-69 GRADE 2 (SEE NOTE)				
34															
35															
36															
37															
38															
39															
40															
41															
42															

R3

MATERIAL A588 UNLESS NOTED

OPEN HOLES 1 1/16"φ UNLESS NOTED

RIVETS ——

BOLTS 1"φ

WELDING E70XX (LOW HYDROGEN) ELECTRODES

PAINT AS PER ERECT. SPECS PARAGRAPH #1 (OIL ON THREADS)

NO.	DATE	INIT.
R5	12/21/70	7 RWB
R4	12/10/70	2 RWB
R3	12/4/70	2 RWB
R2	11/21/70	4 RWB
R1	9/25/70	8.4 RWB

REVISED

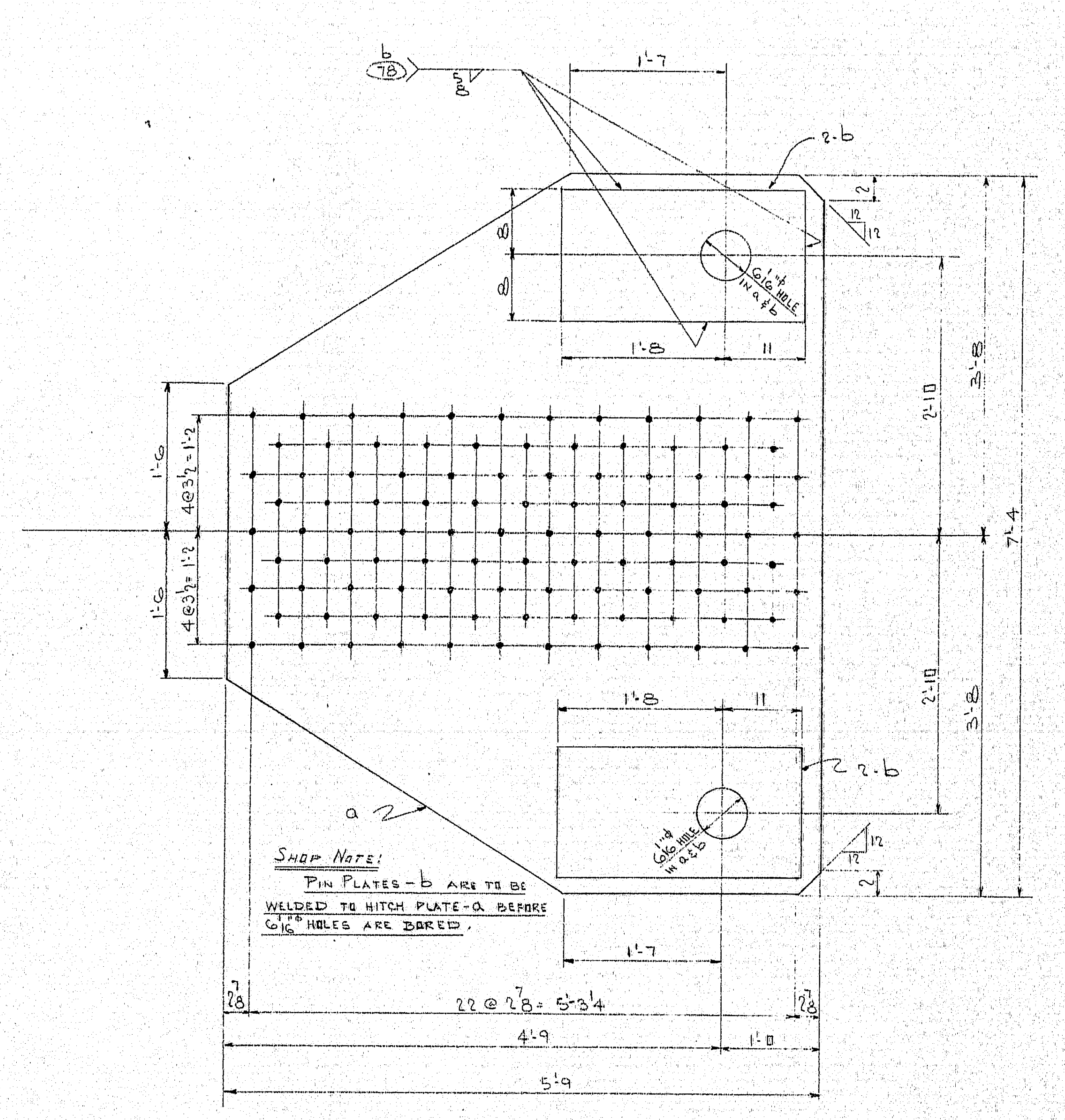
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. KITTERY, MAINE
CLOSURE DETAILS

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG
☐ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☐ District Mgr. ☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: CEM
DATE:
CHECKED BY: JHM RCF 7/7/70
DATE:
SCALE:
FILE NO.:
ERECTION CONTRACT NO.: C.WG290
DWG. NO.: ER68

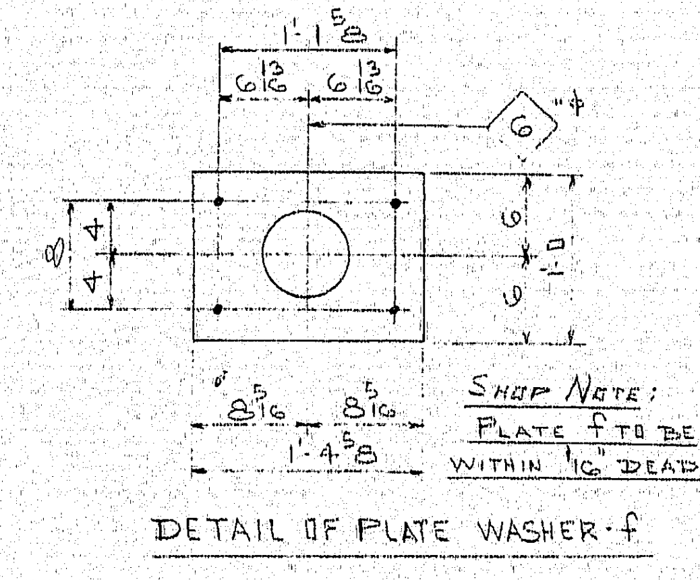
134:73

38558 (Rev.8 9-68)



Shop Note:
Pin Plates - b are to be welded to hitch plate - a before 6 1/16 holes are bored.

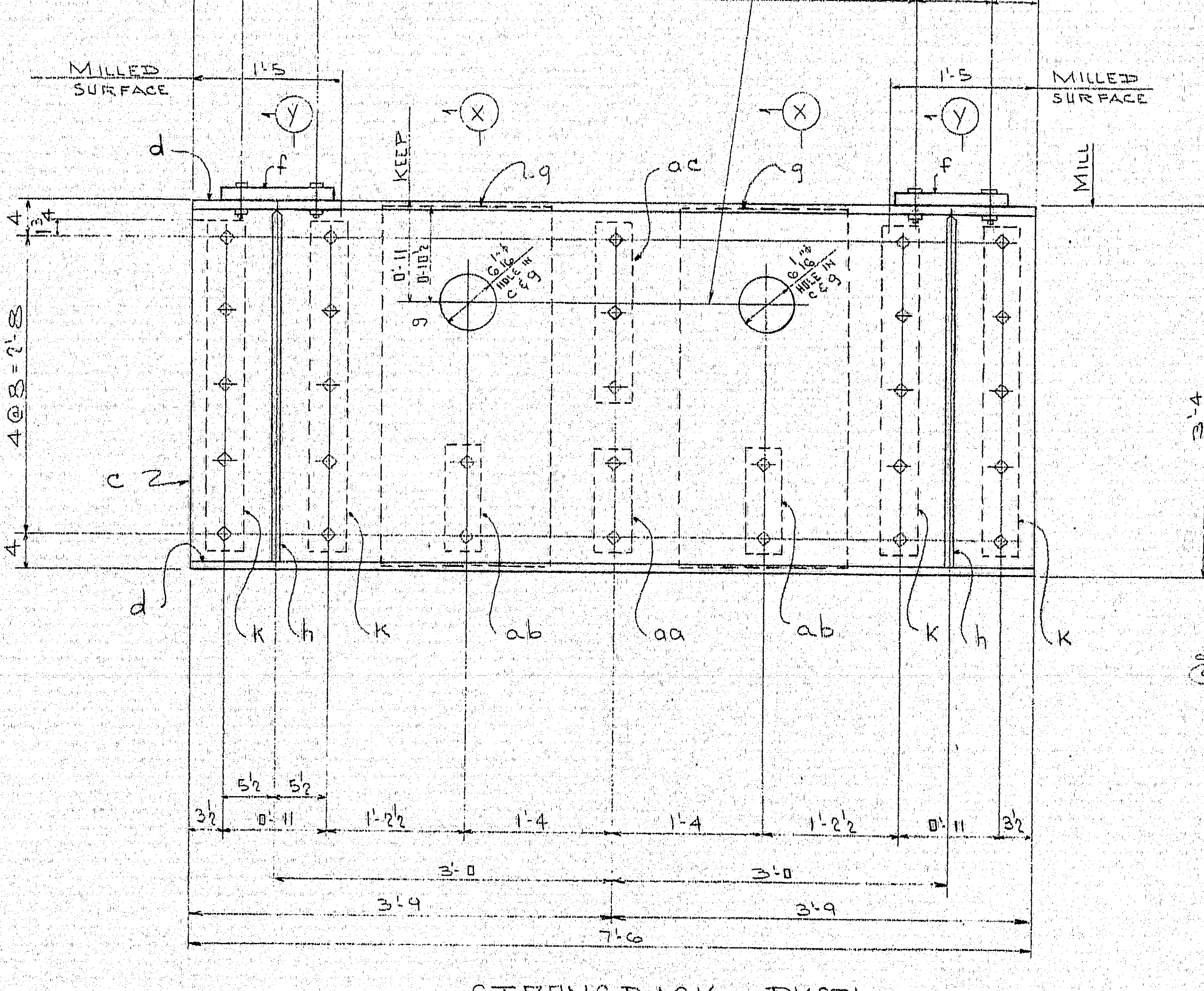
HITCH PLATE - PK270



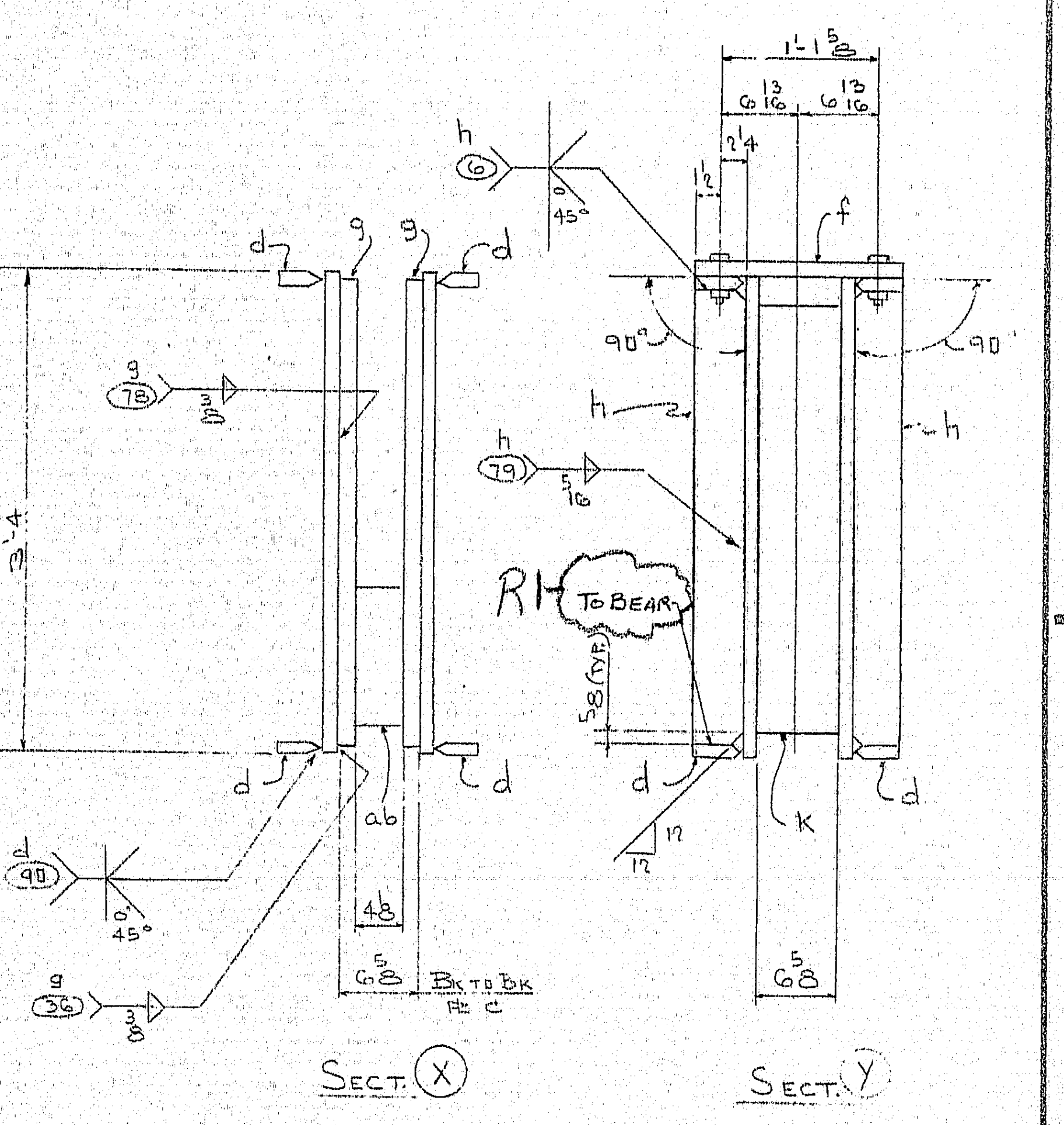
Shop Note:
Plate f to be within 1/16 dead flat

DETAIL OF PLATE WASHER - f

Shop Note:
Pin Pls g are to be welded to Pl C before 6 1/16 holes are bored.



STRONGBACK ~ PK271



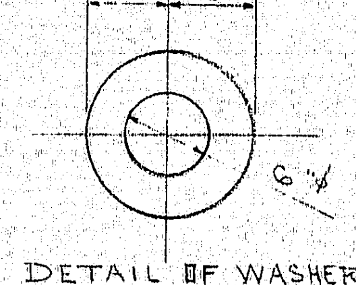
Sect. X

Sect. Y

NOTE A

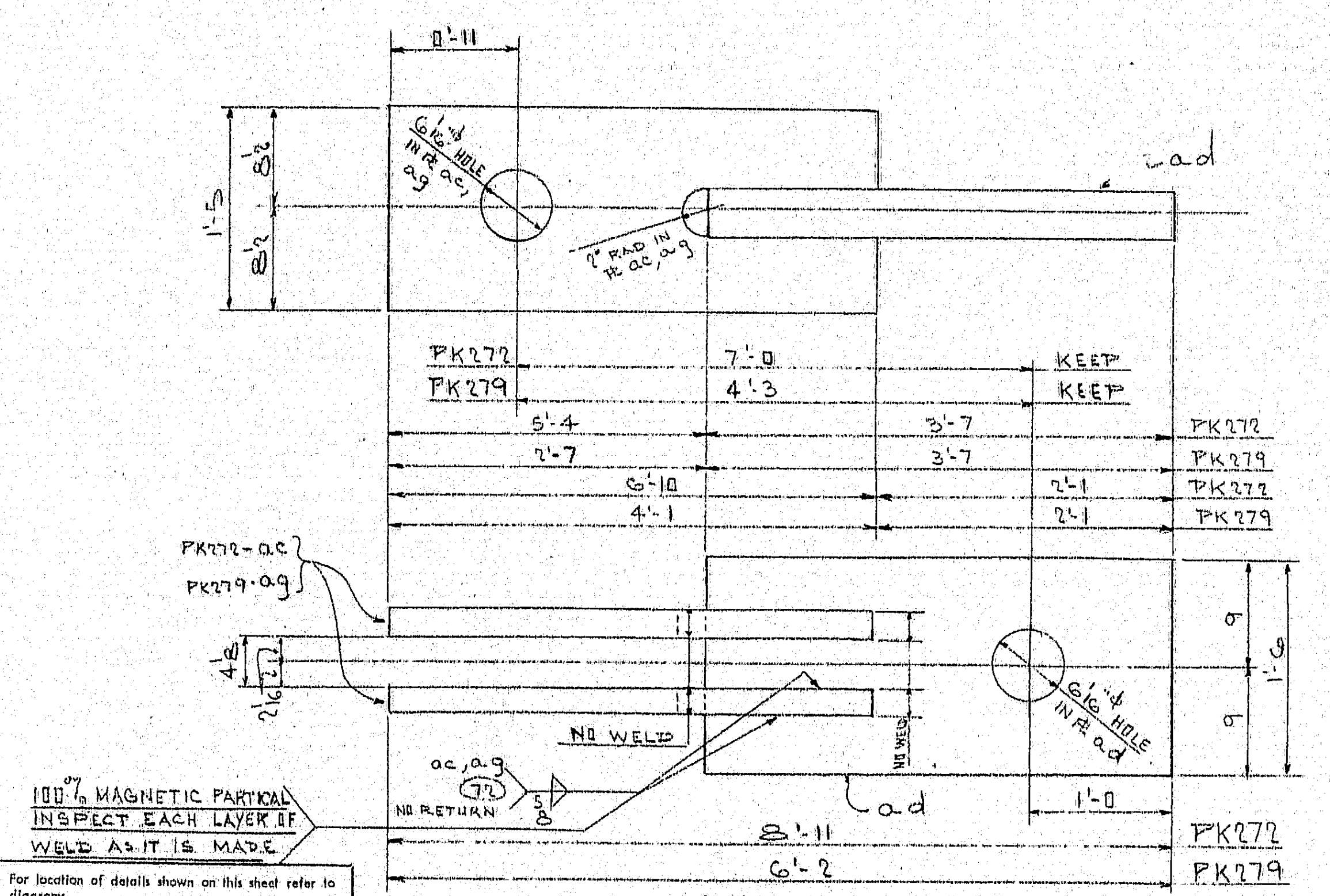
Charpy V Notch Test of 15 Foot Pounds at -50°F Required for all Material as Noted in Edge Listing.

Shop Note:
Sonically inspect all butt welds per AWS Bridge Specs.



DETAIL OF WASHER - ah

Shop Note:
Plate ah to be within 1/16 dead flat

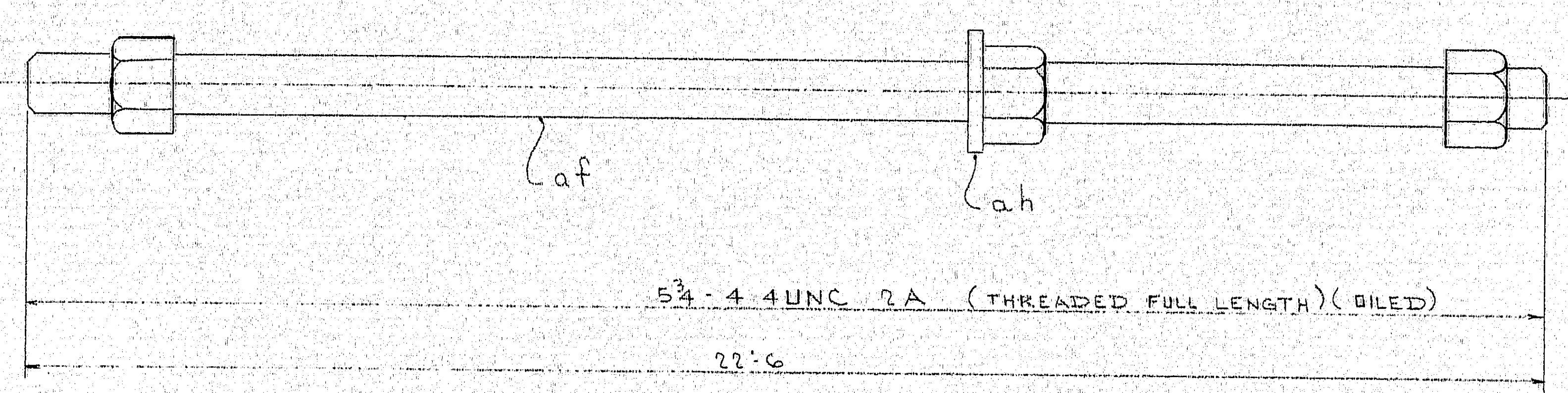


100% Magnetic Partical inspect each layer of weld as it is made.

For location of details shown on this sheet refer to diagrams.

ERG6A

LINK PLATE ~ PK272
LINK PLATE ~ PK279



THREADED ROD - PK273

Note:
Threaded rods - PK273 - Material ASTM A193-B7 (Hot rolled)
Ordered 6¼"φ, turn down to 5¾"φ before threading
Supplier to furnish certificate of analysis and hardenability
All material to be tested by magnetic particle test after turning down and before threading, (AISI Manual alloy steel semi-finished hot rolled)
Before shipping to job site each rod is to be tested by operations dept. in the tool house to 1,000 kips.

Nuts for threaded rods - PK273 - to conform to ASTM A194-69 Grade 2 specs.

Approved Hardesty & Hanover Consulting Engineers New York, N.Y.
By - S.N. 2-17-71

REQUIRED LIST

NUMBER REQUIRED	MARK	DESCRIPTION	REMARKS	WEIGHT EA. PC.	DISPOSITION
8	PK270	HITCH PLATES		3446	
4	PK271	STRONG BACK		4517	
8	PK272	LINK PLATE		2652	
8	PK273	THREADED ROD		2899	
8	PK279	LINK PLATE		19[illegible]	

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
FEB 17 1971
S.N.
DISTR.

Note:
Hitch plate PK270 detailed in Sh't #2 Mark 2B & 2C Contract HG6M-27

"This drawing contains information which is proprietary to Bethlehem Steel Corporation, Bethlehem, Pa., and is not to be used in any manner that is detrimental to the interests of Bethlehem Steel Corporation."

(This drawing replaces CWG290 ERG8-R6)

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	ITEM PAGE	ITEM LINE
1				8	-	HITCH PLATES - PK270									
2		[illegible]	a	8	PL	69		2	7	4	Note A				
3		140	b	32	PL	16		1	2	7	Note A				
4			F.W.	8	WD			⅝	26	0					
5															
6				4	-	STRONGBACKS - PK271									
7		[illegible]	c	8	PL	40		1¼	7	6	Note A				
8		96	d	16	BR	3¾		1	7	6	Note A				
9		[illegible]	f	8	PL	12		1½	1	4⅝					
10		241	g	16	PL	18		1¼	3	3	Note A				
11		41	h	16	BR	3¾		1	3	2	Note A				
12		[illegible]	k	16	BR	4		6⅝	2	11½	(B.U.)				
13		55	aa	4	BR	4		6⅝	0	11½	(B.U.)				
14		31	ab	8	BR	4		4⅛	0	11½	(B.U.)				
15		[illegible]	ac	4	BR	4		6⅝	1	7½	(B.U.)				
16		32		116	325	1			0	11					
17				264	H.W.	2	1 1/16	3/16							
18			F.W.	4	WD			⅜	38	0					
19			F.W.	4	WD			5/16	26	4					
20			T45D	4	WD			1	32	0					
21				32	325	1			0	4					
22															
23															
24				16	-	LINK PLATES - PK272, PK279 - 8 EA									
25		333	ac	16	PL	17		2¼	6	10	PK272 Note A				
26		[illegible]	ag	16	PL	17		2¼	4	1	PK279 Note A				
27		[illegible]	ad	16	PL	18		4	3	7	Note A				
28			F.W.	16	WD			⅝	12	0					
29															
30															
31				8	-	THREADED RODS - PK273									
32		2131	af	8	RD	6¼			22	6	A193-B7				
33		44	ah	8	M	12		1½			Round Plate				
34				24	M	5¾					Hvy hex nut A194-69 Grade 2				
35															
36															
37															
38															
39															
40															
41															
42															

SENT TO	DATE
D.O.	
FLD.	
TH.	
E.D.	
Exc	
EIO	
SHP	

Material A588 unless noted
Open holes 1 1/16"φ unless noted
Rivets —
Bolts 1"φ A325
Welding E70XX L.H.E.
Paint as per erect spec's paragraph #1 (Oil on threads.)

NO.	DATE	INIT.
R1	2-12-71	CG

REVISED

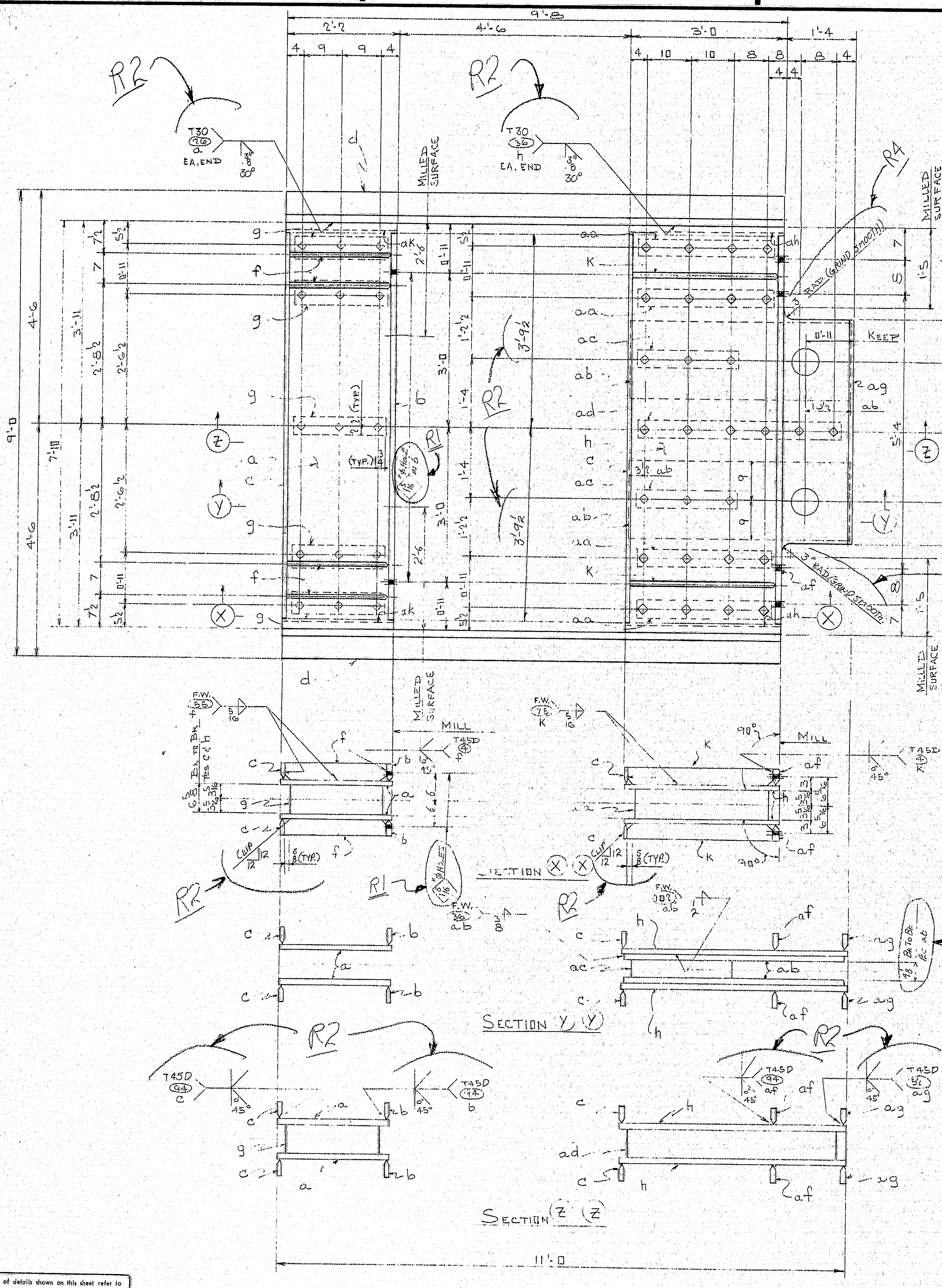
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. KITTERY, MAINE
CLOSURE DETAILS

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

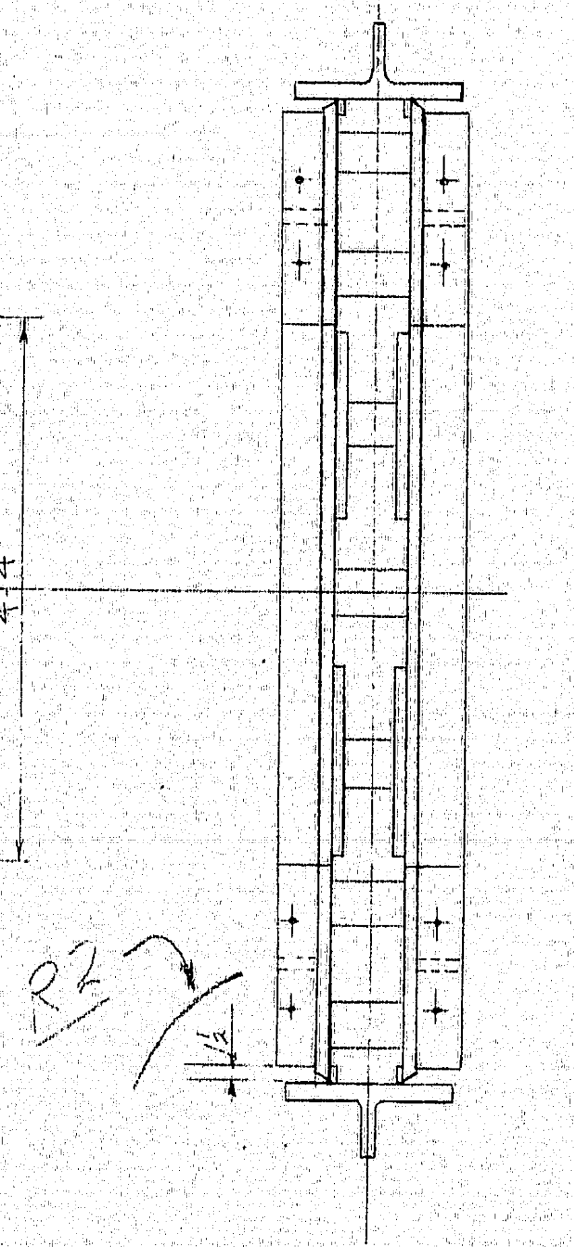
In charge of: C. CREIDENBERG
☐ Erect. Engr. ☐ Proj. Engr.
Approved: ☐ Mgr. of Erect. ☐ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
Made by: CEM
Date:
Checked by: CEG - RWBarch
Date: 2-2-71
Scale:
File No.:
Erection Contract No.: CWG290
Dwg. No.: ERG8A

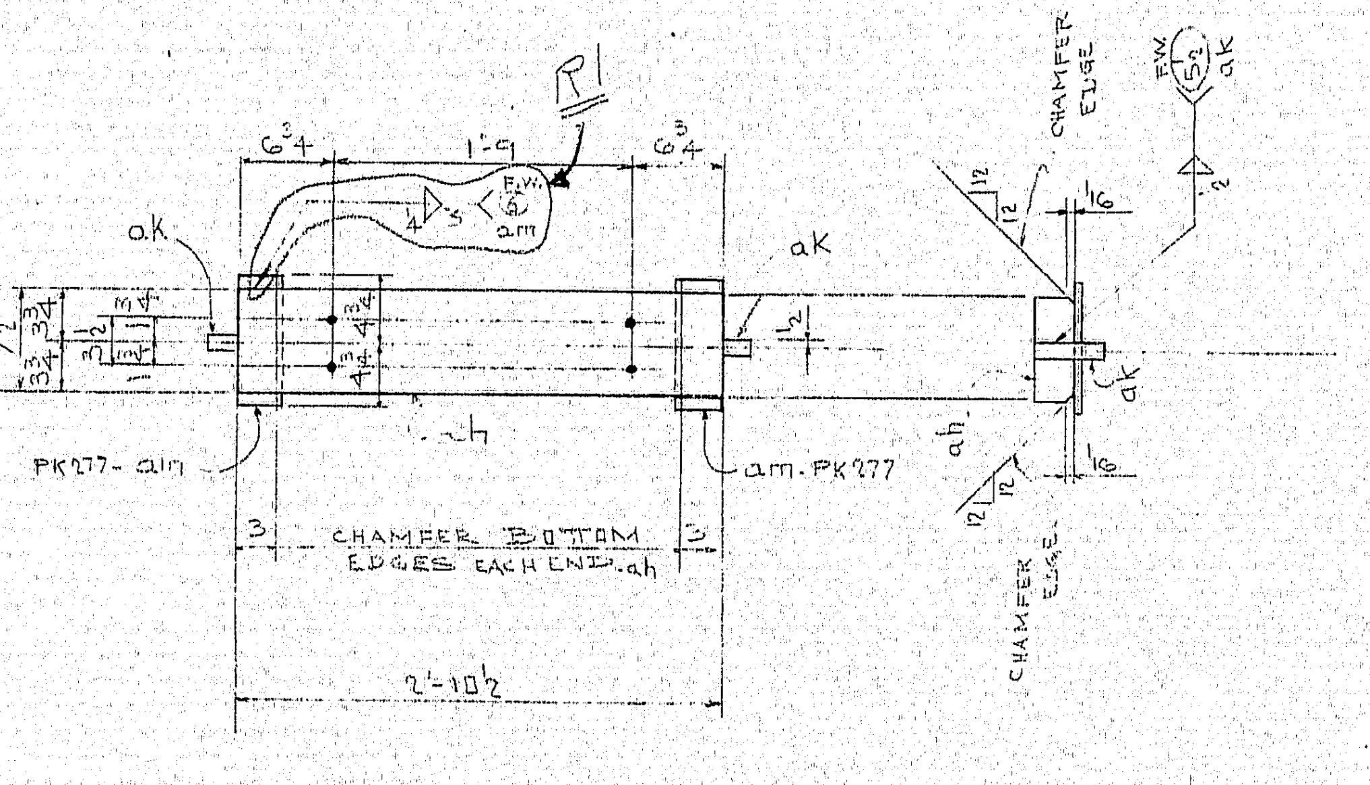
134.74

38558 (Rev.8 9-68)



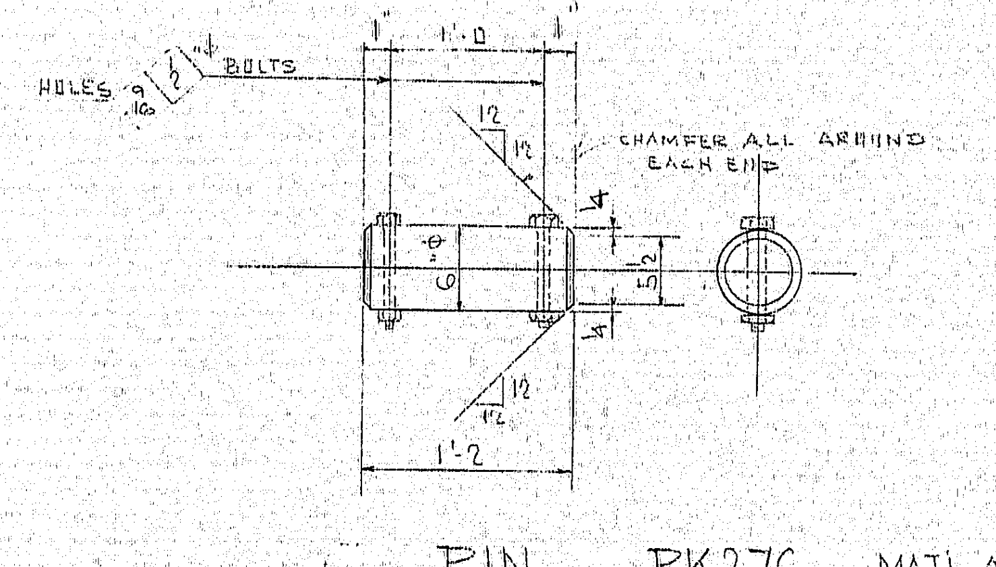
JACKING FRAME - PK274





GUIDE TOGGLE - PK275

GUIDE TOGGLE - PK277



PIN - PK276 MAT'L ASTM A193

SHOP NOTE

SONIC INSPECT ALL BUTT WELDS PER AWS BRIDGE SPEC. ← R3

APPROVED- HARDESTY & HANOVER
CONSULTING ENGINEERS - NEW YORK, NY.
BY - S.N. 12-23-70

REQUIRED LIST

NUMBER REQUIRED	MARK	DESCRIPTION	REMARKS	WEIGHT EA. PC.	DISPOSITION
4	PK274	JACKING FRAMES		11472	
2	PK275	GUIDE TOGGLES		208	
32	PK276	PINS		112	
2	PK277	GUIDE TOGGLES		220	

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY SN DEC 23 1970
dist.

	a	b	c
a			
b			
c			
d			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

SENT TO	DATE
D.O.	1-4-71
FLD.	1-4-71
TH.	
E.D.	
Eac	
EIO.	1-4-71
SHP.	

For location of details shown on this sheet refer to diagrams.

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	MILL ORDER ITEM PAGE	MILL ORDER ITEM LINE
1							4- JACKING FRAMES - PK274								
2															
3		866	a	8	PL	26		1 1/4	7	10	R2				
4		128	b	8	BR	3 3/4		1	7	7	R2				
5		100	c	16	BR	3 3/4		1	7	7	R2				
6		1146	d	8	ST	7	118.5		9	8					
7		25	f	32	BR	3 3/4		1	1	11 3/4					
8		162	g	20	BR	4		6 5/8	1	9 1/2	(B.U.)				
9		1493	h	8	PL	52		1 1/4	7	10					
10		36	K	16	BR	3 3/4		1	2	9 3/4					
11		236	aa	16	BR	4		6 5/8	2	7 1/2	(B.U.)				
12		327	ab	8	PL	18		1 1/4	4	3					
13		110	ac	8	BR	4		4 1/8	1	11 1/2	(B.U.)				
14		356	ad	4	BR	4		6 5/8	3	11 1/2					
15		125	af	8	BR	3 3/4		1	7	7	R2				
16		55	ag	8	BR	3 3/4		1	4	4	R2				
17			ah	16	BR	1		1/4	3	0	R2				
18			ak	16	BR	1		1/4	2	2	R2				
19		32		172	490	1"ϕ			1	1	R1				
20				172	H.W.	2 1/4	1 1/16	3/16							
21															
22			F.W.	4	WD			5/16	61	8					
23			F.W.	4	WD			3/8	12	0					
24			F.W.	4	WD			1/2	34	0	R2				
25			T30	4	WD			1/4	20	8	R2				
26			T45D	4	WD			1	72	8	R2				
27			T45D	4	WD			3/4	2	8	R2				
28						4-	GUIDE TOGGLES - PK275, PK277 - 2 EA								
29		202	ah	4	BR	7 1/2		2 3/4	2	10 1/2					
30		3	ak	8	BR	2		1	0	5					
31			F.W.	4	WD			1/2	0	11					
32		6	am	4	BR2	3 1/2		5/8	0	9 1/2	PK277				
33			F.W.	2	WD			1/4	1	0	PK277				
34															
35															
36						32	PINS - PK276								
37		112		32	RD2	6"ϕ			1	2	A193				
38				64	SB	1/2			0	7					
39															
40															
41															
42															

MATERIAL A588 UNLESS NOTED
OPEN HOLES 1 1/16"ϕ UNLESS NOTED
RIVETS ——
BOLTS 1"ϕ
WELDING E70XX (LOW HYDROGEN) ELECTRODES
PAINT SEE ERECT. SPECS. PARAGRAPH #1

NO.	DATE	INIT.
R4	12/21/70	RWB
R3	12/10/70	RWB
R2	11/24/70	RWB
R1	4/15/70	RWB

REVISED

PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. KITTERY, MAINE
CLOSURE DETAILS

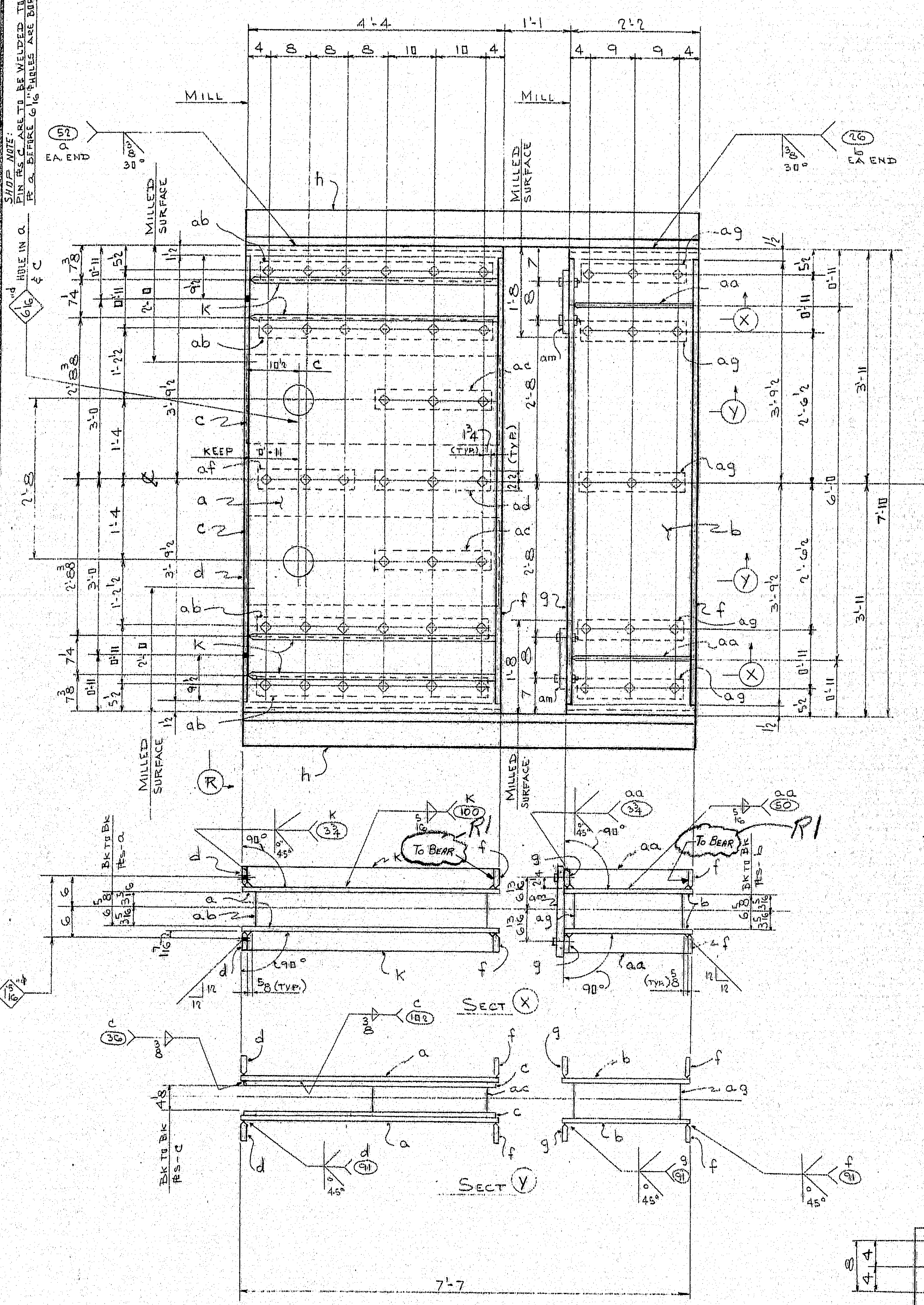
BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
~~ERECTION DIVISION~~
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED
☐ Mgr. of Erect. ☐ District Mgr.
☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY CEM
DATE
CHECKED BY Dim. R.C.F. 12/2/70
DATE
SCALE
FILE NO.
ERECTION CONTRACT NO. CWG290
DWG. NO. ER69

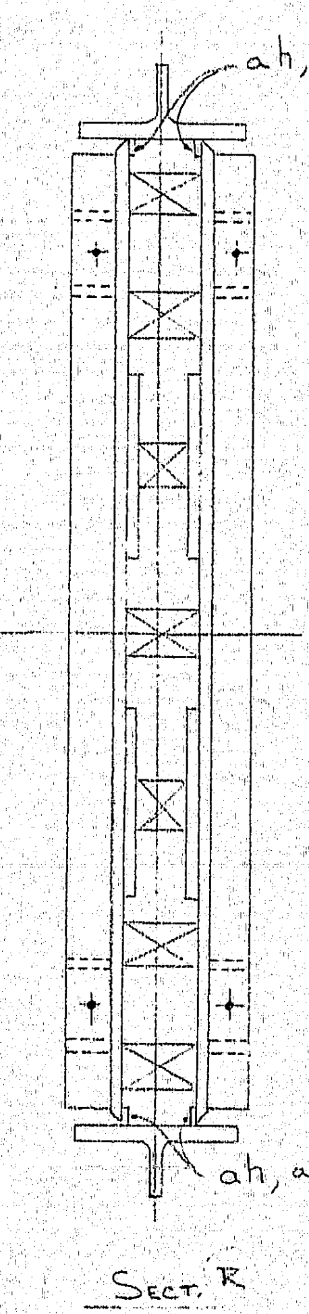
134:75

38558 (Rev.B 9-68)

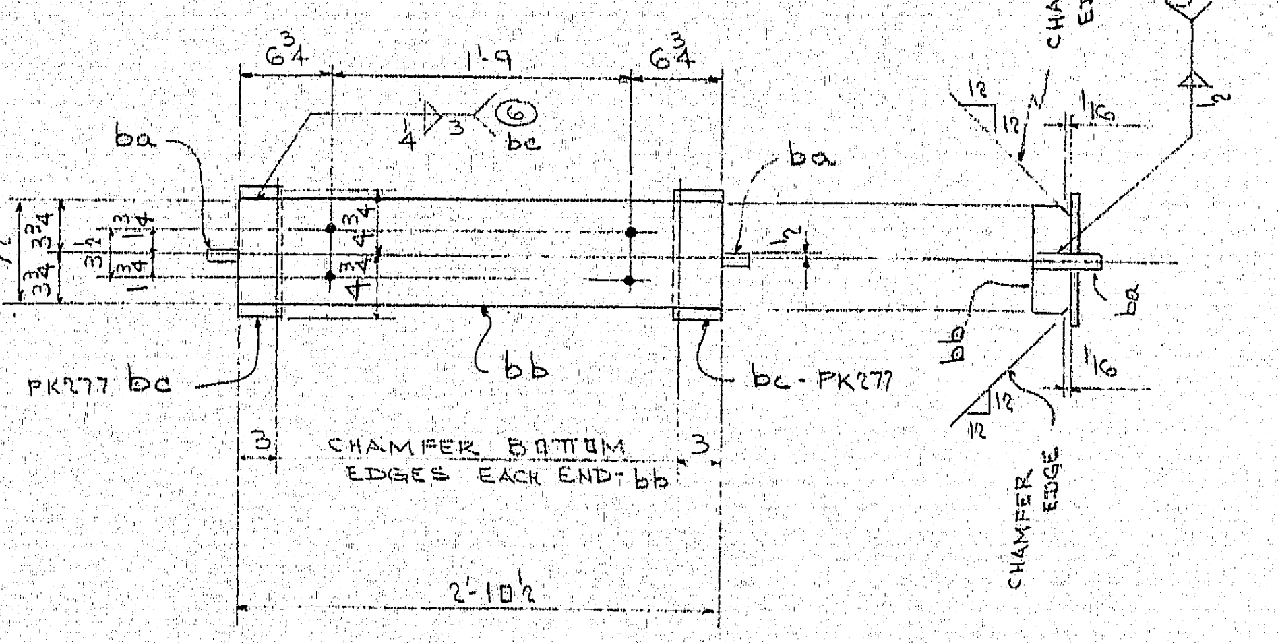
SHOP NOTE: PIN PLS c ARE TO BE WELDED TO PL a BEFORE 6 1/16"ϕ HOLES ARE BORED



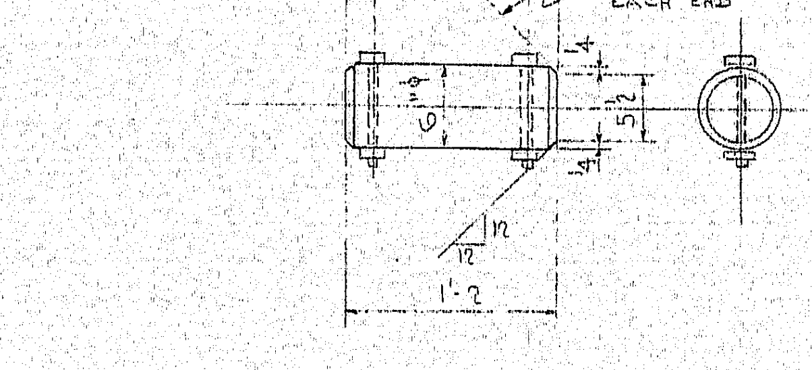
JACKING FRAME ~ PK274



SECT. R



GUIDE TOGGLE ~ PK275
GUIDE TOGGLE ~ PK277

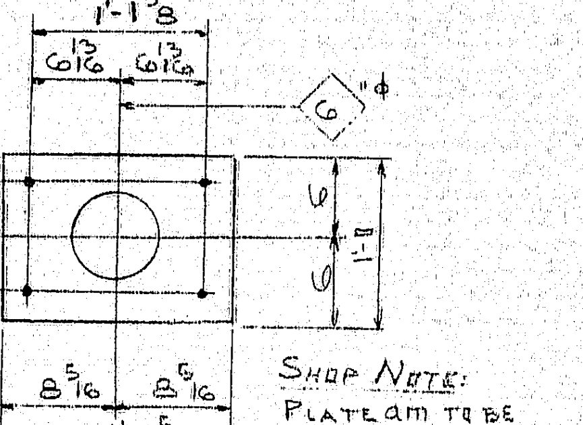


PIN ~ PK276 MAT'L ASTM A193

NOTE A

CHARPY V NOTCH TEST OF 15 FOOT POUNDS AT -50°F REQUIRED FOR ALL MATERIAL AS NOTED IN EDGE LISTING.

SHOP NOTE:
SONICALLY INSPECT ALL BUTT WELDS PER AWS BRIDGE SPECS.



SHOP NOTE:
PLATE am TO BE WITHIN 1/16" DEAD FLAT

DETAIL OF PLATE WASHER - am

APPROVED HARDESTY & HANOVER
CONSULTING ENGINEERS NEW YORK N.Y.
BY - S.N. 2-17-71

REQUIRED LIST

NUMBER REQUIRED	MARK	DESCRIPTION	REMARKS	WEIGHT EA. PC.	DISPOSITION
4	PK274	JACKING FRAMES		12400	
2	PK275	GUIDE TOGGLES		208	
32	PK276	PINS		112	
2	PK277	GUIDE TOGGLES		220	

NOTE:
GUIDE TOGGLES PK275 & PK277
DETAILED ON SH'T #2 MARK 2H & 2K
CONTRACT HG0121

APPROVED:
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
FEB 17 1971
BY S.N.

DISTR.

(THIS DRAWING REPLACES CWG290 ER69-R5)

	a	b	c
a			
b			
c			
d			
e			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

For location of details shown on this sheet refer to diagrams.

ER66A

SENT TO	DATE
D.O.	
FLD.	
TH.	
E.D.	
Eoc	
EIO	
SHP	

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	MILL ORDER ITEM PAGE	MILL ORDER ITEM LINE
1				4	–	JACKING FRAMES – PK274									
2															
3		[illegible]	a	8	PL	52		1¼	7	9¼	NOTE A				
4		861	b	8	PL	26		1¼	7	9¼	NOTE A				
5		327	c	16	PL	18		1¼	4	3	NOTE A				
6		94	d	8	BR	3¾		1	7	7	NOTE A				
7		93	f	16	BR	3¾		1	7	7	NOTE A				
8		[illegible]	g	8	BR	3¾		1	7	7	NOTE A				
9		710	h	8	W	14	237		7	7	(7 15/16) MIN., NOTE A				
10		[illegible]	k	32	BR	3¾	R1	1	4	2	NOTE A				
11		[illegible]	aa	16	BR	3¾		1	2	0	NOTE A				
12		[illegible]	ab	16	BR	4		6⅝	3	11½	(B.U.)				
13		[illegible]	ac	8	BR	4		4⅛	1	11½	(B.U.)				
14		[illegible]	ad	4	BR	4		6⅝	1	11½	(B.U.)				
15		[illegible]	af	4	BR	4		6⅝	1	7½	(B.U.)				
16		[illegible]	ag	20	BR	4		6⅝	1	9½	(B.U.)				
17		[illegible]	ah	16	BR	3		⅜	4	6	A242 Type 1 } or Mayari-R				
18		22	ak	16	BR	3		⅜	2	4	″ ″ } may be substituted				
19		[illegible]		204	325	1			0	11					
20				440	H.W.	2¼ R1	1 1/16	3/16							
21			F.W.	4	WD			5/16	83	4					
22			F.W.	4	WD			⅜	12	0					
23															
24			T30B	4	WD			1	60	0					
25			T45D	4	WD			¾	2	6					
26			T45D	4	WD			1	61	11					
26A			am	8	PL	12		1½	1	4⅝					
27				32	325	1			0	4					
28				4	–	GUIDE TOGGLES – PK275					PK277 - 2 EA.				
29		[illegible]	bb	4	BR	7½		2¾	2	10½					
30			ba	8	BR	2		1	0	5					
31		6	bc	4	BR	3½		⅝	0	9½	PK277				
32			F.W.	4	WD			½	0	11					
33			F.W.	2	WD			¼	1	0	PK277				
34															
35															
36				32	–	PINS – PK276									
37		[illegible]		32	RD	6"ϕ			1	2	A193-70 B7				
38				64	MB	½			0	7					
39															
40															
41															
42															

MATERIAL A588 UNLESS NOTED

OPEN HOLES 1 1/16"ϕ UNLESS NOTED

RIVETS

BOLTS 1"ϕ A325

WELDING E70XX L.H.E

PAINT SEE ERECT. SPEC'S PARAG. #1

NO.	DATE	INIT.
R1	2-12-71	CG.

REVISED

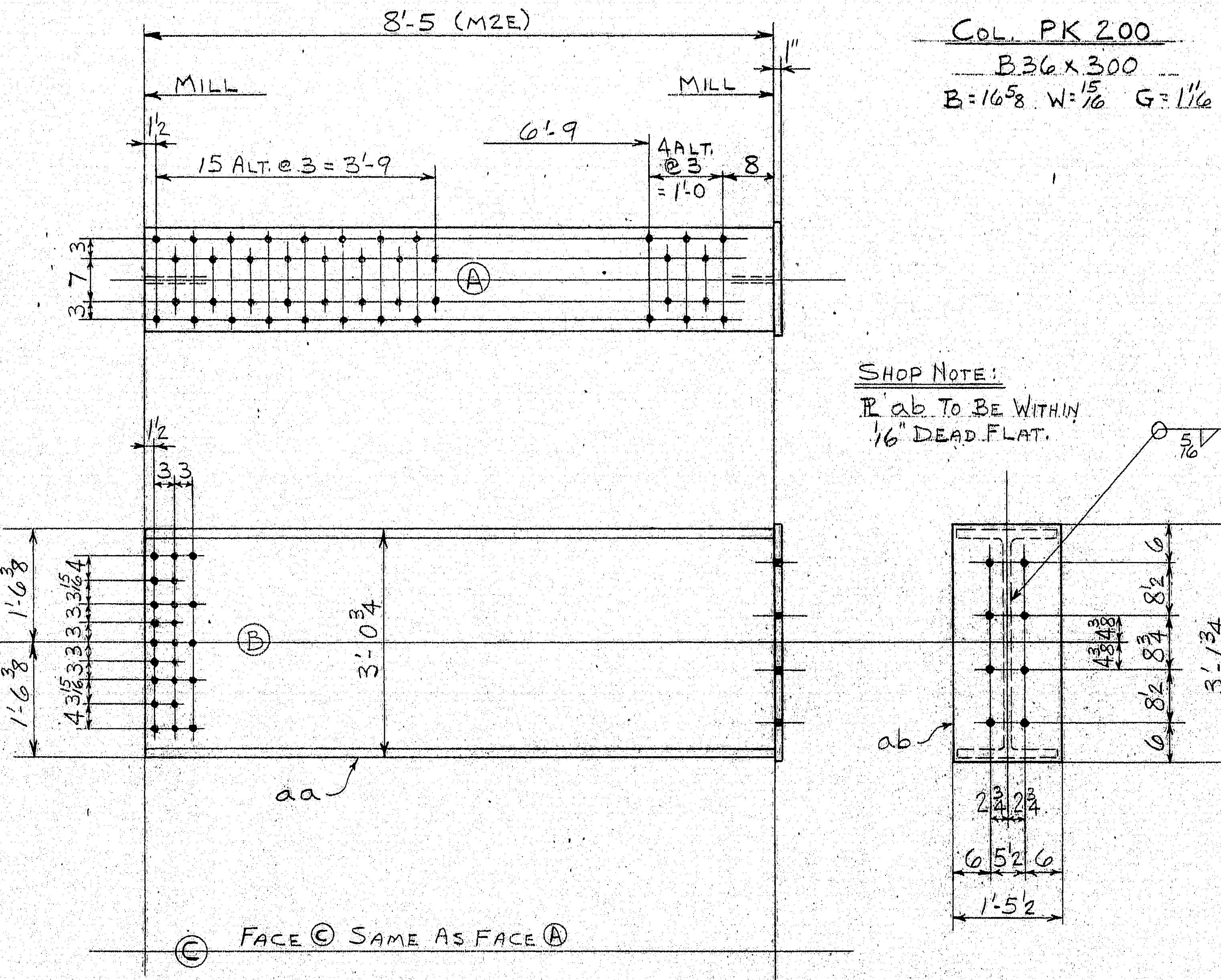
PISCATAQUA RIVER BRIDGE
PORTSMOUTH N.H. KITTERY MAINE
CLOSURE DETAILS

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF C. CREIDENBERG
APPROVED
☐ Erect. Engr. ☐ Proj. Engr.
☐ Mgr. of Erect. ☐ District Mgr.
☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY CEM
DATE
CHECKED BY RW BARCH
DATE 2/4/71
SCALE
FILE NO.
ERECTION CONTRACT NO. CWG290
DWG. NO. ER69A

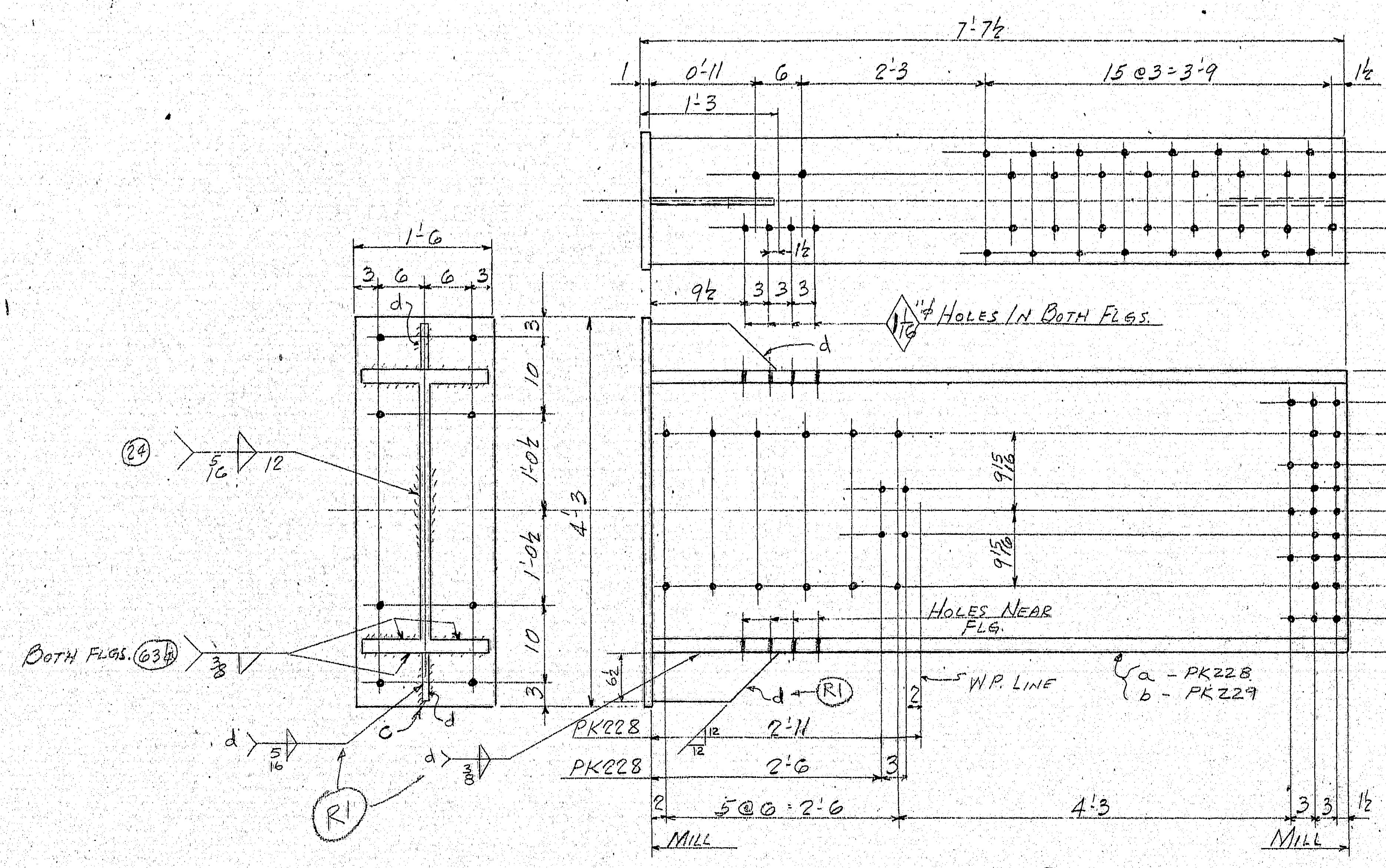
134:76

38558 (Rev 8 9-68)



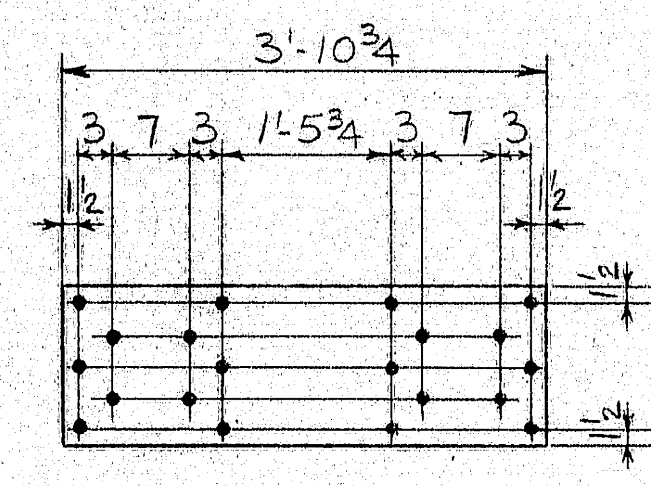
COL. PK 200
B36 x 300
B = 16⅝ W = 15/16 G = 1 1/16

SHOP NOTE:
℄ ab. TO BE WITHIN 1/16" DEAD FLAT.

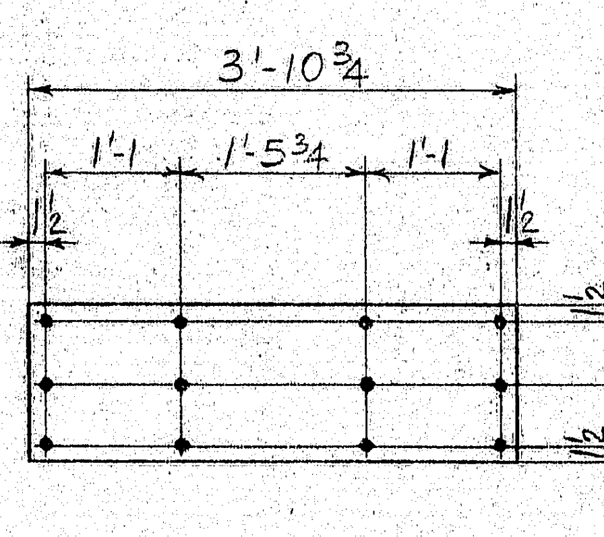


COLUMNS " PK228
do " PK229
(MADE FROM JF1 - CV5498/ER6)

NOTE:- PLUG WELD EXISTING HOLES WITHIN 2" OF NEW HOLES
RESTORE COLUMNS TO ORIGINAL CONDITION AT COMPLETION OF THIS CONTRACT



BATTEN PLATE - PK 226



BATTEN PLATE - PK 227

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
SEP 18 1970
BY F.F.W.

APPROVED:
HARDESTY & HANOVER
CONSULTING ENGINEERS
NEW YORK, N.Y.
By F.F.W. 9-18-70

REQUIRED LIST

NO. REQD.	MARK	DESCRIPTION	REMARKS	WT. EA. PC.	DISPOSITION
2	PK200	COLUMN		2712	TO STOCK
12	PK226	BATTEN PLATE		149	SCRAP
2	PK227	BATTEN PLATE		149	SCRAP
2	PK228	COLUMN	MAKE FROM JF1	2522	SEE NOTE
2	PK229	do	do	2522	do

For location of details shown on this sheet refer to diagrams.
ER62-ER41-ER42

SENT TO	DATE
D.O.	~~6/9~~ 9/11
FLD.	
TH.	
E.D.	
Eac	9/11
EIO	
SHP	

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	MILL ORDER ITEM PAGE	MILL ORDER ITEM LINE
1				2	COLS. - PK200										
2		2525	aa	2	B	36	300		8	5	M2E				
3		187	ab	2	PL	17½		1	3	1¾					
4			FW	2	WD			5/16	11	8					
7				14	BATTEN PLATES										
8		149	PK226	12	PL	15		¾	3	10¾					
9		149	PK227	2	PL	15		¾	3	10¾					
13				2	COLUMNS - PK228										
14		2262	a	2	B	36	300		7	6½	M2E } EXISTING MAT'L. JF1				
15		260	c	2	℄	18		1	4	3					
16			FW	2	WD			⅜	10	11¼					
17			FW	2	WD			5/16	4	2					
18			d	4	BRZ	6½		¾	1	5					
21				2	COLUMNS - PK229										
22		2262	b	2	B	36	300		7	6½	M2E } EXISTING MAT'L. JF1				
23		260	c	2	℄	18		1	4	3					
24			FW	2	WD			⅜	10	11¼					
25			FW	2	WD			5/16	4	2					
26			d	4	BRZ	6½		¾	1	5					

R1
R1

MATERIAL - A7 or A36 STEEL
OPEN HOLES - 15/16" ⌀ U.N.
RIVETS
BOLTS
WELDING
PAINT

NO.	DATE	INIT.	
R1	8-4-70	JBB	ADD ℄ d

REVISED

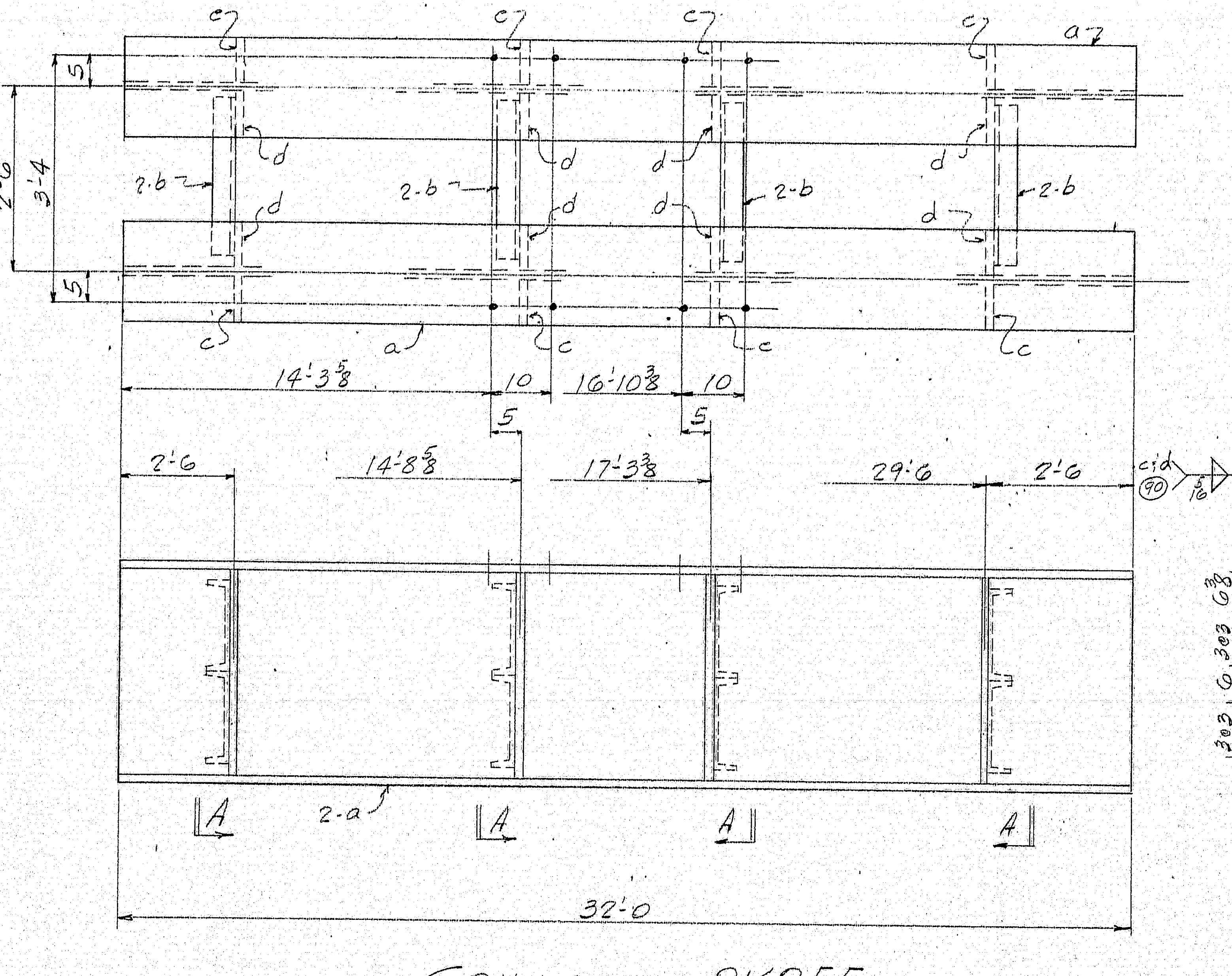
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. TO KITTERY, ME.
DETAILS - COL. @ L4 (SOUTH) - FALSEWORK

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

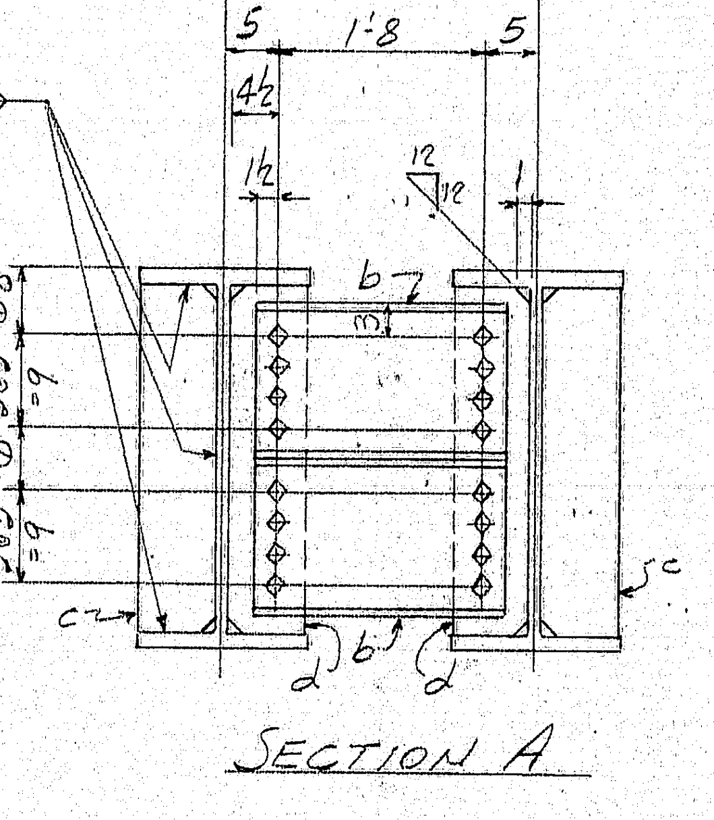
IN CHARGE OF: C. CREIDENBERG
☑ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☐ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: J.D. PIERCE / D.H.M.
DATE:
CHECKED BY: D.D.P.
DATE: 6-8-70
SCALE: ¾" = 1'-0
FILE NO.:
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER78

134:77

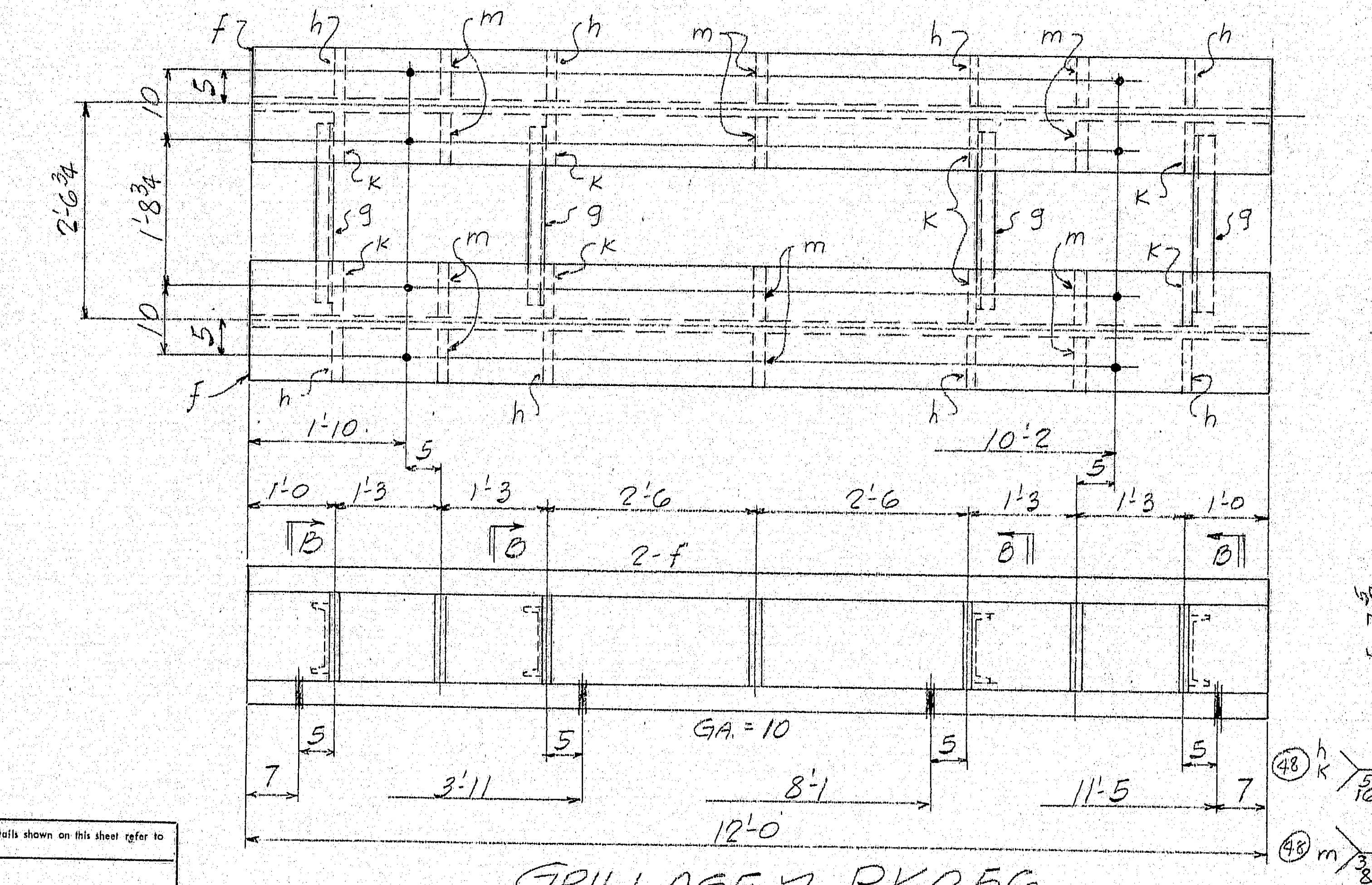
38558 (Rev.B 9-68)



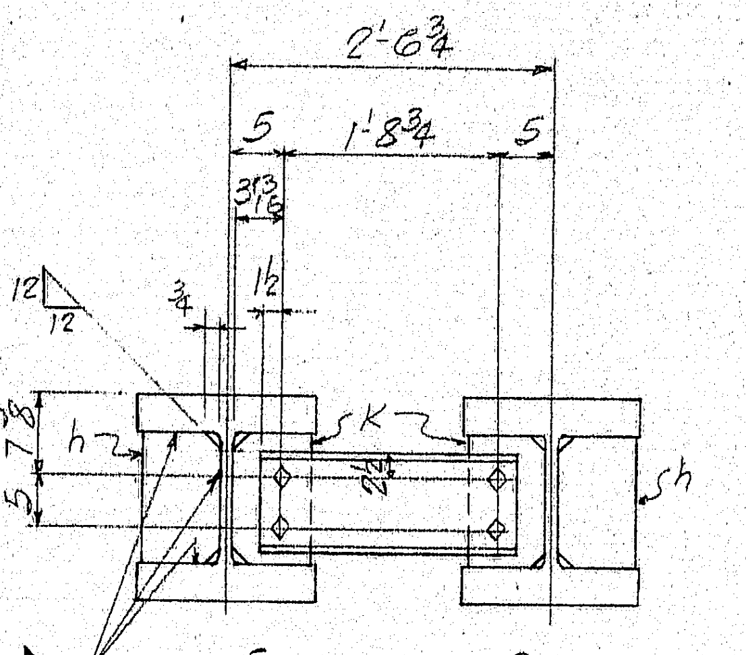
GRILLAGE ~ PK255



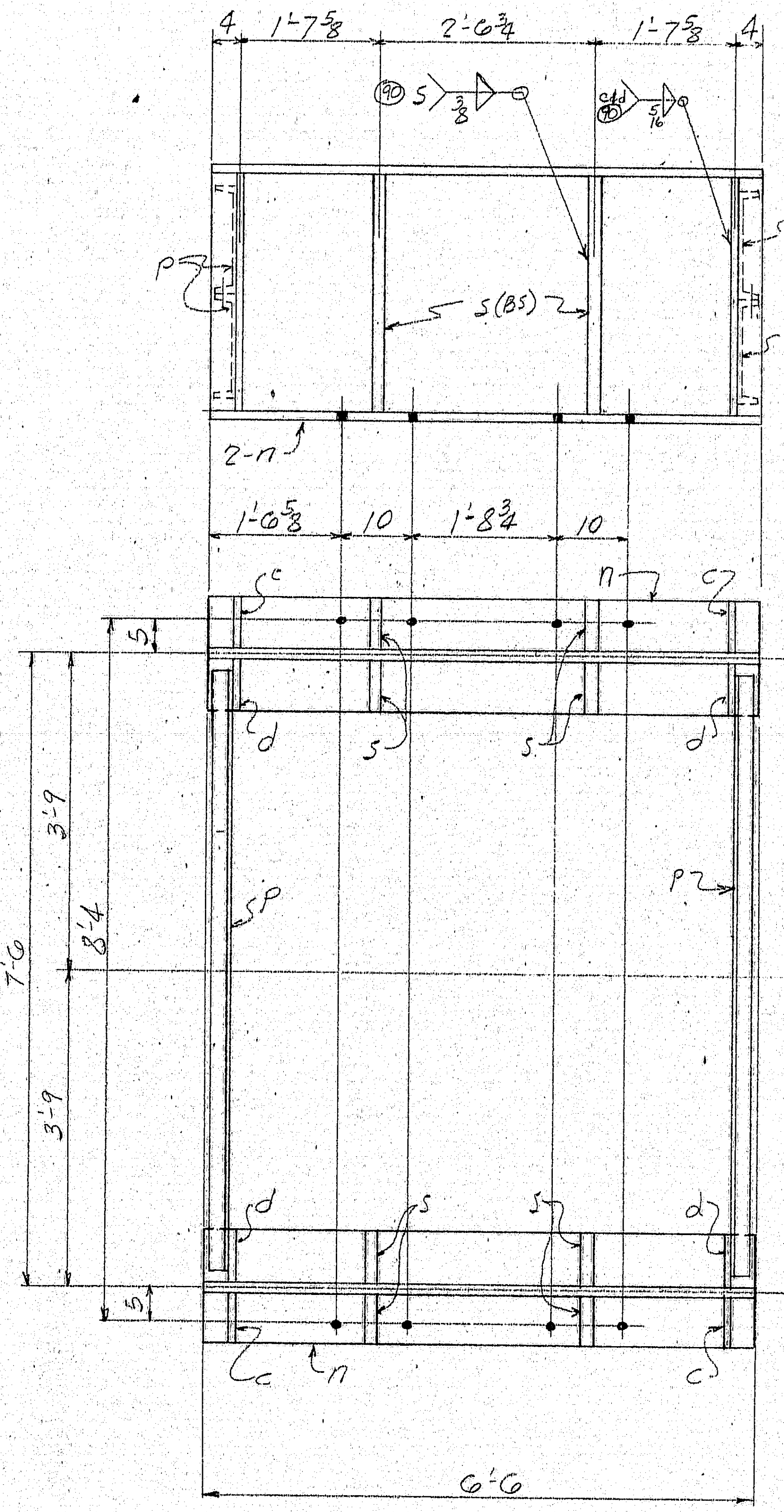
SECTION A



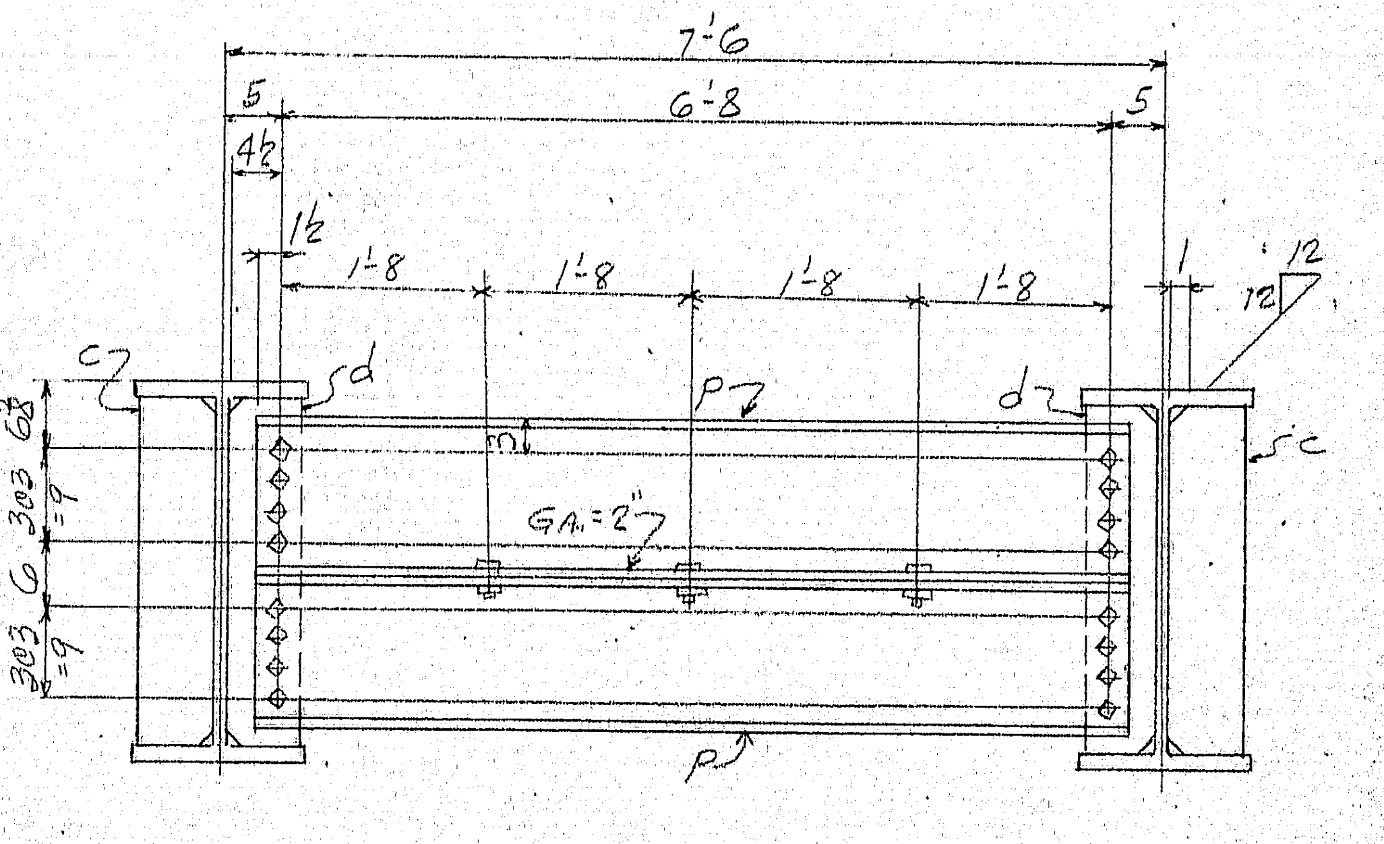
GRILLAGE ~ PK256



SECTION B



GRILLAGE ~ PK257



No. Reqd.	Mark	Description	Remarks	Wt. Ea. Pc.	Disposition
REQUIRED LIST					
2	PK255	GRILLAGE		20,624#	To Stock
ONE	PK256	do		14,392#	
ONE	PK257	do		6,404#	

APPROVED:
HARDESTY & HANOVER
CONSULTING ENGINEERS
NEW YORK, N.Y.
By - F.F.W. 9-18-70

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY F.F.W. SEP 18 1970

	a	b	c
a			
b			
c			
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e			
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g			
h			
k			
m			
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t			
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y			

For location of details shown on this sheet refer to diagrams.

SENT TO	DATE	
D.O.	6/19	9/21
FLD.		
TH.		
E.D.		
Eac	9/11	
EIO		
SHP		

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	ITEM PAGE	ITEM LINE
1				2 ~ GRILLAGES ~ PK255											
2		9600	a	4	B	36	300		32	0					
3		68	b	16	C	15	33.9		1	11					
4		55	c	16	BRZ	7 3/4		3/4	2	9 5/16	Fit to bear on flgs.				
5		55	d	16	BRZ	7 3/4		3/4	2	9 5/16					
6				128	325	7/8"φ			0	2 1/2					
7				128	M	7/8"φ					HHN A325 NUTS ONLY				
8				128	HW	1 3/4	15/16	3/16							
9			FW	2	WD			5/16	120	0					
10															
11															
12															
13				ONE - GRILLAGE ~ PK256											
14		6,600	f	2	B	14	550		12	0					
15		70	g	4	C	10	15.3		1	11 3/4					
16		27	h	8	BRZ	7 3/8		1	1	0 9/16	Fit to bear on flgs.				
17		27	k	8	BRZ	7 3/8		1	1	0 9/16					
18		40	m	12	BRZ	7 3/8		1 1/2	1	0 9/16					
19				16	325	7/8"φ			0	2 3/4					
20				16	M	7/8"φ					HHN A325 NUTS ONLY				
21				16	HW	1 3/4	15/16	3/16							
22			FW	ONE	WD			5/16	64	0					
23			FW	ONE	WD			3/8	48	0					
24															
25															
26															
27															
28				ONE - GRILLAGE ~ PK257											
29		1950	n	2	B	36	300		6	6					
30		238	p	4	C	15	33.9		6	11					
31		148	s	8	BRZ	7 3/4		2	2	9 3/8	FIT TO BEAR ON FLGS.				
32		46	c	4	BRZ	7 3/4		5/8	2	9 5/16					
33		46	d	4	BRZ	7 3/4		5/8	2	9 5/16					
34				32	325	7/8"φ			0	2 1/2					
35				32	M	7/8"φ					HHN A325 NUTS ONLY				
36				32	HW	1 3/4	15/16	3/16							
37			FW	ONE	WD			5/16	60	0					
38			FW	ONE	WD			3/8	60	0					
39				6	MB	7/8"φ			0	2 1/2					
40				6	M	7/8"φ					RHN MACH NUTS ONLY				
41															
42															

MATERIAL A36

OPEN HOLES 15/16"φ

RIVETS

BOLTS 7/8"φ A325

WELDING AS SHOWN

PAINT

NO.	DATE	INIT.
REVISED		

"This drawing contains information which is proprietary to Bethlehem Steel Corporation, Bethlehem, Pa., and is not to be used in any manner that is detrimental to the interest of Bethlehem Steel Corporation."

PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. to KITTERY, ME.
DETAILS - BENT L4 - GRILLAGES

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

IN CHARGE OF C. CREIDENBERG ☒ Erect. Engr. ☐ Proj. Engr.

APPROVED ☐ Mgr. of Erect. ☐ District Mgr. ☐ Engr. of Erect. ☐ Asst. Dist. Mgr.

MADE BY D.H.M. DATE

CHECKED BY CEG DATE 6-18-70

SCALE

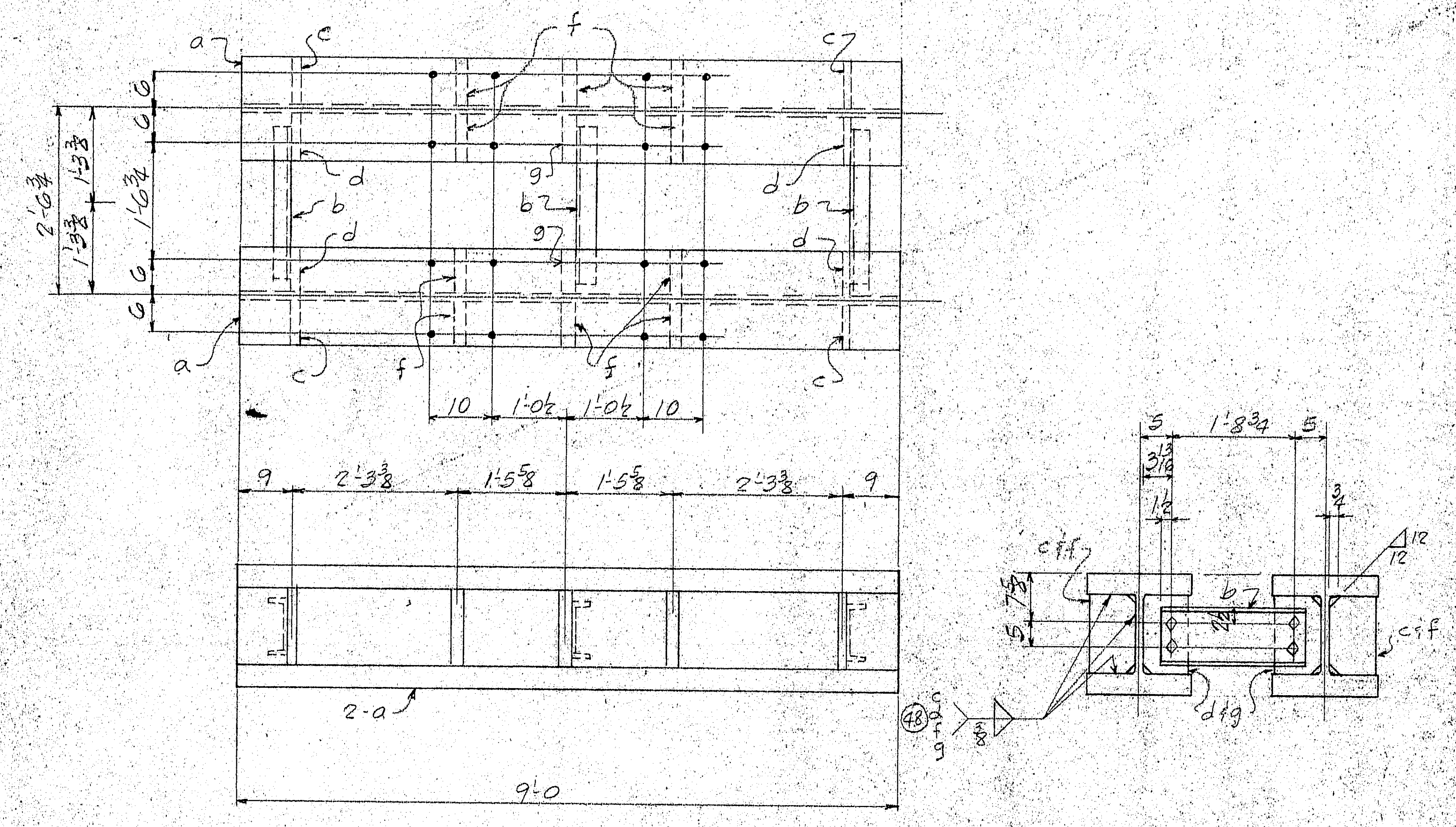
FILE NO.

ERECTION CONTRACT NO. CW6290

DWG. NO. ER91

134:78

38558 (Rev.8 9-68)



GRILLAGE № PK258

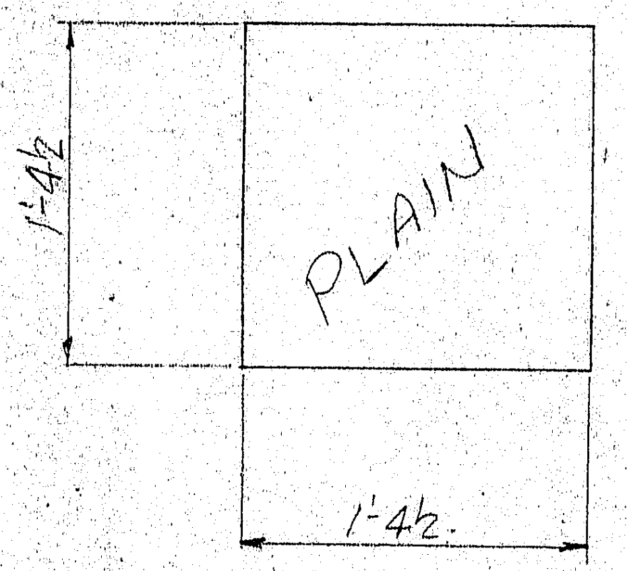
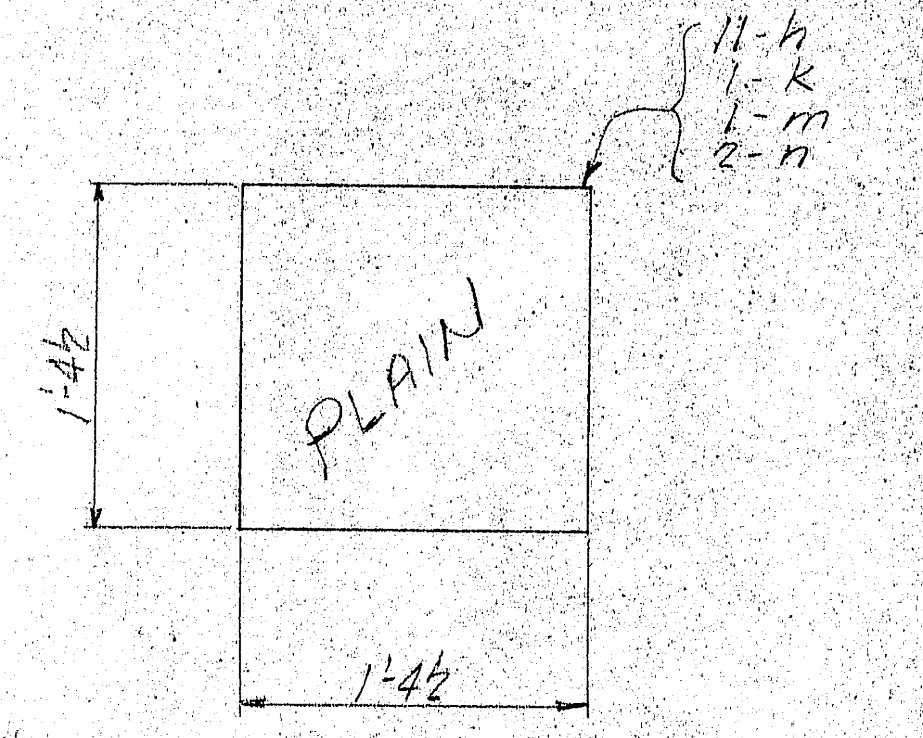


PLATE № PK260



SHIM PACK № PK259
(Wire for shipment)

REQUIRED LIST

No. Reqd.	Mark	Description	Remarks	Wt. Ea. Pc.	Disposition
One	PK258	Grillage		10,686#	
4	PK259	Shim Pack		918#	
16	PK260	Plate		72#	

(3)

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY FFW SEP 18 1970

APPROVED:
HARDESTY & HANOVER
CONSULTING ENGINEERS
NEW YORK, N.Y.
BY - F.F.W. 9-18-70

	a	b	c
a			
b			
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h			
k			
m			
n			
p			
s			
t			
w			
y			

Sent to	Date
D.O.	6/19 4/21
FLD.	
TH.	
E.D.	
Eac	5/11
EIO	
SHP.	

For location of details shown on this sheet refer to diagrams.

SHOP BILL

Line	Weight Total	Weight Ea.	Assembly Mark	No.	Shape	Section Size	Section Size or Pounds	Section Thick	Length Ft.	Length In.	Remarks	Mill Order Length Ft.	Mill Order Length In.	Item Page	Item Line
1				ONE - GRILLAGE № PK258											
2		4950	a	2	B	14	550		9	0					
3		30	b	3	C	10	15.3		1	11¾					
4		27	c	4	BRZ	7⅜		1	1	0 9/16	Fit to bear on Flgs.				
5		27	d	4	BRZ	7⅜		1	1	0 9/16					
6		40	f	10	BRZ	7⅜		1½	1	0 9/16					
7		40	g	2	BRZ	7⅜		1½	1	0 9/16					
8				8	325	⅞			0	2¾					
9				4	325	⅞			0	3¼					
10				12	M	⅞					HHN A325 Nuts Only				
11				12	HW	1¾	15/16	3/16							
12			FW	ONE	WD			⅜	80	0					
13															
14															
15															
16		72	PK260	16	PL	16½		1	1	4½					
17															
18															
19				4 SHIM PACKS - PK259											
20		72	h	44	PL	16½		1	1	4½					
21		36	k	4	PL	16½		½	1	4½					
22		18	m	4	PL	16½		¼	1	4½					
23		9	n	8	PL	16½		⅛	1	4½					
24															
25															
26															
27															

MATERIAL A36
OPEN HOLES 15/16" ∅
RIVETS
BOLTS ⅞ ∅ A325
WELDING As Shown
PAINT

No.	Date	Init.

REVISED

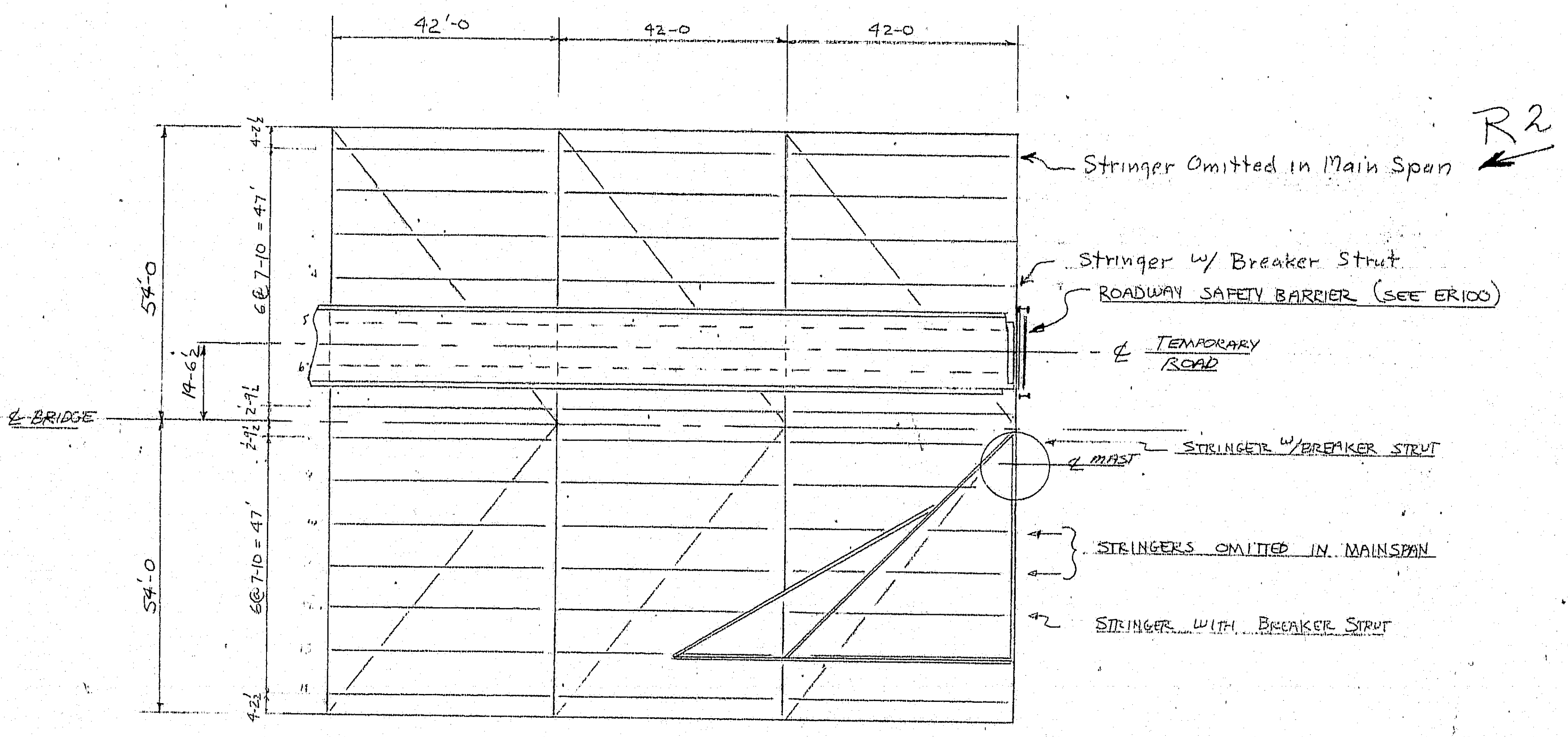
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. to KITTERY, ME
DETAILS - BENT L4 - GRILLAGES

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

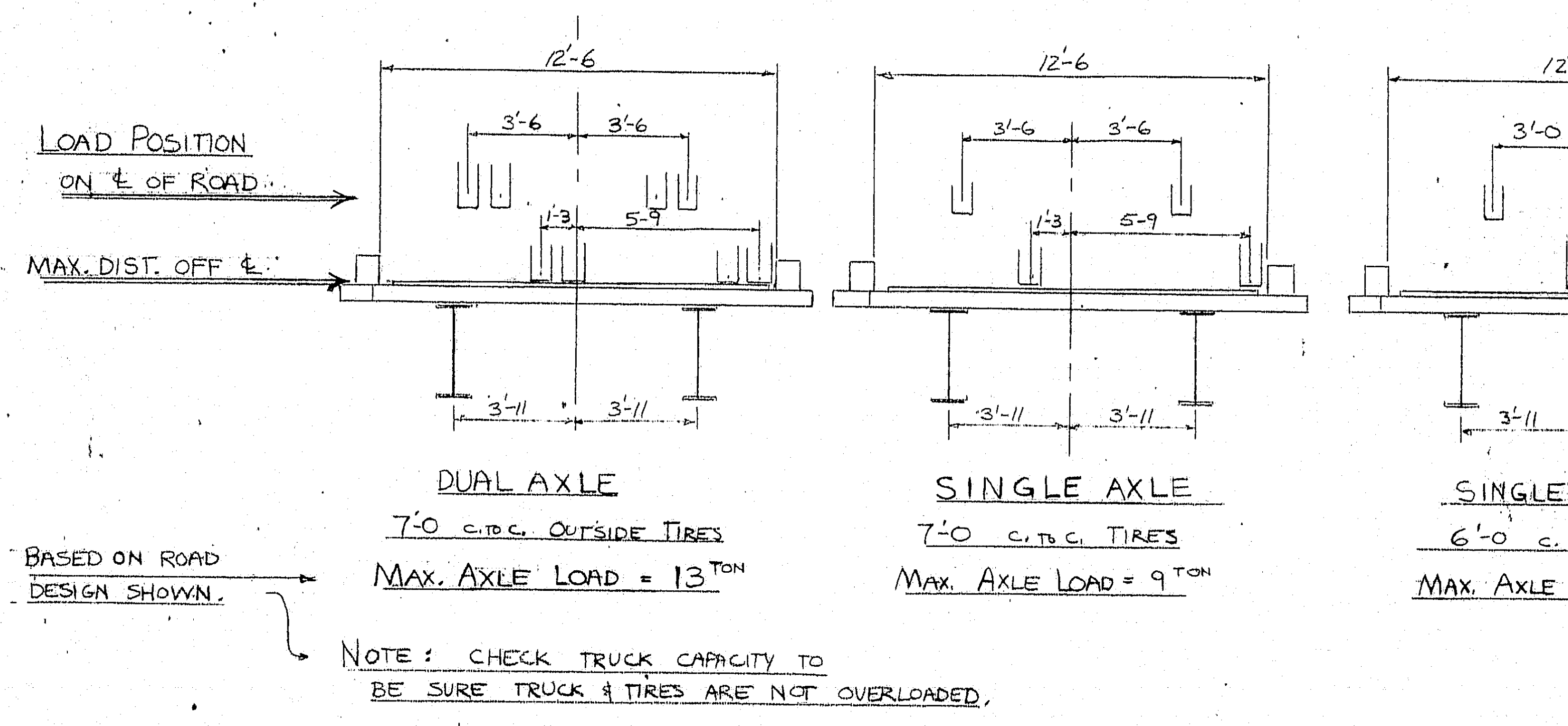
IN CHARGE OF: C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED:
☐ Mgr. of Erect. ☐ District Mgr.
☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: D.H.M. DATE: 6/15/70
CHECKED BY: CEG DATE: 6-18-70
SCALE:
FILE NO.:
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER92

38558 (Rev. 8 9-68)

134:79


42'-0
42-0
42-0
54'-0
54'-0
6@7-10 = 47'
6@7-10 = 47'
14-6½
2-9½
2-9½
4-2½
4-2½
℄ BRIDGE
R2
Stringer Omitted in Main Span
Stringer w/ Breaker Strut
ROADWAY SAFETY BARRIER (SEE ER100)
℄ TEMPORARY ROAD
℄ MAST
STRINGER w/BREAKER STRUT
STRINGERS OMITTED IN MAINSPAN
STRINGER WITH BREAKER STRUT

TYPICAL LAYOUT 1"=20'



DUAL AXLE
7'-0 C. TO C. OUTSIDE TIRES
MAX. AXLE LOAD = 13 TON

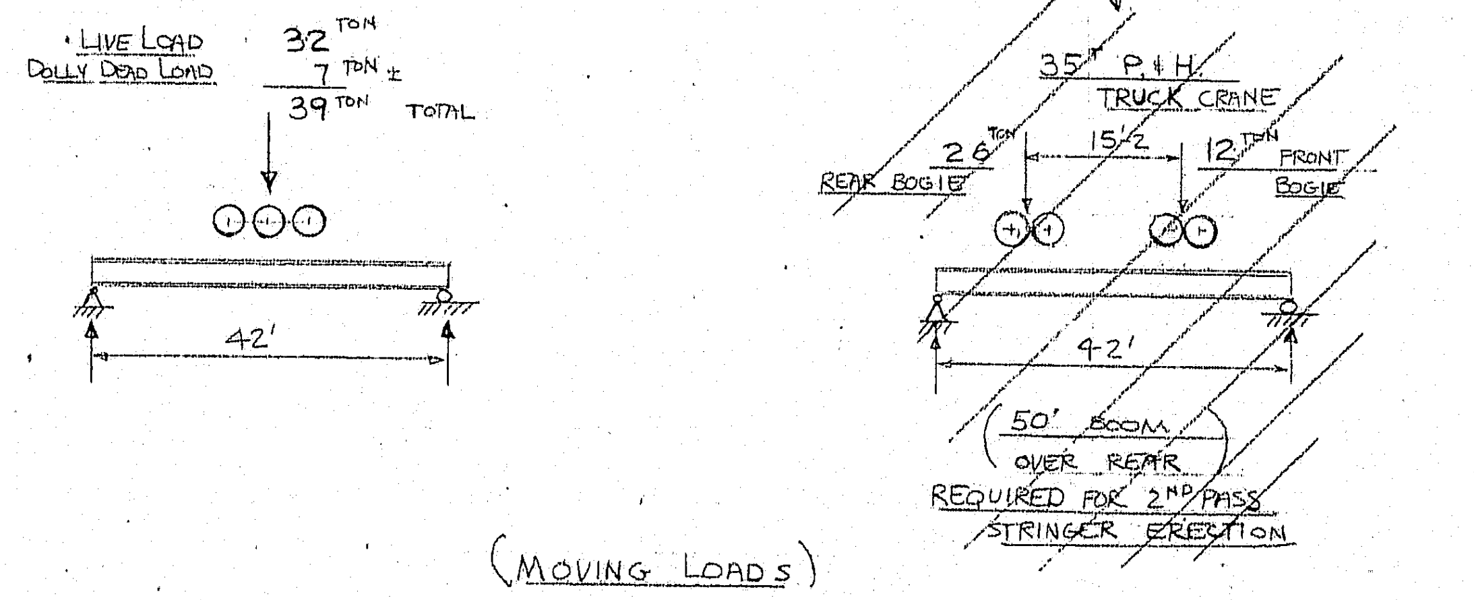
SINGLE AXLE
7'-0 C. TO C. TIRES
MAX. AXLE LOAD = 9 TON

SINGLE AXLE
6'-0 C. TO C. TIRES
MAX. AXLE LOAD = 9 TON

NOTE: CHECK TRUCK CAPACITY TO BE SURE TRUCK & TIRES ARE NOT OVERLOADED.

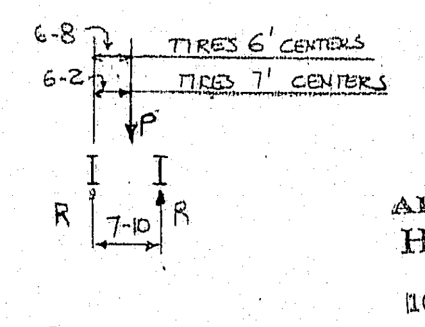
LOAD CONDITIONS ON TIMBER (¼"=1-0)

R1 VOID SEE ER108



(MOVING LOADS)

LOAD CONDITIONS ON STRINGER SPAN



APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY S.N. MAY 11 1971

DISTRIBUTION INTO ONE STRINGER:

$R_{max} = \frac{6.67}{7.83}(P) = .85P$ { FOR AXLES WITH OUTSIDE TIRES ON 6' CENTERS.

$R_{max} = \frac{6.17}{7.83}(P) = .79P$ { FOR AXLES WITH OUTSIDE TIRES ON 7' CENTERS.

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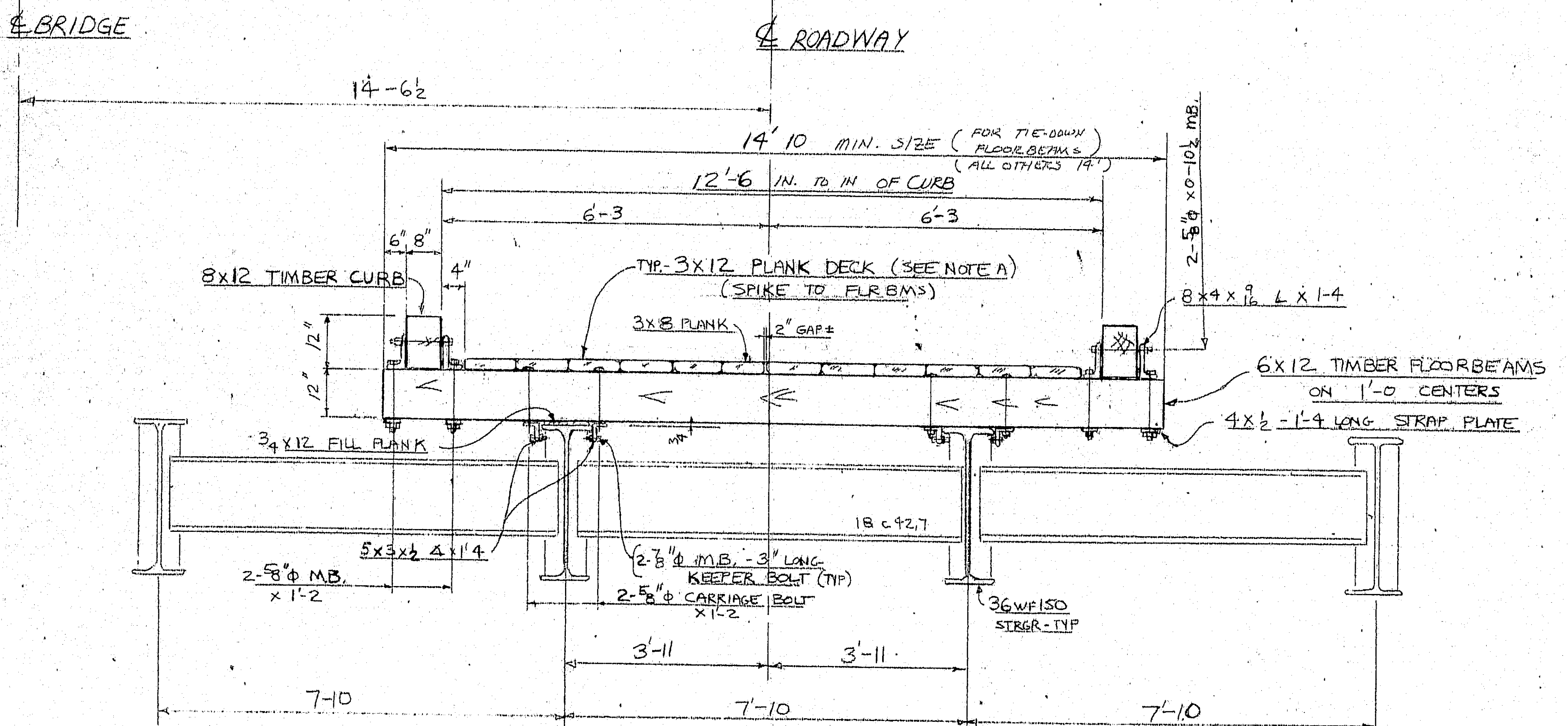
CONSULTING ENGINEERS NEW YORK, N.Y.
BY - SN, 11-4-70


℄ BRIDGE
℄ ROADWAY
14'-6½
14' 10 MIN. SIZE (FOR TIE-DOWN FLOORBEAMS) (ALL OTHERS 14')
12'-6 IN. TO IN. OF CURB
6-3
6-3
6" 8"
4"
12"
12"
8x12 TIMBER CURB
TYP.-3x12 PLANK DECK (SEE NOTE A) (SPIKE TO FLR BMS)
3x8 PLANK
2" GAP ±
2-⅝"Φ x 0-10½ MB.
8x4x 9/16 L x 1-4
6x12 TIMBER FLOORBEAMS ON 1'-0 CENTERS
4x½ - 1'-4 LONG STRAP PLATE
¾x12 FILL PLANK
5x3x½ L x 1'4
2-⅝"Φ MB. x 1'-2
2-⅞"Φ MB. - 3" LONG KEEPER BOLT (TYP)
2-⅝"Φ CARRIAGE BOLT x 1'-2
18 C 42.7
36WF150 STRGR-TYP
3'-11
3'-11
7-10
7'-10
7'-10

TYPICAL CROSS SECTION (½"=1'-0)

TIE-DOWN FLOOR BEAM SHOWN
(SEE ER98 FOR PLAN VIEW)

NOTES:

A. DO NOT END PLANK AT A TIMBER JOINT; ALSO STAGGER PLANK SO THAT ENDS OF ADJACENT PLANKS ARE, AT LEAST, 2' APART.

B. BASIC ALLOWABLE TIMBER STRESSES, FOR STRUCT. SPRUCE.
$F_b = 1200$ psi $F_{HS} = 95$ psi
7 DAY - LOAD FACTOR = 1.25

C. ALL TIMBERS TO BE ROUGH CUT.

D. FIELD TO PAINT STRIPES ON PLANK OVER ℄ OF STRINGERS TO HELP GUIDE TRUCKER.

SENT TO	DATE
D.O.	10/29
FLD.	~~10/29~~ 11-13
TH.	
E.D.	
Eoc	10/29
EIO	
SHP	

FOR GEN DWG W PIECEMARKS SEE ER98

MATERIAL DELIVERY ROAD
LOAD CONDITIONS AND DESIGN

PISCATAQUA RIVER BRIDGE
INTERSTATE 95
PORTSMOUTH, N.H. - KITTERY, ME.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION ENGINEERING DIVISION BETHLEHEM, PA.

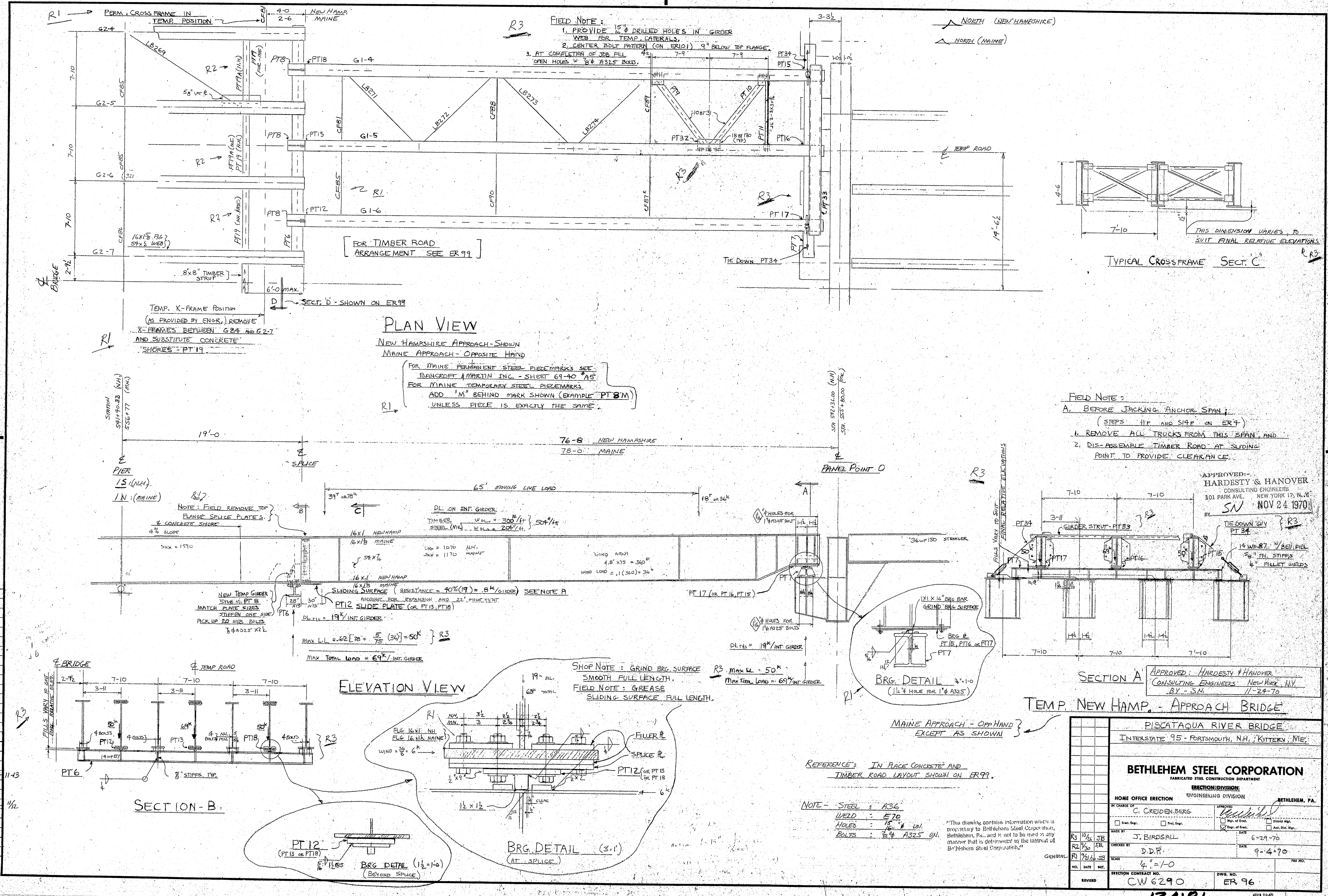
IN CHARGE OF: C. CREIDENBERG
☐ Erect. Engr. ☐ Proj. Engr.
APPROVED:
☐ Mgr. of Erect. ☑ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: J. BIRDSALL DATE: 7-1-70
CHECKED BY: D.D.P. DATE: 9-4-70
SCALE: 1"=40', ½"=1-0
FILE NO.:
ERECTION CONTRACT NO.: CW 6290
DWG. NO.: ER95

NO.	DATE	INIT.
R2	5/11/71	CC
R1	10/26	JB

REVISED

40318 (12-67)

134:80



R1 PERM. CROSSFRAME IN TEMP. POSITION

R3

FIELD NOTE:
1. PROVIDE 15/16"φ DRILLED HOLES IN GIRDER WEB FOR TEMP. LATERALS.
2. CENTER BOLT PATTERN (ON ER101) 9" BELOW TOP FLANGE.
3. AT COMPLETION OF JOB FILL OPEN HOLES W 7/8φ A325 BOLTS.

FOR TIMBER ROAD ARRANGEMENT SEE ER99

THIS DIMENSION VARIES, TO SUIT FINAL RELATIVE ELEVATIONS.

TYPICAL CROSSFRAME SECT. 'C'

TEMP. X-FRAME POSITION (AS PROVIDED BY ENGR.) REMOVE X-FRAMES BETWEEN G2-4 AND G2-7 AND SUBSTITUTE CONCRETE SHORES - PT 19

R1

PLAN VIEW

NEW HAMPSHIRE APPROACH - SHOWN
MAINE APPROACH - OPPOSITE HAND

R1 FOR MAINE PERMANENT STEEL PIECEMARKS SEE BANCROFT & MARTIN INC. - SHEET 69-40 #A5
FOR MAINE TEMPORARY STEEL PIECEMARKS ADD "M" BEHIND MARK SHOWN (EXAMPLE PT 8M) UNLESS PIECE IS EXACTLY THE SAME.

FIELD NOTE:
A. BEFORE JACKING ANCHOR SPAN; (STEPS 11F AND S14P ON ER4)
1. REMOVE ALL TRUCKS FROM THIS SPAN, AND
2. DIS-ASSEMBLE TIMBER ROAD AT SLIDING POINT TO PROVIDE CLEARANCE.

R3

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CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N. Y.
BY SN NOV 24 1970

R1? NOTE: FIELD REMOVE TOP FLANGE SPLICE PLATES.

DL. ON INT. GIRDER
TIMBER $w_{DL_1} = 300^{\#}/ft$
STEEL (ME) $w_{DL_2} = 204^{\#}/ft$ } $504^{\#}/ft$

NEW TEMP GIRDER STUB 4 PT 8
MATCH PLATE SIZES
STIFFEN ONE SIDE
PICK UP 20 WEB BOLTS
7/8φ A325 x 2 1/2

SLIDING SURFACE (RESISTANCE = 40% (19) = 8k/GIRDER) SEE NOTE A
ACCOUNT FOR EXPANSION AND 22" MOVEMENT

PT12 SLIDE PLATE (OR PT 13, PT18)

$DL_{T+S} = 19^k$/INT. GIRDER

$\text{MAX L.L.} = .62\left[78 + \frac{5}{75}(36)\right] = 50^k$ } R3

MAX TOTAL LOAD = 69^k/INT. GIRDER

ELEVATION VIEW

SHOP NOTE: GRIND BRG. SURFACE SMOOTH FULL LENGTH.
FIELD NOTE: GREASE SLIDING SURFACE FULL LENGTH.

R3 MAX LL = 50^k
MAX TOTAL LOAD = 69^k/INT GIRDER

BRG. DETAIL 3"=1-0
(1 1/16"φ HOLE FOR 1"φ A325)

SECTION 'A'

APPROVED: HARDESTY & HANOVER
CONSULTING ENGINEERS NEW YORK, N.Y.
BY - SN. 11-29-70

SECTION - B.

PT 12
(PT 13 OR PT18)
BRG DETAIL (1 1/2 = 1-0)
(BEYOND SPLICE)

BRG. DETAIL (3 = 1')
(AT SPLICE)

TEMP. NEW HAMP. - APPROACH BRIDGE

MAINE APPROACH - OPP HAND EXCEPT AS SHOWN

REFERENCE: IN PLACE CONCRETE AND TIMBER ROAD LAYOUT SHOWN ON ER99.

NOTE -
STEEL : A36
WELD : E70
HOLES : 15/16"φ U.N.
BOLTS : 7/8"φ A325 U.N.

"This drawing contains information which is proprietary to Bethlehem Steel Corporation, Bethlehem, Pa., and is not to be used in any manner that is detrimental to the interest of Bethlehem Steel Corporation."

	a	b	c
g			
b			
c			
d			
f			
g			
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k			
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s			
t			
w			
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SENT TO	DATE	
D.O.	10-29	
FLD.	10-29	11-13
TH.		
E.D.		
Eng.	10/29	11/12
EIO		
SHP		

NO.	DATE	INIT.
R3	10/26	JB
R2	9/30	JB.
R1	9/21/70	JB
REVISED		

GENERAL

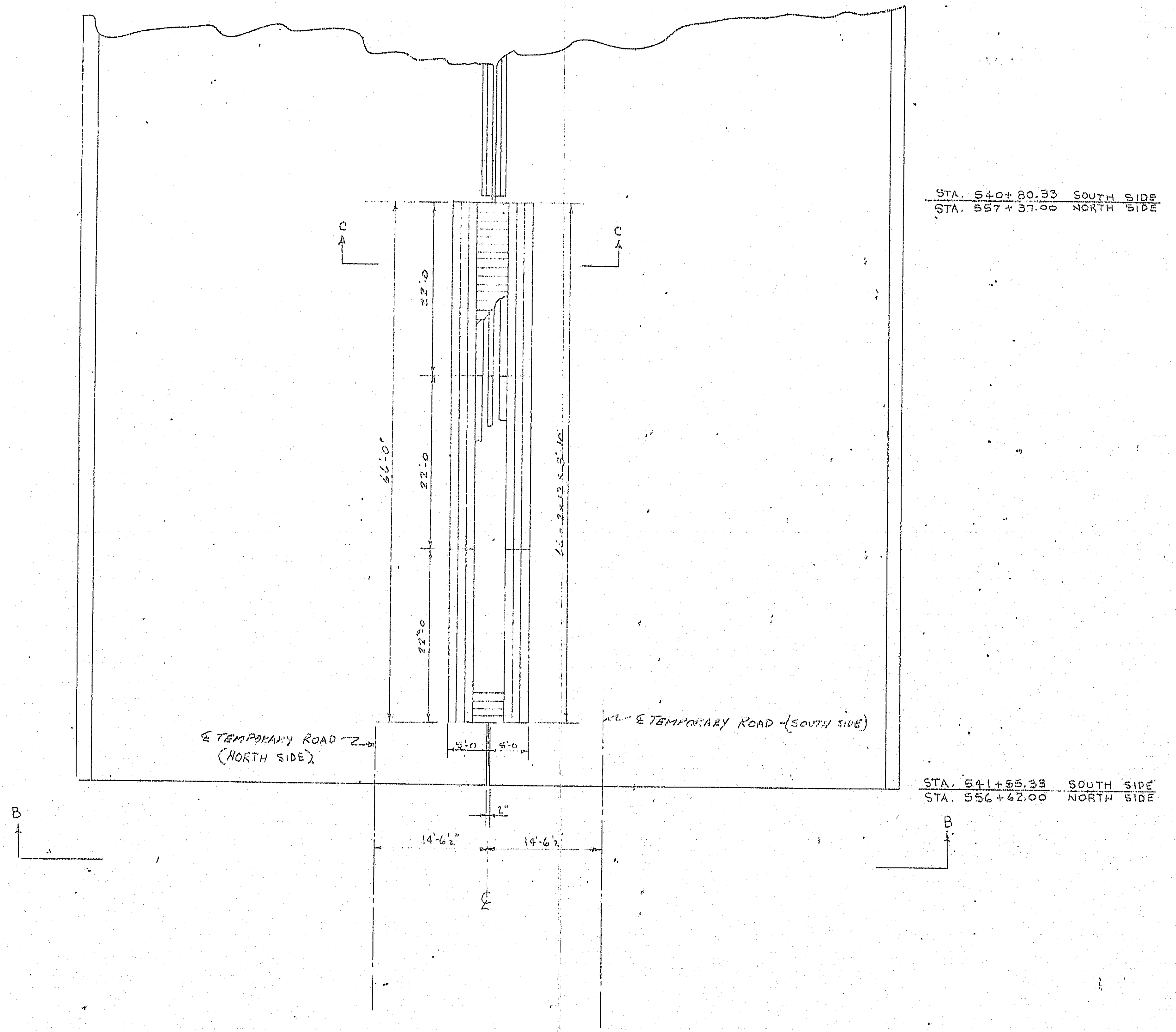
PISCATAQUA RIVER BRIDGE
INTERSTATE 95 - PORTSMOUTH, N.H. / KITTERY, ME.

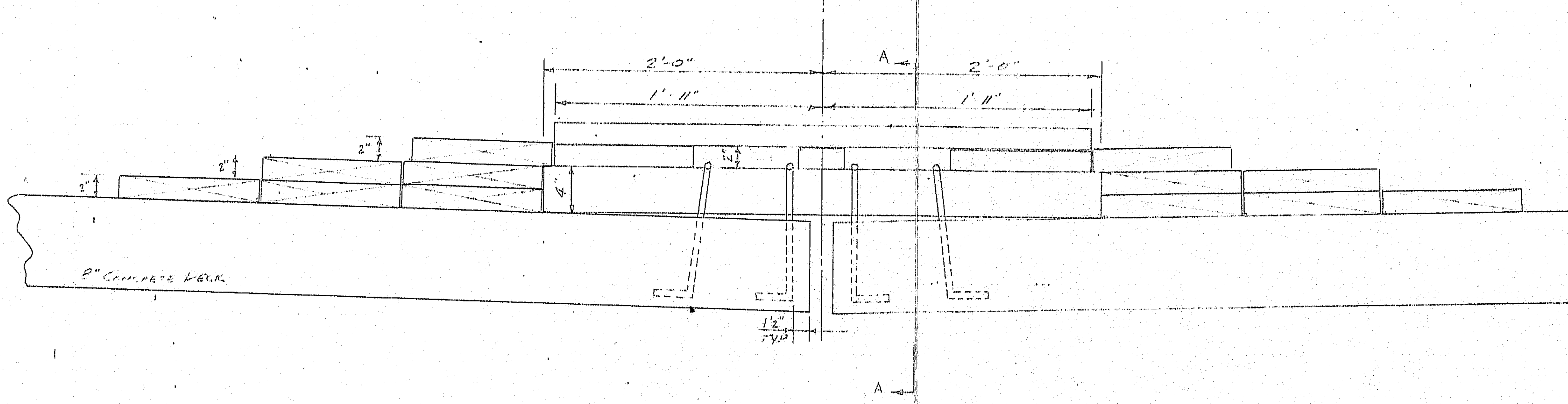
BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
~~ERECTION DIVISION~~
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG
☐ Erect. Engr. ☐ Proj. Engr.
APPROVED:
☐ Mgr. of Erect. ☐ District Mgr.
☑ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: J. BIRDSALL DATE: 6-29-70
CHECKED BY: D.D.P. DATE: 9-4-70
SCALE: 1/4" = 1-0
FILE NO.:
ERECTION CONTRACT NO.: CW 6290
DWG. NO.: ER 96

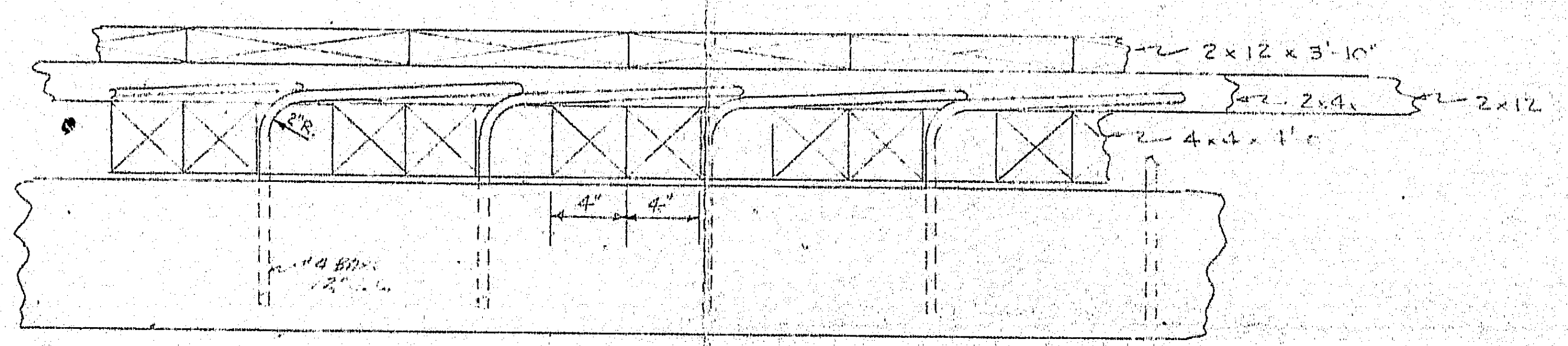
134:81

40318 (12-67)


STA. 540+80.33 SOUTH SIDE
STA. 557+37.00 NORTH SIDE
C
C
22'-0
22'-0
22'-0
66'-0"
66-2x12x3'-10"
℄ TEMPORARY ROAD (NORTH SIDE)
℄ TEMPORARY ROAD -(SOUTH SIDE)
5'-0
5'-0
2"
STA. 541+55.33 SOUTH SIDE
STA. 556+62.00 NORTH SIDE
B
B
14'-6½"
14'-6½"
℄



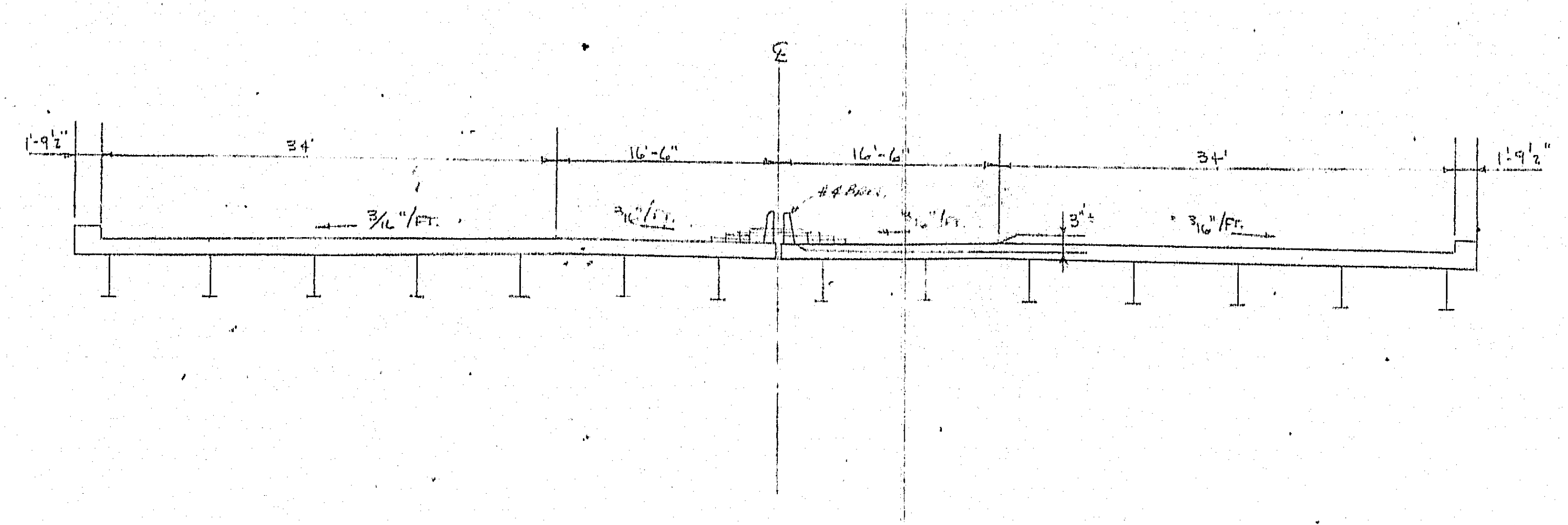
SECTION C-C



SECTION A-A
SCALE 1"=0'-8"

MATERIAL REQUIRED - 2 CROSSOVERS.

84 pcs.	2"x12"x 22'-0"
132 "	2 x 12 x 3'-10"
6 "	2 x 4 x 22'-0"
264 "	4 x 4 x 4'-0"



SECTION B-B
SCALE 1"=10'-0

Not Used

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BY SN OCT 5 1970

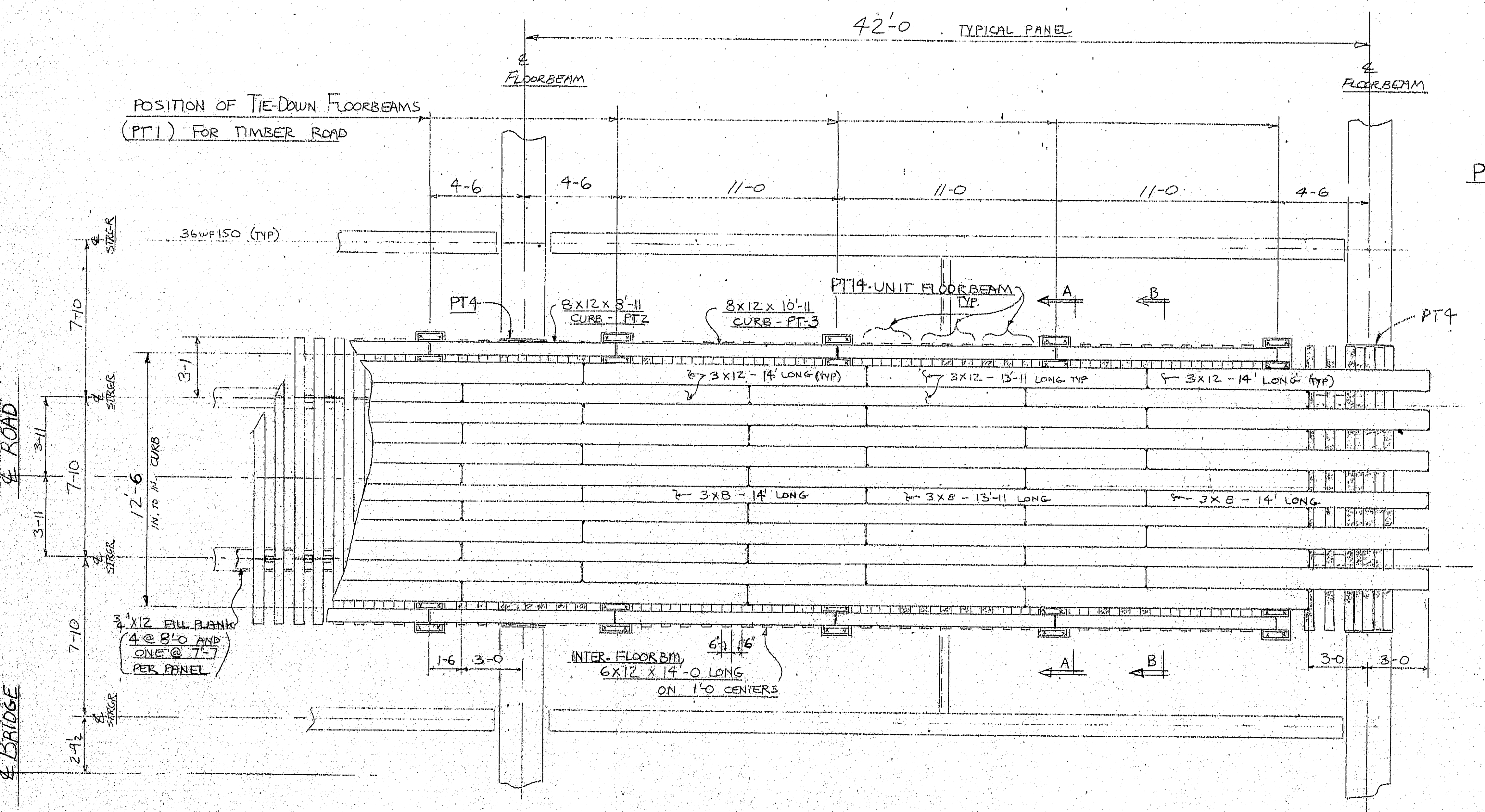
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. - KITTERY, MAINE
MEDIAN CROSSOVER

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
OPERATIONS DIVISION—ERECTION

CENTRAL DISTRICT LEETSDALE, PA.
IN CHARGE OF HAH Proj. Engr.
APPROVED U. Benn ☐ District Mgr. ☒ Asst. Dist. Mgr.
MADE BY ELC
DATE 7-15-70
CHECKED BY
DATE
SCALE As NOTED
FILE NO.
ERECTION CONTRACT NO. CW 6290
DWG. NO. ER96A
NO. DATE INIT.
REVISED

41987 (9-69)

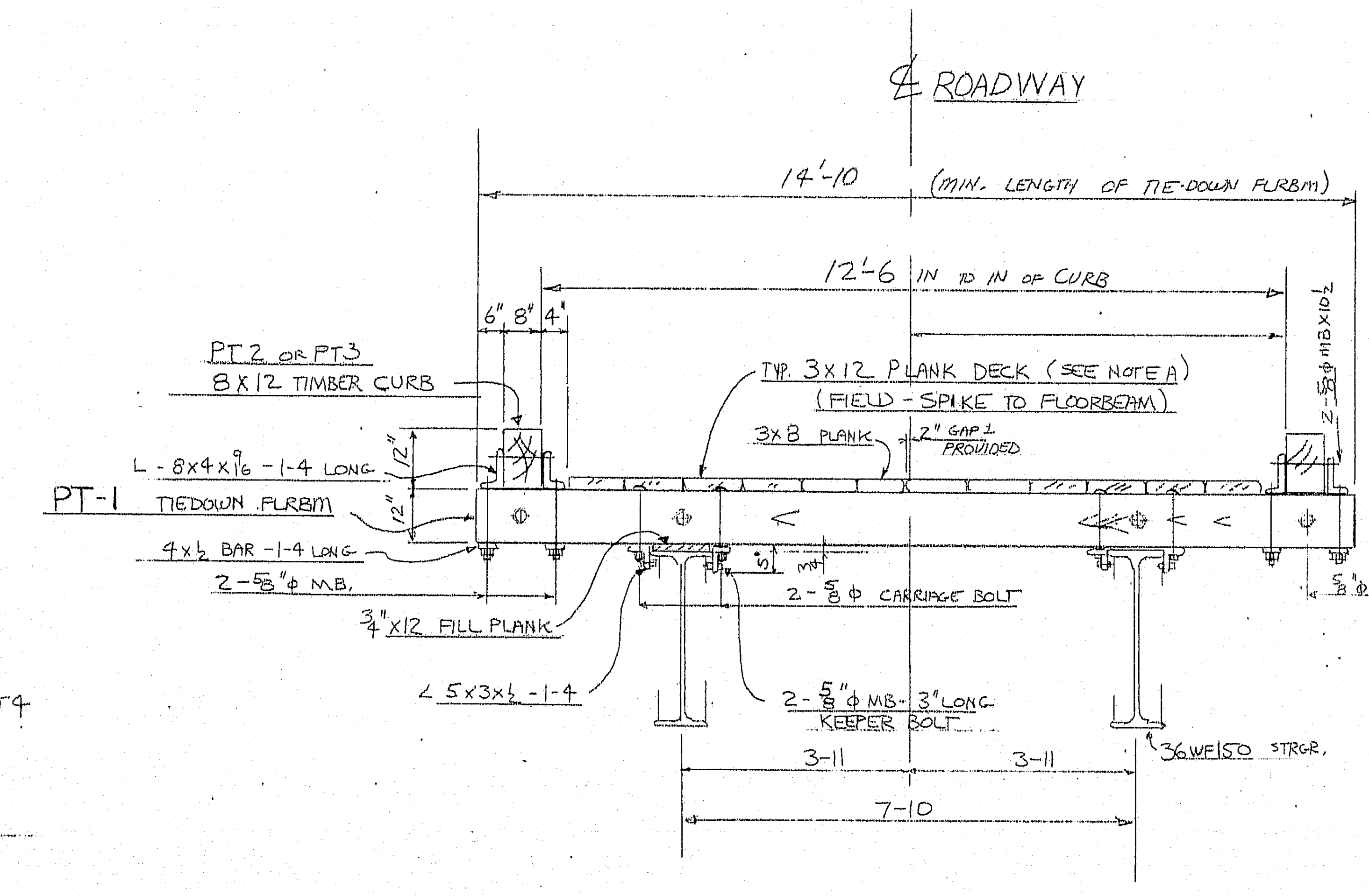
134:82



PLAN VIEW ¼"=1-0

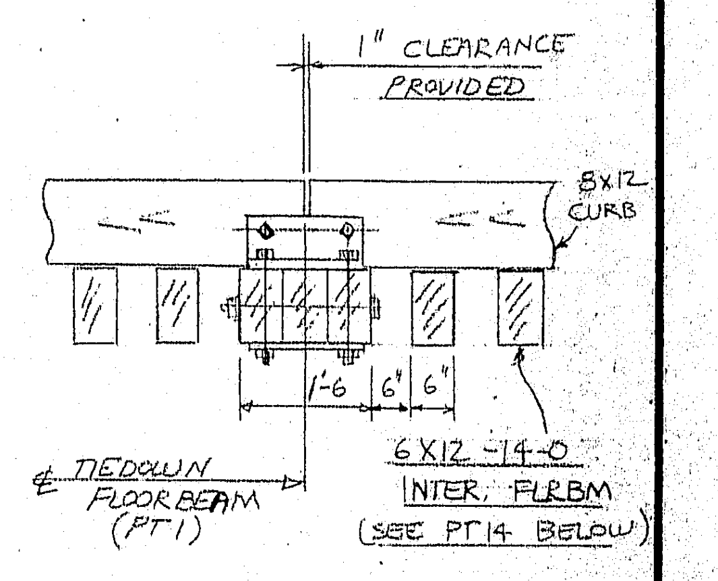
OF TIMBER ROAD IN TYPICAL PANEL

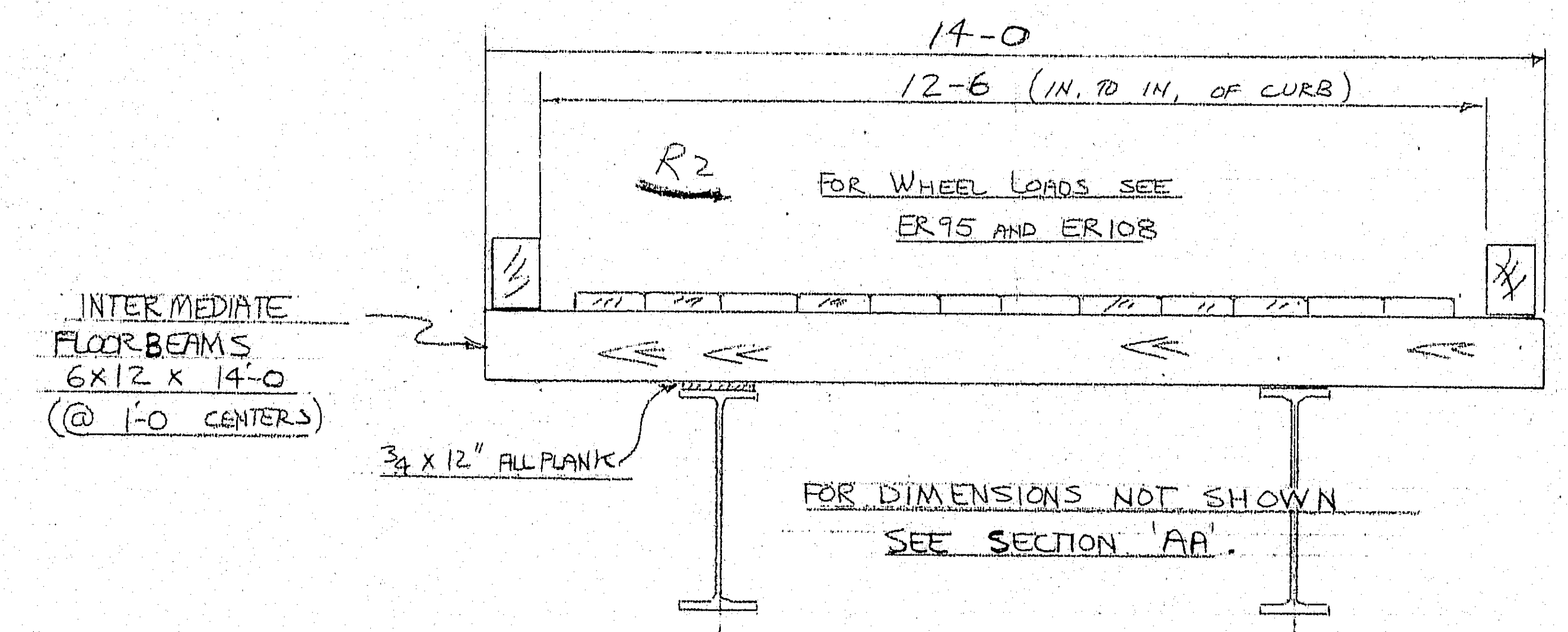
(FOR LOAD CONDITIONS & DESIGN SEE ER95)



SECTION 'AA' (½"=1-0)

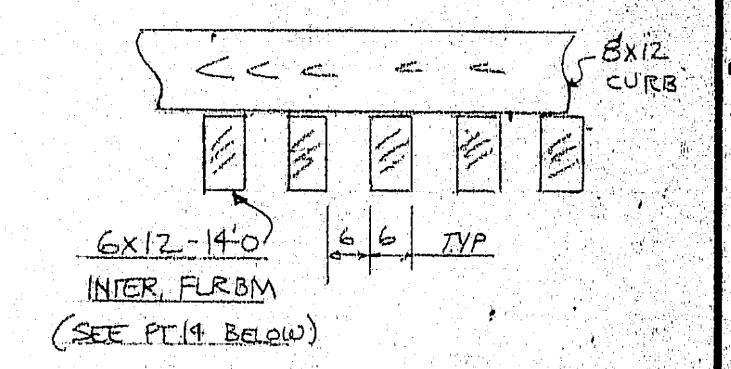
TIE-DOWN FLOORBEAM - PT1 SHOWN


1" CLEARANCE PROVIDED
8x12 CURB
1-6
6
6
℄ TIEDOWN FLOORBEAM (PT1)
6x12 - 14-0 INTER. FLRBM (SEE PT14 BELOW)


14-0
12-6 (IN. TO IN. OF CURB)
R2
FOR WHEEL LOADS SEE ER95 AND ER108
INTERMEDIATE FLOOR-BEAMS 6x12 x 14-0 (@ 1-0 CENTERS)
3/4 x 12" FILL PLANK
FOR DIMENSIONS NOT SHOWN SEE SECTION 'AA'.

SECTION - BB (½"=1-0)

INTERMEDIATE FLOORBEAM SHOWN



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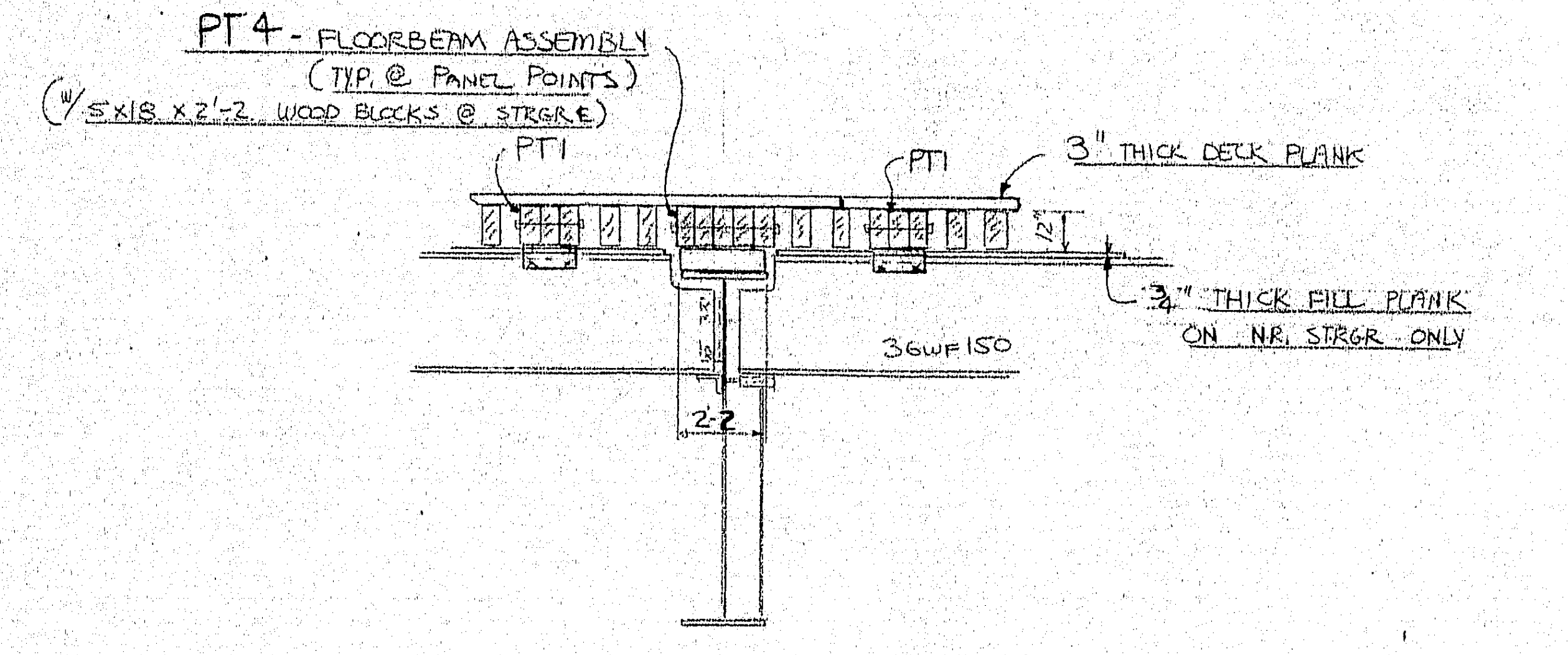
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY SN NOV 4 1970
orig.

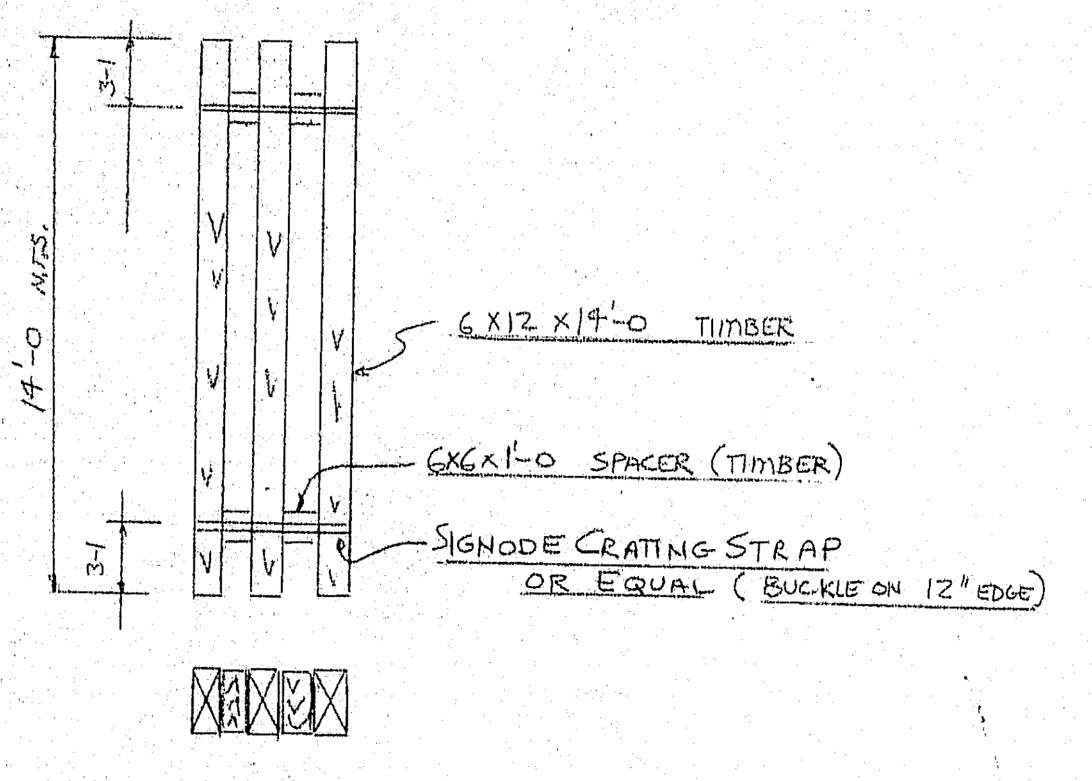
R1 → NOTE: THE PT14 UNIT FLOORBEAM IS SUGGESTED AS A MODULE THAT WOULD SIMPLIFY ROAD CONSTRUCTION. SPACER BLOCKS AND STRAPS WOULD NOT BE REQUIRED IF ANOTHER MODULE IS SELECTED.


PT4 - FLOORBEAM ASSEMBLY (TYP. @ PANEL POINTS)
(4/5x18 x2'-2 WOOD BLOCKS @ STRGR.)
PT1
PT1
3" THICK DECK PLANK
3/4" THICK FILL PLANK ON NR. STRGR. ONLY
36WF150
2-2

PARTIAL ELEVATION ¼"=1-0

TYPICAL PANEL POINT ARRANGEMENT

(SIMILAR FOR FIXED, SLOTTED, OR EXPANSION)
STRINGER CONNECTIONS



PT-14 UNIT FLOORBEAM (SEE NOTE)

APPROX WT: 990#

GENERAL DRAWING -

TIMBER ROADWAY IN TYPICAL PANEL

	a	b	c
a			
b			
c			
d			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

SENT TO	DATE
D.O.	10-29
FLD.	10-29
TH.	
E.D.	
Eac	10/29
EIO	
SHP	

NO.	DATE	INIT.	
R2	10/28	JB	
R1	9/30	JB	REMOVE PT 5

REVISED

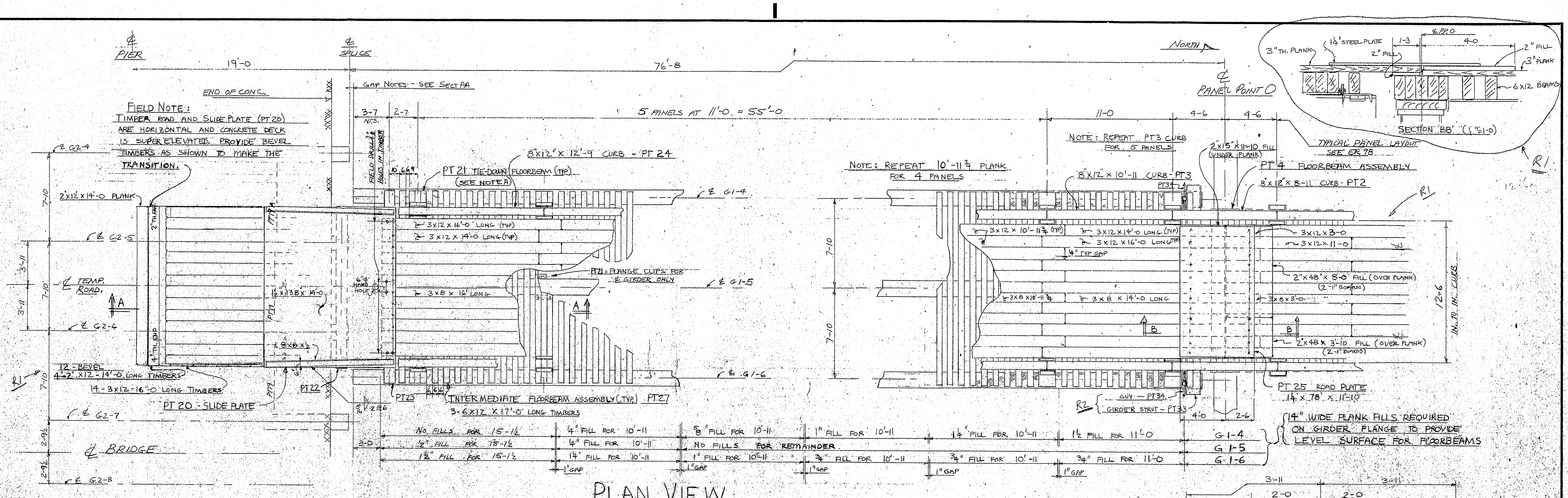
PISCATAQUA RIVER BRIDGE
INTERSTATE 95
PORTSMOUTH, NH, - KITTERY, ME.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
ENGINEERING DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED
☐ Mgr. of Erect. ☒ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: J. BIRDSALL DATE: 9-1-70
CHECKED BY: D.D.P. DATE: 9-4-70
SCALE: ¼=1-0 ½=1-0
FILE NO.:
ERECTION CONTRACT NO.: CW 6290
DWG. NO.: ER98

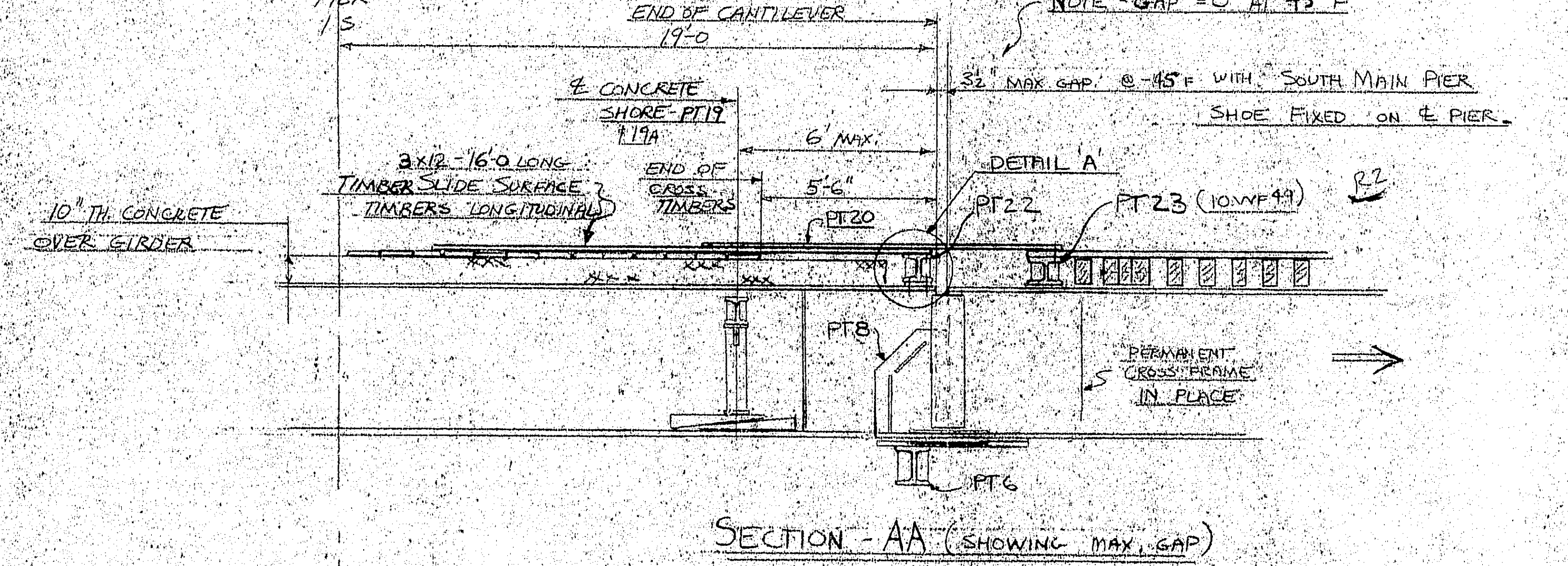
40318 (12-67)

134:83



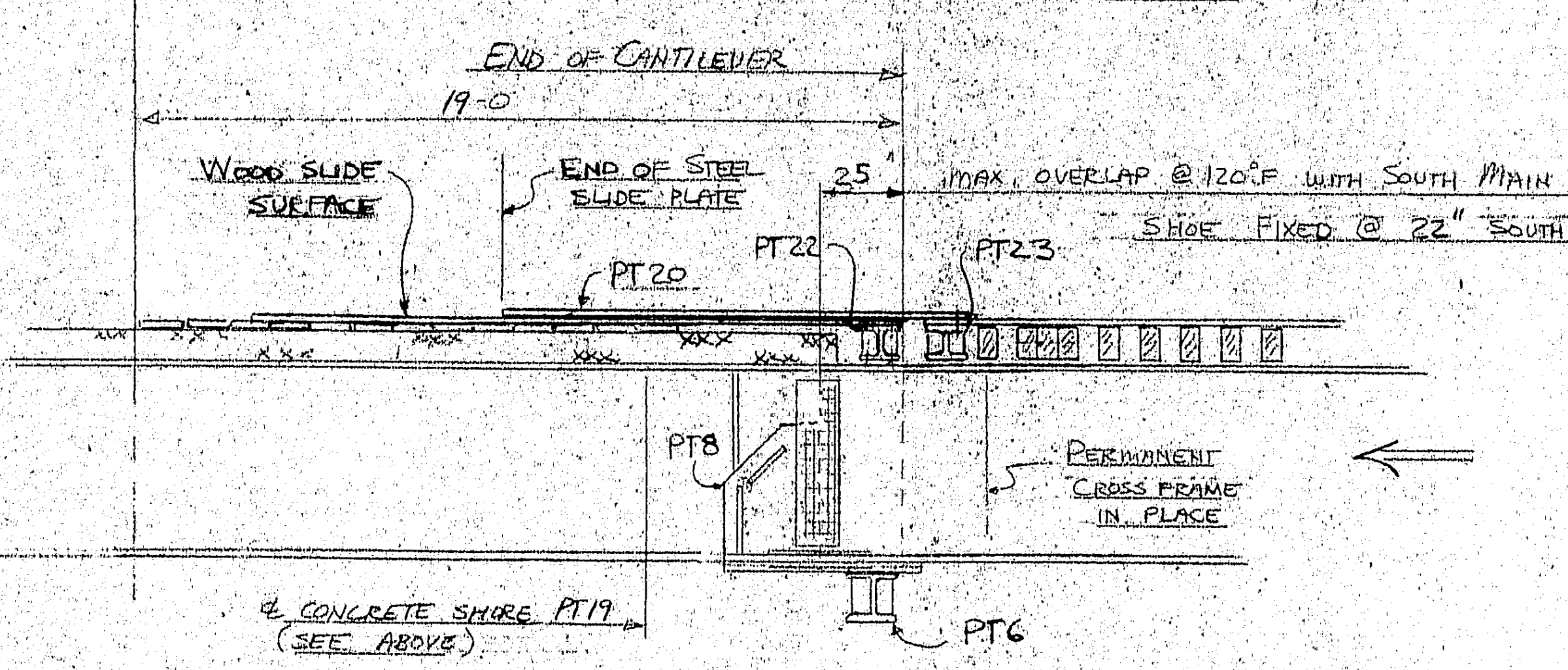
SECTION 'BB' (¾"=1-0)

PLAN VIEW



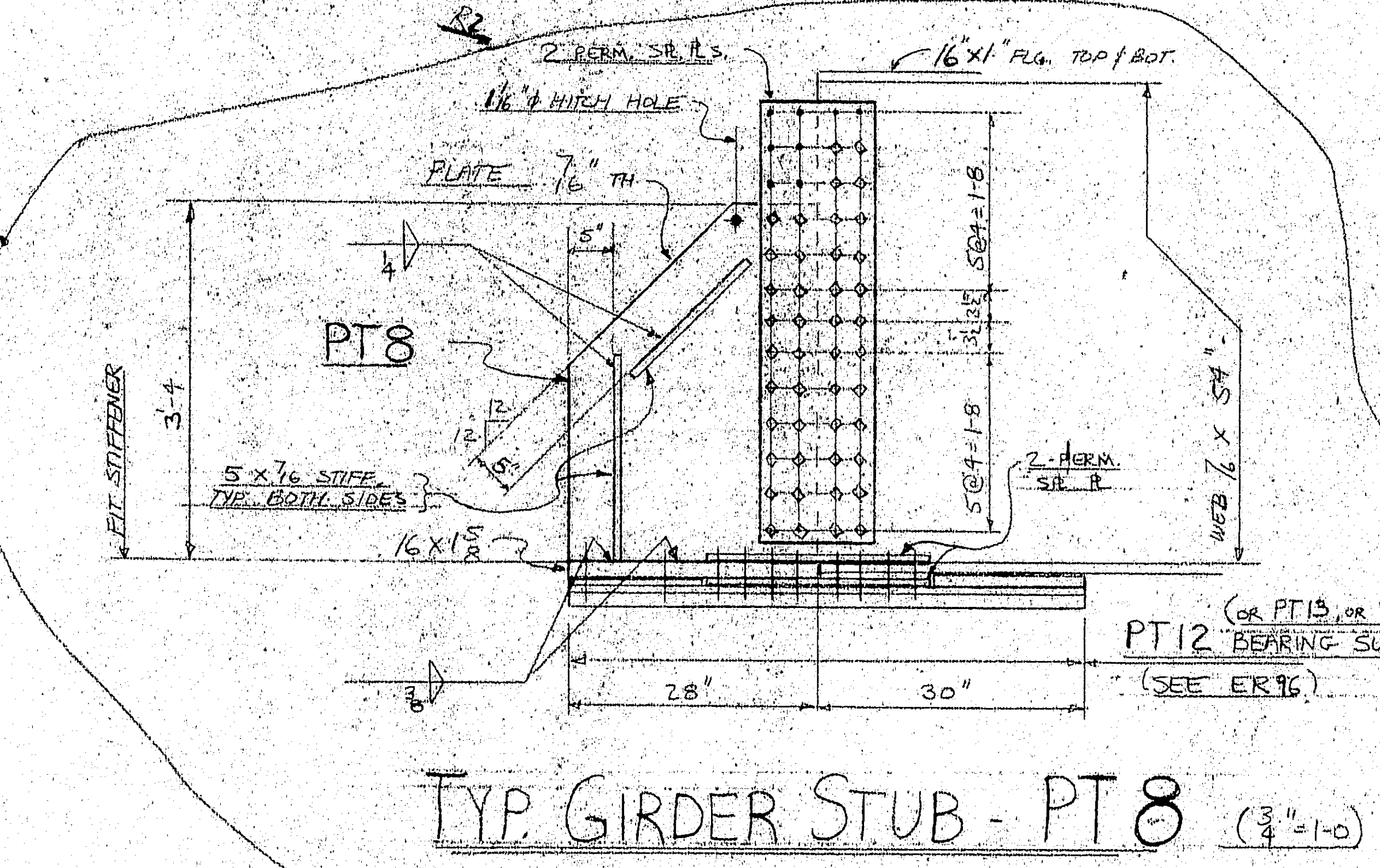
℄ PIER
END OF CANTILEVER
19'-0
NOTE - GAP = 0 AT 45° F
3½" MAX GAP @ -15° F WITH SOUTH MAIN PIER SHOE FIXED ON ℄ PIER.
℄ CONCRETE SHORE - PT19
3x12 - 16'-0 LONG TIMBER SLIDE SURFACE
END OF CROSS TIMBERS
6' MAX.
5'-6"
DETAIL 'A'
10" TH. CONCRETE OVER GIRDER
PT20
PT22
PT23 (10W F49)
PT8
PT6
PERMANENT CROSS FRAME IN PLACE
R2

SECTION - AA (SHOWING MAX. GAP)



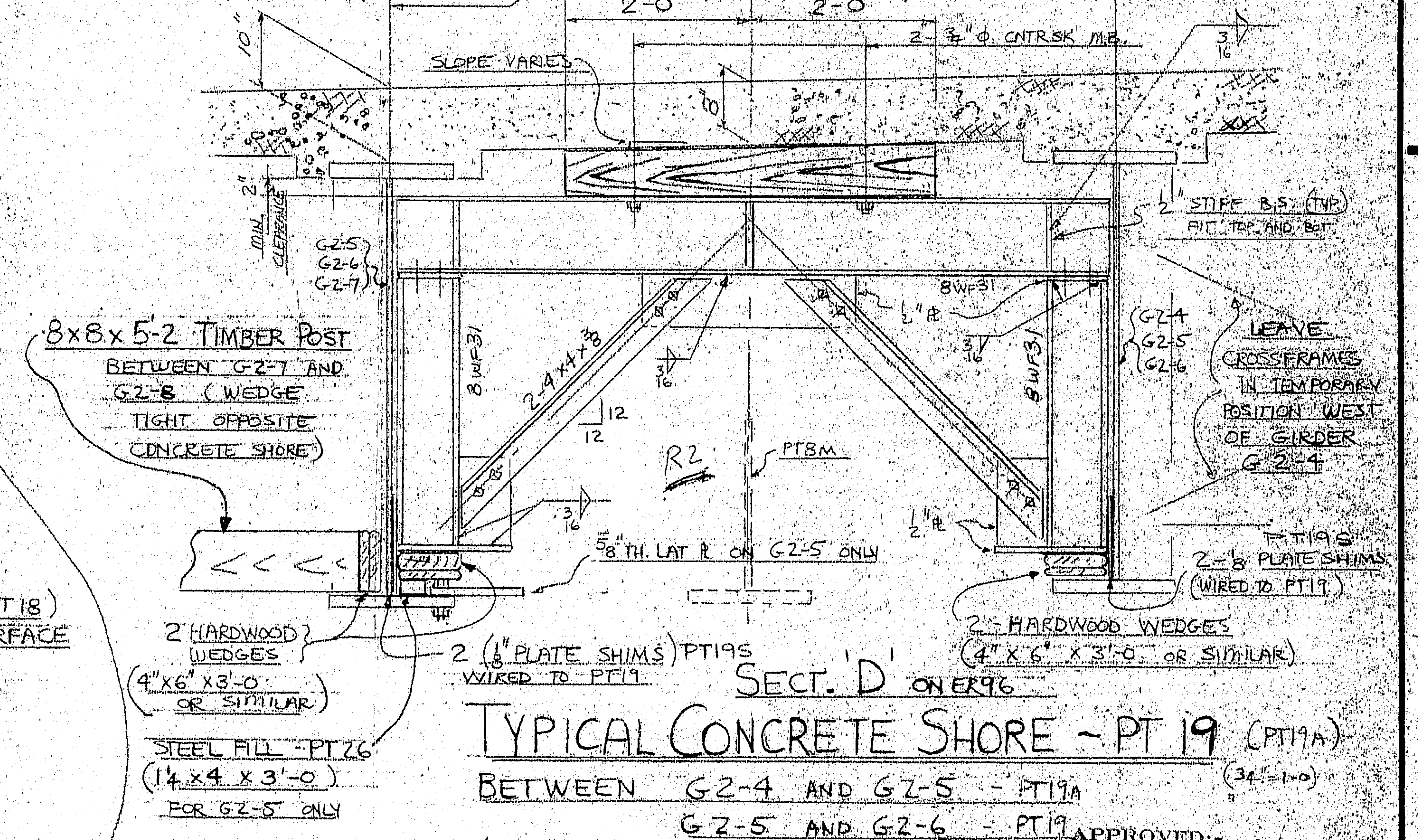
END OF CANTILEVER
19'-0
WOOD SLIDE SURFACE
END OF STEEL SLIDE PLATE
25" MAX. OVERLAP @ 120° F WITH SOUTH MAIN PIER SHOE FIXED @ 22" SOUTH OF ℄ PIER.
PT20
PT22
PT23
PT8
PERMANENT CROSS FRAME IN PLACE
℄ CONCRETE SHORE PT19 (SEE ABOVE)
PT6

SECTION - AA (SHOWING MAX. OVERLAP)



TYP. GIRDER STUB - PT8 (¾"=1-0)

ON END OF G1-4, G1-5, AND G1-6



3-11
2-0
2-0
SLOPE VARIES
¾" ϕ CNTRSK. HB.
8x8x5-2 TIMBER POST BETWEEN G2-7 AND G2-8 (WEDGE TIGHT OPPOSITE CONCRETE SHORE)
2 HARDWOOD WEDGES (4"x6" x 3'-0 OR SIMILAR)
STEEL FILL - PT26 (1¼ x 4 x 3'-0) FOR G2-5 ONLY
2 (⅛ PLATE SHIMS) PT19S WIRED TO PT19
⅝" ϕ LAT R ON G2-5 ONLY
PT8M
R2
2 - HARDWOOD WEDGES (4"x6" x 3'-0 OR SIMILAR)
2 - ⅛ PLATE SHIMS (WIRED TO PT19)
LEAVE CROSSFRAMES IN TEMPORARY POSITION WEST OF GIRDER G2-4
2 STIFF B.S.
G2-5
G2-6
G2-7

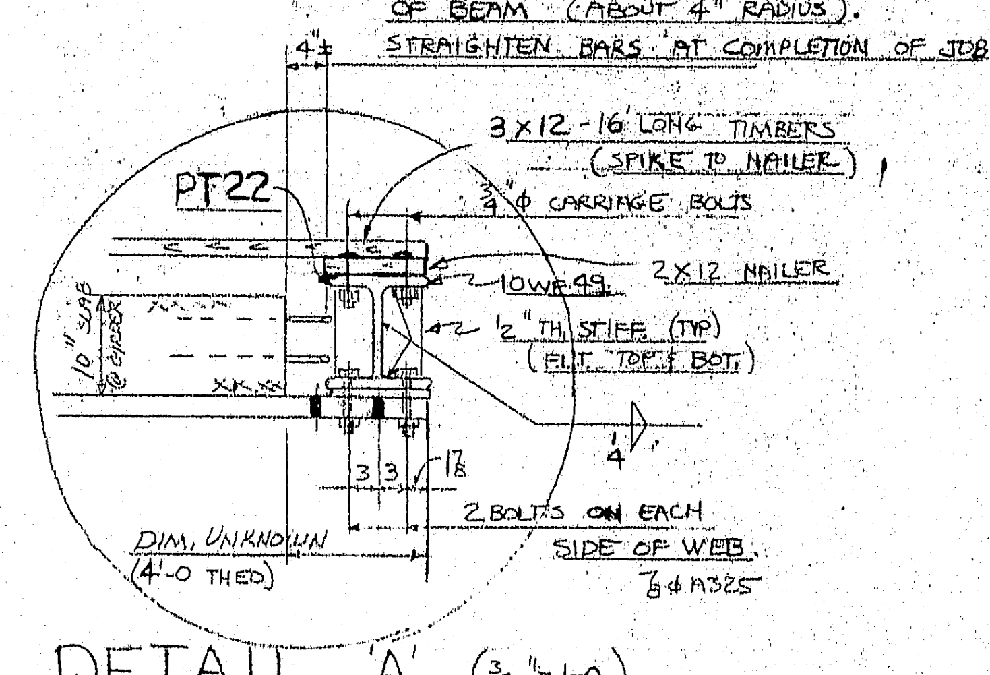
SECT. 'D' ON ER96

TYPICAL CONCRETE SHORE - PT 19 (PT19A) (¾"=1-0)

BETWEEN G2-4 AND G2-5 - PT19A
G2-5 AND G2-6 - PT19
G2-6 AND G2-7 - PT19

APPROVED HARDESTY & HANOVER
CONSULTING ENGINEERS NEW YORK, N.Y.
BY - SN 11-5-70

FIELD TO BEND #5 REBAR CLEAR OF BEAM (ABOUT 4" RADIUS). STRAIGHTEN BARS AT COMPLETION OF JOB.



PT22
3x12 - 16' LONG TIMBERS (SPIKE & NAILED)
⅝" ϕ CARRIAGE BOLTS
2x12 NAILER
10W F49
½" TH STIFF. (TYP) (FLT. TOP & BOT)
DIM. UNKNOWN (4'-0 THEO)
2 BOLTS ON EACH SIDE OF WEB ⅞" ϕ A325

DETAIL 'A' (¾"=1-0)

NOTE -
A. TIE-DOWN FLOORBEAM (PT21) IS SIMILAR TO PT1. (SHOWN OF ER98), EXCEPT
① LENGTH DIFFERENCE
② PT 21 HAS ONE SET OF FLANGE CLIPS ON ℄.
③ OUT BOARD CURB ANGLE BOLTS MUST BE CNTRSK.

MATERIAL NOTE
STEEL - A36
WELD - E70
HOLES - $\frac{15}{16}$" ϕ UN.
BOLTS - ⅞ ϕ A325 UN.

APPROVED:-
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CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY SN NOV 5 1970

GENERAL DRAWING -
TIMBER ROAD ON NEW HAMPSHIRE APPROACH

PISCATAQUA RIVER BRIDGE
INTERSTATE 95
PORTSMOUTH, N.H. - KITTERY, ME.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
~~ERECTION DIVISION~~
ENGINEERING DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG	☒ Erect. Engr. ☐ Proj. Engr.	APPROVED: ☐ Mgr. of Erect. ☒ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: J. BIRDSALL	DATE: 9-17-70	
CHECKED BY: D.D.P.	DATE: 9-29-70	
SCALE: 4=1-0 ¾=1-0 ½=1-0		FILE NO.
ERECTION CONTRACT NO.: CW 6290	DWG. NO.: ER99	

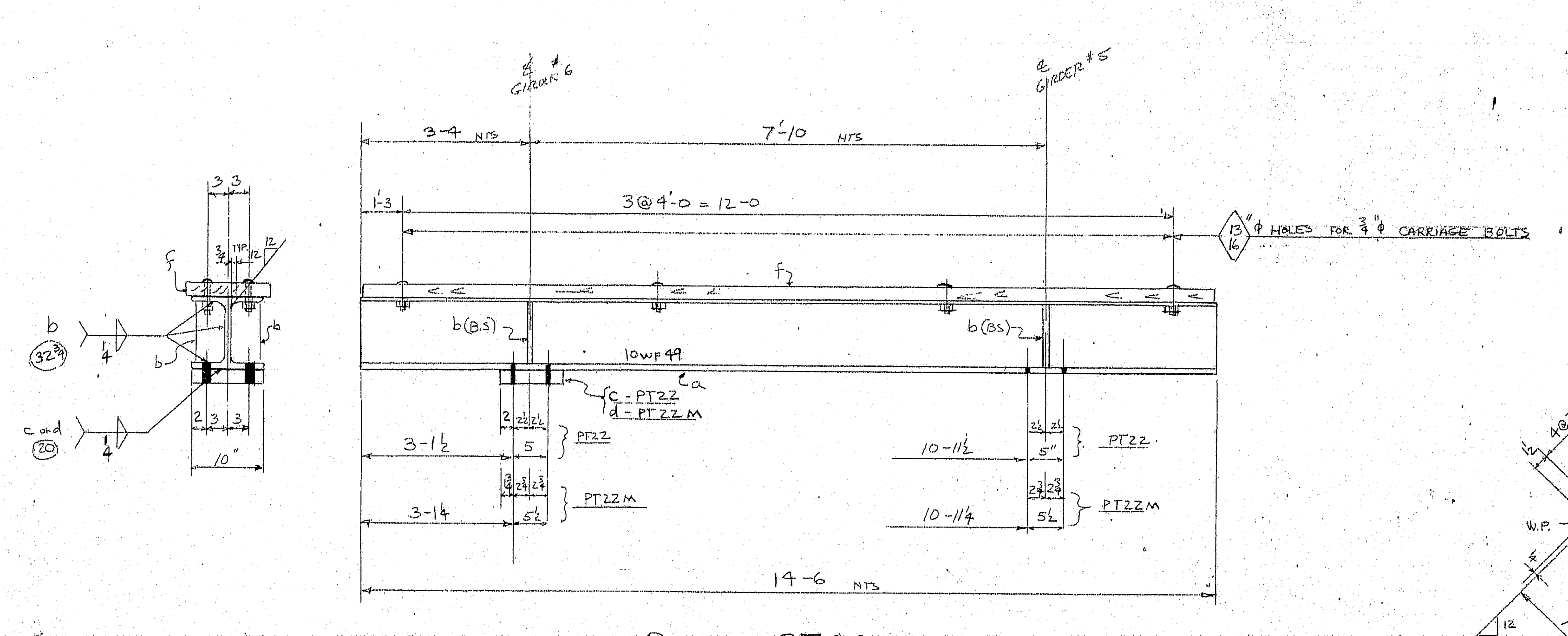
NO.	DATE	INIT.
R2	JB	10/27
R1	JB	9/30

REVISED

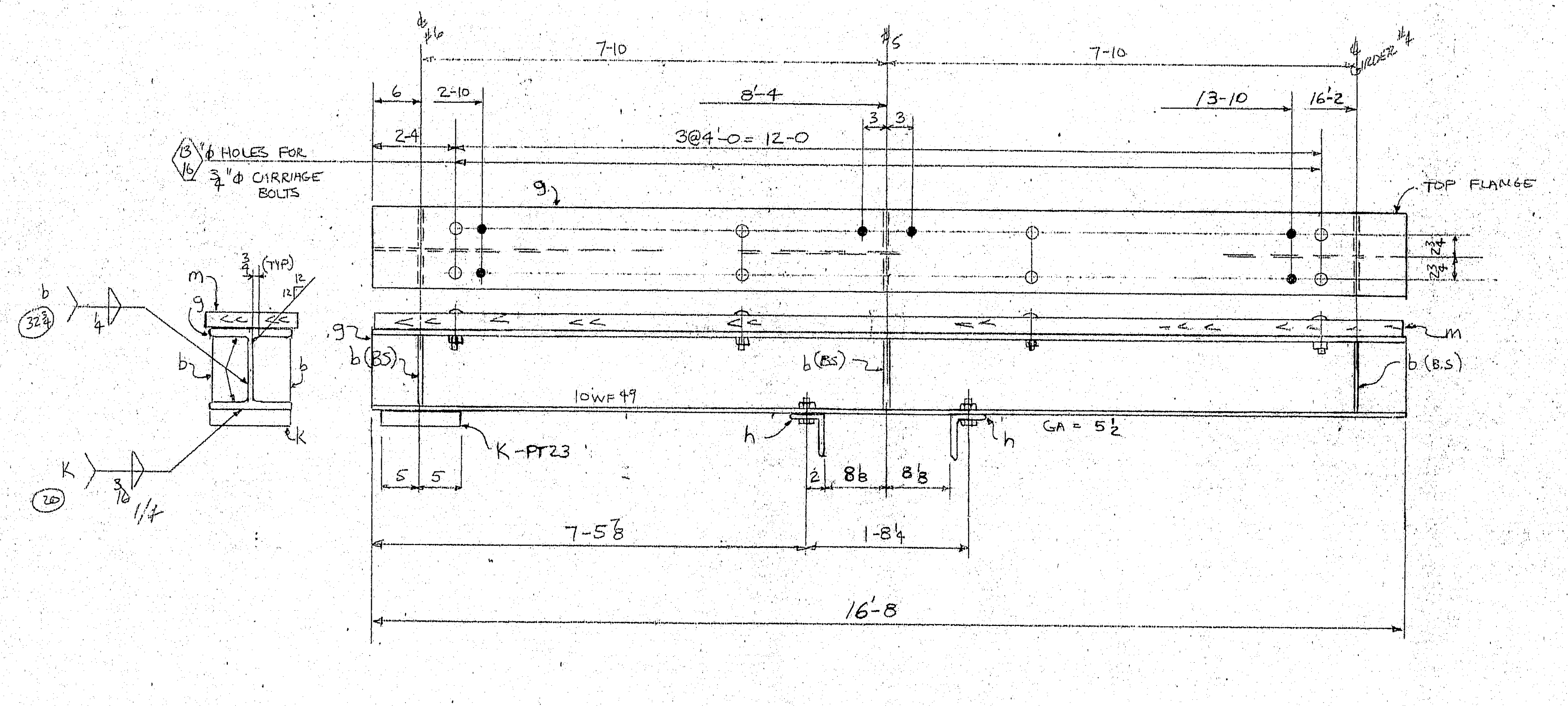
	DATE
D.O.	10-29
FLD.	10-29
TH.	
E.D.	
Eoc.	10/29
EIO.	
SHP.	

40318 (12-67)

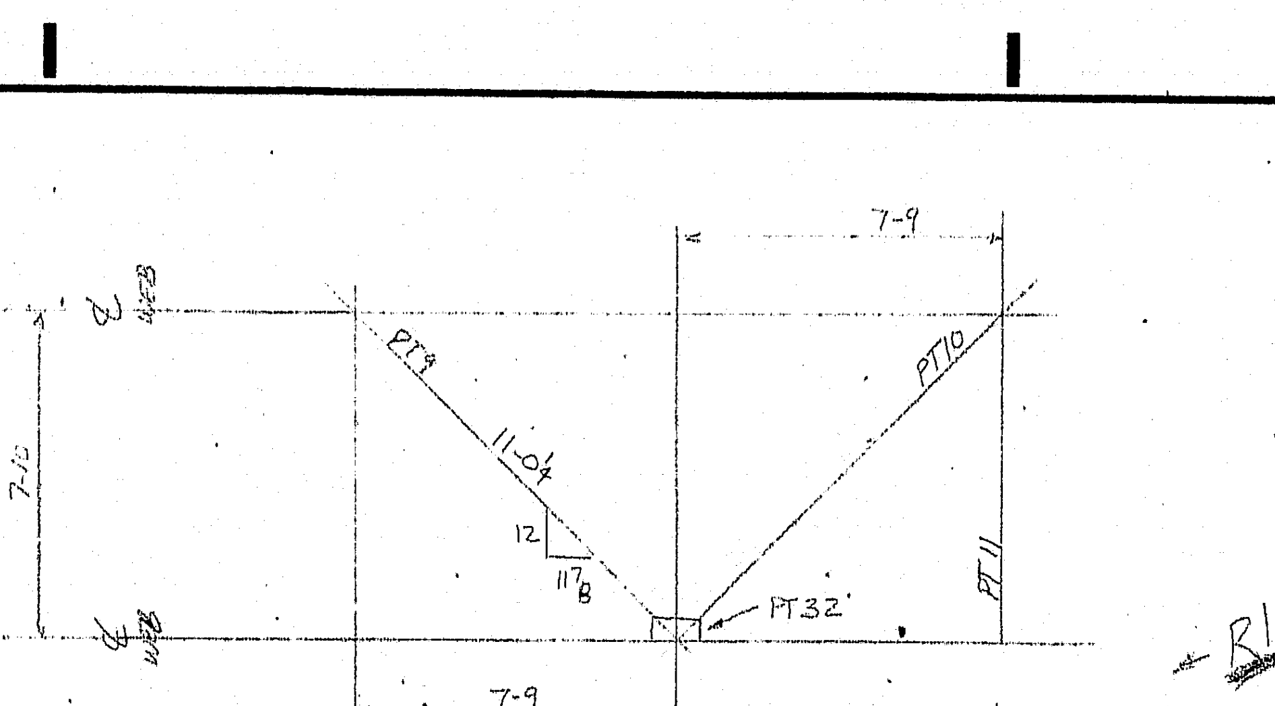
134.84



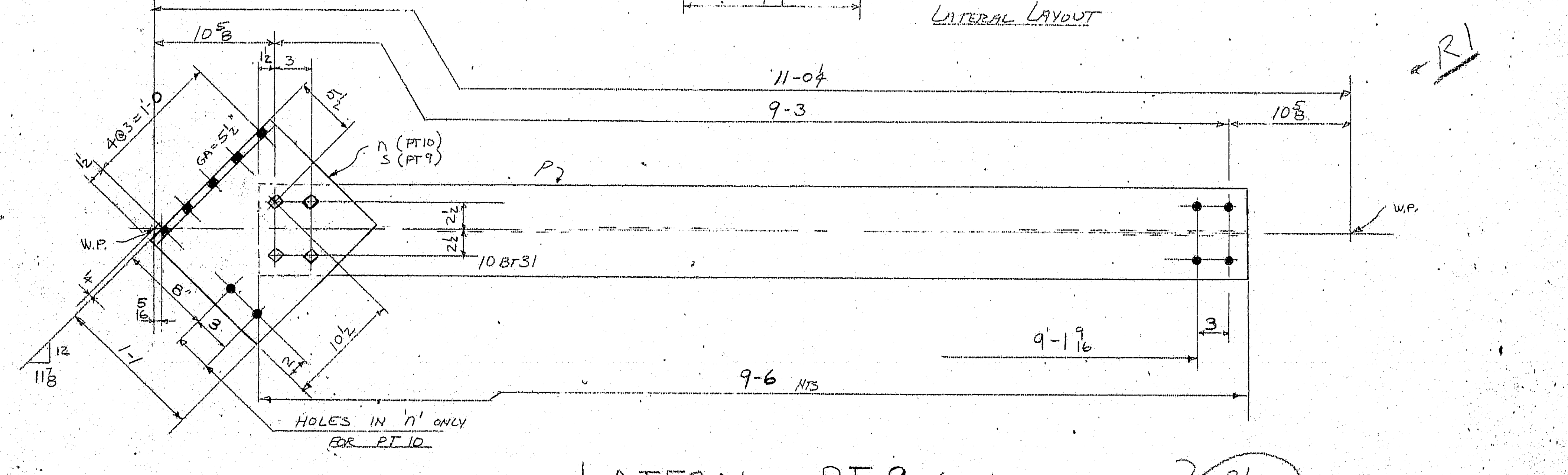
BEAM - PT22
BEAM - PT22M



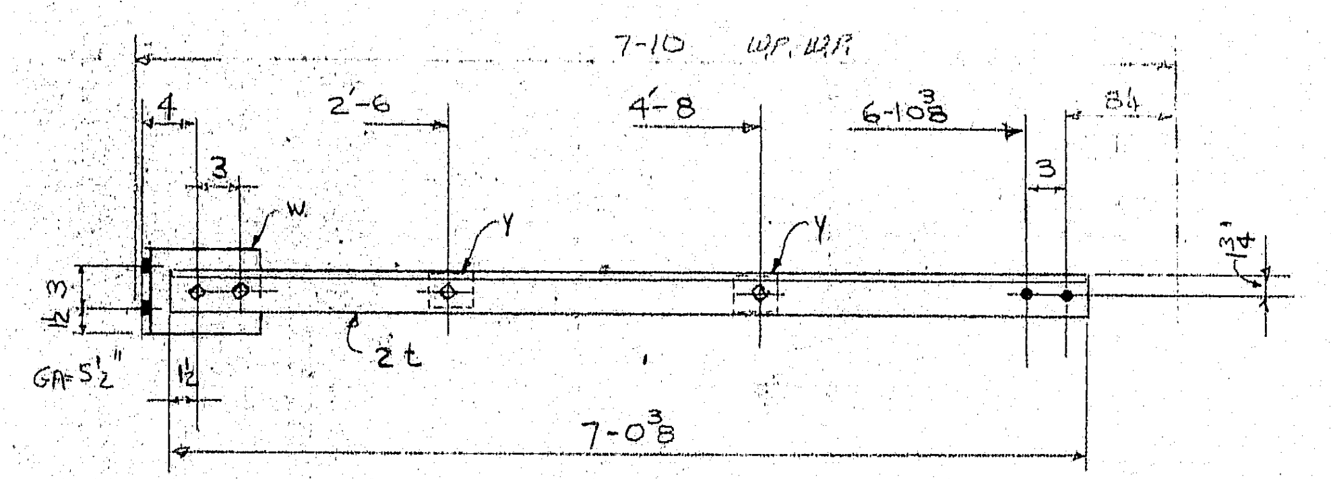
BEAM - PT23
BEAM - PT23M



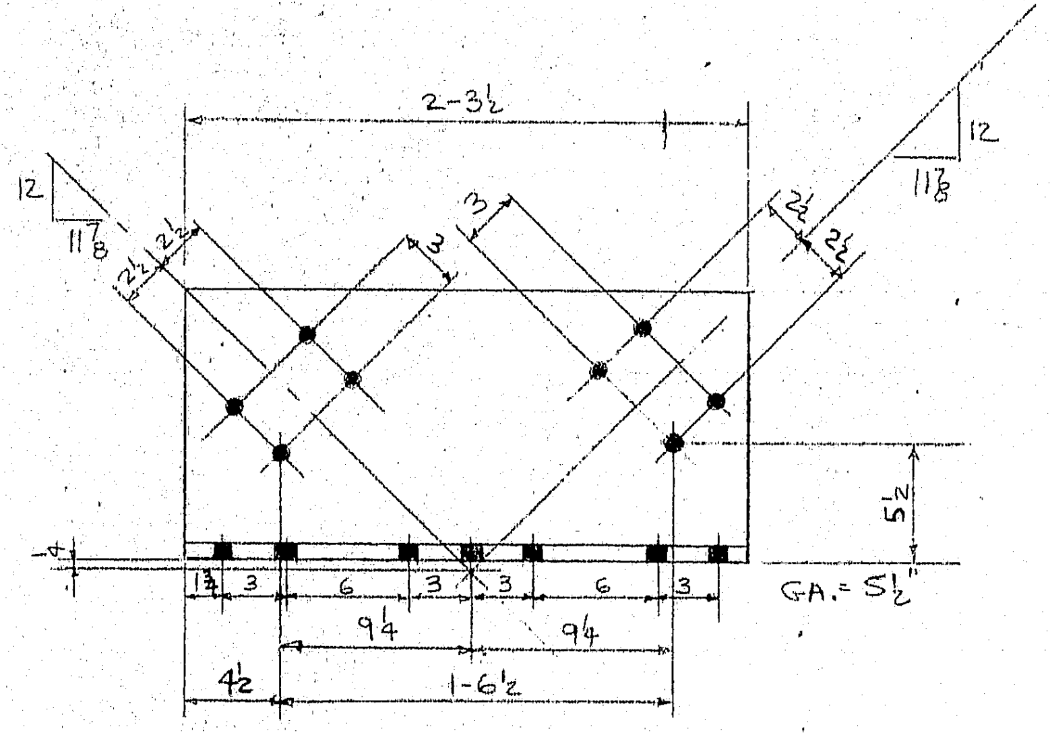
LATERAL LAYOUT



LATERAL - PT9 (1½ = 1-0)
LATERAL - PT10 [OPP. HAND EXCEPT AS NOTED]
R1



STRUT - PT11
R1



GUSSET PLATE - PT32
R1

Approx Wt. Ea.	No. Required	Description	Mark	Remarks	Disposition
	2	LATERAL	PT9		
	2	LATERAL	PT10		
	2	STRUT	PT11		
850#	ONE	BEAM	PT22		
850#	ONE	BEAM	PT22M		
1035#	ONE	BEAM	PT23		
1035#	ONE	BEAM	PT23M		
	2	GUSSET PLATE	PT32		

R1 (PT9, PT10, PT11)
R1 → (PT32)

SHOP NOTE: BT 18x130 CAN BE CUT FROM LEETSDALE TH. STOCK PIECE 7-8 (PAGE 10 OF 17).

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HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
SN NOV 24 1970

"This drawing contains information which is proprietary to Bethlehem Steel Corporation, Bethlehem, Pa., and is not to be used in any manner that is detrimental to the interest of Bethlehem Steel Corporation."

	a	b	c
a			
b			
c			
d			
f			
g			
h			
K			
m			
n			
p			
s			
t			
w			
y			

Sent to	Date
D.O.	10/26
FLD.	10-29
TH.	
E.D.	
Eac	
EIO	
SHP	10/26

For location of details shown on this sheet refer to diagrams.
ER99

SHOP BILL

Line	Weight Total	Weight Ea.	Assembly Mark	No.	Shape	Section Size	Section Size or Pounds	Section Thick	Length Ft.	Length In.	Remarks	Mill Order Length Ft.	Mill Order Length In.	Item Page	Item Line
1			BEAM - ONE PT22, ONE PT22M												
2		710	a	2	B	10	49		14	6					
3		25	b	8	BRZ	4¾		½		8⅞					
4		25	c	ONE	PL	9		1⅜		10	PT22				
5			d	ONE	PL	9		¾		10	PT22M				
6		90	f	2	M	12		2	14	6	ROUGH CUT TIMBER				
7															
8			FW	2	WD			¼	10	11					
9			FW	2	WD			5/16	1	8					
10				16	MB	¾"φ				3½	CARRIAGE BOLTS W NUTS				
11															
12															
13			BEAM - ONE PT23, ONE PT23M												
14		820	g	2	B	10	49		16	8					
15		40	b	12	BRZ	4¾		½		8⅞					
16		50	h	4	L	4	4	½		10					
17		5	K	ONE	PL	8		⅜		10	} PT23				
18			FW	ONE	WD			3/16	1	8					
19		110	m	2	M	12		2	16	8	ROUGH CUT TIMBER				
20			FW	2	WD			¼	16	4½					
21		10		16	MB	¾"φ				3½	CARRIAGE BOLTS W/NUTS				
22				8	325	⅞"φ				2½					
23				8	M	⅞φ					HHN				
24															
25			2 LATERALS PT9 - 2 LATERALS PT10 (OPP HD)												
26		294	P	4	BT	10	31		9	6					
27			n	2	BT	18	130		1	3	(PT10 ONLY) (13") 36 WF 260 STOCK				
28			S	2	BT	18	130		1	3	(PT9 ONLY) (13") 36 WF 260 STOCK				
29				16	A325	⅞φ			0	3	WITH HHN				
30															
31			2 STRUTS - PT 11												
32			t	4	L	3	3	5/16	7	0⅜					
33	R1		w	2	BT	18	130		0	6	(8½ DEEP) (36 WF 260 STOCK)				
34			y	4	BR	3		1	0	3	FILL				
35				8	A325	⅞φ			0	3	W/ HHN				
36															
37			2 - GUSSET PLATES PT32												
38			PT32	2	BT	18	130		2	3½	(13" DEEP) (36 WF 260 STOCK)				
39															
40															
41															
42															

MATERIAL A36
OPEN HOLES 15/16 φ UN
RIVETS
BOLTS ⅞"φ A325 V.N.
WELDING E70
PAINT PER ERECT SPEC PARA #1

No.	Date	Init.
R1	10/26	JB.

REVISED

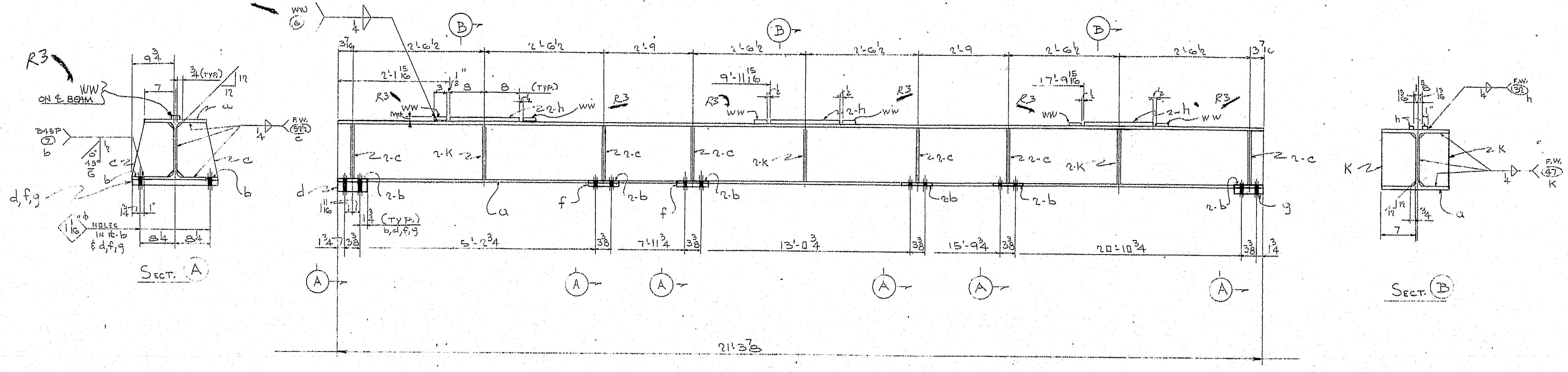
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. - KITTERY, ME.
ROADWAY - DETAILS

BETHLEHEM STEEL CORPORATION

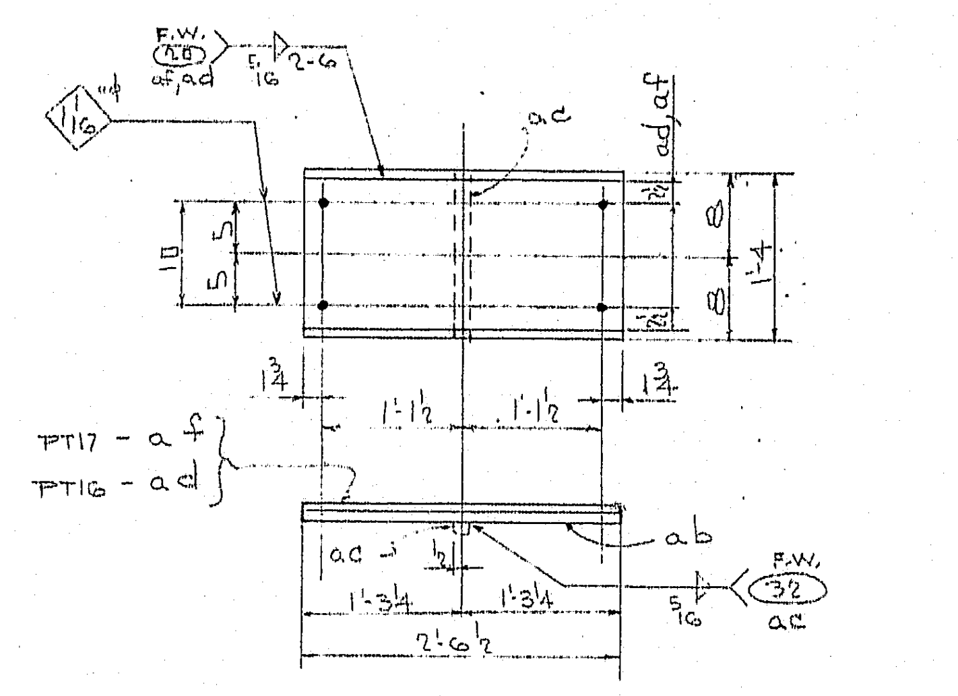
FABRICATED STEEL CONSTRUCTION DEPARTMENT
[redacted]
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED: ☐ Mgr. of Erect. ☐ District Mgr. ☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: J. BIRDSALL DATE: 9-23-70
CHECKED BY: J. STORI DATE: 9-23-70
SCALE: 1"=1-0 UN.
FILE NO.
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER101

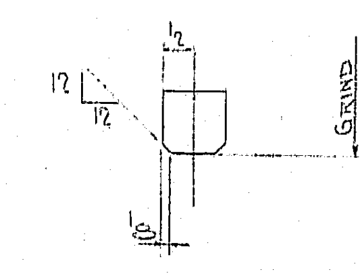
134:85



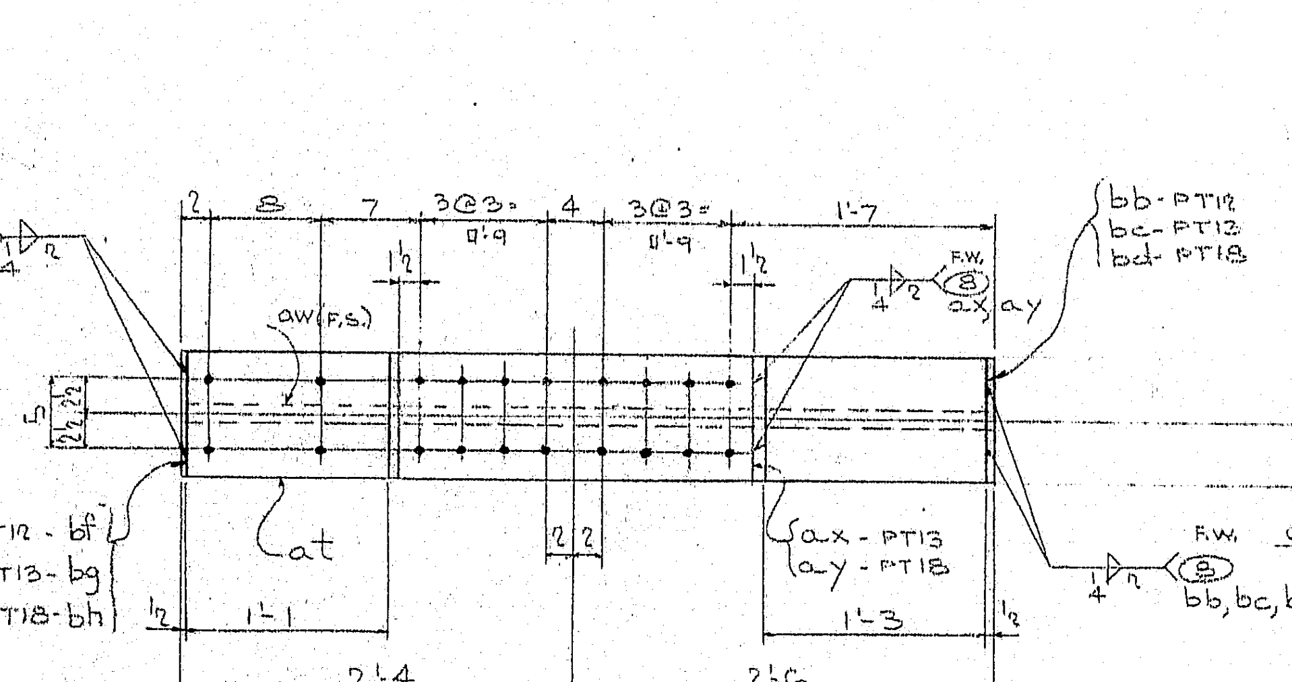
SUPPORT BEAM - PT7



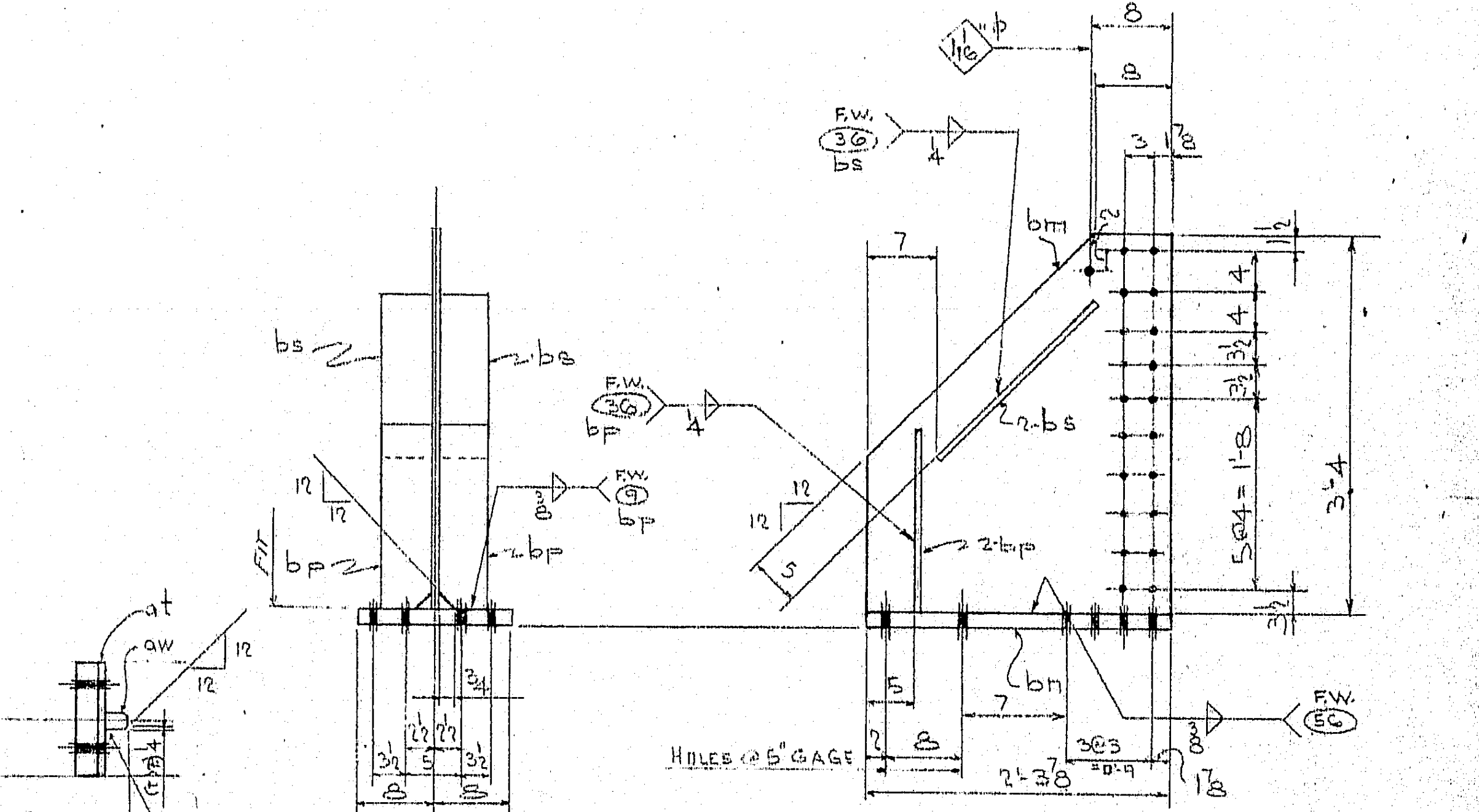
BEARING PL. - PT15
BEARING PL. - PT16
BEARING PL. - PT17



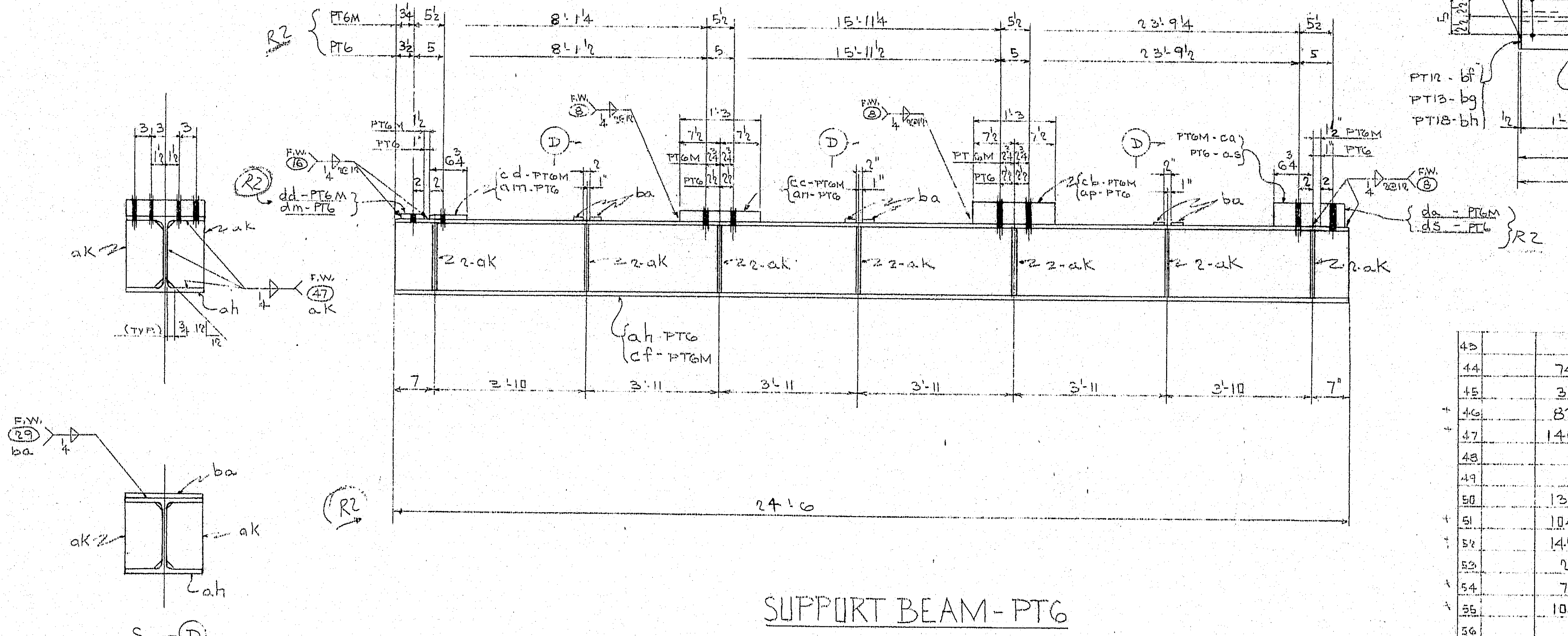
DETAIL OF - ac



SLIDE PLATE - PT12
SLIDE PLATE - PT13
SLIDE PLATE - PT18



GIRDER STUB - PT8



SUPPORT BEAM - PT6
SUPPORT BEAM - PT6M

	a	b	c
a			
b			
c			
d			
e			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

SENT TO	DATE
D.O.	10/29
FLD.	10/29
TH.	
E.D.	
Eac	10/29
EIO	
SHP	10/26

For location of details shown on this sheet refer to diagrams.

ER96

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	MILL ORDER ITEM PAGE	MILL ORDER ITEM LINE
1					2 - SUPPORT BEAMS - PT7										
2			a	2	B	14	87		21	3 7/8					
3			b	24	BR	2 3/4		11/16	0	6 7/8					
4			c	24	PL	9 3/4		5/8	1	0 5/8					
5			d	2	BR	6 7/8		13/16	1	8	(B.U.)				
6			f	4	BR	6 7/8		11/16	1	8					
7			g	2	BR	6 7/8		1 7/16	1	8					
8			h	12	BRZ	1		5/8	1	4					
9			K	12	PL	7		5/8	1	0 5/8					
10	R3 →		WW	12	BRZ	1 1/2		3/4	0	3					
11			B45P	2	WD			1/2	7	0					
12	R3 →		F.W	2	WD			1/4	95	0					
13				8	SB	7/8			0	2 1/2					
14				4	SB	7/8			0	3 1/4					
15				4	SB	7/8			0	4					
16															
17															
18						6 - BEARING PLATES - PT15, PT16, PT17 - 2EA									
19															
20		69	ab	6	PL	16		1/2	2	6 1/2					
21		6	ac	6	BR	1		1	1	4					
22		145	ad	2	PL	15		1 3/8	2	6 1/2	PT16				
23		130	af	2	PL	15		5/8	2	6 1/2	PT17				
24			F.W.	4	WD			5/16	4	4	PT16, PT17				
25			F.W.	2	WD			5/16	2	8	PT15				
26			dd	ONE	BRZ	4		1 1/2	1	2 1/2	(PT 6M)			} R2	
27			dm	ONE	BRZ	4		1 3/16	1	2 1/2	(PT 6)				
28						2 - SUPPORT BEAM - PT6, PT6M 1 EA.									
29		2045	ah	ONE	B	14	87		24	6	PT6			} R2	
30		2045	cf	ONE	B	14	87		24	6	PT6M				
31		30	am	ONE	PL	6 3/4		1 3/16	1	2 1/2	PT6				
32		123	an	ONE	PL	14 1/2		2 5/8	1	3	(B.U.) PT6				
33		135	ap	ONE	PL	14 1/2		4	1	3	(B.U.) PT6				
34		129	as	ONE	PL	6 3/4		4 1/2	1	2 1/2	(B.U.) PT6				
35			F.W.	2	WD			1/4	73	4				} R2	
36		4	ba	12	BRZ	2		1/2	1	2 1/2					
37		16	aK	28	PL	7		5/8	1	0 5/8					
38			ca	ONE	PL	6 3/4		2 1/4	1	2 1/2	(B.U.) PT6M				
39			cb	ONE	PL	14 1/2		3 3/4	1	3	(B.U.) PT6M				
40			cc	ONE	PL	14 1/2	R1	3	1	3	(B.U.) PT6M				
41			cd	ONE	PL	6 3/4		1 1/2	1	2 1/2	PT6M				
42			da	ONE	BRZ	4		2 1/4	1	2 1/2	(BU) PT6M			} R2	
			ds	ONE	BRZ	4		4 1/2	1	2 1/2	(BU) PT 6				
43						3 - SLIDE PLATES 1 EA PT12, PT13, PT18									
44		74	at	3	PL	9		1/2	4	10					
45		37	aw	3	BRZ	1 1/2		1 1/2	4	10					
46		83	ax	ONE	PL	9		1 1/4	2	1	PT13				
47		146	ay	ONE	PL	9		1 3/4	2	1	PT18				
48			F.W.	ONE	WD			1/4	10	4	PT12				
49			F.W	2	WD			1/4	11	8	PT13, PT18				
50		131	bb	ONE	PL	9		1 1/4	1	3	PT12				
51		104	bc	ONE	PL	9		2 1/2	1	3	PT13				
52		142	bd	ONE	PL	9		3	1	3	PT18 B.U.				
53		21	bf	ONE	PL	9		5/8	1	1	PT12				
54		73	bg	ONE	PL	9		1 7/8	1	1	PT13				
55		108	bh	ONE	PL	9		2 3/8	1	1	PT18				
56															
57						3 - GIRDER STUBS - PT8									
58		139	bm	3	PL	27 7/8		7/16	3	4					
59		204	bn	3	PL	16		1 5/8	2	3 7/8					
60		12	bp	6	BR	5		7/16	1	7					
61		13	bs	6	BR	5		7/16	1	6					
62			F.W.	3	WD			1/4	12	0					
63			F.W.	3	WD			3/8	6	2					

REQUIRED LIST

NO. REQ'D	MARK	DESCRIPTION	REMARKS	WT. EA. PC.	DISPOSITION
2	PT7	SUPPORT BEAM		2590	
2	PT15	BEARING PLATE		75	
2	PT16	BEARING PLATE		220	
2	PT17	BEARING PLATE		205	
ONE	PT12	SLIDE PLATE		263	
ONE	PT13	SLIDE PLATE		371	
ONE	PT18	SLIDE PLATE		507	
3	PT8	GIRDER STUBS		393	
ONE	PT6	SUPPORT BEAM		2710	
ONE	PT6M	SUPPORT BEAM		2710	

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY SN orig.
NOV. 4. 1970

MATERIAL A36
OPEN HOLES 15/16" ϕ UNLESS NOTED
~~RIVETS~~
BOLTS
WELDING E70 L.H.E.
PAINT PER ERECTION SPEC'S PARA. #1

NO.	DATE	INIT.
R3	10/28	JB
R2	10/26	JB
R1	9/29	CEM

REVISED

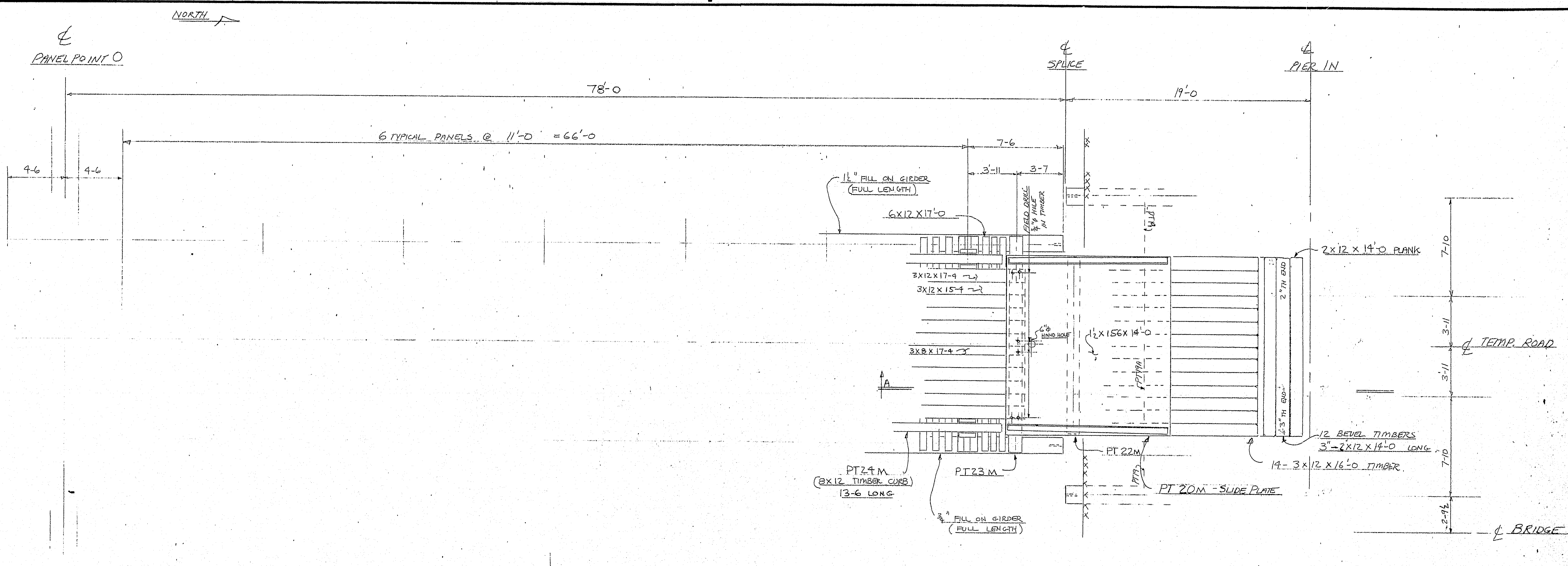
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. - KITTERY, MAINE
TIMBER ROADWAY DETAILS -

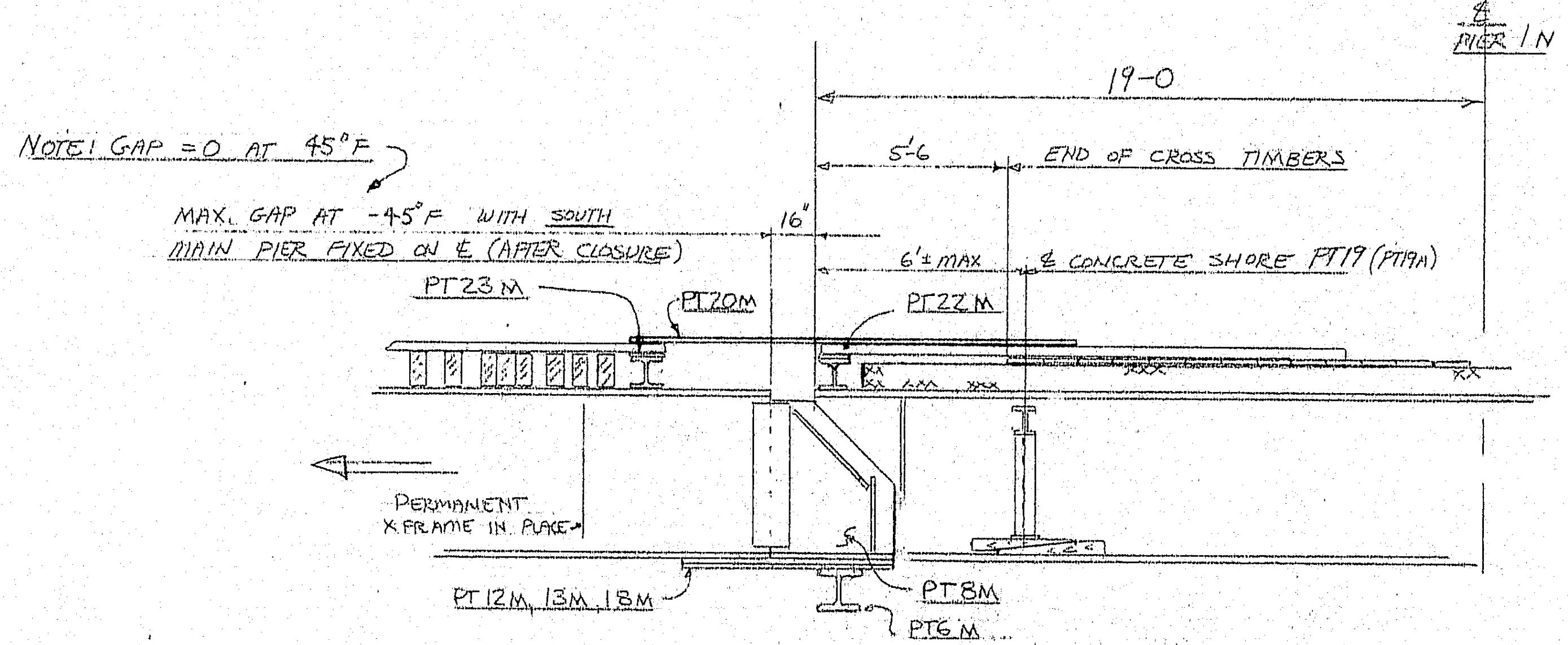
BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
~~ERECTION DIVISION~~
HOME OFFICE ERECTION ENGINEERING DIVISION BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBURG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED
☐ Mgr. of Erect. ☐ District Mgr.
☒ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: CEM
DATE:
CHECKED BY: J BIRDSALL
DATE: 9-24-70
SCALE:
FILE NO.:
ERECTION CONTRACT NO.: CWG290
DWG. NO.: ER102

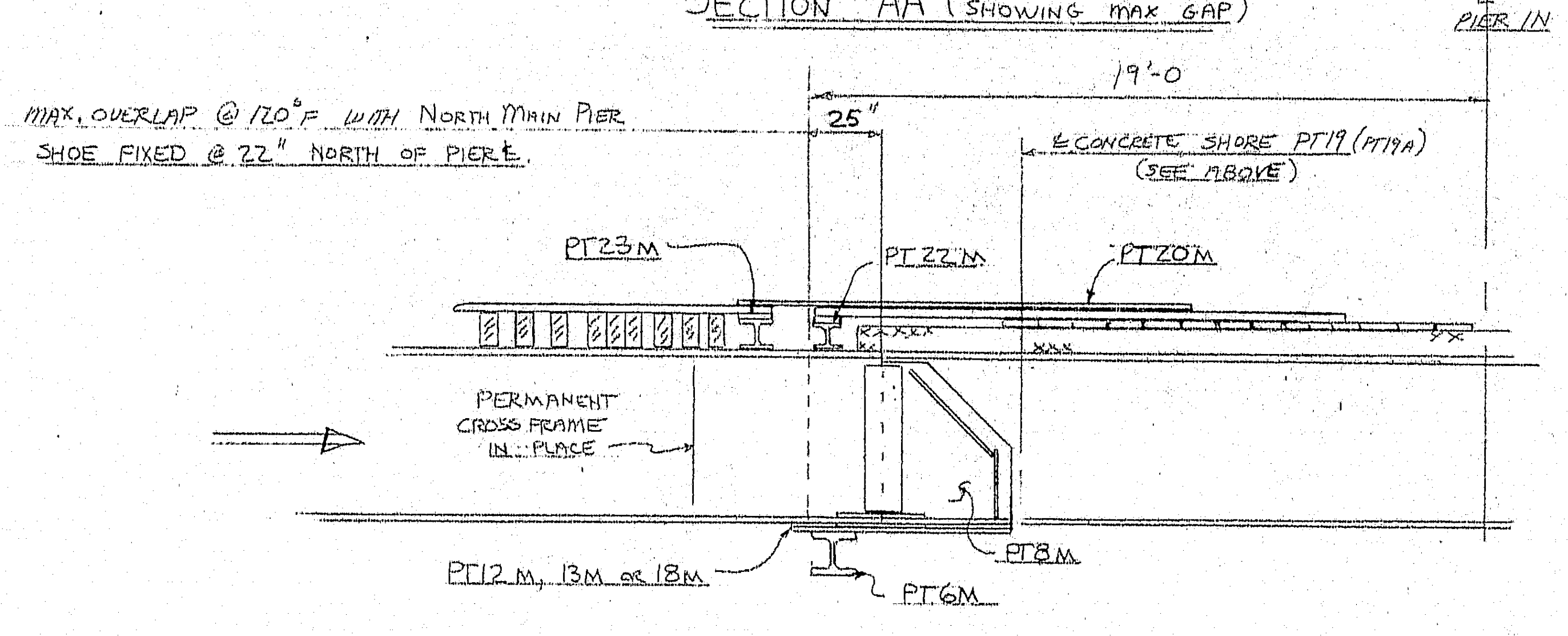
134:86

38558 (Rev.8 9-68)

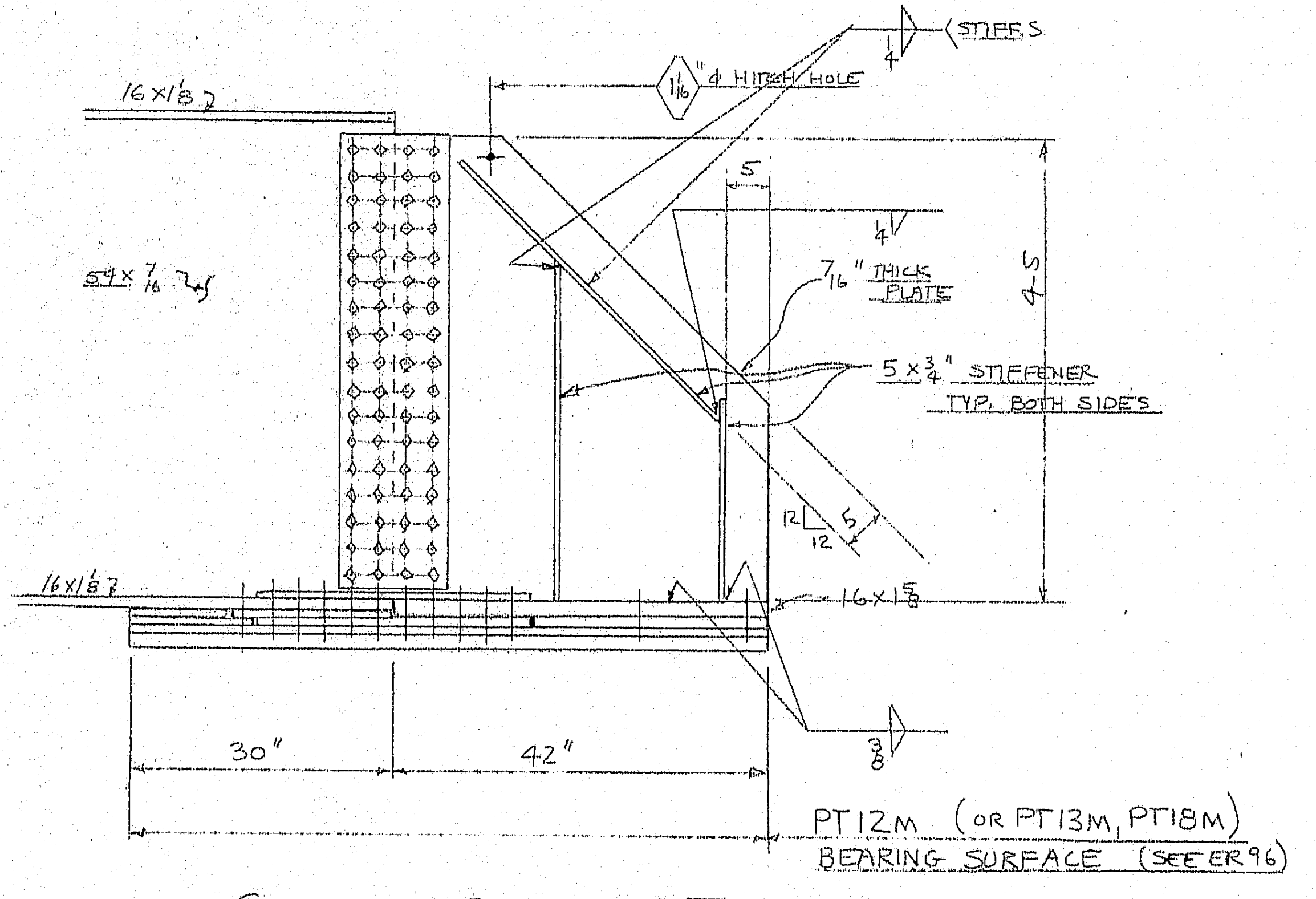



℄ PIER IN
19-0
NOTE: GAP = 0 AT 45°F
MAX. GAP AT -45°F WITH SOUTH MAIN PIER FIXED ON ℄ (AFTER CLOSURE)
16"
5'-6
END OF CROSS TIMBERS
6'± MAX
℄ CONCRETE SHORE PT19 (PT19A)
PT23M
PT20M
PT22M
PERMANENT X-FRAME IN PLACE
PT12M, 13M, 18M
PT8M
PT6M

SECTION AA (SHOWING MAX GAP)


℄ PIER IN
19'-0
MAX. OVERLAP @ 120°F WITH NORTH MAIN PIER SHOE FIXED @ 22" NORTH OF PIER ℄.
25"
℄ CONCRETE SHORE PT19 (PT19A) (SEE ABOVE)
PT23M
PT22M
PT20M
PERMANENT CROSS FRAME IN PLACE
PT12M, 13M or 18M
PT8M
PT6M

SECTION-AA (SHOWING MAX OVERLAP)



GIRDER STUB - PT8M (¾"=1-0)

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY FFM OCT 28 1970

APPROVED: HARDESTY & HANOVER
CONSULTING ENGINEERS NEW YORK N.Y.
BY - FFW. 10-28-70

GENERAL DRAWING
TIMBER ROAD ON MAINE APPROACH

WORK THIS DRAWING WITH ER96 AND ER99.
DIMENSIONS & VIEWS NOT SHOWN ARE
SIMILAR TO NEW HAMPSHIRE APPROACH - SEE ER99

MATERIAL NOTE	
STEEL	A36
WELD	E70
HOLES	15/16"φ UN.
BOLTS	A325 7/8"φ UN.

"This drawing contains information which is proprietary to Bethlehem Steel Corporation, Bethlehem, Pa., and is not to be used in any manner that is detrimental to the interest of Bethlehem Steel Corporation."

PISCATAQUA RIVER BRIDGE
INTERSTATE 95
PORTSMOUTH, N.H. - KITTERY, ME.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

IN CHARGE OF: C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED
☐ Mgr. of Erect. ☒ Engr. of Erect. ☐ District Mgr. ☐ Asst. Dist. Mgr.
MADE BY: J. BIRDSALL
DATE: 9-25-70
CHECKED BY: D.D.P.
DATE: 9-29-70
SCALE: ¼" = 1-0 U.N.
FILE NO.:
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER106

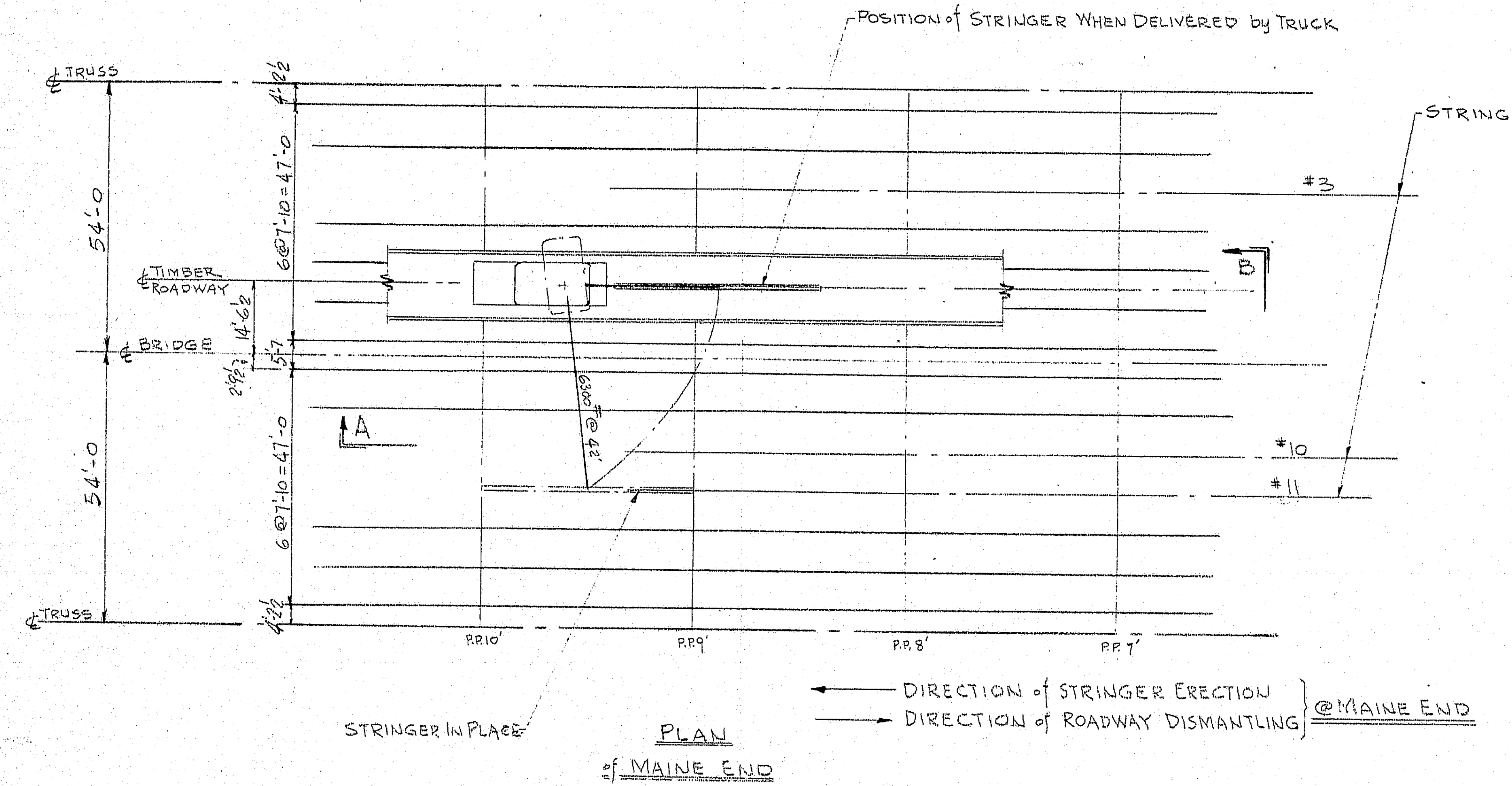
NO.	DATE	INIT.
REVISED		

134:87

40318 (12-67)

	a	b	c
a			
b			
c			
d			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

SENT TO	DATE	
D.O.	9/30	
FLD.		
TH.		
E.D.		
Eac	9/30	11/2
EIO		
SHP		



PLAN
of MAINE END

GROVE SERIES TM225 TRUCK CRANE
RATED LIFTING CAPACITY - 85% TIPPING

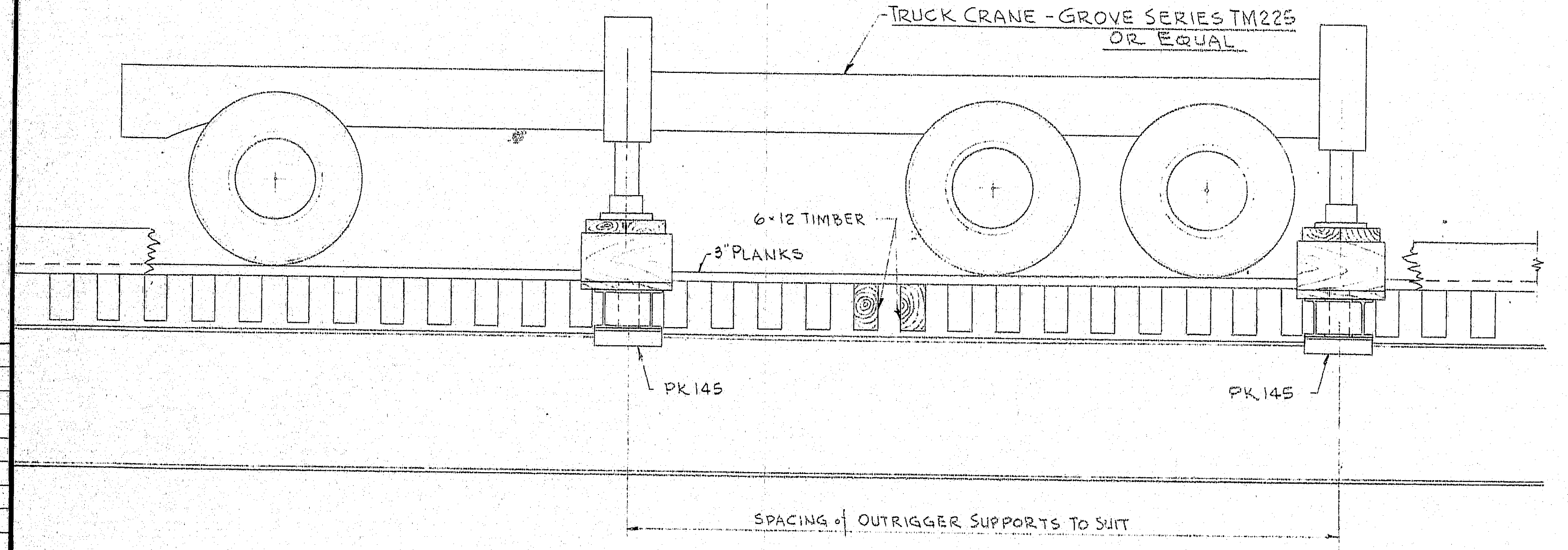
RADIUS IN FEET	26'-80' BOOM WITH OUTRIGGERS	
	REAR	SIDE
10	~~50,000#~~	~~50,000#~~
12	~~42,000~~	~~42,000~~
15	~~38,500~~	~~38,500~~
20	~~28,000~~	~~26,750~~
25	~~21,750~~	~~20,000~~
30	~~14,900~~	~~13,600~~
35	~~11,000~~	~~10,000~~
40	~~8,000~~	~~7,150~~
50	5,100	4,675
60	3,740	3,500
70	2,840	2,550
75	2,550	2,040

7K MAX. WORKING CAP GOVERNED by OUTRIGGER SUP'T. BMS.

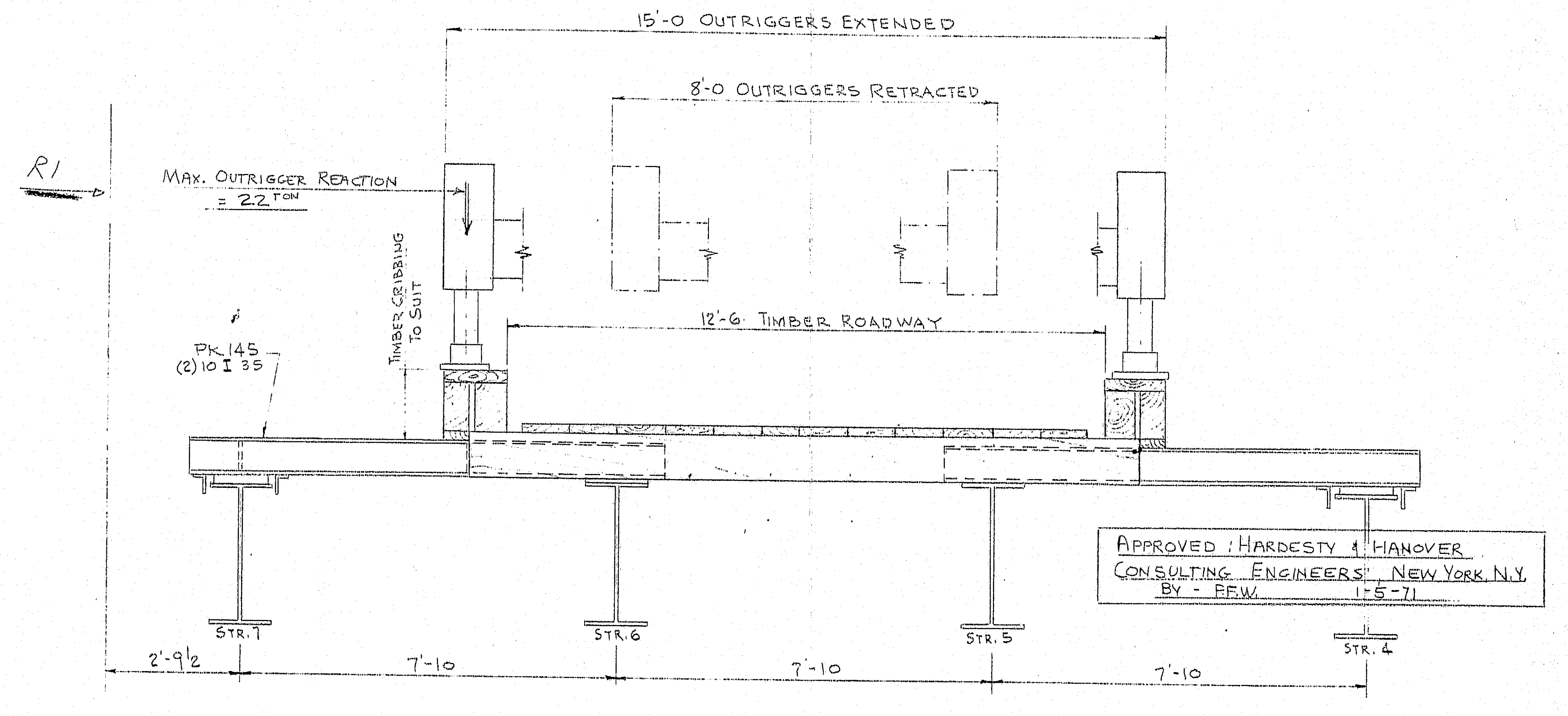
R1

PROCEDURE

1- POSITION TRUCK CRANE ON TIMBER ROADWAY SO THAT CTR. of ROTATION WILL BE ABOUT 5 FT. SOUTH of CTR. of PANEL, ON ROAD ℄.
2- PLACE OUTRIGGER SUPPORTS "PK145" USING TRUCK CRANE TO DO SO.
3- PLACE TIMBER CRIBBING for OUTRIGGER BEARING.
4- EXTEND, LOWER & LOCK OUTRIGGERS IN PLACE.
5- BACK MATERIAL TRUCK ONTO ROADWAY SO THAT c.g. of STRINGER WILL BE WITHIN 40' REACH of CRANE.
6- PICK STRINGER from MATERIAL TRUCK & SWING IT INTO PLACE. COMPLETE STRINGER ERECTION IN PANEL & RAISE OUTRIGGERS.
7- USE TRUCK CRANE TO PICK UP OUTRIGGER SUPPORTS & PLACE THEM IN POSITION IN NEXT PANEL.
8- CONTINUE ERECTION of STRINGERS UNTIL COMPLETED.
9- WHEN STRINGERS HAVE BEEN PLACED IN LAST PANEL, USE TRUCK CRANE TO LIFT DISMANTLED ROADWAY TIMBERS & PLACE ON MATERIAL TRUCK.


Truck Crane - Grove Series TM225 or Equal
6-12 Timber
3" Planks
PK145
PK145
Spacing of Outrigger Supports to Suit

SECTION AA

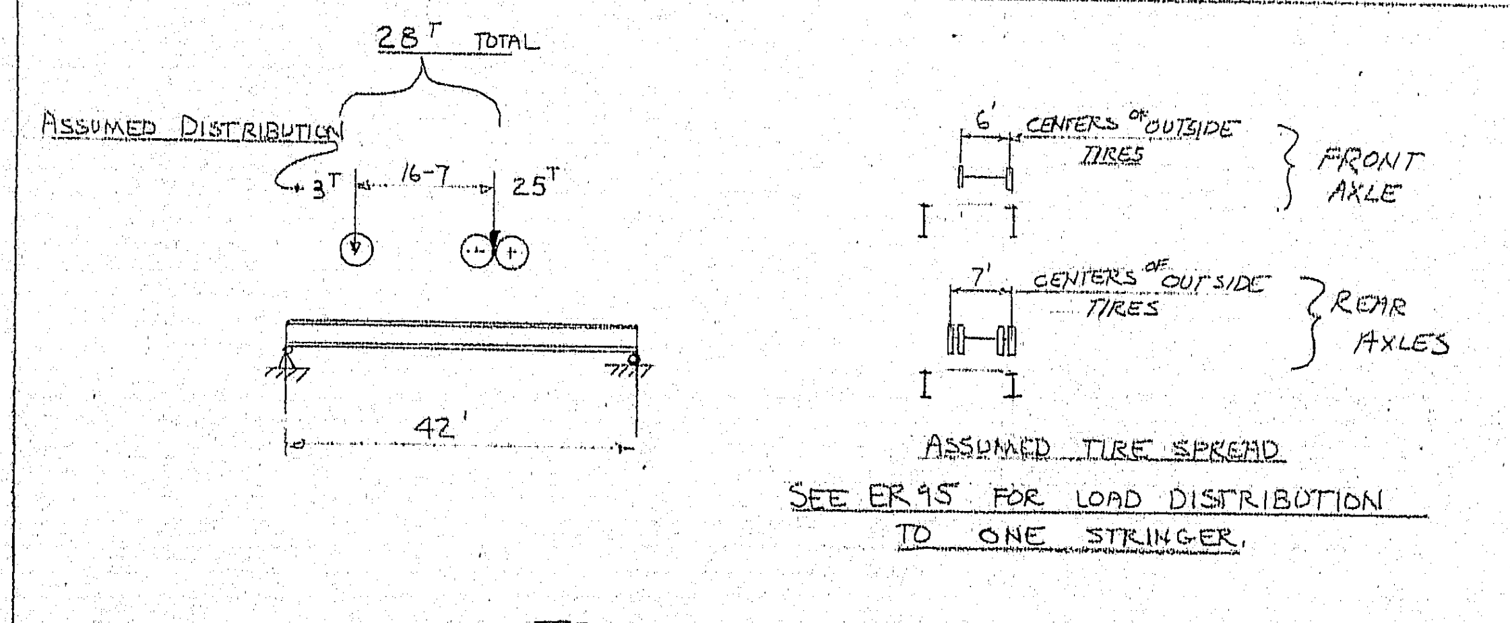


APPROVED: HARDESTY & HANOVER
CONSULTING ENGINEERS, NEW YORK N.Y.
BY - F.F.W. 1-5-71

SECTION B-B

STRINGER ERECTION - SECOND PASS

R1



ASSUMED TIRE SPREAD

SEE ER95 FOR LOAD DISTRIBUTION TO ONE STRINGER.

TRUCK CRANE
TRAVELING LOADS
(SEE ABOVE FOR MAX OUTRIGGER REACTION)

	a	b	c
a			
b			
c			
d			
e			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

SENT	DATE	
D.O.	10-29	
FLD.	~~10-29~~	11/13
TH.		
E.D.		
Eoc	10-29	
EIO		
SHP		

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY F.F.W. JAN 5 1971

PISCATAQUA RIVER BRIDGE
INTERSTATE I95
PORTSMOUTH, N.H. KITTERY, ME.

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
~~ERECTION DIVISION~~
ENGINEERING DIVISION
HOME OFFICE ERECTION BETHLEHEM, PA.

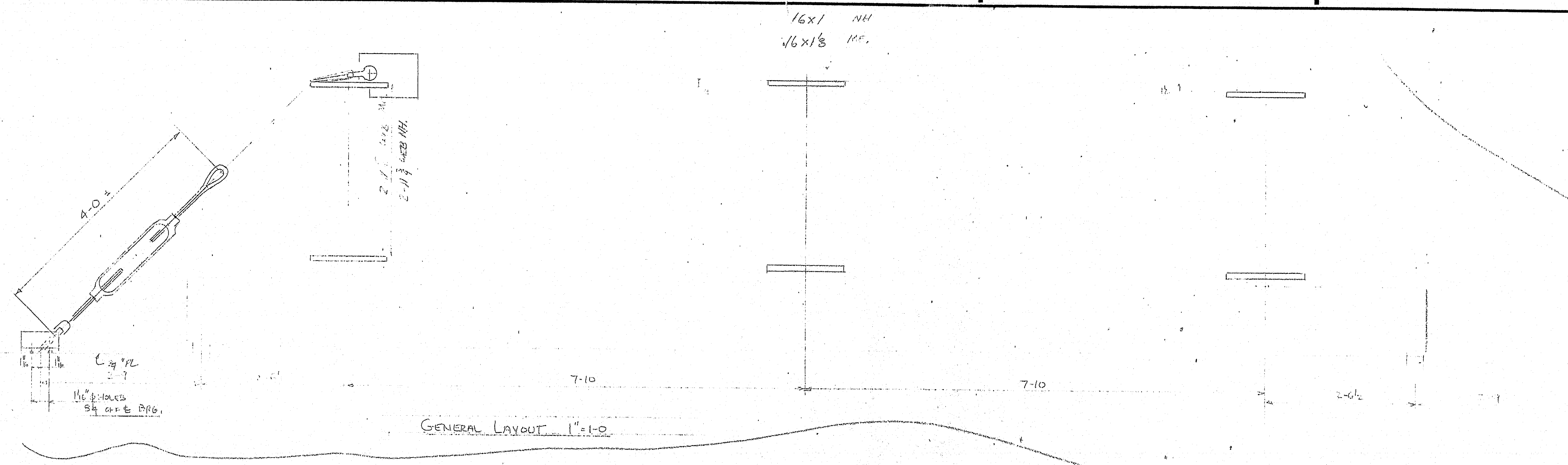
IN CHARGE OF: C GREIDENBURG
APPROVED:
☑ Erect. Engr. ☐ Proj. Engr.
☐ Mgr. of Erect. ☐ District Mgr.
☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY: D.D.P. DATE: 10-6-70
CHECKED BY: J.B.B. DATE: 10-7-70
SCALE: 1"=20FT. & ½"=1FT.
FILE NO.:
ERECTION CONTRACT NO.: CW6290
DWG. NO.: ER 108

NO.	DATE	INIT.
R1	10/28	JBB

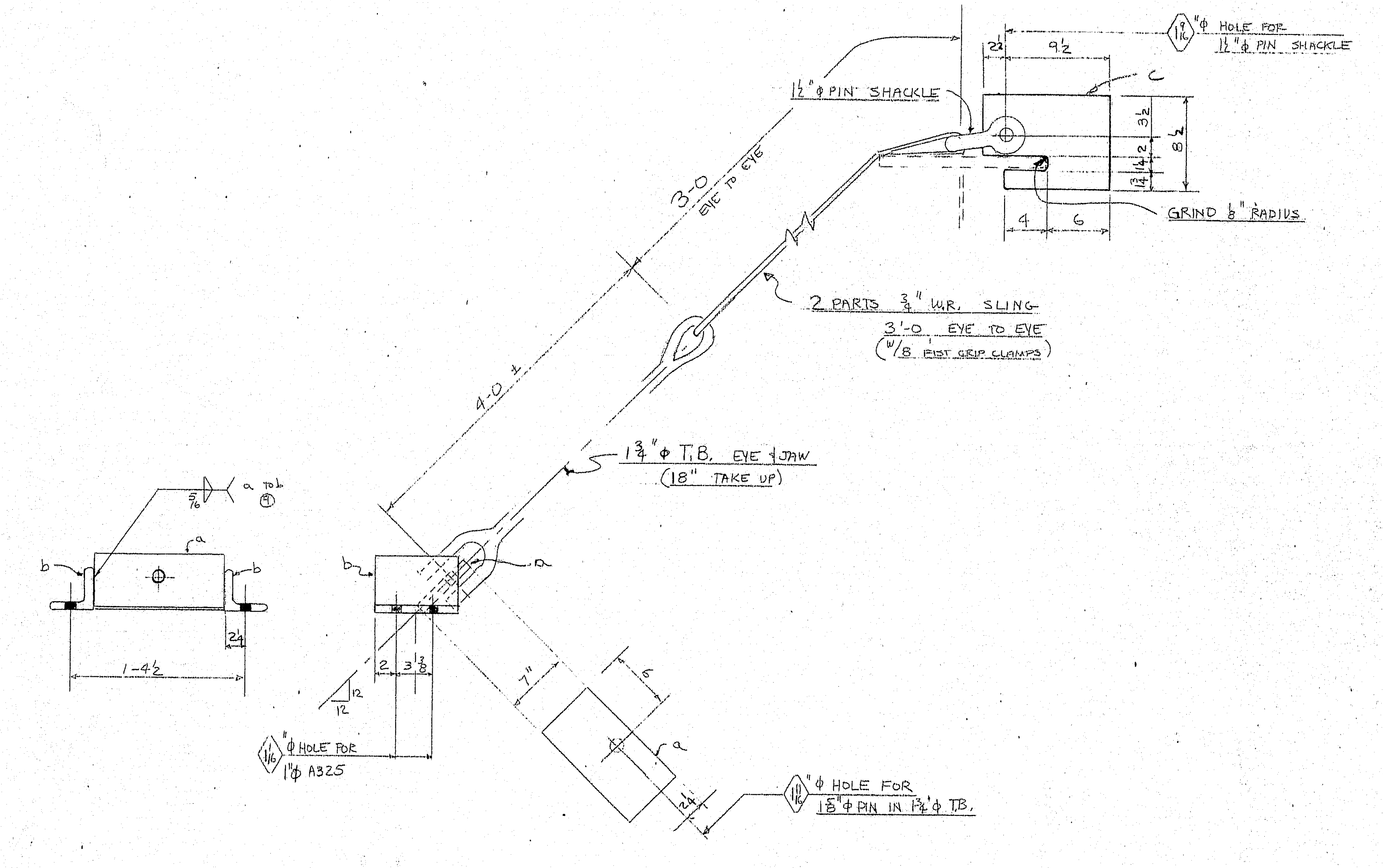
REVISED

134:88

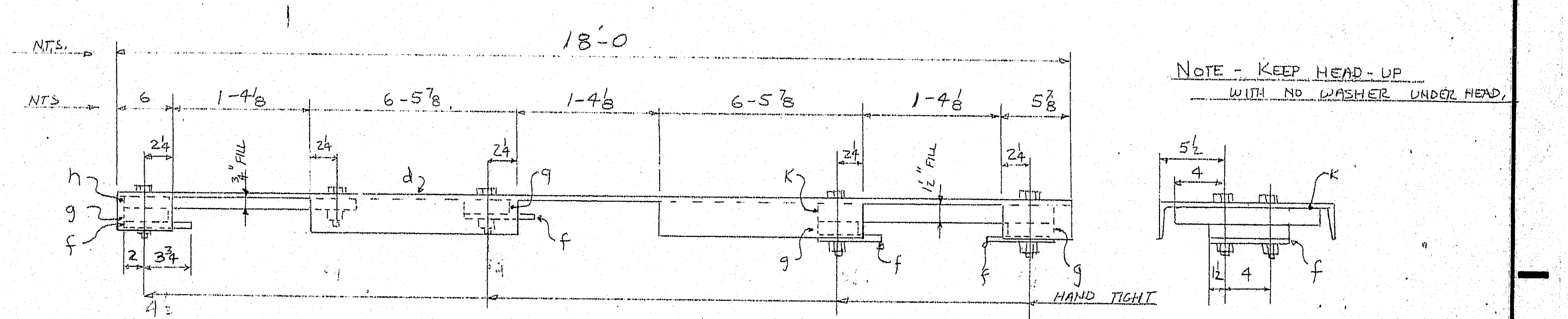
40318 (12-67)



GENERAL LAYOUT 1"=1-0



TIE-DOWN GUY - PT34



GIRDER STRUT - PT33

REQUIRED LIST					
APPROX WT.	NO. REQ'D.	DESCRIPTION	MARK	REMARKS.	DISPOSITION
850#	2	GIRDER STRUT	PT33		
145#	4	TIE-DOWN GUY	PT34		

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY SNovy NOV 24 1970

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	a	b	c
a			
b			
c			
d			
e			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

For location of details shown on this sheet refer to diagrams.

ER96

SENT TO	DATE
D.O.	10-29
FLD.	10-29
TH.	
E.D.	
Eac	
EIO	
SHP	

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	ITEM PAGE	ITEM LINE
1						4 TIEDOWN GUYS - PT34									
2		[illegible]	a	4	PL	7		1	1	0					
3		[illegible]	b	8	L	4	4	¾	0	7⅜					
4		[illegible]		4	M	1¾"φ T.B. (EYE AND JAW TURNBUCKLE W/18" TAKEUP)									
5		[illegible]		4	M	1½"φ PIN SHACKLE									
6				4	M	¾"φ W.R.			10	0					
7				32	M	¾"φ W.R. FIST GRIP CLAMPS									
8		3	c	4	PL	8½		1	1	0					
9			FW	4	WD			5/16	1	6					
10															
11															
12															
13															
14															
15						2 GIRDER STRUTS - PT33									
16		610	d	2	C	15	33.9		18	0					
17			f	8	BRZ	5¾		½	0	7					
18			g	8	BRZ	4		1¼	0	7					
19			h	2	PL	12		¾	2	0⅝					
20		[illegible]	k	2	PL	12		1½	2	0⅝	BU.				
21				4	A325	⅞"φ			0	2¾	W/HHN				
22				4	A325	⅞φ			0	3¾	do.				
23				4	A325	⅞φ			0	4½	do.				
24				8	A325	⅞φ			0	5¼	do.				
25															
26															
27															

MATERIAL A36
EXCEPT EQUIPMENT MAY BE OTHER
OPEN HOLES 15/16"φ UN
RIVETS
BOLTS ⅞"φ A325 UN.
WELDING E70
PAINT

NO.	DATE	INIT.
REVISED		

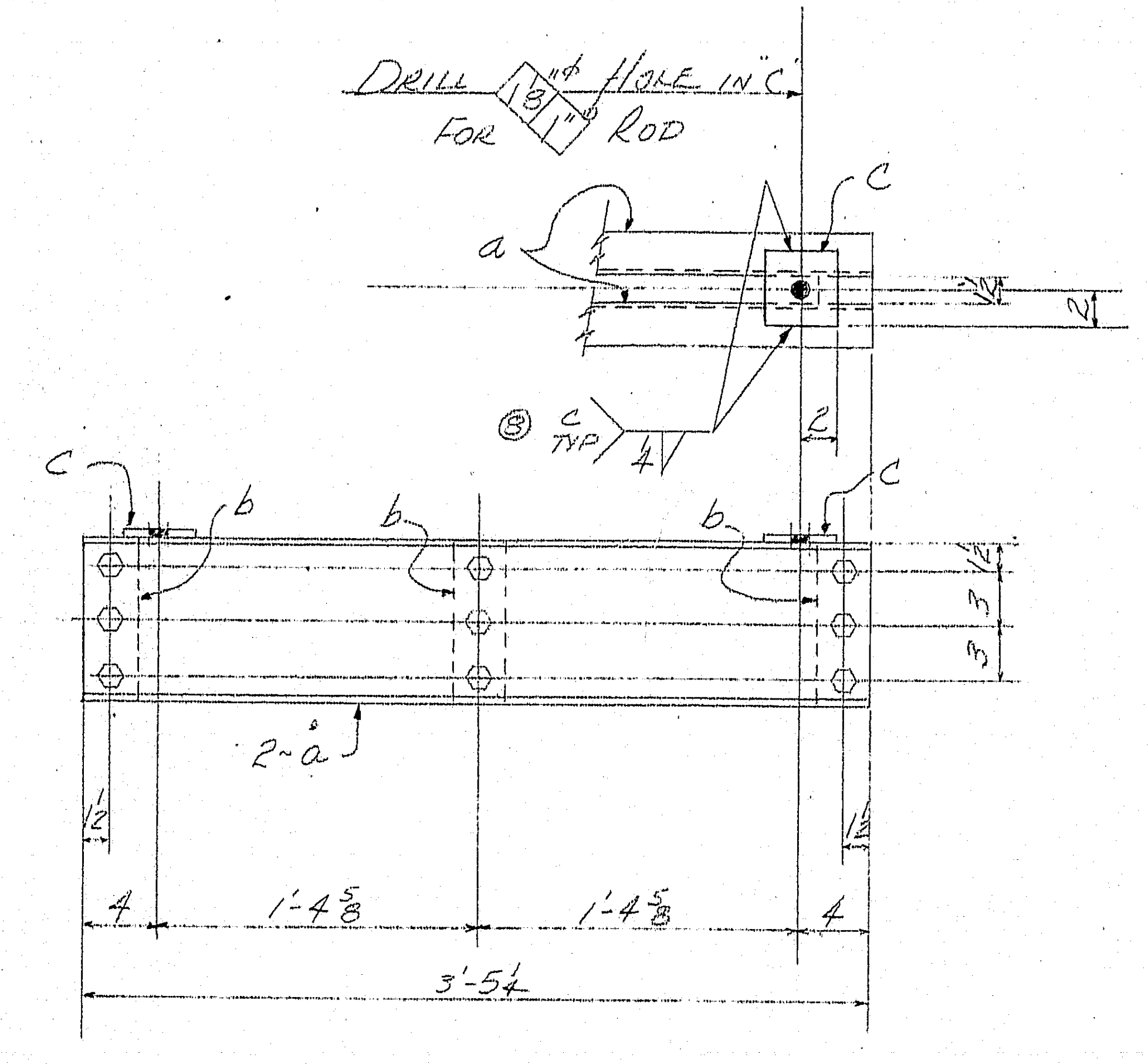
PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. - KITTERY, ME.
ROADWAY - DETAILS

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
ERECTION DIVISION
ENGINEERING DIVISION
HOME OFFICE ERECTION
BETHLEHEM, PA.

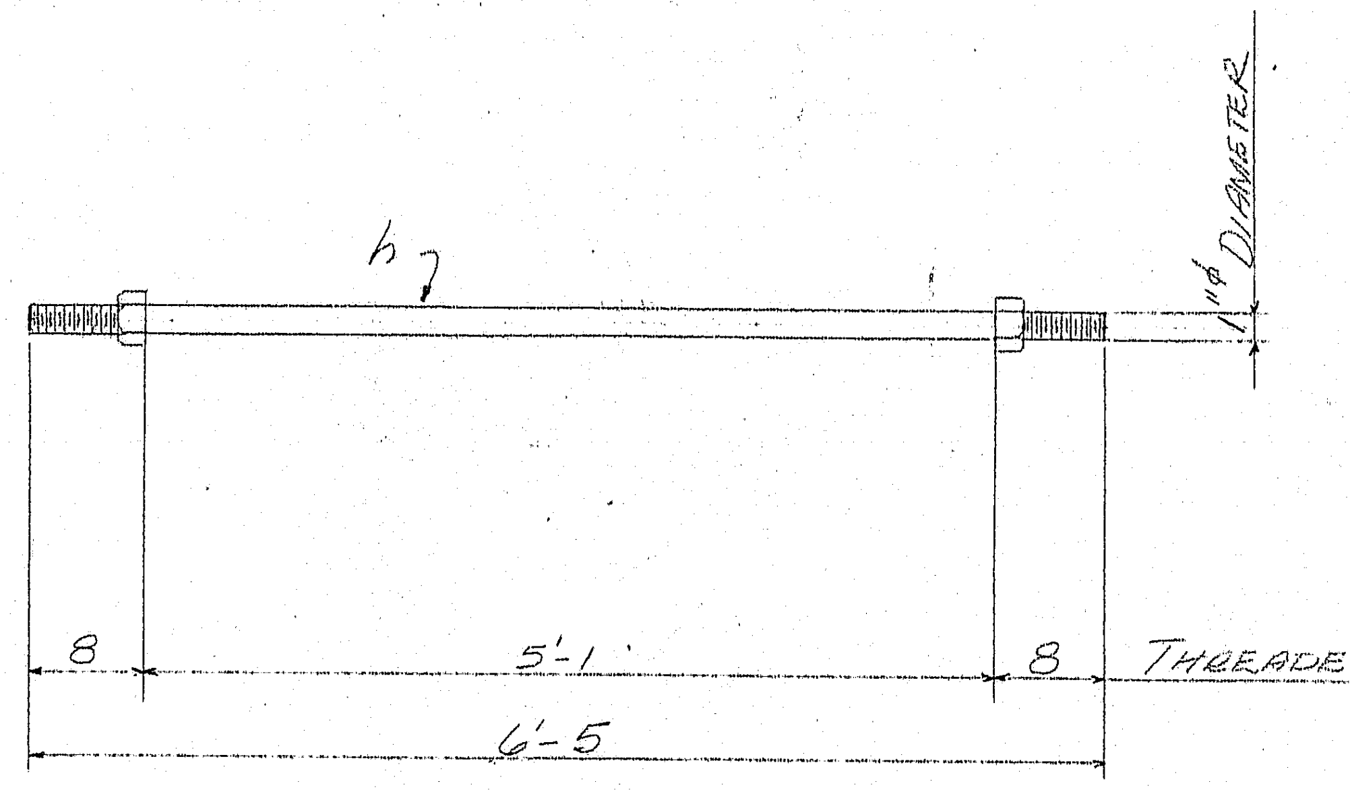
IN CHARGE OF C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.
APPROVED
☐ Mgr. of Erect. ☐ District Mgr.
☐ Engr. of Erect. ☐ Asst. Dist. Mgr.
MADE BY J.B.B.
DATE 10-27-70
CHECKED BY
DATE
SCALE 1½ = 1-0 UN.
FILE NO.
ERECTION CONTRACT NO. CW6290
DWG. NO. ER110

134:89

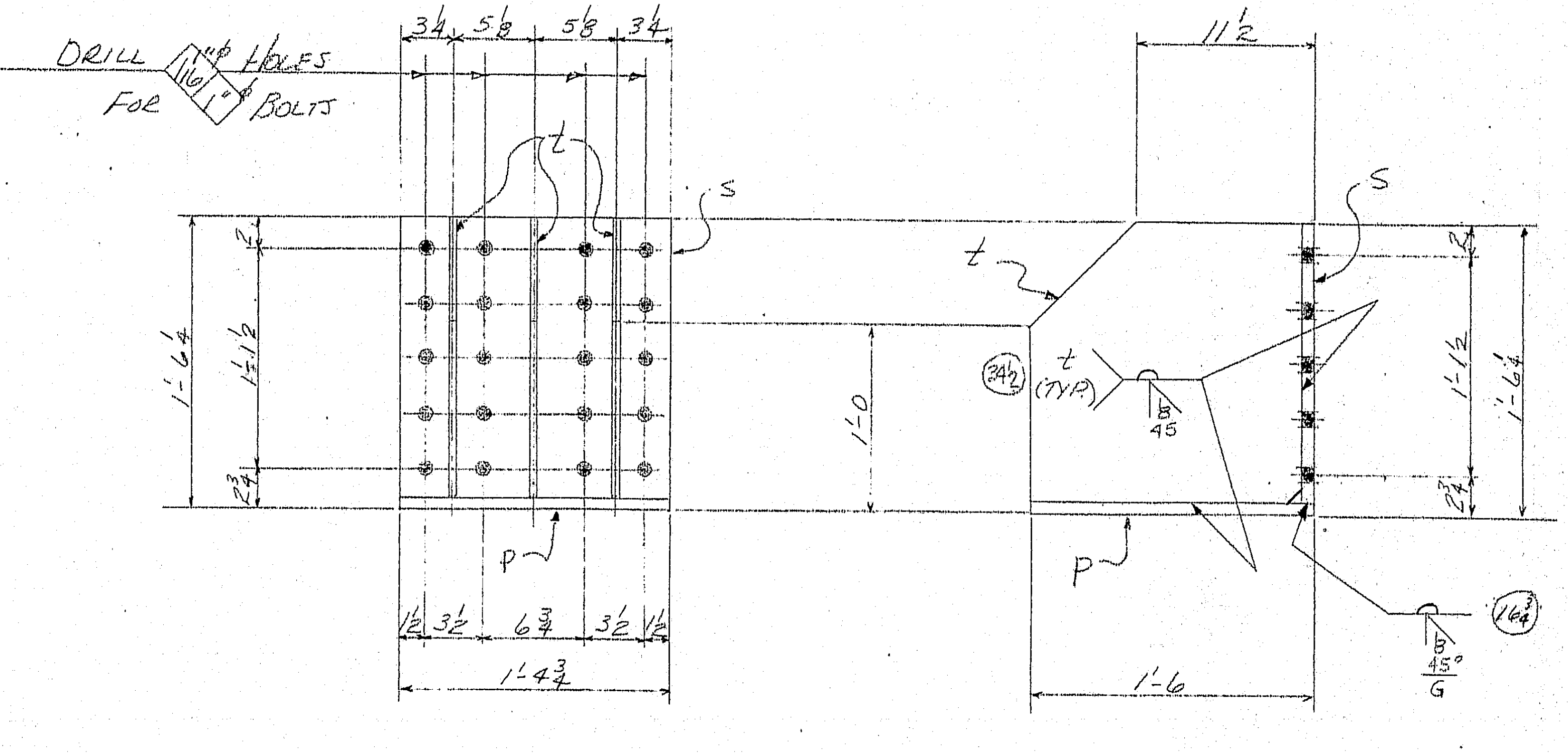
38558 (Rev.8 9-68)



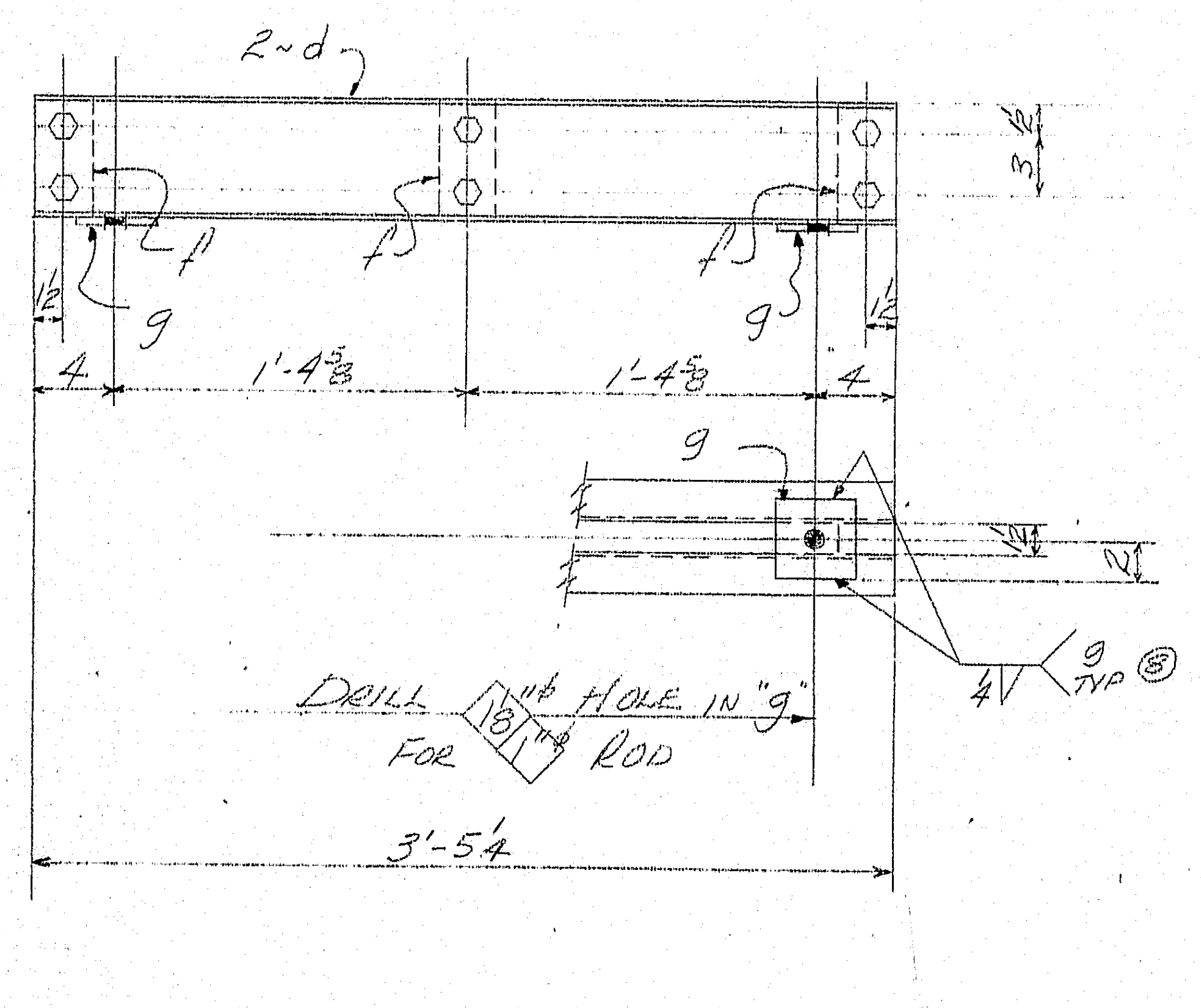
4~PK265~STRUT YOKE



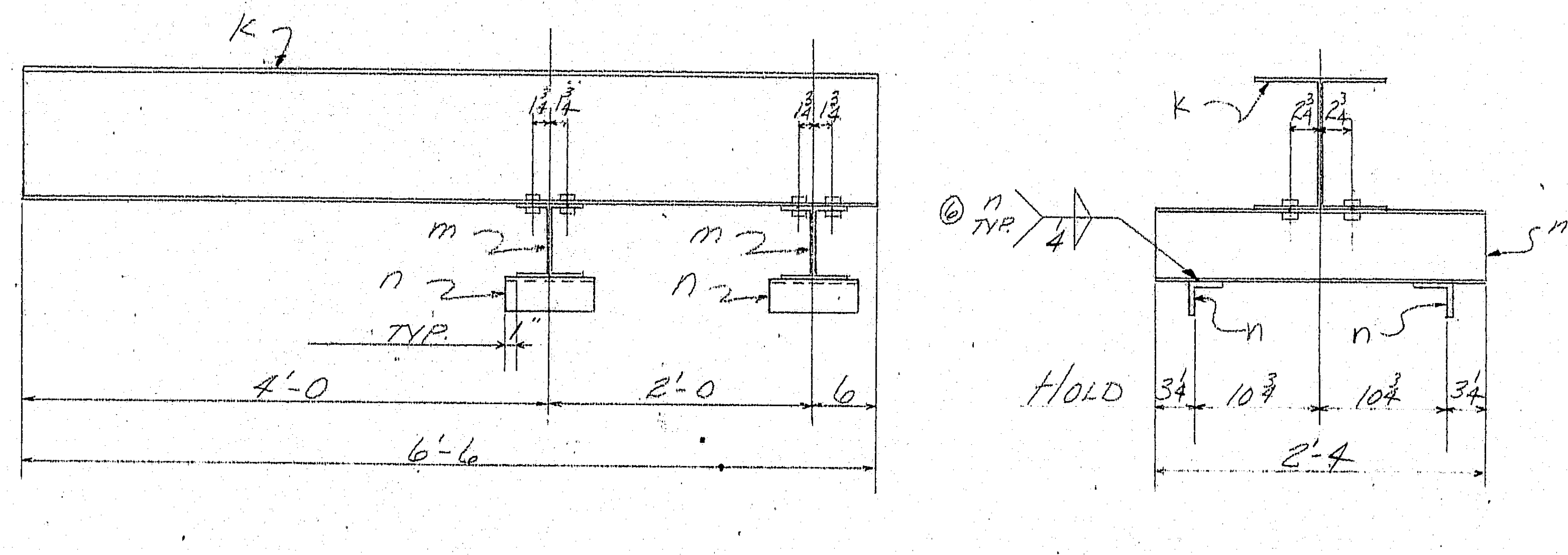
8~PK267~YOKE RODS



2~PK269~SEAT LUG



4~PK266~STRUT YOKE



2~PK268~SKID BEAM

REQUIRED LIST

No. Req'd.	Mark	Description	Remarks	Wt. Ea. Pc.	Disposition
4	PK265	STRUT YOKE		132	SCRAP
4	PK266	" "		106	"
8	PK267	" ROD		17	"
2	PK268	SKID BEAM		587	"
2	PK269	SEAT LUG		263	"

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
NEW YORK, N. Y.
BY SN SEP 8 1971

	a	b	c
a			
b			
c			
d			
f			
g			
h			
k			
m			
n			
p			
s			
t			
w			
y			

SENT TO	DATE
D.O.	
FLD.	
TH.	
E.D.	
Eac	
EIO	
SHP	

For location of details shown on this sheet refer to diagrams.

SHOP BILL

LINE	WEIGHT TOTAL	WEIGHT EA.	ASSEMBLY MARK	NO.	SHAPE	SECTION SIZE	SECTION SIZE OR POUNDS	SECTION THICK	LENGTH FT.	LENGTH IN.	REMARKS	MILL ORDER LENGTH FT.	MILL ORDER LENGTH IN.	MILL ORDER ITEM PAGE	MILL ORDER ITEM LINE
1				4~PK265~STRUT YOKE											
2			a	8	C	9	20		3	5 1/4					
3			b	12	BR	3	1 1/2		0	9	FLUSH WITH "a"				
4			c	8	BR	4	1/2		0	4					
5				36	325	7/8"φ			0	3 1/2					
6			FW	4	WD		1/4		1	4					
7				36	HW	1 3/4	15/16	3/16							
8															
9				4~PK266~STRUT YOKE											
10			d	8	C	6	10.5		3	5 1/4					
11			f	12	BR	3	1 1/2		0	6	FLUSH WITH "d"				
12			g	8	BR	4	1/2		0	4					
13			FW	4	WD		1/4		1	4					
14				24	325	7/8"φ			0	3 1/2					
15				24	HW	1 3/4	15/16	3/16							
16															
17				8~PK267~YOKE RODS											
18			h	8	RD	1"φ			6	5	4140 STEEL-Q&T~BHN 255 to 302				
19				16	M	1"φ					A194-GD2 HHN				
20															
21				2~PK268~SKID BEAM											
22			k	2	B	12	65		6	6					
23			m	4	B	6	25		2	4					
24			n	8	L	3	3	1/2	0	8					
25			FW	2	WD		1/4		2	0					
26				16	325	7/8"φ			0	2 1/2					
27				16	HW	1 3/4	15/16	3/16							
28															
29				2~PK269~SEAT LUG											
30			p	2	PL	16 3/4		3/4	1	6					
31			s	2	PL	16 3/4		1	1	5 1/2					
32			t	6	PL	17		1/2	1	5 1/2					
33			V45	2	WD			1/2	8	7 1/2					
34			V45	2	WD			1	1	4 3/4					
35															
36															
37															
38															
39															
40															
41															
42															

MATERIAL A36, U.N.

OPEN HOLES 15/16"φ U.N.

RIVETS

BOLTS 7/8"φ A325, U.N.

WELDING E70 xx

PAINT SEE FRACT PAINT SPECS, PARA. #1 (or #2)

NO.	DATE	INIT.

REVISED

PISCATAQUA RIVER BRIDGE
PORTSMOUTH, N.H. TO KITTERY, ME.
DETAILS ~ CLOSURE ITEMS

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION DEPARTMENT
[redacted]
HOME OFFICE ERECTION BETHLEHEM, PA.

IN CHARGE OF C. CREIDENBERG
☒ Erect. Engr. ☐ Proj. Engr.

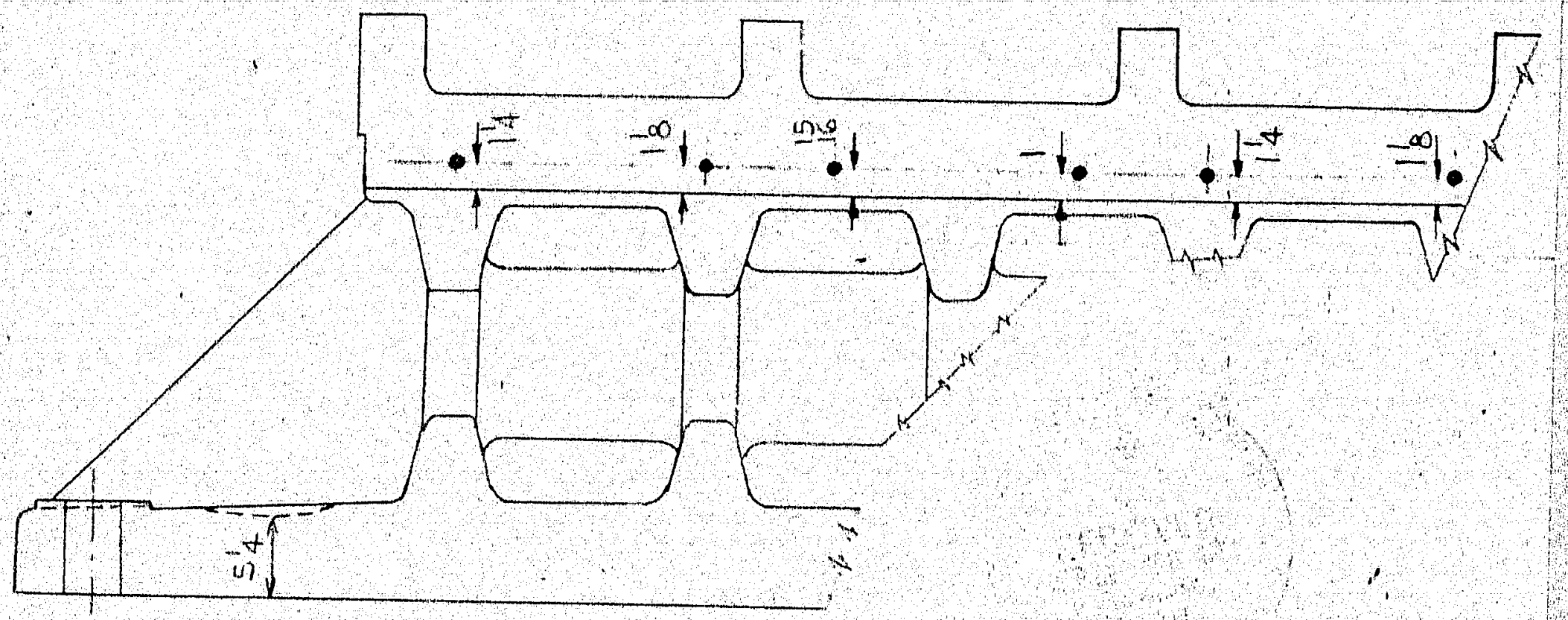
APPROVED
☐ Mgr. of Erect. ☐ District Mgr.
☒ Engr. of Erect. ☐ Asst. Dist. Mgr.

MADE BY R.B.D. DATE 8-12-71
CHECKED BY J. MUNN DATE 8-31-71
SCALE
FILE NO.
ERECTION CONTRACT NO. CW 6290
DWG. NO. ER 113

134:90

38558 (Rev.8 9-68)

BETHLEHEM STEEL CORPORATION



SECTION B-B (FOR DETAILS NOT SHOWN - SEE SECT. B-B ON SHOP DRAWING NO. 1)

MAIN PIER EXPANSION PEDESTAL - MARK 1A-W (ONE ONLY)
(SHOWING AS-BUILT DIMENSIONS AT ONE END ONLY OF ONE PEDESTAL MARKED 1A-W)

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R.W.C. NOV 3 1970

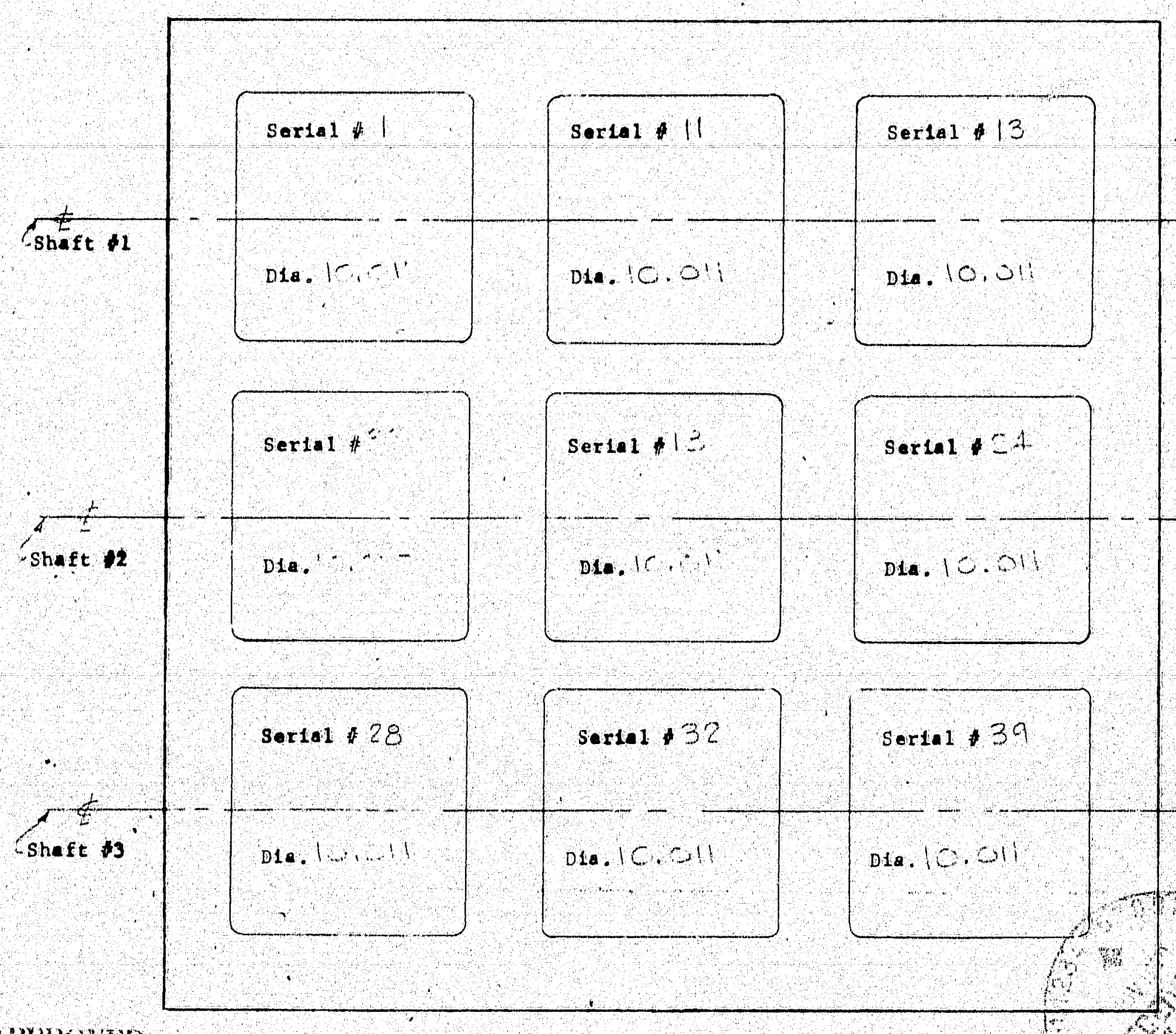
PROJECT #I-95-1(22)16, KITTERY, MAINE

In Charge LAG	Made GEC Date 10-7-70	Revised Date	Contract CG6290
Shop No.	Checked Date	Revised Date	Sheet SK 38

Customer MAINE STATE HIGHWAY COMMISSION HARDESTY & HANOVER - CONSULTING ENGR. Structure PISCATAQUA RIVER BRIDGE - CONTRACT #5

137:57

BETHLEHEM STEEL CORPORATION



Shaft #1	Serial # 1 Dia. 10.011	Serial # 11 Dia. 10.011	Serial # 13 Dia. 10.011
Shaft #2	Serial # [illegible] Dia. [illegible]	Serial # 13 Dia. 10.011	Serial # 24 Dia. 10.011
Shaft #3	Serial # 28 Dia. 10.011	Serial # 32 Dia. 10.011	Serial # 39 Dia. 10.011

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R.W.C. NOV 3 1970

ROLLER NEST FRAME ASSEMBLY

Location ANCHOR PIER EXPANSION SHOE - MARK [illegible]

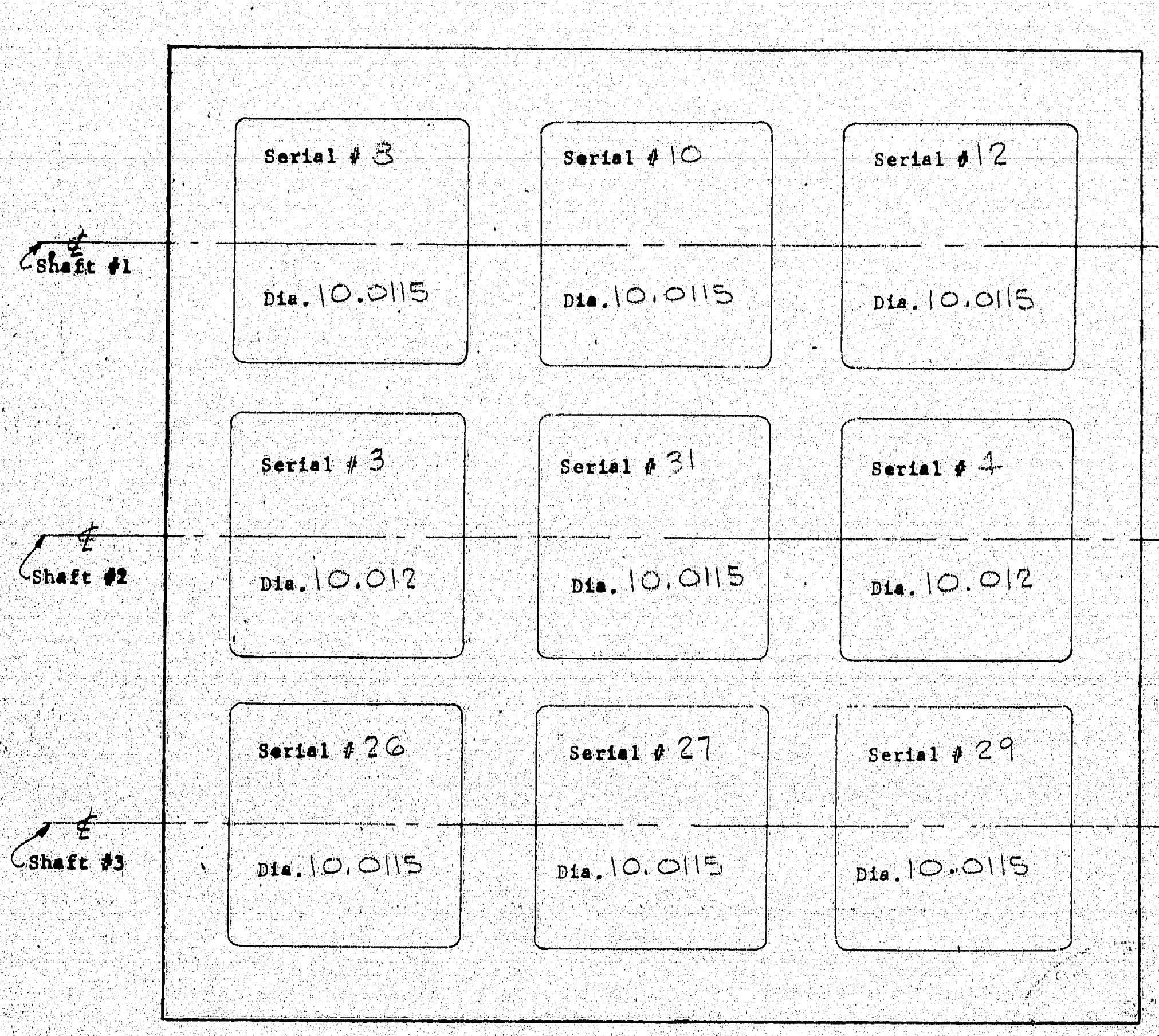
Project #I-95-1(22)16, Kittery, Maine

In Charge LAG	Made BIW/GEC Date 10-8-70	Revised Date	Contract CG 6290
Shop No.	Checked Date	Revised Date	Sheet SK39

Customer Maine State Highway Commission Structure Piscataqua River Bridge - Contract #5

137:58

BETHLEHEM STEEL CORPORATION



Shaft #1	Serial # 8 Dia. 10.0115	Serial # 10 Dia. 10.0115	Serial # 12 Dia. 10.0115
Shaft #2	Serial # 3 Dia. 10.012	Serial # 31 Dia. 10.0115	Serial # 4 Dia. 10.012
Shaft #3	Serial # 26 Dia. 10.0115	Serial # 27 Dia. 10.0115	Serial # 29 Dia. 10.0115

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R.W.C. NOV 3 1970

ROLLER NEST FRAME ASSEMBLY

Location ANCHOR PIER EXPANSION SHOE - MARK S.E.

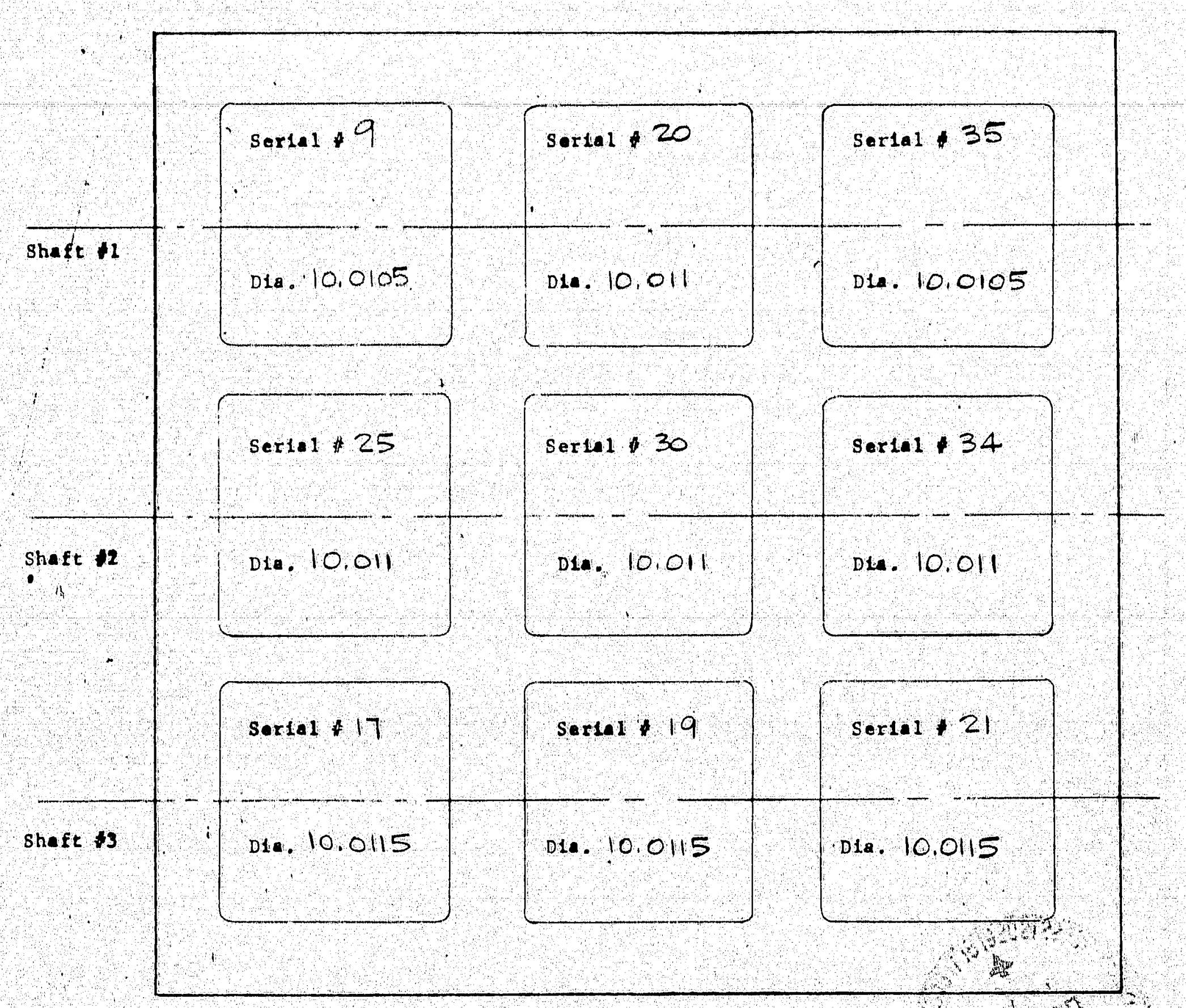
Project #I-95-1(22)16, Kittery, Maine

In Charge LAG	Made BIW/GEC Date 10-8-70	Revised Date	Contract CG 6290
Shop No.	Checked Date	Revised Date	Sheet SK40

Customer Maine State Highway Commission Structure Piscataqua River Bridge - Contract #5

137:59

BETHLEHEM STEEL CORPORATION



Shaft #1	Serial # 9 Dia. 10.0105	Serial # 20 Dia. 10.011	Serial # 35 Dia. 10.0105
Shaft #2	Serial # 25 Dia. 10.011	Serial # 30 Dia. 10.011	Serial # 34 Dia. 10.011
Shaft #3	Serial # 17 Dia. 10.0115	Serial # 19 Dia. 10.0115	Serial # 21 Dia. 10.0115

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R.W. Christie NOV 18 1970

ROLLER NEST FRAME ASSEMBLY

Location ANCHOR PIER EXP. SHOE - N.W.

RECEIVED BETHLEHEM STEEL CORP. WORKS ENGINEER CHICAGO

Project #I-95-1(22)16, Kittery, Maine

In Charge LAG	Made JGH Date 11-5-70	Revised Date	Contract CG 6290
Shop No.	Checked Date	Revised Date	Sheet SK41

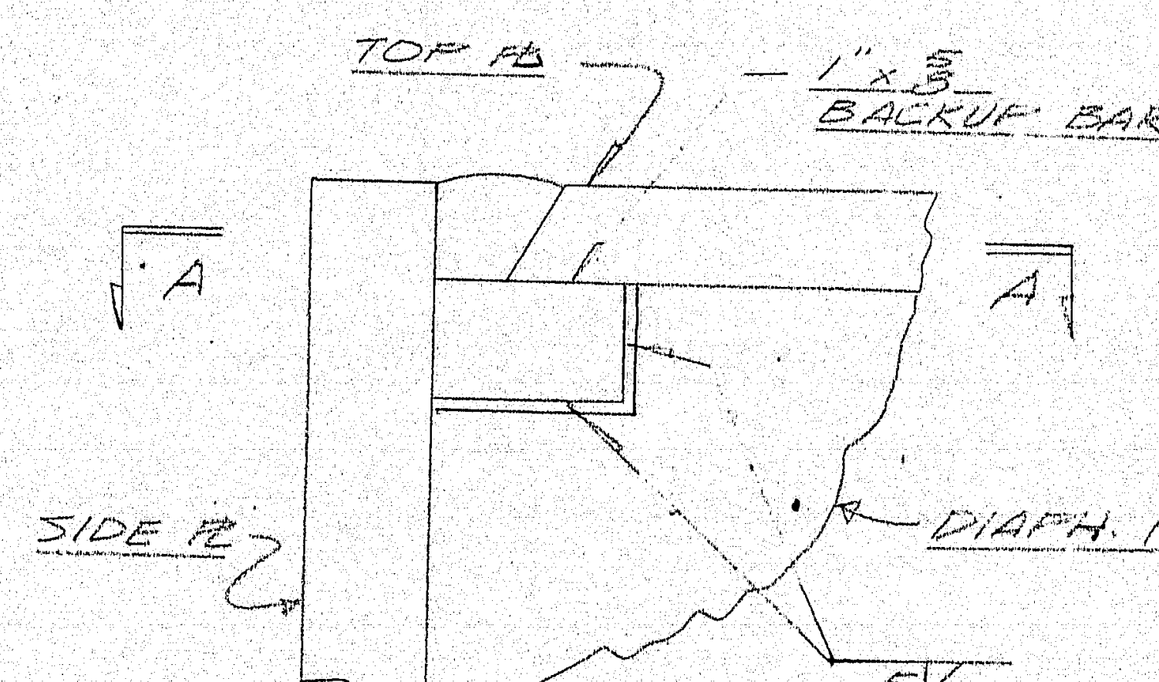
Customer Maine State Highway Commission Structure Piscataqua River Bridge - Contract #5

137:60

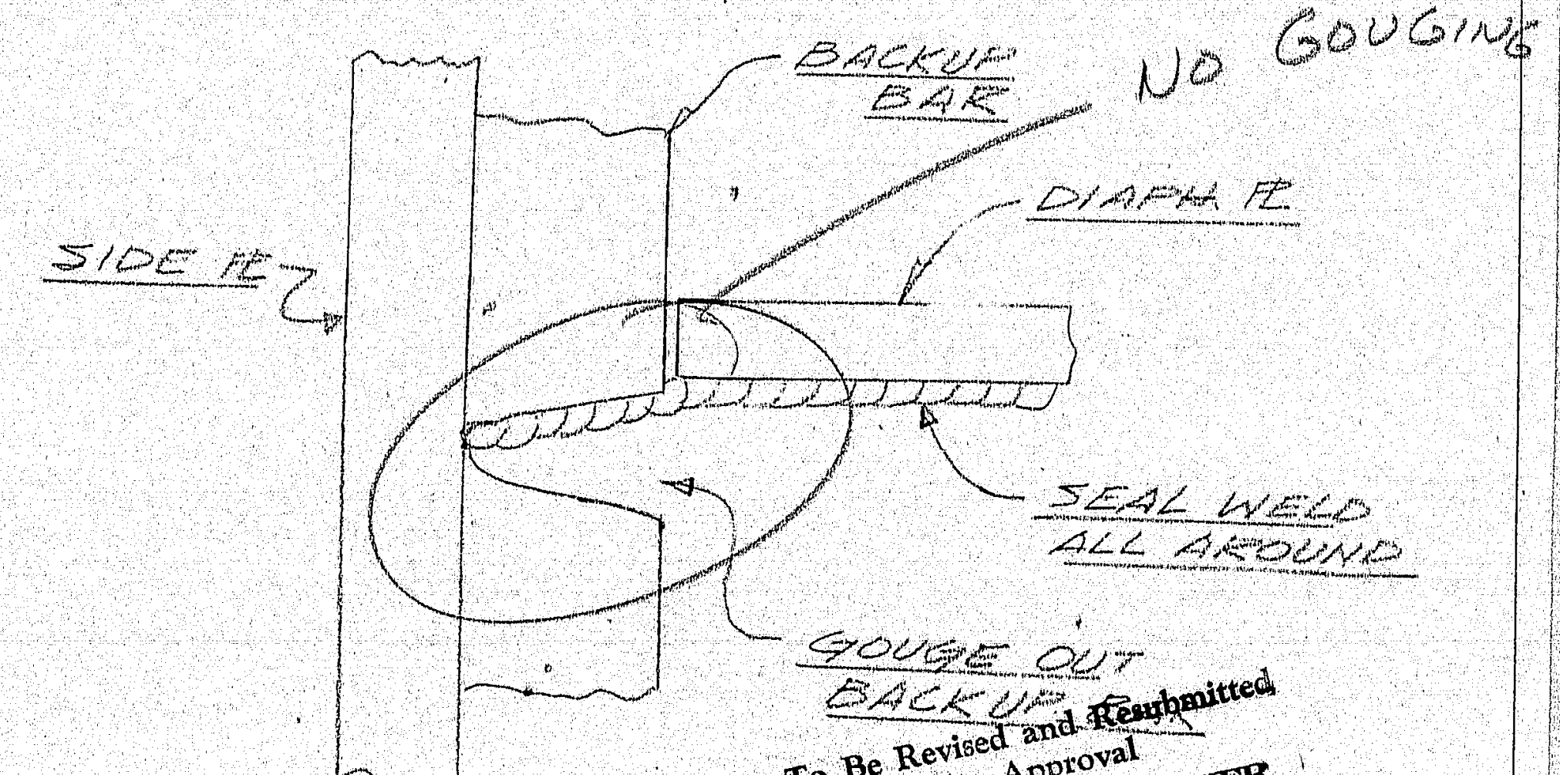
3233 (Rev.8 1-65)

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

CHICAGO DRAFTING ROOM CHICAGO WORKS
CUSTOMER MAINE STATE HWY DEPT
STRUCTURE PISCATAQUA RIVER BRIDGE



TYPICAL CORNER AT SEALED DIAPHRAGM



SECTION A-A

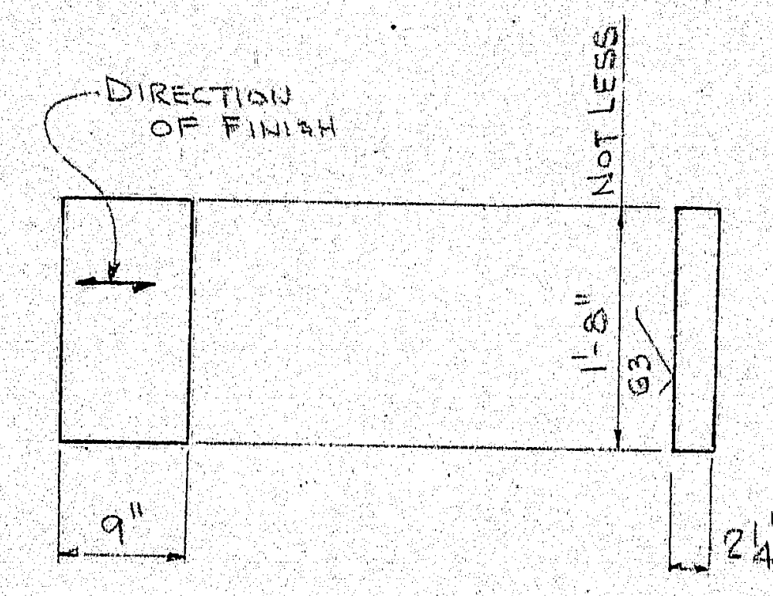
To Be Revised and ~~Resubmitted~~ For Approval
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY SN FEB 4 1970

RIVETS	MADE PS	DATE 1-15-70	REV.	IN CHARGE LAG
HOLES	CHECKED	DATE	REV.	Contract CG6290-000
PAINT	SHOP NO.		TIER	SHEET SK17
SHOP CONTACT SURFACES				

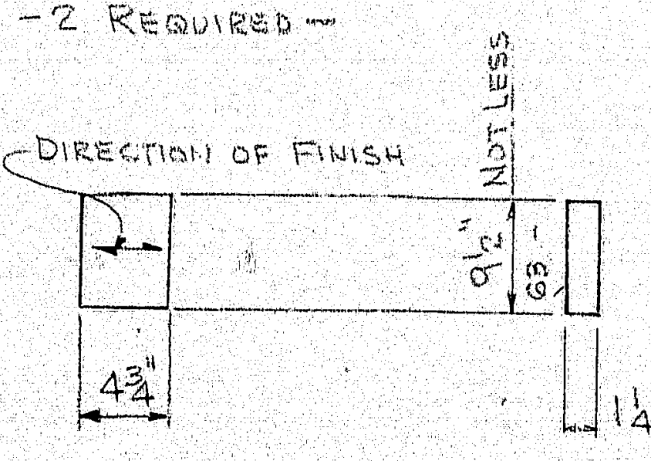
137:53

FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.8 7-57)

DRAFTING ROOM CHICAGO
WORKS SUBLET



TEST PLATE FOR MAIN PIER EXPANSION SHOES (14"⌀ ROLLER)
- 2 REQUIRED -



TEST PLATE FOR ANCHOR PIER EXPANSION SHOES (10"⌀ ROLLER)
- 2 REQUIRED -

MATERIAL: ASTM A517

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY Rw FEB 27 1970

137:54

In Charge LAG	Made GEC Date 2-10-70	Revised GEC Date 2-16-70	Contract CG6290
Shop No.	Checked Date	Revised Date	Sheet SK23

Customer MAINE STATE HIGHWAY COMMISSION Structure PISCATAQUA RIVER BRIDGE

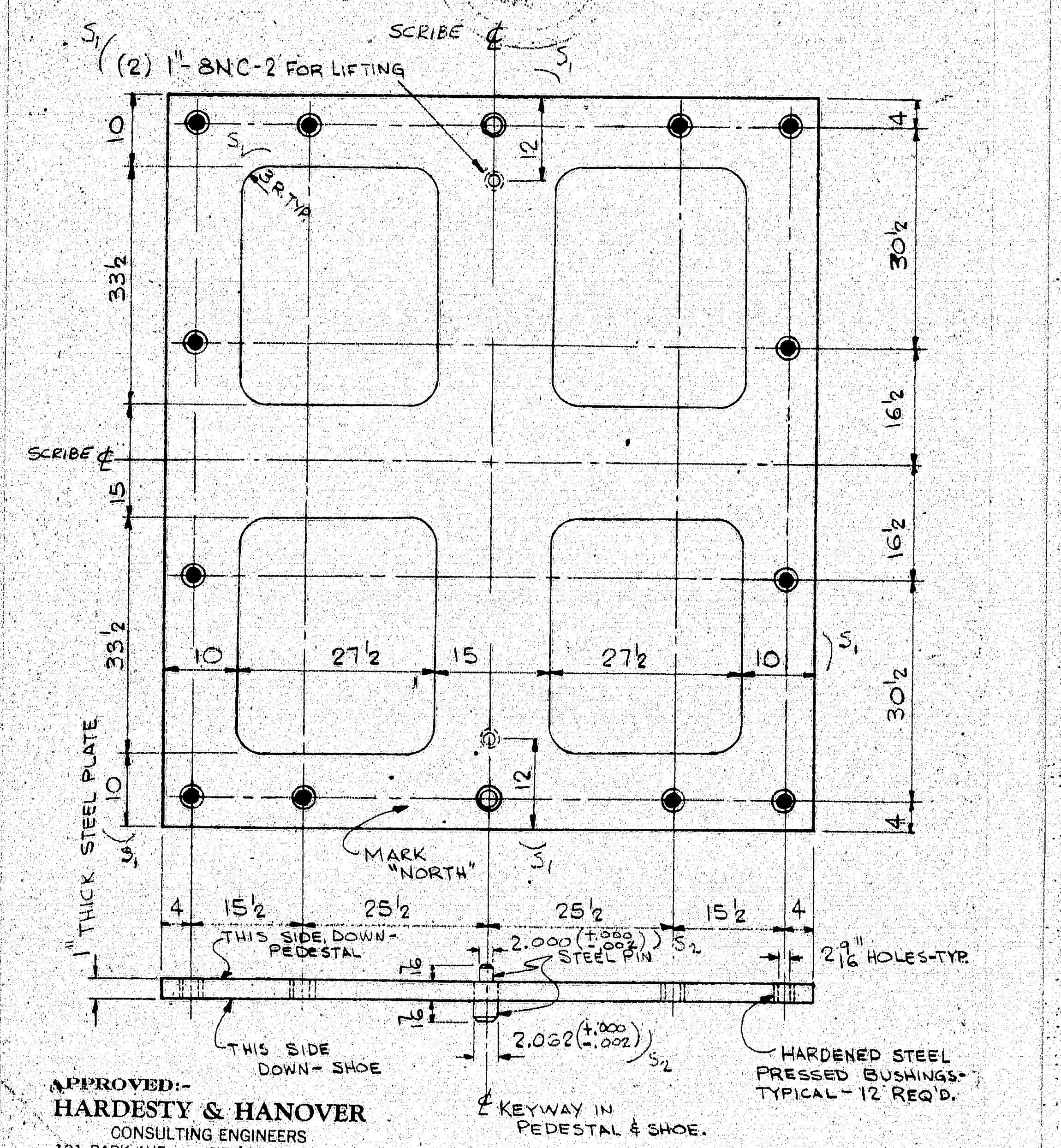
FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.8 7-57)

DRAFTING ROOM CHICAGO
WORKS SUBLET

RECEIVED BETHLEHEM STEEL CORP. WORKS ENGINEER CHICAGO

TEMPLATE FOR FITTING:
BOTTOM PEDESTAL - DRWG. 3
S1 TOP SHOE - DRWG 4

BATH IRON WORKS
C.O. 98-670SK
S1 M.O. FA 3040-832



APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R.W. Christie MAY 13 1970

137:55

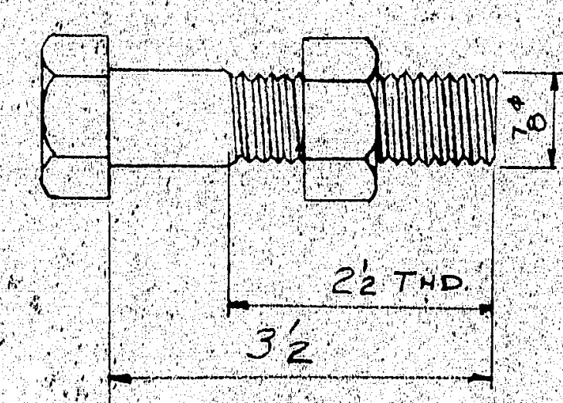
In Charge LAG	Made GEC Date 2-10-70	S1 Revised GEC Date 4-13-70	Contract CG6290
Shop No.	Checked Date	S2 Revised GEC Date 4-30-70	Sheet SK24

Customer MAINE STATE HIGHWAY COMMISSION Structure PISCATAQUA RIVER BRIDGE

3233 (Rev.8 1-65)

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

CHICAGO DRAFTING ROOM CHICAGO WORKS
CUSTOMER MAIN STATE HWY. COMM.
STRUCTURE PISCATAQUA RIVER BRIDGE



SPECIAL A325 BOLT -
- MINIMUM 2 1/2 THREAD LENGTH
- GALVANIZED BOLT & NUT
- SHIP WITH NUTS ON BOLTS.

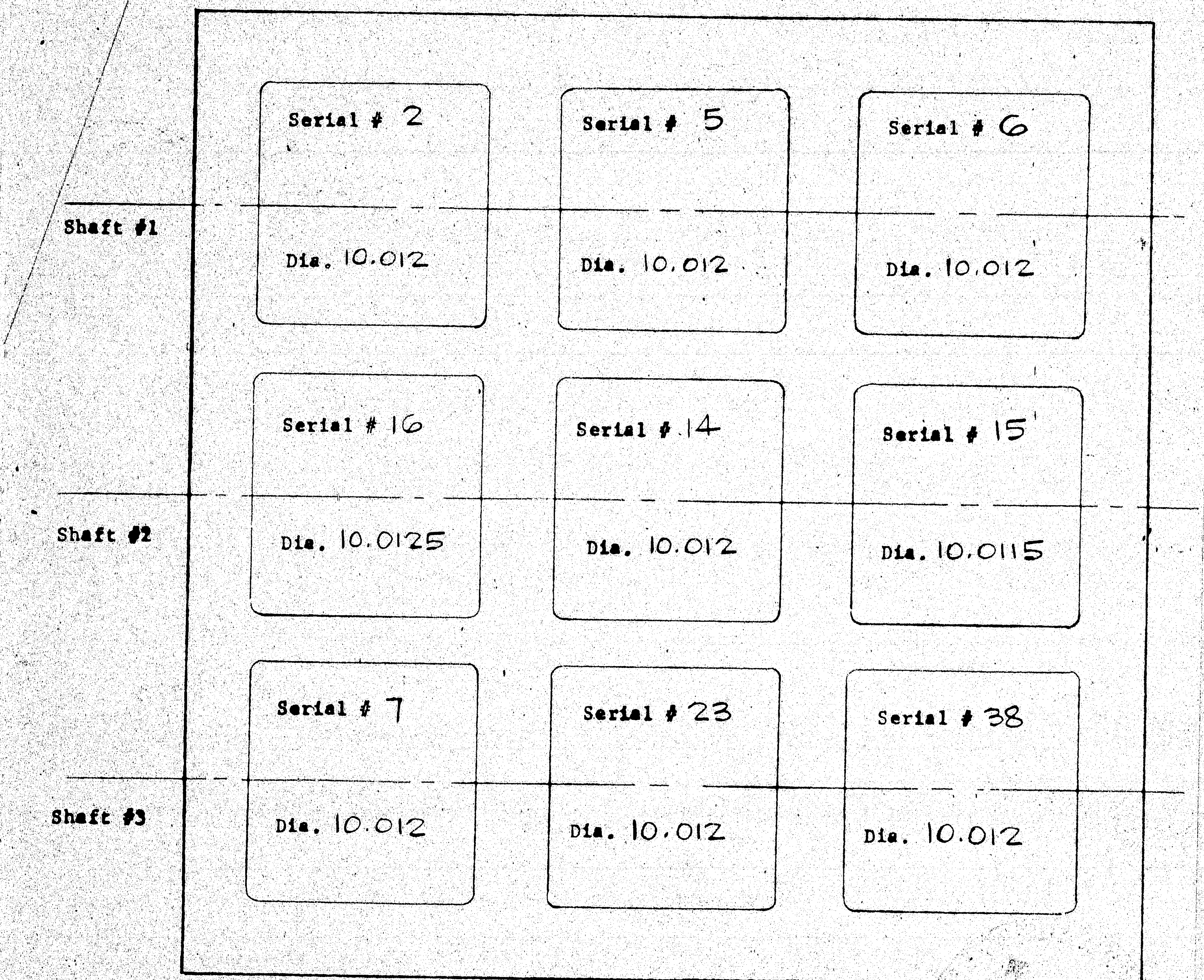
RECEIVED BETHLEHEM STEEL CORP. WORKS ENGINEER CHICAGO

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY S.S. [illegible] SEP 9 1970

RIVETS	MADE RLK	DATE 8-10-70	REV.	IN CHARGE LAG
HOLES	CHECKED C.A.D.	DATE 8-28-70	REV.	Contract CG6290-090
PAINT	SHOP NO.		TIER	SHEET SK37
SHOP CONTACT SURFACES				

137:56

BETHLEHEM STEEL CORPORATION



Shaft #1	Serial # 2 Dia. 10.012	Serial # 5 Dia. 10.012	Serial # 6 Dia. 10.012
Shaft #2	Serial # 16 Dia. 10.0125	Serial # 14 Dia. 10.012	Serial # 15 Dia. 10.0115
Shaft #3	Serial # 7 Dia. 10.012	Serial # 23 Dia. 10.012	Serial # 38 Dia. 10.012

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R.W. Christie NOV 18 1970

ROLLER NEST FRAME ASSEMBLY

Location Anchor Pier Exp. Shoe - N.E.

RECEIVED

Project #I-95-1(22)16, Kittery, Maine

In Charge LAG	Made JGH Date 11-5-70	Revised ..... Date	Contract CG 6290
Shop No.	Checked ..... Date	Revised ..... Date	Sheet SK42

Customer Maine State Highway Commission

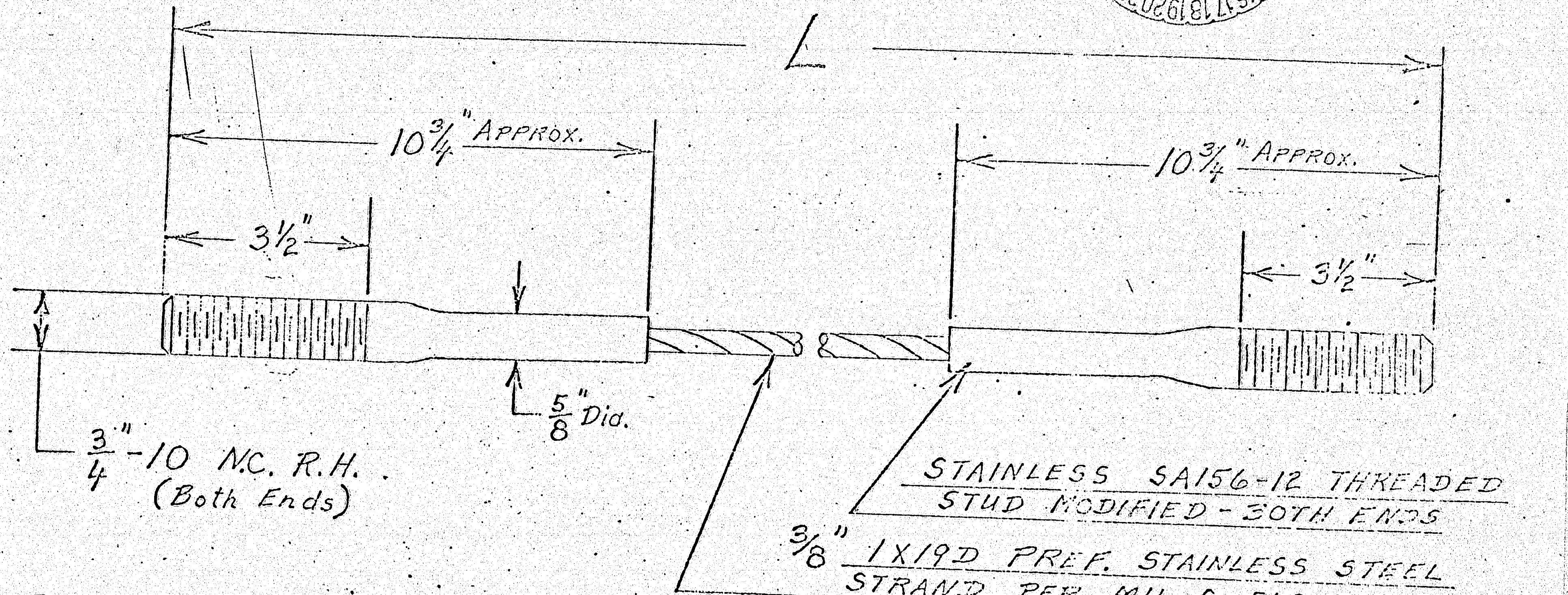
Structure Piscataqua River Bridge - Contract #5

137:61

Piscataqua River Bridge - Interstate Route 95
Project No. I-95-1(22)16
Portsmouth, N.H. to Kittery, Maine
Contract No. 5 - River Bridge Superstructure
Bethlehem Steel Contract No. CG6290
Reqn. 906-D-170

-NOT TO SCALE-

DEC 1970
RECEIVED
BETHLEHEM STEEL CORP.
WORKS ENGINEER
CHICAGO


L
10 3/4" Approx.
10 3/4" Approx.
3 1/2"
3 1/2"
5/8" Dia.
3/4"-10 N.C. R.H. (Both Ends)
STAINLESS SA156-12 THREADED STUD MODIFIED - BOTH ENDS
3/8" 1X19D PREF. STAINLESS STEEL STRAND PER MIL-C-5693C AS APPLICABLE

RE: Bethlehem Steel Corp.
Drawing # 540

R1

QUANTITY	P/N	~~APPROX.~~ LENGTH (L)
6	540 F.D	105'-7"
3	540 N	2'-9"

R1

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y
BY SN NOV 30 1970

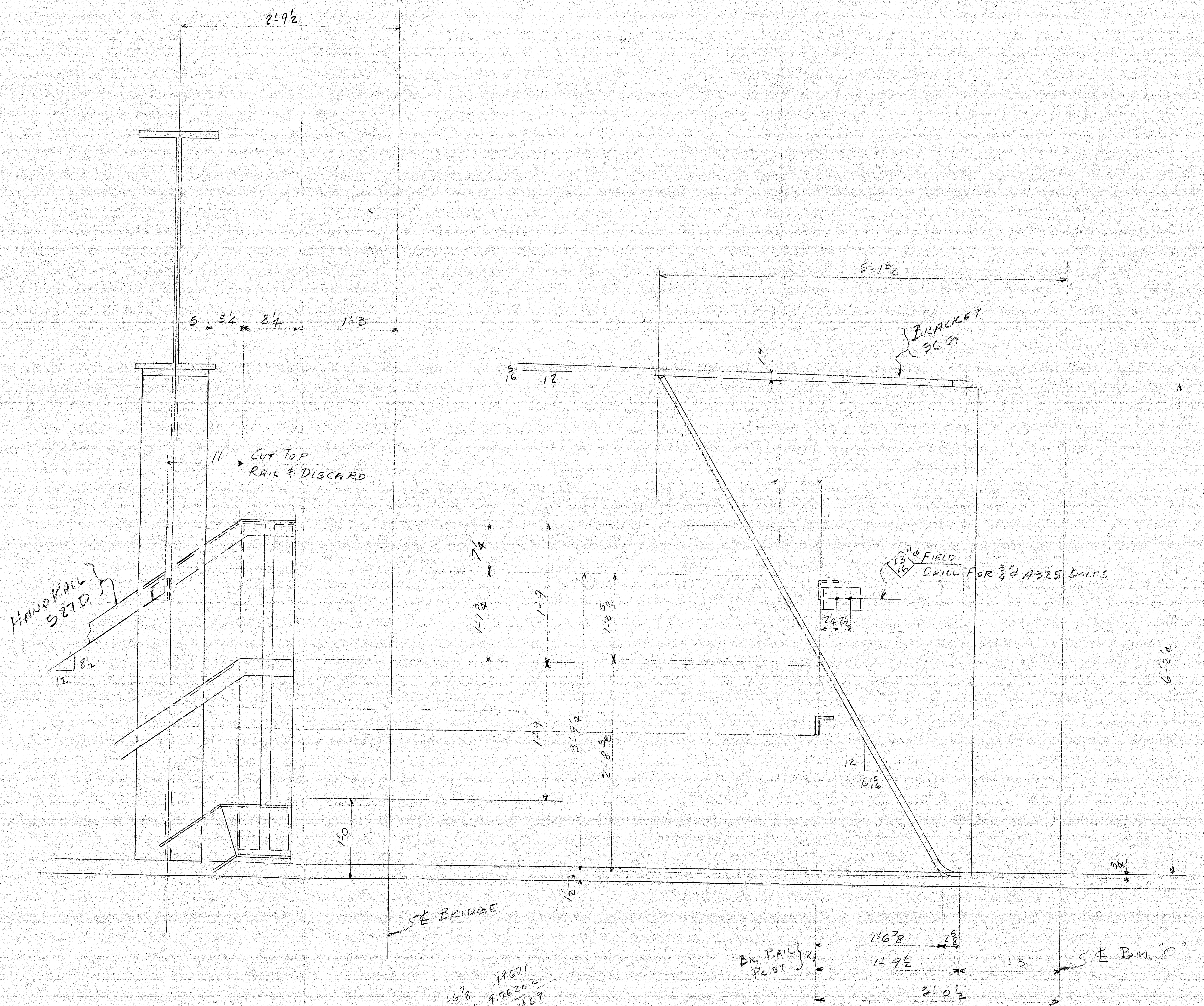
Drawing: SK44

COPY

R1 11-24-70

MACWHYTE COMPANY
KENOSHA, WISCONSIN
NOVEMBER 12, 1970

137:62



1'-6⅞ .19671
-TAN 9.76202
0.43469
2'-8⅝

6 15/16
SIN 9.69941
COS 9.93738
TAN 9.76202

1'-0⅝ .02205
+TAN 9.76202
9.78407
7⅝

E3
FL BM O LINE 8
BRKT 36G

DESIGN 17/54
" 36/54

E21
SEC A-A
H.R 527 D-FS

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
MAR 1 1971
BY F.F.W.

MATERIAL
RIVETS OR BOLTS
OPEN HOLES
A325 FIELD BOLTS
SHOP CONTACT SURFACES
PAINT

OFFICE COPY

For location of details shown on this sheet refer to diagrams.

DUE TO	NO.	DATE	INIT.
	0		
	9		
	8		
	7		
	6		
	5		
	4		
	3		
	2		
	1		

REVISION

SUBMITTAL	1	2	3	4	5	6	7	8	9	0
DATE										

CUSTOMER MAINE STATE HIGHWAY COMM.
STRUCTURE

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION
CHICAGO DRAFTING ROOM CHICAGO WORKS
MADE BY ET DATE 2-23-71 IN CHARGE L. GOTHBERG
CHECKED BY DATE SHOP NO.
CONTRACT EG6290 DRAWING NO. SK47

36016 (Rev. C 3-66)

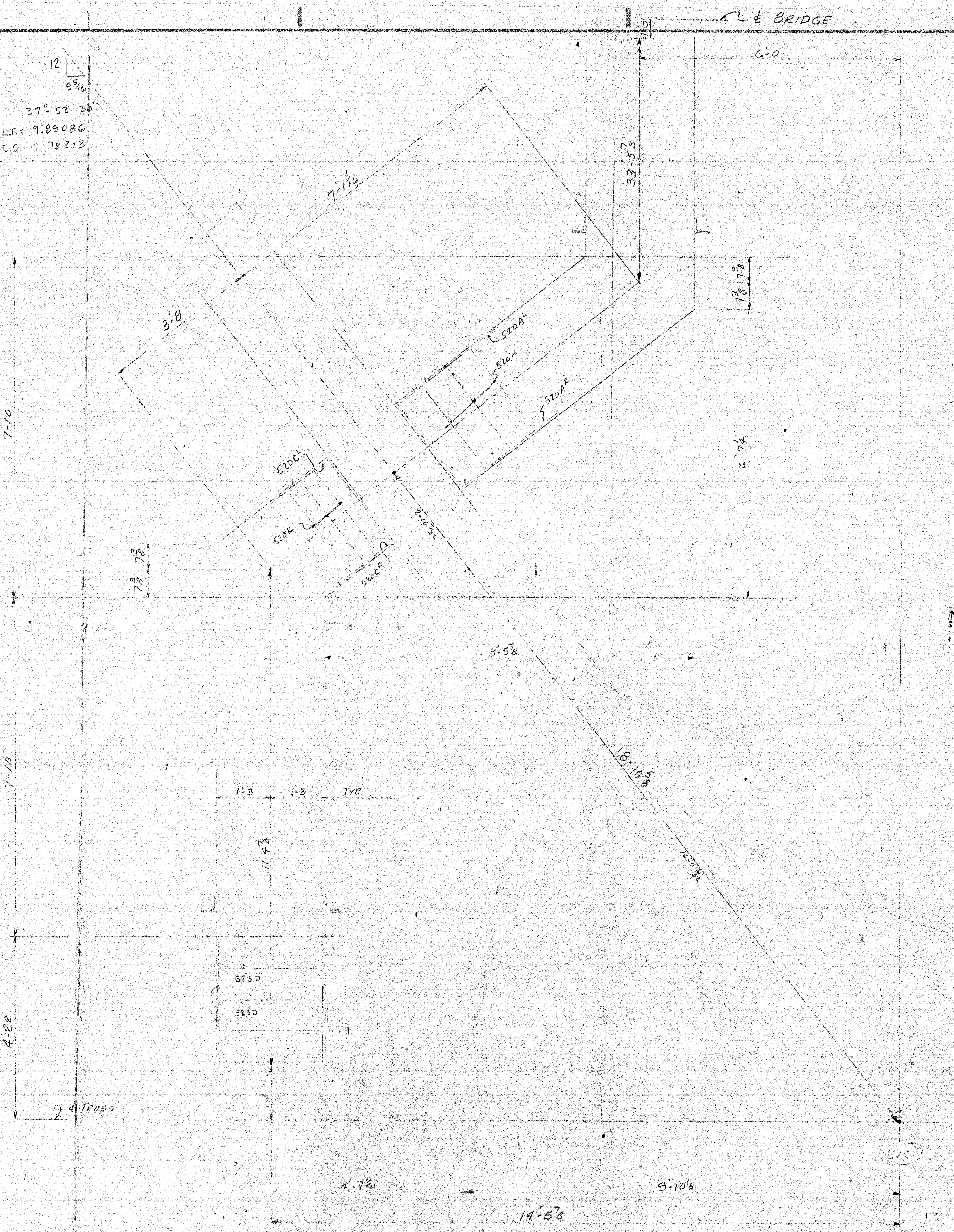
137:63

OPP. 6'-7¼ = .81982
L.T. - 9.89086
0.92896
8'-5⅞

.81982
L.S. - 9.78813
1.03169
10'-9 1/16

ADJ. 12'-7⅞ = 1.10231
L.T. + 9.89086
0.99317 = 9'-10⅛
-9.78813
1.20504 = 16'-0 13/32

HYP. 4'-7¾ = .66706
L.S. + 9.78813
OPP. 0.45519 = 2'-0+ - (2'-0 1/32)
L.T. - 9.89086
ADJ. 0.56433 = 3'-8



For location of details shown on this sheet refer to diagrams

MATERIAL
RIVETS OR BOLTS
OPEN HOLES
A325 FIELD BOLTS
SHOP CONTACT SURFACES
PAINT

REVISION NO.	DATE	INIT.
0		
9		
8		
7		
6		
5		
4		
3		
2		
1		

SUBMITTAL	1	2	3	4	5	6	7	8	9	0
DATE										

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY J. Zarin FEB 11 1970

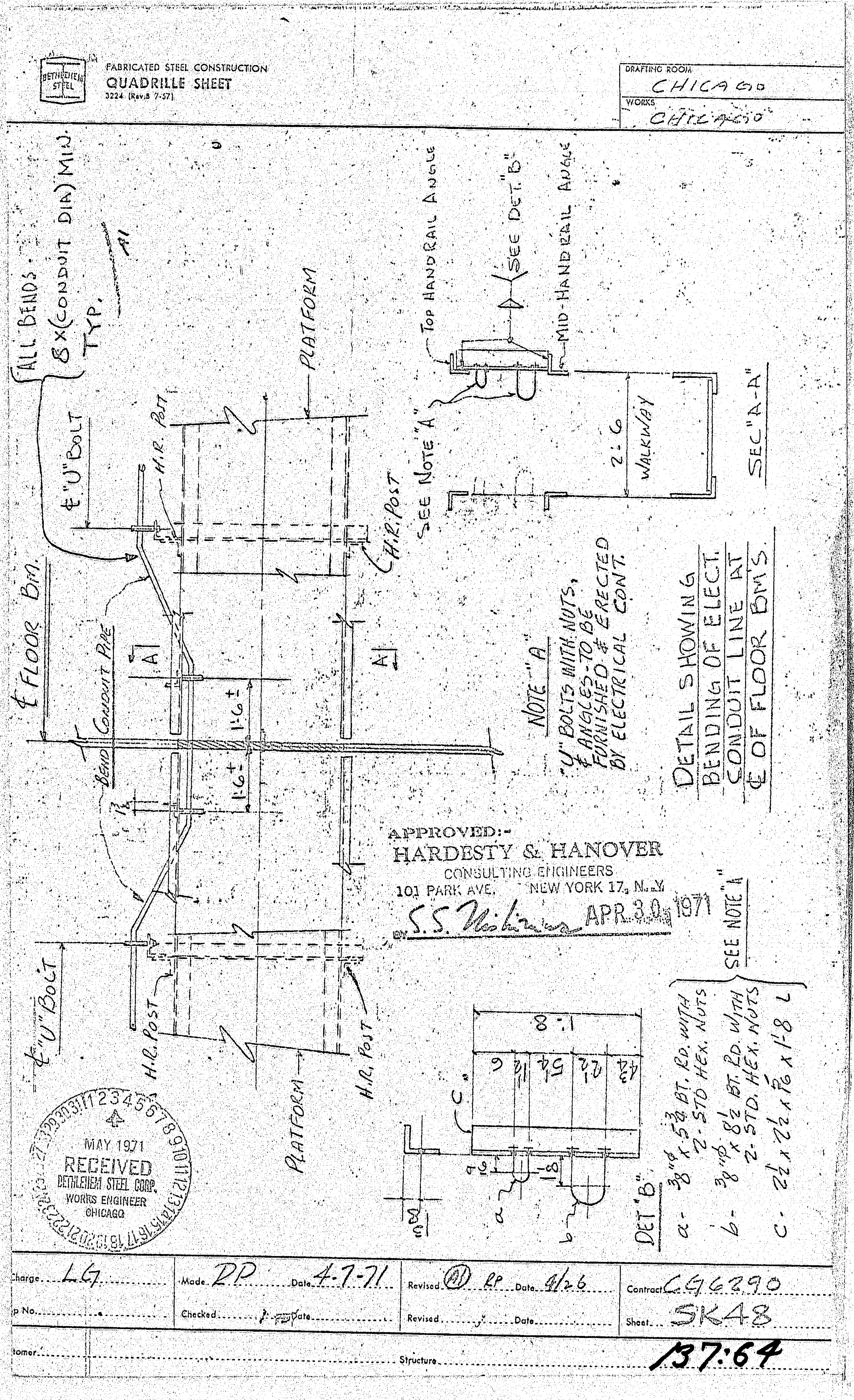
CUSTOMER MAINE STATE HIGHWAY COMMISSION
HARDESTY AND HANOVER CONSULTING ENG'R.
STRUCTURE PISCATAQUA RIVER BRIDGE, CONTRACT #5
PROJECT #1-95-1(22)16, KITTERY, MAINE

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

CHICAGO DRAFTING ROOM WORKS
MADE BY DATE IN CHARGE
CHECKED BY DATE SHOP NO.
CONTRACT CG 6240-090 DRAWING NO. L2

25450 (Rev. 0 6-69)

137:65



FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

DRAFTING ROOM CHICAGO
WORKS CHICAGO

NOTE "A"
"U" BOLTS WITH NUTS, & ANGLES TO BE FURNISHED & ERECTED BY ELECTRICAL CONT.

DETAIL SHOWING BENDING OF ELECT. CONDUIT LINE AT ℄ OF FLOOR BM'S

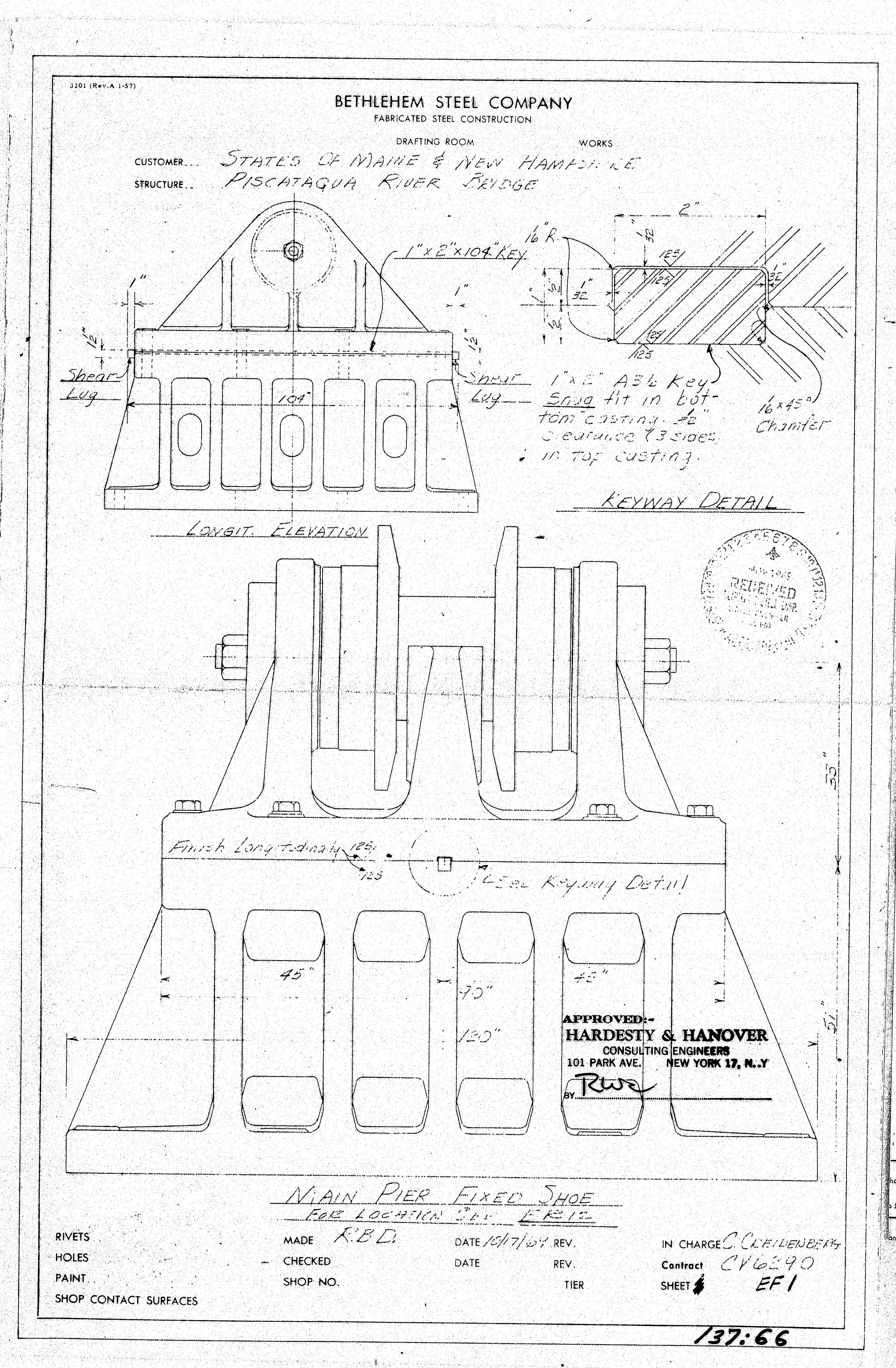
DET "B"
a - 3/8" ⌀ x 5 3/8 BT. RD. WITH 2-STD HEX. NUTS
b - 3/8" ⌀ x 8 1/2 BT. RD. WITH 2-STD. HEX. NUTS
c - 2 1/2 x 2 1/2 x 5/16 x 1'-8 L
SEE NOTE "A"

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY S.S. Nishimura APR 30 1971

MAY 1971
RECEIVED
BETHLEHEM STEEL CORP.
WORKS ENGINEER
CHICAGO

Charge LG Made RP Date 4-7-71 Revised (A1) RP Date 4/26 Contract CG6290
Shop No. Checked Date Revised Date Sheet SK48
Customer Structure

137:64



3201 (Rev.A 1-57)

BETHLEHEM STEEL COMPANY
FABRICATED STEEL CONSTRUCTION

DRAFTING ROOM WORKS
CUSTOMER... STATES OF MAINE & NEW HAMPSHIRE
STRUCTURE... PISCATAQUA RIVER BRIDGE

LONGIT. ELEVATION

KEYWAY DETAIL

MAIN PIER FIXED SHOE
FOR LOCATION SEE EF1

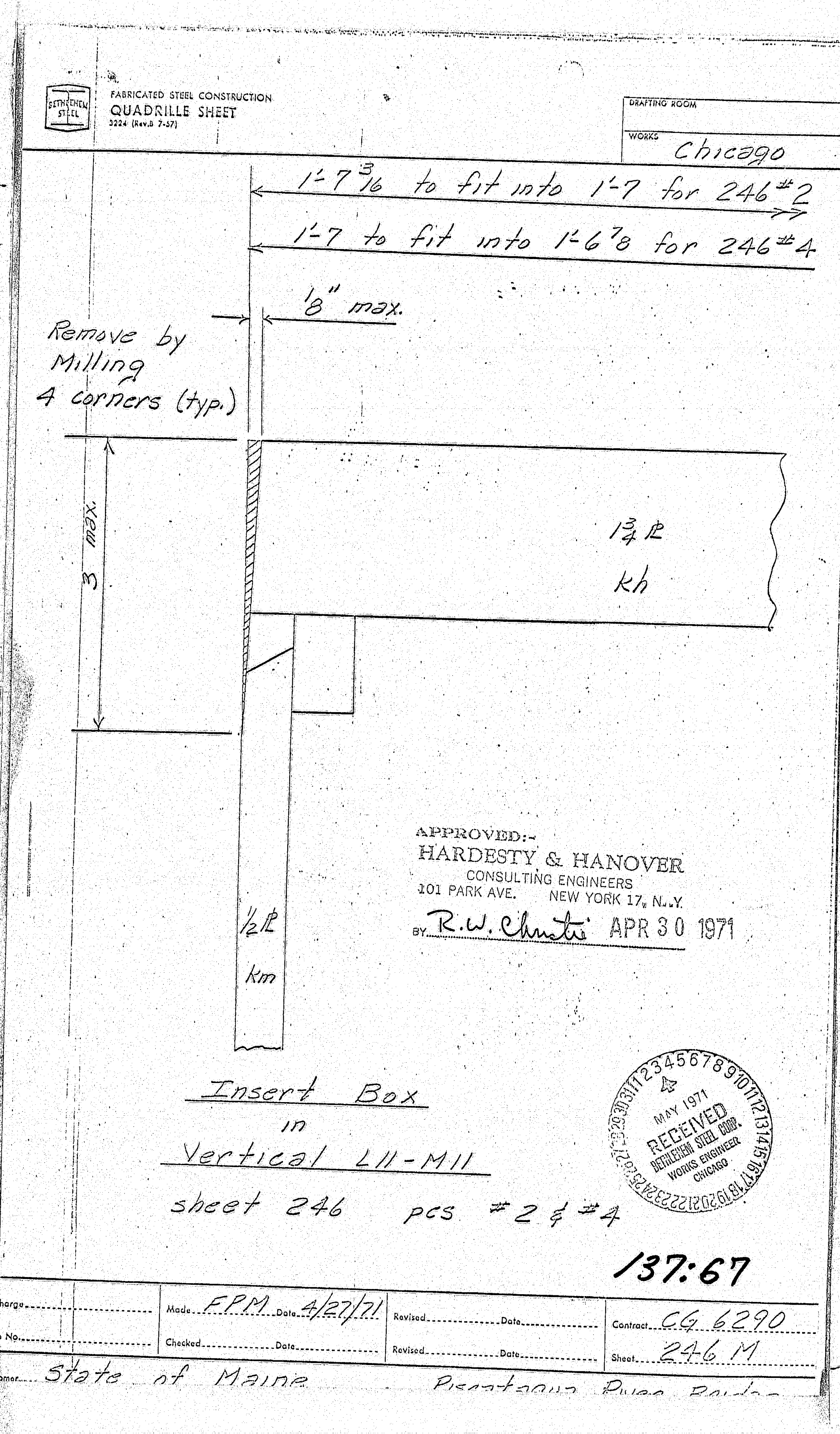
APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY RWC

RIVETS
HOLES
PAINT
SHOP CONTACT SURFACES

MADE R.B.D. DATE 10/17/67 REV.
CHECKED DATE REV.
SHOP NO. TIER

IN CHARGE C. Creilenberg
Contract CV6290
SHEET EF1

137:66


1'-7 3/16 to fit into 1'-7 for 246 #2
1'-7 to fit into 1'-6 7/8 for 246 #4
1/8" max.
Remove by Milling 4 corners (typ.)
3 max.
1 3/4 ℞
kh
1/2 ℞
km

FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

DRAFTING ROOM
WORKS Chicago

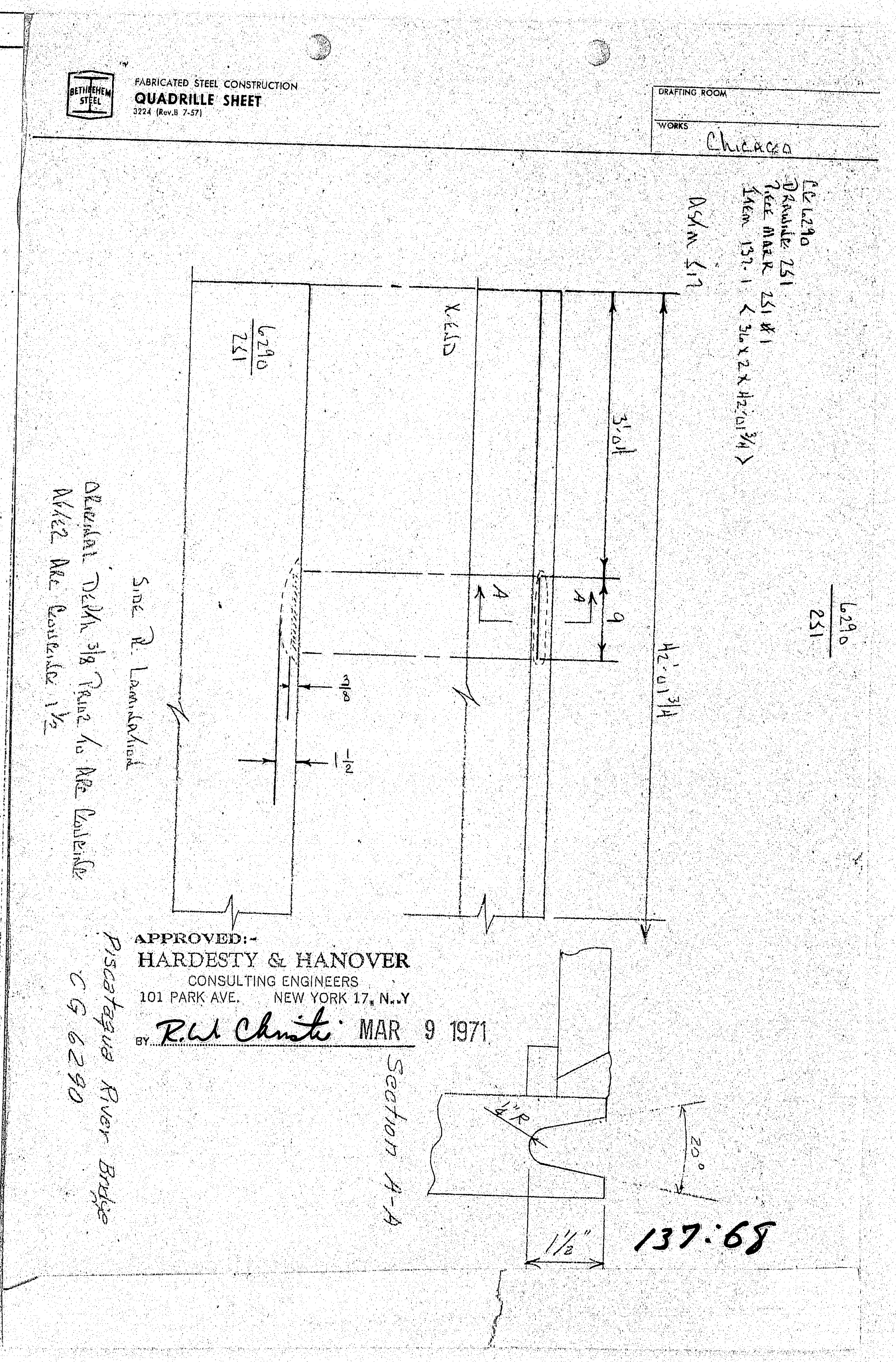
APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R.W. Christie APR 30 1971

Insert Box
in
Vertical L11-M11
sheet 246 pcs #2 & #4

MAY 1971
RECEIVED
BETHLEHEM STEEL CORP.
WORKS ENGINEER
CHICAGO

137:67

Charge Made FPM Date 4/27/71 Revised Date Contract CG 6290
Shop No. Checked Date Revised Date Sheet 246 M
Customer State of Maine Piscataqua River Bridge



FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

DRAFTING ROOM
WORKS Chicago

CG 6290
Drawing 251
Piece Mark 251 #1
Item 132-1 < 3 1/2 x 2 x 42'-0 3/4 >
Dwg. 517

Side ℞ Laminated

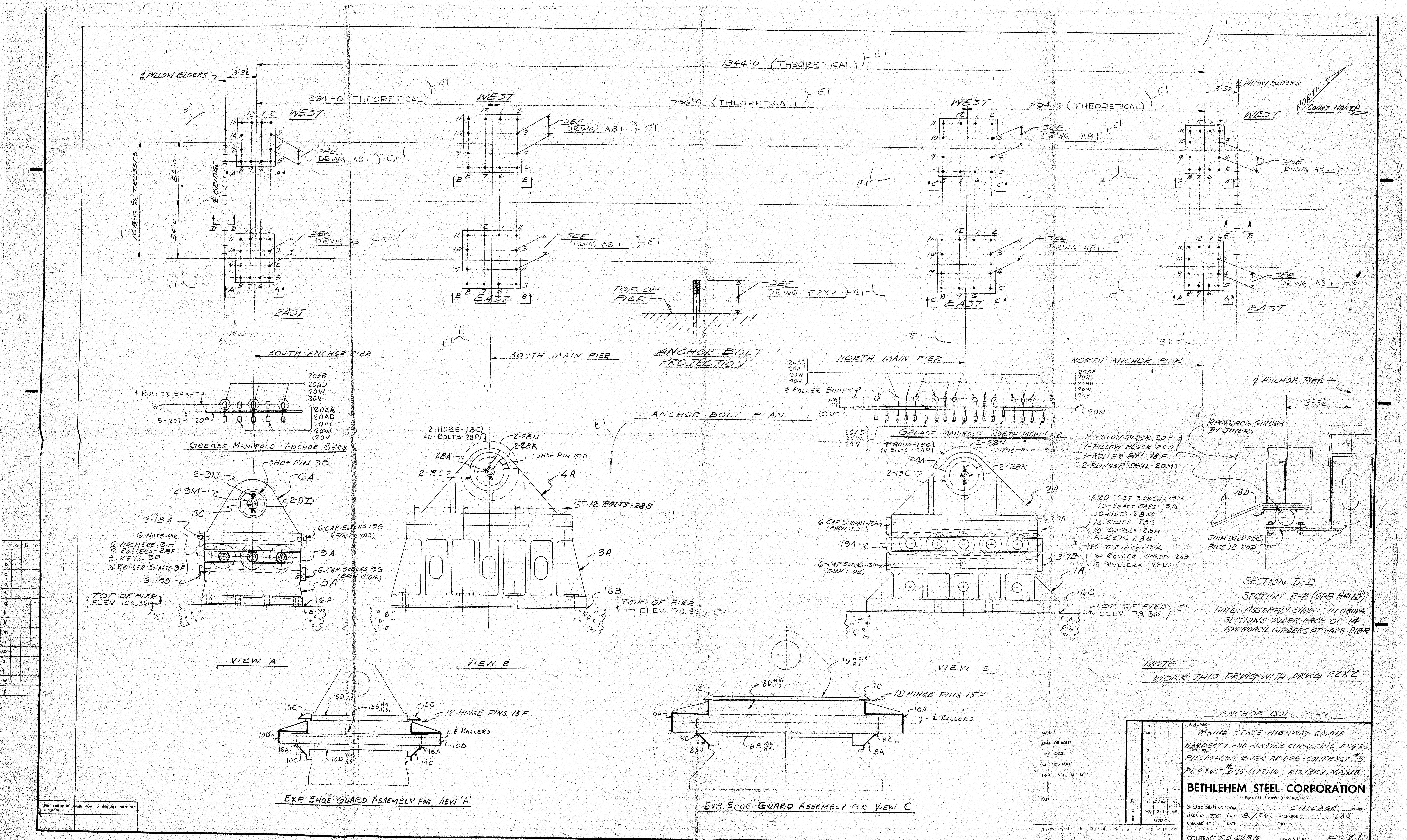
Original Detail 3/8 Plate to Ae Controlling
Added Ae Controlling 1 1/2

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R.W. Christie MAR 9 1971

Piscataqua River Bridge
CG 6290

Section A-A

137:68



NOTE:
WORK THIS DRWG WITH DRWG E2X2

ANCHOR BOLT PLAN

MATERIAL
RIVITS OR BOLTS
OPEN HOLES
A325 FIELD BOLTS
SHOP CONTACT SURFACES
PAINT

DUE TO	NO	DATE	INIT
	0		
	9		
	8		
	7		
	6		
	5		
	4		
	3		
	2		
E	1	3/18	RLK

REVISION

SUBMITTAL	1	2	3	4	5	6	7	8	9	0
DATE										

CUSTOMER
MAINE STATE HIGHWAY COMM.
HARDESTY AND HANOVER CONSULTING ENG'R.
STRUCTURE
PISCATAQUA RIVER BRIDGE - CONTRACT #5.
PROJECT # I-95-1(22)16 - KITTERY, MAINE

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

CHICAGO DRAFTING ROOM CHICAGO WORKS
MADE BY T.C. DATE 8/26 IN CHARGE LAG
CHECKED BY DATE SHOP NO.
CONTRACT 66290 DRAWING NO. E2X1

36016 (Rev. C 3-66)

137-69

3233 (Rev. B 1-65)

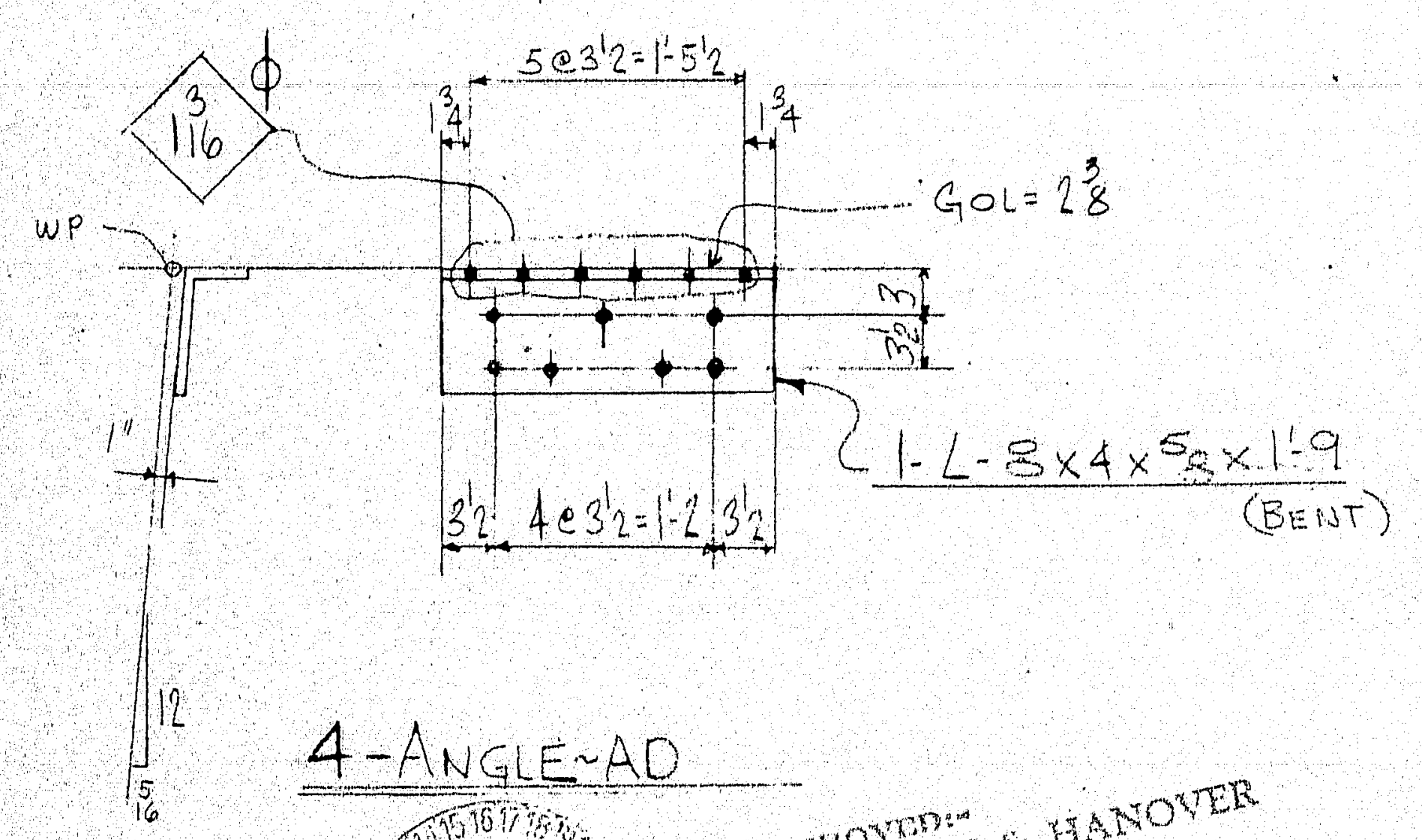
BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

CHICAGO DRAFTING ROOM CHICAGO WORKS

CUSTOMER MAINE STATE HWY COMMISSION
STRUCTURE PISCATAQUA RIVER BRIDGE, KITTERY MAINE

THE SHOP TO FABRICATE & FURNISH THE FOLLOWING MATERIAL & SHIP TO SITE BY 12-16-70

24 - A325 BOLTS 1⅛ϕ x 3¼
24 - HARDENED WASHER FOR 1⅛ϕ BOLTS



4-ANGLE~AD

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HARDESTY & HANOVER
101 PARK AVE. NEW YORK 17, N.Y.
BY S.S. Nishimura DEC 14 1970

NOTE -
THE MATERIAL FURNISHED ABOVE TO BE USED FOR THE REVISION TO BRACING 26 B ℄ TO BE CORRECTED IN THE FIELD.

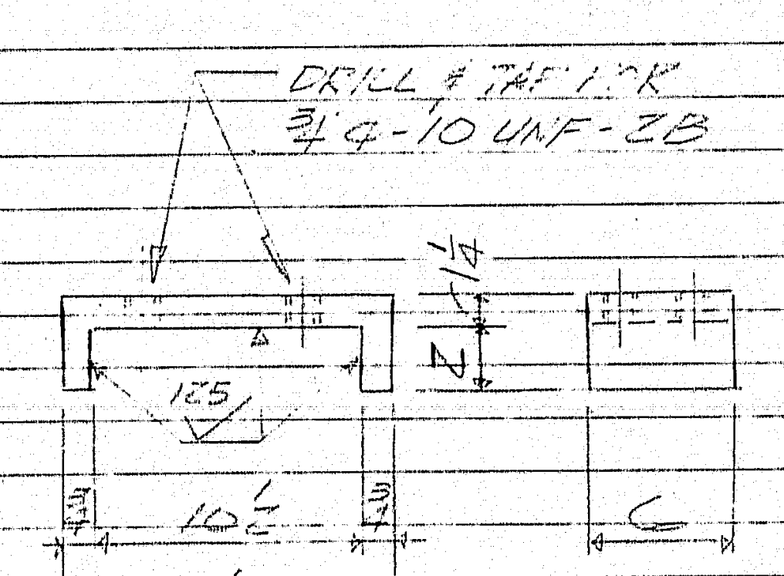
NO PAY WEIGHT

RIVETS —— MADE LM DATE 12-7-70 REV. IN CHARGE LAG
HOLES 11/16ϕ UN CHECKED RP DATE 12-8-70 REV. Contract CG6290-000
PAINT NP SHOP NO. TIER SHEET SO 10
SHOP CONTACT SURFACES

137:74

FABRICATED STEEL CONSTRUCTION
BILL OF MISCELLANEOUS MATERIAL
3211 (Rev. B 2-57)

CHICAGO DRAFTING ROOM CHICAGO WORKS



LINE	NO.	DESCRIPTION	MARK OR ITEM NO.	WEIGHT	REQUISITION NO.	ORDER NO.
1						
2						
3						
4						
5						
6						
7					ORD REQN 9060 309	
8						
9						
10						
11						
12						
13						
14						
15						
16		25Z-BRONZE SHOES				
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

APPROVED:-
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BY SN NOV 11 1969

Material: BRONZE
Specifications: ASTM B-22 ALLOY E
Machining: FINISH AS INDICATED TO ASA 125
Paint: NONE
Shipment:
Inspection: MAINE STATE HWY COMM
Remarks:

137:75

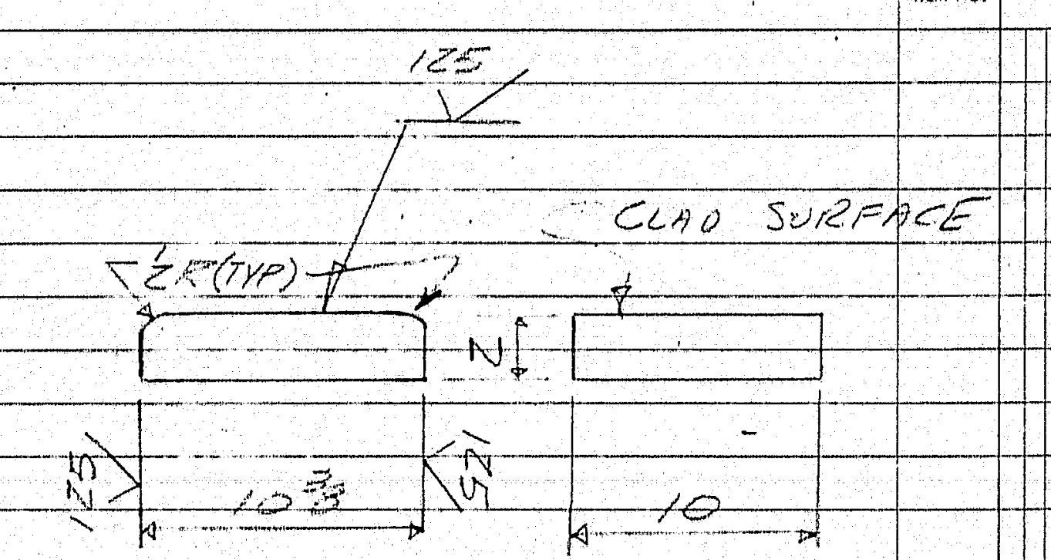
Gen'l Supt. ☐ Layout ☐ Temp. Shop ☐ Smith Shop ☐ Loader ☐ Scale ☐ Purch. Dept. ☐ Erection ☐ O. Insp. ☐ ☐ ☐
Shop Supt. ☐ Filter ☐ Mach. Shop ☐ Rod Shop ☐ Shipper ☐ Bill ☐ Owners ☐ S. Insp. ☐ App'l

IN CHARGE LAG
Made PS Date 8 Revised Date Contract CG6290-000
Checked Date Revised Date Bill Page No. AM1 USE AS B.F.P.

Customer MAINE STATE HWY COMM Structure PISCATAQUA RIVER BRIDGE

FABRICATED STEEL CONSTRUCTION
BILL OF MISCELLANEOUS MATERIAL
3211 (Rev. B 2-57)

CHICAGO DRAFTING ROOM CHICAGO WORKS



LINE	NO.	DESCRIPTION	MARK OR ITEM NO.	WEIGHT	REQUISITION NO.	ORDER NO.
1						
2						
3						
4						
5						
6						
7						
8					ORD REQN 9060 310	
9						
10						
11						
12						
13						
14		25Z- STAINLESS CLAD PL.				
15						
16		10⅜ x 2 x 0'-10 F1S & F2W.				
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

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101 PARK AVE. NEW YORK 17, N.Y
BY SN NOV 11 1969

Material: STAINLESS CLAD PL (SINGLE CLAD)
Specifications: CLAD PL A264, STAINLESS STL A240 TYPE 316, BACKUP STEEL ASTM A36
Machining: FINISH AS INDICATED TO ASA 125
Paint: NONE
Shipment:
Inspection: MAINE STATE HWY COMM
Remarks:

137:76

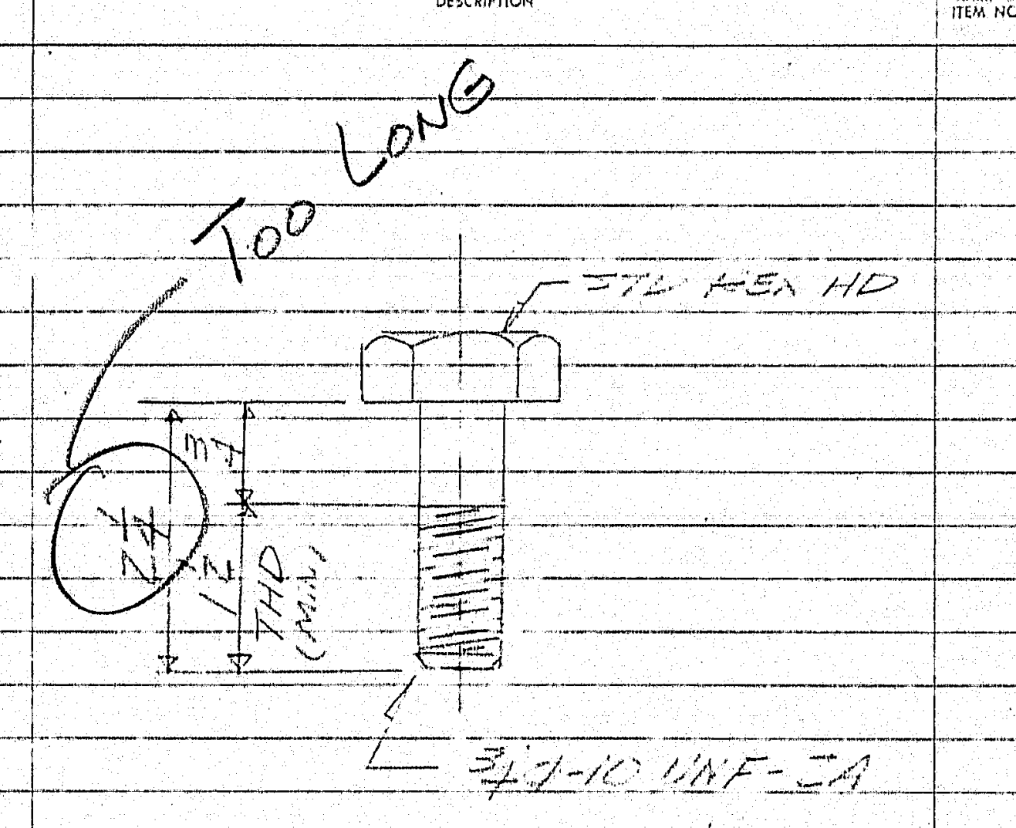
Gen'l Supt. ☐ Layout ☐ Temp. Shop ☐ Smith Shop ☐ Loader ☐ Scale ☐ Purch. Dept. ☐ Erection ☐ O. Insp. ☐ ☐ ☐
Shop Supt. ☐ Filter ☐ Mach. Shop ☐ Rod Shop ☐ Shipper ☐ Bill ☐ Owners ☐ S. Insp. ☐ App'l

IN CHARGE LAG
Made PS Date 8-29-69 Revised Date Contract CG6290-000
Checked Date Revised Date Bill Page No. AM2 USE AS B.F.P.

Customer MAINE STATE HWY COMM Structure PISCATAQUA RIVER BRIDGE

FABRICATED STEEL CONSTRUCTION
BILL OF MISCELLANEOUS MATERIAL
3211 (Rev. B 2-57)

CHICAGO DRAFTING ROOM CHICAGO WORKS



LINE	NO.	DESCRIPTION	MARK OR ITEM NO.	WEIGHT	REQUISITION NO.	ORDER NO.
1						
2						
3						
4						
5						
6						
7						
8						
9					ORD REQN 9060 309	
10						
11						
12						
13						
14						
15						
16						
17		100B - BRONZE CAPSCREW				
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

Material: SILICON BRONZE
Specifications: ASTM
Machining:
Paint: NONE
Shipment:
Inspection: MAINE STATE HWY COMM
Remarks:

To Be Revised and Resubmitted
For Approval
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y
BY SN NOV 11 1969
NOV 11 1969

Gen'l Supt. ☐ Layout ☐ Temp. Shop ☐ Smith Shop ☐ Loader ☐ Scale ☐ Purch. Dept. ☐ Erection ☐ O. Insp. ☐ ☐ ☐
Shop Supt. ☐ Filter ☐ Mach. Shop ☐ Rod Shop ☐ Shipper ☐ Bill ☐ Owners ☐ S. Insp. ☐ App'l

IN CHARGE LAG
Made PS Date 8-29-69 Revised Date Contract CG6290-000
Checked Date Revised Date Bill Page No. AM3 USE AS B.F.P.

Customer MAINE STATE HWY COMM Structure PISCATAQUA RIVER BRIDGE

137:77

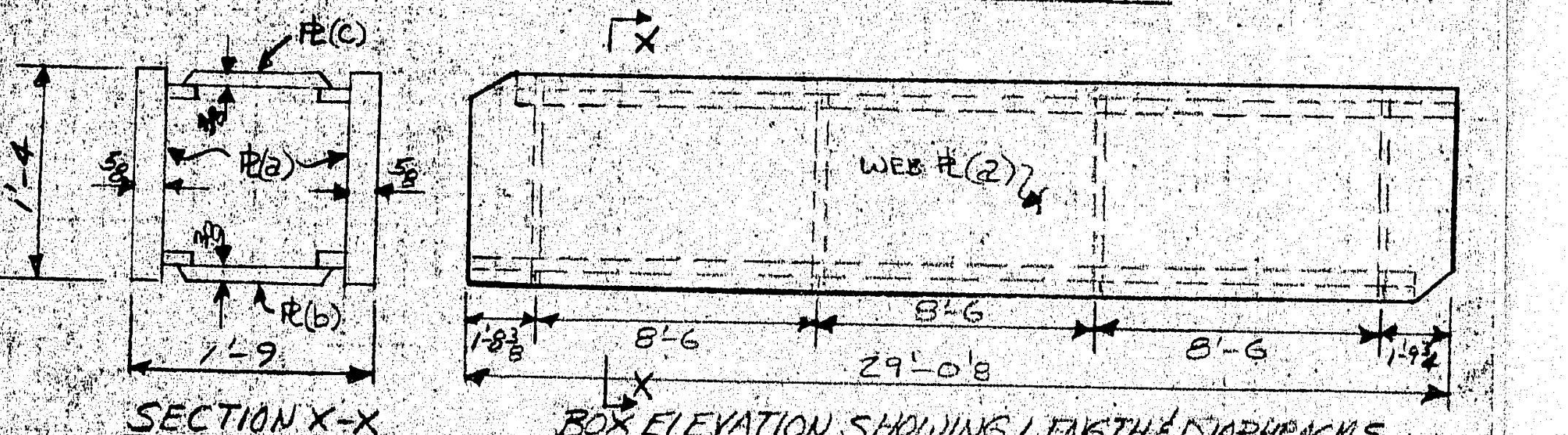
5

FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev. B 7-57)

6290-070
101A (DIAGONAL-SWAY FRAME

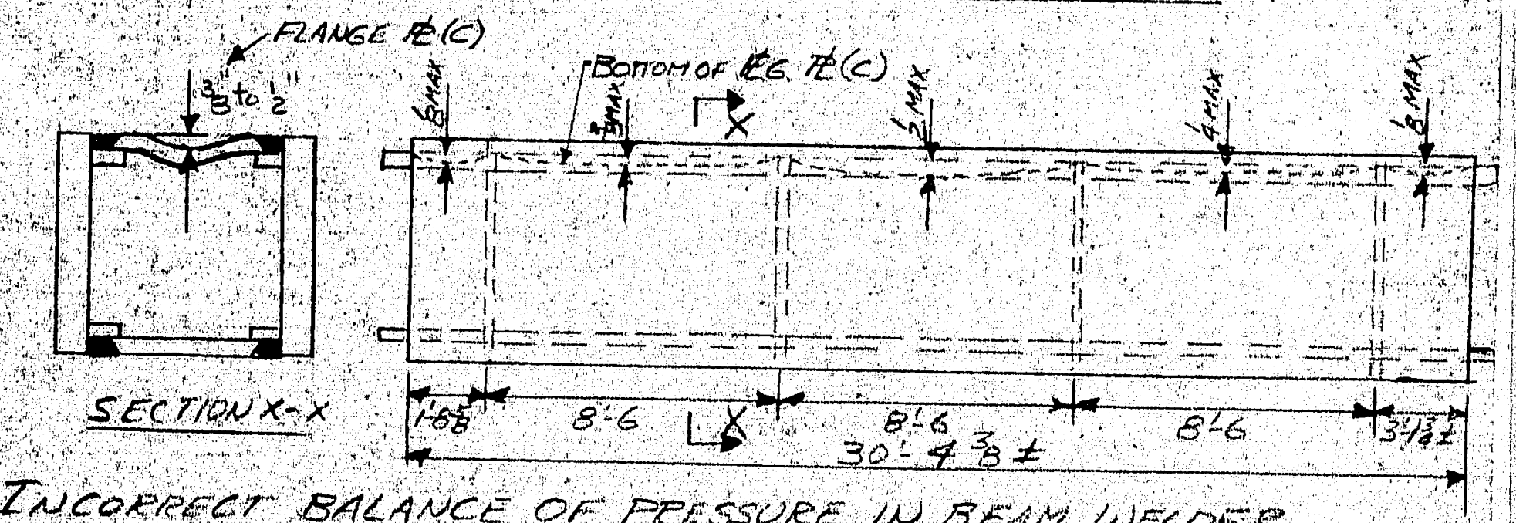
DRAFTING ROOM
WORKS CHICAGO

DIAGONAL BOX AS SHOWN ON SHEET 101:



SECTION X-X
BOX ELEVATION SHOWING LENGTH & DIAPHRAGMS

PRESENT STATUS OF BOX AS BUILT AND WELDED: (NOT CUT TO LENGTH)

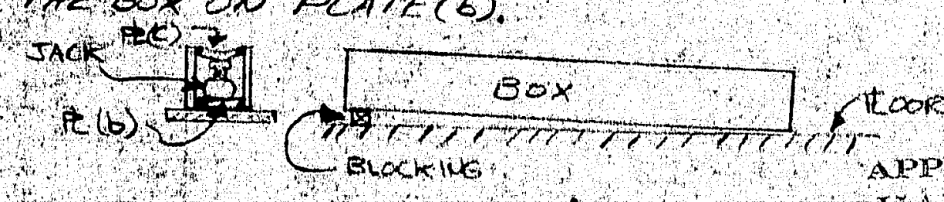


SECTION X-X

INCORRECT BALANCE OF PRESSURE IN BEAM WELDER RESULTED IN BENDING FLANGE PLATE (C) ALONG ITS ℄.

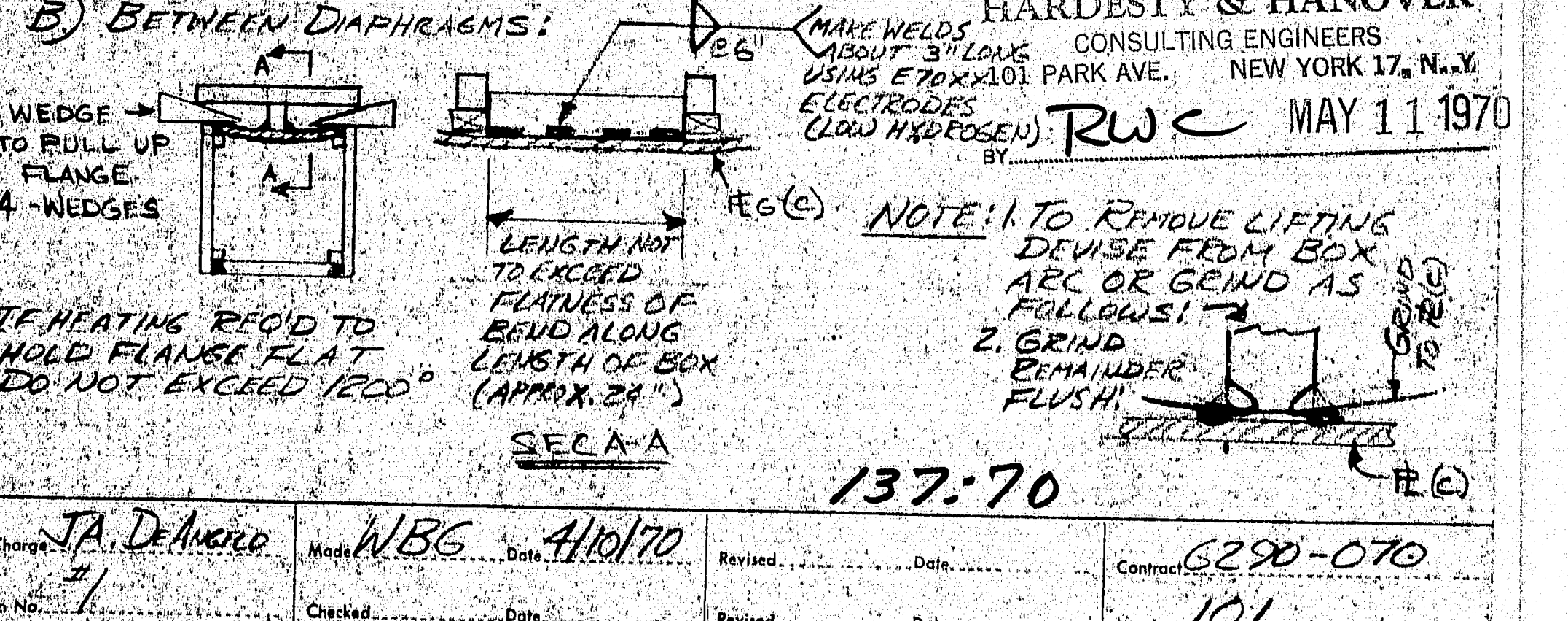
TO CORRECT SITUATION:

A) FROM END DIAPHRAGM TO END OF BOX: PUT JACK BETWEEN FLANGE PLATES b & C INSIDE BOX AND JACK OUT PLATE C STRAIGHT WITH THE WEIGHT OF THE BOX ON PLATE (b).



NOTE: NO PHYSICAL DAMAGE TO MATERIAL.

B) BETWEEN DIAPHRAGMS:



(MAKE WELDS ABOUT 3" LONG USING E70XX ELECTRODES (LOW HYDROGEN))

LENGTH NOT TO EXCEED FLATNESS OF BEND ALONG LENGTH OF BOX (APPROX. 24")

IF HEATING REQ'D TO HOLD FLANGE FLAT DO NOT EXCEED 1200°

SEC A-A

NOTE: 1. TO REMOVE LIFTING DEVISE FROM BOX ARC OR GRIND AS FOLLOWS:
2. GRIND REMAINDER FLUSH.

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CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY RWC MAY 11 1970

137:70

In Charge J.A. DeAngelo Made WBG Date 4/10/70 Revised Date Contract 6290-070
Shop No. #1 Checked Date Revised Date Sheet 101
Customer MAINE STATE HIGHWAY COMM. Structure PISCATAQUA RIVER BRIDGE

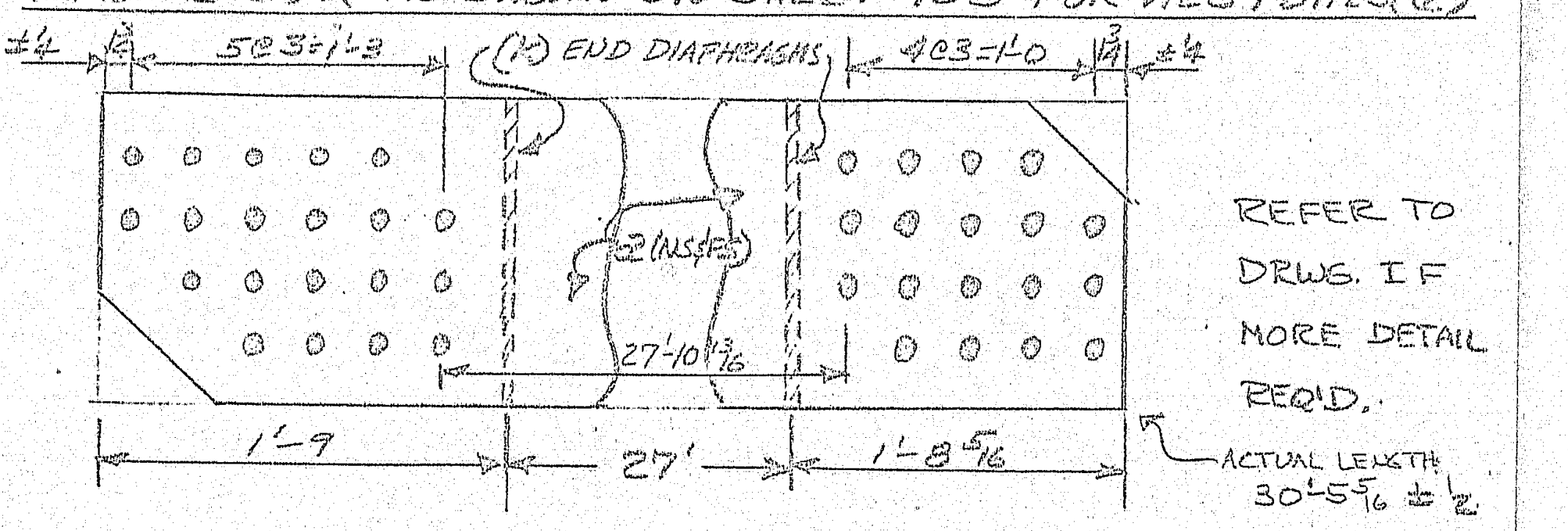
5

FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev. B 7-57)

6290-070
103A (DIAGONAL-SWAY FRAME)

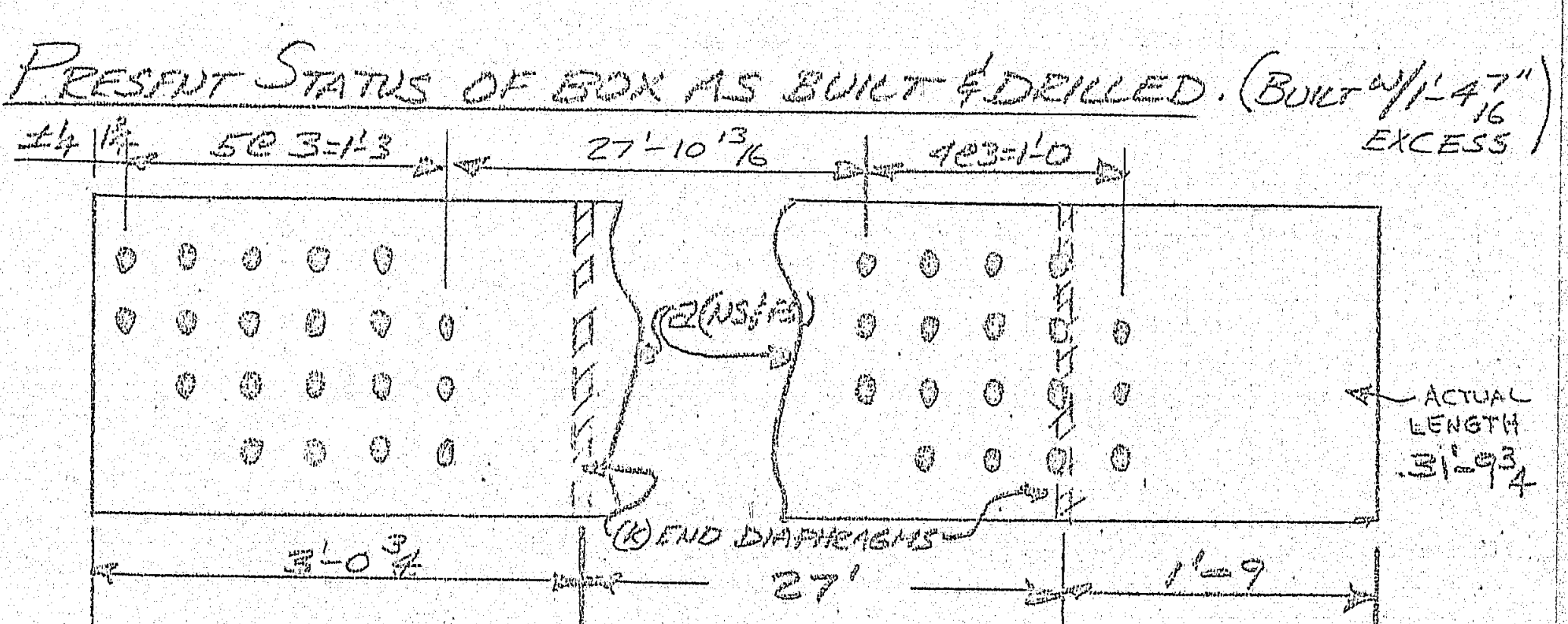
DRAFTING ROOM
WORKS CHICAGO

DIAGONAL BOX AS SHOWN ON SHEET 103 FOR WEB PLATES (2)



REFER TO DRWG. IF MORE DETAIL REQ'D.

PRESENT STATUS OF BOX AS BUILT & DRILLED. (BUILT w/ 1'-4 7/16" EXCESS)



BOX WAS BUILT WITH 1'-4 7/16" EXCESS, HOWEVER WRONG END WAS PLACED IN HILL DRILL FOR DRILLING WEBS.

TO CORRECT SITUATION:

1. MAKE DIAPHRAGM (K) ON LEFT END DIAPHRAGM BY REMOVING PIPE PLUG.
2. PUT A NEW END DIAPHRAGM ~~1'-9 FROM THE LEFT~~ END OF THE BOX AND WELD.
3. REMOVE DIAPHRAGM (K) ON RIGHT END BY CUTTING ⅛" AWAY FROM APPARENT MATERIAL AND GRINDING REMAINDER FLUSH, THEN RE-WELD, 8 HOLES COINCIDENT WITH THE EXISTING DIAPHRAGM.
4. PUT A NEW END DIAPHRAGM AT ITS PROPER LOCATION ON THE RIGHT END OF THE BOX IN RELATION TO THE HOLE PATTERN.

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BY RWC MAY 11 1970

RESULTS: BOX WILL BE AS SHOWN ON DRAWING WITH ONE ADDITIONAL INTERIOR DIAPHRAGM AND ALL OTHER INTERIOR DIAPHRAGMS MOVED TO THE RIGHT BY 1'-4 7/16".

137:71

In Charge J.A. DeAngelo Made WBG Date 4/14/70 Revised WBG Date 4/22/70 Contract 6290-070
Shop No. #1 Checked Date Revised Date Sheet 103
Customer MAINE STATE HIGHWAY COMM. Structure PISCATAQUA RIVER BRIDGE

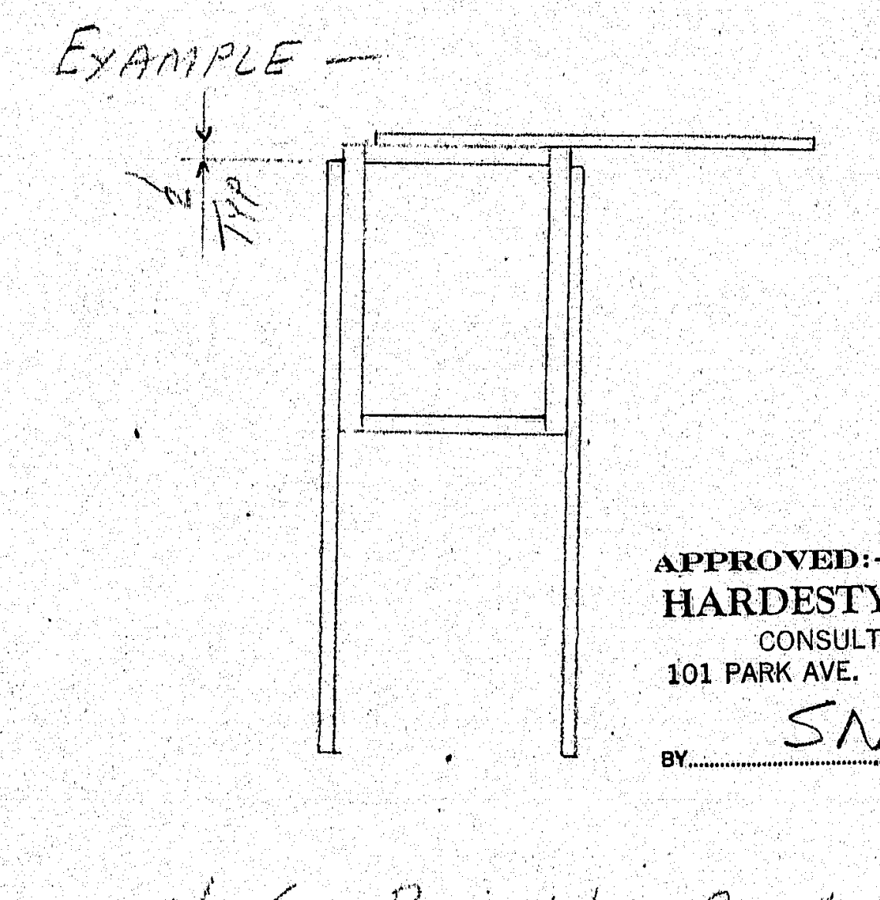
FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev. B 7-57)

DRAFTING ROOM CHGO
WORKS CHGO

SHOP ORDER #3

ON ALL TOP & BOTT. CHORD TRUSS MEMBERS THAT HAVE WEB GUSSET PLATES, THE SHOP MAY CUT THE EDGE SHOWN FLUSH WITH THE BOX MEMBER BACK ¼". THIS IS AS PER SHOP REQUEST FOR RELIEF TO CLEAR LATERAL GUSSET PLATES ON SAME MEMBER.

EXAMPLE -



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BY SN MAY 22 1970

NOTE - NO SET BACK WILL BE ALLOWED WHEN WEB PLATES CALL FOR A MILLED EDGE. POINT L2 (DWG 228) & L4 (DWG 225)

137:72

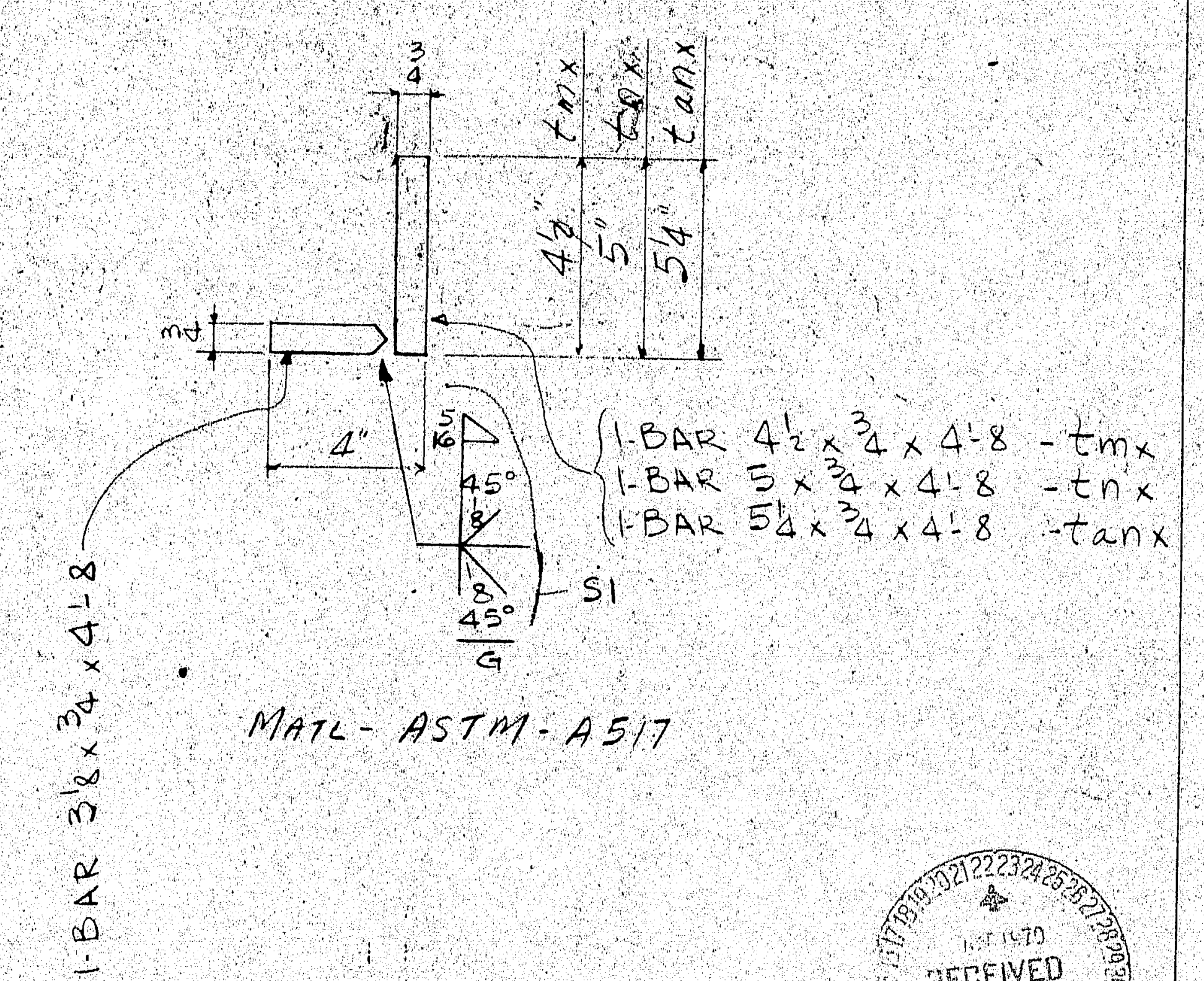
In Charge Made LG Date 5/14 Revised Date Contract CG6290
Shop No. Checked Date Revised Date Sheet SO3
Customer Structure

3233 (Rev. B 1-65)

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

DRAFTING ROOM WORKS

CUSTOMER
STRUCTURE



1-BAR 4½ x ¾ x 4'-8 - tmx
1-BAR 5 x ¾ x 4'-8 - tnx
1-BAR 5¼ x ¾ x 4'-8 - tanx

MATL - ASTM - A517

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SHOP TO FABRICATE ONE ANGLE EACH tmx, tnx, & tanx AS DETAILED ON DWG 128 X

	Wt. Ea
TMX	99.03
TNX	104.63
TANX	107.90

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BY S.S. Nishimura OCT 20 1970
OCT 20 1970

TOTAL WT. 312*

RIVETS MADE RP DATE REV. 10/12/70 IN CHARGE G
HOLES CHECKED LG DATE REV. Contract CG6290
PAINT SHOP NO. TIER SHEET SO #8
SHOP CONTACT SURFACES

137:73

CONTRACT STANDARDS

for FABRICATION of

PISCATAQUA RIVER BRIDGE

Project No. I-95-1(22)16, Contract No. 5

I. General

A. The work shall consist of detailing, furnishing fabricating and shop painting of the structural steel for this contract.

B. All work shall be in accordance with the State of Maine Highway Commission Standard Specifications and the contract Special Provisions as outlined and ammended as follows:

II. Drawings

A. Changes on the approved plans shall be subject to further approval and the Engineer shall be supplied with a record of such changes.

B. Substitution of sections different from those shown on the plans supplied by the Commission, or prepared by the fabricator and previously approved, shall be made only when approved in writing by the Engineer.

C. The fabricator shall be responsible for the correctness of his plans and for shop fits and field connections, although the plans may have been approved.

III. Engineers Inspection

A. The contractor shall give the Engineer ample notice of the beginning of work in the shop, so that inspection may be provided. No material shall be manufactured or work done in the shop before the Engineer has been so notified.

B. The fabricator shall furnish facilities for the inspection of material and workmanship in the mill and shop, and the inspectors shall be allowed free access to the necessary parts of the works.

C. The inspector will have the authority to reject any material or work which does not meet the requirements of the specifications.

D. The acceptance of any material or finished members by the inspector will not prevent their subsequent rejection, if found defective. Rejected material and workmanship shall be replaced promptly or made good by the fabricator.

E. All inspection of structural steel will be done by the Engineer or by Pittsburgh Testing Laboratories. The fabricator shall cooperate in making the material available for inspection. In addition to the usual mill and shop inspection, the following additional shop inspection will be made by the Engineer or Pittsburgh Testing Laboratories.

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1. Plates:

a. All plates shall be visually inspected along all edges for evidence of laminations.

b. All plates 2 inches and over in thickness will be inspected for laminations or other injurious defects by ultrasonic methods. All plates showing evidence of lamination or other injurious defects which would affect the completed structure, will be rejected.

2. Groove Welds Other Than Butt Welds:

a. Full length visual and ultrasonic inspection.

3. Fillet Welds: D1

a. Root Pass and Single Pass - full length magnetic particle and visual inspection.

b. Completed welds - full length visual inspection and magnetic particle inspection for at least 25% of the length.

4. Butt Welds:

a. Full length visual and ultrasonic inspection.

b. Selected butt welds will be inspected by radiographic methods as a check on the ultrasonic inspection.

(1) At the start of fabrication of floor beams 2 flange butt welds, and 1 web butt weld will be radiographed. During fabrication an additional 2 flange butt welds and 1 web butt weld will be radiographed.

(2) One butt weld in one of the thickest plates in U7-L7 will be radiographed.

5. When radiographic inspection is specified, the inspector shall ascertain that radiographic equipment and process, resulting radiographs, identification marks, penetrameters, and weld surface preparation are in accordance with Appendix E of AWS D2.0-66. The inspector shall perform the making of the radiographs, examine and interpret the radiographs and technician's reports, approve satisfactory welds, disapprove or reject unsatisfactory welds, approve satisfactory methods proposed by the fabricator for repairing disapproved welds, and inspect the preparation and rewelding of disapproved welds. The inspector shall record the location and findings of all radiographic inspections, together with descriptions of any repairs made.

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BY SN APR 28 1970

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6. When magnetic particle inspection is specified, the Engineer's inspector shall ascertain that magnetic particle equipment and process and surface preparation are in accordance with Article 609 in AWS D2.0-66. The inspector shall perform the making of the magnetic particle inspections, examine and interpret the magnetic particle patterns, approve satisfactory welds, disapprove or reject unsatisfactory welds, approve satisfactory methods proposed by the fabricator for repairing disapproved welds, and inspect the preparation and rewelding of disapproved welds. The inspector shall record the locations of inspected areas and defects found by magnetic particle inspection, together with descriptions of any repairs made.

The magnetic particle inspection procedures and techniques shall be in accordance with Dry Powder Magnetic Particle Inspection, ASTM Designation E109. Welds shown by magnetic particle inspection to have defects prohibited by Article 409 of the AWS D2.0-66 Specifications shall be repaired by the methods permitted by Article 410 of these Specifications, shall be removed and replaced, or the entire piece shall be rejected as determined by the engineer.

7.
a. Where ultrasonic inspection of welds is specified, the inspector shall ascertain that ultrasonic testing equipment, procedures, surface preparation, and acceptance criteria are in accordance with the American Welding Society Specifications for Welded Highway and Railway Bridges, AWS D2.0-69, Appendix C, Ultrasonic Testing of Groove Welds. D1

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BY SN APR 28 1970

D1

IV. Identification and Storage of Mill Material

A. Storage

Structural material, either plain or fabricated, shall be stored above the ground upon platforms, skids, or other supports. It shall be kept free from dirt, grease and other foreign matter, and shall be protected as far as practicable from corrosion.

B. Identification

1. When structural steel plates or shapes are delivered to the fabrication shop from the mill and are to be cut, color coding shall be used for positive identification of ASTM steel classification, preferably by painting the original piece containing the heat mark extensively enough so that all pieces cut therefrom bear a trace of the appropriate color, or by transferring a mark of the appropriate color to each piece as it is cut. If, however, the material is to be stored for future use on the same project, or possible use on a future bridge project, the heat number must be transfered. Failure to comply with this specification may be cause for rejection of the material.

2. All steel shall be color coded as indicated in the following chart.

ASTM Type	Color Code
A517	Red & Blue
A588	Blue & Yellow
A242	Blue
A36	No Color
T1 Type A Shapes	Black & Yellow

D1

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3. Color coding shall be transfered to the surface or edge of each piece cut from the mill plate such that the color coding will not be obliterated during preparation or fitting.

4. Color coding shall be maintained on each assembly mark until such piece is identified with an assembly mark or is permanently attached or identified to a member with an erection mark.

V. Preparation

A. Straightening

1. ASTM type steels A36, A242 and A588 may be straightened before being laid out or worked. If straightening is necessary, it shall be done by methods that will not injure the metal. Sharp kinks and/or bends may be cause for rejection of the material.

2. For ASTM A517 material heat shall not be applied for straightening or bending plates. It shall be the fabricator's responsibility to order quenched and tempered steel within mill tolerances that will result in members and structures meeting the specified dimensional tolerances.

3. When bending plates, bend line shall be perpindicular to direction of rolling.

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101 PARK AVE. NEW YORK 17, N.Y.
BY SN APR 28 1970

B. Flame Cutting

1.a. ASTM steel types A36, A242 and A588 may be flame cut provided the flame cut surface conforms to the conditions indicated in paragraphs V B.1.b through e. below.

b. Longitudinal burning of material shall be performed with automatic burning equipment or by equipment with travel and speed mechanically controlled.

c. Ends of members not in bearing; particularly bracing tees and box members, stringers, gusset plate stiffener angles may be burned using hand travel provided a guide or straight edge is used where practicable.

d. The cutting flame shall be so adjusted and manipulated as to avoid cutting beyond (inside) the prescribed lines. Flame cut surfaces shall meet the American Standards Association surface roughness rating value of 1,000, except that flame cut surfaces of members not subject to calculated stress shall meet the surface roughness value of 2,000.

e. Surface roughness, exceeding the above values, and occasional gouges not more than 3/16 inch deep on otherwise satisfactory flame cut surfaces, shall be removed by machining or grinding. Corrections of the defects must be faired with the surface of the cut on a bevel of 1 to 6 or less. Occasional gouges of flame cut edges more than 3/16 inch deep but not more than 7/16 inch deep may be repaired by welding with low-hydrogen electrodes not exceeding 5/32 inch in diameter and with a preheat of 250°F. The completed weld shall be ground smooth and flush with the adjacent surface.

2.a. ASTM A517 steel may be flame cut, provided a smooth surface free from cracks and notches is secured and provided that an accurate profile is secured by the use of a mechanical guide. The cutting flame shall be so adjusted and manipulated as to avoid cutting beyond (inside) the prescribed lines. Members with excessive cracking or cracks of depth exceeding 3/16 inch will not be acceptable. Flame cut surfaces shall meet the American Standards Association surface roughness rating value of 1,000 and these surfaces shall have their corners rounded to 1/16-inch radius by grinding after flame cutting.

b. Occasional notches, cracks and surface roughness, not more than 3/16 inch deep on otherwise satisfactory cut surfaces, shall be removed by planing or grinding. Defects of flame cut edges shall not be repaired by welding. Corrections or defects must be faired with the surfaces of the cuts on a bevel of 1 to 6 or less.

c. Burning shall be in accordance with paragraph V. B.1.b. above.

d. Hand burning shall only be performed when necessary on the ends of members or material not in bearing and with the use of a guide or straightedge. Hand burning shall be restricted to the ends of gusset plate stiffener angles.

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BY SN APR 28 1970

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e. Mill scale and extraneous material shall be removed from the torch side of quenched and tempered plates along the lines to be flame cut when necessary to obviate excessive notches.

f. At least one bend test shall be made of flame cut edges to qualify the procedure and workmanship in the greatest thickness to be flame cut on the finished edges in manufacture, fabrication or erection under this contract. The bend test specimen shall be flame cut while the material is at the lowest temperature at which material under the Contract will be flame cut. The material subject to the bend test shall conform to the bending property requirements of the governing material specifications. The bend test shall be conducted as shown on sheet WP105 of the Joint Welding Procedures for this contract.

g. When the specimen does not meet the pertinent bend test requirements, additional tests shall be made of material cut with a revised procedure or at higher material temperatures until a minimum preheat temperature at which the flame cut specimen will meet the bend test is determined for the procedure used.

h. In lieu of the bend tests and preheat specified above, flame cut edges shall be removed to a depth of at least 1/8 inch by milling, grinding or other approved mechanical means.

C. Accuracy of Holes

1. Holes punched full size, subpunched or subdrilled, shall be so accurately punched that after assembling (before any reaming is done) a cylindrical pin 1/8 inch smaller in diameter than the nominal size of the punched hole may be entered perpendicular to the face of the member, without drifting, in at least 75 percent of the contiguous holes in the same plane. If this requirement is not fulfilled, the badly punched pieces will be rejected. If any hole will not pass a pin 3/16 inch smaller in diameter than the nominal size of the punched hole, this will be cause for rejection.

2. When holes are reamed or drilled, 85 percent of the holes in any contiguous group shall, after reaming or drilling, show no offset greater than 1/32 inch between adjacent thicknesses of metal.

3. Misplaced holes in all steel except A517 may be plug welded and redrilled provided all the following conditions are met:

a. The Engineer is notified of number of holes, piece mark and location of holes in the member and he gives his approval.

b. Holes to be welded solid with all weld metal. D1

c. Plug welds ultrasonically inspected per section III.E.7.a. contained herein.

d. Pittsburgh Testing Laboratory to include in their report notation of holes plug welded.

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BY SN APR 28 1970

VI. Fitting

A. Main trusses shall be shop assembled for final drilling or reaming in accordance with the following procedure:

1. Chord members, gusset plates and splice plates shall be assembled one panel point at a time to true geometric angles.

2. Holes for chord to gusset plate bolts and chord to splice plate bolts shall be drilled full size or reamed while so assembled.

3. Web members may be assembled with gusset plates to true geometric angles and have connecting holes drilled or reamed full size while so assembled or may have connecting holes drilled or reamed full size to template or by tape drill without assembly.

4. Tape drill equipment, if used, must be of such proven quality that it will produce connections with the accuracy specified in paragraph V. C.2. above.

5. Connecting parts assembled in the shop for purposes of reaming or drilling holes in field connections shall be match-marked, and a diagram showing such marks shall be furnished the Engineer.

B. Milled ends of compression truss members shall be milled with such accuracy that at least 75% of the area of any such joint shall have a gap of no more than 0.010 inches when the members are assembled for reaming.

C.
1. The distance between paired gusset plates on the truss shall be equal to the width of the truss members, with a tolerance of zero to plus 1/16 inch.

2. Floorbeams, stringers and girders having end connection angles shall be built to exact length shown on the detail drawings measured between the heels of the connection angles, with a permissable tolerance of plus 0 inch to minus 1/16 inch.

D.
1. Finished sealed box members shall have their plugs removed and have blown through them at least three times their volume of nitrogen gas in order to rid them of substantially all air. As soon as the required volume of nitrogen has been forced through, the plugs shall be coated with pipe joint compound and be reinserted, with the nitrogen gas at atmospheric pressure.

2. Sealed box members shall have a circled N added to their erection mark after nitrogen purging of the member is completed.

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E. Sharp corners on all finished members shall be broken to insure good paint coverage. A broken corner shall be defined as one having no overhanging lips and having a chamfer or radius such that a gage with an internal right angle filleted with a 1/32" x 1/32" triangular fillet will fit over the corner and touch both adjacent surfaces.

F. Welding will not be permitted in lieu of milling or grinding.

G. Contact surfaces noted on detail drawings as M1E or M2E denote surfaces to fully bear on one or both ends. Such bearing to be obtained preferably by milling however local grinding may be used to assure proper bearing.

H. Contact surfaces noted on detail drawings as F1E or F2E denote surfaces to be fit as close as possible on one or both ends. Gaps not exceeding 1/16 inch will be allowed provided they are sealed with lead wool or paint prior to painting. D1

VII. Welding

A. The following provisions shall apply for welding all grades of steel for this contract with additional provision for welding ASTM A517 steel contained in section VII. B. Welding shall be in accordance with the American Welding Society Specifications for Welded Highway and Railway Bridges, AWS D2.0-66, as amended by current Addenda except as modified as follows:

1.
a. Welding electrodes for Manual Shielded Metal Arc Welding shall be of the following classes: D1

Base Metal	Electrode
A36 & A588	E7016, E7018, E7028 all low hydrogen
A242-Corrision Resistant	E8018-G

b. Welding electrode & flux combination for submerged arc welding shall be as shown on Joint Welding Procedure sheets WP2 thru WP25 inclusive. D1

2. Edges of built-up girder and beam webs shall be cut to the prescribed camber with suitable allowance for shrinkage due to cutting and welding.

3.
a. Welding procedures for specific types of steel, joints, processes and electrodes are contained in the Welding Procedures for this contract and the conditions shown must be followed.

b. For submerged arc welding a variation of ± 10 percent for welding current, ± 7 percent for arc voltage and ± 10 percent for travel speed will be permitted.

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FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

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X. A517 & A514 STEELS SURFACE CONDITION

Surface imperfections occurring on ASTM A517 and A514 steels after blasting shall be subject to the following conditions and limitations.

A. Surface depressions resulting from the removal of mill scale that do not exhibit sharp changes in section are not considered injurious defects and shall remain and not be cause for additional surface conditioning.

B. Surface imperfections such as seams, scabs, slivers and tears shall be removed by grinding provided such grinding does not reduce the material thickness more than 0.01 inch below the ordered thickness.

C. The removal of surface imperfections such as seams, scabs, slivers and tears which reduce the ordered thickness more than 0.01 inch may be reconditioned as follows:

1. The imperfection shall be removed by arc air gouging (followed by grinding of the gouged surface), grinding or chipping. Weld metal shall then be deposited and the weld ground flush.
2. After removal of any imperfection preparatory to welding, the thickness of the plate at any location must not be reduced more than 20% of the ordered thickness nor shall the area prepared for welding exceed 2% of the surface area.
3. Repairs shall be made utilizing welding procedures and welders or welding operators qualified in accordance with AWS D2.0-69. All welding shall be done with AWS E11018M electrodes. REV. 1
4. All welding shall be done in accordance with the procedure shown on sheet WP27 of the Joint Welding Procedures.

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In Charge ____ Made FPM Date 4-23-70 Revised FPM Date 5-11-70
Shop No. ____ Checked ____ Date ____ Revised FPM 5-27-70
Revised A1 FPM 9-3-70
FPM 11-16-70
Contract CG 6290
Sheet CS 18
Customer MAINE STATE HIGHWAY COMMISSION Structure A1 PISCATAQUA RIVER BRIDGE

FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

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XI. Visual Inspection and Repair of Plate Cut Edges

A. In the repair and determination of limits of internal defects visually observed on sheared or flame cut edges and caused by entrapped slag or refractory, deoxidation products, gas pocket or blow holes, the amount of metal removed shall be the minimum necessary to remove the defect or to determine that the permissible limit is not exceeded. Plate edges may be at any angle with respect to the rolling direction. All repairs of the defects made by welding shall conform to the applicable provisions of Welding Procedure Sheet WP30 or WP31.

B. The limits of acceptability and the repair of visually observed edge defects in plates 4" and under in thickness shall be in accordance with the following table in which the length of defect is the visible long dimension on the plate cut edge and the depth is the distance that the defect extends into the plate from the cut edge.

TABLE

Description of discontinuity	Repair required
Any discontinuity 1" in length or less & 1/8" max. depth. A2	None - need not be explored
Any discontinuity over 1" in length and 1/8" maximum depth.	None - depth should be explored by random spot grinding.
A2 (	) A2
Any discontinuity over 1" length with depth over 1/8" but not greater than ½". A1 A2	Completely remove and weld. Aggregate length of welding not over 20% of plate edge length being repaired.
Any discontinuity over 1" in length with depth greater than ½". A1	Subject to approval by the Engineer. A2 A1 Aggregate length of welding not over 20% of plate edge length being repaired unless approved by Engineer.

C. Laminar type defects which are detected in edges of side plates prior to welding of the corner groove welds shall be repaired by welding providing they do not exceed 1" in length and 1/2" in depth. Defects exceeding 1" in length with depth greater than 1/2" shall be referred to the Engineer for disposition. Laminar type defects in edges of side plates which are detected after welding of the corner groove welds shall be treated in accordance with the table in paragraph B above. A1

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In Charge ____ Made FPM Date 8-19-70 Revised A1 FPM Date 9-8-70 Contract CG 6290
Shop No. ____ Checked ____ Date ____ Revised A2 FPM Date 11-16-70 Sheet CS 19
Customer Maine State Highway Commission Structure Piscataqua River Bridge

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3233 (Rev.B 1-65)

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

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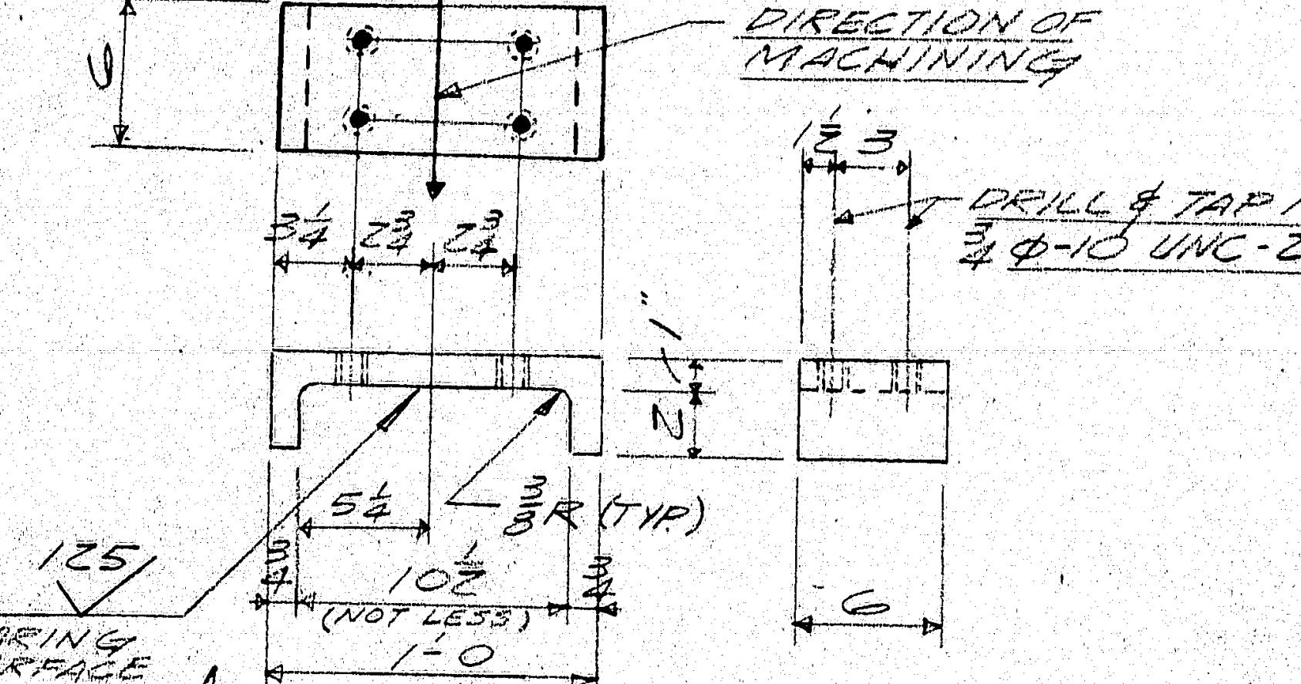
CUSTOMER MAINE STATE HIGHWAY COMM
STRUCTURE PISCATAQUA RIVER BRIDGE



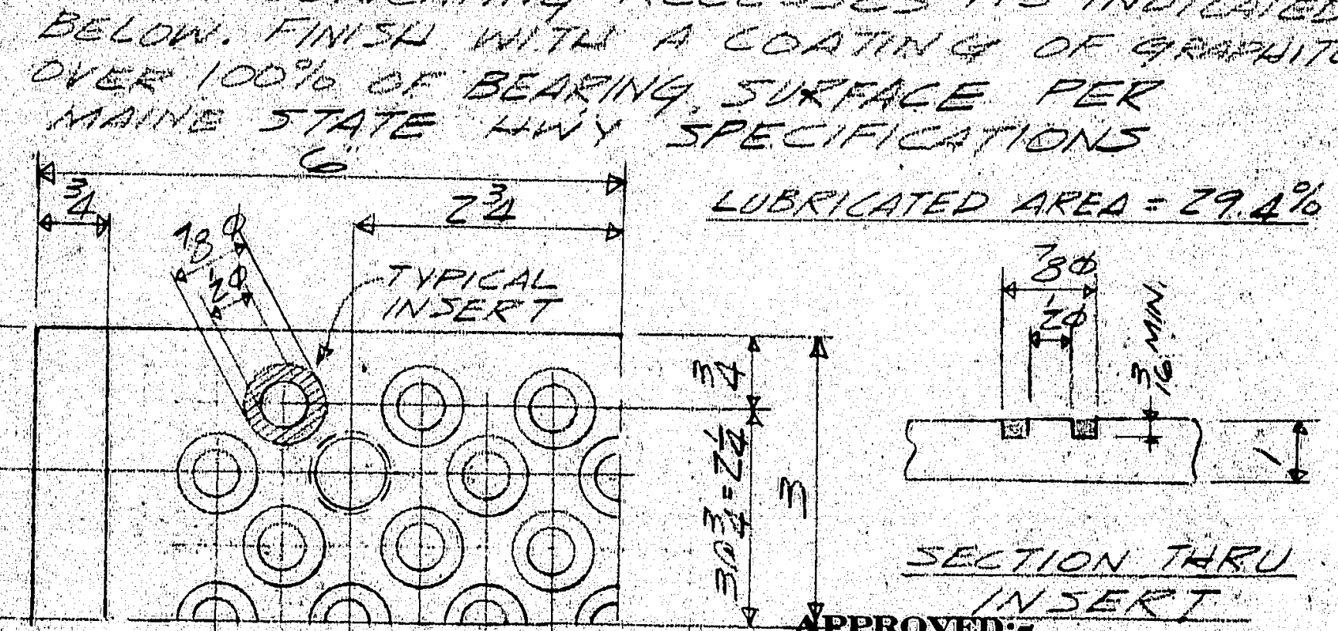
Do Not Ship From This Sheet (Ship With Stringers)

252- SELF LUBRICATED BRONZE SHOES-M1A
PURCHASE REQN Nº 906-D-309

MATERIAL
BRONZE ASTM B22 ALLOY D, OR B147-7A

NOTE:
BEARING SURFACE TO BE PROVIDED WITH SELF LUBRICATING RECESSES AS INDICATED BELOW. FINISH WITH A COATING OF GRAPHITE OVER 100% OF BEARING SURFACE PER MAINE STATE HWY SPECIFICATIONS

LUBRICATED AREA = 29.4%



TYPICAL QUARTER SECTION

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BY S.N. APR 15 1970

RIVETS — MADE PS DATE 11-28-69 REV. 2-18-70 IN CHARGE LAG
HOLES AS NOTED CHECKED C.A.D. DATE 12-4-69 REV. 3-10-70 3-31-70 Contract CG6290-090
PAINT NONE SHOP NO. ____ TIER ____ SHEET M1
SHOP CONTACT SURFACES —

137:92

3233 (Rev.B 1-65)

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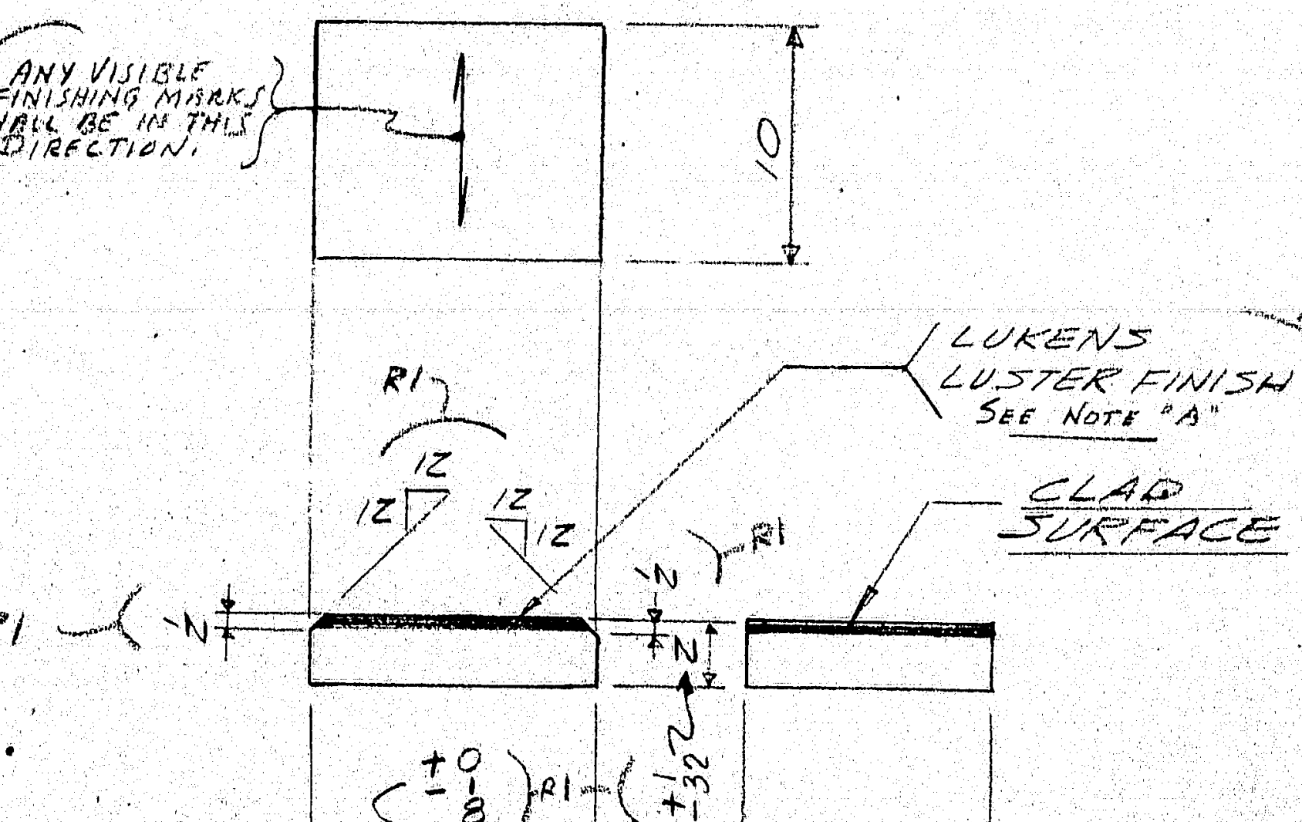
STRUCTURE PISCATAQUA RIVER BRIDGE


R1
ANY VISIBLE FINISHING MARKS SHALL BE IN THIS DIRECTION.
10
R1
LUKENS LUSTER FINISH SEE NOTE "A"
R1
12
12
12
12
CLAD SURFACE
R1
½
R1
2
+0 -⅛
R1
+1/32
NOT MORE
10⅝
10

252-STAINLESS CLAD PL'S-M2A
Do Not Ship From This Sheet (Ship With Floor Beams)

MATERIAL
CLAD PL - ASTM A264
STAINLESS STL - ASTM A240 TYPE 316
R1 ⅛ THK. MIN. CLAD AFTER FINISHING
BACKUP STEEL - ASTM A36
R1 PLS SHALL BE CUT TO DIM'S SHOWN W/AN ABRASIVE CUTTER

NOTE "A" LUKENS LUSTER FINISH SHALL BE EQUIVALENT OR BETTER THAN AISI 125 MICRO FINISH.

PURCHASE REQUISITION Nº 906-D-310

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BY SN MAR 23 1970

RIVETS — MADE PS DATE 11-28-69 REV. ① 3-6-70 PS IN CHARGE LAG
HOLES — CHECKED C.A.D. DATE 12-4-69 REV. Contract CG6290-090
PAINT NONE SHOP NO. ____ TIER ____ SHEET M2
SHOP CONTACT SURFACES ____

137:93

FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

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5. Minimum preheat and interpass temperatures shall be as follows for A36, A242 & A588 steels.

Thickness of thickest part at point of Welding, in inches	Shielded metal-arc welding with low-hydrogen electrodes or submerged arc	
	A36 or A242	A588
to 1 1/2 incl.	70°F.	100°F.
over 1 1/2 to 2 1/2 incl.	150°F.	175°F.
over 2 1/2	225°F.	250°F.

Notes:

a. Welding shall not be done when the ambient temperature is lower than 0°F.

b. When the base metal is below the temperature listed for the welding process being used and the thickness of material being welded, it shall be preheated (except as otherwise provided) in such manner that the surfaces of the parts on which weld metal is being deposited are at or above the specified minimum temperature for a distance equal to the thickness of the part being welded, but not less than 3 in., both laterally and in advance of the welding. Preheat temperature shall not exceed 400°F. (interpass temperature is not subject to a maximum limit.)

c. Use only low-hydrogen electrodes (E7028, E7016, E7018) or AWS flux classifications F71-XXXXX or F72-XXXXX.

6. The quality of completed welds magnetic particle inspected shall be:

a. There shall be thorough fusion between weld metal and base metal and between successive passes in the weld. All craters shall be filled to the full cross-section of the weld.

b. Welds shall have no cracks nor incomplete fusion or penetration and regardless of the method of inspection, shall have no other defects exceeding the following limits in size or frequency of occurrence:

(1) The greatest dimension of any porosity (porosity signifies gas pockets and any similar generally globular type voids) or fusion-type defect (fusion type defect signifies slag inclusions and similar generally elongated defects) that is 1/16 in. or larger in greatest dimension shall not exceed the size, Dimension of Defect, B, indicated in Fig. 409 in the specifications for Welded Highway and Railway Bridges, AWS D2.0-66, for the joint or weld throat thickness involved. The distance from any porosity or fusion-type defect described above to another such defect, to an edge or to the toe of a flange-to-web fillet weld shall not be less than the Minimum Clearance Allowed, C, indicated by Fig. 409 for the size of defect under examination. The limitations given by Fig. 409 for 1 1/2 in. joint or weld throat thickness shall apply to all joints or weld throats of greater thickness.

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BY SN APR 28 1970

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In Charge ____ Made F. P. M. Date 3/2/70 Revised ____ Date ____ Contract CG-6290
Shop No. ____ Checked ____ Date ____ Revised ____ Date ____ Sheet CS 10
Customer Maine State Highway Comm. Structure Piscataqua River Bridge

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FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
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14. The fabrication shop shall maintain a file of certificates of qualification for its welders and welding operators and make the file available to the Engineer upon request. Each certificate of qualification shall state the name of the welder or welding operator, the name and title of the person who conducted the examination, the kind of specimens, the positions of welds, the results of the tests and the date of the examination.

15. Tack Welds

a. Tack welds which are not incorporated into the final weld shall be removed. Tack welds which are incorporated into the final weld shall be cleaned thoroughly.

b. Preheat is not mandatory for single pass tack welds which are remelted and incorporated into continuous submerged arc welds.

c. Defects in tack welds such as undercut unfilled craters and porosity need not be removed before final submerged arc welding.

d. Tack welds where permitted by the engineer and shown on the detail drawings shall be removed and the surface made flush with the origional surface. Tack welds, where permitted by the Engineer, shall only be as shown on the detail drawings.

B. For welding of ASTM A517 Quenched and Tempered steel the following provisions supercede or replace the requirements of section VII. A. where applicable. Otherwise, all provisions of section VII. A. apply equally to A517 steel.

1. Welding electrodes shall be of the following classes.

Base Metal	Electrode
A517 - Butt Welds	E11018-M
A517 - Longitudinal Welds	E11018-M

2. Welding of quenched and tempered steel, ASTM A517, shall be in accordance with the recommended practices of the steel manufacturer and the Welding Procedures (sheets WP 13 through WP 21) for this contract.

3. All butt welds on main members shall be finished smooth and flush on all surfaces, including edges, by grinding in the direction of applied stress, leaving the surfaces free from depressions. Chipping may be used provided it is followed by such grinding. The grinding shall not reduce the thickness of the base metal by more than 1/32 inch nor 5 percent of the thickness; whichever is smaller.

4. There shall be no temporary welds for transportation, erection or other purposes on main members.

5. Arc strikes outside the area of permanent welds must be avoided. Where they do occur, resulting cracks and blemishes shall be ground out to fair surfaces.

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In Charge ____ Made F. P. M. Date 3/2/70 Revised ____ Date ____ Contract CG-6290
Shop No. ____ Checked ____ Date ____ Revised ____ Date ____ Sheet CS 12
Customer Maine State Highway Comm. Structure Piscataqua River Bridge

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FABRICATED STEEL CONSTRUCTION
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6. Where guided bend tests are performed for 3/8 inch thick specimens of quenched and tempered steel the radius of the plunger and the die slot of the jig shall be increased to 1 1/4 and 1 11/16 inches respectively. Where free bend tests are required for specimens of quenched and tempered steel the minimum elongation requirement shall be 17 percent.

7. All welders and welding operators for welds of quenched and tempered steel shall be qualified by the standard AWS D2.0 welder qualification tests. Tests shall be made with the quenched and tempered steel and electrodes which will be used in the construction welding. Each welder must present evidence, satisfactory to the Engineer, that he has had at least three monghs satisfactory experience welding quenched and tempered steel over one inch thick. In lieu of such experience each welder, providing he has previously qualified for welding with low hydrogen electrodes, shall be given a training course in welding quenched and tempered steel prior to taking the welder qualification test. The training shall meet the approval of the Engineer as adequate to result in a working knowledge of the procedures and a proficiency in the techniques of welding quenched and tempered steel.

8. Welder and welding operator qualification for groove welds in plates one inch and over in thickness shall be made with plates at least one inch thick.

9. Radiographic inspection shall be made of all procedure qualification test plates for groove welds. If the radiographic inspection indicates any lack of fusion, incomplete penetration, any defect 1/16 inch or larger in greatest dimension, or if the sum of the greatest dimensions of defects less than 1/16 inch in greatest dimension exceeds 3/8 inch in any linear inch of weld the weld shall be considered as failing the soundness test. This radiographic inspection shall apply only to that portion of the welds between the discard strips of the specimens as indicated on the applicable figures of Appendices B and D of AWS D2.0. Width of specimen plates shall be adequate to provide a minimum of six inches of effective weld length for radiographic testing.

10. Welding procedures shall be submitted for approval prior to start of qualification and welding. The variables to be considered and reported shall include welding process, plate thickness, type of steel, weld position, details of groove, type and size of electrode, type of flux if used, number and location of passes, welding sequence, back gouging, current and voltage per pass, welding speed per pass, heat input in joules per inch, preheat and maximum interpass temperature. A change in any of the variables, except for plate thickness reduction of less than one inch and number of passes set forth above will require requalification of the procedure. A reduction in plate thickness up to one inch, with a proportional reduction in the number of passes, will be acceptable without requalification. A variation from the qualification value of ± 10 percent for welding current, ± 7 percent for arc voltage and ± 10 percent for speed of travel will be permitted without requalification.

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In Charge ____ Made F. P. M. Date 3/2/70 Revised ____ Date ____ Contract CG-6290
Shop No. ____ Checked ____ Date ____ Revised ____ Date ____ Sheet CS 13
Customer Maine State Highway Comm. Structure Piscataqua River Bridge

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FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

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11.

a. Minimum preheat and interpass temperatures for quenched and tempered steel shall be as shown below.

Thickness of Thickest Part at Point of Welding	Shielded Metal-Arc or Submerged Arc Welding with Alloy Steel Wire and Neutral Flux
To 1" incl.	50°F.
over 1" to 1½" incl.	100°F.
over 1½" to 2" incl.	200°F.
over 2"	250°F.

b. The preheat temperature where practicable shall be measured on the side opposite to which the heat is applied at points about three inches away from the joint to assure that all the material adjacent to the joint is preheated to the minimum specified temperature throughout its thickness. The welder shall have and use approved equipment for measuring preheat and interpass temperature.

c. Higher preheat and interpass temperatures shall be used for welds on members under heavy restraint, on base materials of maximum chemical ranges and under conditions where cracking results from welding with minimum specified preheat and interpass temperature. Maximum preheat and interpass temperature shall be 425°F.

d. Heat input from welding shall be kept within limits recommended by the steel producer and within limits which will result in base metal temperatures below those temperatures that will cause critical base metal embrittlement. Heat input shall be controlled, as necessary, by the use of relatively low currents and high welding speeds and, where applicable, by the use of stringer beads.

12. In making welds under conditions of severe external restraint, the welding shall be carried continuously to completion or to a point that will insure freedom from cracking before the joint is allowed to cool below the minimum specified preheat and interpass temperature.

13. In addition to the normal visual inspection as required by AWS D2.0, all old welds, except those examined by magnetic particle and radiographic inspection more than 48 hours after completion, shall be visually examined for cracks after this period of time has elapsed.

VIII. CLEANING AND PAINTING

A. Blast cleaning shall be used and conform to SSPC-SP6 No. 6 Commercial Blast Cleaning except for those areas which are to be painted with zinc rich epoxy paint. Those areas shall be cleaned in accordance with SSPC-SP5 No. 5 White Metal Blast Cleaning. D

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BY SN APR 28 1970

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In Charge ____ Made F. P. M. Date 3/2/70 Revised FPM/AES Date 3-17-70 Contract CG-6290
Shop No. ____ Checked ____ Date ____ Revised ____ Date ____ Sheet CS 14
Customer Maine State Highway Comm. Structure Piscataqua River Bridge

- 2 -

the side plates "a" between the diaphragm and the corner of the member. This was probably the result of the rigid corner of the box not changing in angle.

We feel all practical efforts have been made to produce good verticals which will properly fit and perform in the structure. Further work on these pieces probably would not result in any improvement in appearance, and might have harmful results on the structural soundness of the member.

We, therefore, request approval to furnish these members as now fabricated.

Very truly yours,

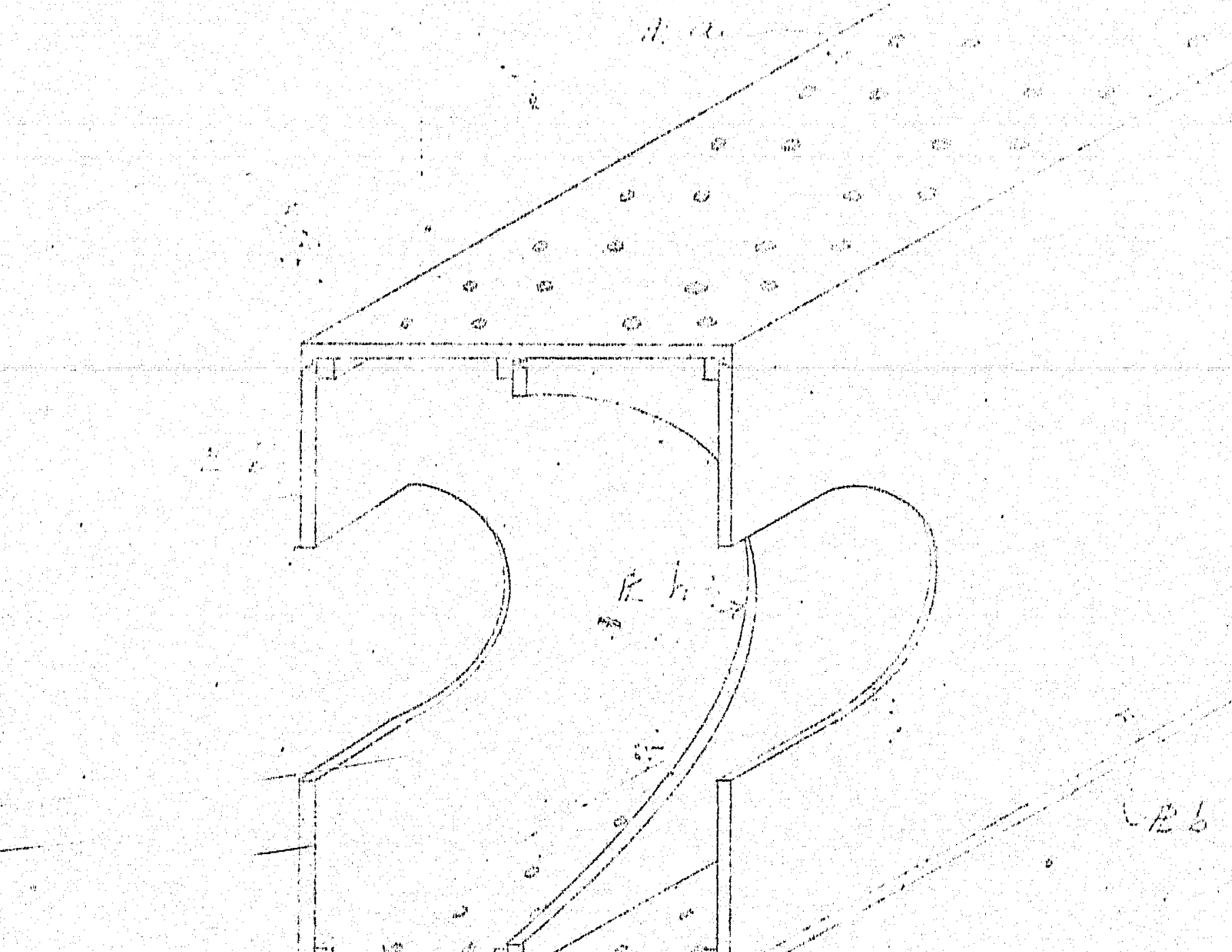
BETHLEHEM STEEL CORPORATION

J. G. Howell
Works Engineer

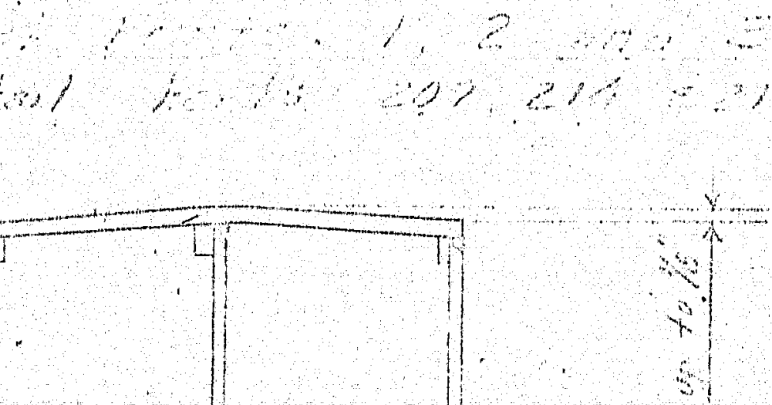
F.P. Mikita/jc
FPMikita/jc

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY R. W. Christie NOV 3 1970

137:98



Typical End View of Vertical at Panel Points 1, 2 and 3 (Detail Parts 207, 214 & 215)



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FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

DRAFTING ROOM CHICAGO
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DWG. Nº	DESCRIPTION	DWG. Nº	DESCRIPTION
YA1	INDEX	YA31	BOTT. CHD M14-M16
YA2	TOP CHD U0-U2	YA32	" " M15-M15'
YA3	" " U1-U3	YA33	TIES L9-L11
YA4	" " U2-U4	YA34	" L10-L12
YA5	" " U3-U5	YA35	" L11-L13
YA6	" " U4-U6	YA36	" L12-L14
YA7	" " U5-U7	YA37	" L13-L15
YA8	" " U6-U8	YA38	" L14-L16
YA9	" " U7-U9	YA39	" L15-L15'
YA10	" " U8-U10	YA40	YARD ASSEMBLY NOTES
YA11	" " U9-U11		
YA12	" " U10-U12		
YA13	" " U11-U13		
YA14	" " U12-U14		
YA15	" " U13-U15		
YA16	" " U14-U16		
YA17	" " U15-U15'		
YA18	BOTT CHD L0-L2		
YA19	" " L1-L3		
YA20	" " L2-L4		
YA21	" " L3-L5		
YA22	" " L4-L6		
YA23	" " L5-L7		
YA24	" " L7-L9		
YA25	" " L8-M10		
YA26	" " L9-M11		
YA27	" " M10-M12		
YA28	" " M11-M13		
YA29	" " M12-M14		
YA30	" " M13-M15		

APPROVED:-
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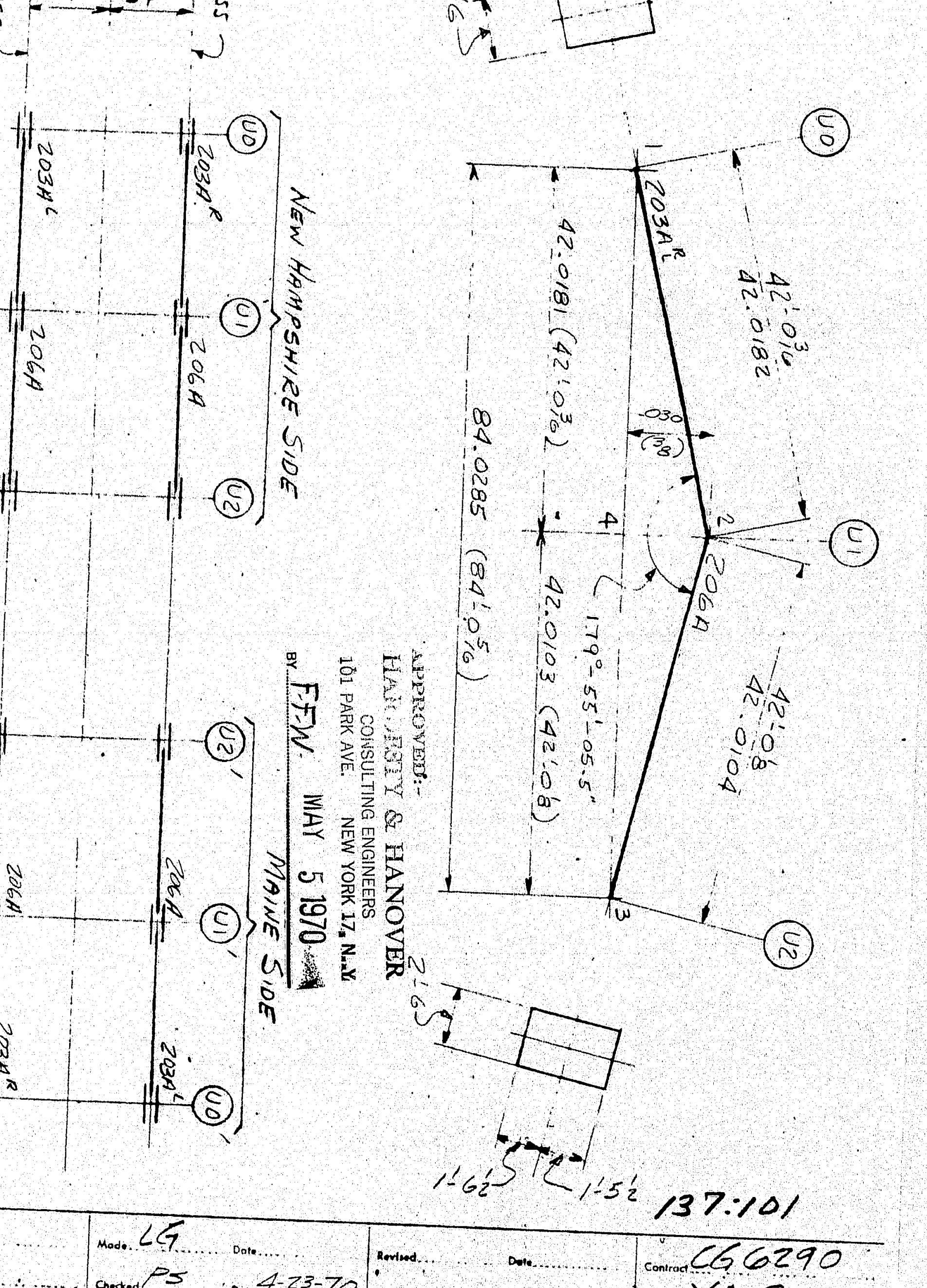
101 PARK AVE. NEW YORK 17, N.Y.
BY FFW MAY 5 1970

137:100

In Charge
Shop No.
Made LG Date 3-23
Checked PS Date
Revised Date
Revised Date
Contract CG6290
Sheet YA1
Customer
Structure

FABRICATED STEEL CONSTRUCTION
QUADRILLE SHEET
3224 (Rev.B 7-57)

DRAFTING ROOM
WORKS



APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY FFW MAY 5 1970

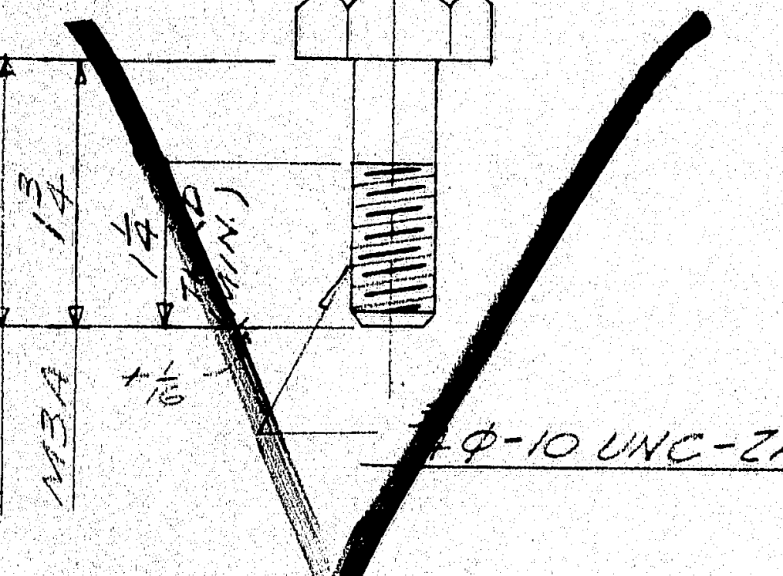
137:101

In Charge
Shop No.
Made LG Date
Checked PS Date 4-23-70
Revised Date
Revised Date
Contract CG6290
Sheet YA 2
Customer
Structure

3233 (Rev.B 1-65)

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

CHICAGO DRAFTING ROOM CHICAGO WORKS
CUSTOMER MAINE STATE HIGHWAY COMM
STRUCTURE PISCATAQUA RIVER BRIDGE



~~976- BRONZE CAPSCREW-M3A~~
~~32-BRONZE CAPSCREW-M3B~~
~~Do Not Ship From This Sheet (Ship With Stringers)~~
~~MATERIAL~~
~~SILICON BRONZE~~

APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY S.N. JAN 13 1970

PURCHASE REQUISITION Nº 906-D309

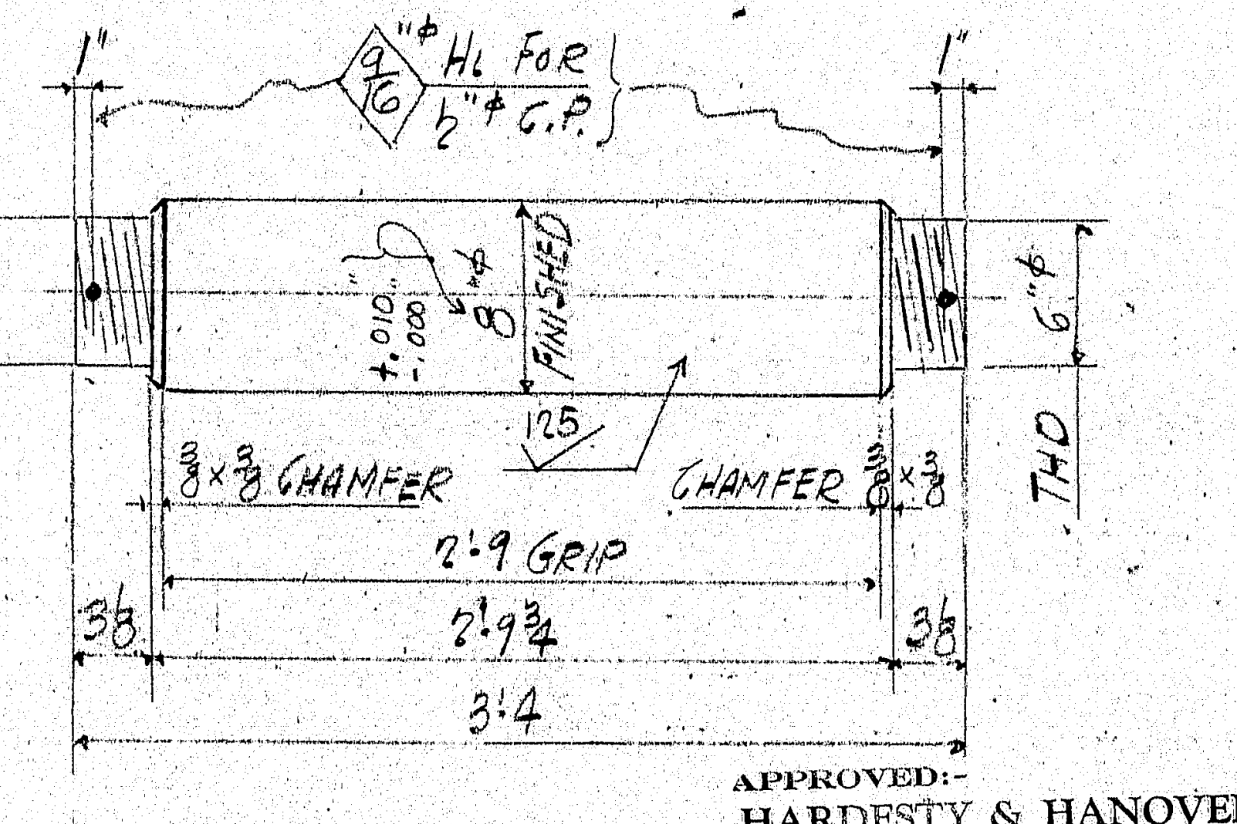
RIVETS —
HOLES —
PAINT NONE
SHOP CONTACT SURFACES
MADE PS DATE 11-28-69 REV.
CHECKED C.A.D. DATE 12-4-69 REV.
SHOP NO. TIER
IN CHARGE LAG
Contract CG6290-090
SHEET M3

137:94

3233 (Rev.B 1-65)

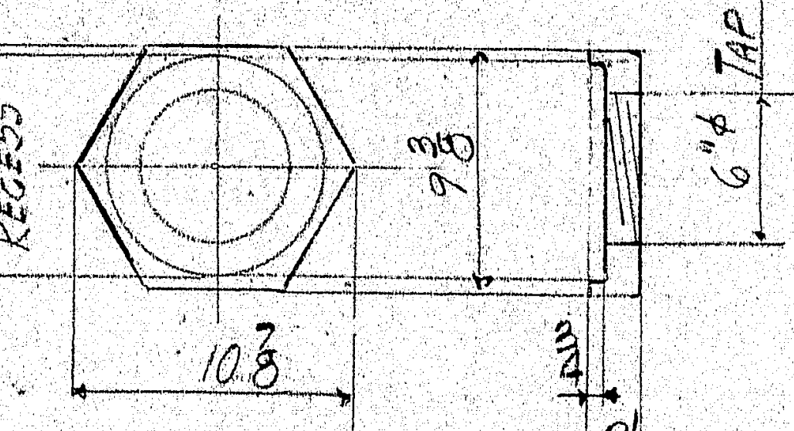
BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

CHICAGO DRAFTING ROOM CHICAGO WORKS
CUSTOMER MAINE STATE HIGHWAY COMM.
STRUCTURE PISCATAQUA RIVER BRIDGE



8-PINS-a
(TO BE ASSEMBLED WITH b & c)

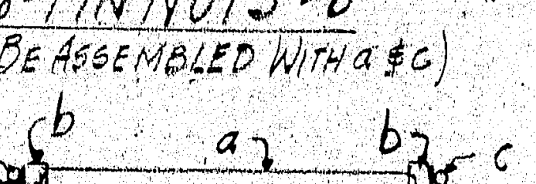
APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY MAR 26 1970



NOTE:
SIX THREADS PER INCH
MATERIAL SPECS:
PINS { ASTM-A237 CLASS A
COTTER PIN - COMM'L STD
NUTS - ASTM-A36

16-PIN NUTS-b
(TO BE ASSEMBLED WITH a & c)

16-COTTER PINS
½"φ × 0'-8 MARKED-c
(TO BE ASSEMBLED WITH a & b)



ALL ITEMS ORD ON REQ Nº 906-D-305. VENDOR TO SHIP ALL ITEMS DIRECT TO BRIDGE SITE.

E9-E11

8-PINS M4A - INST { 2-H11 2-H12 2-M11 2-M12
SUBLET FABR.

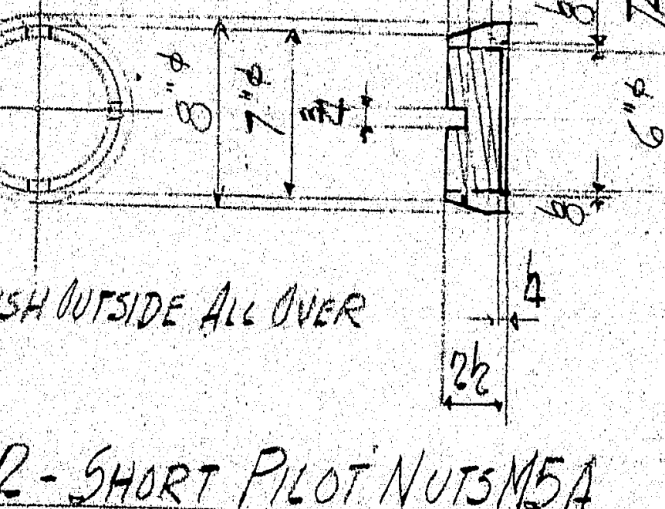
RIVETS —
HOLES AS NOTED
PAINT NONE
SHOP CONTACT SURFACES
MADE BJ DATE 2-16-70 REV.
CHECKED C.A.D. DATE 2-18-70 REV.
SHOP NO. TIER
IN CHARGE LAG
Contract CG6290-090
SHEET M4

137:95

3233 (Rev.B 1-65)

BETHLEHEM STEEL CORPORATION
FABRICATED STEEL CONSTRUCTION

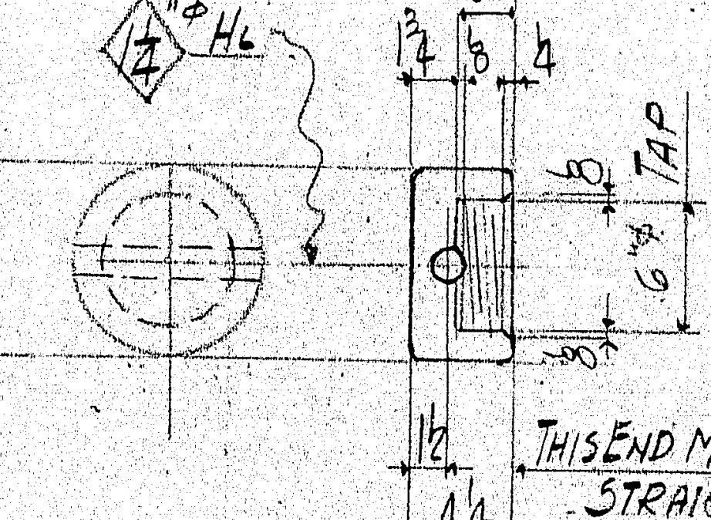
CHICAGO DRAFTING ROOM CHICAGO WORKS
CUSTOMER MAINE STATE HIGHWAY COMM.
STRUCTURE PISCATAQUA RIVER BRIDGE



FINISH OUTSIDE ALL OVER

2-SHORT PILOT NUTS M5A
SUBLET FABR.

NOTE:
SIX THDS PER INCH



APPROVED:-
HARDESTY & HANOVER
CONSULTING ENGINEERS
101 PARK AVE. NEW YORK 17, N.Y.
BY MAR 26 1970

THIS END MUST BE FACED STRAIGHT AND TRUE

2-DRIVING NUTS M5B
SUBLET FABR.

INSTALLMENT-H11

MATERIAL SPECS:-ASTM-A36

ALL ITEMS ORD ON REQ Nº 906-D-305
VENDOR TO SHIP ALL ITEMS DIRECT TO BRIDGE SITE.

E9-E11

RIVETS —
HOLES AS NOTED
PAINT NONE
SHOP CONTACT SURFACES
MADE BJ DATE 2-16-70 REV.
CHECKED C.A.D. DATE 2-18-70 REV.
SHOP NO. TIER
IN CHARGE LG
Contract CG6290-090
SHEET M5

137:96

RWC
117

Bethlehem Steel Corporation

CENTRAL DISTRICT
J. H. HOFFMAN, MANAGER OF OPERATIONS
E. W. SLOCKBOWER, DISTRICT MANAGER OF ERECTION
A. C. SPALLITTA, MANAGER OF CONSTRUCTION
H. W. BRINKMAN, DISTRICT CHIEF ENGINEER
R. V. ARNDT, DISTRICT ENGINEER

FABRICATED STEEL CONSTRUCTION
8301 SOUTH STEWART AVENUE
CHICAGO, ILL. 60620

CHICAGO WORKS
F. G. VARGO, MANAGER OF WORKS
J. G. HOWELL, WORKS ENGINEER

RECEIVED
OCT - 8 1970
HARDESTY & HANOVER

RECEIVED
BETHLEHEM STEEL CORP.
WORKS ENGINEER
CHICAGO

October 6, 1970

Hardesty and Hanover
Consulting Engineers
101 Park Avenue
New York, New York 10017

Atten: Mr. Richard W. Christie

Re: Piscataqua River Bridge
Project No. I-95-1(22)16
Contract #5
Portsmouth, N.H. to Kittery, Me.
Our Contract CG 6290-000

Dear Mr. Christie:

The truss verticals at panel points 1, 2 and 3 all contain welded diaphragms close to or at the upper end for the floor beam connection. These members were fabricated by fitting two plates "a" to one plate "b" (refer to sheet VI) and then fitting the diaphragm "h" into the U shape. Plate "h" was then welded, inspected and the second plate "b" fitted to form the box. Next in sequence was the welding of all 4 corners of the boxed section.

When the welding was completed the verticals were dimensionally checked and the majority of them exceeded dimensional tolerances at the diaphragms. The members, however, were dimensionally acceptable at the corners and were within tolerance for squareness. It was therefore necessary to flatten the plates to which the diaphragm is welded (plates "a"), and at the same time reduce the out to out dimension of the members at the diaphragm (refer to section on sheet VI).

The procedure used to flatten the side plates "a" was to apply a compressive force on the box at the diaphragm and then heat the diaphragm adjacent to each back up bar. The results were most satisfactory for flattening the plates "a" but the corrective steps resulted in the box plates "b" distorting at the ends where the half manhole is cut.

All efforts to reflatten plates "b" only caused redistortion of

137:97