

WTC
DRAWING BOOK 9
AB 1-1 — AB 18-2

WTC LERA BOOK BOX 4A

↓

BOX 04A

↓

BOOK 9 1-OF 2

296

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT *THE WORLD TRADE CENTER*TITLE *FLOOR 107 - P.H. CONTENTS*DATE *4 - 1 - 70*

REVISIONS

5-27-70
6-15-70

Drawing Book 9 contains all General Notes, Details and Schedules for Structural Steel from floor 106 core columns splice thru Penthouse Roof, Towers "A" & "B" except the Exterior Wall. For Exterior Wall, see Drawing Book 4.

CONTENTS

9-AB0 Date Pages

9-AB1 Index and General Notes

9-AB2 Typical Details - Truss connections

9-AB3 Typical Details - Shear studs

9-AB4 Member Types - Built up

9-AB5 Member Types - Rolled shapes

9-AB6 Connection Details

9-AB7 Horizontal Bracing

9-AB8 Bridging and Deck Supports

9-AB9 Louver Wall Support Details

9-AB10 Strap Anchor Details

9-AB11 Connection Details - Beam to Beam

9-AB12 Column Splice Details

9-AB13 Connection Details Floor 107

9-AB14 Connection Details Exterior wall

9-AB15 Connection Details Floor 108

9-AB16 Connection Details Floor 110

9-AB17 Connection Details P.H. Roof

9-AB18 Connection Details lines 04 & 05

9-AB19 Connection Details misc.

9-AB20 Connection Details P.H. Roof.

9-AB21 Connection Details Ape Posts & misc.

9-AB22 Connection Details Floor 109

9-AB23 Connection Details - T.V. Mast Interface

9-AB1-1.1

DESIGNED

DRAWN

W. Clarke

REVIEWED

E. Drakos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT	THE WORLD TRADE CENTER	TITLE	FL 107-PH DATE PAGE	DATE	10/ 6/72
VISIONS					
PRINTED 5/18/73		9-A6-5 11/9/73 9-A6-6 11/9/73			
9-AB 0- 1.1	5/18/73	9-AB 6- 1	5/27/70	9-AB10- 4	9/15/70
9-AB 0- 1.2	5/18/73	9-AB 6- 2	7/08/70	9-AB10- 5	12/14/70
9-AB 1- 1.1	5/18/73	9-AB 6- 3	7/08/70	9-AB10- 6	12/14/70
9-AB 1- 1.2	1/04/71	9-AB 6- 4	6/17/70	9-AB10- 7	9/15/70
9-AB 1- 1.3	1/04/71			9-AB10- 8	9/15/70
9-AB 1- 1.4	1/04/71			9-AB10- 9	9/15/70
9-AB 1- 1.5	1/04/71	9-AB 7- 1	5/27/70	9-AB10-10	9/15/70
9-AB 1- 1.6	1/04/71	9-AB 7- 2	5/27/70	9-AB10-11	9/15/70
9-AB 1- 1.7	1/04/71	9-AB 7- 3	5/27/70	9-AB10-12	9/15/70
9-AB 1- 1.8	1/04/71	9-AB 7- 4	5/27/70	9-AB10-13	9/15/70
9-AB 1- 1.9	1/04/71	9-AB 7- 5	5/27/70	9-AB10-14	12/14/70
* 9-AB 1-1.10	1/04/71	9-AB 7- 6	5/27/70	9-AB10-16	12/14/70
9-AB 1-1.11	1/04/71	9-AB 7- 7	5/27/70	9-AB10-17	12/14/70
9-AB 1- 2.1	5/27/70	9-AB 7- 8	5/27/70	9-AB10-18	12/14/70
9-AB 1- 2.2	5/27/70	9-AB 7- 9	5/27/70	9-AB10-19	12/14/70
		9-AB 7-10	5/27/70		
9-AB 2- 1.1	5/27/70	9-AB 7-11	7/08/70	9-AB11- 2	5/27/70
9-AB 2- 1.2	5/27/70	9-AB 7-12	6/15/70	9-AB11- 3	5/27/70
9-AB 2- 1.3	5/27/70	9-AB 7-13	6/15/70	9-AB11- 4	6/17/70
9-AB 2- 2	5/27/70	9-AB 7-14	8/03/70	9-AB11- 5	5/27/70
9-AB 2- 3	1/08/70	9-AB 7-15.1	12/14/70	9-AB11- 6	5/27/70
9-AB 2- 4.1	5/27/70	9-AB 7-15.2	12/14/70	9-AB11- 7	12/14/70
9-AB 2- 4.2	5/27/70			9-AB11- 8	12/14/70
9-AB 2- 4.3	5/27/70	9-AB 8- 1	12/14/70	9-AB11- 9.1	7/08/70
9-AB 2- 5	6/15/70	9-AB 8- 2	5/27/70	9-AB11- 9.2	7/08/70
9-AB 2- 6.1	6/15/70	9-AB 8- 4	5/27/70		
9-AB 2- 6.2	5/27/70	9-AB 8- 5.1	7/15/70	9-AB12- 1	5/27/70
9-AB 2- 7	5/27/70	9-AB 8- 5.2	6/15/70	9-AB12- 2	5/27/70
		9-AB 8- 5.1ALT	8/11/70	9-AB12- 3.1	12/14/70
9-AB 3- 1.1	10/20/70	9-AB 8- 5.2ALT	8/11/70	9-AB12- 3.2	12/14/70
9-AB 3- 1.2	10/20/70	9-AB 8- 6	12/14/70	9-AB12- 4	5/27/70
9-AB 3- 1.3	10/20/70				
9-AB 3- 1.4	12/14/70	9-AB 9- 1	2/ 5/71	9-AB13- 1	VOID
9-AB 3- 2	9/15/70	9-AB 9- 2.1	2/ 5/71	9-AB13- 2	VOID
9-AB 3- 3	9/15/70	9-AB 9- 2.2	3/ 1/71	9-AB13- 3	VOID
9-AB 3- 4.1	9/15/70	9-AB 9- 2.3	3/ 1/71	9-AB13- 4.1	5/27/70
9-AB 3- 4.2	9/15/70	9-AB 9- 3	2/ 5/71	9-AB13- 4.2	5/27/70
		9-AB 9- 4.1	2/ 5/71	9-AB13- 4.3	6/17/70
9-AB 4- 1.1	7/13/70	9-AB 9- 4.2	3/ 1/71	9-AB13- 4.4	6/17/70
9-AB 4- 1.2	5/27/70	9-AB 9- 4.3	3/ 1/71	9-AB13- 4.5	7/08/70
9-AB 4- 2.1	12/21/70	9-AB 9- 5.1	2/ 5/71	9-AB13- 4.6	5/27/70
9-AB 4- 2.2	12/14/70	9-AB 9- 5.2	2/ 5/71	9-AB13- 4.7	8/03/70
9-AB 4- 3	5/27/70	9-AB 9- 6	6/15/70	9-AB13- 4.8	8/03/70
		9-AB 9- 7	7/08/70	9-AB13- 5.1	5/27/70
9-AB 5- 1.1	7/08/70	9-AB 9- 8	2/ 5/71	9-AB13- 5.2	7/08/70
9-AB 5- 1.2	7/15/70	9-AB 9- 9	3/ 1/71	9-AB13- 5.3	7/13/70
9-AB 5- 2	12/14/70			9-AB13- 7.1	5/27/70
9-AB 5- 3	7/08/70	9-AB10- 1	9/15/70	9-AB13- 7.2	5/27/70
9-AB 5- 4.1	12/14/70	9-AB10- 2	12/14/70	9-AB13- 7.3	5/27/70
9-AB 5- 4.2	12/14/70	9-AB10- 3	9/15/70	9-AB13- 7.4	5/27/70
				9-AB13- 8.1	5/27/70
				9-AB13- 8.2	5/27/70
				9-AB13- 9.1	7/08/70
				9-AB13- 9.2	7/08/70
				9-AB13- 9.3	5/27/70
				9-AB13- 9.4	5/27/70
				9-AB13- 9.5	7/15/70
				9-AB13- 9.6	5/27/70
				9-AB13- 9.7	6/17/70
				9-AB13- 9.8	8/03/70
				9-AB13-10.1	7/08/70
				9-AB13-10.2	7/08/70
				9-AB13-10.3	5/27/70
				9-AB13-10.4	5/27/70
				9-AB13-10.5	5/27/70
				9-AB14- 1	5/27/70
				9-AB14- 2	7/08/70
				9-AB14- 3	7/08/70
				9-AB14- 4	7/08/70
				9-AB14- 5.1	5/27/70
				9-AB14- 5.2	5/27/70
				9-AB14- 6	5/27/70
				9-AB14- 7.1	5/27/70
				9-AB14- 7.2	5/27/70
				9-AB14- 8.1	6/03/70
				9-AB14- 8.2	5/27/70
				9-AB14- 8.3	9/08/70
				9-AB14- 9.1	8/03/70
				9-AB14- 9.2	12/14/70
				9-AB14- 9.3	12/14/70
				9-AB14-10	6/03/70
				9-AB15- 1.1	5/27/70
				9-AB15- 1.2	5/27/70
				9-AB15- 2	5/27/70
				9-AB15- 3	7/13/70
				9-AB15- 4	5/27/70
				9-AB15- 5.1	8/03/70
				9-AB15- 5.2	5/27/70
				9-AB15- 5.3	9/08/70
				9-AB15- 6	5/27/70
				9-AB15- 7.1	5/27/70
				9-AB15- 7.2	5/27/70
				9-AB15- 7.3	VOID
				9-AB15- 8.1	5/27/70
				9-AB15- 8.2	5/27/70
				9-AB15- 9	5/27/70
				9-AB15-10	5/27/70
				9-AB15-11.1	7/15/70
				9-AB15-11.2	7/15/70
				9-AB15-12	5/27/70
				9-AB15-13.1	5/27/70
				9-AB15-13.2	5/27/70
				9-AB15-14	7/08/70
				9-AB15-15.1	7/08/70
				9-AB15-15.2	7/15/70
				9-AB15-15.3	7/15/70
				9-AB15-16.1	5/27/70
				9-AB15-16.2	5/27/70
				9-AB15-17.1	5/27/70
				9-AB15-17.2	5/27/70
				9-AB15-18.1	7/08/70
				9-AB15-18.2	5/27/70
				9-AB15-19	VOID

* = NO RECORD

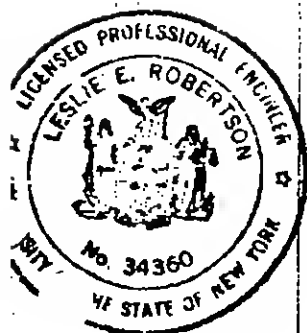
9-AB C- 1.1



REVISIONS

PRINTED
5/18/73

9-AB16- 0.1	6/15/70	9-AB18- 1.1	12/14/70	9-AB18- 5.7	7/10/70	9-AB20- 2	6/18/70	9-AB21- 2.2	5/27/70
9-AB16- 0.2	6/15/70	9-AB18- 1.2	12/14/70	9-AB18- 5.8	7/10/70	9-AB20- 3.1	6/18/70	9-AB21- 3.1	5/27/70
9-AB16-10	6/15/70	9-AB18- 1.3	12/14/70	9-AB18- 5.9	7/10/70	9-AB20- 3.2	6/18/70	9-AB21- 3.2	5/27/70
9-AB16-11	6/15/70	9-AB18- 1.4	12/14/70	9-AB18- 5.10	7/10/70	9-AB20- 3.3	6/18/70	9-AB21- 4	6/15/70
9-AB16-12	12/14/70	9-AB18- 1.5	12/14/70	9-AB18- 5.14	7/08/70	9-AB20- 4.1	10/ 4/71		
		9-AB18- 1.6	12/14/70	9-AB18- 5.15	7/02/70	9-AB20- 4.2	10/ 4/71	9-AB22- 1.1	6/15/70
9-AB17- 1.1	6/18/70	9-AB18- 1.7	12/14/70	9-AB18- 5.16	6/22/70	9-AB20- 4.3	10/ 4/71	9-AB22- 1.2	6/15/70
9-AB17- 1.2	6/18/70	9-AB18- 1.8	6/16/70	9-AB18- 5.17	5/22/70	9-AB20- 4.4	10/ 4/71	9-AB22- 2	6/15/70
9-AB17- 1.3	12/14/70	9-AB18- 1.9	7/08/70	9-AB18- 5.18	6/22/70	9-AB20- 4.5	10/ 4/71	9-AB22- 3	6/15/70
9-AB17- 1.4	12/14/70	9-AB18- 1.10	7/06/70	9-AB18- 5.19	6/22/70	9-AB20- 4.6	10/ 4/71	9-AB22- 4.1	6/15/70
9-AB17- 1.5	12/14/70	9-AB18- 1.11	6/03/70	9-AB18- 5.20	VOID	9-AB20- 4.7	10/ 4/71	9-AB22- 4.2	6/15/70
9-AB17- 1.6	12/14/70	9-AB18- 1.12	5/27/70	9-AB18- 5.21	VOID	9-AB20- 4.8	8/20/70	9-AB22- 5.1	6/15/70
9-AB17- 2.1	6/13/70	9-AB18- 2.1	12/14/70	9-AB18- 5.30	10/12/70	9-AB20- 4.9	8/20/70	9-AB22- 5.2	6/15/70
9-AB17- 2.2	12/14/70	9-AB18- 2.2	7/08/70	9-AB18- 5.31	10/12/70	9-AB20- 4.10	10/ 4/71	9-AB22- 5.3	6/15/70
9-AB17- 2.3	12/14/70	9-AB18- 2.3	7/08/70	9-AB18- 6.1	12/14/70	9-AB20- 4.11	10/ 4/71	9-AB22- 5.4	6/15/70
9-AB17- 3.1	7/10/70	9-AB18- 2.4	8/03/70	9-AB18- 6.2	10/12/70	9-AB20- 4.12	7/ 9/71		
9-AB17- 3.2	7/10/70	9-AB18- 2.5	5/27/70	9-AB18- 6.3	10/12/70	9-AB20- 4.13	7/ 9/71	9-AB23- 1	12/21/70
9-AB17- 3.3	7/10/70	9-AB18- 2.6	6/16/70	9-AB18- 6.4	10/12/70	9-AB20- 5	7/08/70		
9-AB17- 3.4	7/10/70	9-AB18- 2.7	12/14/70	9-AB18- 6.5	7/10/70	9-AB20- 6	6/15/70		
9-AB17- 3.5	12/14/70	9-AB18- 3.1	7/09/70	9-AB18- 6.6	7/10/70	9-AB20- 7.1	3/20/70		
9-AB17- 3.6	12/14/70	9-AB18- 3.2	7/10/70	9-AB18- 6.7	7/10/70	9-AB20- 7.2	8/20/70		
9-AB17- 3.7	12/14/70	9-AB18- 3.3	7/10/70	9-AB18- 6.8	7/10/70	9-AB20- 7.3	8/20/70		
9-AB17- 3.8	12/14/70	9-AB18- 3.4	7/10/70	9-AB18- 6.9	7/10/70	9-AB20- 7.4	8/20/70		
9-AB17- 4.1	7/10/70	9-AB18- 3.5	7/09/70	9-AB18- 6.14	7/08/70	9-AB20- 7.5	12/21/70		
9-AB17- 4.2	7/10/70	9-AB18- 3.7	7/09/70	9-AB18- 6.15	7/08/70	9-AB20- 8.1	6/18/70		
9-AB17- 4.3	7/10/70	9-AB18- 3.8	7/09/70	9-AB18- 6.16	6/22/70	9-AB20- 8.2	6/18/70		
9-AB17- 4.4	12/14/70	9-AB18- 3.9	7/05/70	9-AB18- 6.17	6/22/70	9-AB20- 9.1	7/08/70		
9-AB17- 4.5	12/14/70	9-AB18- 3.10	7/05/70	9-AB18- 6.18	6/22/70	9-AB20- 9.2	7/08/70		
9-AB17- 4.6	12/14/70	9-AB18- 3.11	7/09/70	9-AB18- 6.19	6/22/70	9-AB20- 9.3	9/27/71		
9-AB17- 5.1	7/13/70	9-AB18- 3.12	7/03/70	9-AB18- 6.30	10/12/70	9-AB20-10	8/20/70		
9-AB17- 5.2	7/13/70	9-AB18- 3.13	7/06/70	9-AB18- 6.31	10/12/70	9-AB20-11	VOID		
9-AB17- 5.3	6/18/70	9-AB18- 3.14	7/08/70			9-AB20-12.1	10/ 4/71		
9-AB17- 5.4	7/13/70	9-AB18- 3.15	7/08/70	9-AB19- 1.1	7/15/70	9-AB20-12.2	10/ 4/71		
9-AB17- 6.1	6/11/70	9-AB19- 4.1	7/09/70	9-AB19- 1.2	5/27/70	9-AB20-12.3	12/21/70		
9-AB17- 6.2	7/13/70	9-AB19- 4.2	7/09/70	9-AB19- 1.3	5/27/70	9-AB20-13.1	12/21/70		
9-AB17- 7.1	10/12/70	9-AB19- 4.3	7/09/70	9-AB19- 1.4	7/15/70	9-AB20-13.2	12/21/70		
9-AB17- 7.2	10/12/70	9-AB19- 4.4	7/09/70	9-AB19- 1.5	5/27/70	9-AB20-14.1	12/21/70		
9-AB17- 7.3	10/12/70	9-AB19- 4.5	7/08/70	9-AB19- 1.6	5/27/70	9-AB20-14.2	12/21/70		
9-AB17- 7.4	10/12/70	9-AB19- 4.7	7/08/70	9-AB19- 2.1	7/15/70	9-AB20-14.3	12/21/70		
9-AB17- 7.5	10/12/70	9-AB19- 4.8	5/22/70	9-AB19- 2.2	7/15/70	9-AB20-15.1	12/21/70		
9-AB17- 7.6	10/12/70	9-AB19- 4.9	7/15/70	9-AB19- 2.3	5/27/70	9-AB20-15.2	3/ 5/71		
9-AB17- 7.7	10/12/70	9-AB19- 4.10	7/15/70	9-AB19- 3	6/15/70	9-AB20-15.3	12/21/70		
9-AB17- 7.8	10/12/70	9-AB19- 4.11	7/03/70	9-AB19- 4	6/15/70	9-AB20-16	12/21/70		
9-AB17- 7.9	12/14/70	9-AB19- 4.12	7/02/70	9-AB19- 5	6/15/70	9-AB20-17.1	12/21/70		
9-AB17-7.10	12/14/70	9-AB19- 5.1	12/14/70	9-AB19- 6	6/15/70	9-AB20-17.2	12/21/70		
9-AB17-7.11	12/14/70	9-AB19- 5.2	10/12/70	9-AB19- 7.1	6/15/70	9-AB20-18	3/ 5/71		
9-AB17- 9	VOID	9-AB19- 5.3	10/12/70	9-AB19- 7.2	6/15/70				
9-AB17-10.1	7/10/70	9-AB19- 5.4	7/10/70			9-AB21- 1.1	5/27/70		
9-AB17-10.2	7/10/70	9-AB19- 5.5	7/10/70	9-AB20- 1.1	6/18/70	9-AB21- 1.2	6/15/70		
		9-AB19- 5.6	7/10/70	9-AB20- 1.2	6/18/70	9-AB21- 2.1	5/27/70		



PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH INDEX

DATE 5/27/70

9-AB 6- 1	FL 107-PH CONNECTION DETAILS
9-AB 6- 2	FL 107-PH CONNECTION DETAILS
9-AB 6- 3	FL 107-PH CONNECTION DETAILS
9-AB 6- 4	FL 107-PH CONNECTION DETAILS
9-AB 7- 1	FL 107-PH HORIZONTAL BRACING
9-AB 7- 2	FL 107-PH HORIZONTAL BRACING
9-AB 7- 3	FL 107-PH HORIZONTAL BRACING
9-AB 7- 4	FL 107-PH HORIZONTAL BRACING
9-AB 7- 5	FL 107-PH HORIZONTAL BRACING
9-AB 7- 6	FL 107-PH HORIZONTAL BRACING
9-AB 7- 7	FL 107-PH HORIZONTAL BRACING
9-AB 7- 8	FL 107-PH DECK SUPPORT DETAILS
9-AB 7- 9	FL 107-PH HORIZONTAL BRACING
9-AB 7- 10	FL 107-PH HORIZONTAL BRACING
9-AB 7- 11	FL 107-PH HORIZONTAL BRACING
9-AB 7- 12	FL 107-PH HORIZONTAL BRACING
9-AB 7- 13	FL 107-PH HORIZONTAL BRACING
9-AB 7- 14	FL 107-PH HORIZONTAL BRACING
9-AB 7- 15.1	FL 107-PH HORIZONTAL BRACING
9-AB 8- 1	FL 107-PH DECK BEAMS & BRIDGING
9-AB 8- 2	FL 107-PH DECK BEAMS & BRIDGING
9-AB 8- 3	NJT USED
9-AB 8- 4	FL 107-PH DECK BEAMS & BRIDGING
9-AB 8- 5.1	FL 107-PH DECK BEAMS & BRIDGING
9-AB 8- 5.1	FL 107-PH DECK BEAMS & BRIDGING - ALTERNATE
9-AB 8- 5.2	FL 107-PH DECK BEAMS & BRIDGING
9-AB 8- 5.2	FL 107-PH DECK BEAMS & BRIDGING - ALTERNATE
9-AB 9- 1	FL 107-PH LOUVER WALL SUPPORT
9-AB 9- 2	FL 107-PH LOUVER WALL SUPPORT
9-AB 9- 3	FL 107-PH LOUVER WALL SUPPORT
9-AB 9- 4	FL 107-PH LOUVER WALL SUPPORT
9-AB 9- 5.1	FL 107-PH LOUVER WALL SUPPORT
9-AB 9- 5.2	FL 107-PH LOUVER WALL SUPPORT
9-AB 9- 6	FL 107-PH LOUVER WALL SUPPORT
9-AB 9- 7	FL 107-PH LOUVER WALL SUPPORT
9-AB10- 1	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 2	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 3	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 4	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 5	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 6	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 7	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 8	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 9	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 10	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 11	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 12	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 13	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 14	FL 107-PH STRAP ANCHOR DETAILS
9-AB10- 15	FL 107-PH STRAP ANCHOR DETAILS

GENERAL NOTES

- FLOOR 107

- FLOOR 108

- FLOOR 109

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH INDEX

DATE 5/27/70

REVISIONS

6/15/70
6/17/70
8/3/70

9-AB11-	1	NOT USED
9-AB11-	2	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB11-	3	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB11-	4	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB11-	5	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB11-	6	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB11-	7	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB11-	8	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB11-	9.1	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB11-	9.2	FL 107-PH CONNECTION DETAILS - BEAM TO BEAM
9-AB12-	1	FL 107-PH COLUMN SPLICE DETAILS
9-AB12-	2	FL 107-PH COLUMN SPLICE DETAILS
9-AB12-	3	FL 107-PH COLUMN BASE DETAILS
9-AB12-	4	FL 107-PH TYPICAL CAP & BASE PLATE DETAILS
9-AB13-	1	VOID
9-AB13-	2	VOID
9-AB13-	3	VOID
9-AB13-	4.1	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	4.2	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	4.3	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	4.4	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	4.5	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	4.6	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	4.7	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	4.8	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	5.1	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	5.2	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	5.3	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	6	NOT USED
9-AB13-	7.1	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	7.2	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	7.3	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	7.4	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	8.1	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	8.2	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	9.1	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	9.2	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	9.3	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	9.4	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	9.5	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	9.6	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	9.7	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	9.8	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	10.1	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	10.2	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	10.3	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	10.4	FL 107-PH CONNECTION DETAILS - FLOOR 107
9-AB13-	10.5	FL 107-PH CONNECTION DETAILS - FLOOR 107

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT	TITLE	DATE
THE WORLD TRADE CENTER	FL 107-PH INDEX	5/27/70

REVISIONS

8/3/70

1-AB14-	1	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL
1-AB14-	2	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 107
1-AB14-	3	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 107
1-AB14-	4	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 107
1-AB14-	5.1	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 108
1-AB14-	5.2	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 108
1-AB14-	6	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 108
1-AB14-	7.1	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 108
1-AB14-	7.2	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 108
1-AB14-	8.1	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 108
1-AB14-	8.2	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 108
1-AB14-	8.3	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 108
1-AB14-	9.1	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 110
1-AB14-	9.2	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 110
1-AB14-	10	FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FLOOR 107
1-AB14-	11.1	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	11.2	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	12	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	13	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	14	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	15.1	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	15.2	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	16	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	17.1	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	17.2	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	18.1	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	18.2	FL 107-PH CONNECTION DETAILS - FLOOR 108
1-AB14-	19	FL 107-PH CONNECTION DETAILS - FLOOR 108

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH INDEX

DATE 5/27/70

REVISIONS

6/18/70

9-AB16-	1.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	1.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	1.3	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	1.4	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	2.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	2.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	3.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	3.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	3.3	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	4.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	4.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	5.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	5.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	6.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	6.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	6.3	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	6.4	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	6.5	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	7.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	7.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	7.3	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	7.4	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	7.5	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	7.6	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	8.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	8.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	8.3	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	9.1	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	9.2	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	10	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	11	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB16-	12	FL 107-PH CONNECTION DETAILS - FLOOR 110

9-AB17-	1.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	1.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	3.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	3.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	3.3	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	3.4	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	4.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	4.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	4.3	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	5.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	5.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	5.3	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	5.4	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	6.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB17-	6.2	FL 107-PH CONNECTION DETAILS - PH ROOF

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH INDEX

DATE 5/27/70

REVISIONS

6/18/70
7/18/70
7/19/70
VOID 8/25/70
10/12/70

9-A 17-	7.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-A 17-	7.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-A 17-	7.3	FL 107-PH CONNECTION DETAILS - PH ROOF
9-A 17-	7.4	FL 107-PH CONNECTION DETAILS - PH ROOF
9-A 17-	7.5	FL 107-PH CONNECTION DETAILS - PH ROOF
9-A 17-	7.6	FL 107-PH CONNECTION DETAILS - PH ROOF
9-A 17-	7.7	FL 107-PH CONNECTION DETAILS - PH ROOF
9-A 17-	7.8	FL 107-PH CONNECTION DETAILS - PH ROOF
9-B 17-	7.10	FL 107-PH CONNECTION DETAILS - PH ROOF
9-B 17-	7.11	FL 107-PH CONNECTION DETAILS - PH ROOF
9-B 17-	7.12	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB 17-	8	NOT USED
9-AB 17-	9	VOID
9-AB 17-	10.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB 17-	10.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB 18-	1.1	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.2	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.3	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.4	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.5	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.6	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.7	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.8	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.9	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.10	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.11	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	1.12	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	2.1	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	2.2	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	2.3	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	2.4	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	2.5	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	2.6	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	2.7	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.1	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.2	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.3	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.4	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.5	NOT USED
9-AB 18-	3.6	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.7	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.8	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.9	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.10	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.11	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.12	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.13	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.14	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB 18-	3.15	FL 107-PH CONNECTION DETAILS - LINES 04 & 05

SKILLING, HELLÉ, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT	TITLE	DATE
THE WORLD TRADE CENTER	FL 107-PH INDEX	5/27/70

REVISIONS

6/15/70
7/8/70
7/10/70
VOID 9/25/70
10/12/70

9-AB18-	4.1	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.2	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.3	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.4	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.6	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.7	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.8	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.9	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.10	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.11	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	4.12	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.1	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-A 18-	5.2	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-A 18-	5.3	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.4	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.5	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.6	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.7	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.8	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.9	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.10	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.14	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.15	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.16	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.17	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.18	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.19	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	5.20	VOID
9-AB18-	5.21	VOID
9- B18-	5.30	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9- B18-	5.31	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.1	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-A 18-	6.2	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-A 18-	6.3	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-A 18-	6.4	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.5	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.6	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.7	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.8	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.9	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.14	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.15	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.16	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.17	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.18	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9-AB18-	6.19	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9- B18-	6.30	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9- B18-	6.31	FL 107-PH CONNECTION DETAILS - LINES 04 & 05
9- B18-	6.32	FL 107-PH CONNECTION DETAILS - LINES 04 & 05

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH INDEX

DATE 5/27/70

REVISIONS

6/15/70
7/18/70
7/19/70
8/20/70
10/29/70
10/12/70

9-AB19-	1.1	FL 107-PH CONNECTION DETAILS - FLOOR 108
9-AB19-	1.2	FL 107-PH CONNECTION DETAILS - FLOOR 108
9-AB19-	1.3	FL 107-PH CONNECTION DETAILS - FLOOR 108
9-AB19-	1.4	FL 107-PH CONNECTION DETAILS - FLOOR 108
9-AB19-	2.1	FL 107-PH CONNECTION DETAILS - FLOOR 108
9-AB19-	2.2	FL 107-PH CONNECTION DETAILS - FLOOR 108
9-AB19-	3	FL 107-PH CONNECTION DETAILS - FLOOR 110
9-AB19-	4	FL 107-PH CONNECTION DETAILS - FLOOR 109
9-AB19-	5	FL 107-PH CONNECTION DETAILS
9-AB19-	6	FL 107-PH CONNECTION DETAILS
9-AB19-	7.1	FL 107-PH CONNECTION DETAILS - FLOOR 109
9-AB19-	7.2	FL 107-PH CONNECTION DETAILS - FLOOR 109
9-AB20-	1.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	1.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	3.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	3.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	3.3	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.3	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.4	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.5	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.6	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.7	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.8	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.9	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.10	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	4.11	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	5	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	6	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	7.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	7.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	7.3	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	7.4	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	8.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	8.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	9.1	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	9.2	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	10	FL 107-PH CONNECTION DETAILS - PH ROOF
9-AB20-	11	VOID

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107-PH GENERAL NOTES

DATE

4-1-70

REVISIONS

5-27-70 A

GENERAL NOTES

The following provisions apply to all Drawing Book 9 drawings, unless specifically shown as noted otherwise in Drawing Book 9 drawings or in the plans.

A. Dimensions

1. All beam reference center lines and column reference center lines are located in the plans.
2. Elevation of top of steel is shown in the plans. See Beam Types (9-AB4 & 9-AB5) for location on beam of reference top of steel.
3. Where a dimension is shown in the drawings from the centerline of a beam or column it shall be considered to be from the reference centerline of the beam or column. Where a dimension is shown from the face of a column it shall be considered to be from the theoretical face of the column. The theoretical face of the column is located from the reference centerline of the column by a distance equal to one half of the scheduled column width or depth.

B. Materials

1. All steel sections, plates, detail materials and other members shall be ASTM A36, unless specifically shown otherwise. Steel parts noted in the drawings as Fy 50, or in general Fy XX, refers to steel conforming to the ASTM specifications with yield point corresponding to 50 or XX.

2. Members indicated in the Drawings as "tube" are rectangular seamless structural tubing and shall conform to ASTM A501.

3. Studs shall be manufactured from AISI grade C1015, C1017 or C1020 steel conforming to the requirements of ASTM A108. All studs will be furnished & installed by KKE under Contract WTC-230.00.

C. Bolted Connections

1. All bolted connections shall be high strength friction type, except where specifically noted as A307.
2. All high strength bolts shall be ASTM A325, except where specifically noted in the drawings as ASTM A490.
3. A minimum of 2-3/4" Ø bolts shall be used at each member connected except where specifically noted in the Drawings.
4. All field bolts to be furnished under Contract WTC-234.00. Field bolt lists and summaries will be prepared by the PNYA's Steel Detailer.

D. Welded Connections

1. All manual welded electrodes shall be E70XX low hydrogen type.
2. All submerged arc welding shall be Grade SAW-2.
3. Studs shall be applied using a stud welding system providing a minimum current of 2000 amperes.
4. Where weld joint details are not designated prequalified by AWS, each welding procedure submitted for approval shall be accompanied by welding procedure qualification test certification and reports.
5. Where the symbols  are shown in the drawings the fabricator shall provide a complete penetration weld. The fabricator may provide single or double bevel, V, U or J groove welds conforming to approved welding procedure specifications.

E. Connection Details

1. Where connection plate dimensions are not shown in the drawings, plate dimensions shall be determined by providing standard AISC edge distances with the indicated bolt spacing. Where bolt spacing is not shown use AISC spacing with 3" min.
2. Use standard gauge for all bolts in beams unless otherwise shown in the drawings, or approved by the Engineer.
3. The bolt pattern is the same for the top and bottom plates or both side plates of a connection unless otherwise shown in the drawings.



DESIGNED

DRAWN

REVIEWED

E. Dravos

9-AB1-2.1

PROJECT

THE WORLD TRADE CENTER

TITLE

FL107-PH GENERAL NOTES

DATE

4-1-70

REVISIONS

5-27-70

F. Reference Drawings

1. See SA-115 thru SA-120 for Floor Framing Plans Tower A.
2. See SB-115 thru SB-120 for Floor Framing Plans Tower B.
3. See SA-401 thru SA-404 for Elevations of Columns and Bracing, Tower A.
4. See SB-401 thru SB-404 for Elevations of Columns and Bracing, Tower B.
5. See Drawing Book 3 for core column below the Fl. 106 splice.
6. See Drawing Book 4 chapter 4-A1, 4-B1 and 4-AB2 for panels and seat details at Fl. 107.
7. See Drawing Book 4 chapter 4-AB3 for columns, spandrels and connection details floor 107 to 110.

G. Miscellaneous

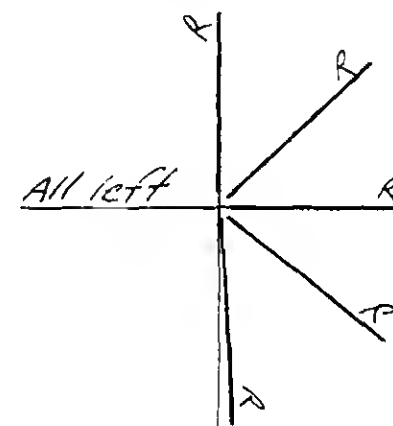
1. Specific details and notes shall prevail over general details and notes.

Any conflict or apparent conflict between drawings and/or notes shall be submitted to the Engineer for his decision, before construction or preparation of shop drawings has begun.

2. Section/details indicated 3-10E means Section/Detail E in Drawing Book 9 page 9-AB3-10.
3. Page numbers in Drawing Book 9 which include more than one page are numbered 2.1, 2.2, 2.3, etc. Page numbers which include only one page are numbered 2 with no decimal. Where reference is made to page numbers with more than one page, the decimal portion of the page number is not included. Therefore, a section or detail indicated 3-2 may be on 9-AB3-2.1, 2.2, etc.
4. Studs are indicated on the plans thus: N90. See 9-AB3 for details.

4. Convention for Determining left and right ends of members.

- (a) All members except those on vertical axis of sheet have the end nearest to the left side of the sheet designated as left.
- (b) All members on vertical axis have the end nearest to the bottom of the sheet designated as left.



DESIGNED

DRAWN

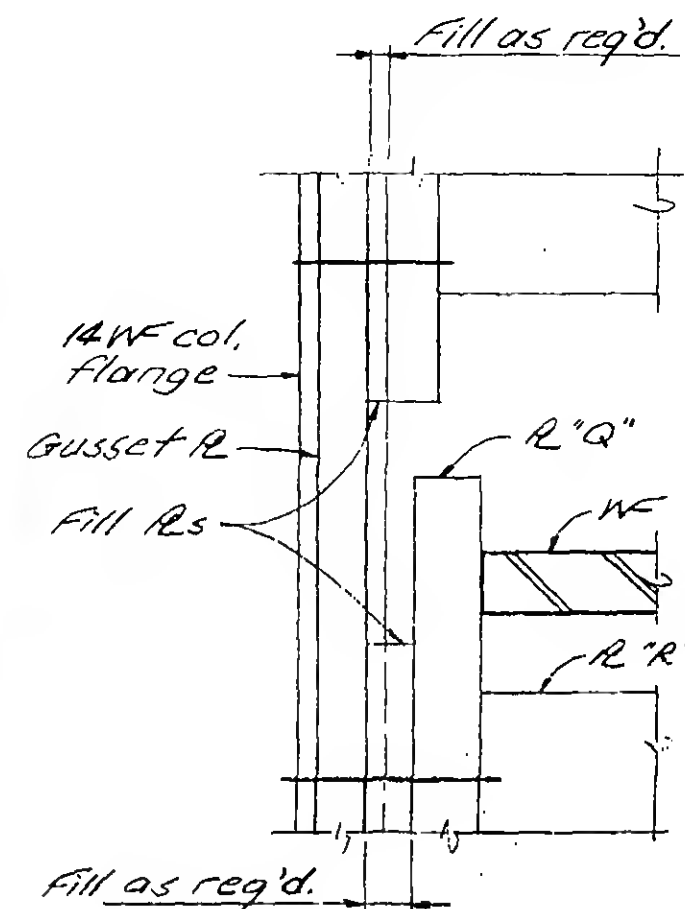
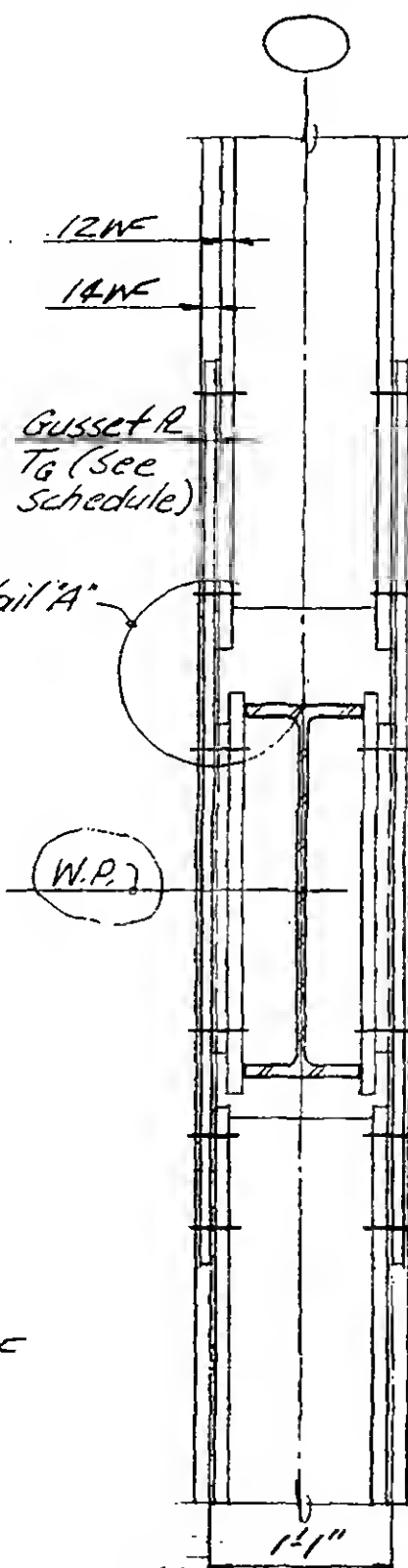
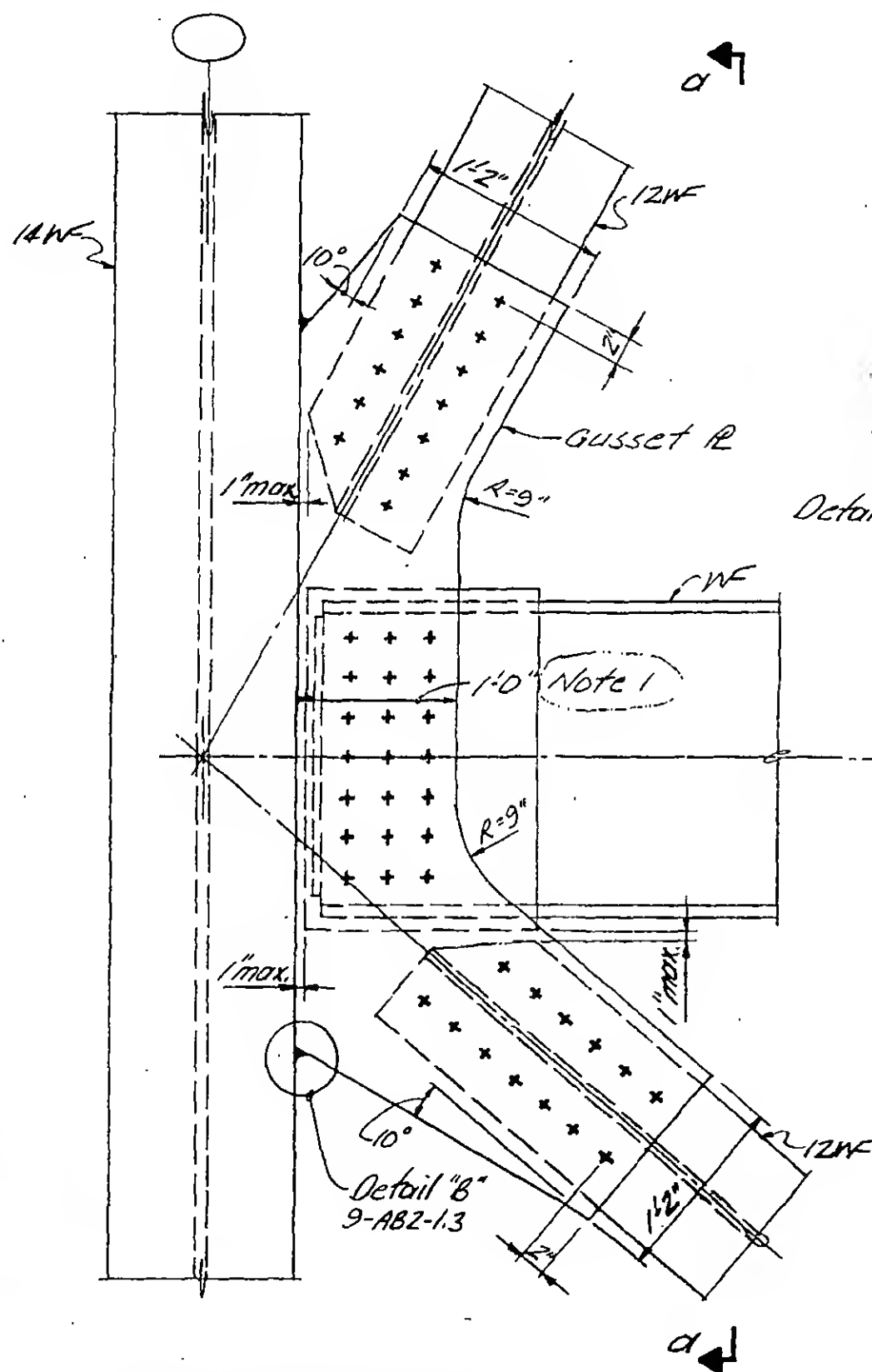
REVIEWED

E. J. D'Amico

9-AB1-2.2

REVISIONS

5-27-70



Detail "A"

Note 1. Minimum dimension. Increase as required to accommodate connection material. See specific details.

clear distance between
gusset plates (typ.)

Section a-a



Two Diagonal and Beam to Column Connection

DESIGNED
E. Drakes

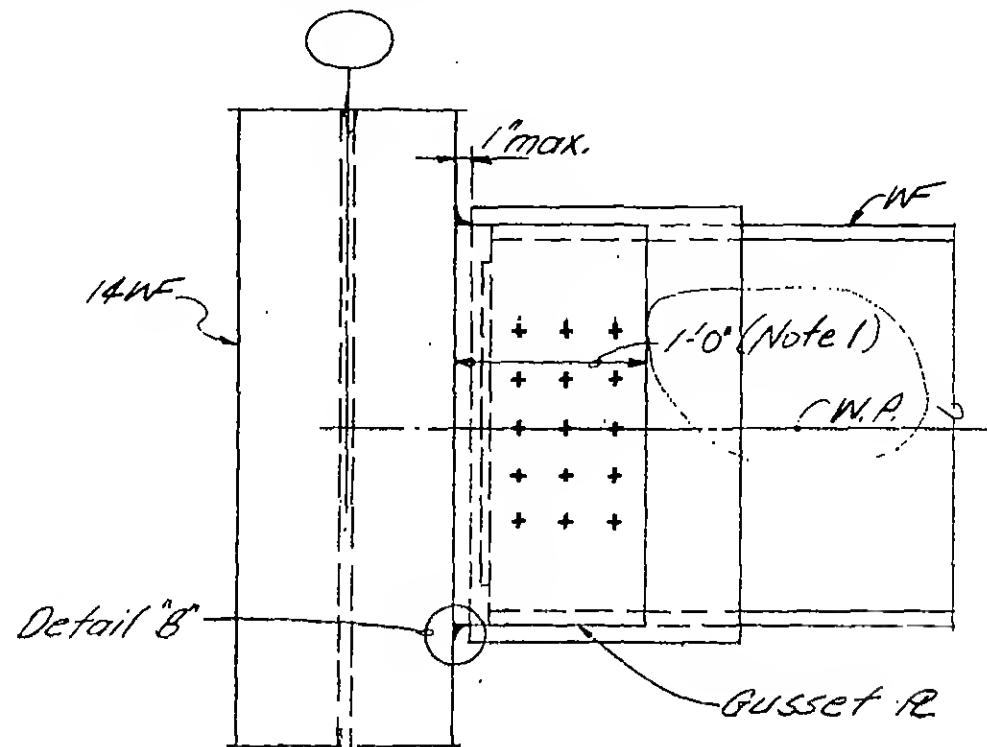
DRAWN
J. Adams

REVIEWED
E. Dravos

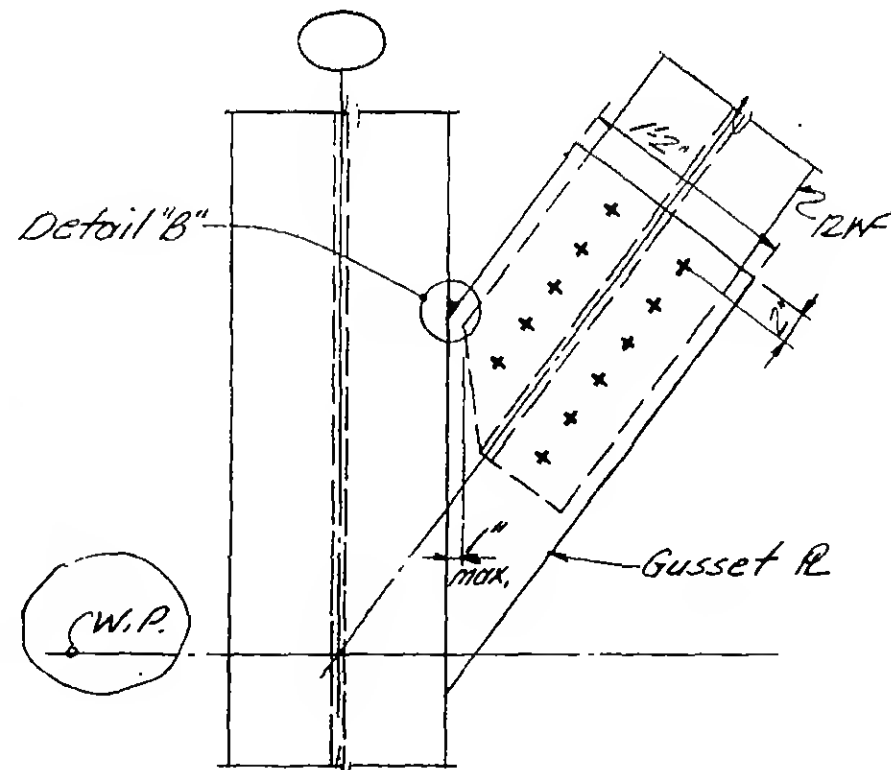
9-ABZ-1.1

REVISIONS

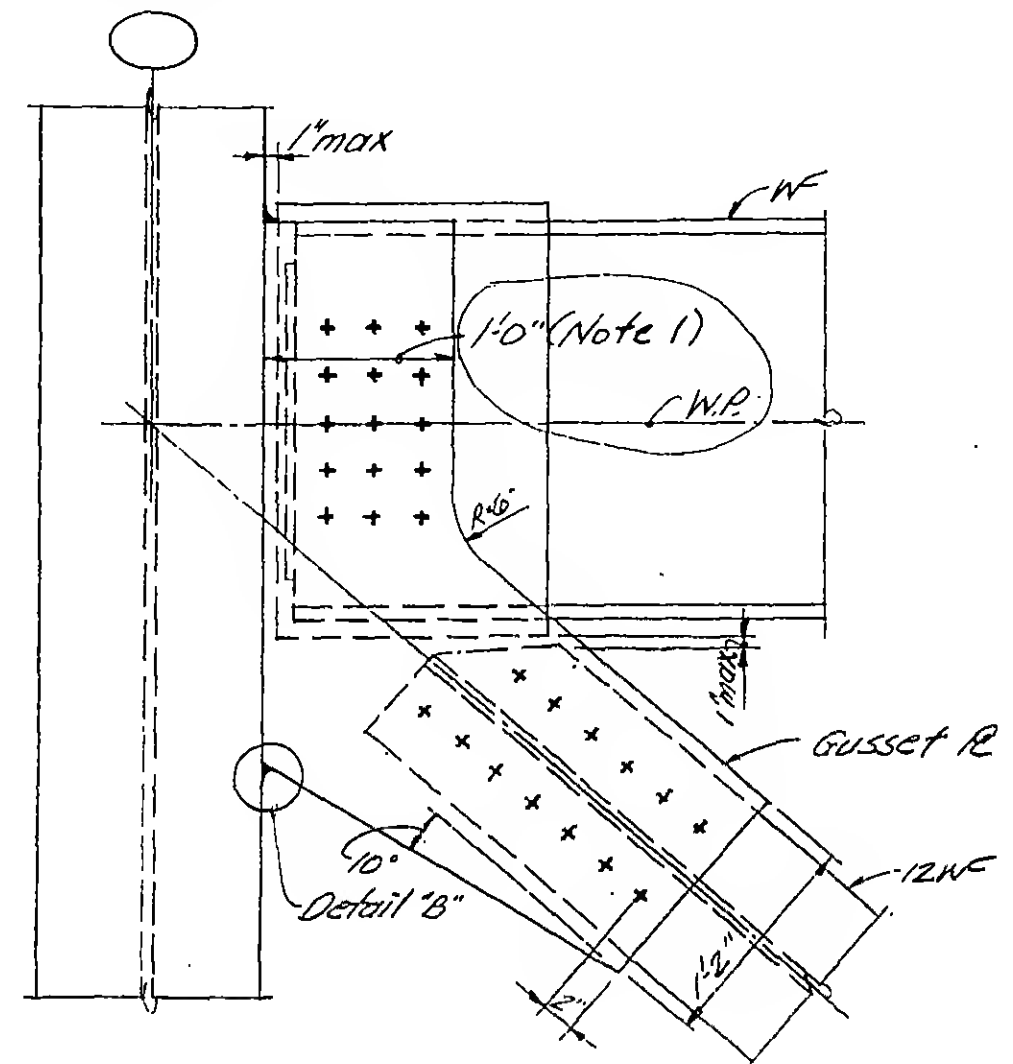
5-27-70



Beam to Column Connection



Diagonal to Column Conn.



Diagonal and Beam to Column Conn.



DESIGNED
E. Drakos

DRAWN
J. Adams

REVIEWED
E. Drakos

PROJECT

THE WORLD TRADE CENTER

TITLE

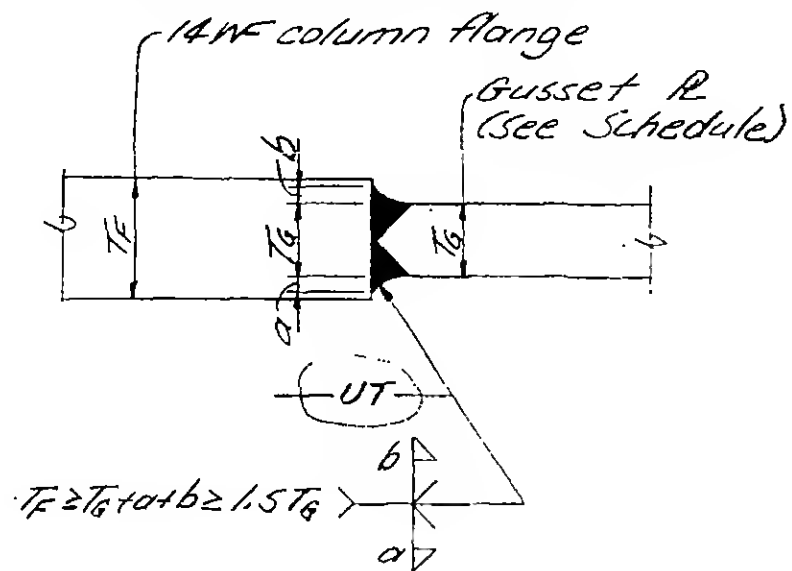
FL 107-PH TYPICAL DETAILS-TRUSS CONNECTIONS

DATE

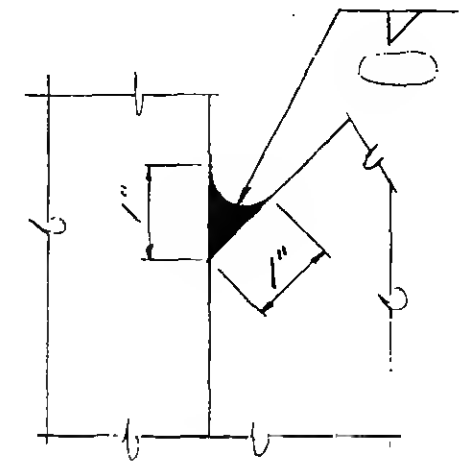
4-1-70

REVISIONS

5-27-70



SCHEDULE			
TYPE	T_g (in.)	F_y (ksi)	Remarks
2-1W	1"	50	
2-1X	$\frac{7}{8}$ "	50	
2-1Y	$\frac{3}{4}$ "	50	
2-1Z	$\frac{5}{8}$ "	50	



Typical Gusset R to Column Flange Weldment

Detail "B"

Note:

All holes in gusset plates are $\frac{3}{16}$ " larger than nominal bolt diameter.



DESIGNED

E. Dracos

DRAWN

J. Adams

REVIEWED

E. Dracos

9-ABZ-1.3

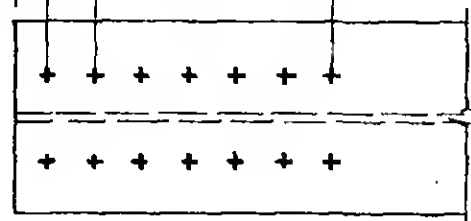
REVISIONS

5-27-70

No. of bolts
(total both flanges)

2-2 3" typ.

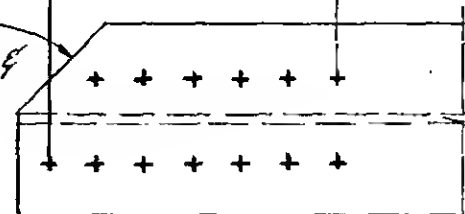
a



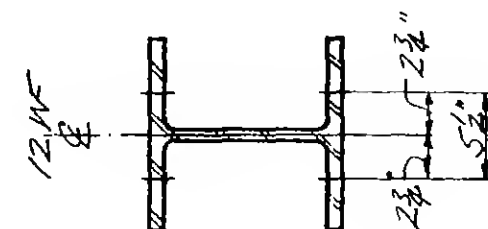
a

clip flange
see sketch &
Note 1No. of bolts
(total both flanges)

a



a



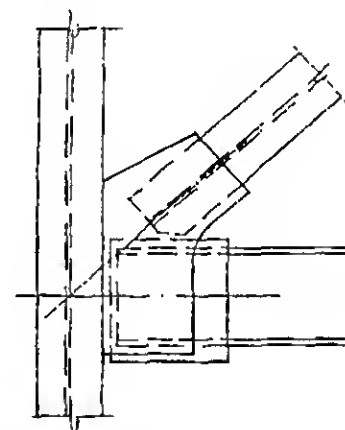
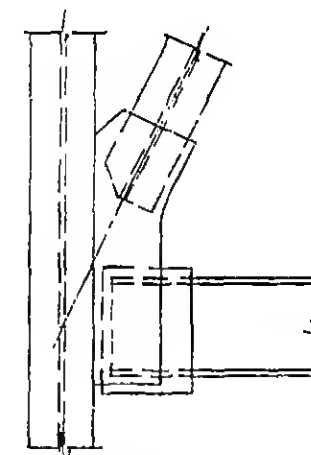
Section a-a

Diagonal End Elevation

SCHEDULE		
TYPE	NO. OF BOLTS	REMARKS
2-2A	34	Note 3
2-2B	(26)	Note 3
2-2C	22	Note 3

Notes:

1. Clip one side of diagonal when it interferes with beam or column.
2. All bolts are friction type, 1" ϕ , A490.
(All holes in diagonals are $\frac{1}{16}$ " larger than nominal bolt diameter)
3. Number of bolts shown in Schedule is minimum required. In a non-clipped diagonal add two more bolts to the total number of bolts shown in the Schedule.

Diag. Interference with BeamDiag. Interference with ColumnSketch

DESIGNED

L. Drakos

DRAWN

J. Adams

REVIEWED

E. Drakos

9-AB2-2

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107-PH TYPICAL DETAILS - TRUSS CONNECTIONS

DATE

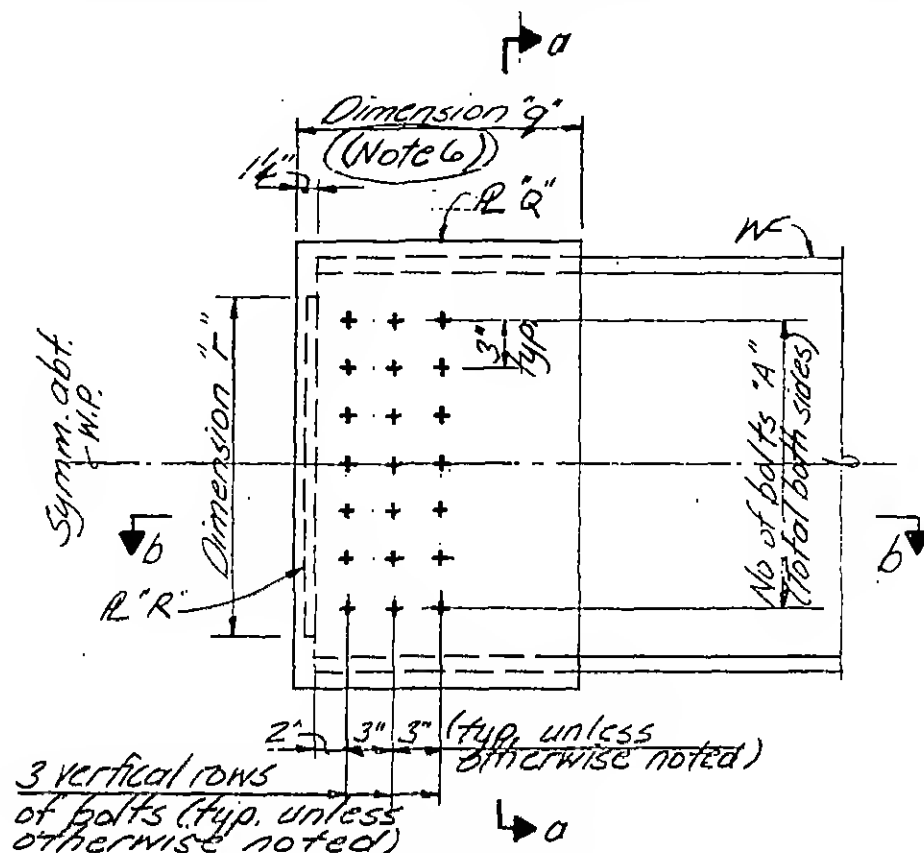
4-1-70

REVISIONS

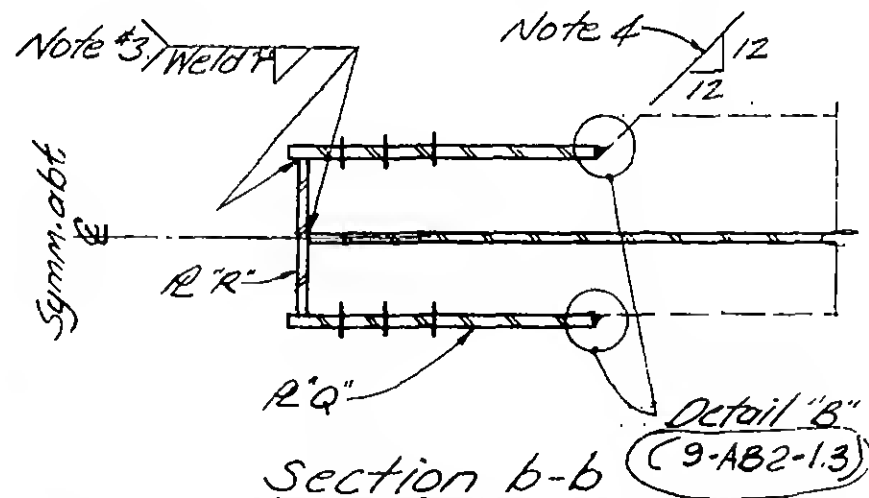
5-27-70

6-15-70

7-8-70



Beam End Elevation

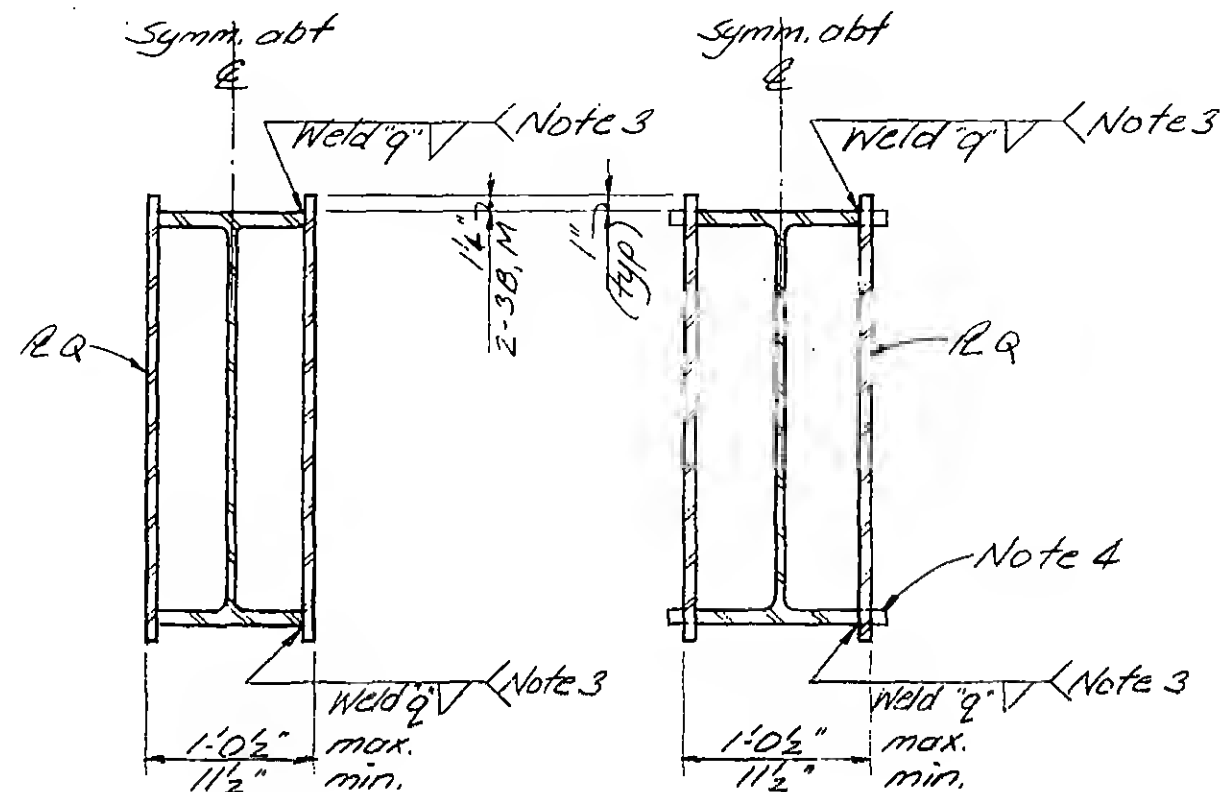


Section b-b

(9-AB2-1.3)

Notes:

1. All bolts are friction type, 1" ϕ A490. All holes in beam end are $\frac{1}{16}$ " larger than nominal bolt diameter.
2. R"Q" & R"R" Fy36 material.
3. Fillet welds "q" & "r" can be substituted by equivalent capacity groove welds



Section a-a

SCHEDULE

BEAM	TYPE	NO. OF BOLTS A	R"Q" x Dim q	Weld q	R"R" x Dim r	Weld r	Remarks
36WF	2-3A	36	1" x 1'-6"	$\frac{3}{4}$ "	5/8" x 2'-6"	$\frac{7}{16}$ "	
30WF	2-3B	48	1" x 1'-6"	$\frac{5}{16}$ "	5/8" x 2'-0"	$\frac{3}{8}$ "	
	2-3C	30	1" x 1'-6"	5/8"	5/8" x 2'-0"	$\frac{3}{8}$ "	
27WF	2-3D	36	1" x 1'-6"	$\frac{3}{4}$ "	5/8" x 1'-9"	$\frac{5}{16}$ "	
	2-3E	24	1" x 1'-6"	$\frac{7}{16}$ "	5/8" x 1'-9"	$\frac{5}{16}$ "	
24WF	2-3F	36	1" x 1'-6"	$\frac{11}{16}$ "	5/8" x 1'-6"	$\frac{5}{16}$ "	
	2-3G	24	$\frac{1}{4}$ " x 1'-6"	$\frac{7}{16}$ "	5/8" x 1'-6"	$\frac{5}{16}$ "	
21WF	2-3H	18	$\frac{1}{4}$ " x 1'-0"	$\frac{7}{16}$ "	5/8" x 1'-3"	$\frac{5}{16}$ "	
18WF	2-3K	30	1" x 1'-6"	$\frac{11}{16}$ "	5/8" x 1'-3"	$\frac{5}{16}$ "	
24WF	2-3M	48	1" x 1'-6"	1"	5/8" x 1'-6"	$\frac{3}{8}$ "	Note #5
	2-3N	36	1" x 1'-6"	$\frac{3}{4}$ "	5/8" x 1'-6"	$\frac{5}{16}$ "	

4. If beam flange width exceeds $10\frac{1}{2}$ " cut top & bottom flanges as shown.
5. Provide 4 vertical rows at 3" spacing.

6. Minimum dimension required. Increase dimension shown on Schedule as noted on specific details.



DESIGNED

E. Drakos

DRAWN

J. Adams

REVIEWED

E. Drakos

9-AB2-3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

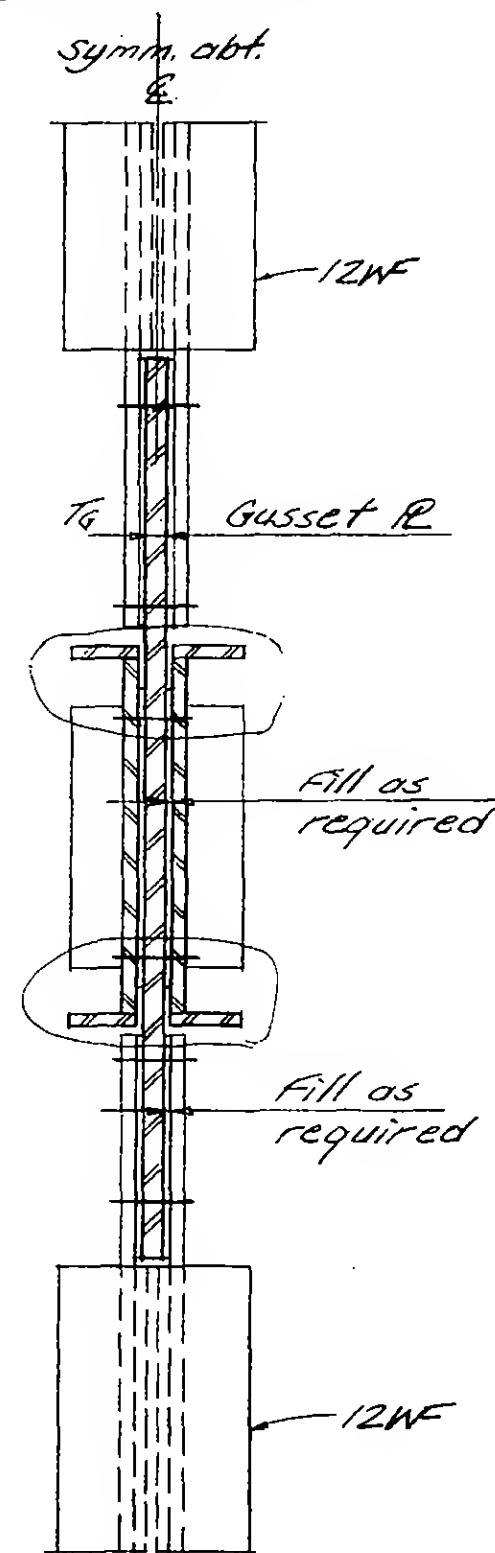
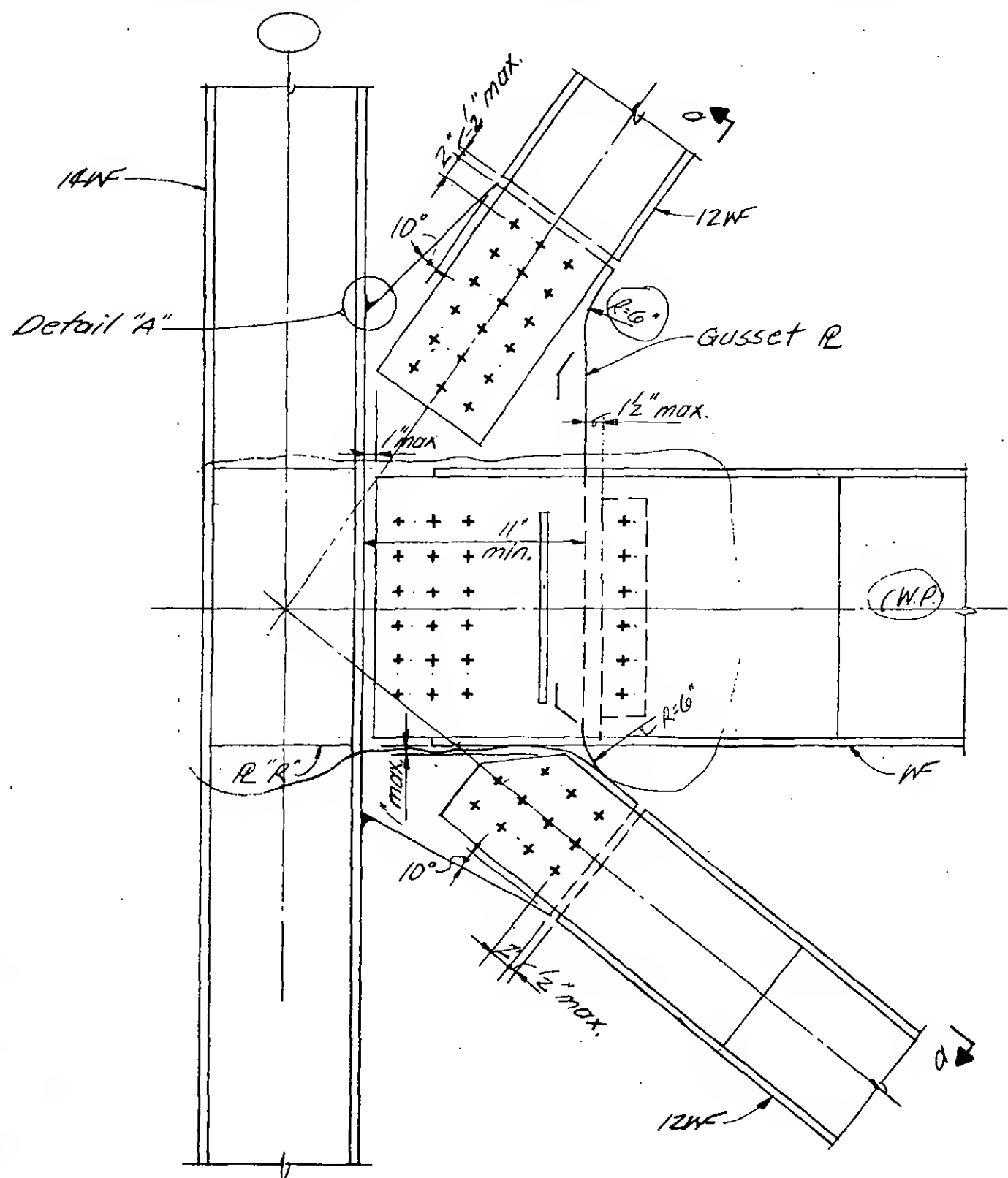
FL 107-PH TYPICAL DETAILS-TRUSS CONNECTIONS

DATE

4-1-70

REVISIONS

5-27-70



Section a-a.

Two Diagonal and Beam
to Column Connection.



DESIGNED
E. Dracos

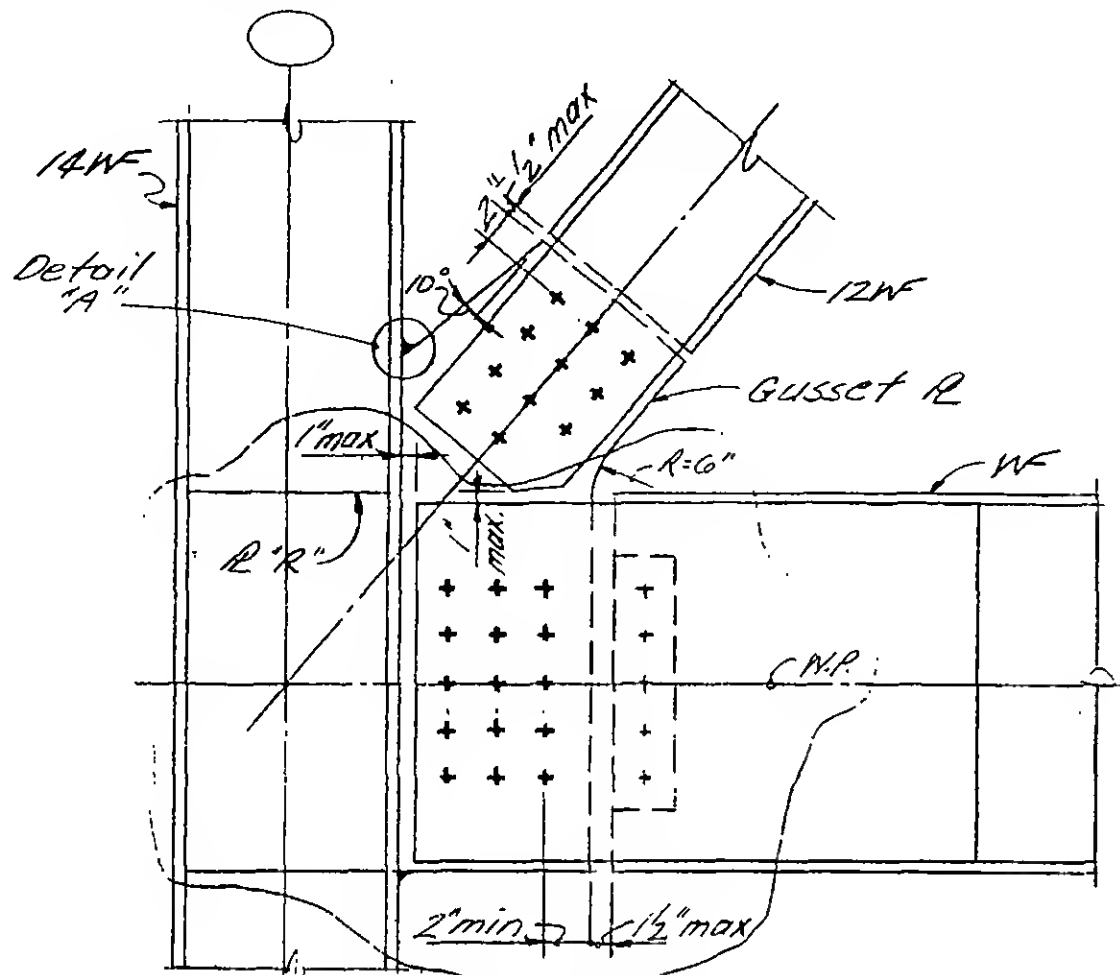
DRAWN
J. Adams

REVIEWED
E. Dracos

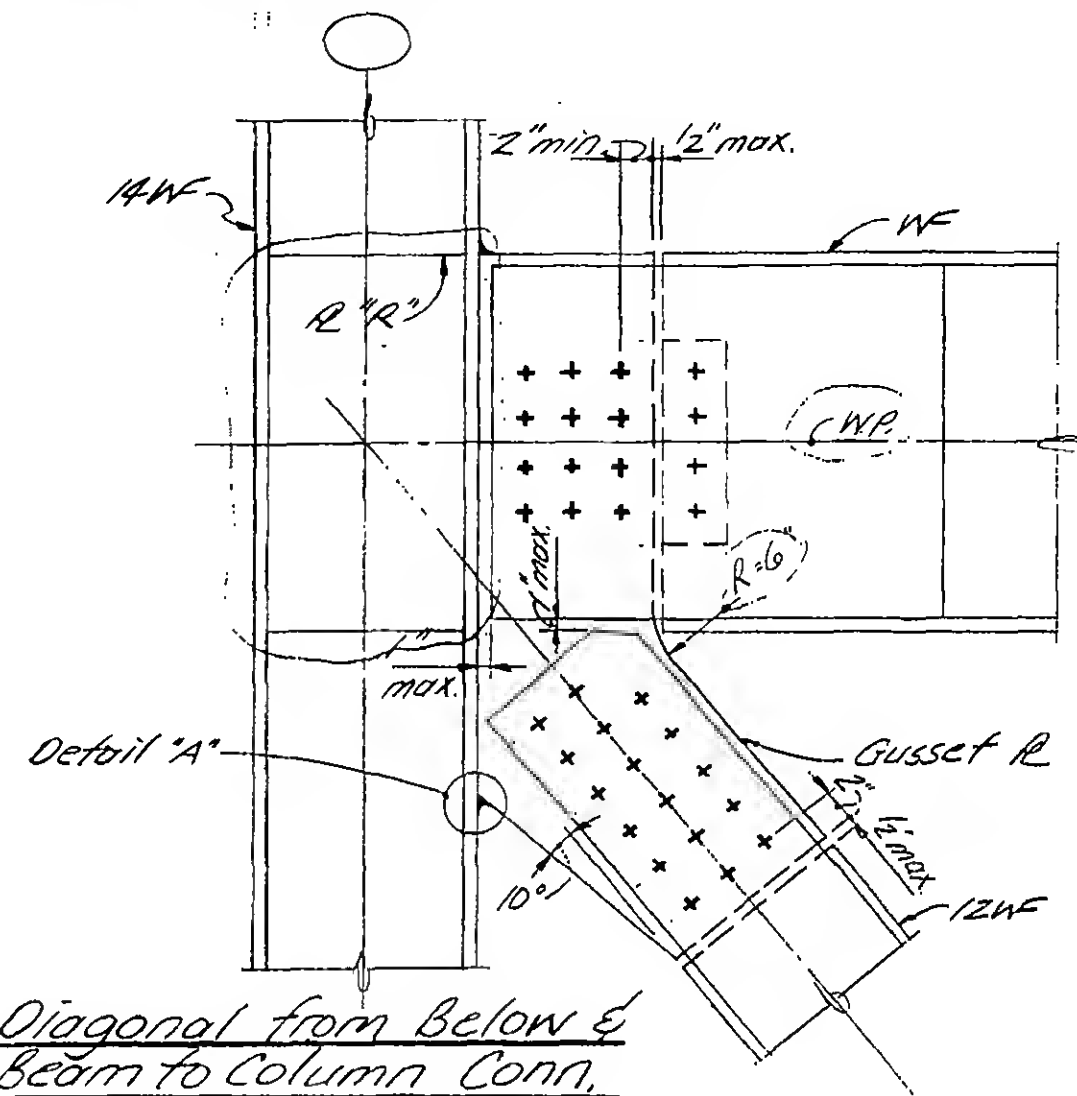
9-AB2-4.1

REVISIONS

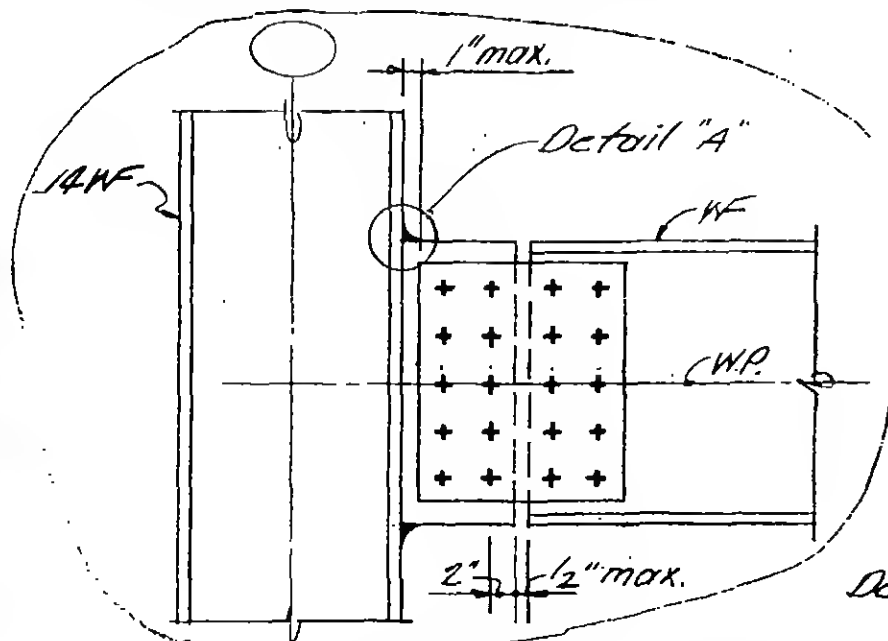
5-27-70



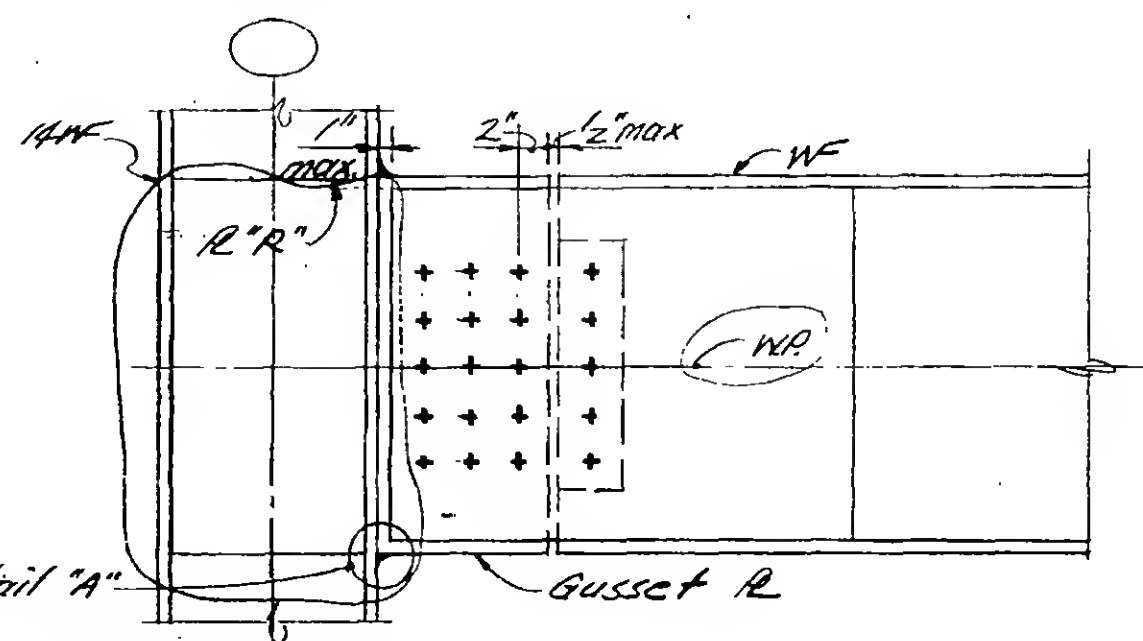
Diagonal from Above and
Beam to Column Connection



Diagonal from Below and
Beam to Column Conn.



Beam to Column Connection



DESIGNED

E. Drakos

DRAWN

J. Adams

REVIEWED

E. Drakos

9-ABZ-4.2

PROJECT

THE WORLD TRADE CENTER

TITLE

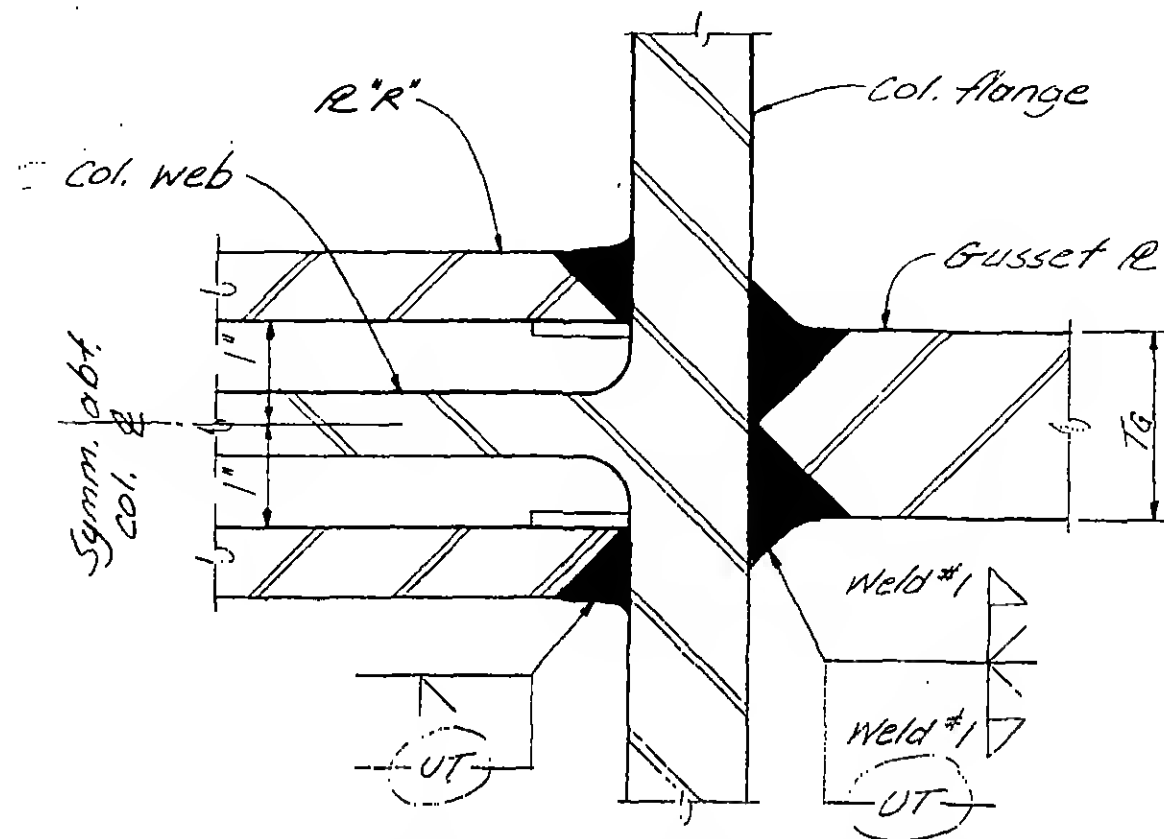
FL 107-PH TYPICAL DETAILS-TRUSS CONNECTIONS

DATE

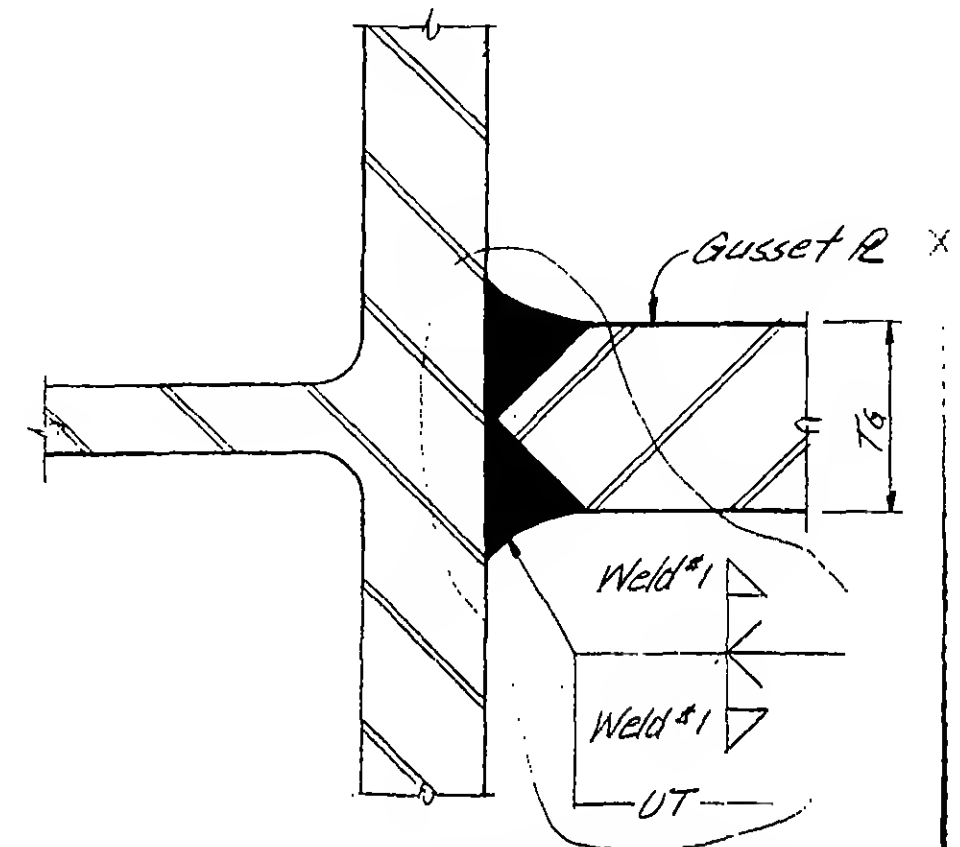
4-1-70

REVISIONS

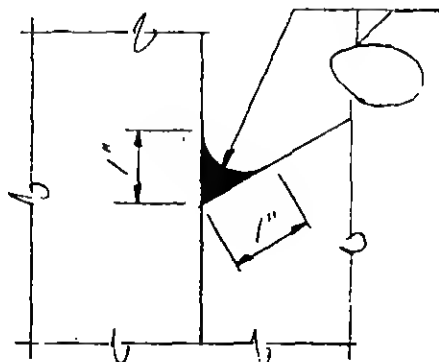
5/27/70



Typical Gusset Plate to Column
Weldment Thru Plate "R"



Typical Gusset Plate to Column
Weldment Above & Below Plate "R"



Detail "A"

Notes:

1. All gusset plates and plates "R" are $F_y=50$ material.
2. $R'R$ is determined by the heaviest gusset R existing at the connection.
Depth of plate "R" equals the nominal depth of the deepest beam framing at the connection, or as shown in specific details.
3. All holes in gusset plate are $3/16"$ larger than the nominal bolt diameter.

SCHEDULE				
TYPE	GUSSET R T_g	WELD #1	$R'R$	REMARKS
2-4V	$7/8"$	$1/8$	None	
2-4W	$5/8"$	$1/8$	None	
2-4X	$13/4"$	$3/8$	$1/2"$	
2-4Y	$1/2"$	$1/4$	$1/2"$	
2-4Z	$1/4"$	$1/4$	$3/8"$	

DESIGNED
E. DraxosDRAWN
J. AdamsREVIEWED
E. Draxos

9-AB2-4.3

PROJECT

THE WORLD TRADE CENTER.

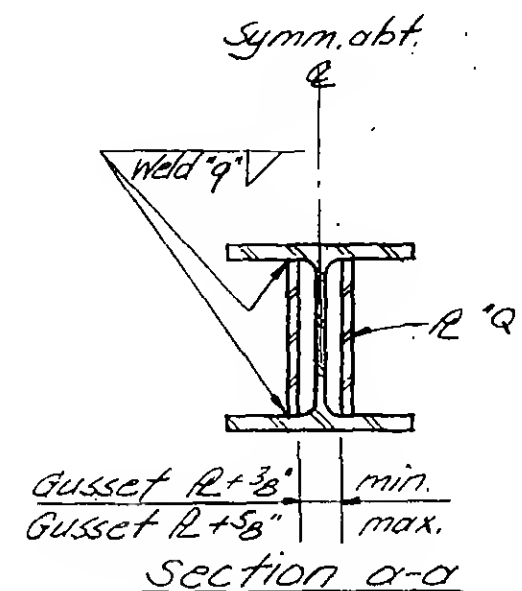
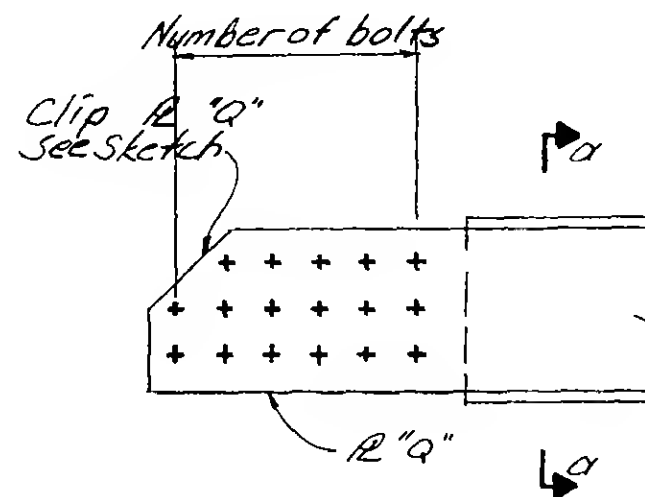
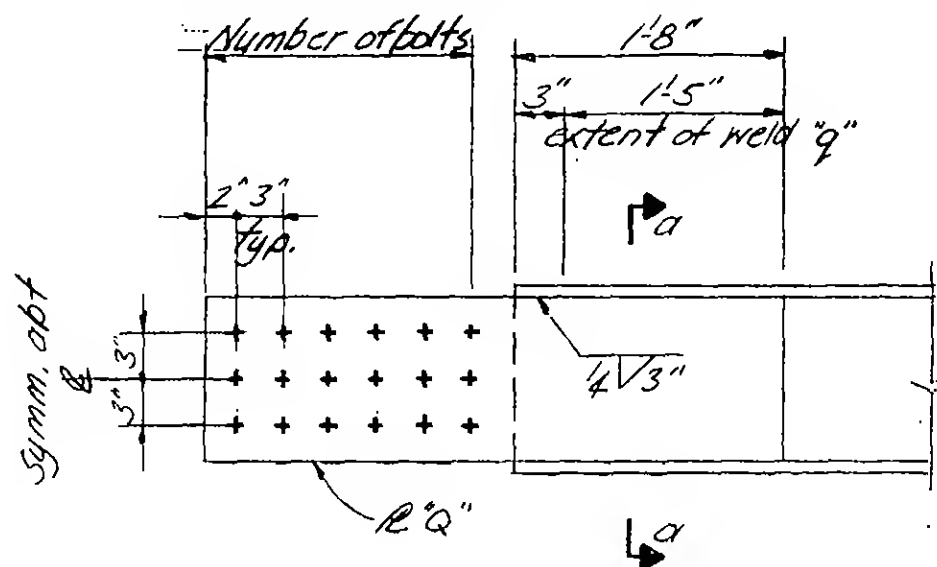
TITLE

FL 107-PH TYPICAL DETAILS-TRUSS CONNECTIONS

DATE

4-1-70

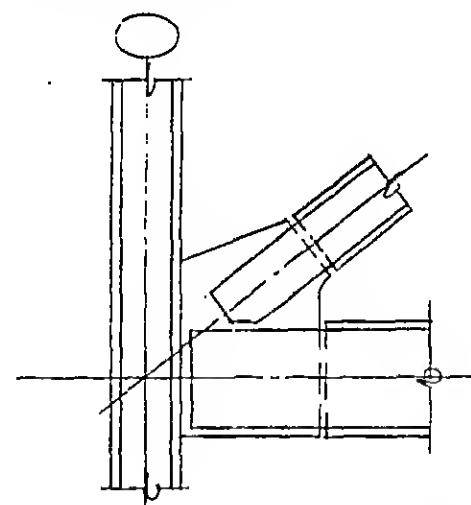
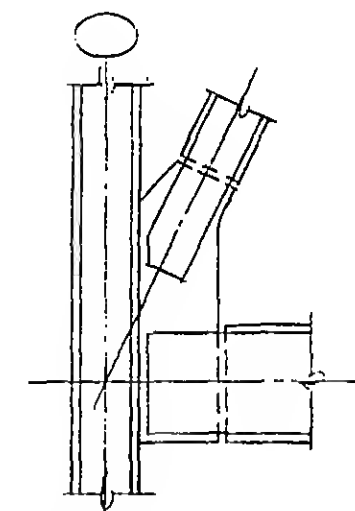
REVISIONS

5/27/70
6-15-70Diagonal End Elevation

SCHEDULE					
TYPE	NO. OF BOLTS	R'Q'	F _y	WELD 'q'	REMARKS
2-5A	17	1 1/4"	50	5/8"	Note 2
2-5B	14	1"	50	1/2"	Note 2
2-5C	11	3/4"	50	7/16"	Note 2
2-5E	17	1 1/4"	50	3/4"	Note 2
2-5F	14	1"	50	5/8"	Note 2
2-5G	11	3/4"	50	1/2"	Note 2

Notes:

1. All bolts are friction type, 1" ϕ , A490. All holes in R's "Q" are 1/16" larger than nominal bolt diameter.
2. Number of bolts shown in Schedule is minimum required. In a non-clipped diagonal add one more bolt to the total number of bolts shown in the Schedule.
3. Fillet weld "q" can be substituted by equivalent capacity partial penetration groove weld.

R'Q' Interference with BeamR'Q' Interference with ColumnSketch

SIGNED

E. Drakos

DRAWN

! Adams

REVIEWED

E. Drakos

9-ABZ-5

PROJECT

THE WORLD TRADE CENTER

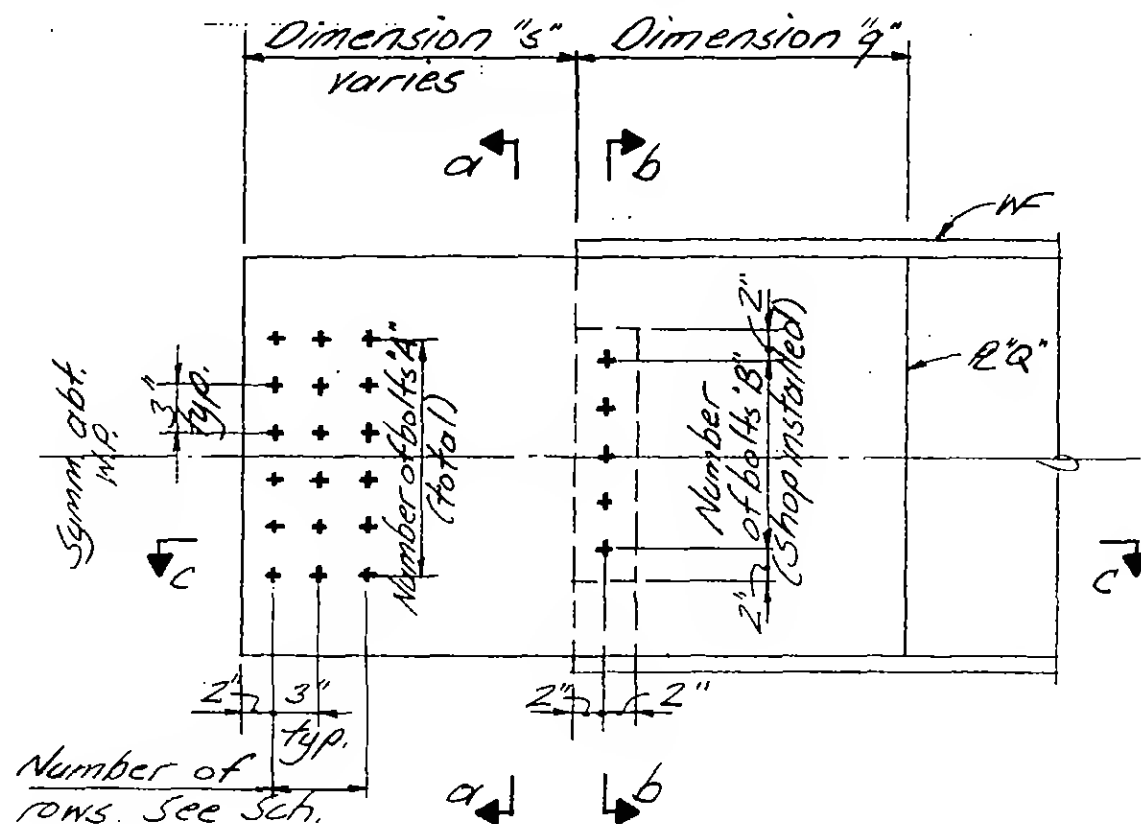
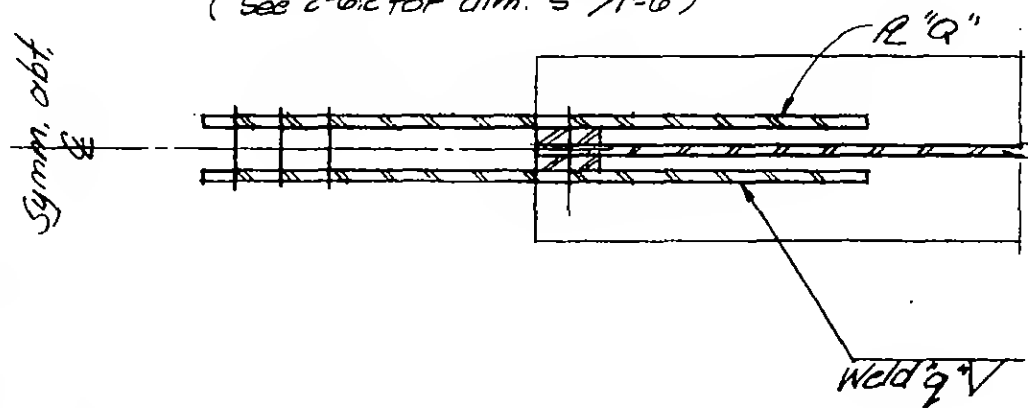
TITLE

FL 107-PH. TYPICAL DETAILS-TRUSS CONNECTIONS

DATE

4-1-70

REVISIONS

5/27/70
6-15-70Beam End ElevationDimension "s" $\leq 1'-6"$
(See 2-6.2 for dim. "s" $> 1'-6"$)Section c-c

Symm. abt.

Symm. abt.

E

E

Fill as req'd

Weld "q"

R "Q"

min.
max.Gusset $R + \frac{3}{8}"$
Gusset $R + \frac{5}{8}"$ Section a-aSection b-b

SCHEDULE

BEAM	TYPE	NO. BOLTS 'A'		R "Q" x Dim "q"	Weld "q"	NO. OF BOLTS "B"	REMARKS
		NO. OF ROWS	TOTAL BOLTS				
36WF	2-6A	3	18	$\frac{3}{4} \times 2'-0"$	$\frac{5}{8}"$	6	
30WF	2-6B	3	12	$\frac{3}{4} \times 2'-0"$	$\frac{1}{2}"$	4	
27WF	2-6D	4	20	$1 \times 2'-0"$	$\frac{3}{4}"$	5	
	2-6E	3	12	$\frac{3}{4} \times 1'-8"$	$\frac{5}{8}"$	4	
24WF	2-6F	4	20	$1 \frac{1}{4} \times 2'-0"$	$\frac{3}{4}"$	5	
	2-6G	3	12	$\frac{3}{4} \times 1'-8"$	$\frac{5}{8}"$	4	
18WF	2-6J	3	12	$\frac{1}{2} \times 1'-6"$	$\frac{9}{16}"$	4	
24WF	2-6M	4	24	$1 \frac{1}{4} \times 2'-0"$	$\frac{15}{16}"$	5	
	2-6N	4	20	$1 \frac{1}{4} \times 2'-0"$	$\frac{13}{16}"$	4	

Notes:

1. All bolts are friction type, $1" \phi$, A490. All holes in beam ends are $\frac{1}{16}"$ larger than nominal bolt diameter.
2. Plate "Q" is Fy50 material.
3. Weld "q" can be substituted by an equivalent capacity partial penetration groove weld.



DESIGNED

E. Drakos

DRAWN

J. Adams

REVIEWED

E. Drakos

9-AB2-6.1

PROJECT

THE WORLD TRADE CENTER

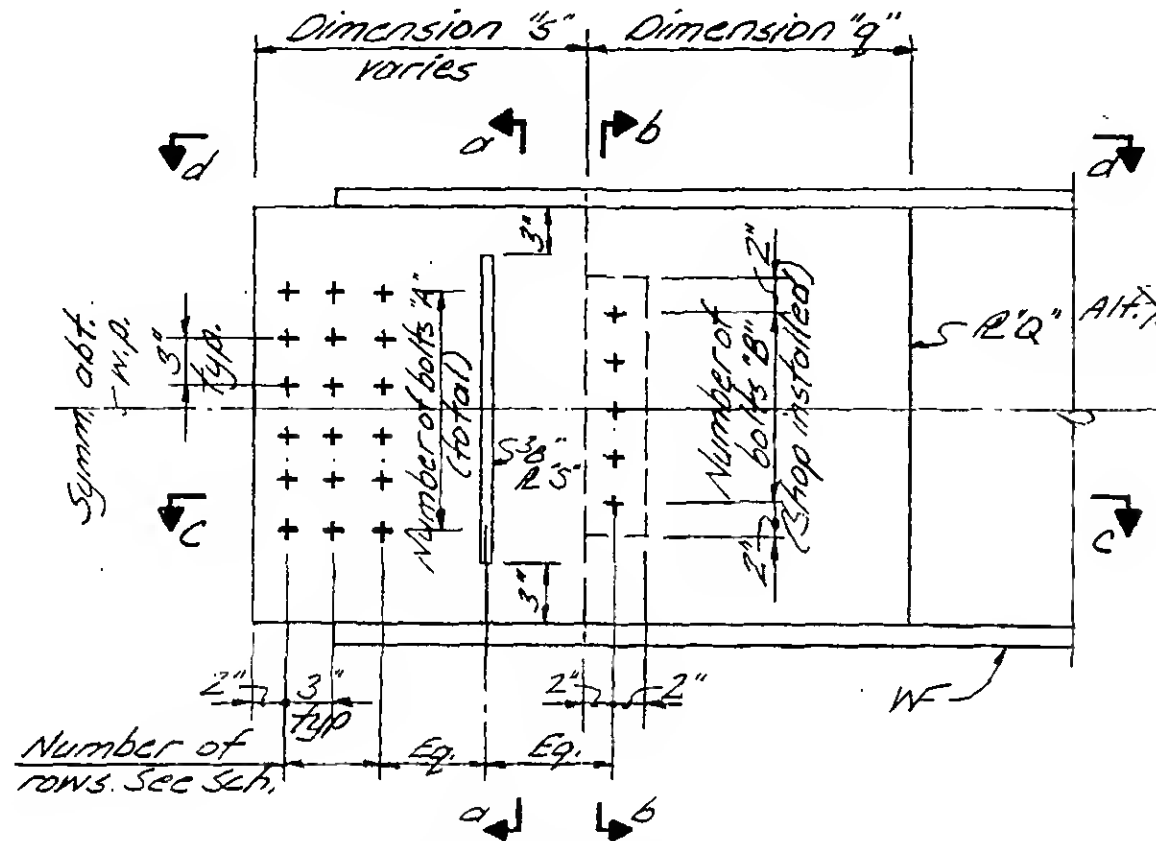
TITLE

FL 107-PH TYPICAL DETAILS-TRUSS CONNECTIONS

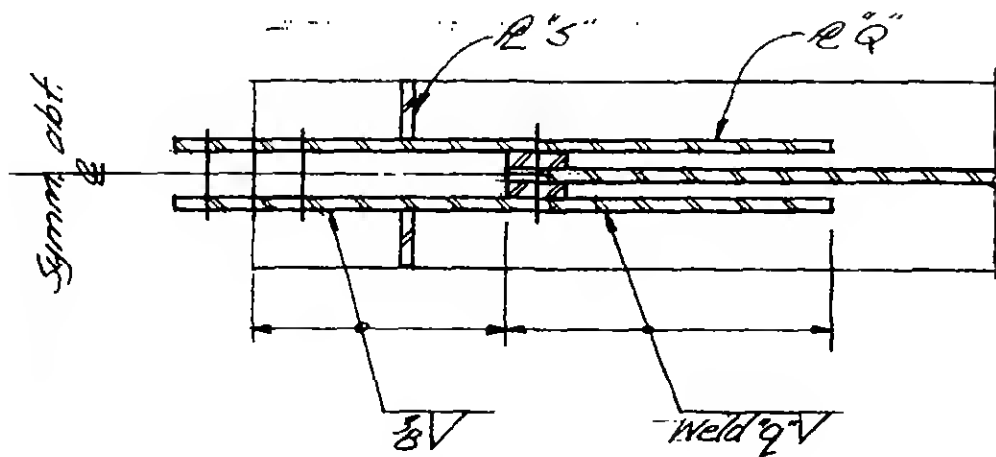
DATE

5-27-70

REVISIONS

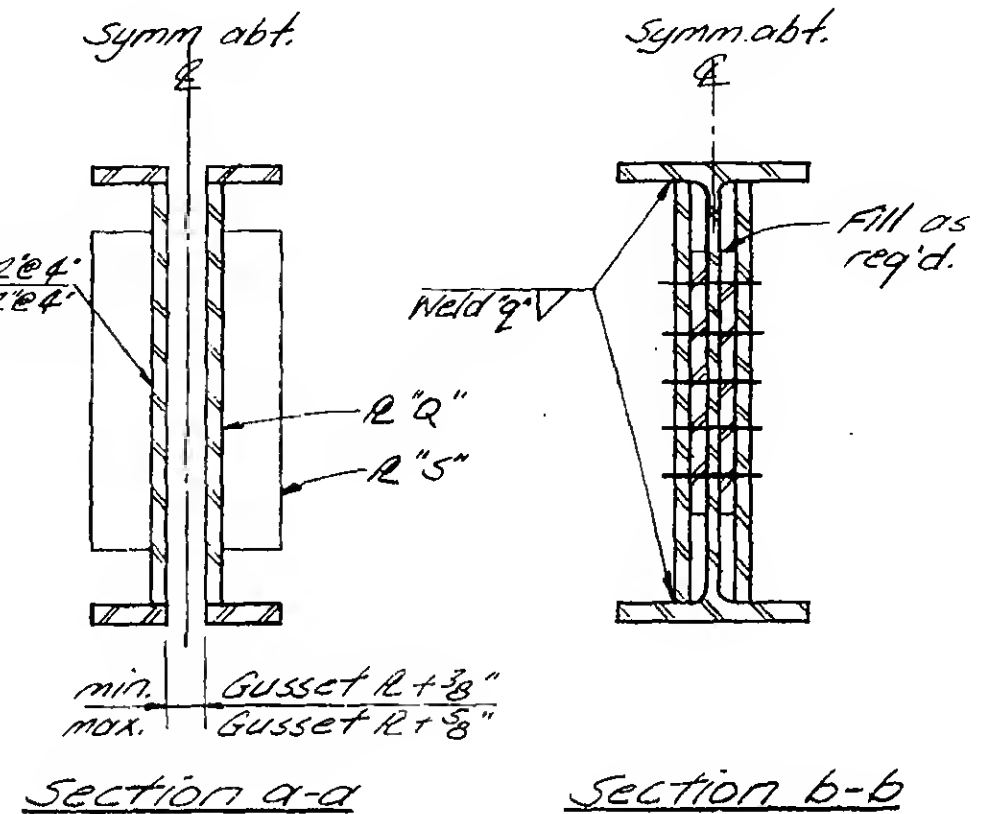
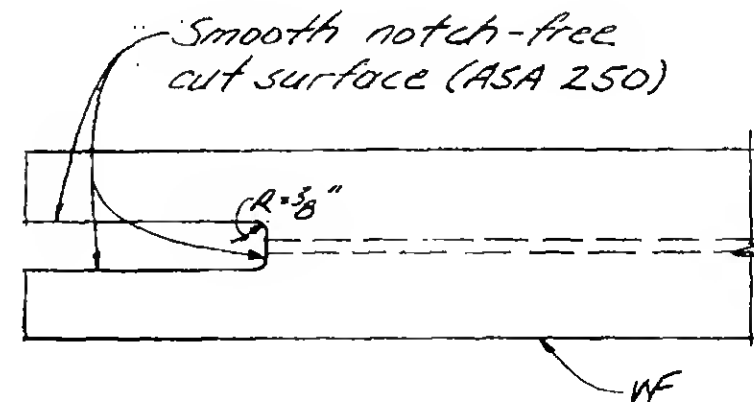
Beam End Elevation

Dimension "5" > 1'-6"
(see 2-6.1 for dim. "5" ≤ 1'-6")

Section c-c

Note:

See 2-6.1 for Schedule and Notes.

Section a-aSection b-bSection d-d

DESIGNED

E. Drakos

DRAWN

J. Adams

REVIEWED

E. Drakos

9-AB2-6.2

PROJECT

THE WORLD TRADE CENTER

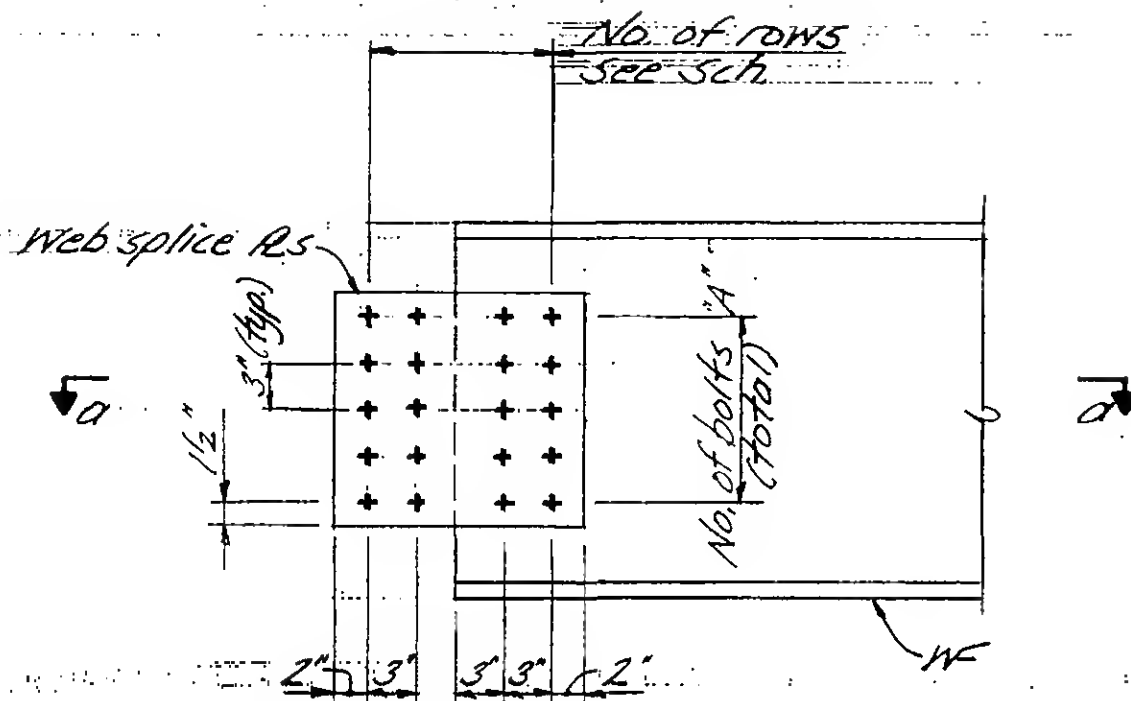
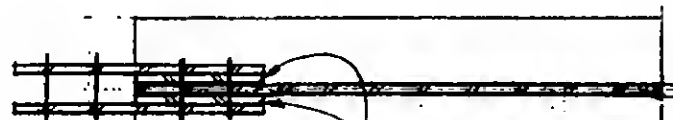
TITLE

FL 107-PH TYPICAL DETAILS - TRUSS CONNECTIONS

DATE

5-27-70

REVISIONS

Beam End ElevationFill RS
(Note 2)Section a-aSCHEDULE

Beam	Type	No. bolts "A"		Web splice plates		Remarks
		No. of rows	Total bolts	t	Fy	
24WF	2-7A	4	20	1/2"	50	
18WF	2-7B	4	16	1/2"	50	
	2-7C	2	8	3/8"	50	

Notes:

1. All bolts are friction type, 1" ϕ , A490.
All holes in web splice RS are 1/16" larger than nominal bolt size.
2. If total requirement of fill RS is less than or equal to 3/8", one side of web only may be filled.



DESIGNED

Drakos

DRAWN

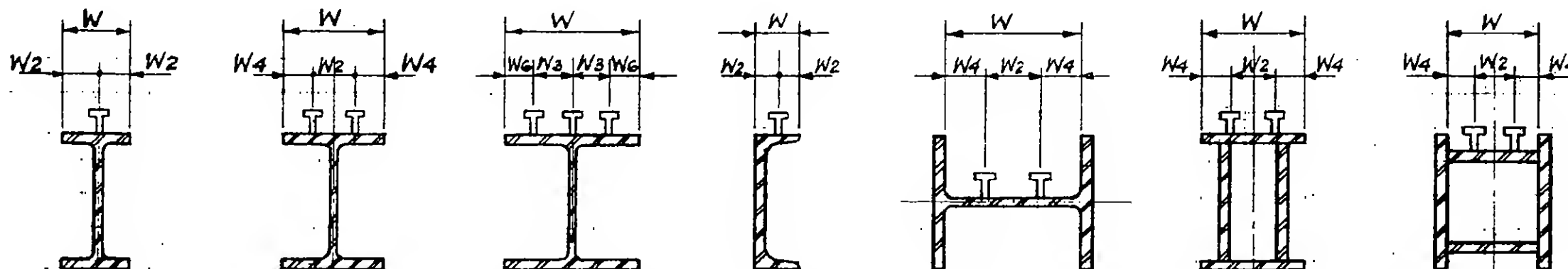
J. Adams

REVIEWED

E. Drakos

9-AB2-7

VISIONS

One RowW ≤ 6
@ ≤ W ≤ 9 (Note 4)Two Rows

(Note 4)

Three Rows

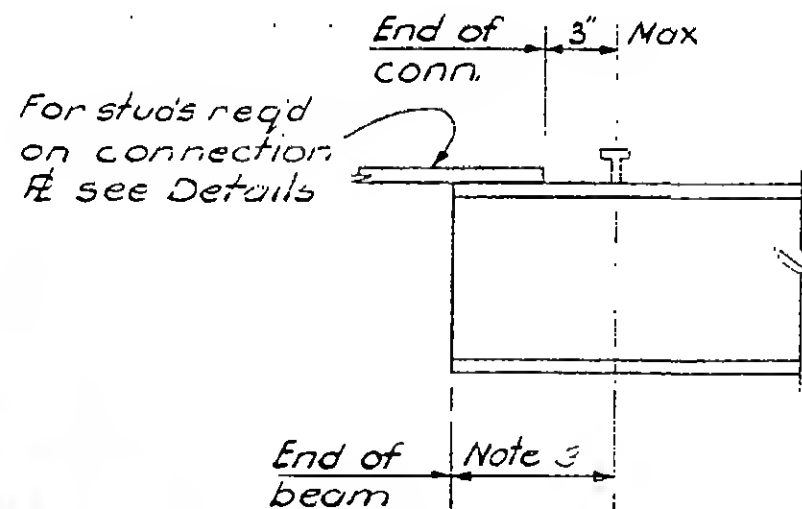
(Note 5)

Typ. Det.

at Channel

Typ. Det.at IAF with
Horiz. WebTypical Detail

at Built-Up Beams

TYPICAL DETAILS - ONE, TWO & THREE ROWSTypical Detail at ConnectionNotes:

1. Studs are indicated thus in the plans: N39 or N39C. N is the designation for studs; 39 is the number of studs required; C is the stud placement (see 9-AB3-1.2 & 1.3). Where no letter is given, stud placement A is required.
2. All studs are 3/4" ϕ x 0'3" headed shear studs.
3. Clearance for connection.
4. Use two rows for W=6" to 9" where studs in a single row would otherwise be less than 4" o.c. Use two rows for W=9" and greater except as provided in Note 5.
5. Use three rows for W=9" or more where studs in two rows would otherwise be less than 4" o.c.



DL ED

DRAWN
Huggins
REVIEWED

PROJECT

THE WORLD TRADE CENTER

TITLE

FLOOR 107-FIT STUDS TYPICAL DETAILS

DATE

10-20-70

VISIONS

Note 3

Studs - See Plan
equal spaced

Note 3

Placement A

Right end

See Plan
@ 6" C.C.

Note 3

Placement B

Note 3

Studs - See Plan
@ 6" C.C.

Placement C

Place studs equal spacing
(See Plan)
11'-9"

7'-9"

Right support

Placement D

Note 3

.75L

40% studs
Eq. sp.

.25L

60% studs
Eq. sp.

Note 3

Right end

Placement E

Note 3

.75L
60% studs
Eq. sp.

.25L

40% studs
Eq. sp.

Note 3

Placement F

Right end

Note 3

.33L

50% studs
Eq. sp.

.67L

50% studs
Eq. sp.

Note 3

Placement G

Note 3

.67L

50% studs
Eq. sp.

.33L

50% studs
Eq. sp.

Placement H

Note 3

50% studs
@ 3" sp50% studs
Eq. sp.

Note 3

Placement J

Note 3

50% studs
Eq. sp.50% studs
@ 3" sp

Note 3

Placement K



DR. ED

DRAWN
D. Huggins

REVIEWED

9-AB3-1.2

PROJECT

THE WORLD TRADE CENTER

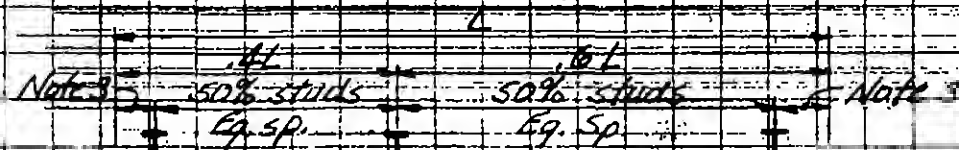
TITLE

FLOOR 107-PH STUDS-TYPICAL DETAILS

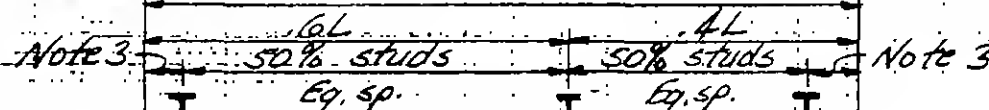
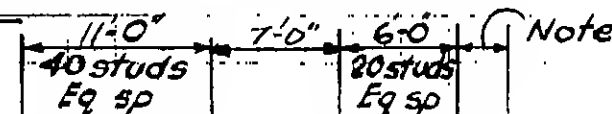
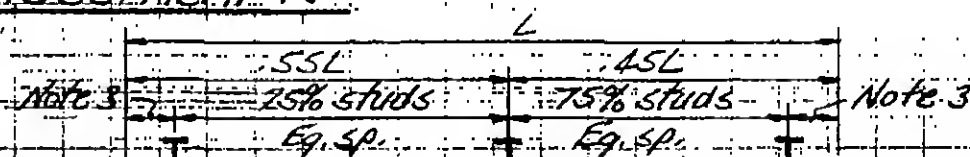
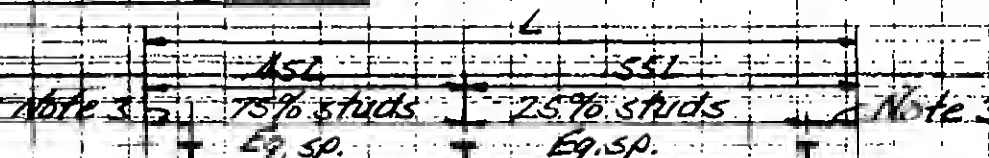
DATE

10-20-70

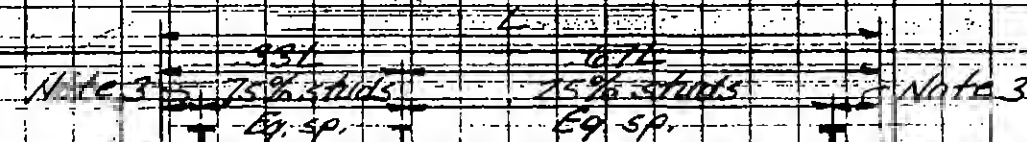
REVISIONS

Placement L

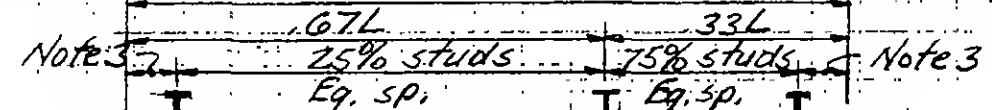
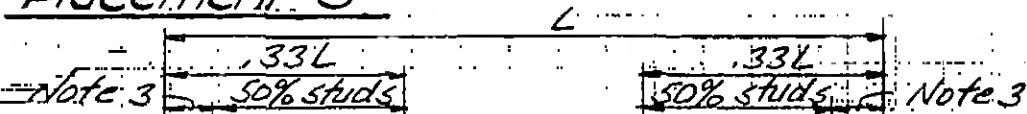
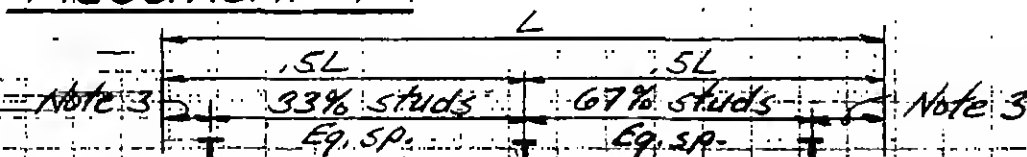
Right end

Placement MPlacement NPlacement P

Left end

Placement QPlacement R

Right end

Placement SPlacement TPlacement U

DESIGNED

DRAWN

D. Huggins

REVIEWED

9-AB3-13

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

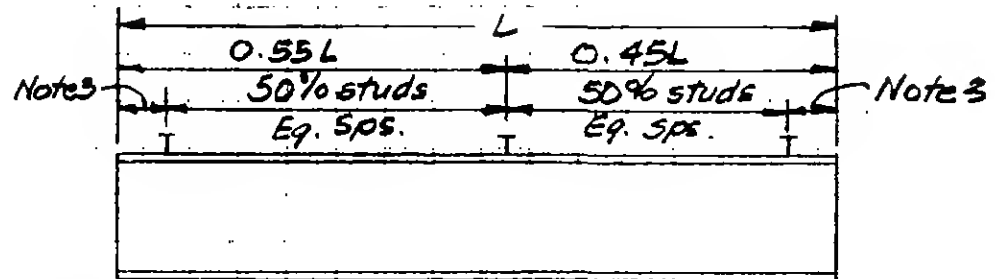
TITLE

FLOOR 107 P.H. STUDS TYPICAL DETAILS

DATE

12-14-78

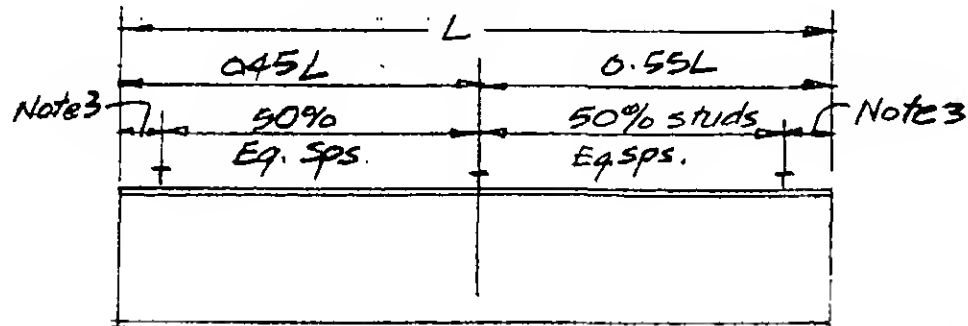
SIGNATURES



Left End

Right End

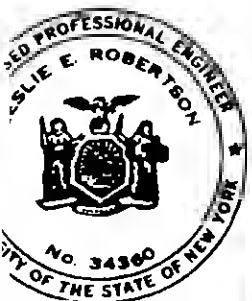
Placement V



Left End

Right End

Placement W



06 ED

DRAWN
P. O'Brien
REVIEWED

9-AB3-1.4

SKILLING, WELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

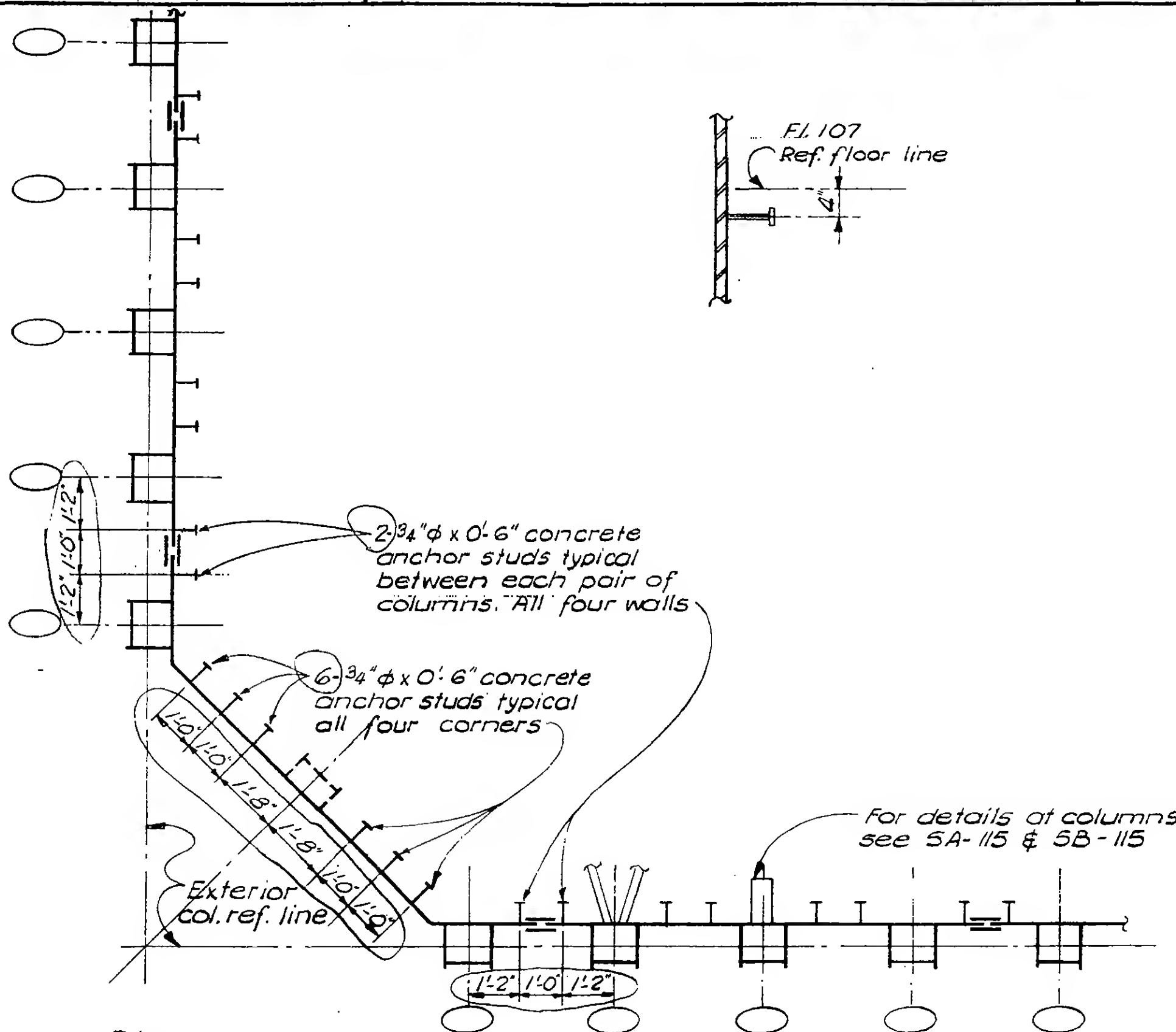
FL 107 PH STUD DETAILS AT EXT. WALL FL 107

DATE

4-1-70

VISIONS

9-15-70



DESIGNED

DRAWN

M. Nichols

REVIEWED

TYPICAL ARRANGEMENT OF ANCHOR DETAILS AT EXTERIOR WALL OF BUILDING

9-AB3-2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

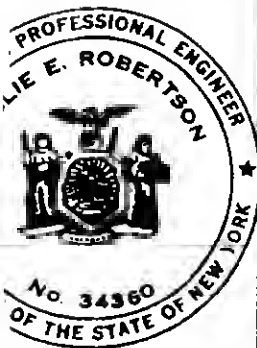
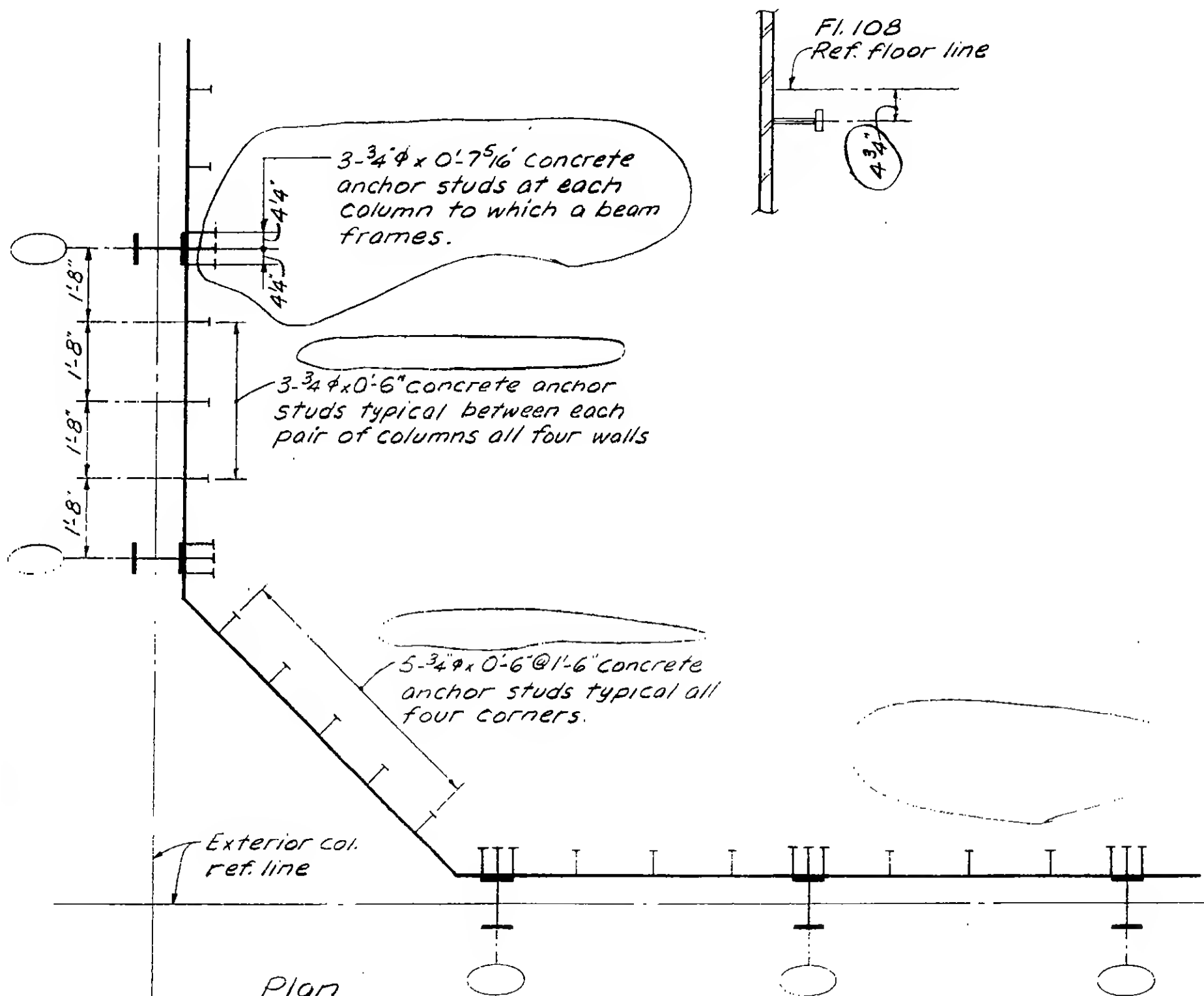
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH STUD DETAILS AT EXT. WALL FL 108

DATE 4-1-70

SIONS

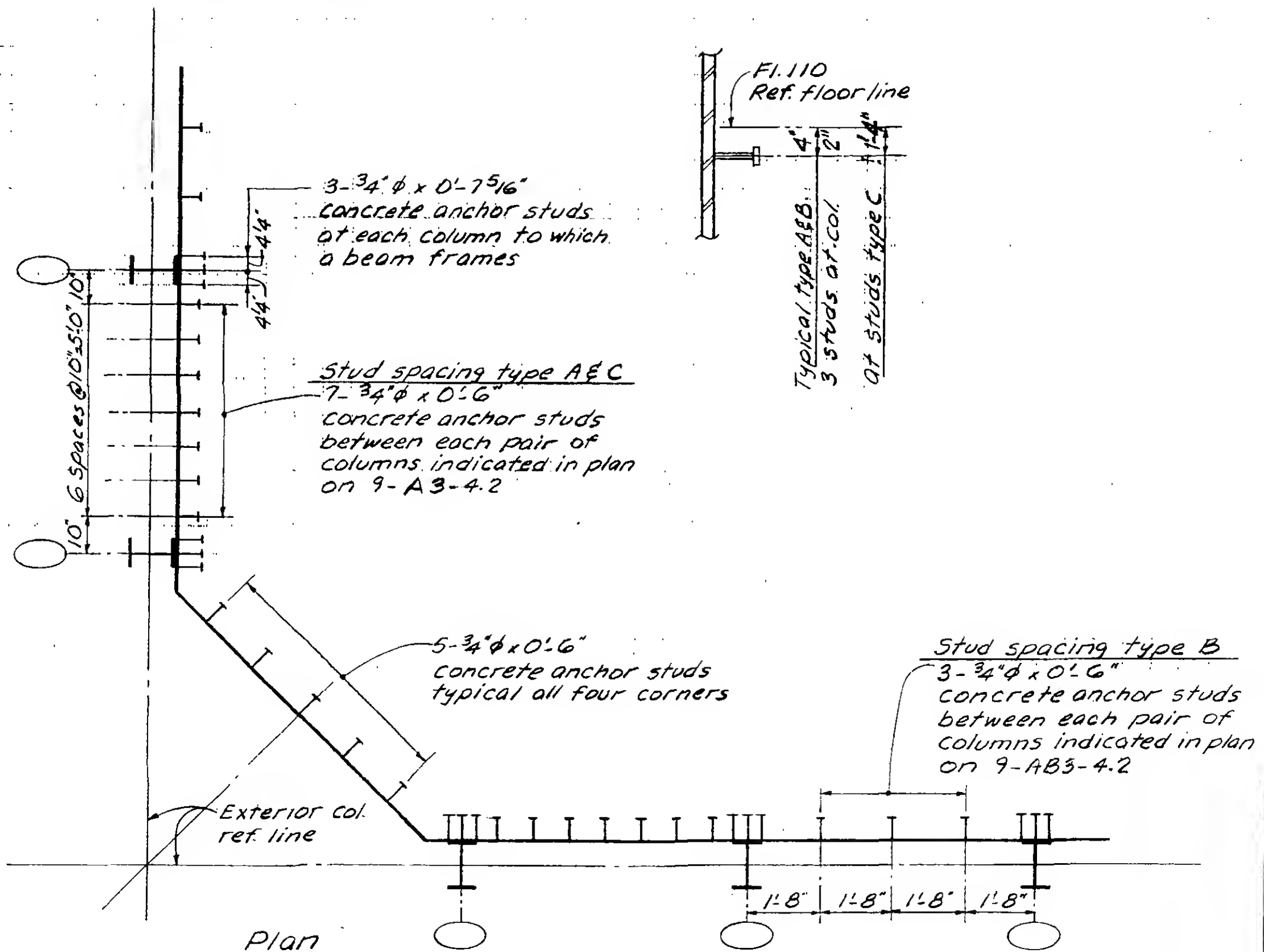
9-15-70



TYPICAL ARRANGEMENT OF ANCHOR DETAILS AT EXTERIOR WALL OF BUILDING

9-AB3-3

VISIONS



TYPICAL ARRANGEMENT OF ANCHOR DETAILS AT EXTERIOR WALL OF BUILDING

9-AB3-4.1

SKILLING, HERR, CHRISTIANSEN, ROBERTSON

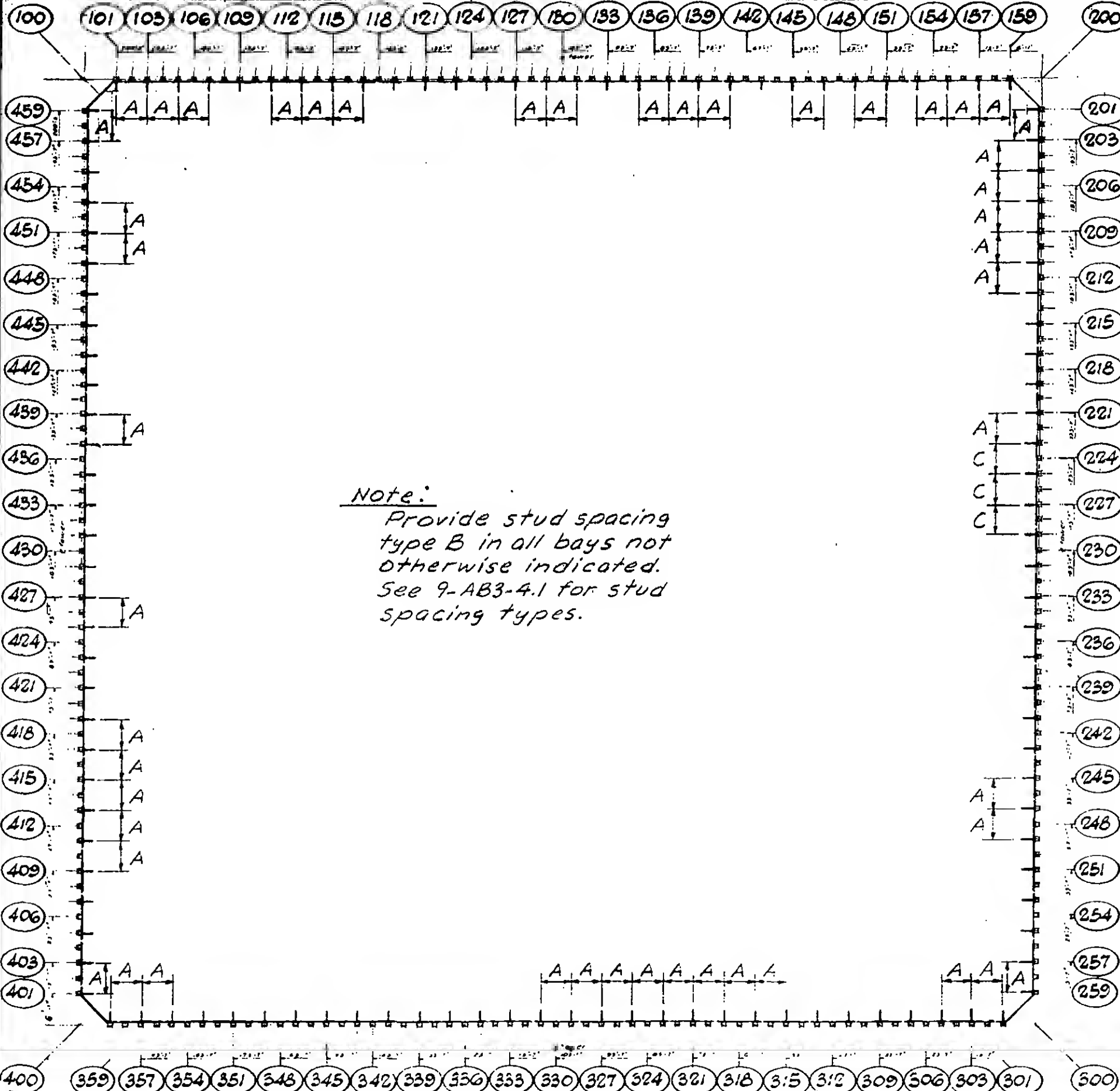
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL. 107-PH. STUD DETAILS AT EXT. WALL-FL. 110

DATE 9-15-70

REVISIONS



NORTH



TOWER A

Note:

Provide stud spacing
type B in all bays not
otherwise indicated.
See 9-AB3-4.1 for stud
spacing types.

KEY PLAN
FLOOR 110

9-A3-4.2

PROJECT

THE WORLD TRADE CENTER

TITLE

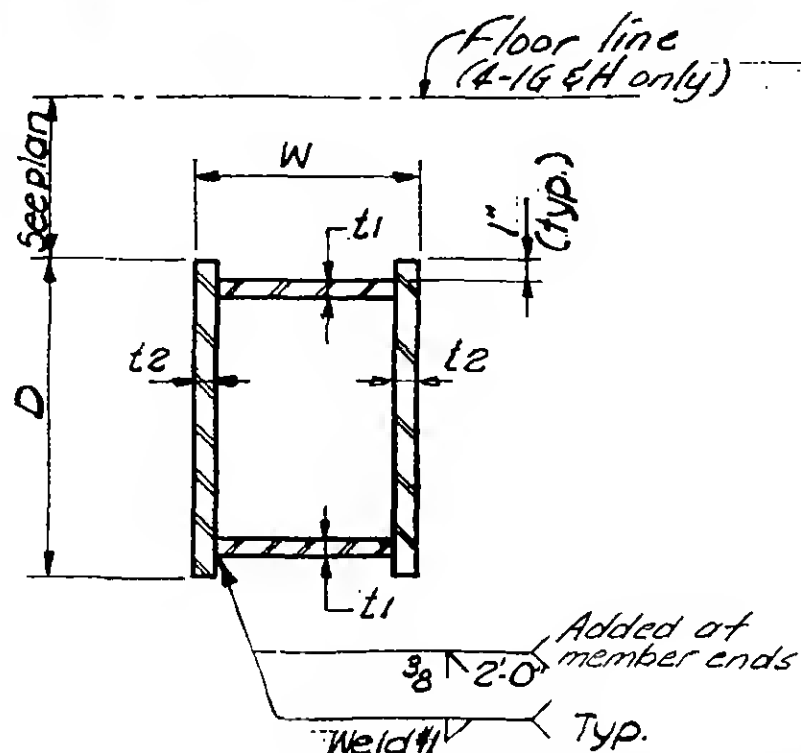
FLOOR JOIST-PH MEMBER TYPES-BOLT UP

DATE

4-1-70

REVISIONS

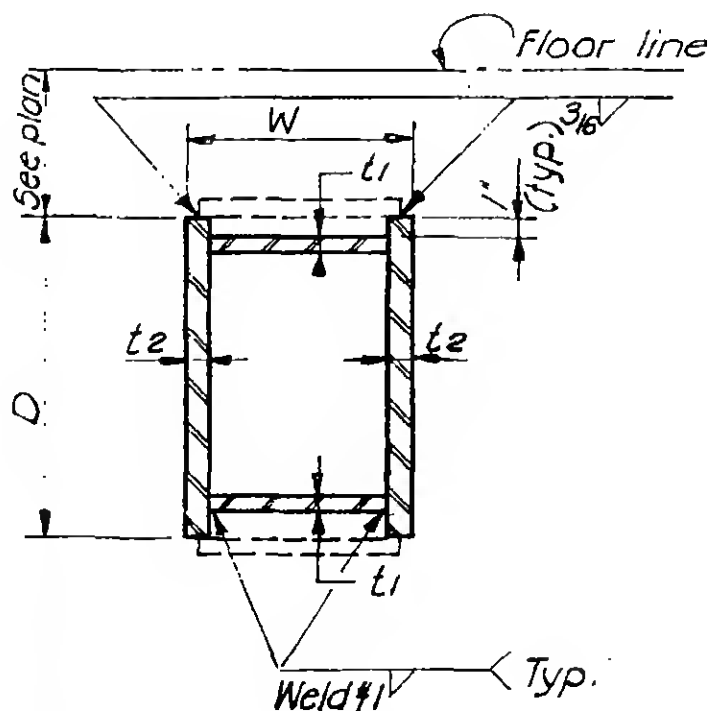
5-27-70
7-13-70



Type: 4-1A, B, C, D, G, H & J

Schedule

Type	D(in)	W(in)	t1(in)	t2(in)	Fy(ksi)	Weld #1	Remarks
4-1A	26	18	1	3/4	50	3/8	Note 1
4-1B	26	18	1	3/4	50	3/8	Note 1
4-1C	30	18	1	3/4	50	3/8	Note 1
4-1D	30	18	1	3/4	50	3/8	Note 1
4-1E	16	5 1/2	3/8	3/4	36	1/4	4-1.2
4-1F	27	5 1/2	3/8	1/2	36	1/4	4-1.2
4-1G	35	15	1 3/4	1/2	50	3/8	4-1.2
4-1H	35	15	3/4	1/2	50	5/16	4-1.2
4-1J	12	5 1/2	3/4	3/4	36	5/16	Note 1



Type: 4-1E & F

Note 1. See SA-401, 402, 403 & 404 for elevations



DESIGNED

Patel

DRAWN

Nichols

REVIEWED

E. J. Davis

9-AB4-1.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

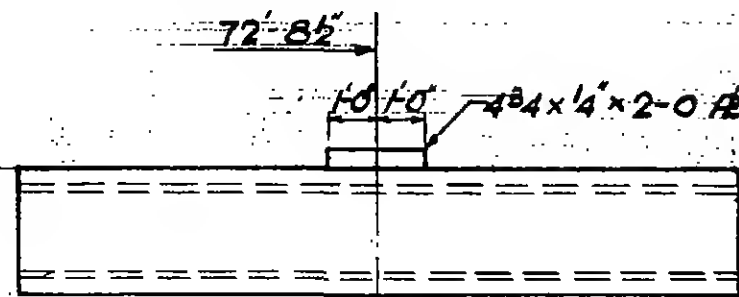
PROJECT THE WORLD TRADE CENTER

TITLE FL. 107-PH. MEMBER TYPES - BUILT UP

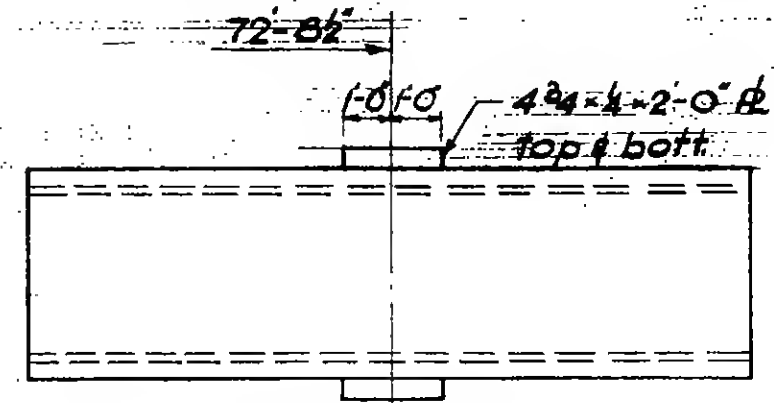
DATE 4-1-70

REVISIONS

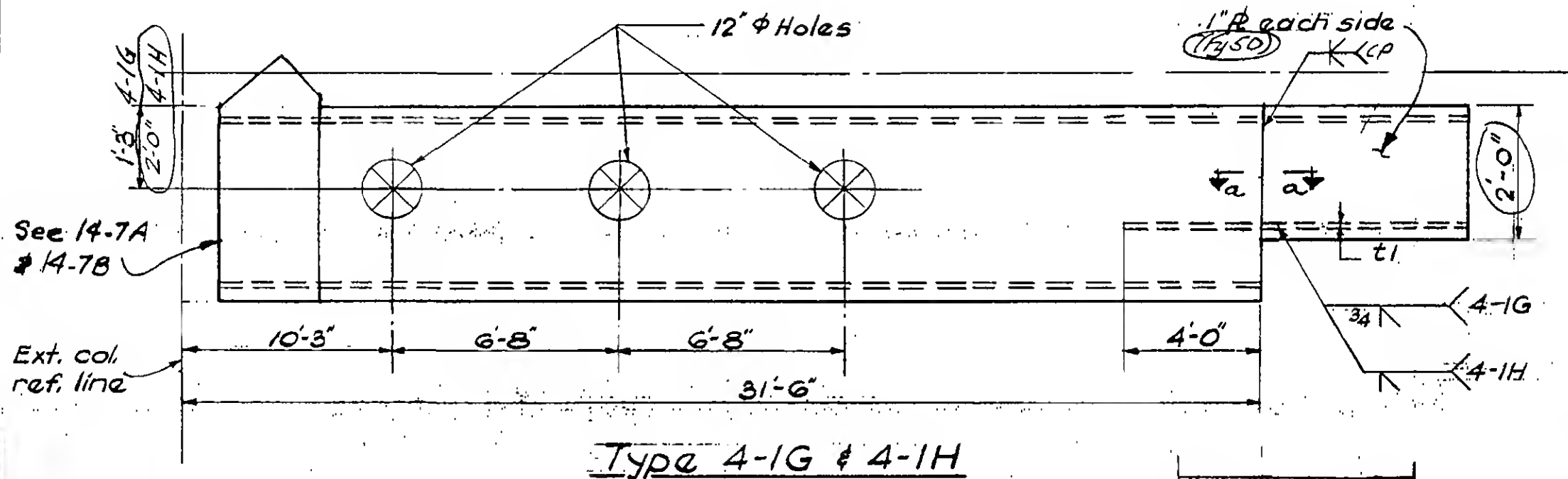
5-27-70



Type 4-1E



Type 4-1F



Type 4-1G & 4-1H



Detail a-a 2 1/2



DESIGNED

A. Patel

DRAWN

D. Huggins

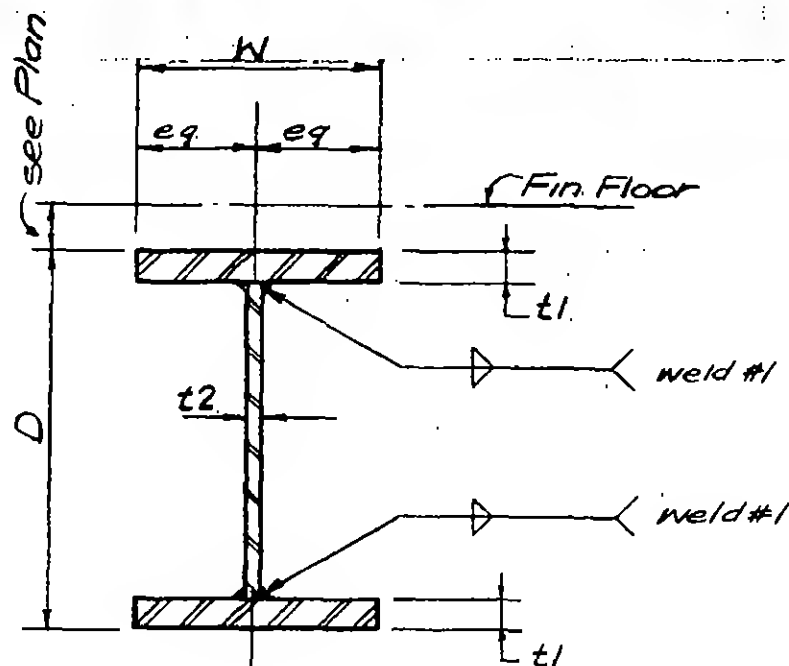
REVIEWED

E. Drakos

9-AB4-1.2

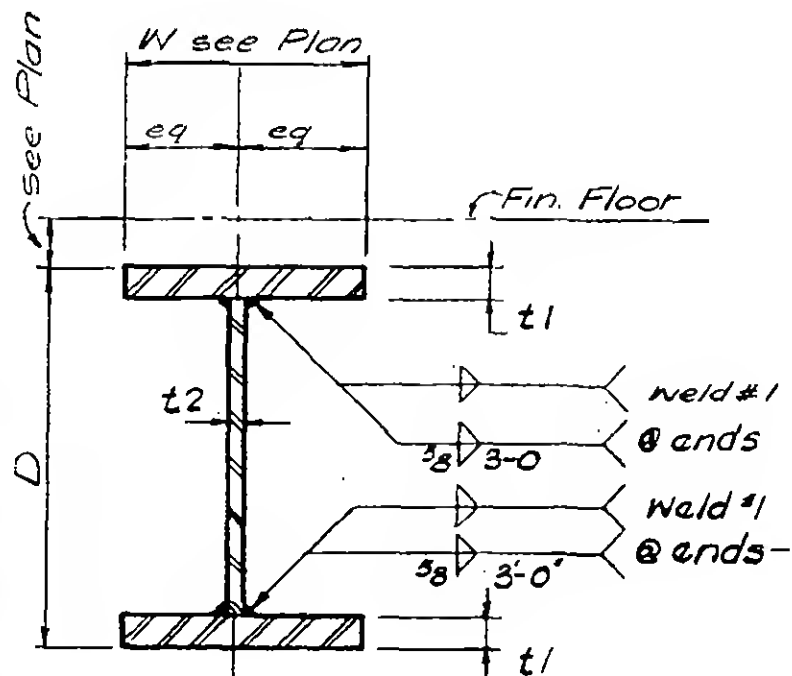
VISIONS

5-27-70
6-16-70
6-17-70
12-14-70
12-21-70



Type 4-2A thru P

Type	D (in)	W (in)	t1 (in)	t2 (in)	Fy (ksi)	Weld #1	Remarks
4-2A	30	52	2 1/4	1/2	36	3/8	
4-2B	30	52	2 1/4	1/2	36	3/8	
4-2C	30	10	1 1/2	3/4	36	3/8	
4-2D	43	5	1 1/4	1/2	36	3/8	13-10
4-2E	16	5	1	3/8	36	1/4	
4-2F	30	52	1 1/2	3/8	36	5/16	
4-2G	21	9	2	3/8	36	3/8	
4-2H	21	9	1 1/2	5/8	36	3/8	
4-2K	27	10	1 1/2	3/4	50	3/8	
4-2M	40	12	2 1/4	3/4	50	3/8	4-2.2
4-2N	20	14	2 1/2	3/4	36	1/2	
4-2P	20	12	1 1/2	5/8	36	3/8	
4-2W	27	9	1	5/8	50	3/8	
4-2X	35	14	1 3/4	3/4	50	3/8	4-2.2
4-2Y	35	14	1 3/4	3/4	50	3/8	4-2.2
4-2Z	35	14	1 3/4	3/4	50	3/8	4-2.2



Type 4-2W, X, Y, Z



SIGNED A. Patel

DRAWN W.C.

REVIEWED E. Drans

9-AB4-2.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - PH. MEMBER TYPES - BUILT UP

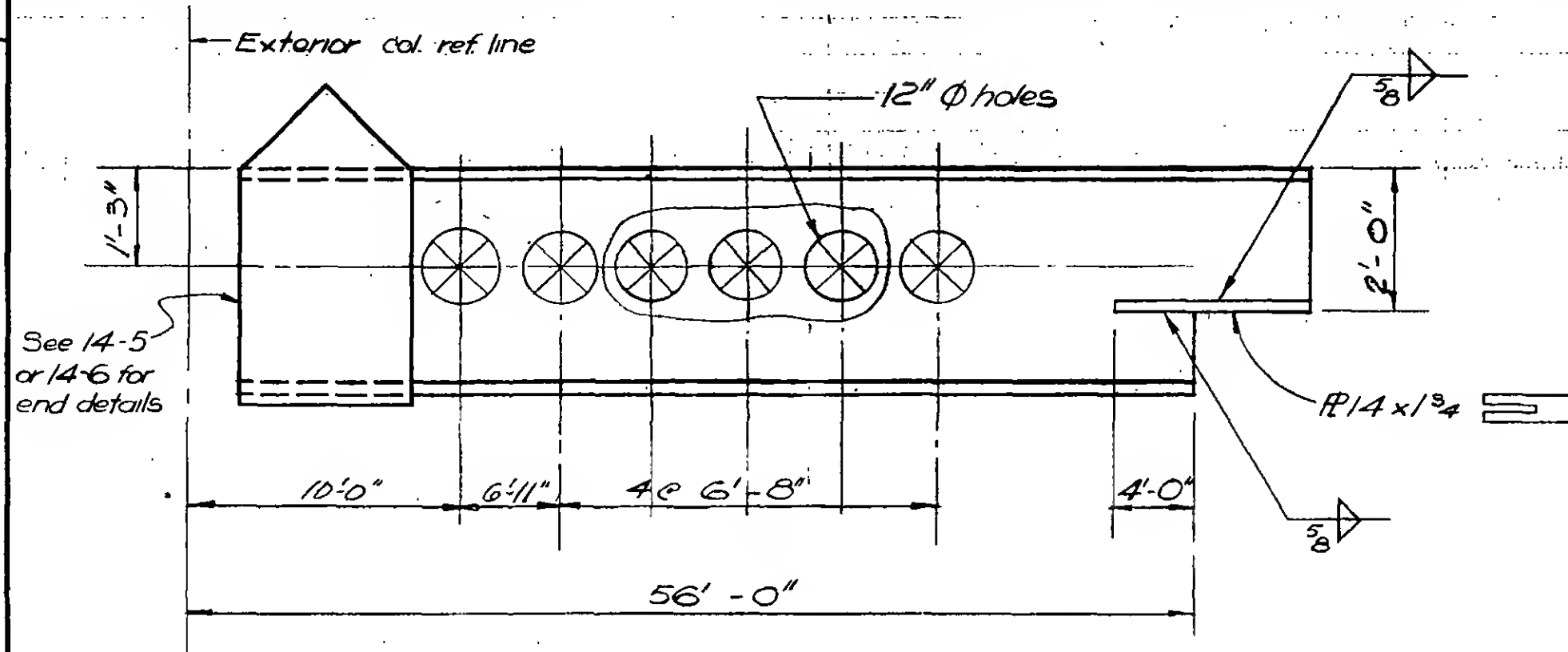
DATE

4-1-70

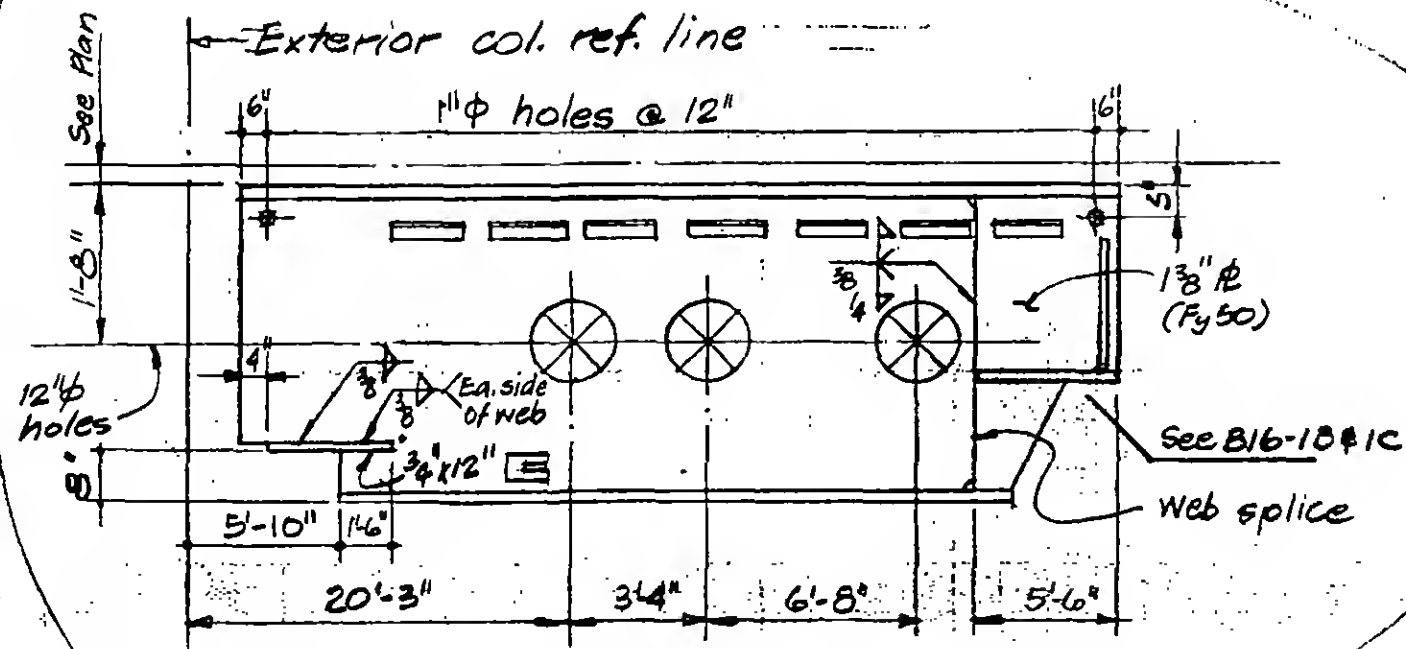
REVISIONS

5-27-70

12-14-70



TYPE 4-2X, 4-2Y, 4-2Z



TYPE 4-2M



DESIGNED

A. Patel

DRAWN

H. Clarke

REVIEWED

E. Drakos

9-AD4-2-2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

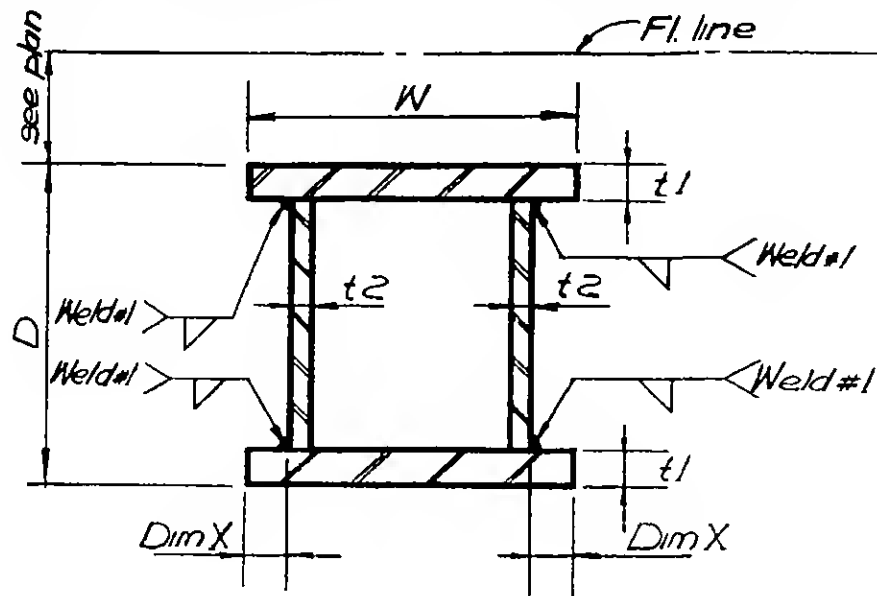
TITLE

FL 107-PH MEMBER TYPES - BUILT UP

DATE 4-1-70

REVISIONS

5-27-70



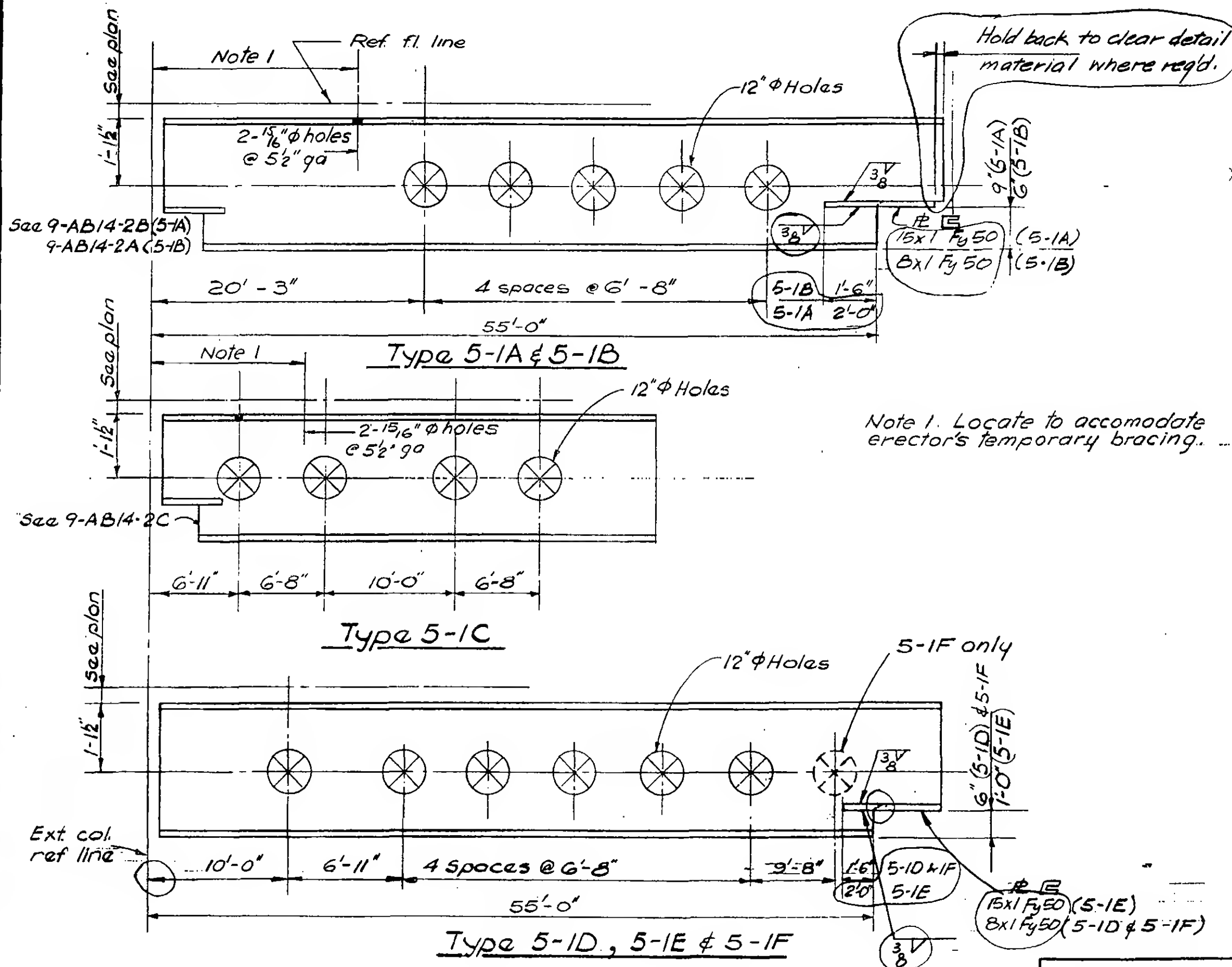
Type	D(in)	W(in)	t1(in)	t2(in)	Fy(ksi)	Weld #1	Dim X (in)	Remarks
4-3A	30	5 1/2	1 1/4	3/4	36	5/16	1	
4-3B	30	5 1/2	1 1/4	3/4	36	5/16	1	
4-3C	See 9-AB4-3-9							
4-3D	30	5 1/2	1 1/2	3/4	36	3/8	1	

DESIGNED
A. PatelDRAWN
W. ClarkeREVIEWED
W. Clarke

9-AB4-3

REVISIONS

5/27/70
7/8/70



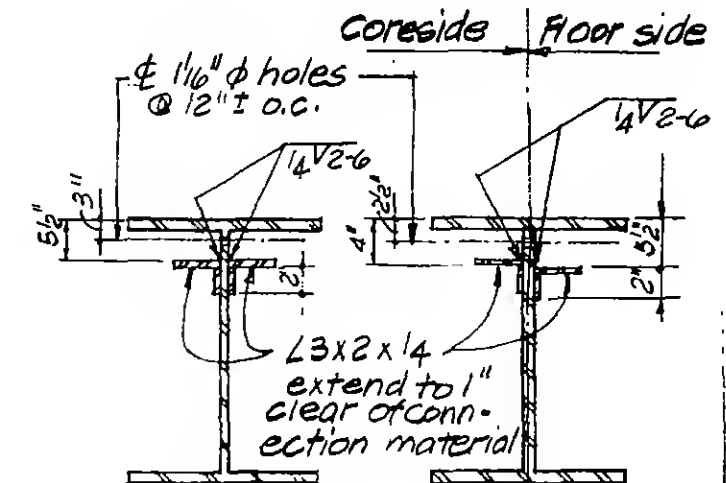
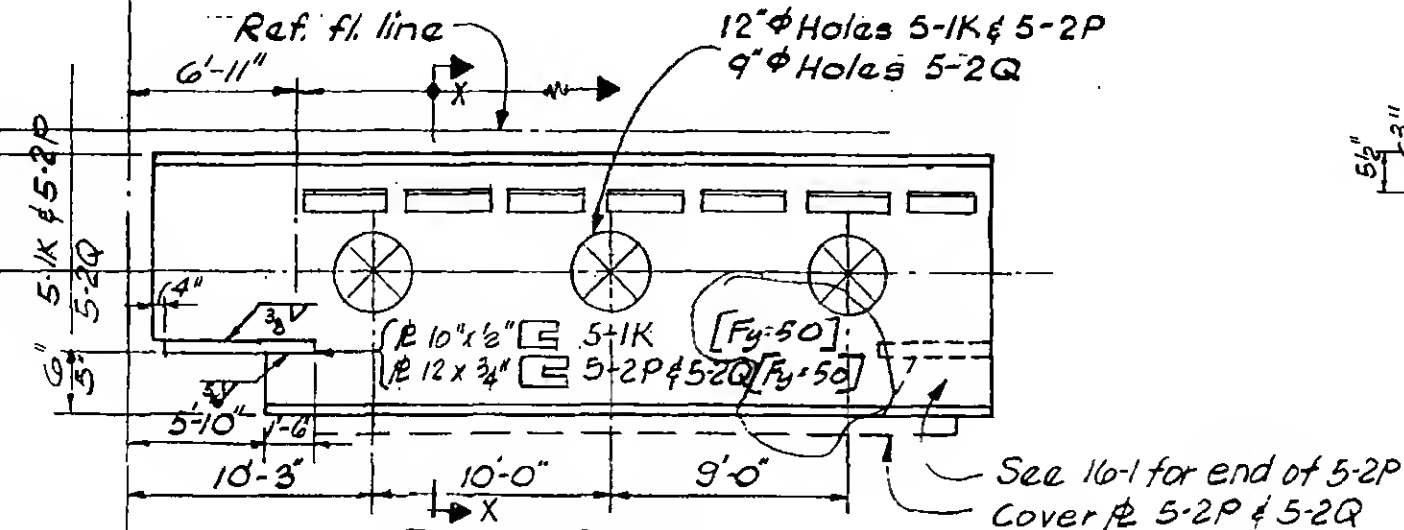
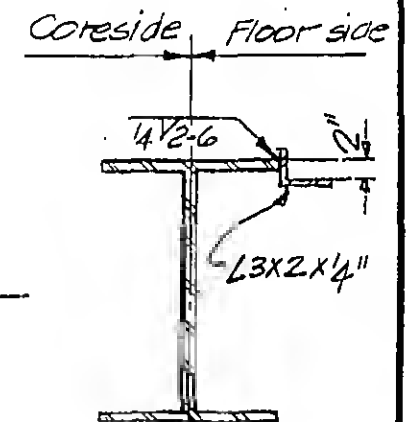
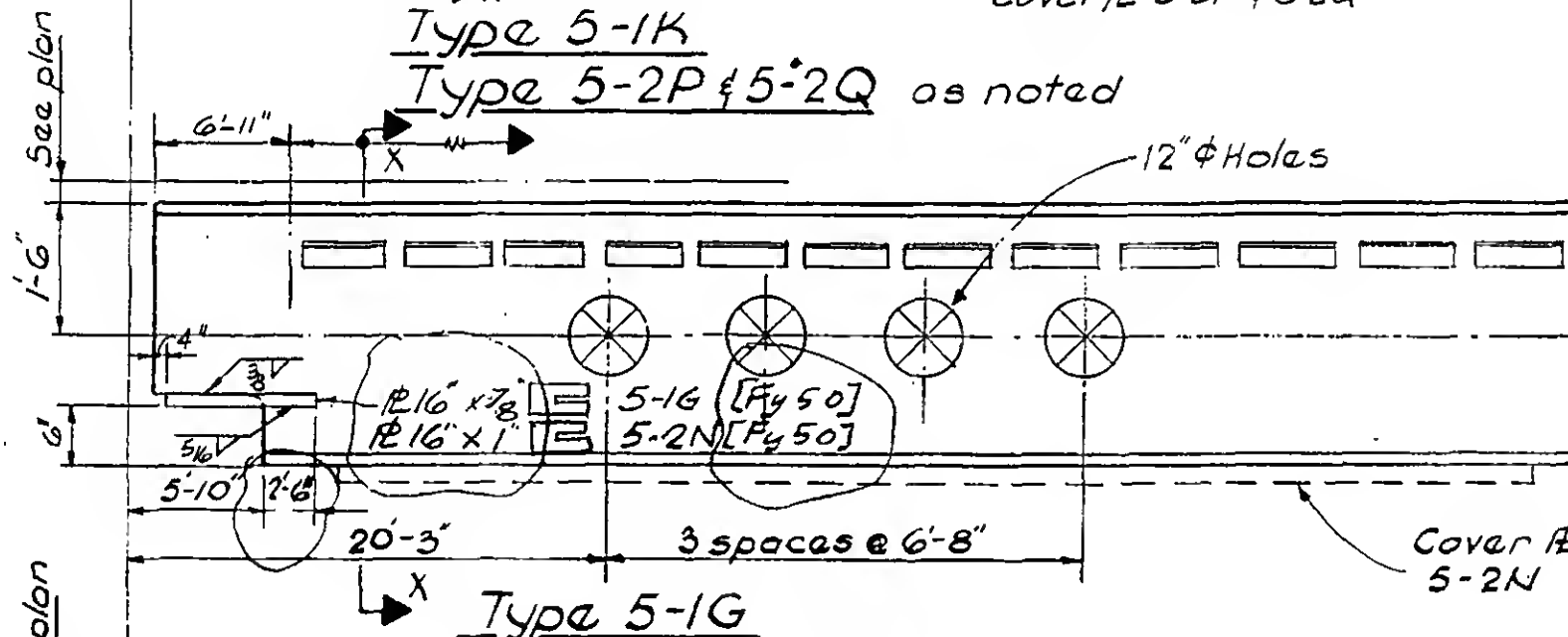
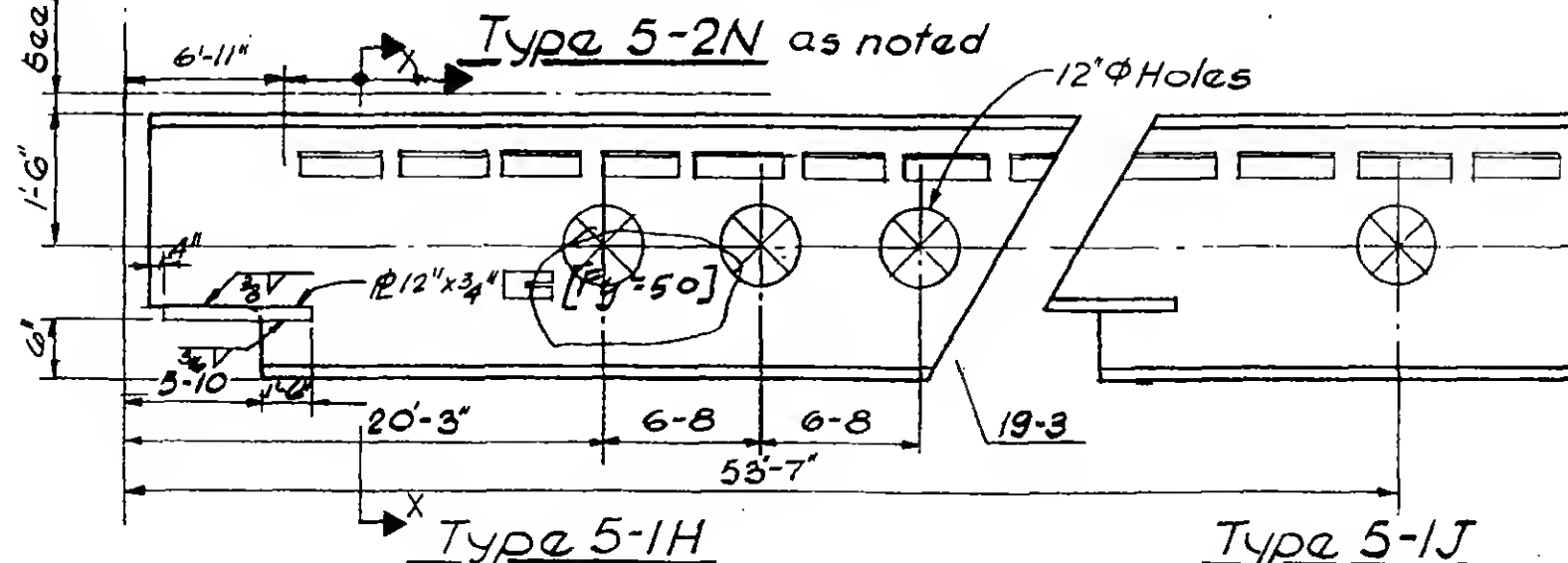
DESIGNED

DRAWN
W. Clarke

REVIEWED

9-AB5-1.1

REVISIONS

6/15/70
7/15/70Ext. Col.
ref. lineSection
1'-6"
8"
5'-1K & 5-2P
5'-2QType 5-1RType 5-1QType 5-1J

9-AB5-1.2



DESIGNED

DRAWN

D. Huggins

REVIEWED

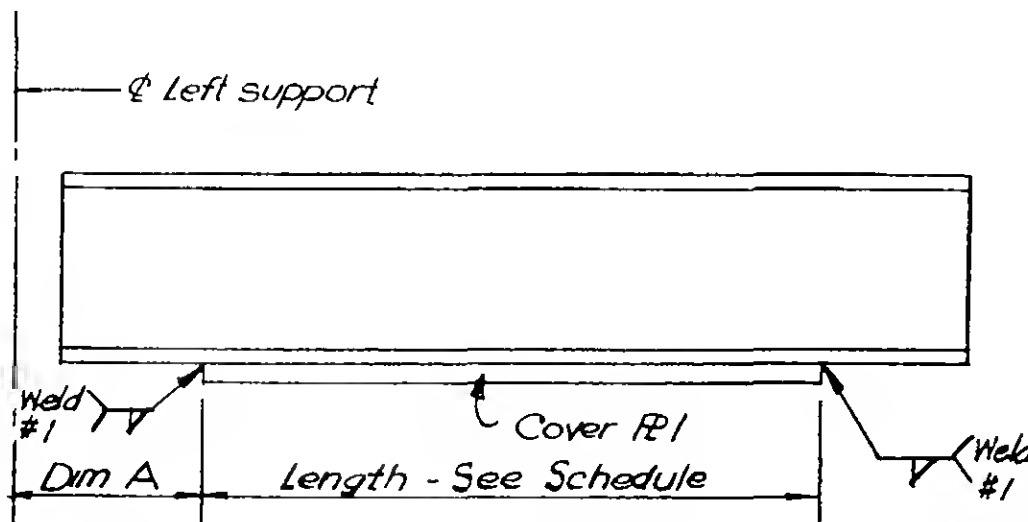
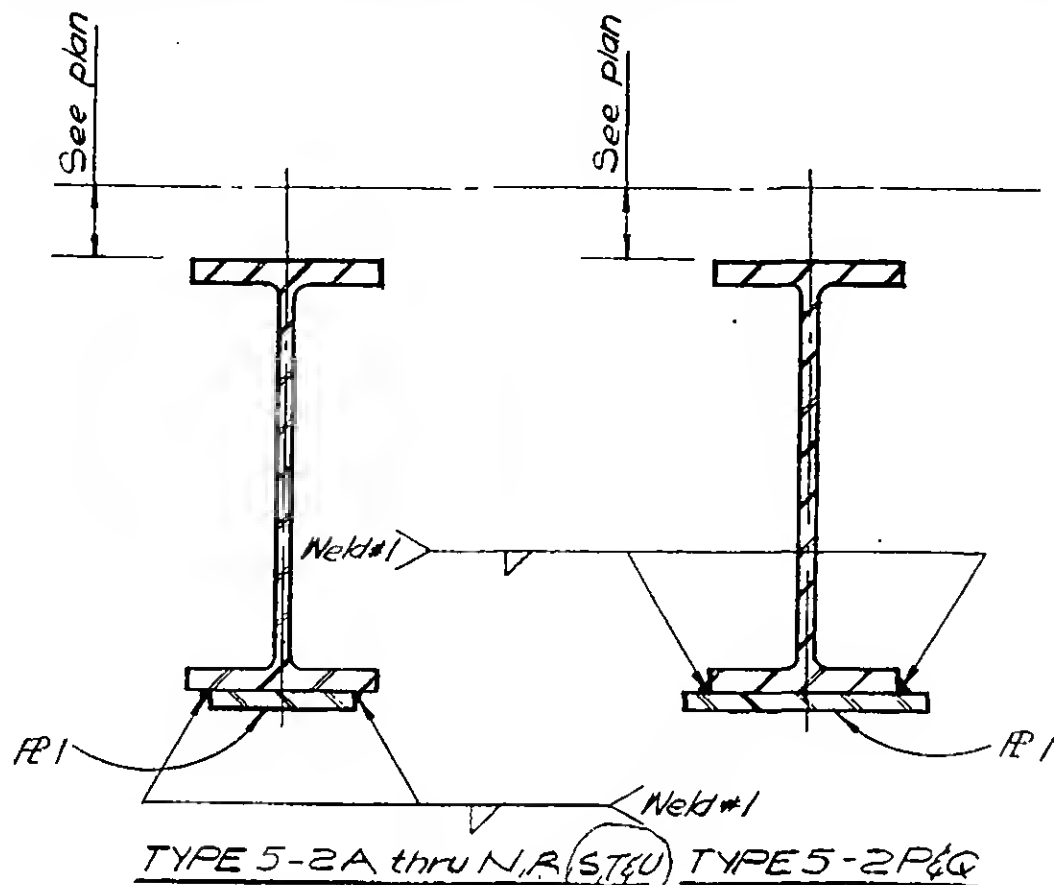
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH. MEMBER TYPES

DATE 4-1-70

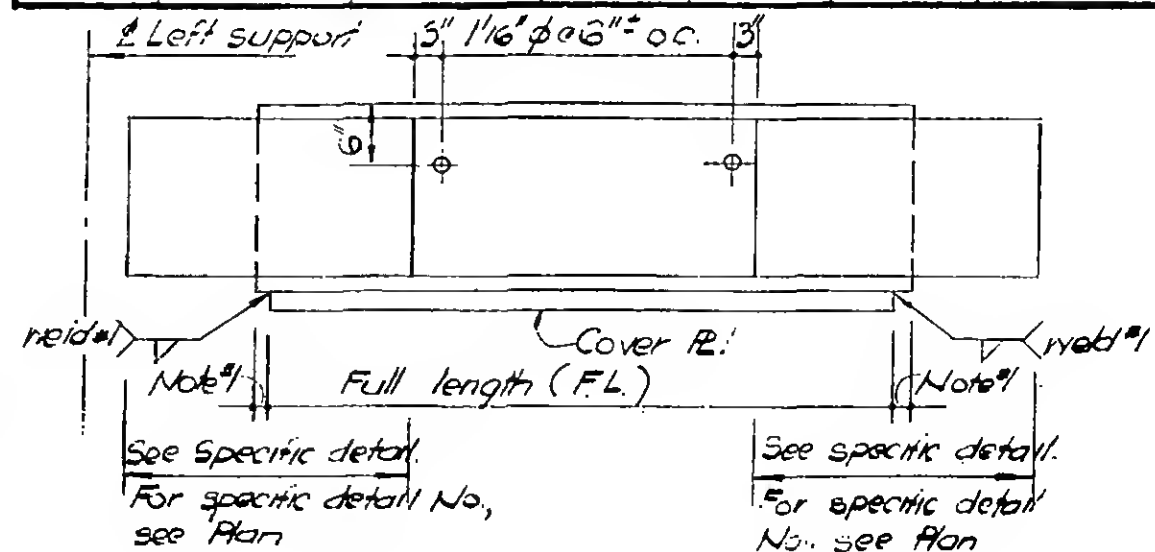
REVISIONS

5-27-70
6-15-70
7-8-70
7-13-70
12-14-70



- NOTES:
1. Where dim A not given, center cover R on beam. Full length Rs (F.L. in Schedule) stop 1" clear of connection detail material each end.
 2. R1 same Fy as beam. See Plan for Fy.
 3. As fabricated Tower A 30WF116 with 8 1/2 x 1 3/4 F.L. R1
 4. As fabricated Tower A substitution.

Type	Beam	R1	Length	Dim A	Weld #1	Remarks
5-2A	30WF132	7" x 1 3/4"	F.L.		3B	Note 3
5-2B	30WF132	7" x 1 3/4"	F.L.		3B	Note 3
5-2C	27WF114	8" x 1"	F.L.		3B	
5-2D	27WF114	8" x 1"	F.L.		3B	
5-2E	27WF94	7 1/2" x 7 8"	26'-0"		5/16	
5-2F	27WF102	8" x 7 8"	33'-0"	8'-0"	5/16	
5-2G	24WF160	10" x 1 1/2"	F.L.		7/16	
5-2H	24WF160	10" x 1 1/2"	F.L.		7/16	
5-2K	24WF94	7" x 3/4"	F.L.		5/16	
5-2M	24WF94	7" x 3/4"	F.L.		5/16	
5-2N	36WF230	14" x 1 3/4"	40'-0"		7/16	5-1.2
5-2P	36WF170	14" x 1 1/2"	24'-0"	5-1.2	3B	5-1.2
5-2Q	21WF62	14" x 1/2"	24'-0"	5-1.2	5/16	5-1.2
5-2R	24WF120	10" x 1"	F.L.		3B	
5-2S	21WF82	6 1/2" x 1/2"	13'-0"		5/16	Note 4
5-2T	16WF88	8" x 1/2"	24'-0"	5-4.1	5/16	5-4.1
5-2U	36WF230	14" x 1 3/4"	40'-0"		7/16	5-4.1



TYPE 5-2K, M & R



DESIGNED

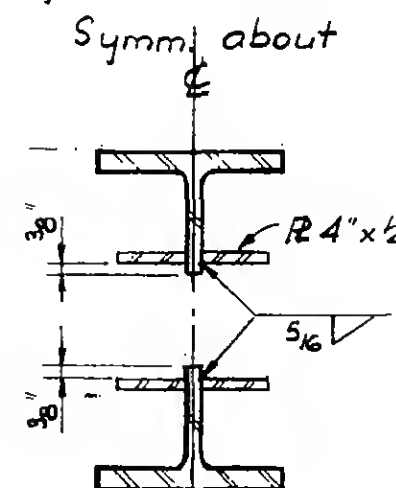
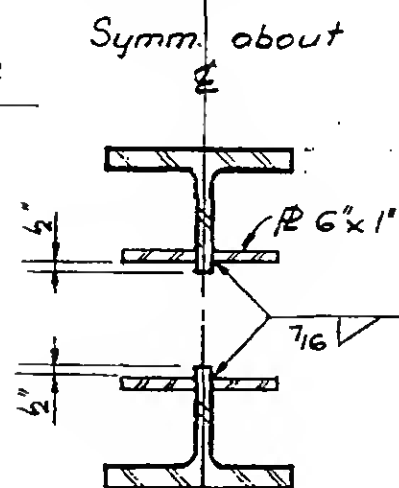
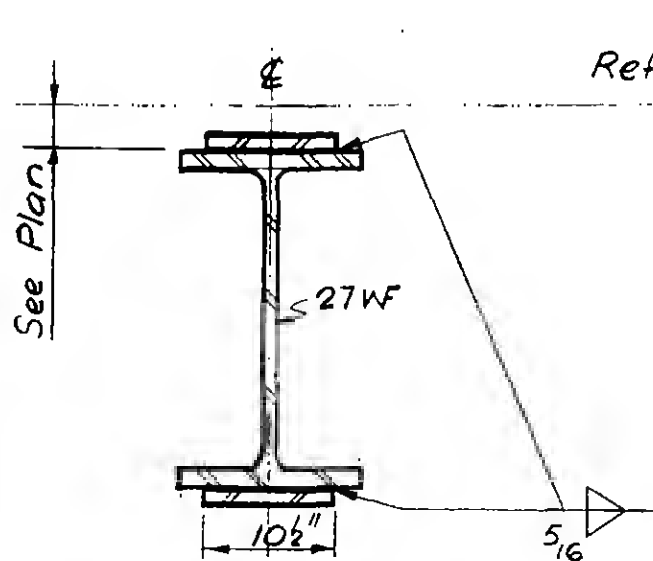
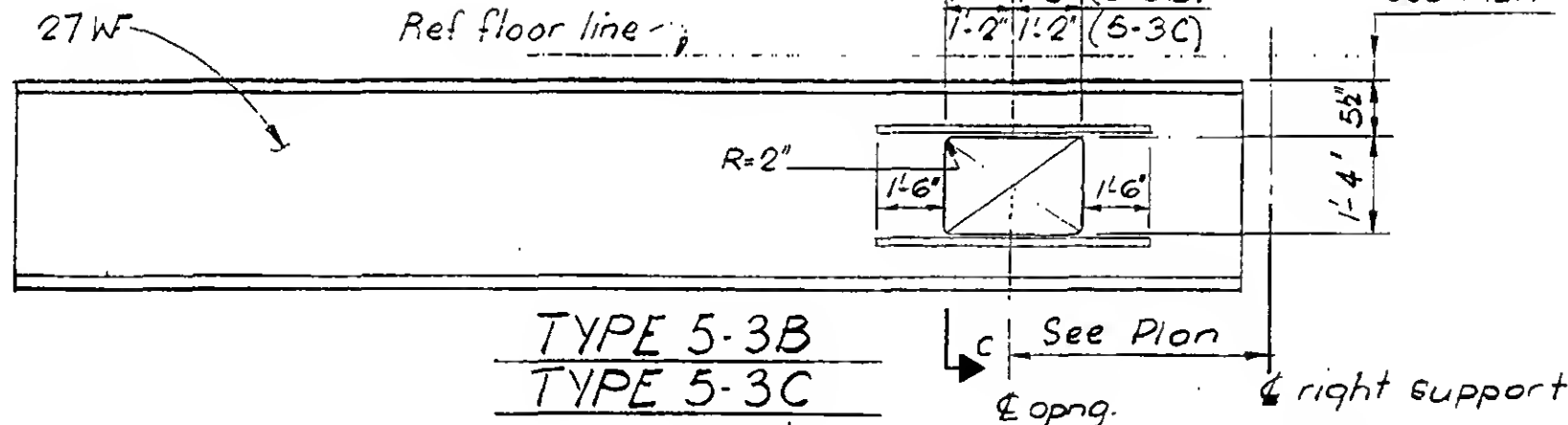
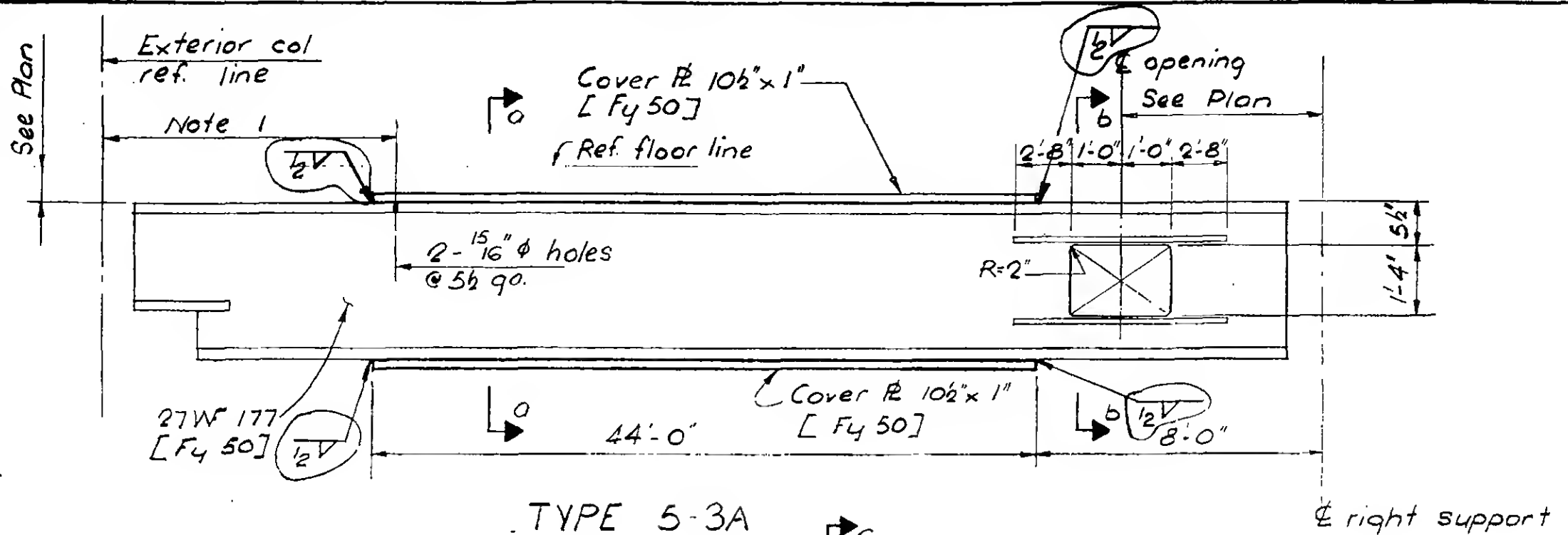
DRAWN
W. Clarke

REVIEWED

9-AB5.2

REVISIONS

7/8/70



Note:

1. Location to accommodate erector's temporary bracing.

9-AB5-3



DESIGNED

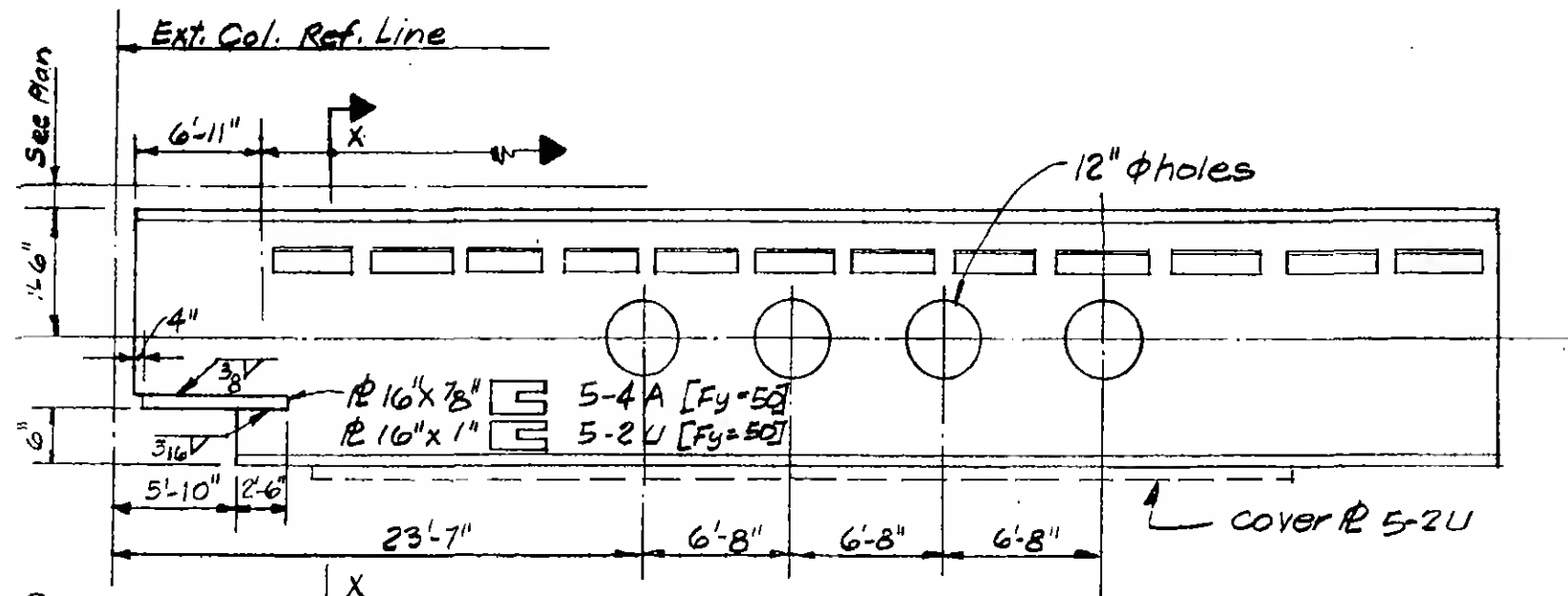
M. Ramani

DRAWN

T. Terrelonge

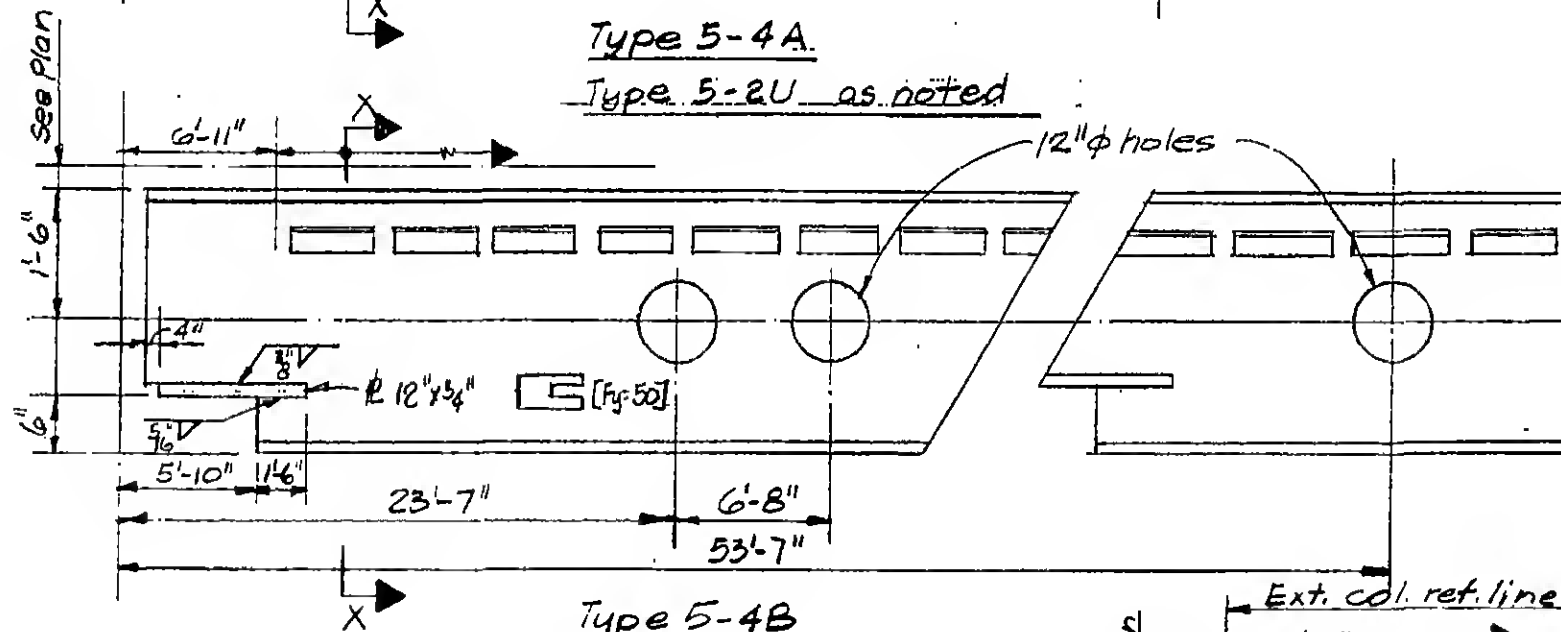
REVIEWED

REVISIONS

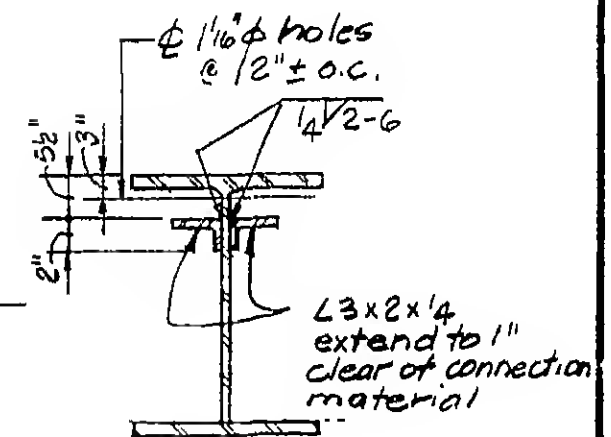


Type 5-4A

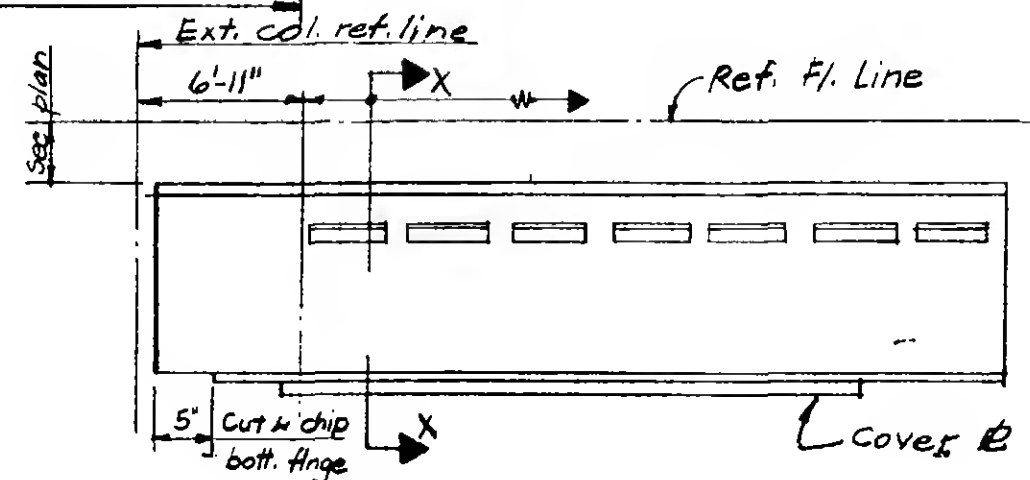
Type 5-2U as noted



Type 5-4B



Section x-x



Type 5-2T

9-B5-4.1

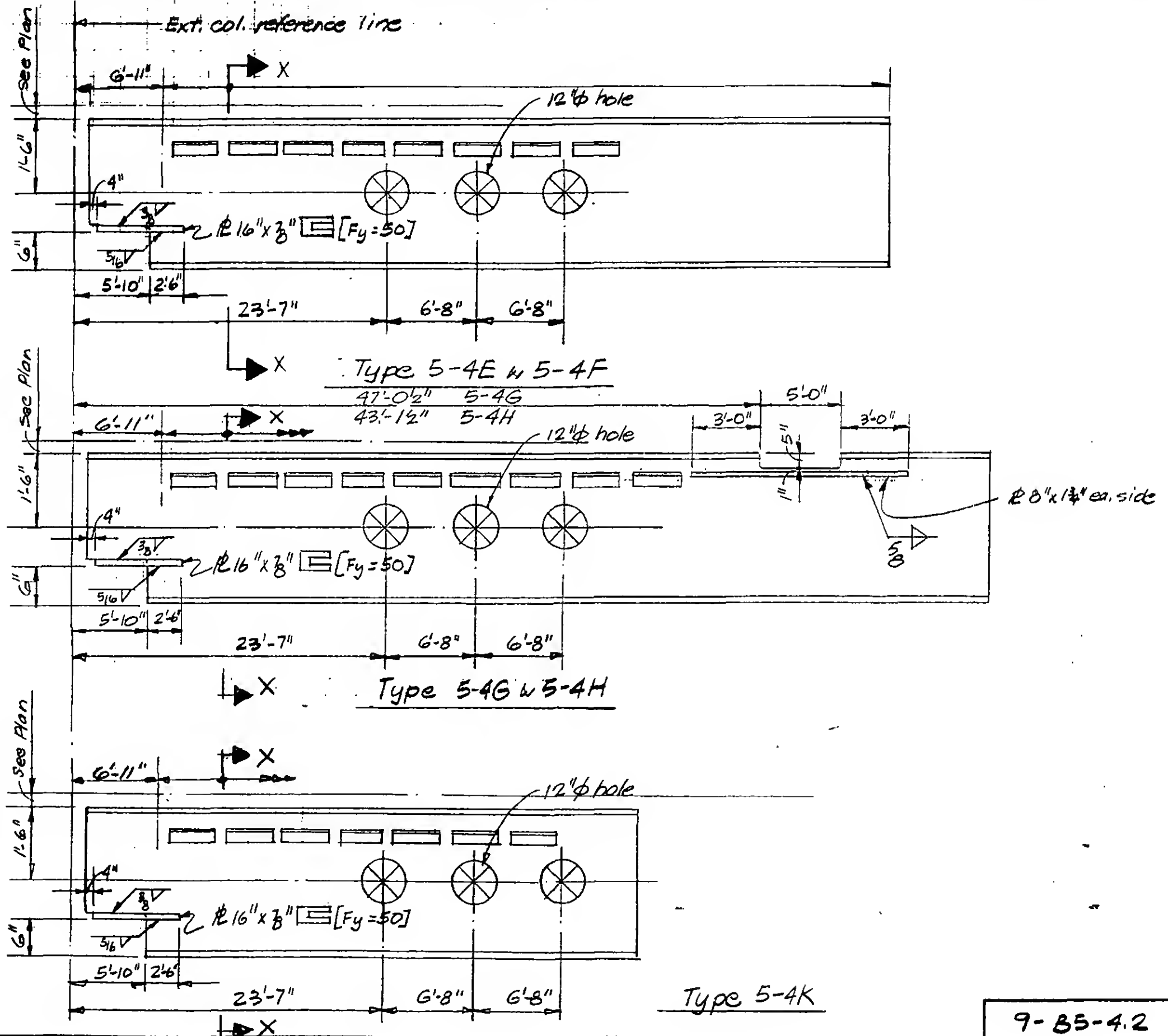


DESIGNED

DRAWN

REVIEWED

REVISIONS



DESIGNED

DRAWN

P. Oehl

REVIEWED

9-B5-4.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

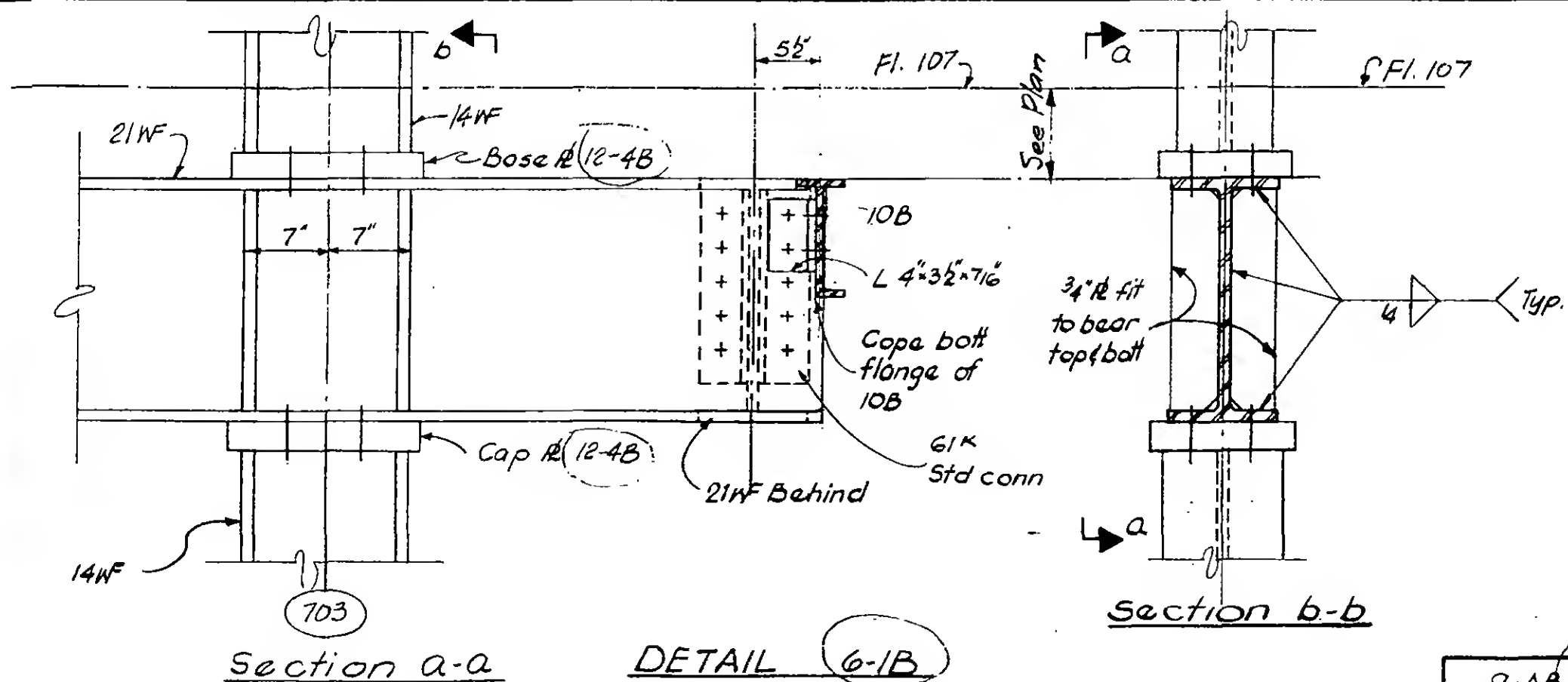
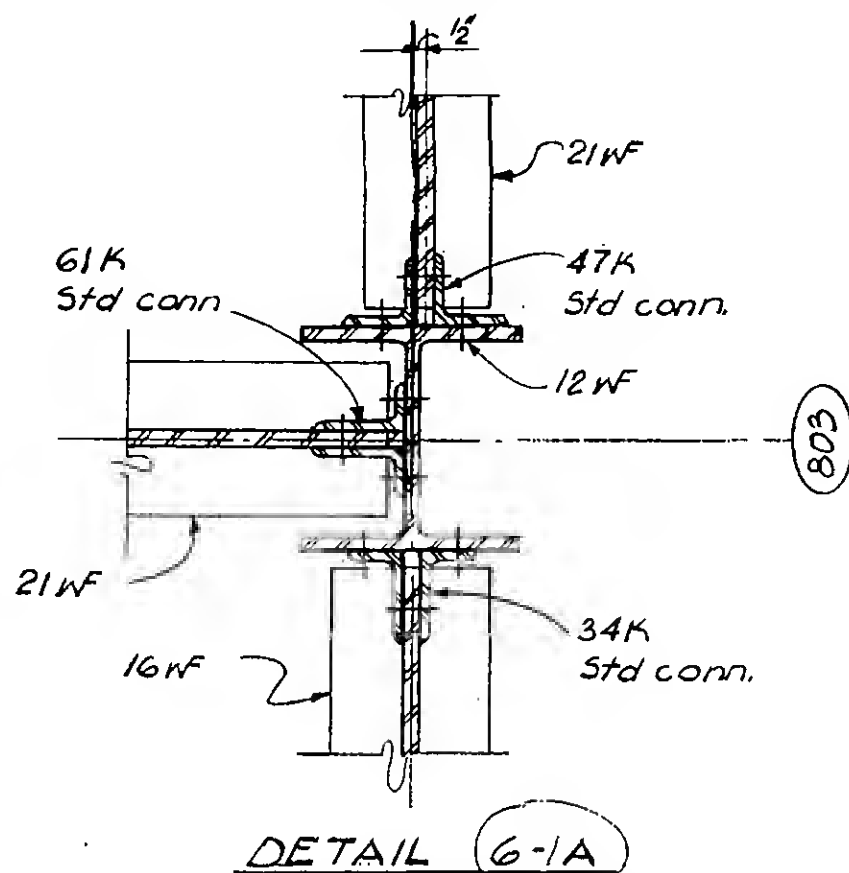
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTIONS DETAILS - FL 107

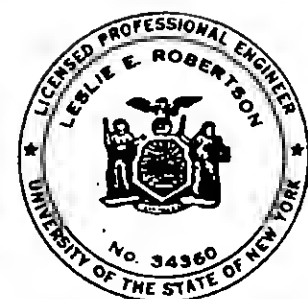
DATE 4-1-70

REVISIONS

5/27/70



9-AB 6-1



DESIGNED

K. Hwang

DRAWN

D. Huggins

REVIEWED

E. Drakos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

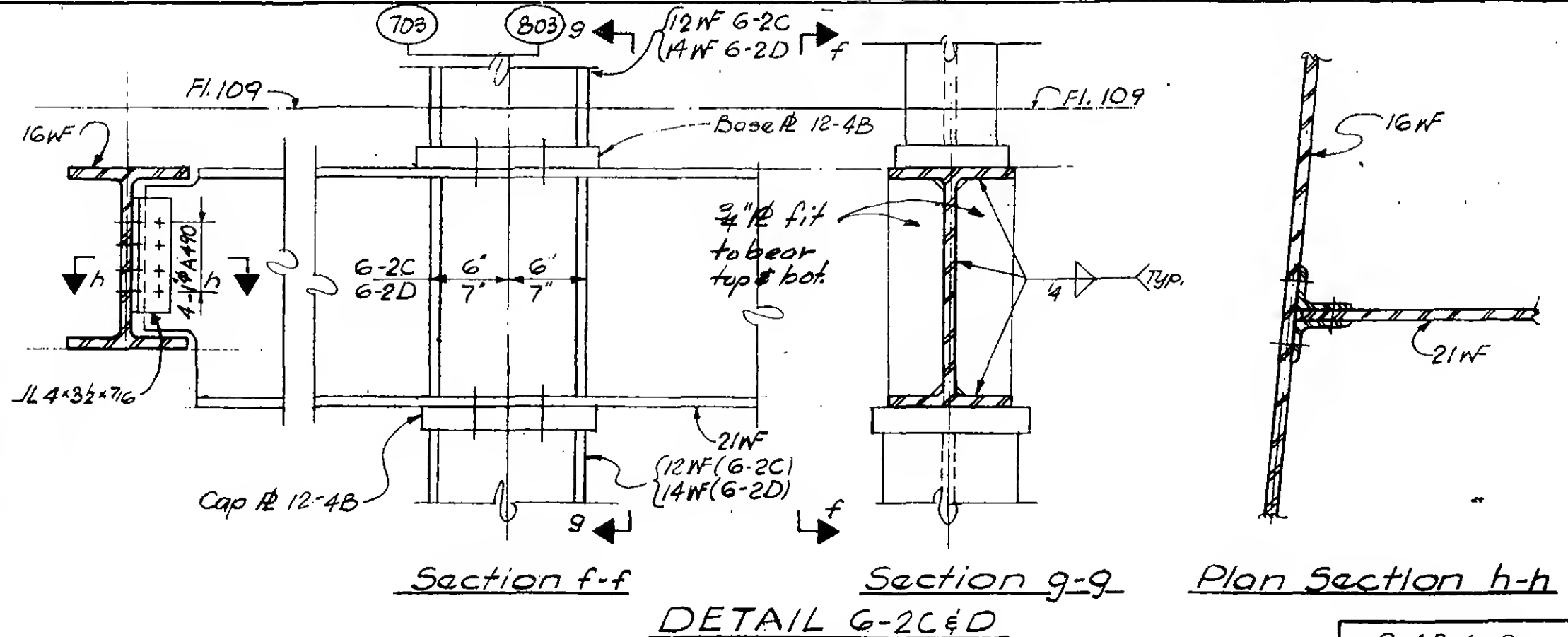
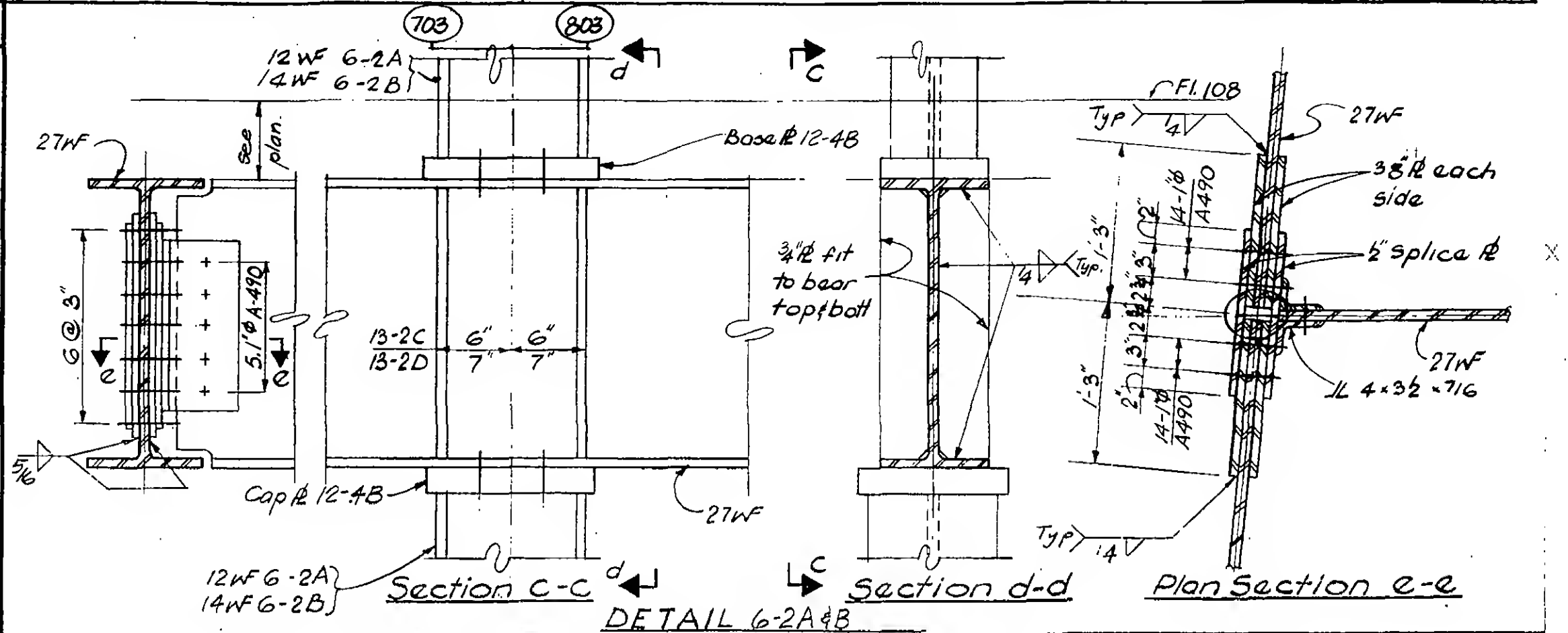
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - FL 107

DATE 4-1-70

REVISIONS

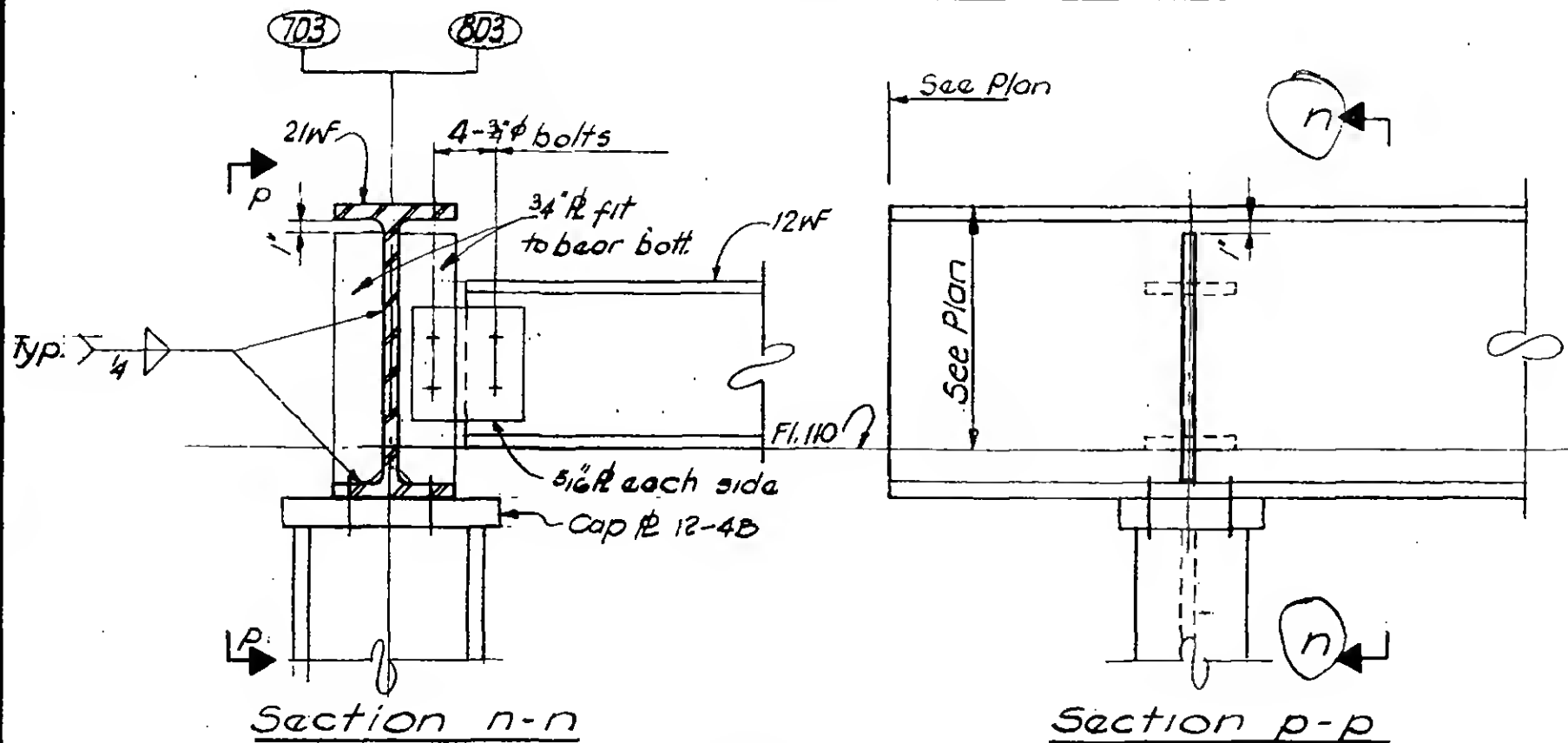
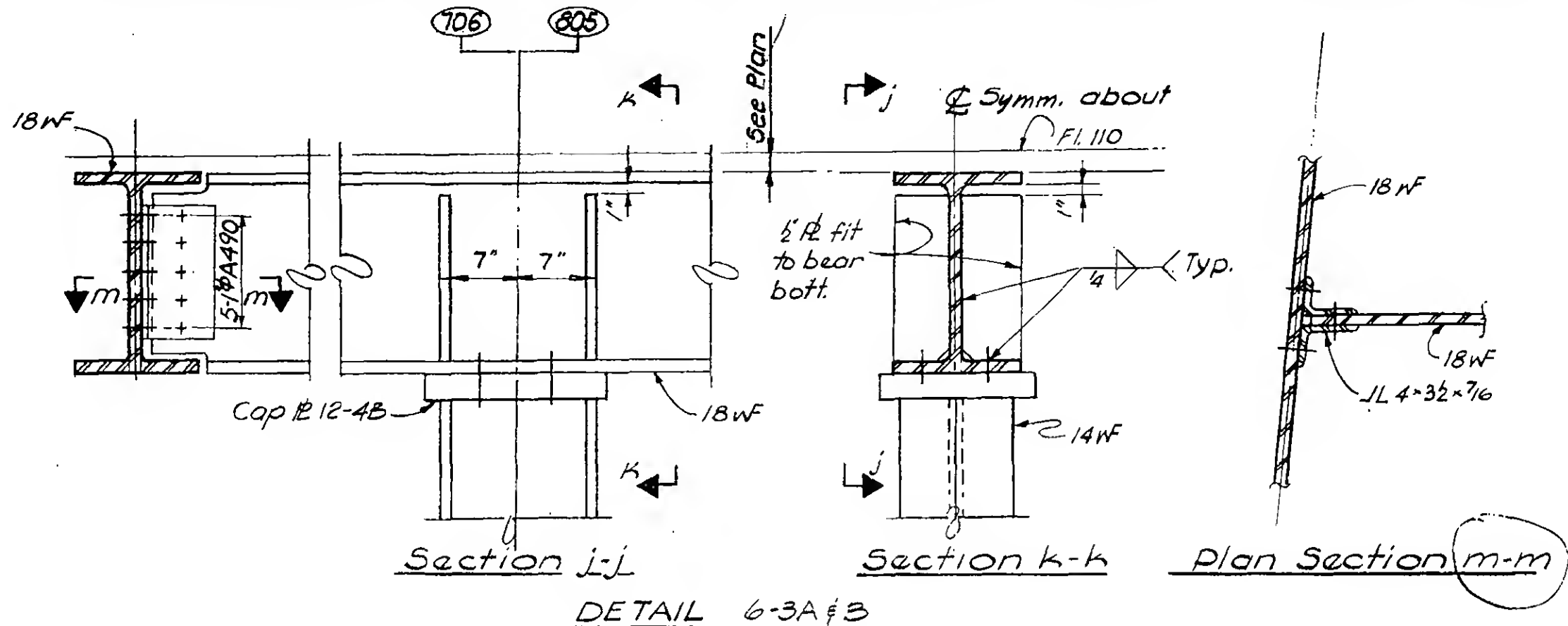
5/27/70
7/8/70

9-AB 6-2

DESIGNED
K. HwangDRAWN
D. HugginsREVIEWED
E. Draxos

REVISIONS

5/27/70
7/8/70

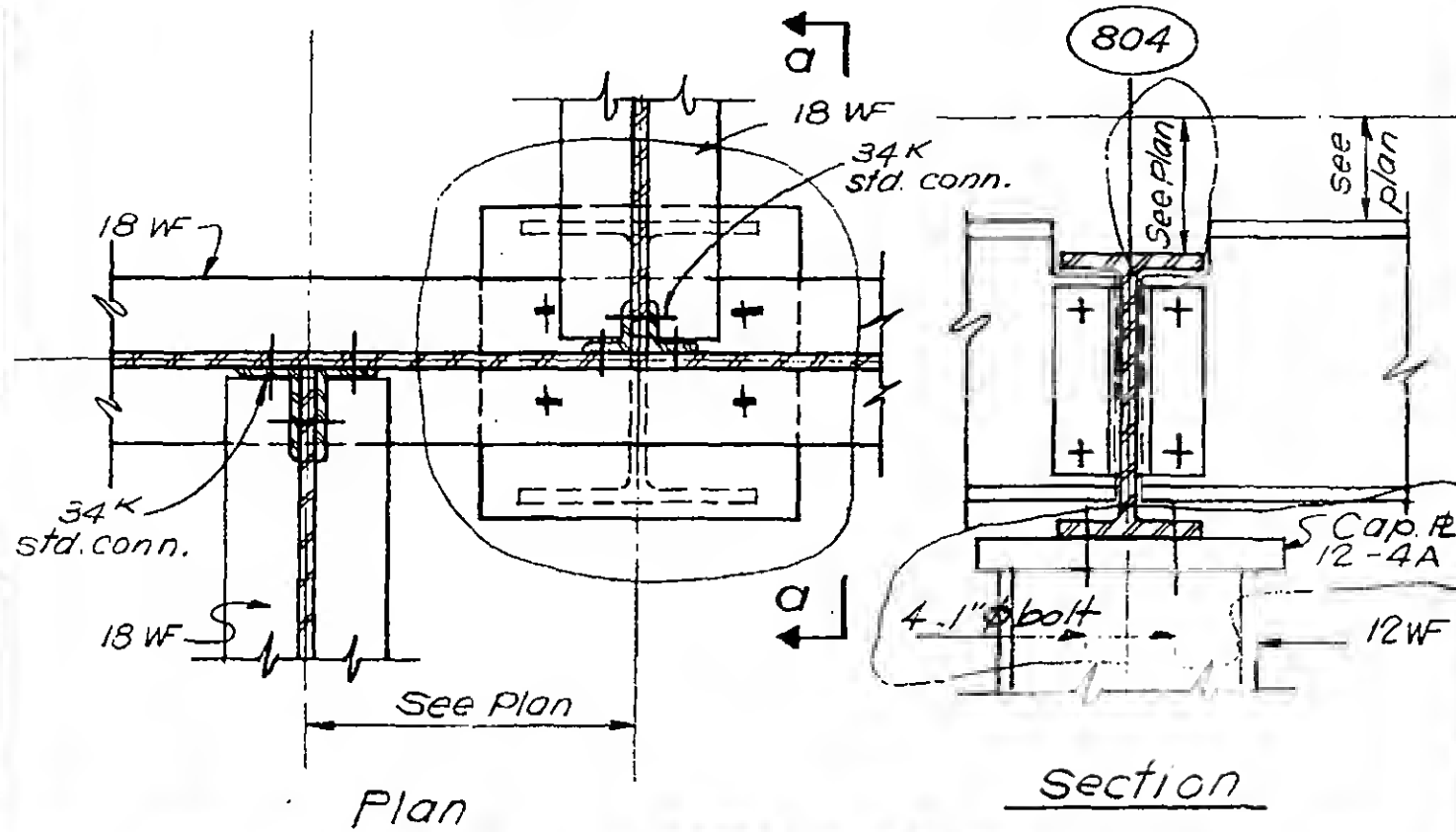


DESIGNED
K. Hwang
DRAWN
D. Huggins
REVIEWED
E. Drakos

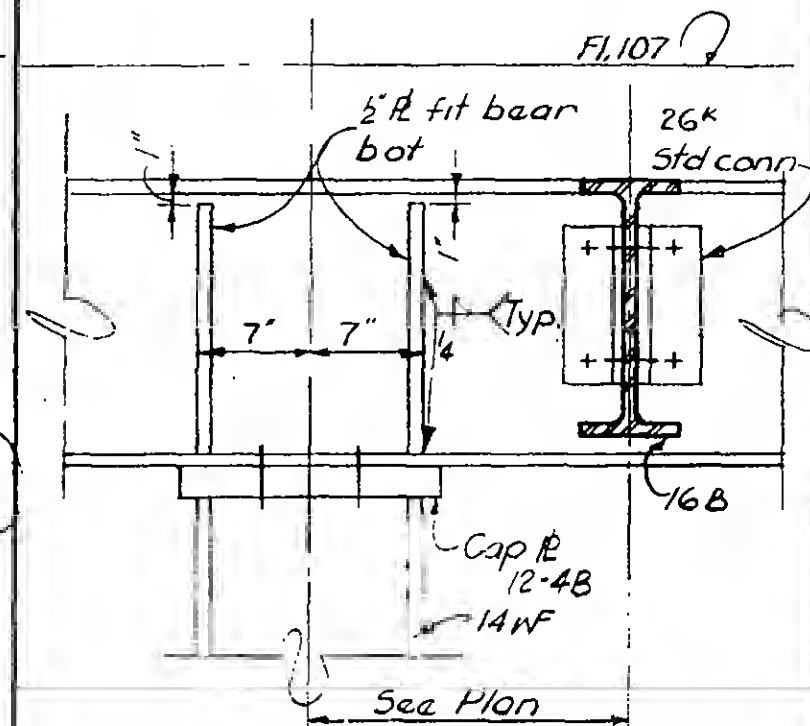
PROVISIONS

5/27/70

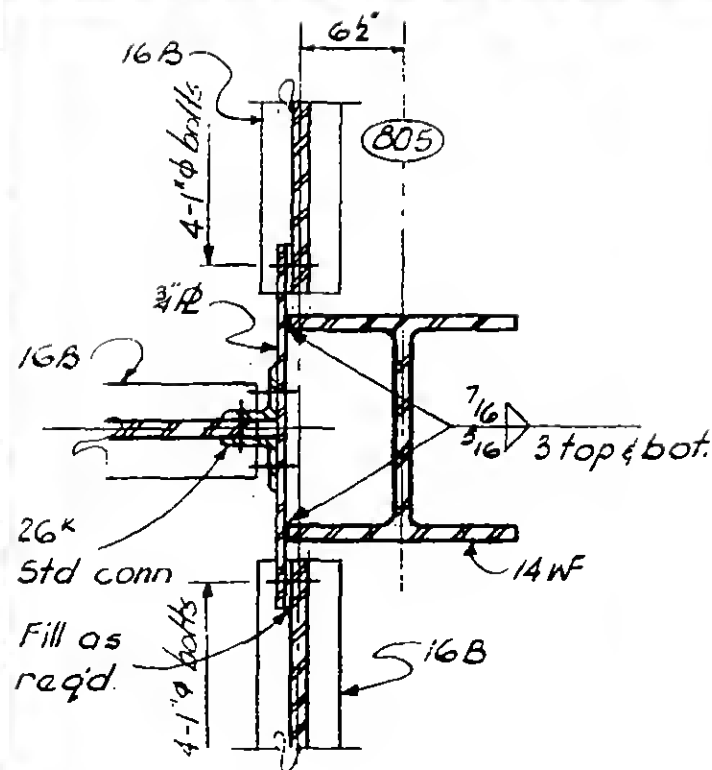
6/17/70



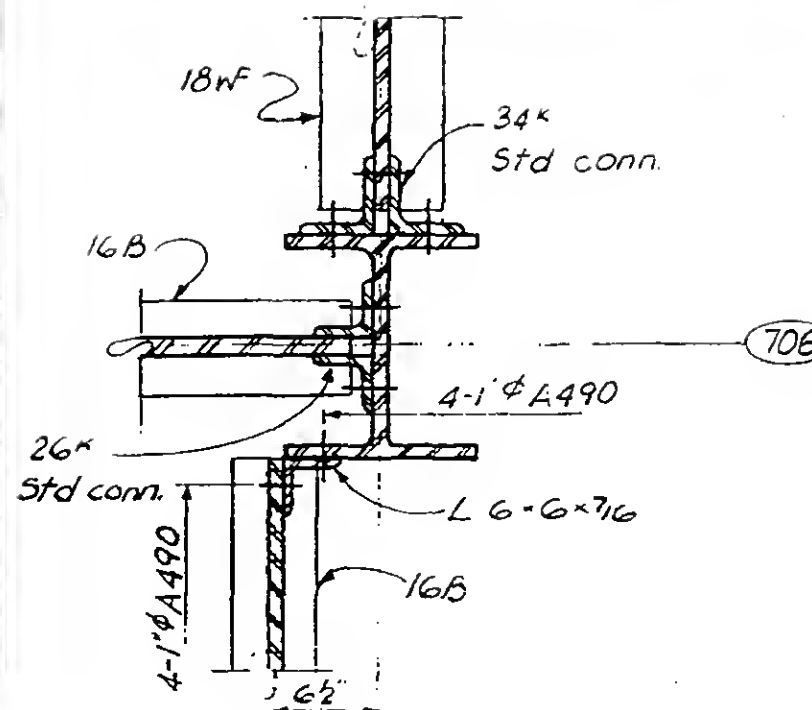
DETAIL 6-4A



DETAIL 6-4B



DETAIL 6-4C



DETAIL 6-4D



SIGNED
K. Hwang
DRAWN
D. Huggins
REVIEWED
E. Oravos

7-AE6-4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

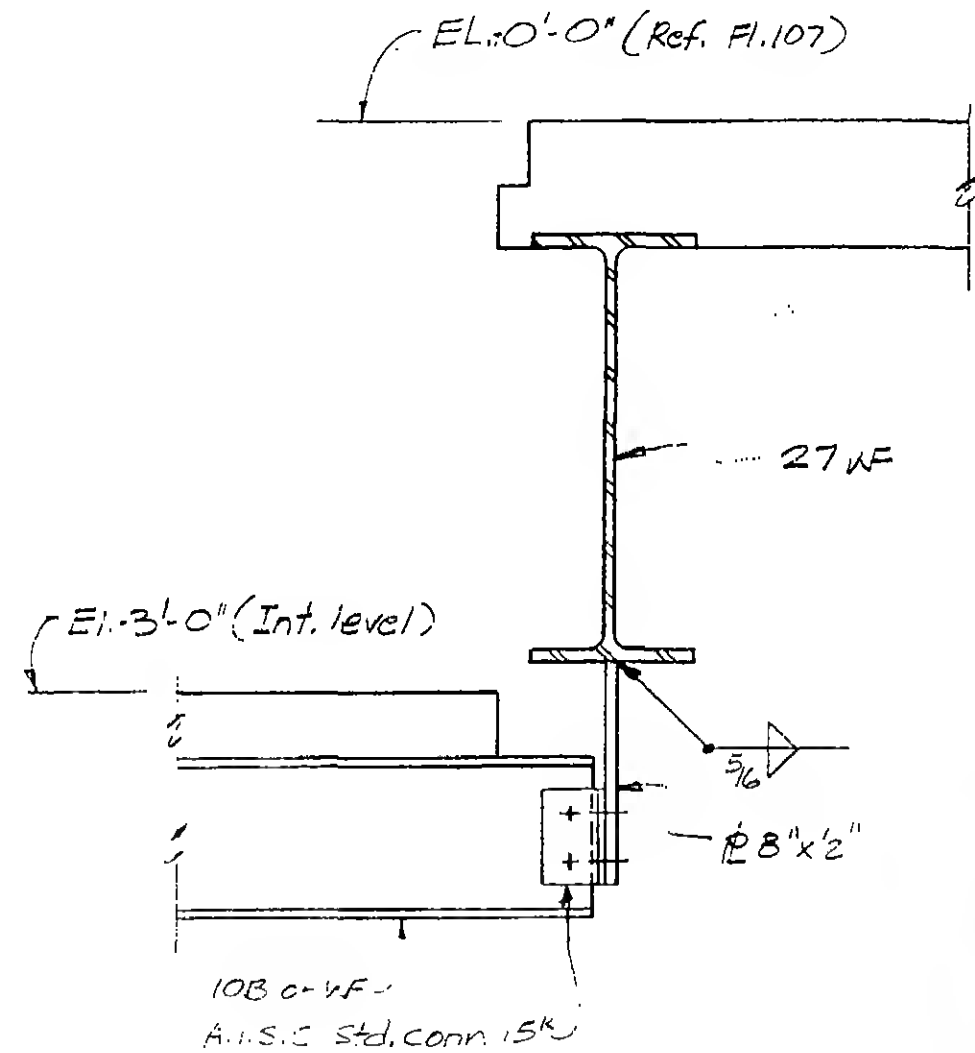
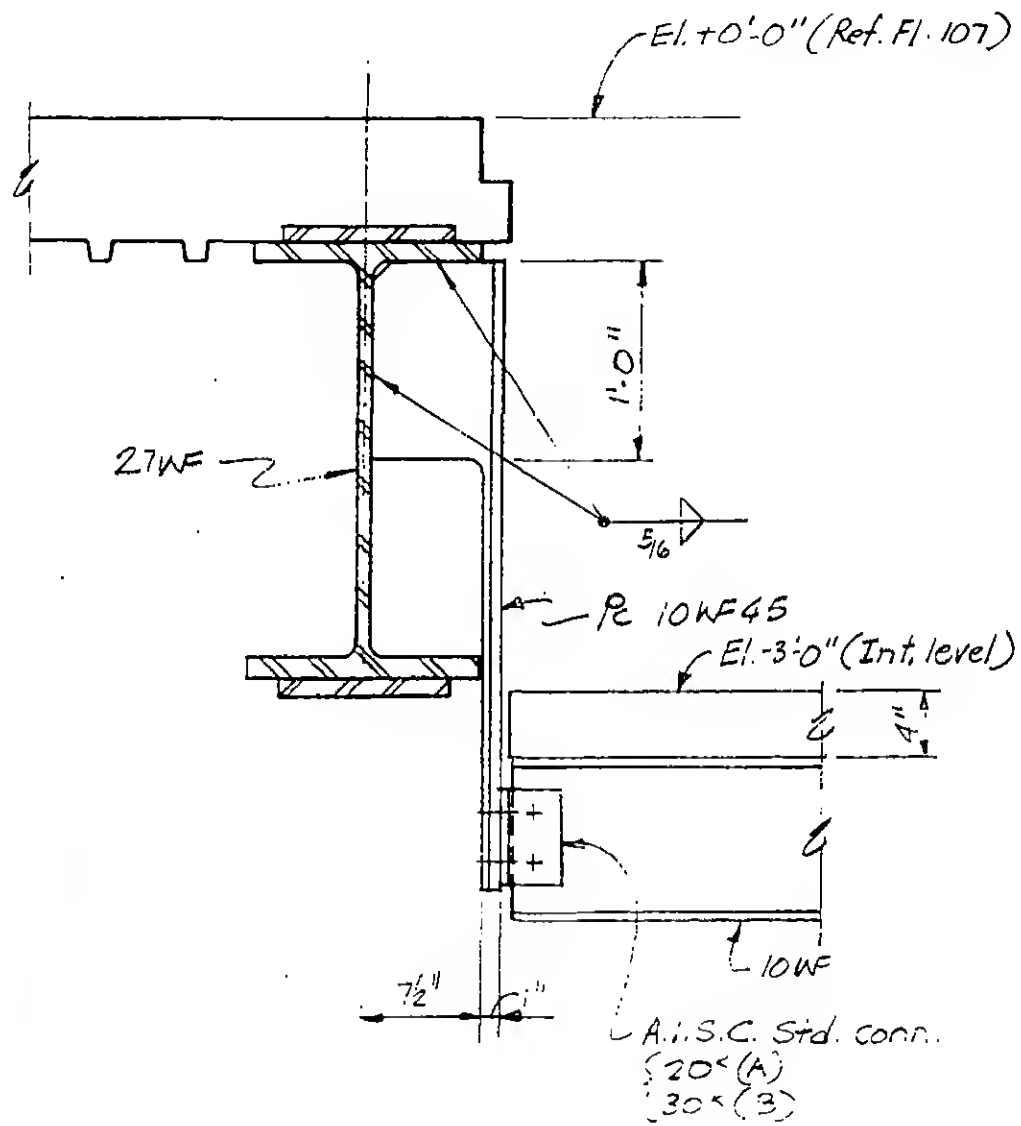
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL.107 PH-CONNECTION DETAILS

DATE 11-9-73

PROVISIONS

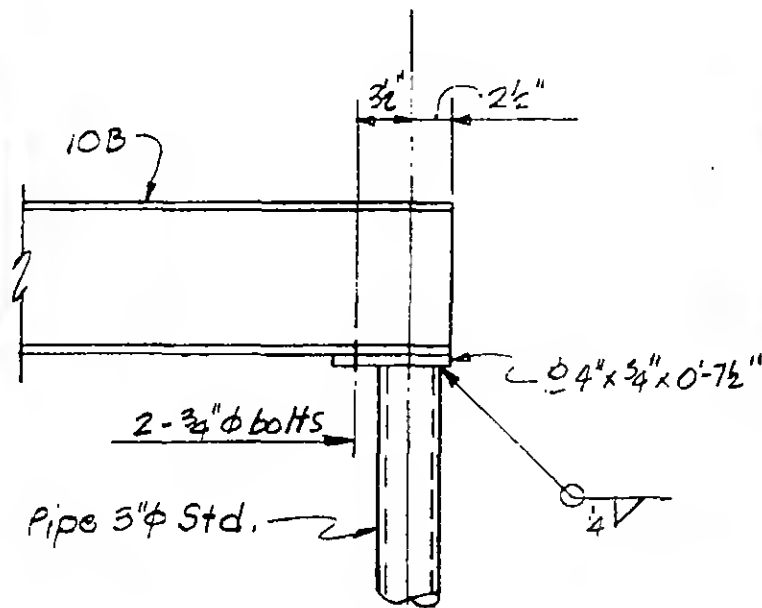


DESIGNED
JIM
DRAWN
REVIEWED

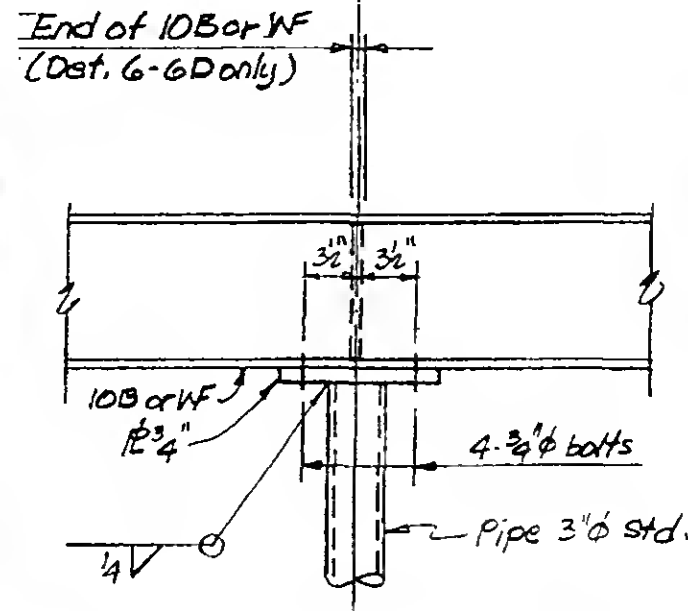
A	
B	C

9-A6-5

REVISIONS

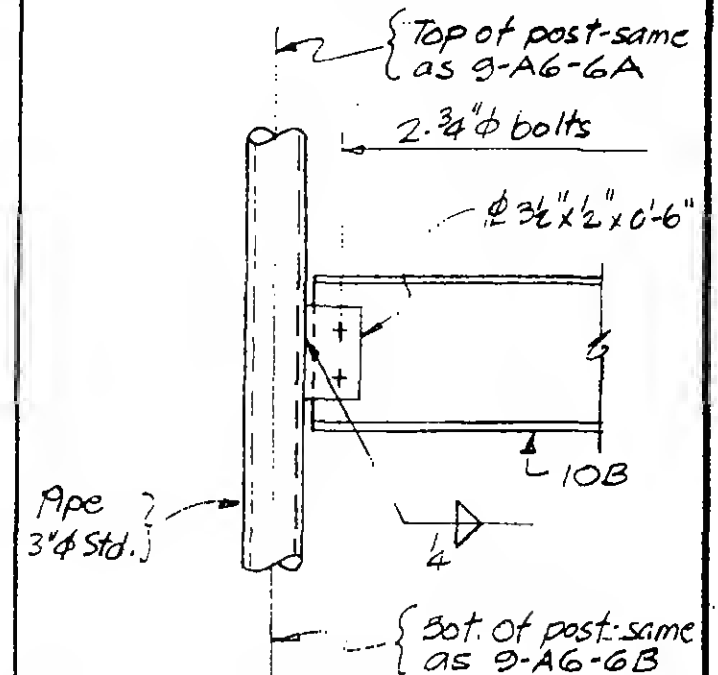


A

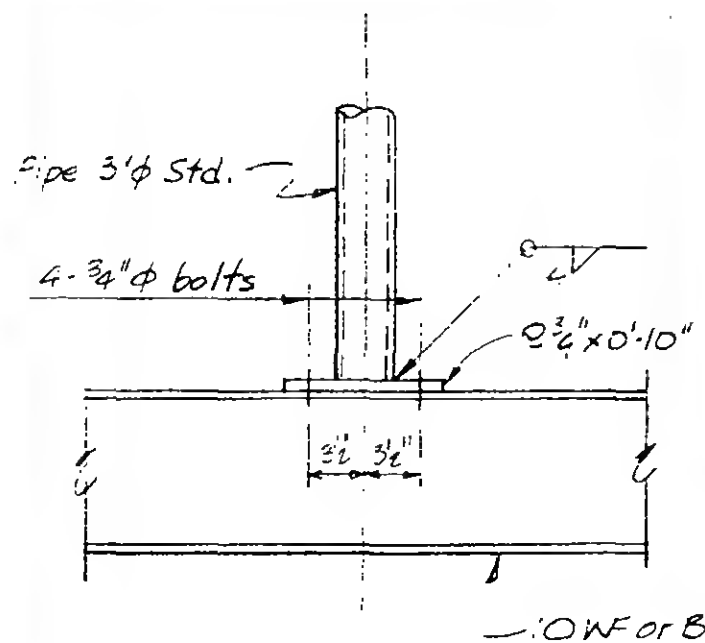


C

D

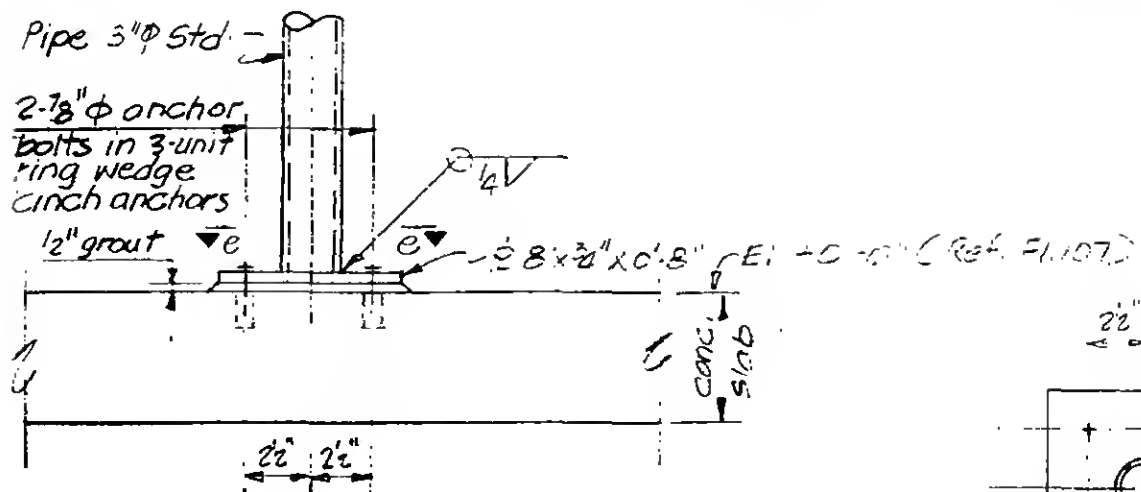


F

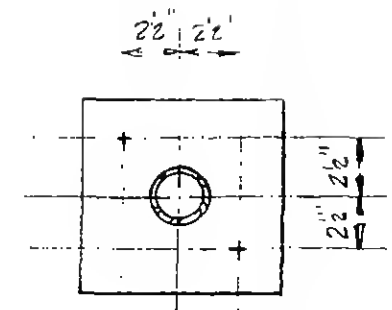


B

E



View looking north



Section e-e

9-AG-6



SIGNED JTM

DRAWN [Signature]

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

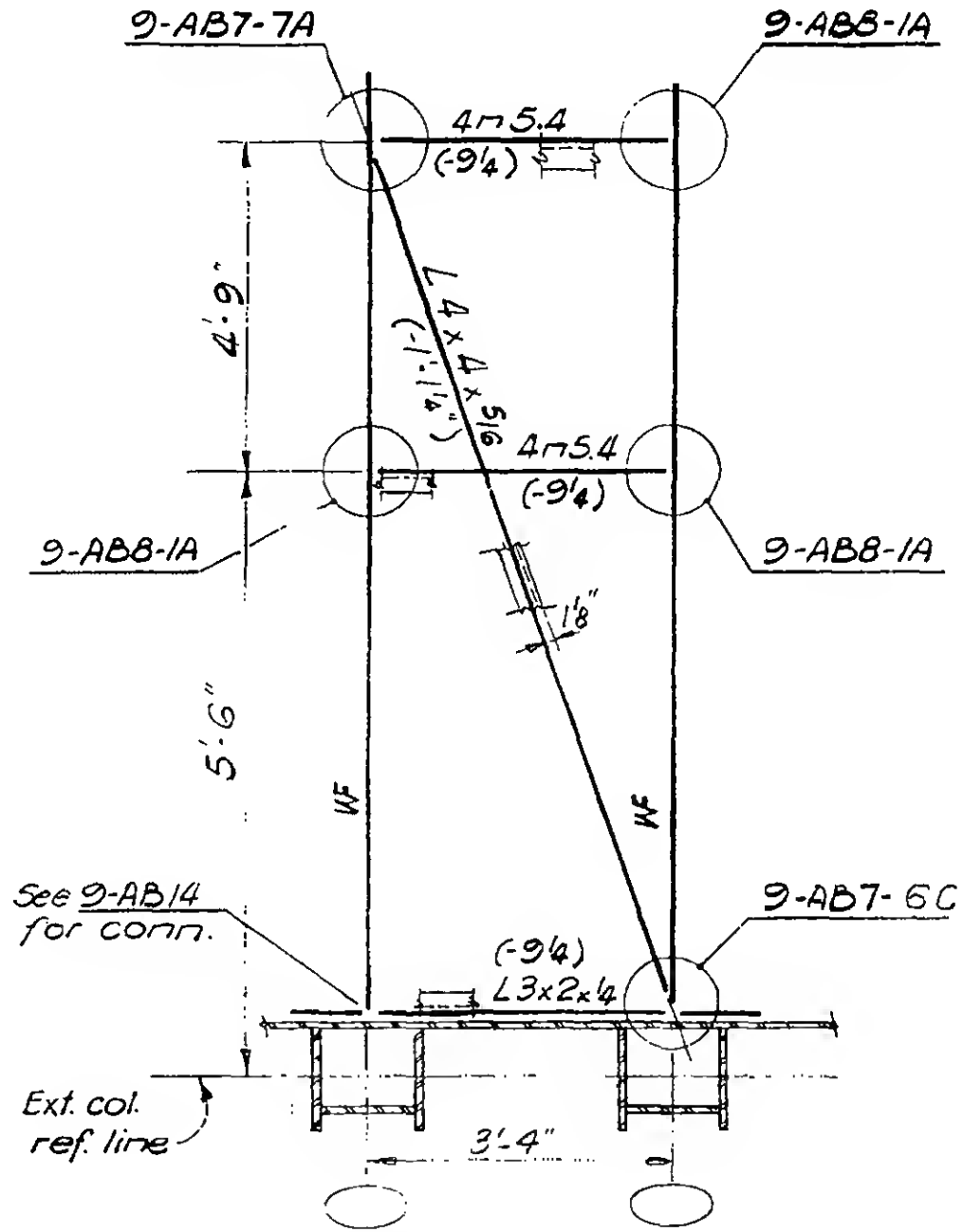
FLOOR 107-PH HORIZONTAL BRACING

DATE

4-1-70

REVISIONS

5/27/70



Plan 7-1A
Plan 7-1B Opp. hand



DESIGNED

DRAWN

M. Nichols

REVIEWED

W. P. ...

9-AB7-1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

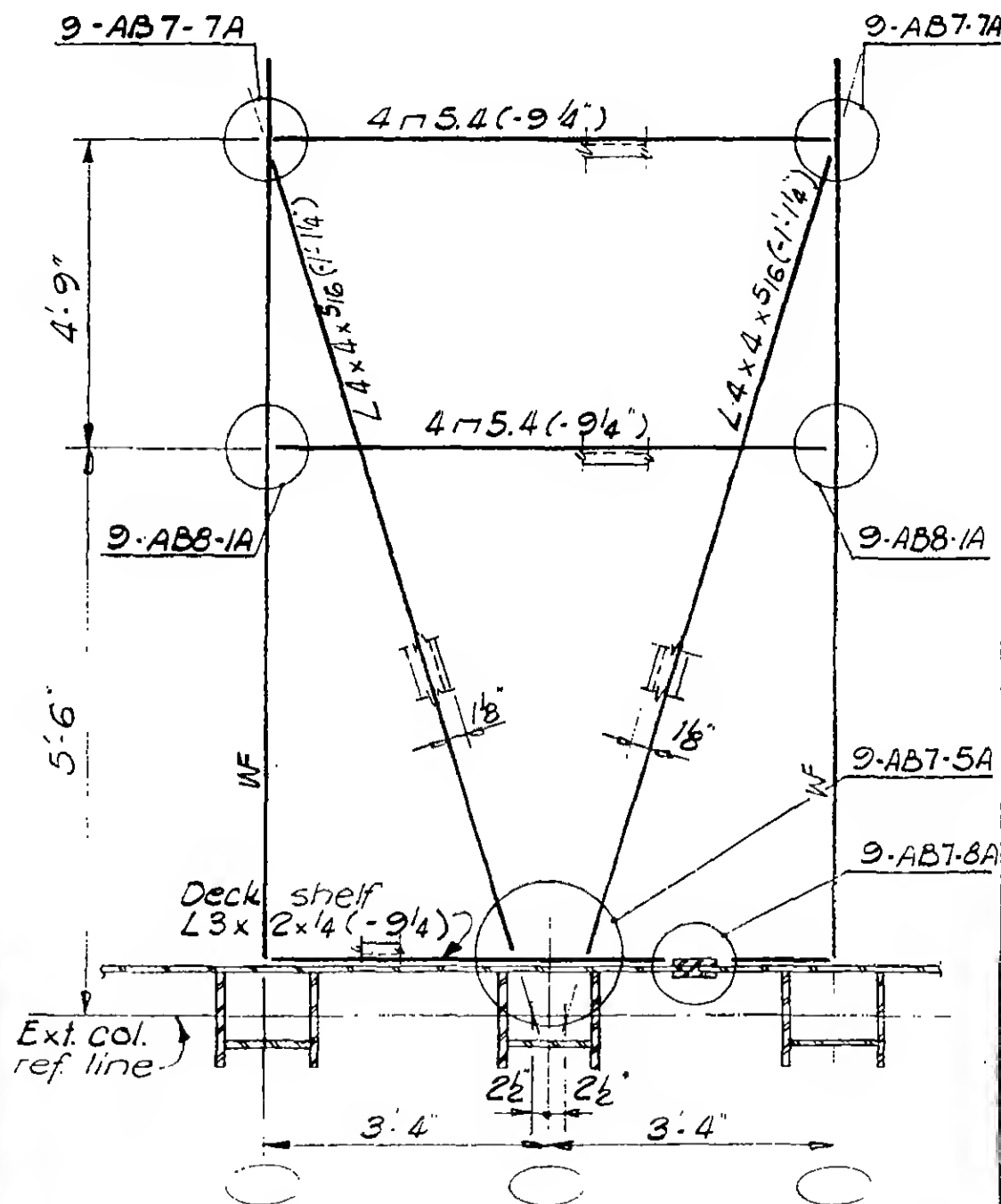
PROJECT THE WORLD TRADE CENTER

TITLE FLOOR 107-PH HORIZONTAL BRACING

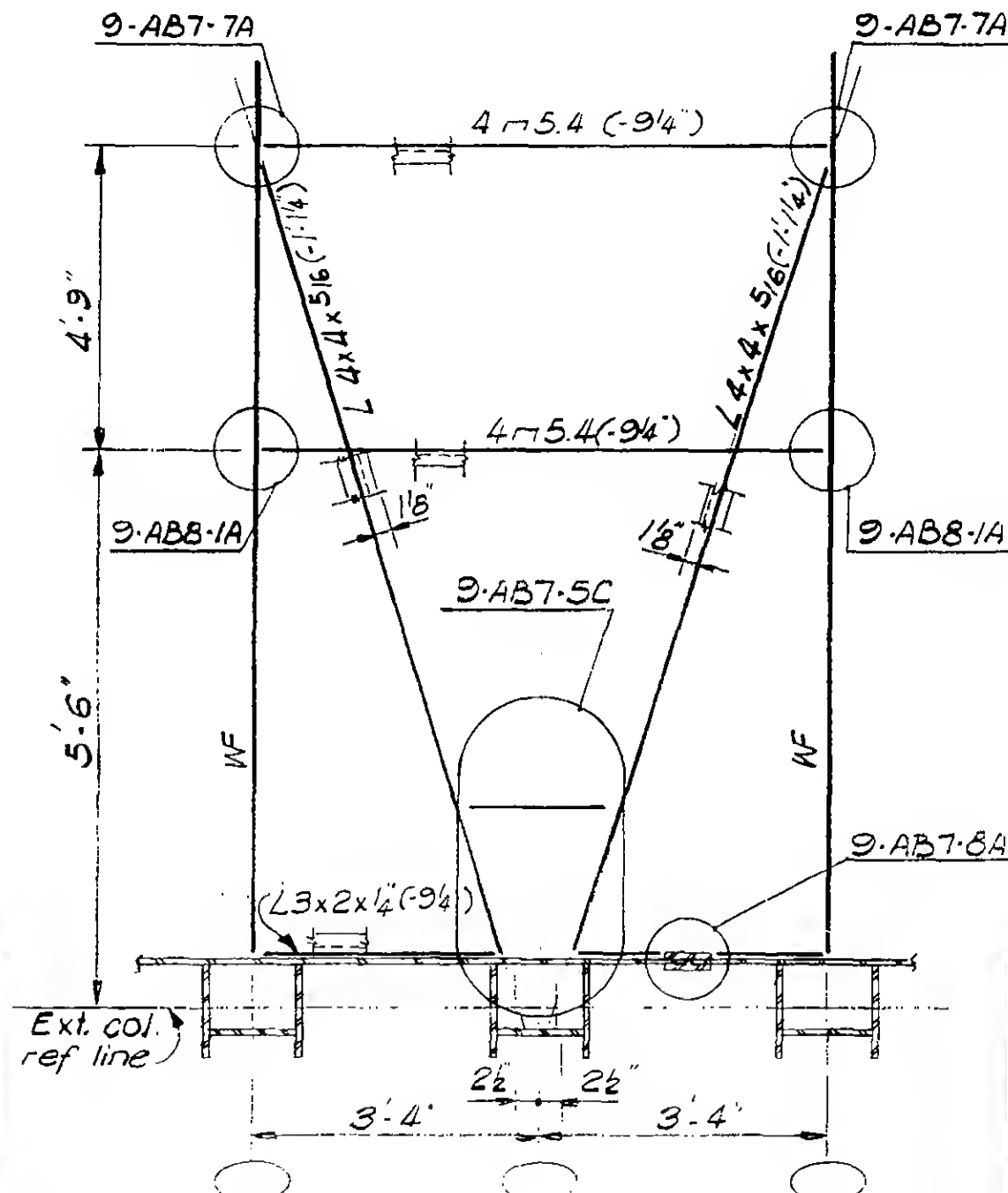
DATE 4-1-70

VISIONS

5/27/70



Plan 7-2C



Plan 7-2D



SIGNED

DRAWN M. Nichols

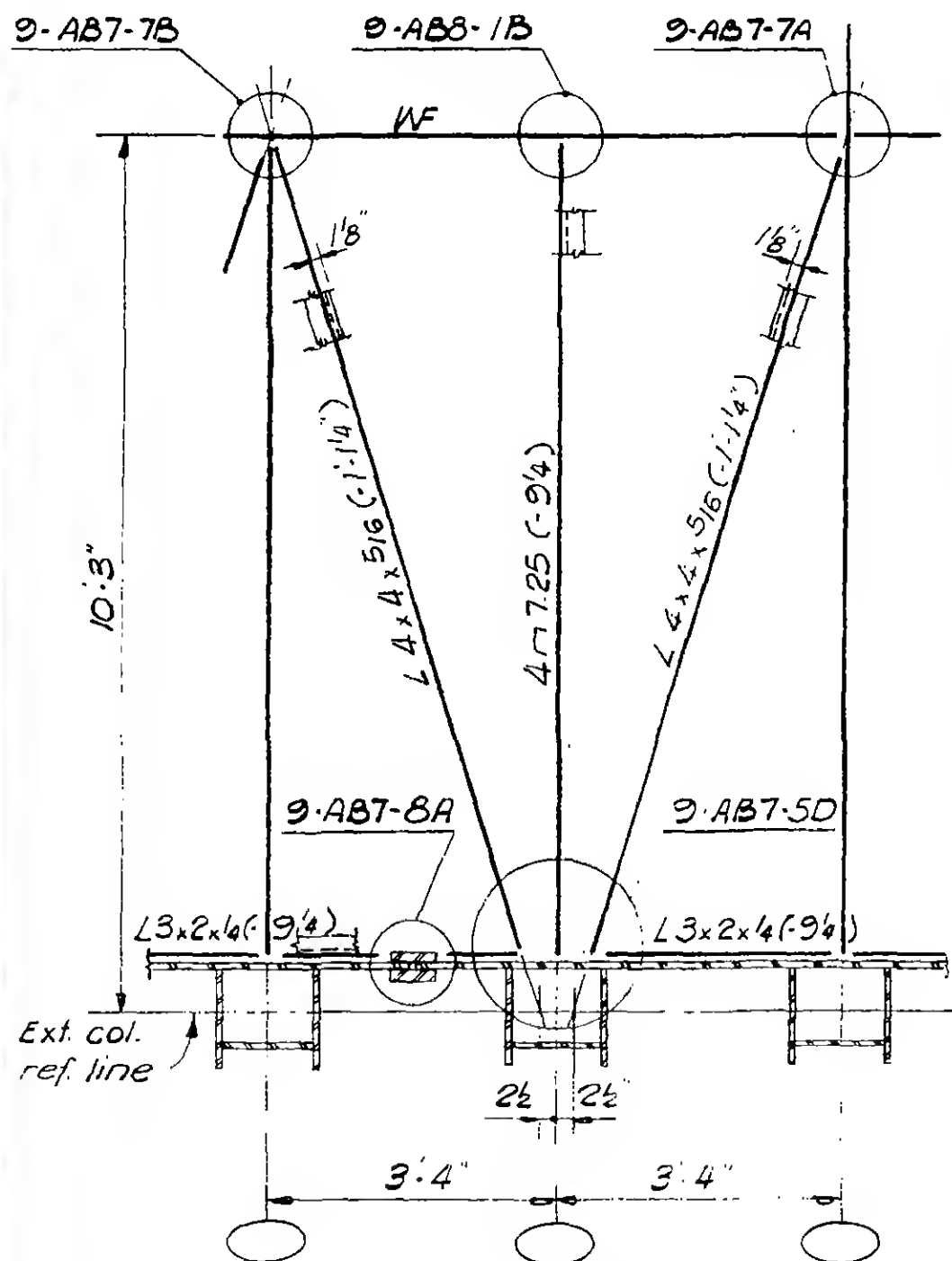
REVIEWED

6/1/70

9-AB7-2

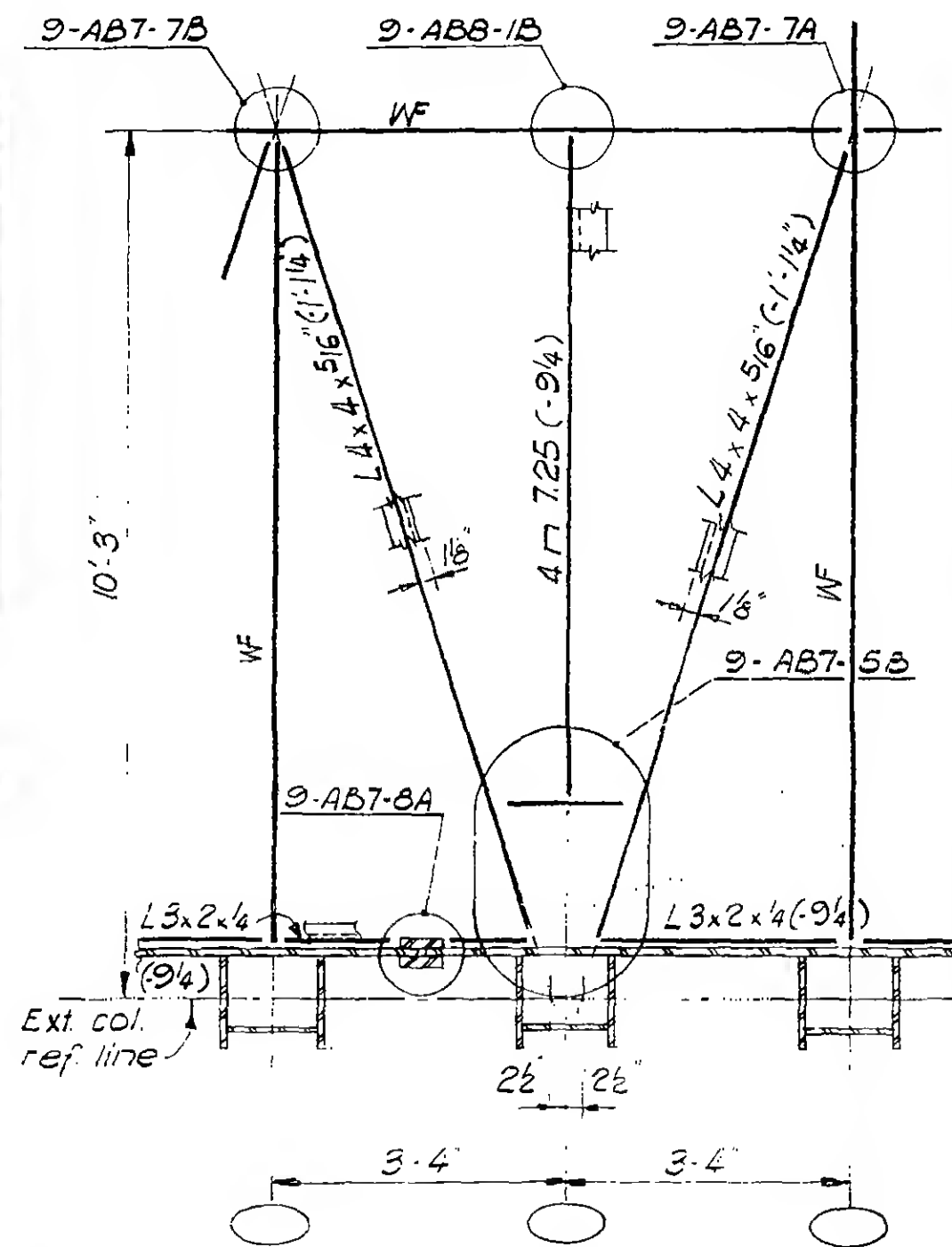
VISIONS

5/27/70



Plan 7-3G

Plan 7-3H opp. hand

Plan 7-3E

Plan 7-3F opp. hand



DESIGNED

DRAWN

DRAWN
M. Nichols

REVIEWED

REVIEWED
W. Brown

9 - AB7-3

PROJECT

THE WORLD TRADE CENTER

TITLE

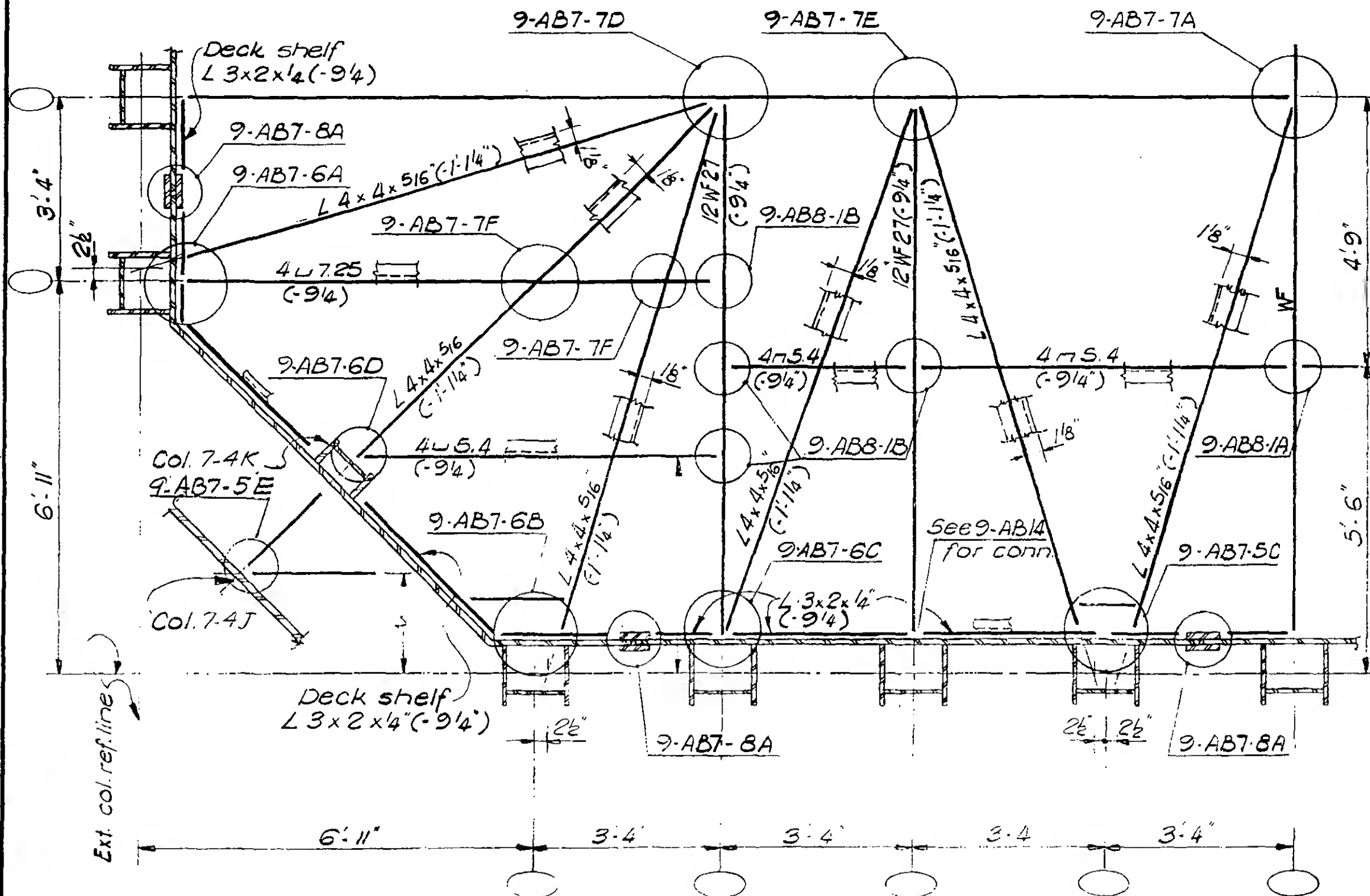
FLOOR 107-PH HORIZONTAL BRACING

DATE

4-1-70

VISIONS

5/27/70



Plan 7-4J

Plan 7-4K opp. hand



DESIGNED

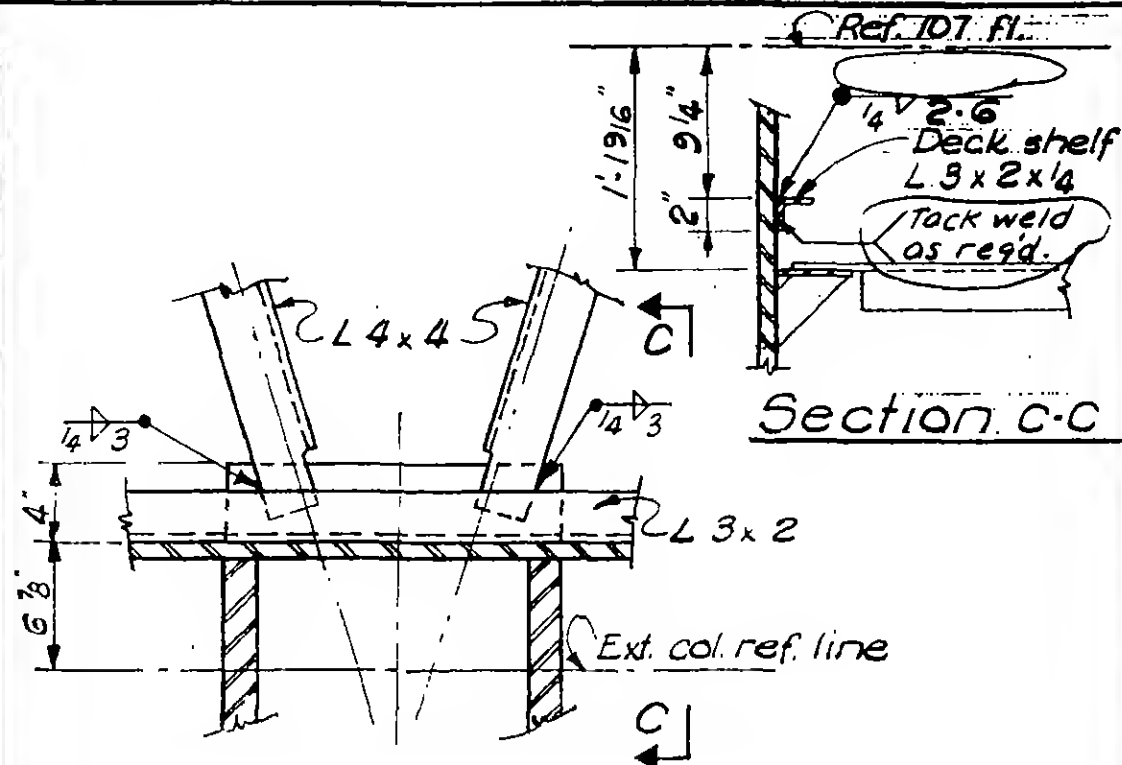
DRAWN
M. Nichols

REVIEWED

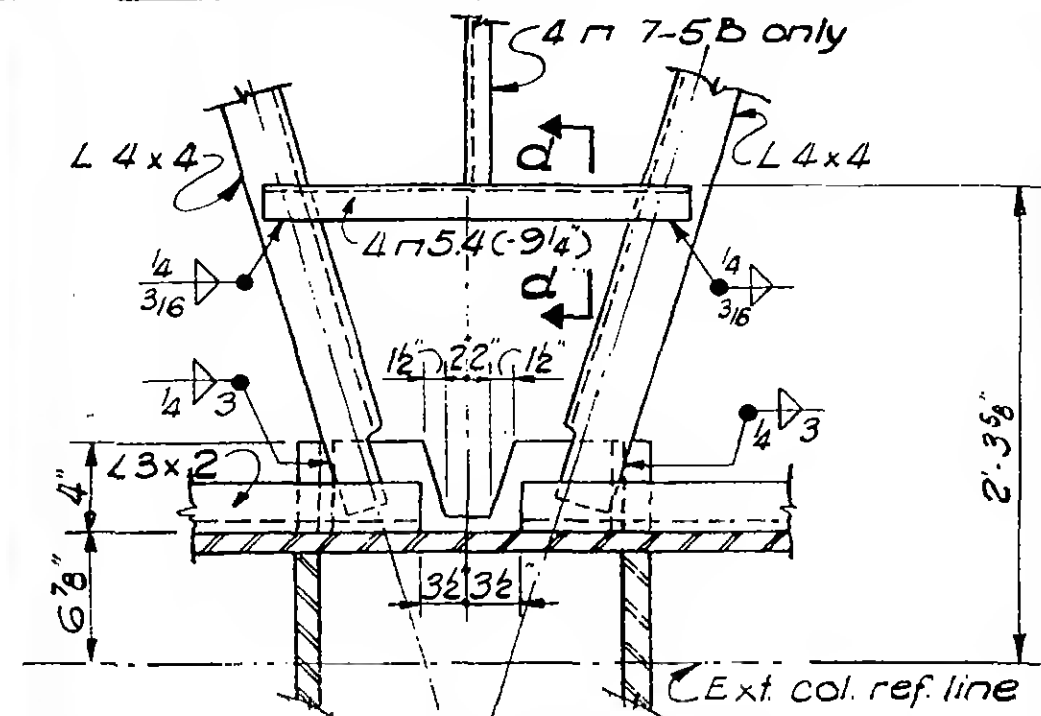
9-AB7-4

REVISIONS

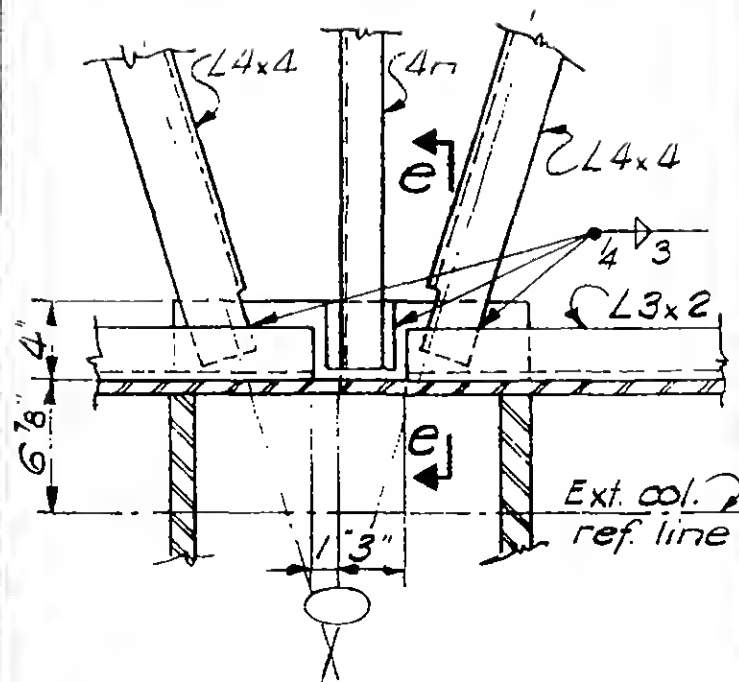
5/27/70



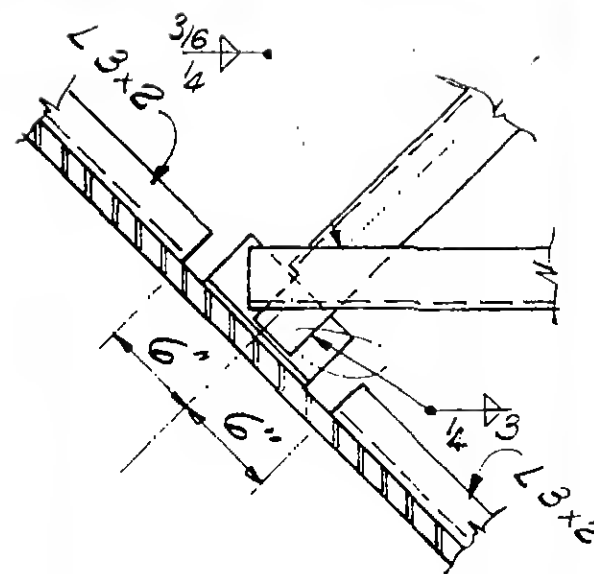
Detail 7-5A



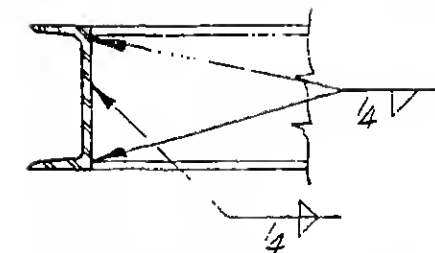
Detail 7-5B & 7-5C



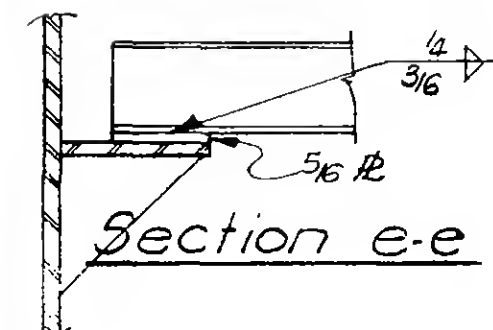
Detail 7-5D



Detail 7-5E



Section d-d
(7-5B only)



~~Section e-e~~

9 - AB7-5



SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

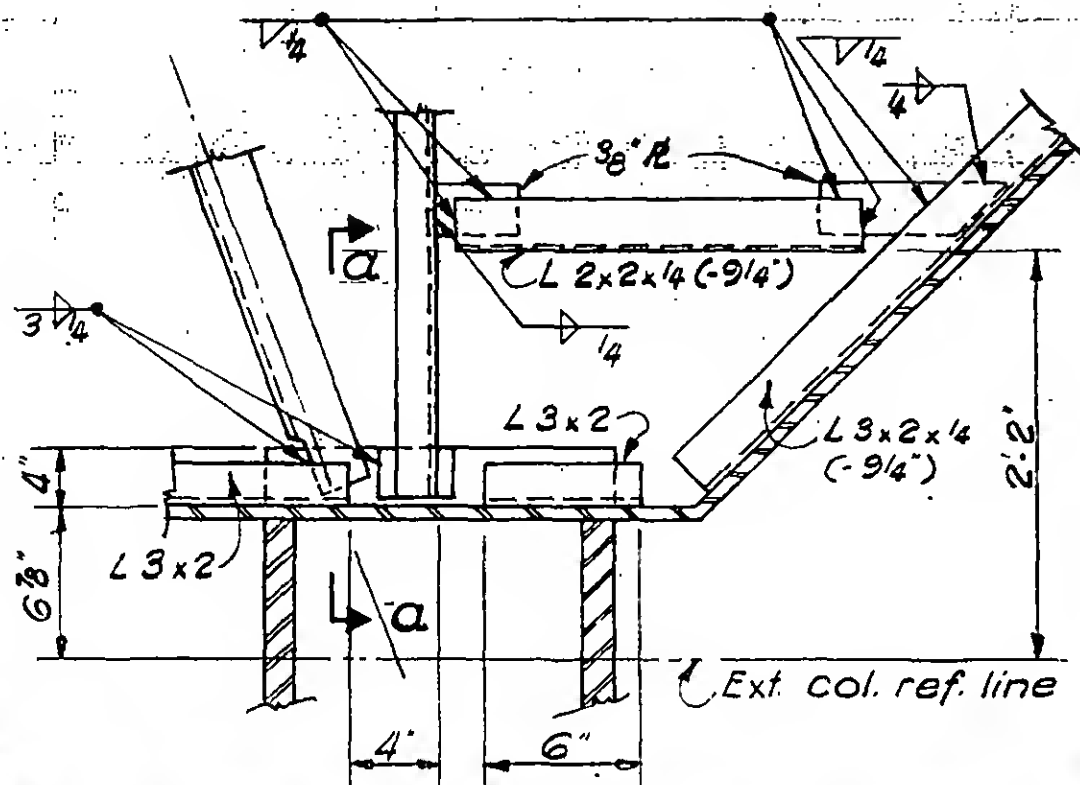
FLOOR 101-PH HORIZONTAL BRACING

DATE

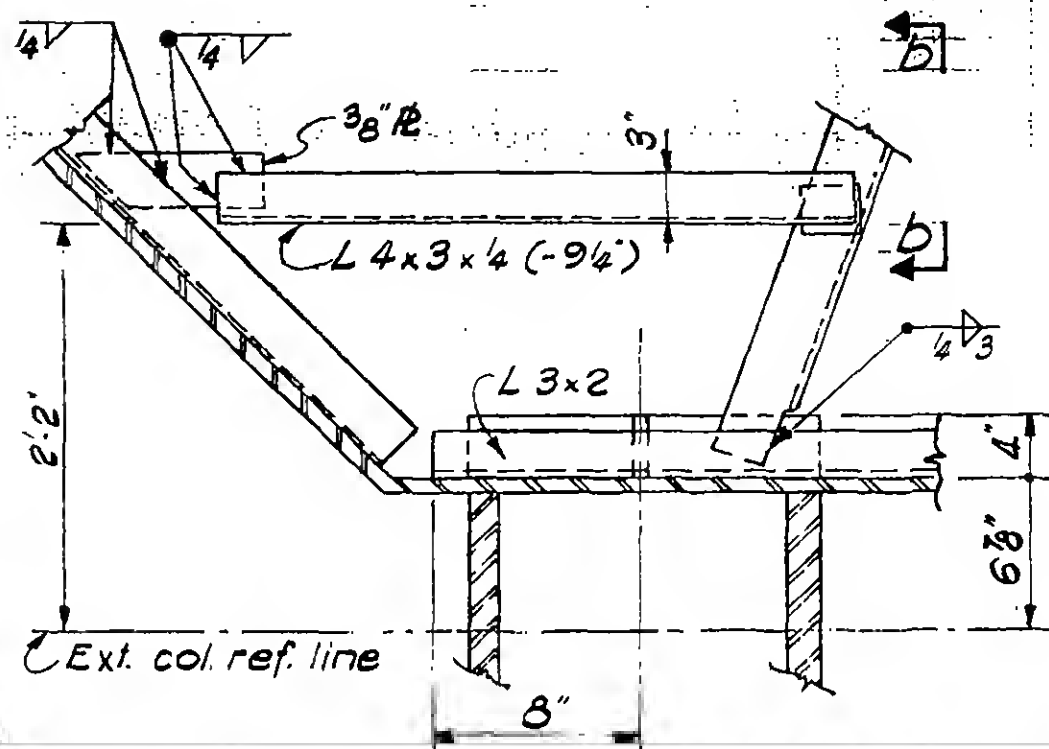
4-1-70

REVISIONS

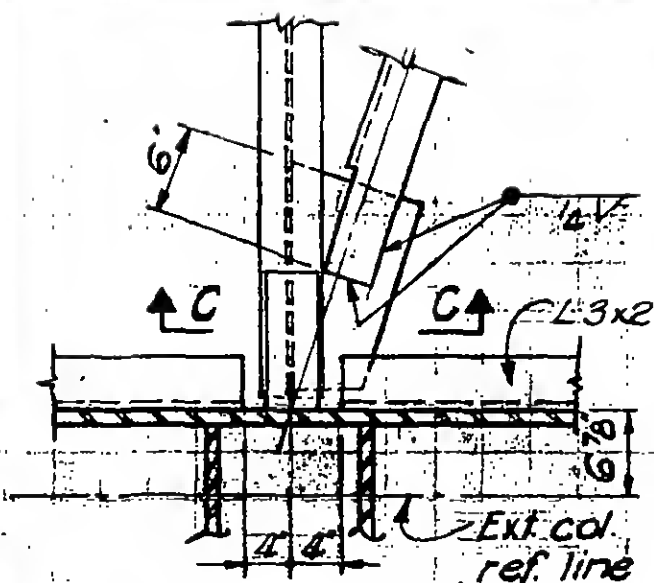
5/27/70



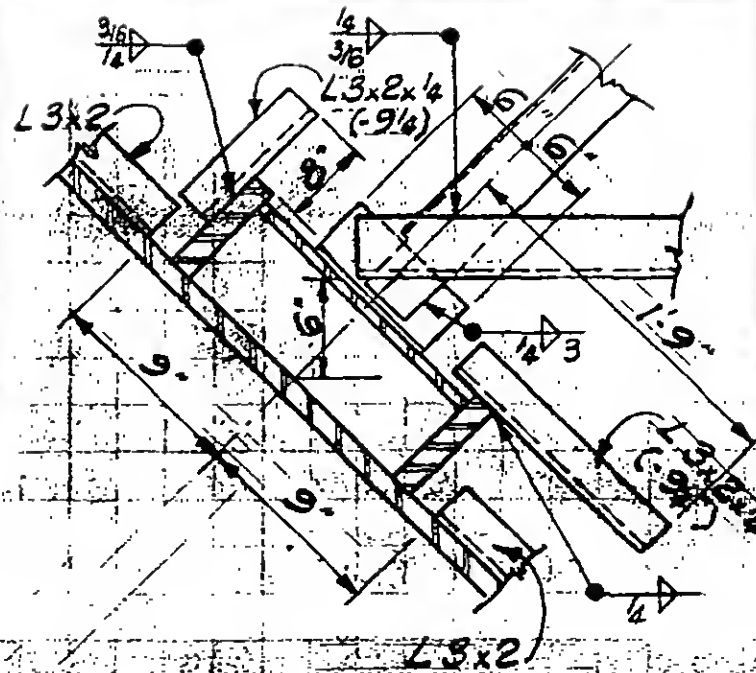
Detail 7-6A



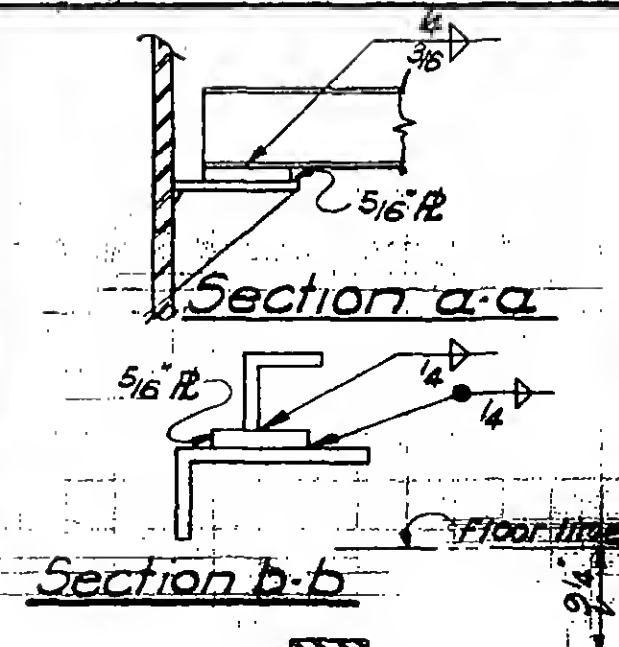
Detail 7-6B



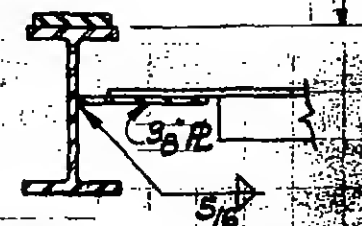
Detail 7-6C



Detail 7-6D



Section a-a



Section b-b



Section c-c

9-AB7-6



DESIGNED

DRAWN

M. Nicholson

W. Brewer

PROJECT

THE WORLD TRADE CENTER

TITLE

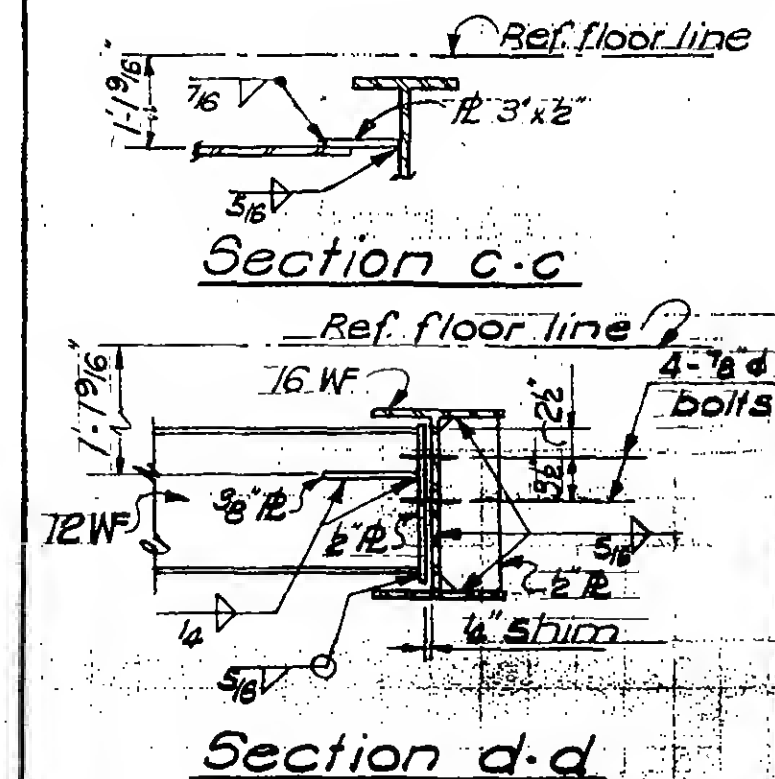
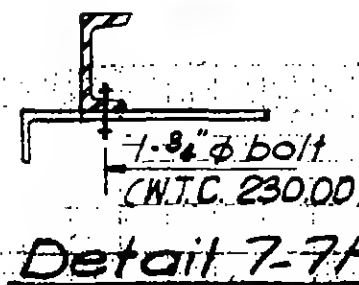
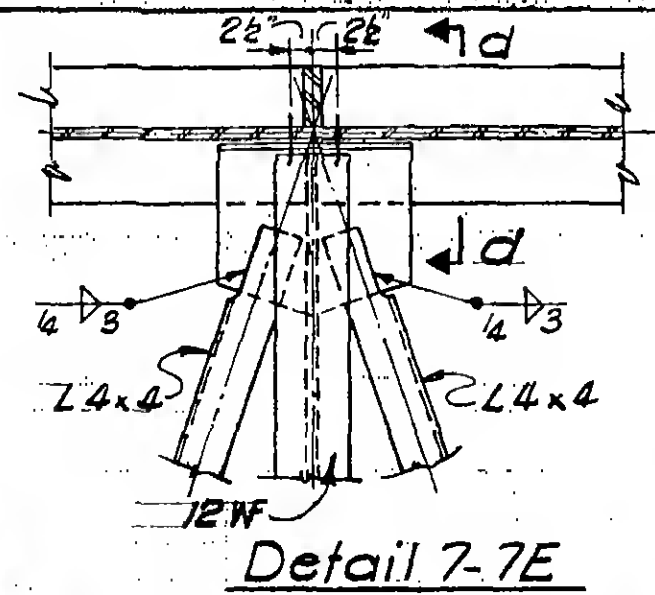
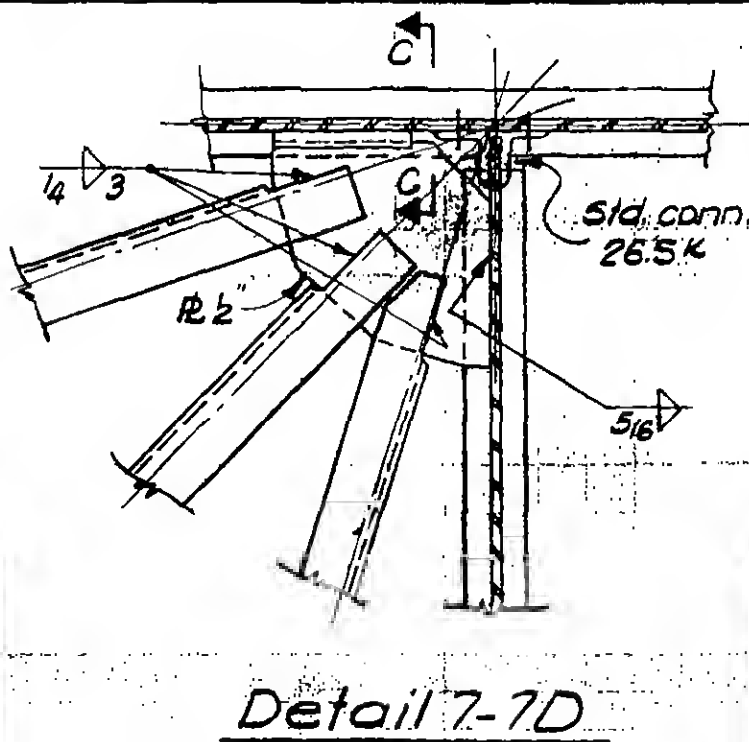
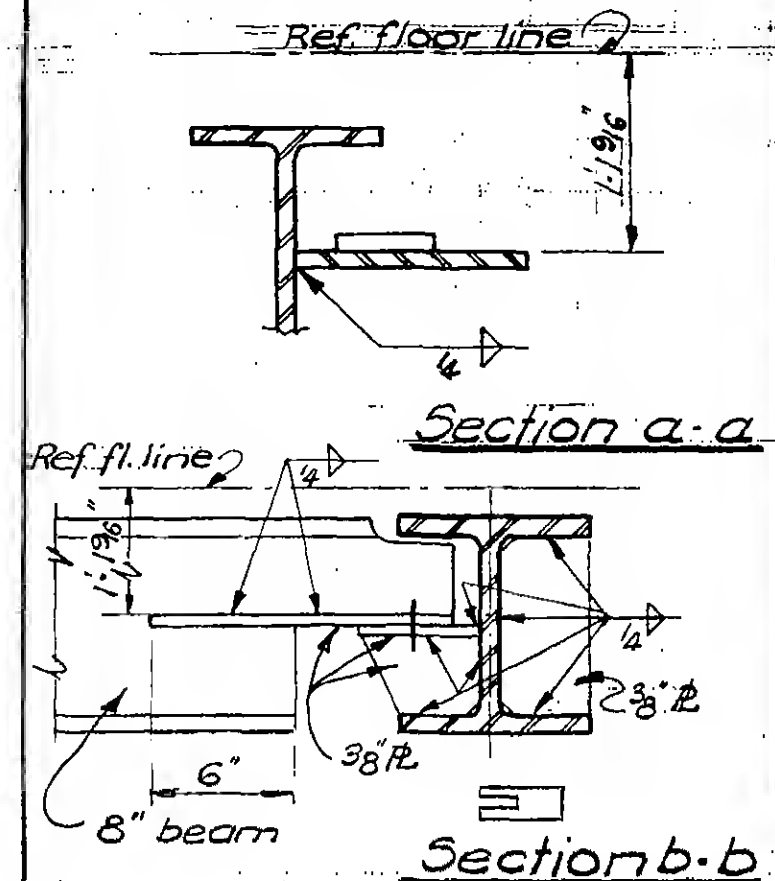
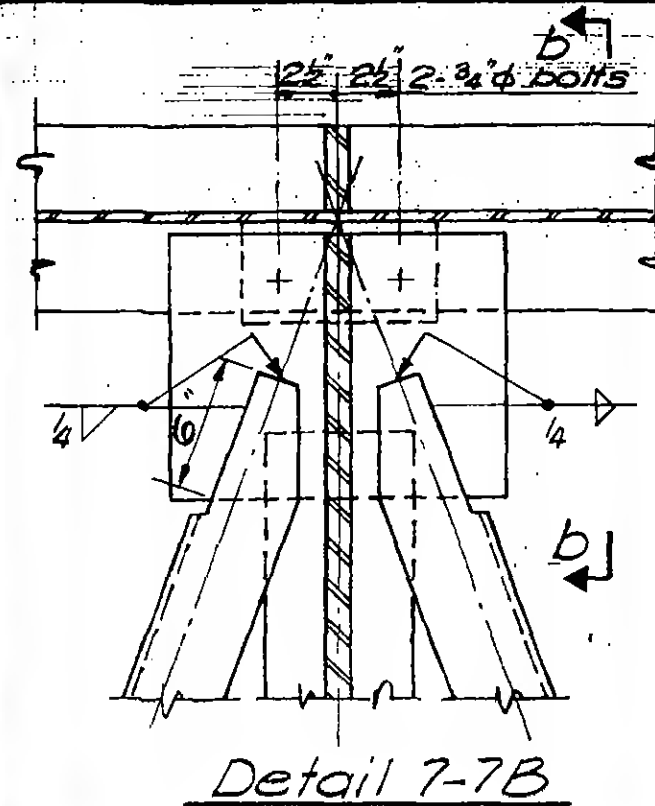
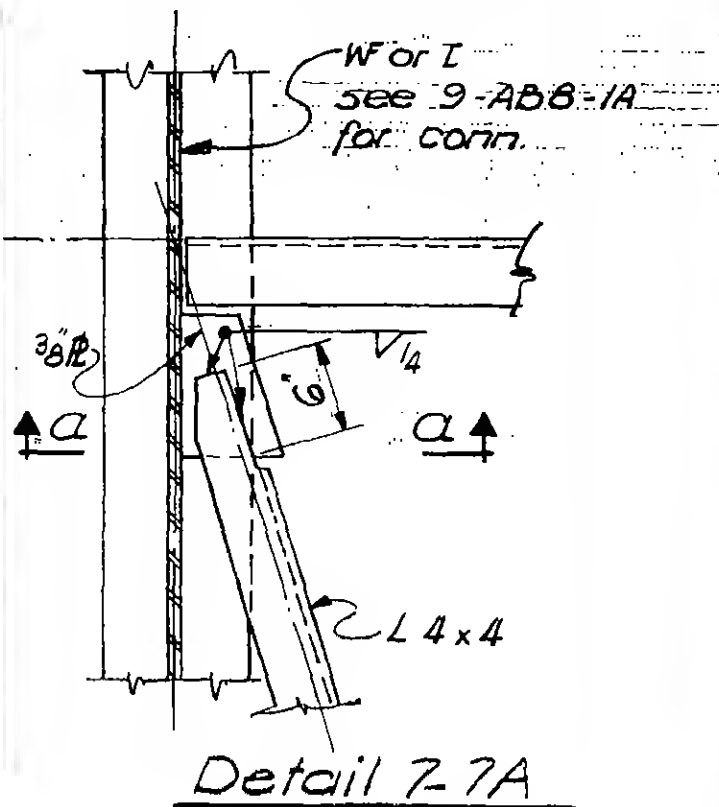
FLOOR 107 - PH HORIZONTAL BRACING

DATE

4-1-70

REVISIONS

5/27/70



DESIGNED

DRAWN

M. Nichols

REVIEWED

W. Brewer

9-AB7-7

PROJECT

THE WORLD TRADE CENTER

TITLE

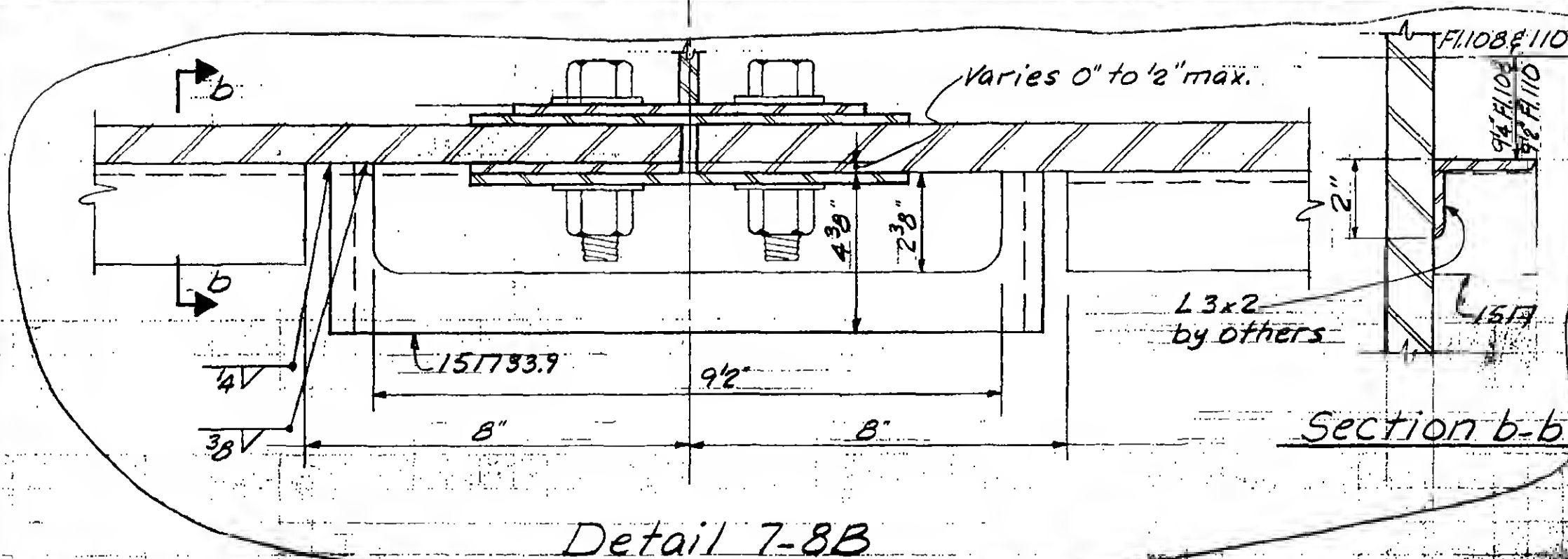
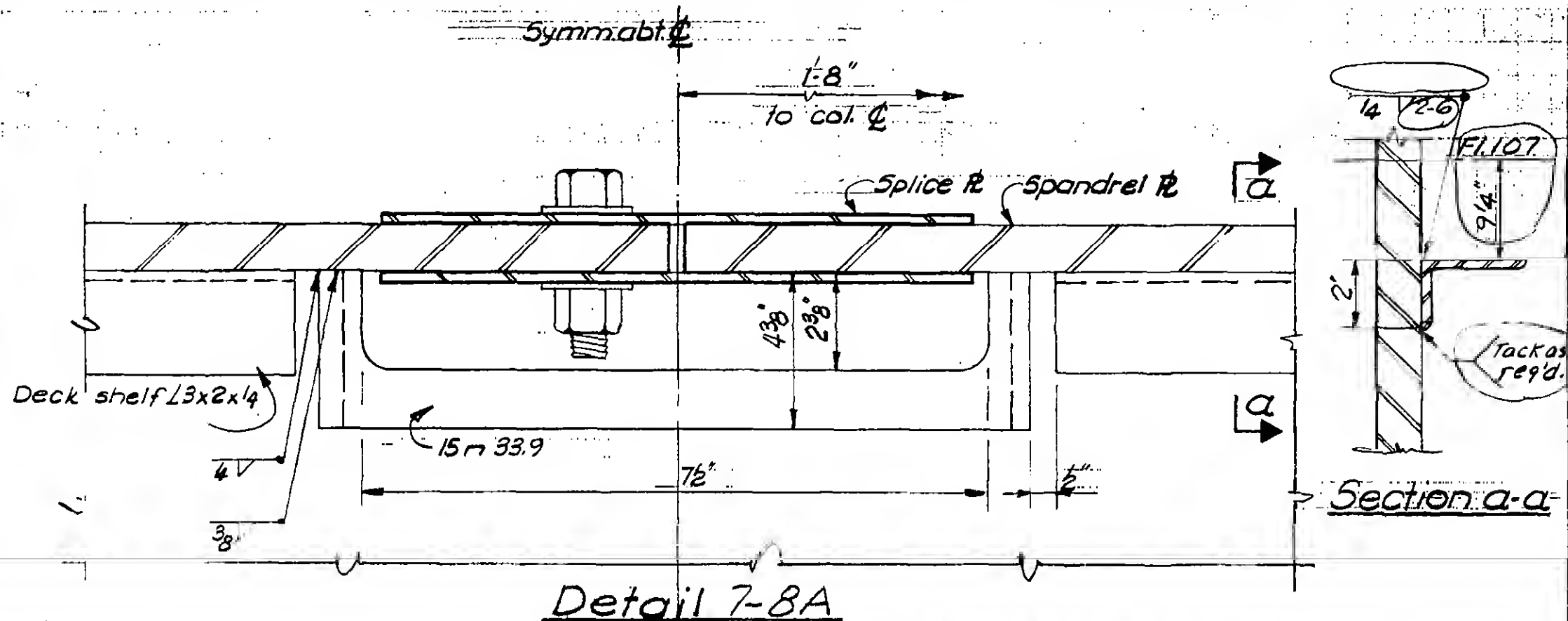
FLOOR 107-PH DECK SUPPORT DETAILS

DATE

4-1-70

REVISIONS

5/27/70



DESIGNED

DRAWN

H. Nichols

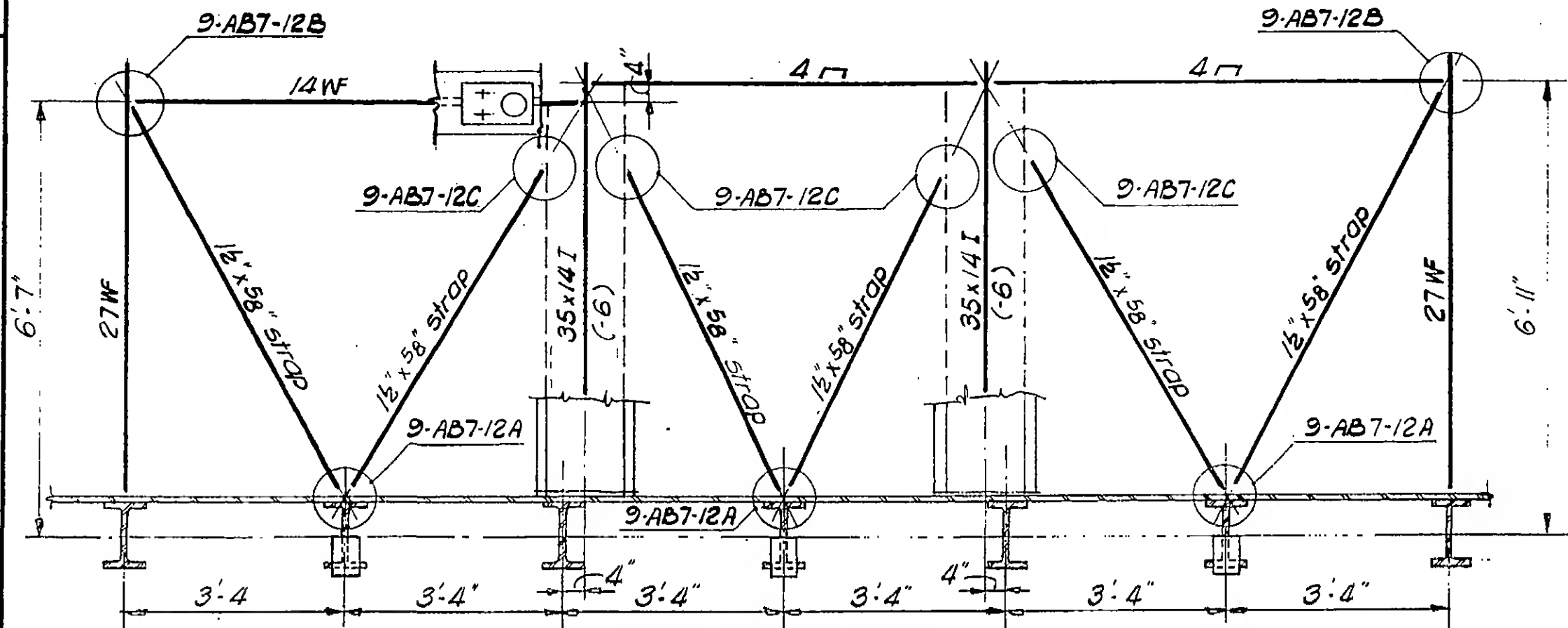
REVIEWED

W. P. Newer

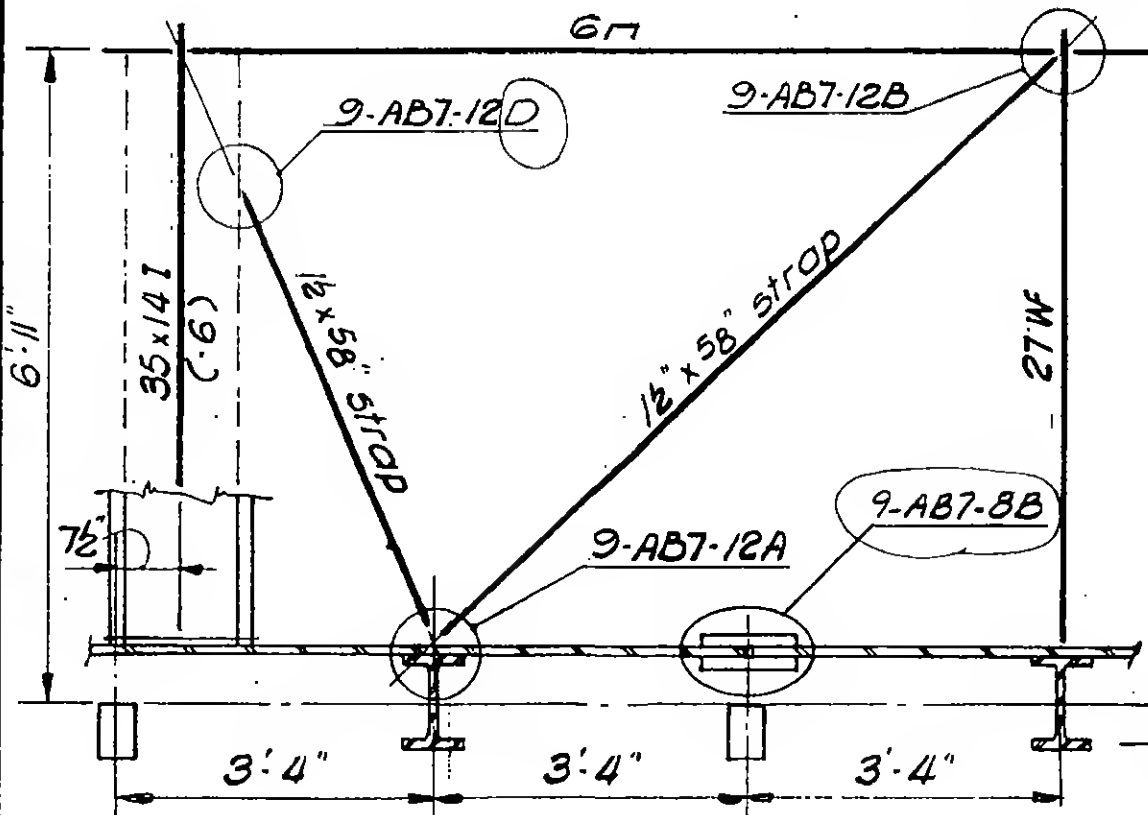
9-AB7-8

REVISIONS

5/27/70



Plan 7-9A

Plan 7-9B (as shown)
Plan 7-9C (opp. hand)

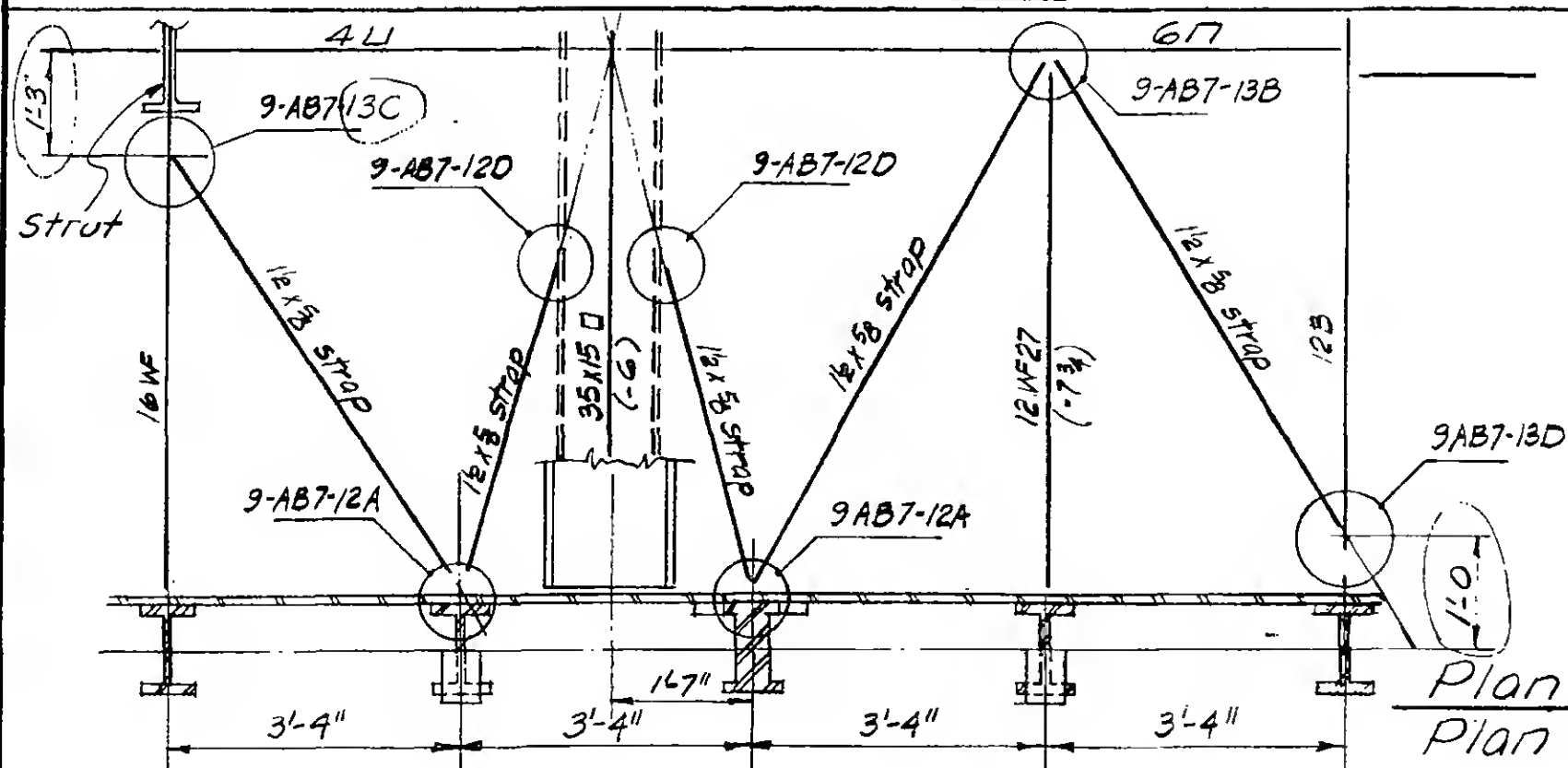
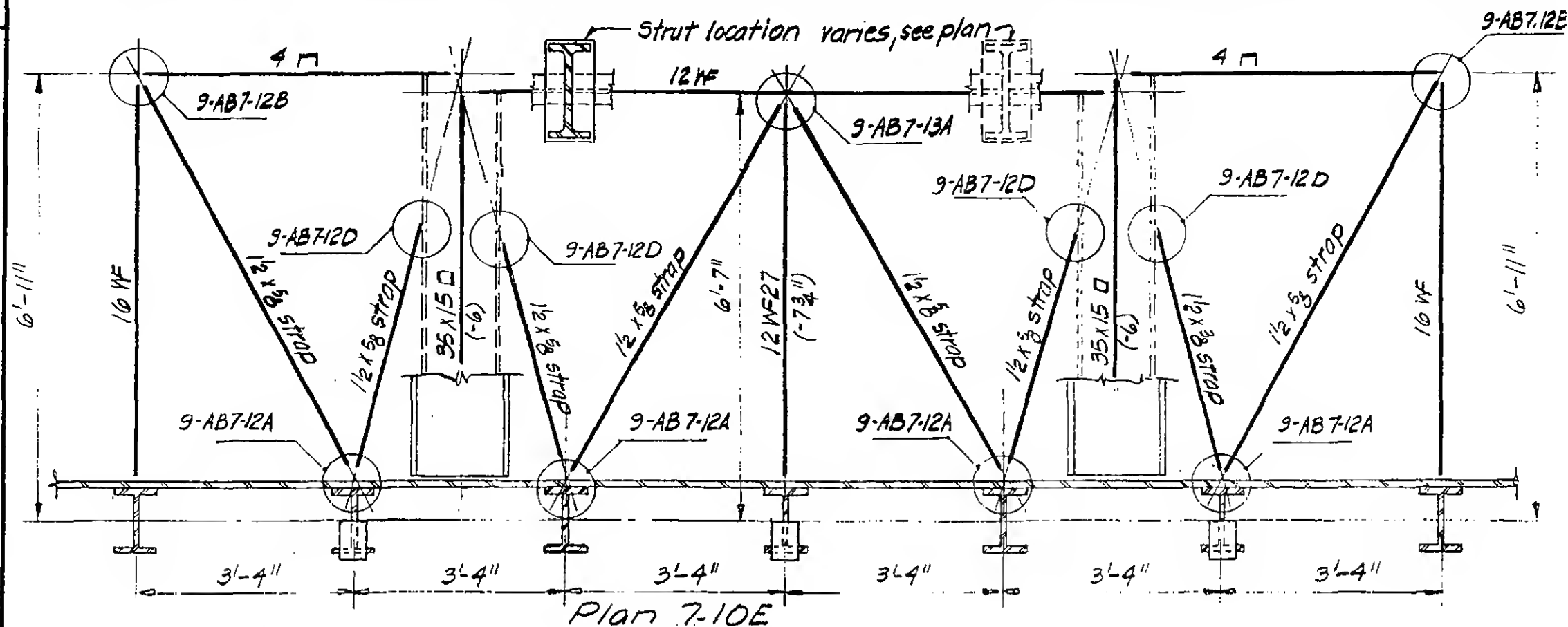
DESIGNED

DRAWN
M. NicholsREVIEWED
W. Brewer

9-AB7-9

REVISIONS

5/27/70



Plan 7-10F (as shown)
Plan 7-10G (opp. hand)

9-AB7-10



DESIGNED

DRAWN

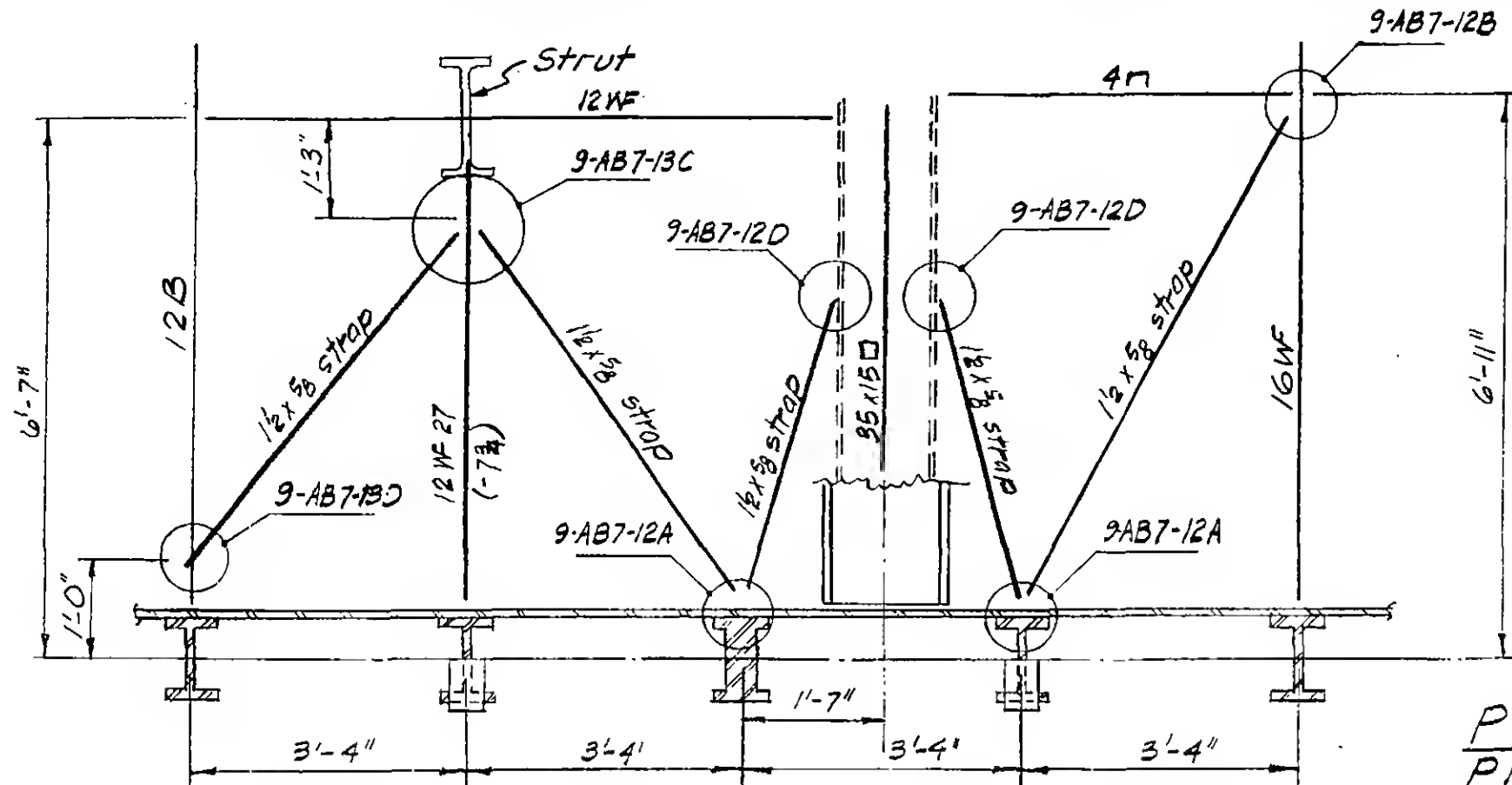
DRAWN
M. Nichols

REVIEWED

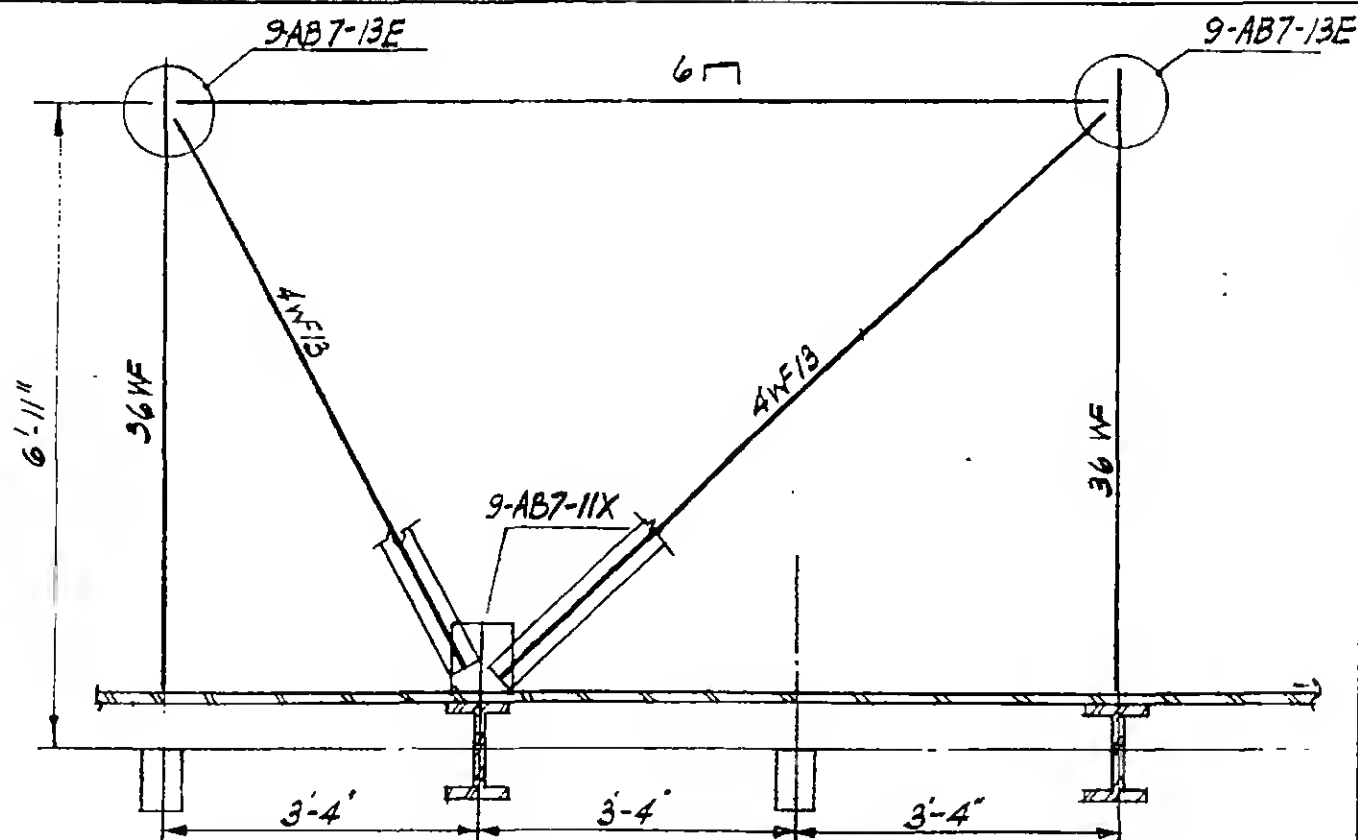
REVIEWED
W. Brewer

REVISIONS

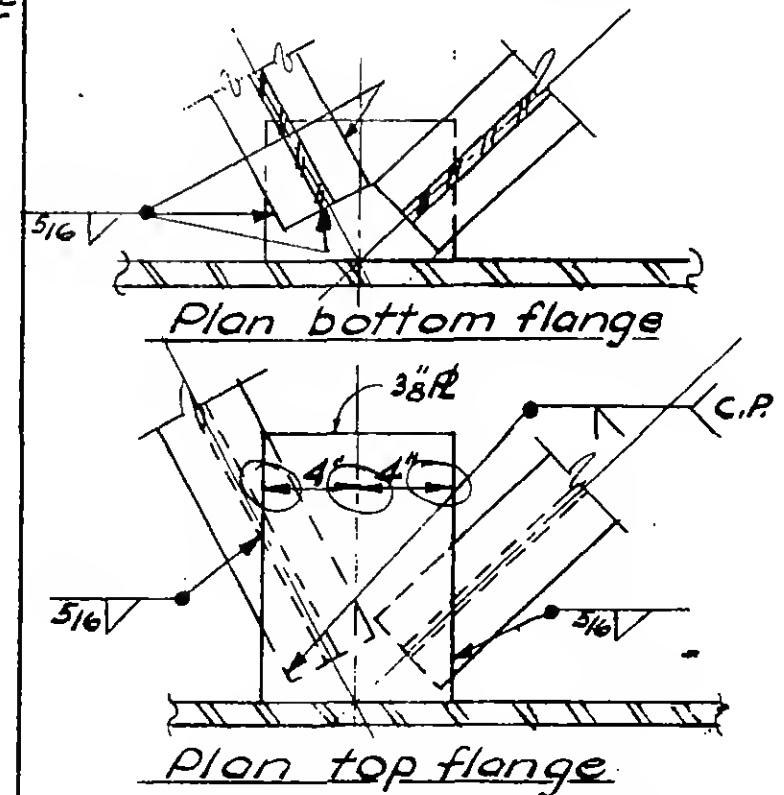
5/27/70
6/15/70
7/8/70



Plan 7-11K (as shown)
Plan 7-11M (opp. hand)



Plan 7-11P as shown Plan 7-11Q opp. hand



DETAIL 7-11X

9-AB7-11



DESIGNED

DRAWN

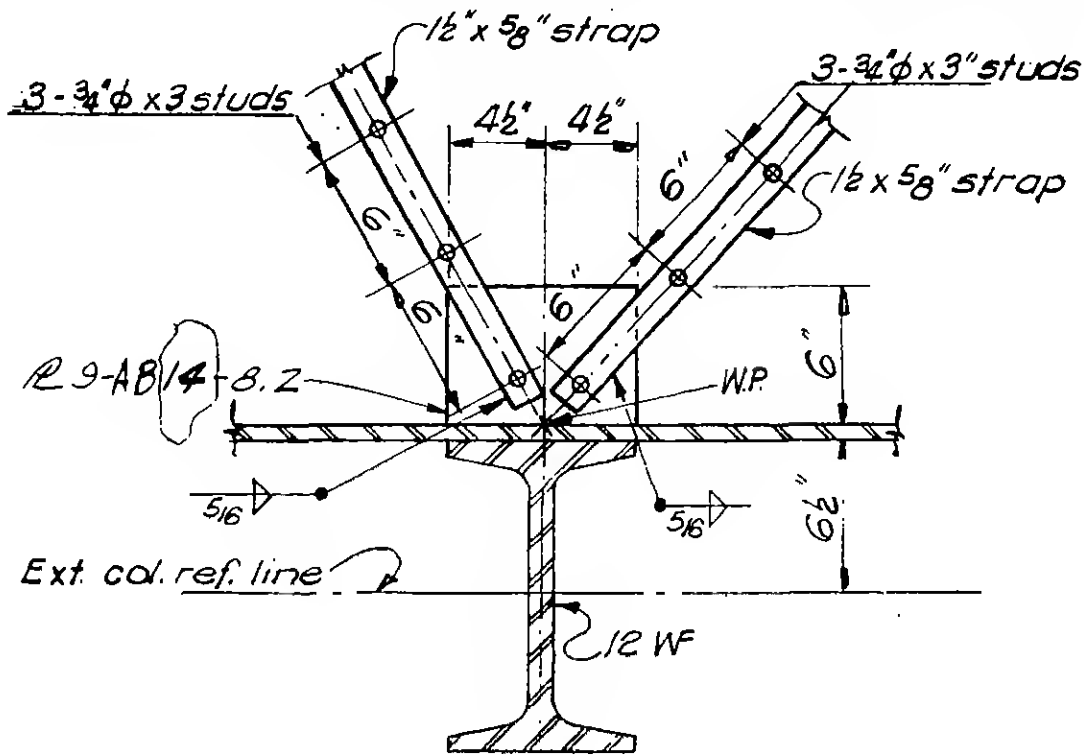
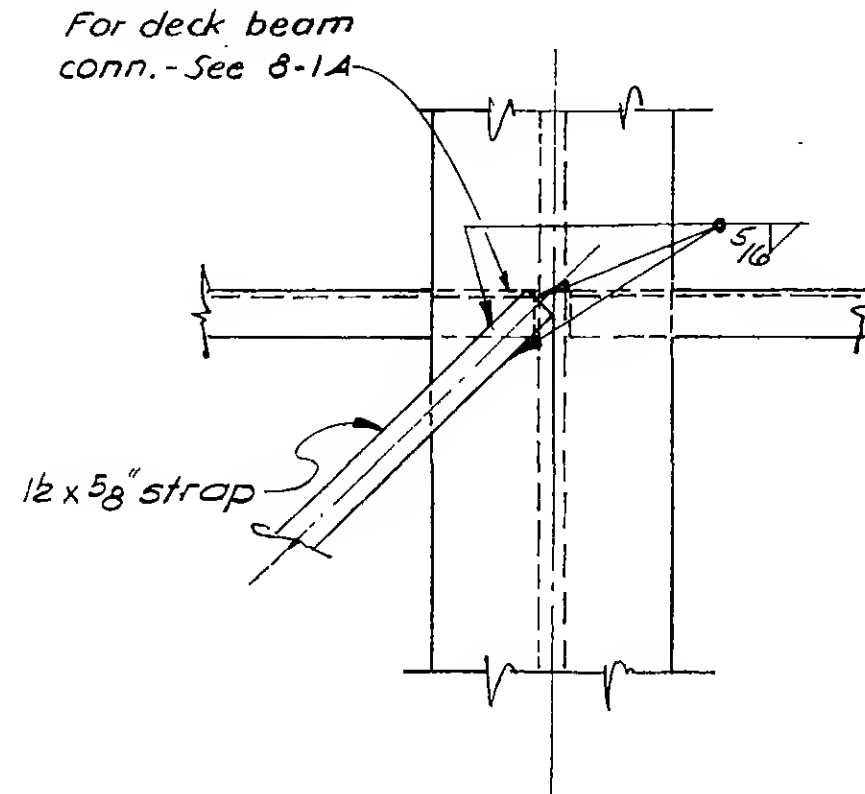
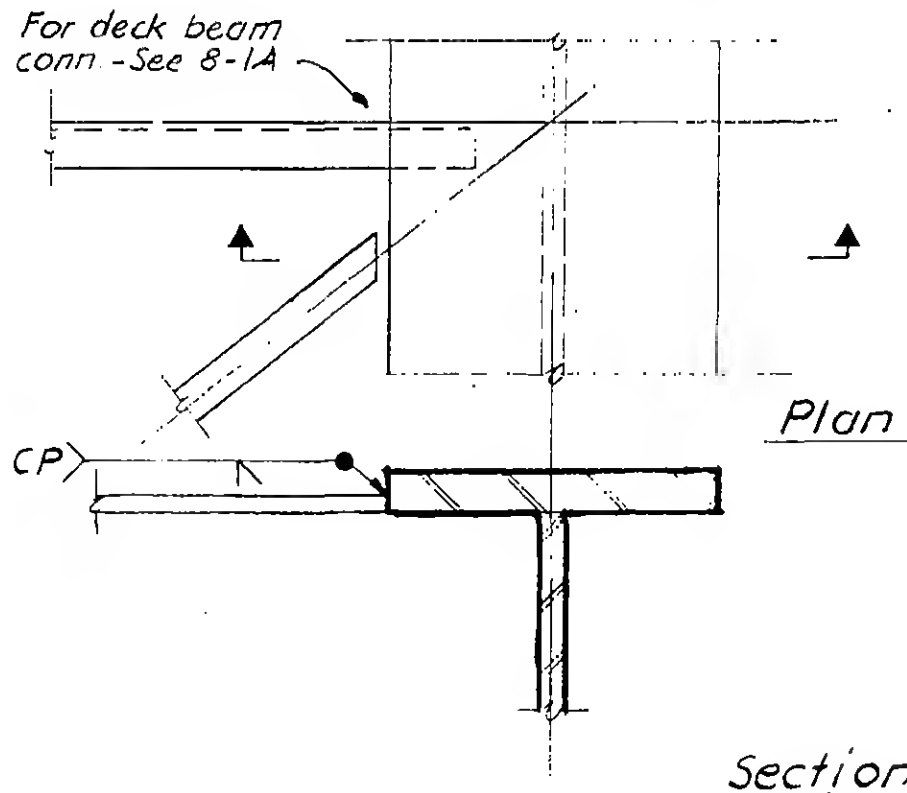
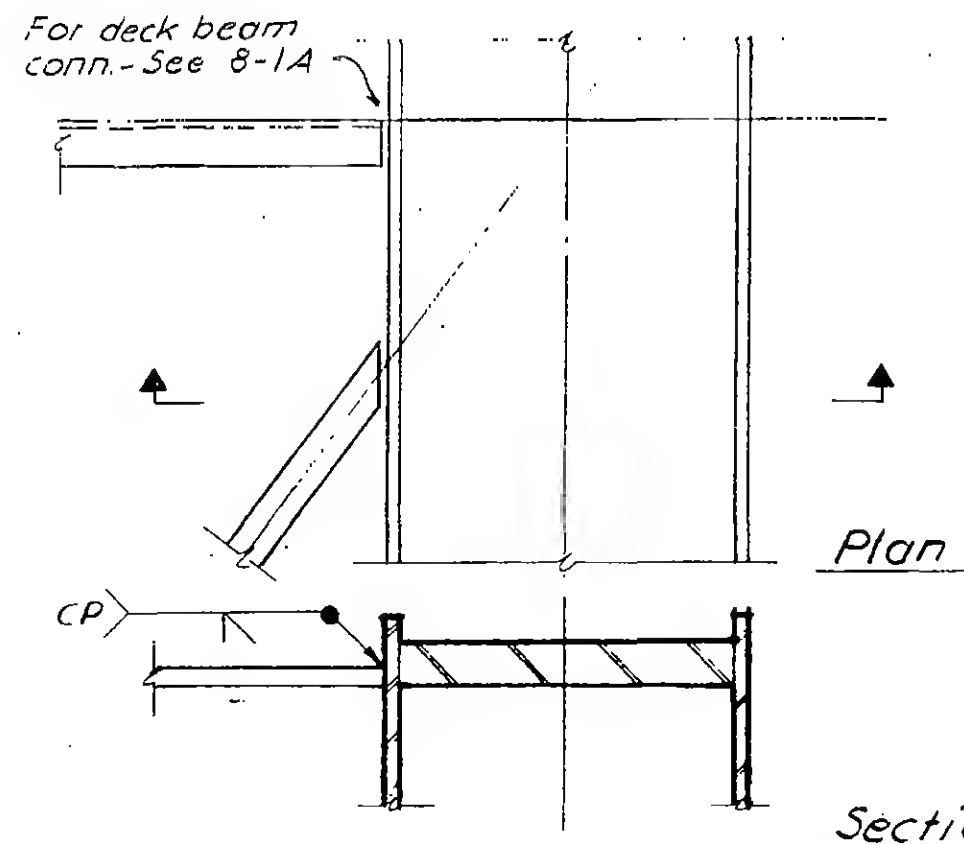
P. Ozeki

REVIEWED

REVIEWED
W. Brewer

REVISIONS

5-27-70
6-15-70

Detail 7-12ADetail 7-12BDetail 7-12CDetail 7-12D

9-AB7-12



DESIGNED

DRAWN
M. NicholsREVIEWED
W. Brewer

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

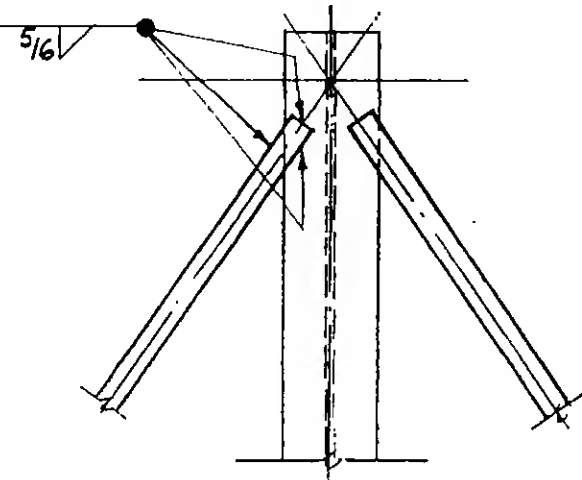
TITLE FL. 107-PH, HORIZONTAL BRACING

DATE 4-1-70

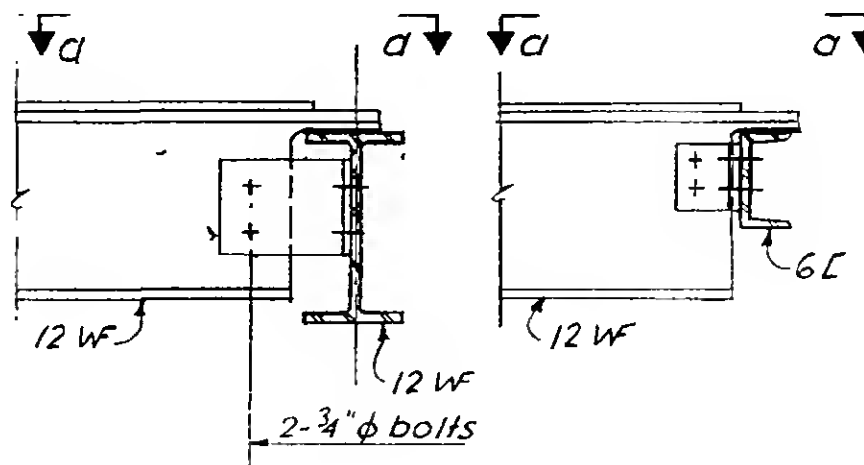
REVISIONS

5-27-70

6-15-70

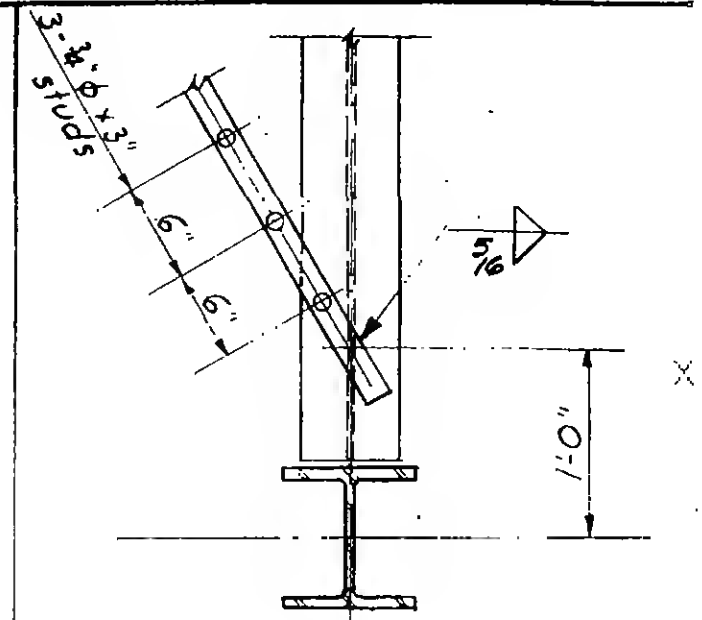


Plan a-a

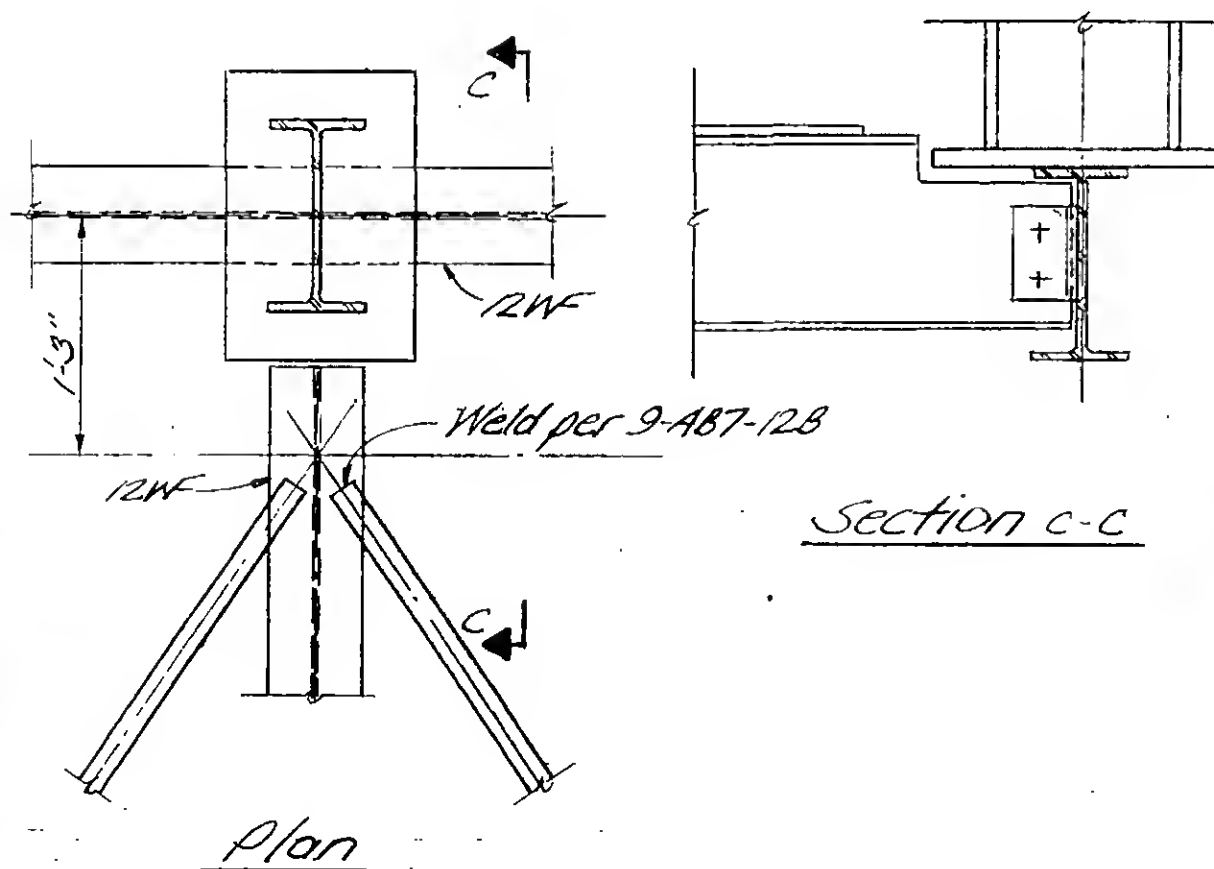


Detail 7-13A

Detail 7-13B



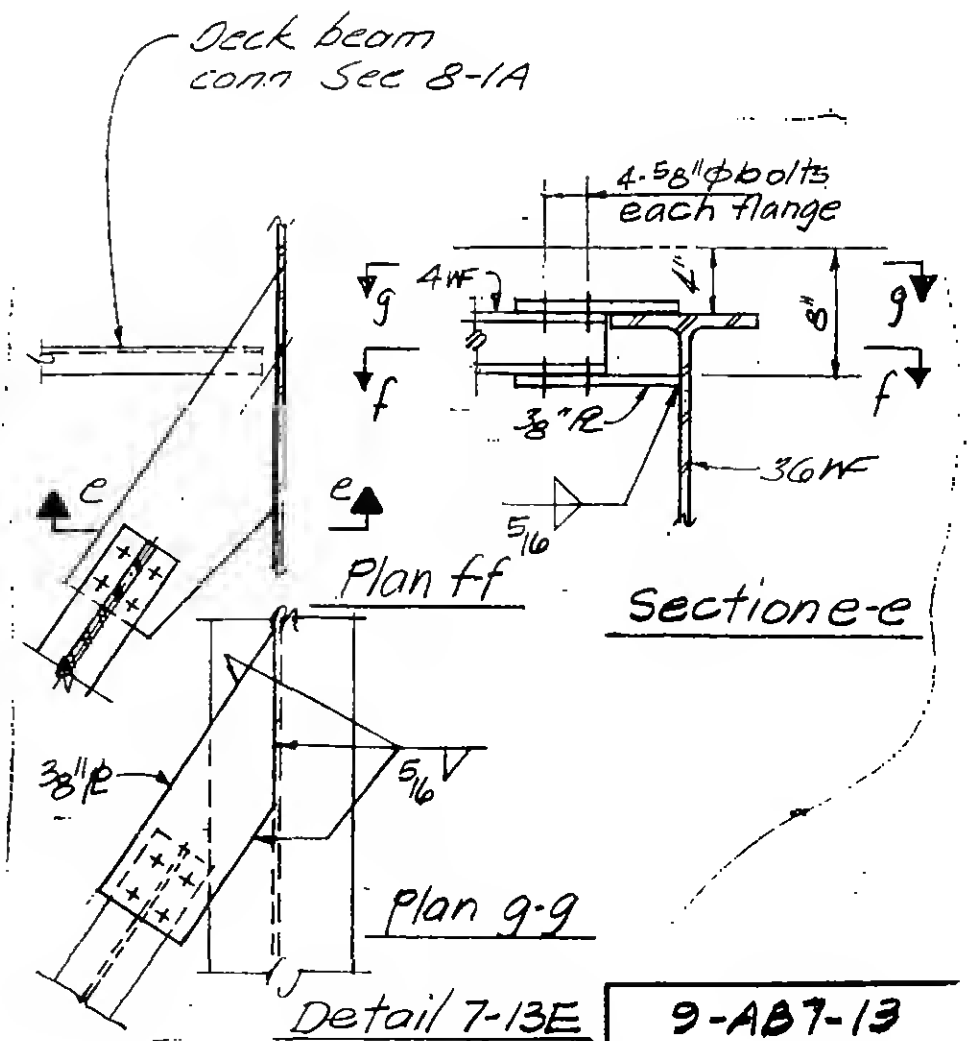
Detail 7-13D



Plan

Section C-C

Detail 7-13C



Plan ff

Section e-e

Plan 9-9

Detail 7-13E

9-AB7-13



DESIGNED

DRAWN F. Smith

REVIEWED

(10) Brewer

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

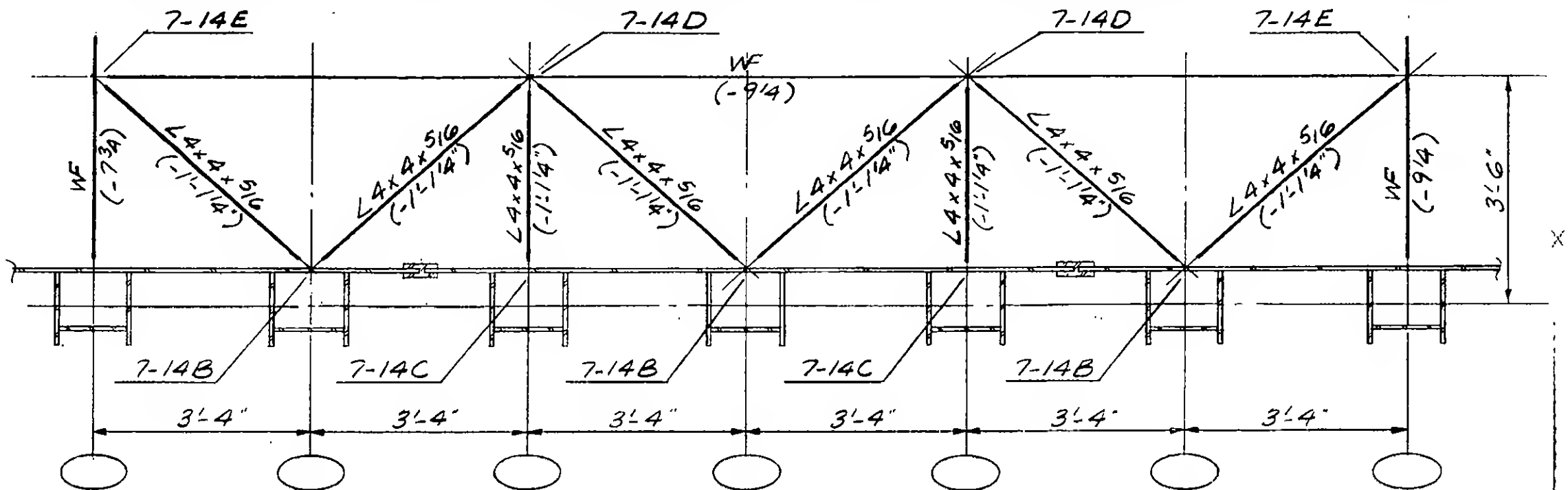
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

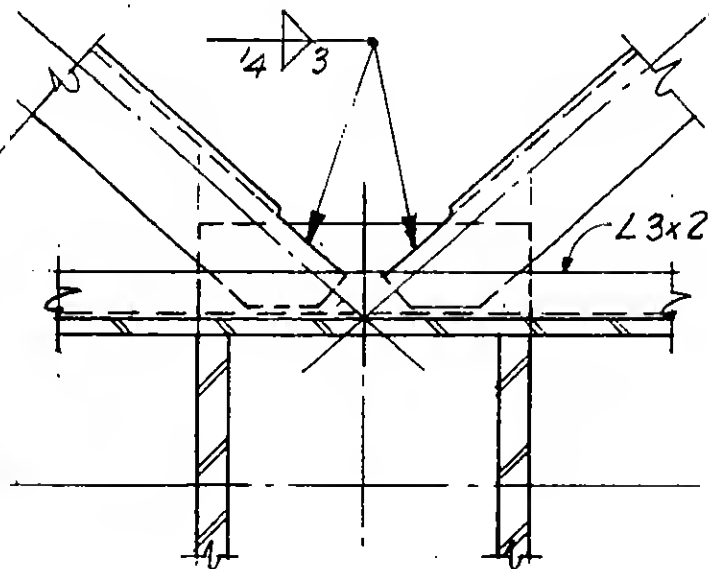
TITLE FLOOR 107-PH HORIZONTAL BRACING

DATE 8-3-70

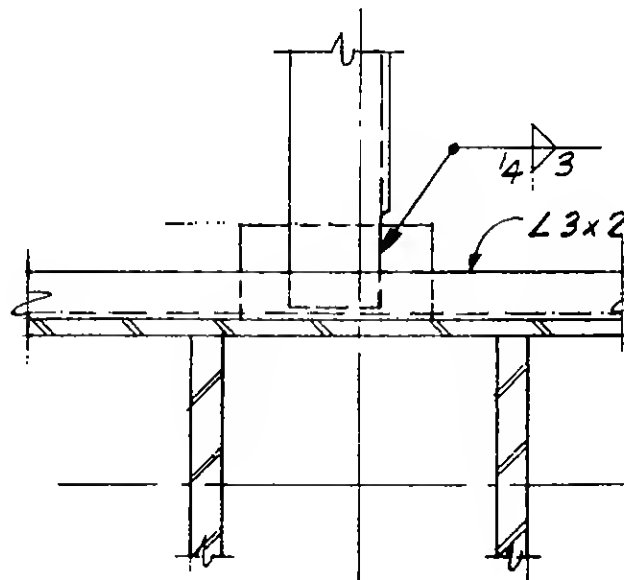
REVISIONS



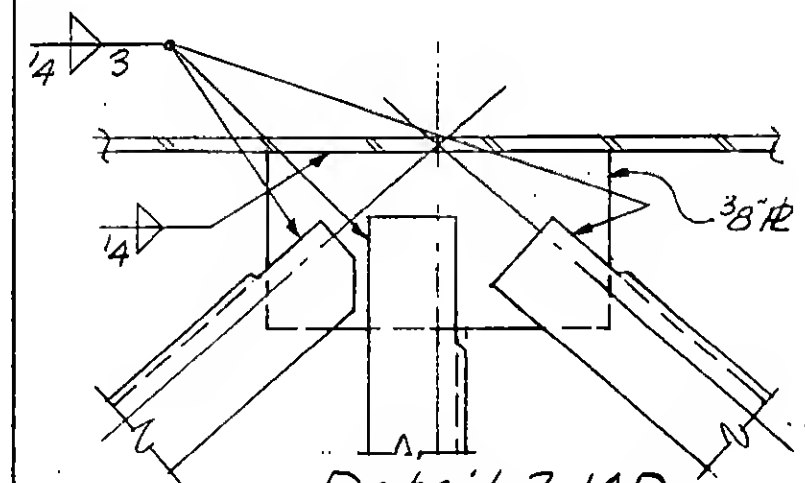
Plan 7-14A



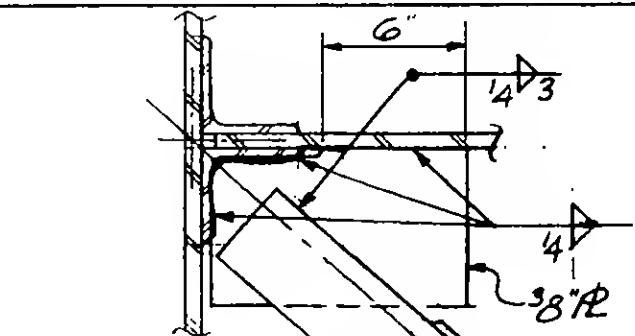
Detail 7-14B



Detail 7-14C



Detail 7-14D



Detail 7-14E

9-AB7-14



DESIGNED

DRAWN
A. FRANQUI

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

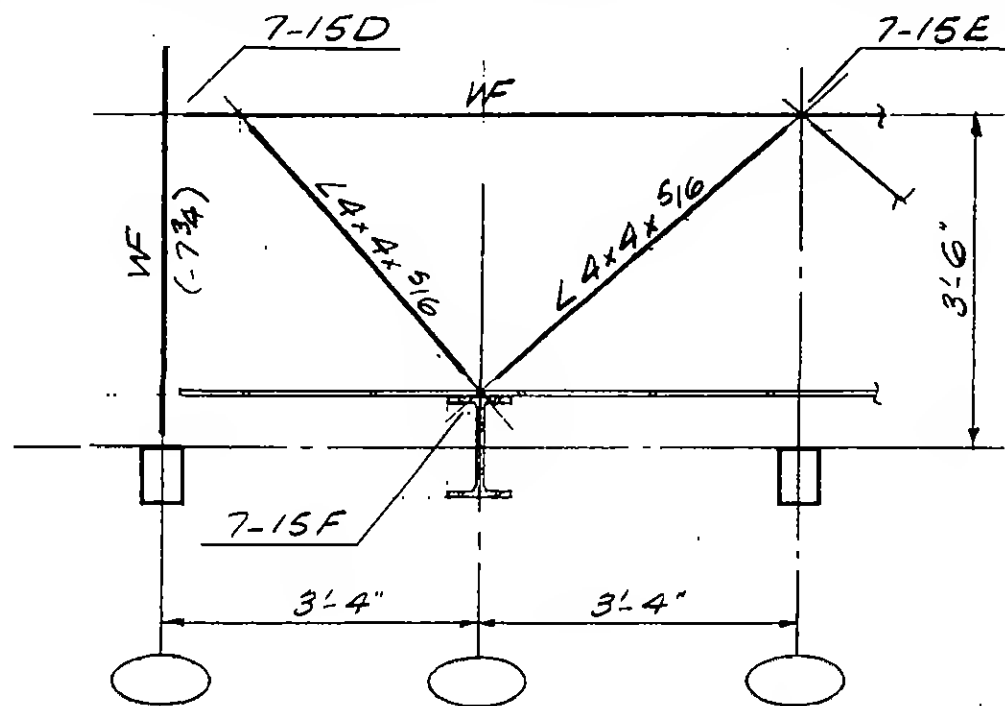
PROJECT THE WORLD TRADE CENTER

TITLE FLOOR 107-PH HORIZONTAL BRACING

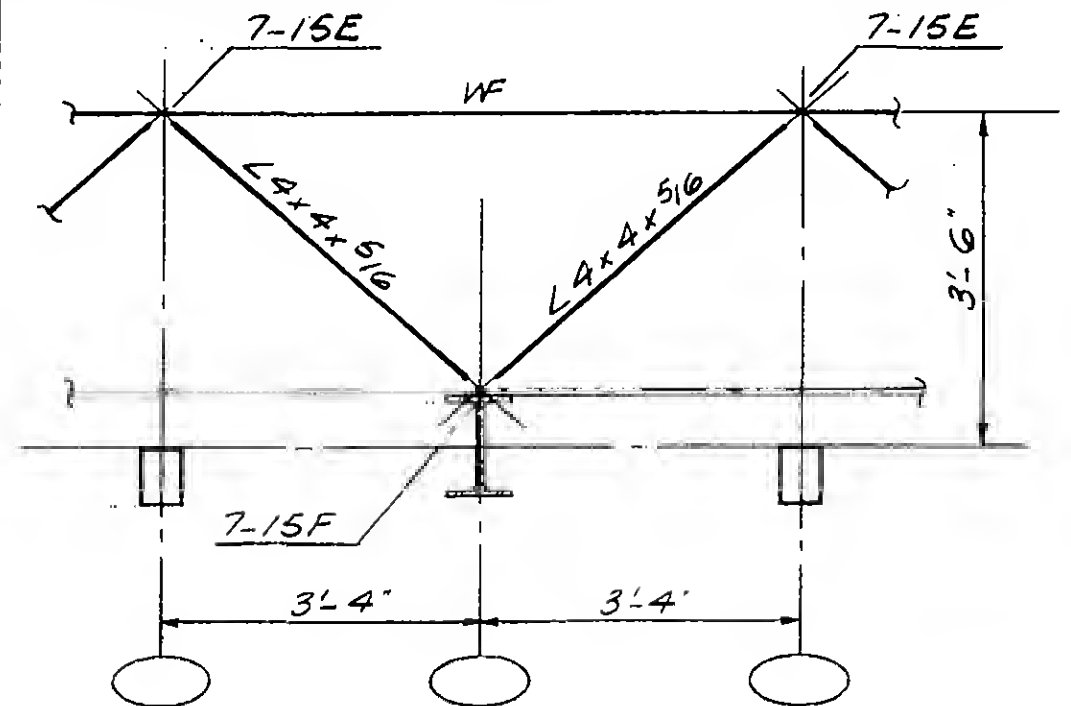
DATE 8-3-70

REVISIONS

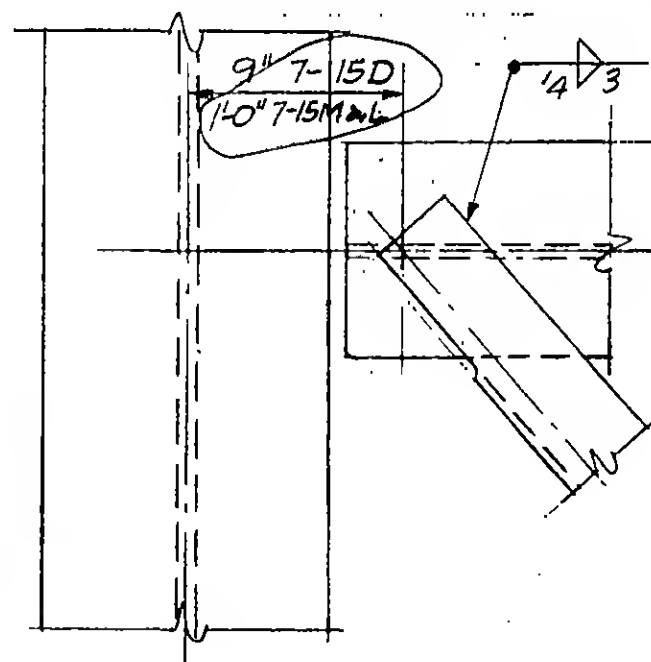
12/14/70



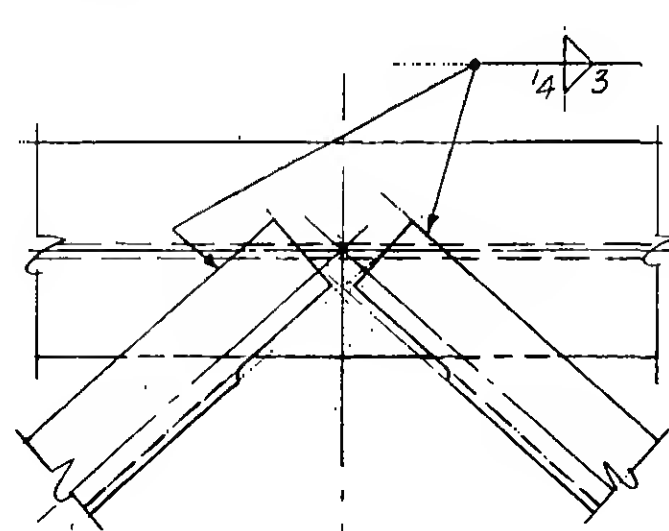
Plan 7-15A
Plan 7-15B opp hand



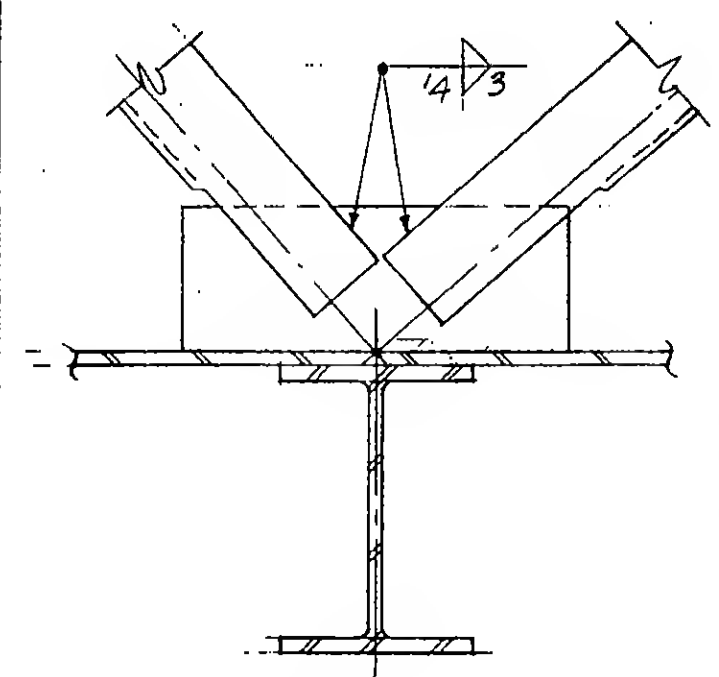
Plan 7-15C



Detail 7-15D & 7-15L
Detail 7-15M, opp. hand



Detail 7-15E



Detail 7-15F



DESIGNED

DRAWN
A. FRANQUI

REVIEWED

9-B7-15.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

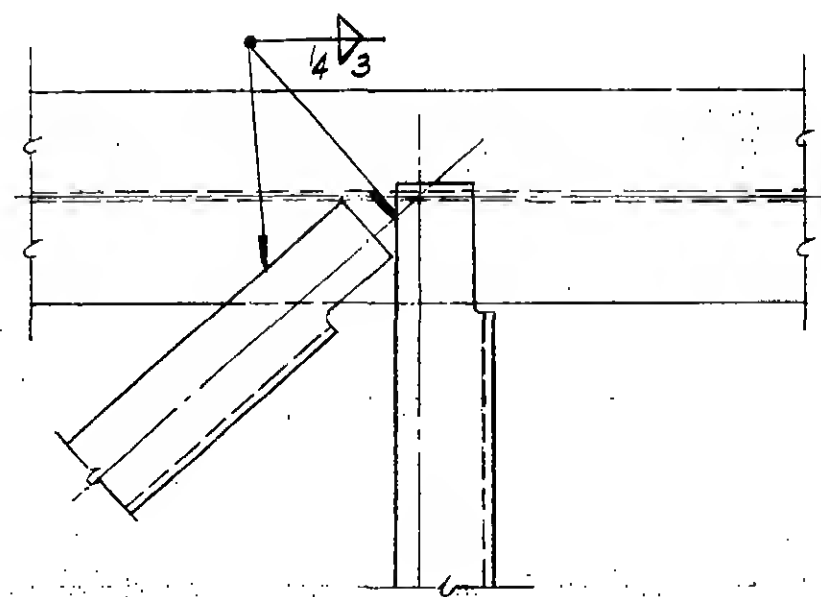
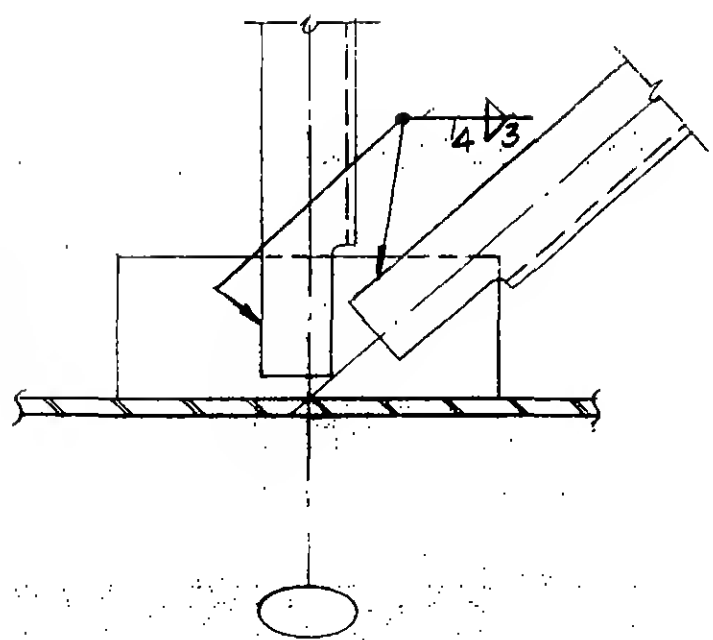
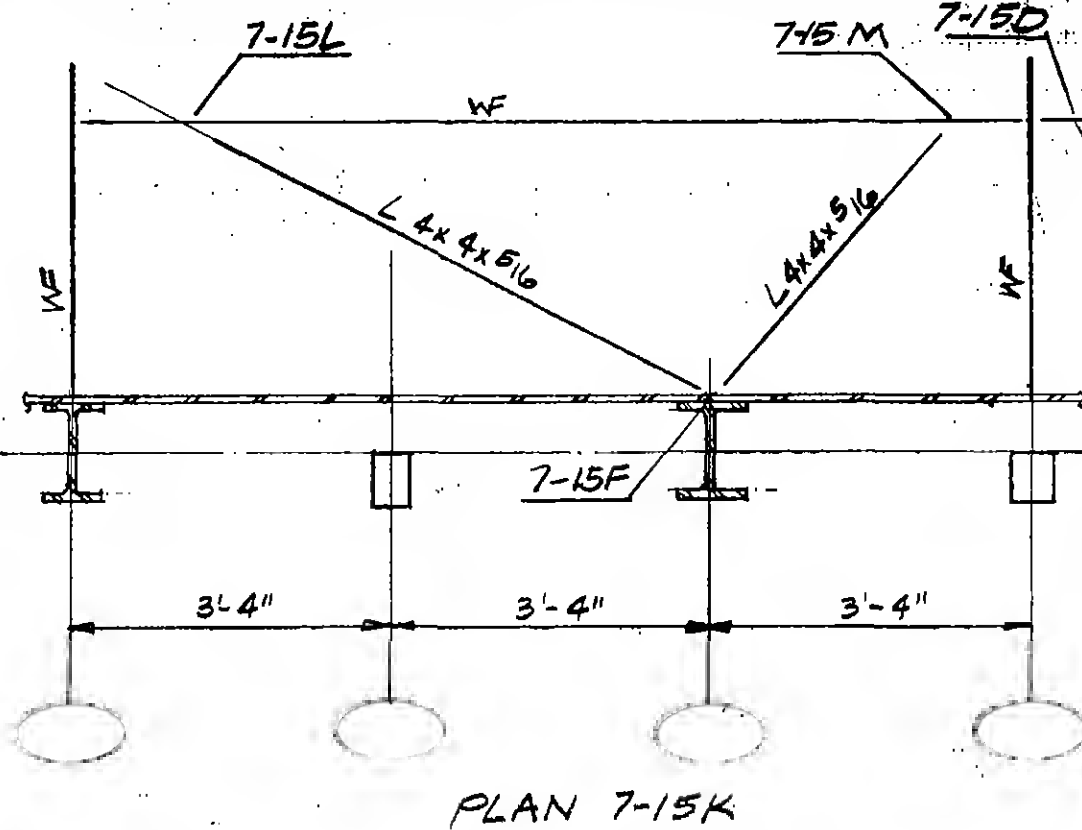
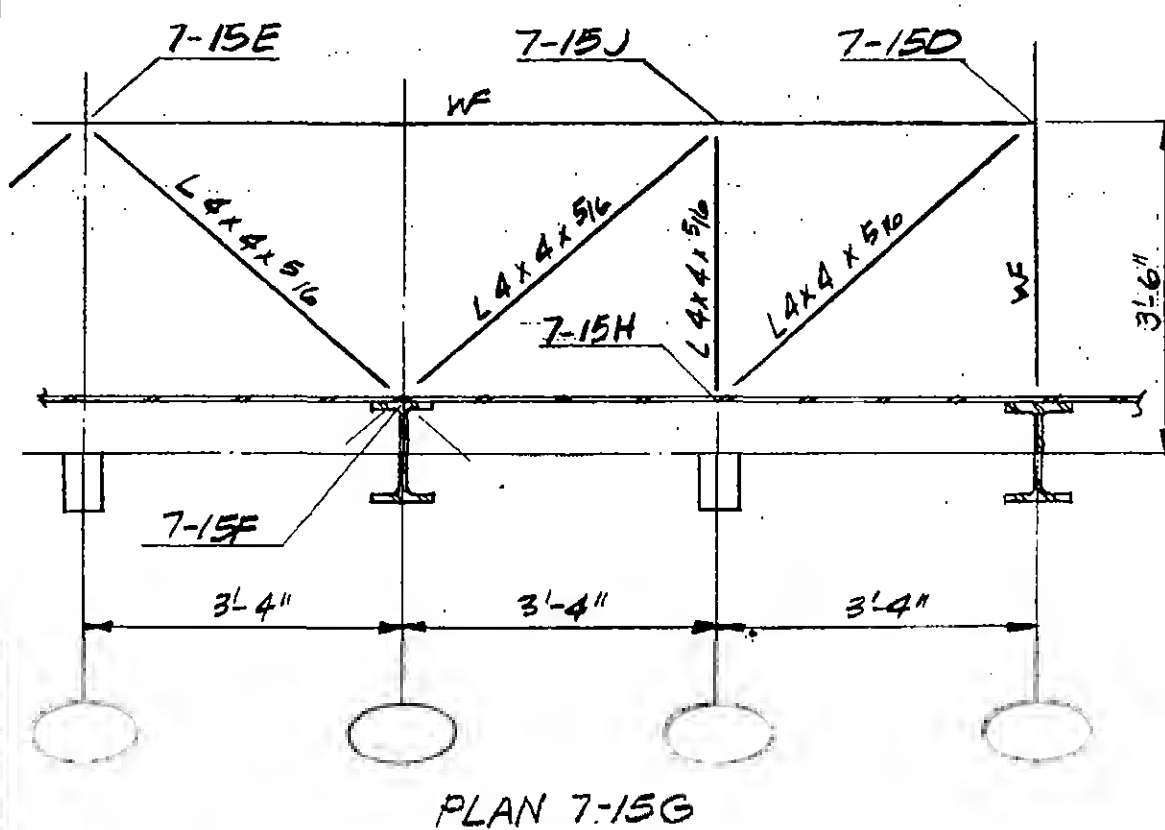
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FLOOR 107-PH, HORIZONTAL BRACING

DATE 12-14-70

REVISIONS



DESIGNED

DRAWN

F. Smith

REVIEWED

9-B7-15.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

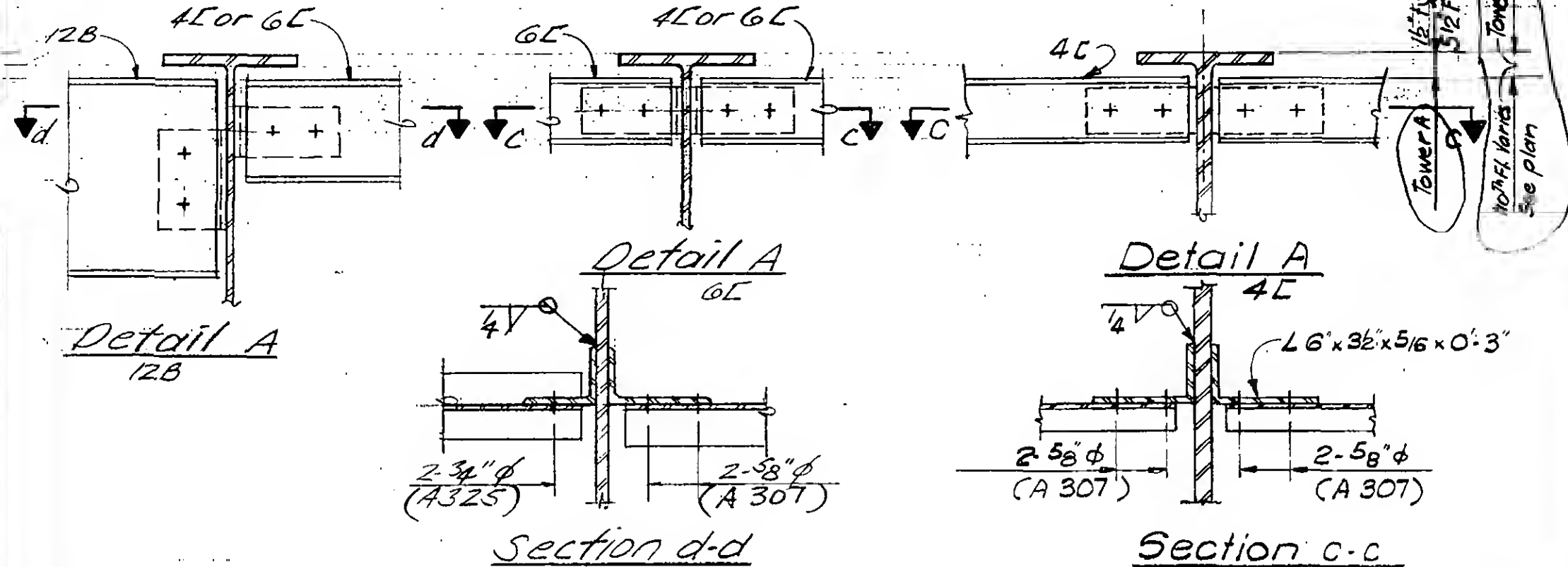
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER TITLE FLOOR 107-PH DECK BEAMS & BRIDGING

DATE 4-1-70

REVISIONS

5/27/70
12-14-70



DESIGNED

DRAWN

M. Nichols

REVIEW

W. Brewer

9-ABB-1

PROJECT

THE WORLD TRADE CENTER

TITLE

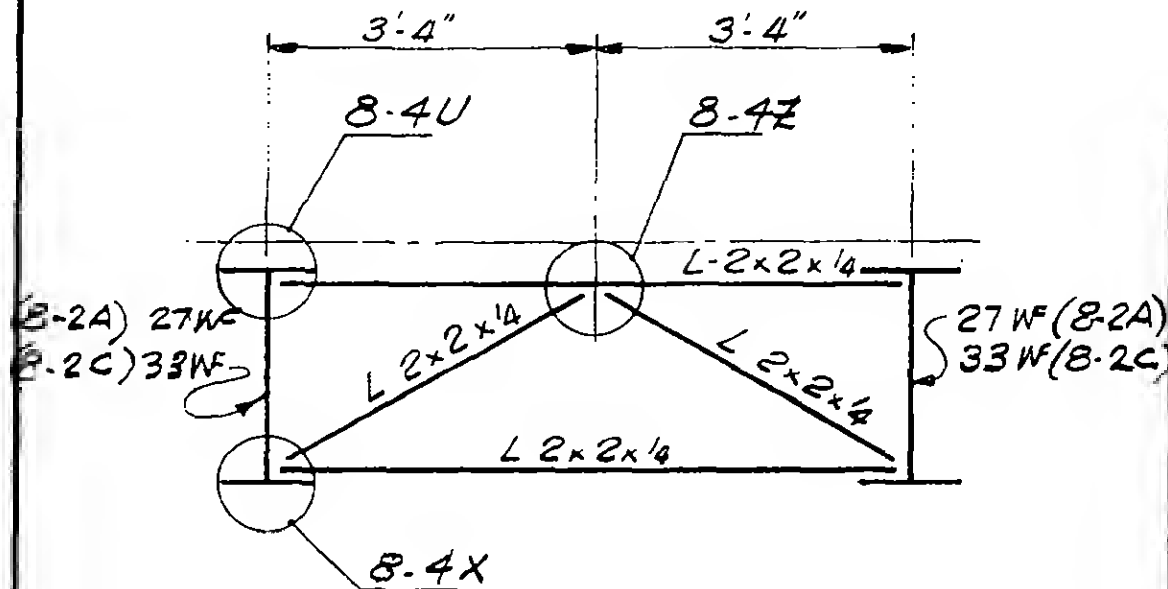
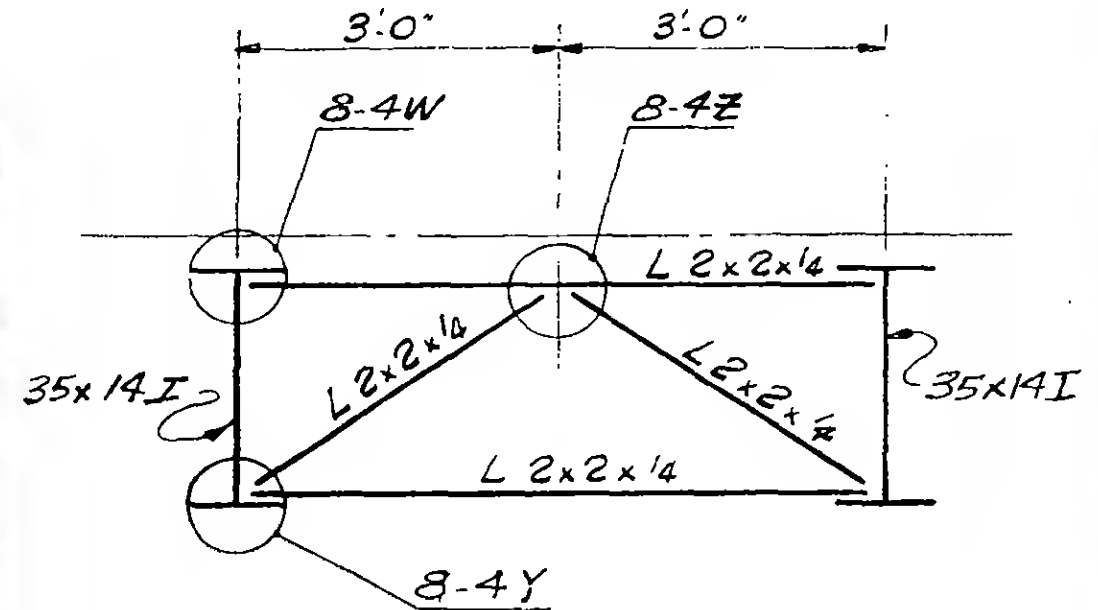
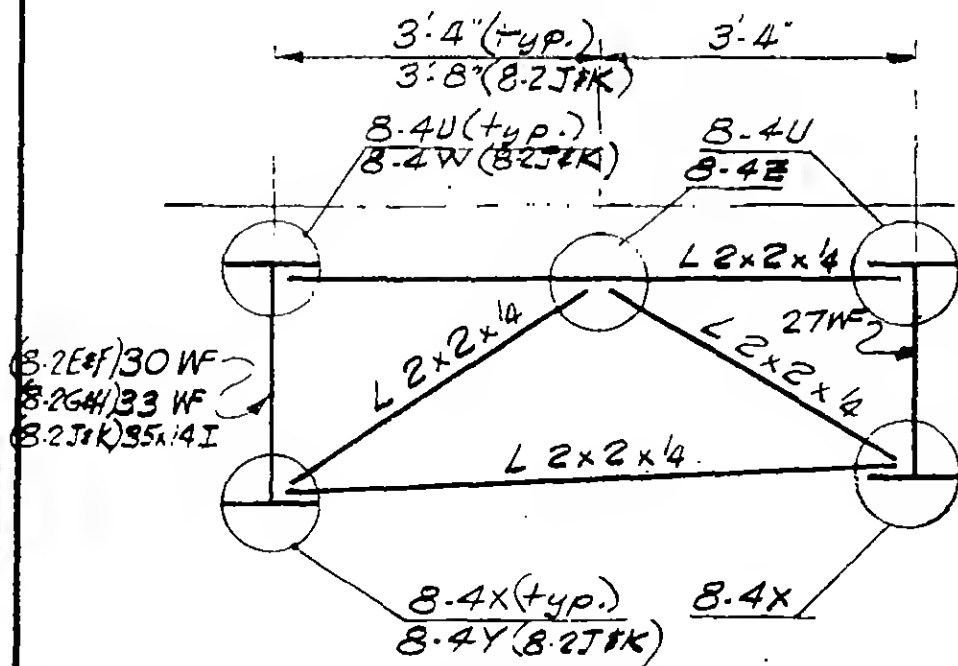
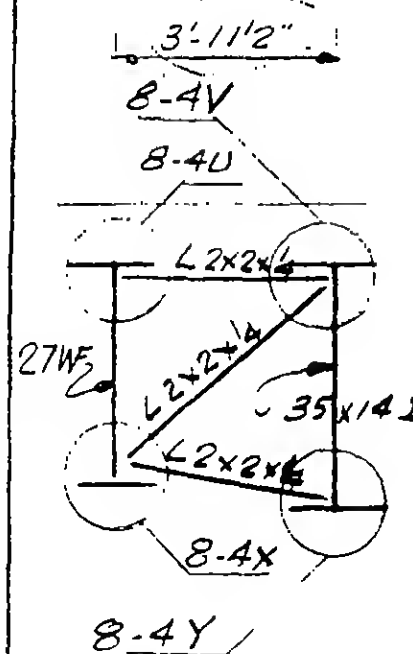
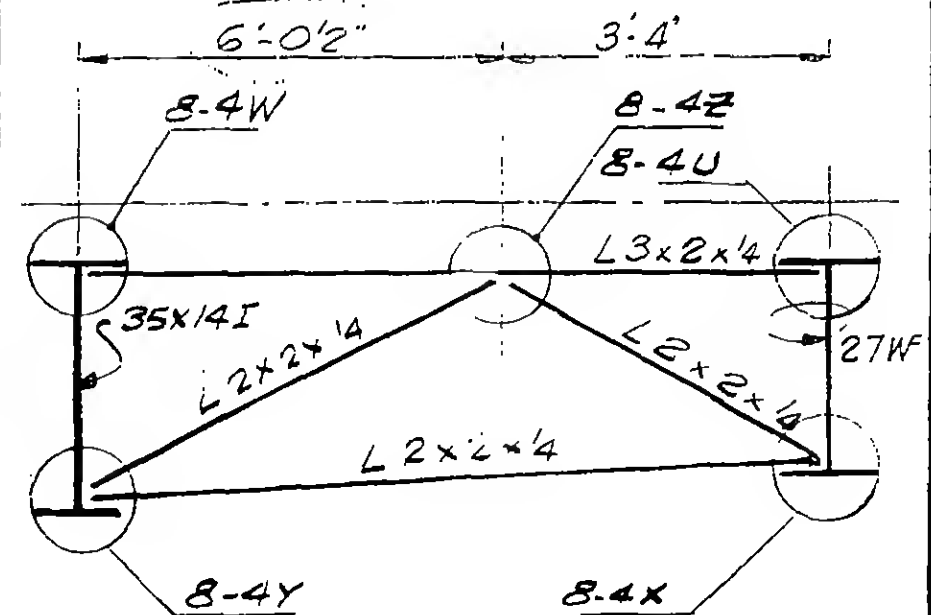
FLOOR 107-PH DECK BEAMS & BRIDGING

DATE

4-1-70

VISIONS

5/27/70

Bridging 8-2A & 8-2CBridging 8-2MBridging 8-2E, 8-2G, 8-2JBridging 8-2F, 8-2H, 8-2K opp. handBridging 8-2QBridging 8-2R
opp. handBridging 8-2NBridging 8-2P opp. hand

9-ABB-2



SIGNED

DRAWN

M. Nichols

REVIEWED

W. Brewer

PROJECT

THE WORLD TRADE CENTER

TITLE

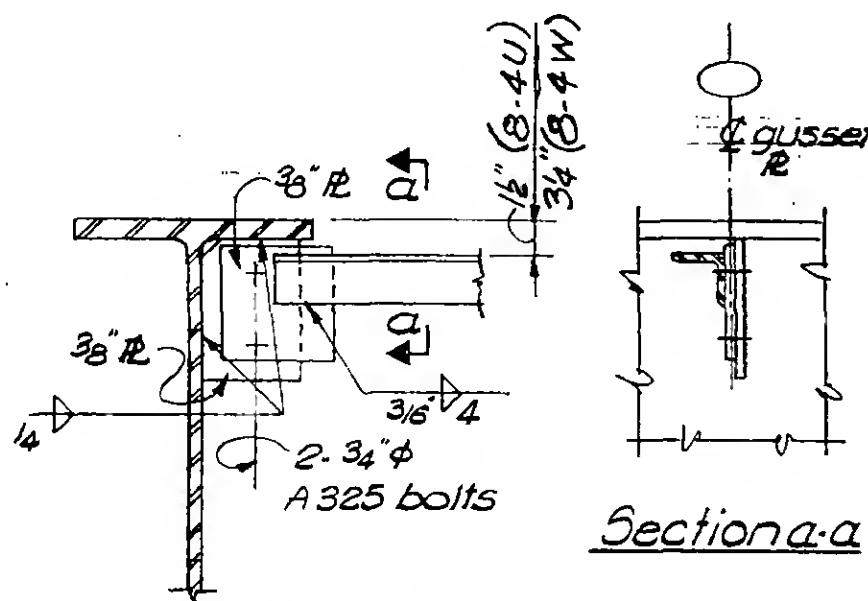
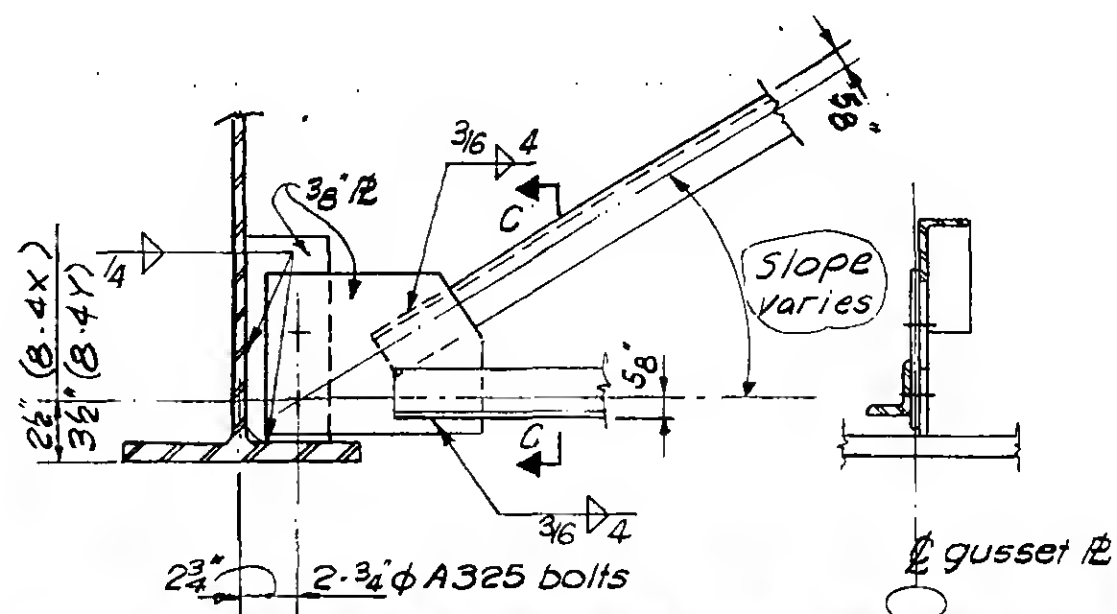
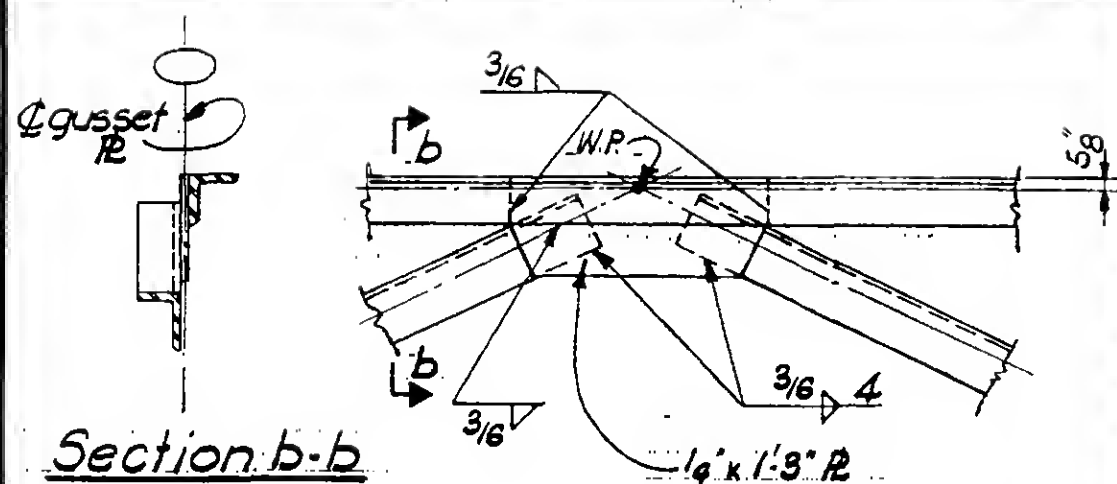
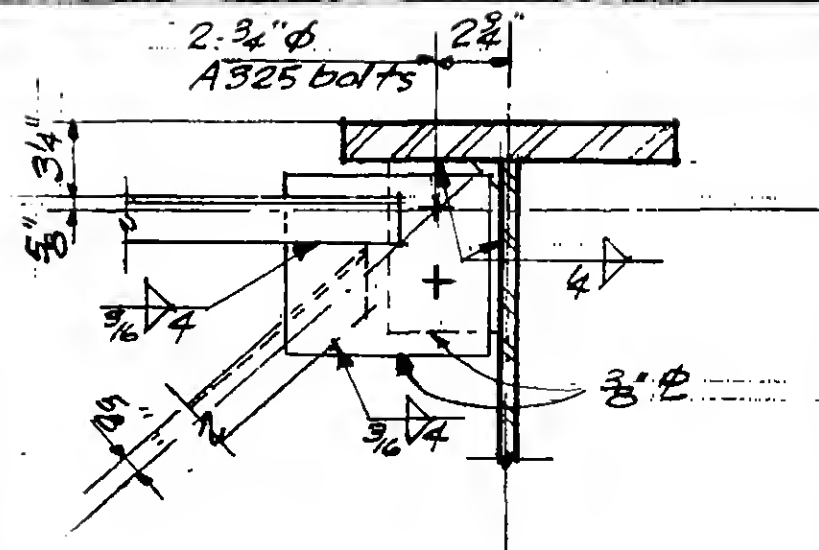
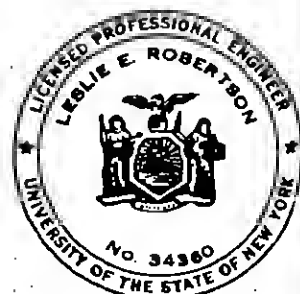
FL107-PH DECK BEAMS & BRIDGING

DATE

4-1-70

REVISIONS

5/27/70

Detail 8-4U & 8-4WDetail 8-4X & 8-4Y Section c-cDetail 8-4ZDETAIL 8-4V

DESIGNED

DRAWN

M. Nichols

REVIEWED

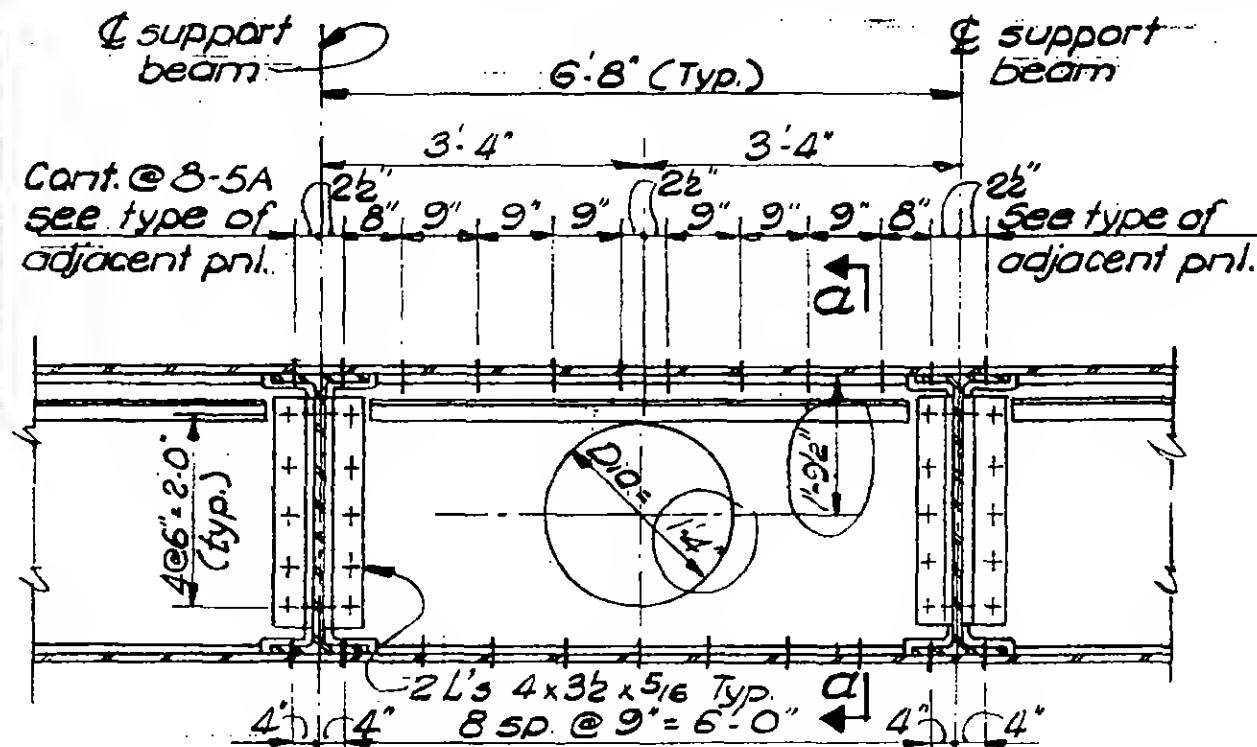
W. Brewer

9-AB8-4

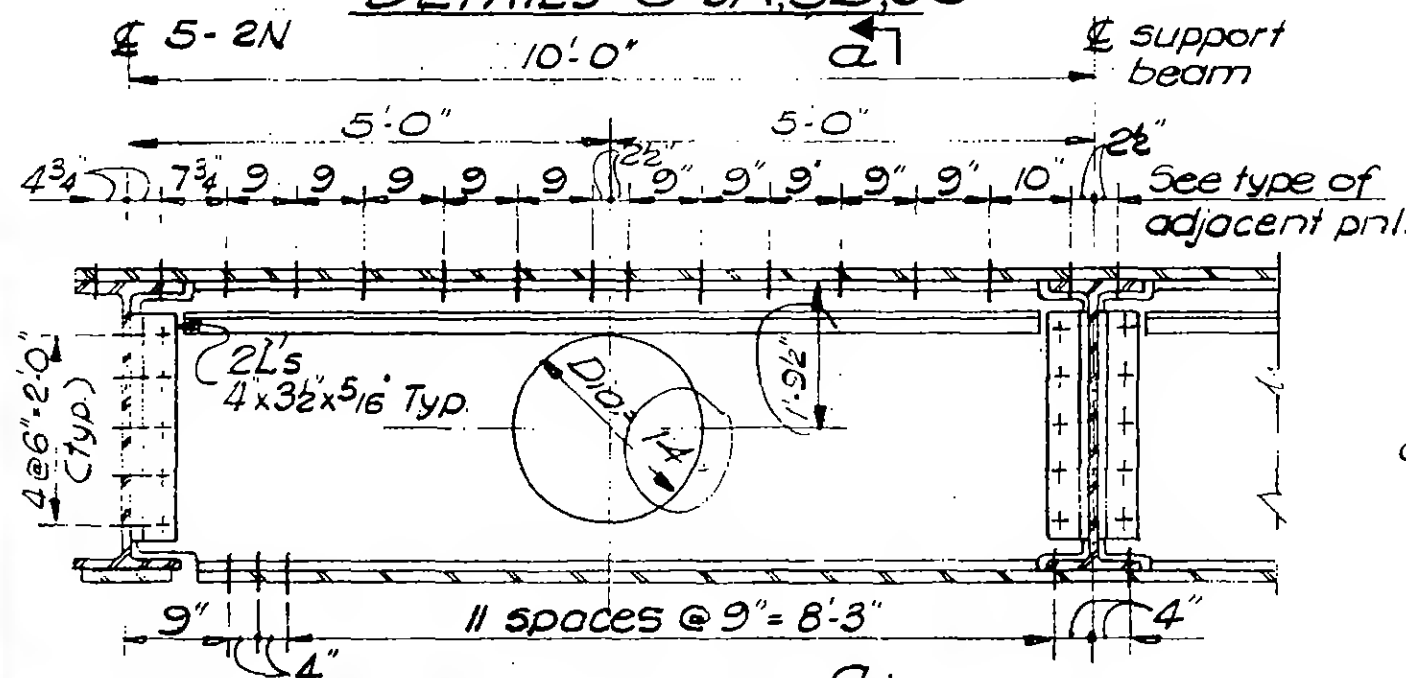
VISIONS

6/15/70

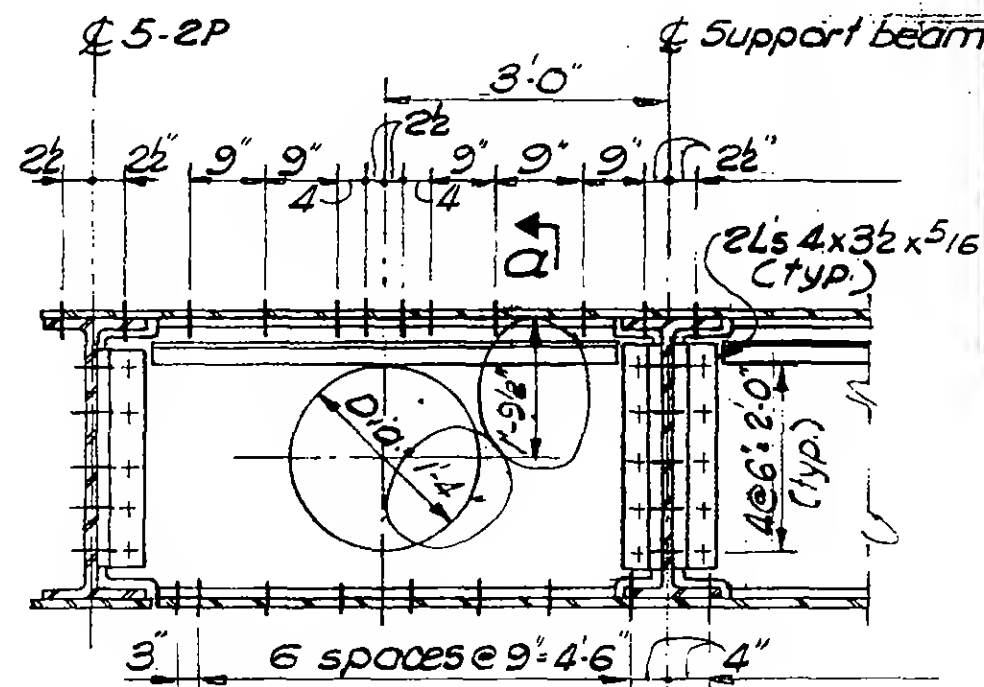
7-15-70



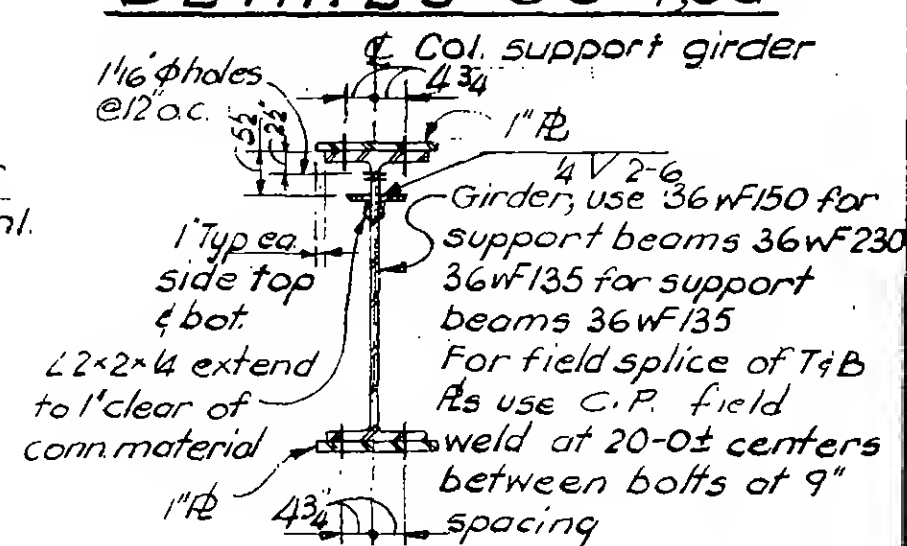
DETAILS 8-5A, 5B, 5C



DETAILS 8-5D & 5E



DETAILS 8-5F & 5G



Section a-a Typ.

Note:
All bolts 3/4" φ unless noted



DESIGNED

DRAWN
M. Nichols

REVIEWED

9-AB8-5.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

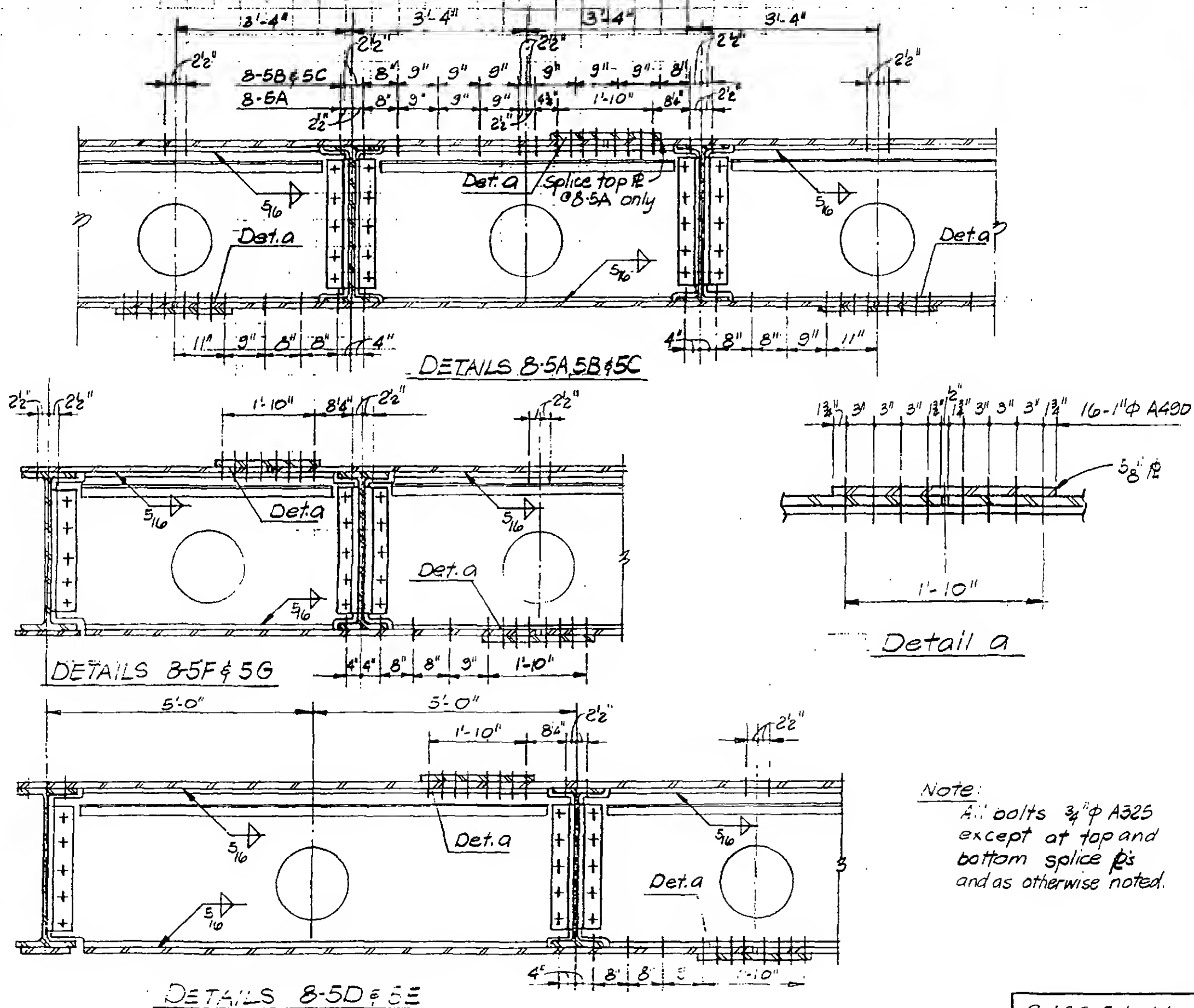
TITLE

FL 107-FH BRIDGING DETAILS

DATE

8-11-70

VISIONS



SIGNED

DRAWN

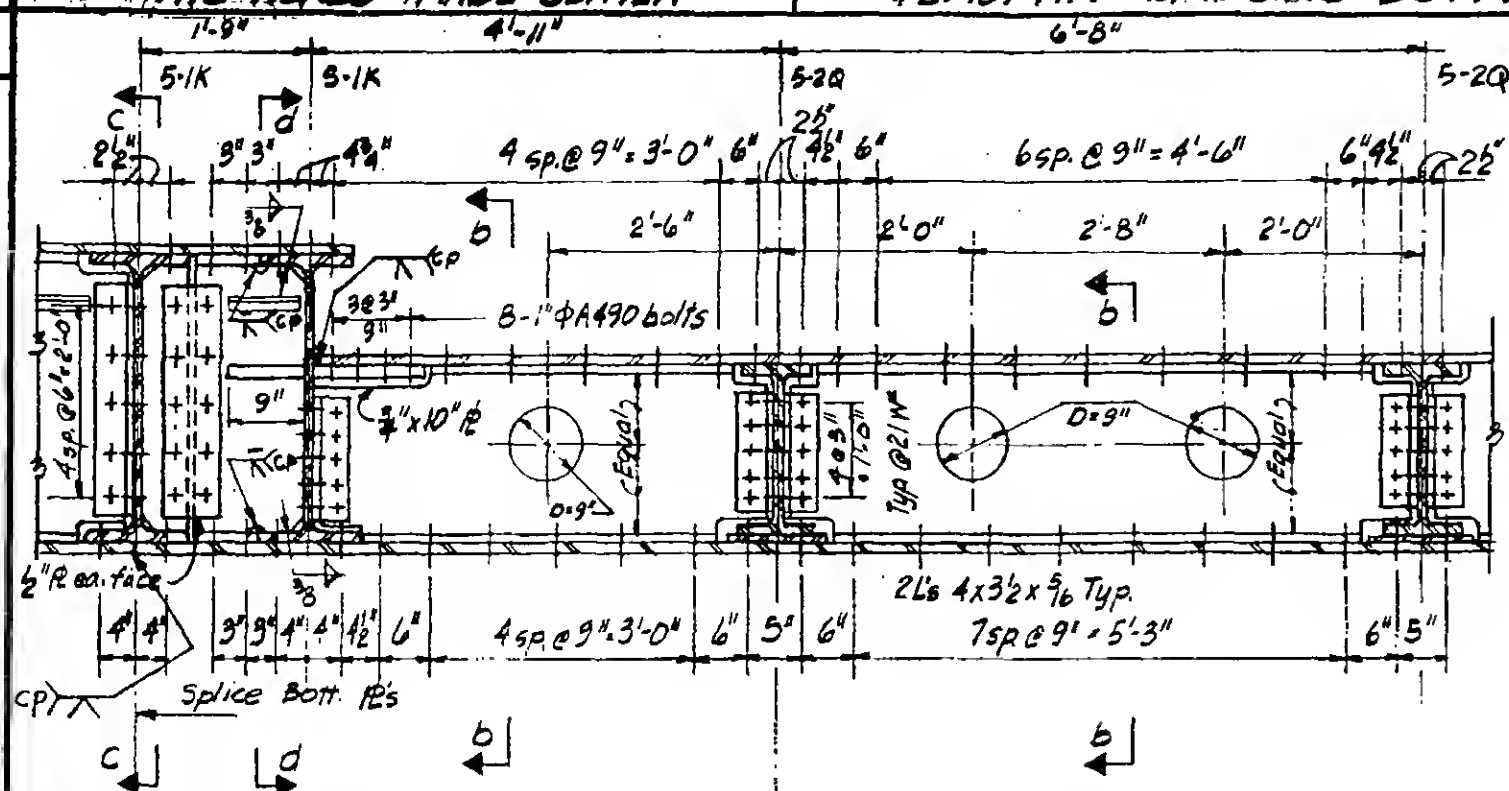
G. Ozdin

REVIEWED

9-AB8-5.1 A/T

VISIONS

6/15/70

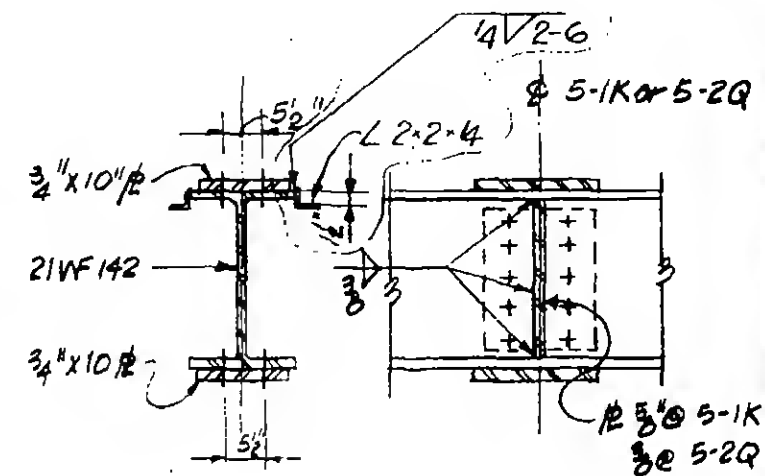


DTL85A

DETAIL 8-5J

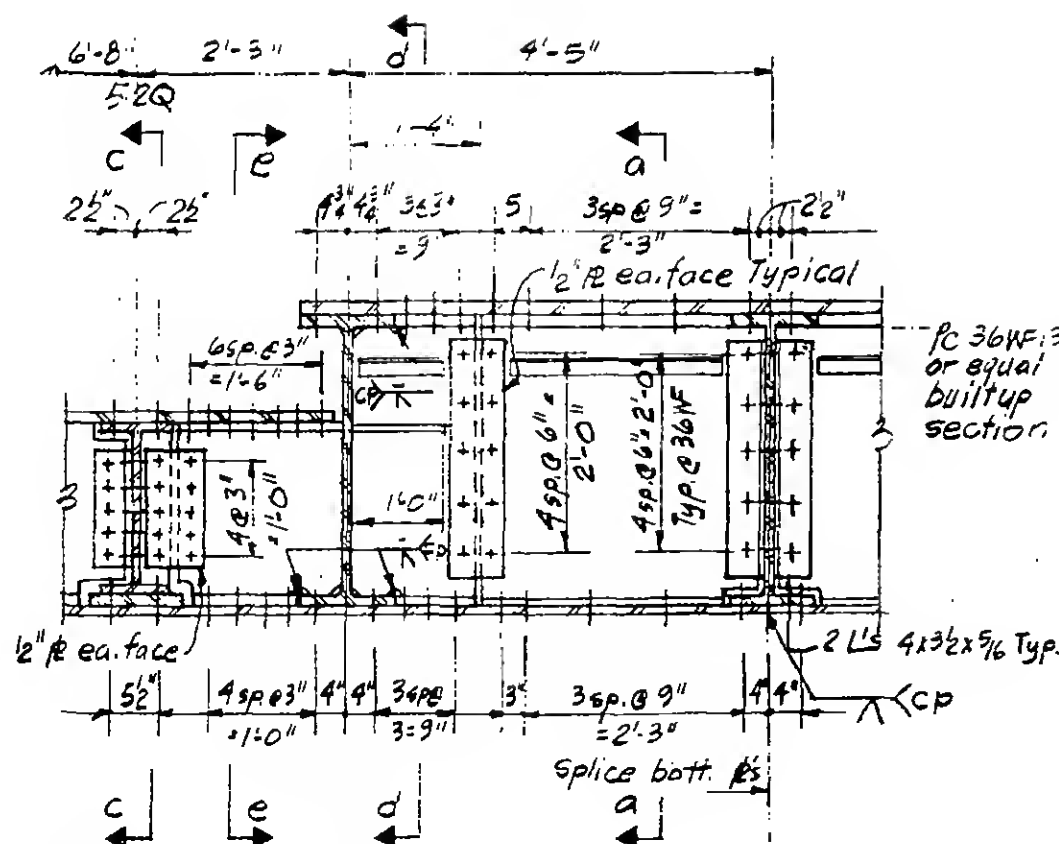
DETAIL 8-5K

DTL, 8-5K



Section b-b

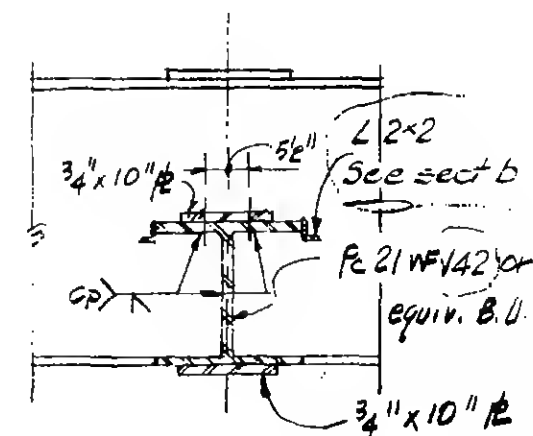
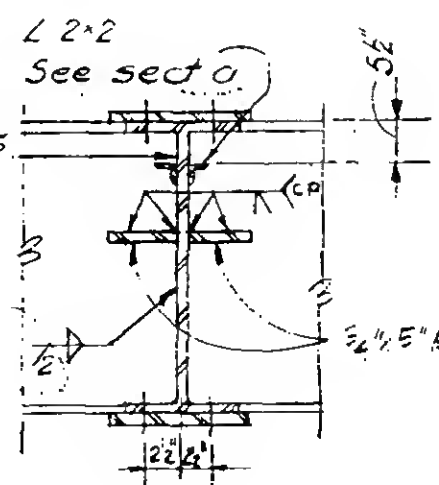
Section CC



DTL 8-5K

DETAIL 8-5N

DTL 8-5A



Note:

All bolts 3/4" ϕ unless otherwise noted



SIGNED

DRAWN

P. M. Ozek.

REVIEWED

9-AB8-5,2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

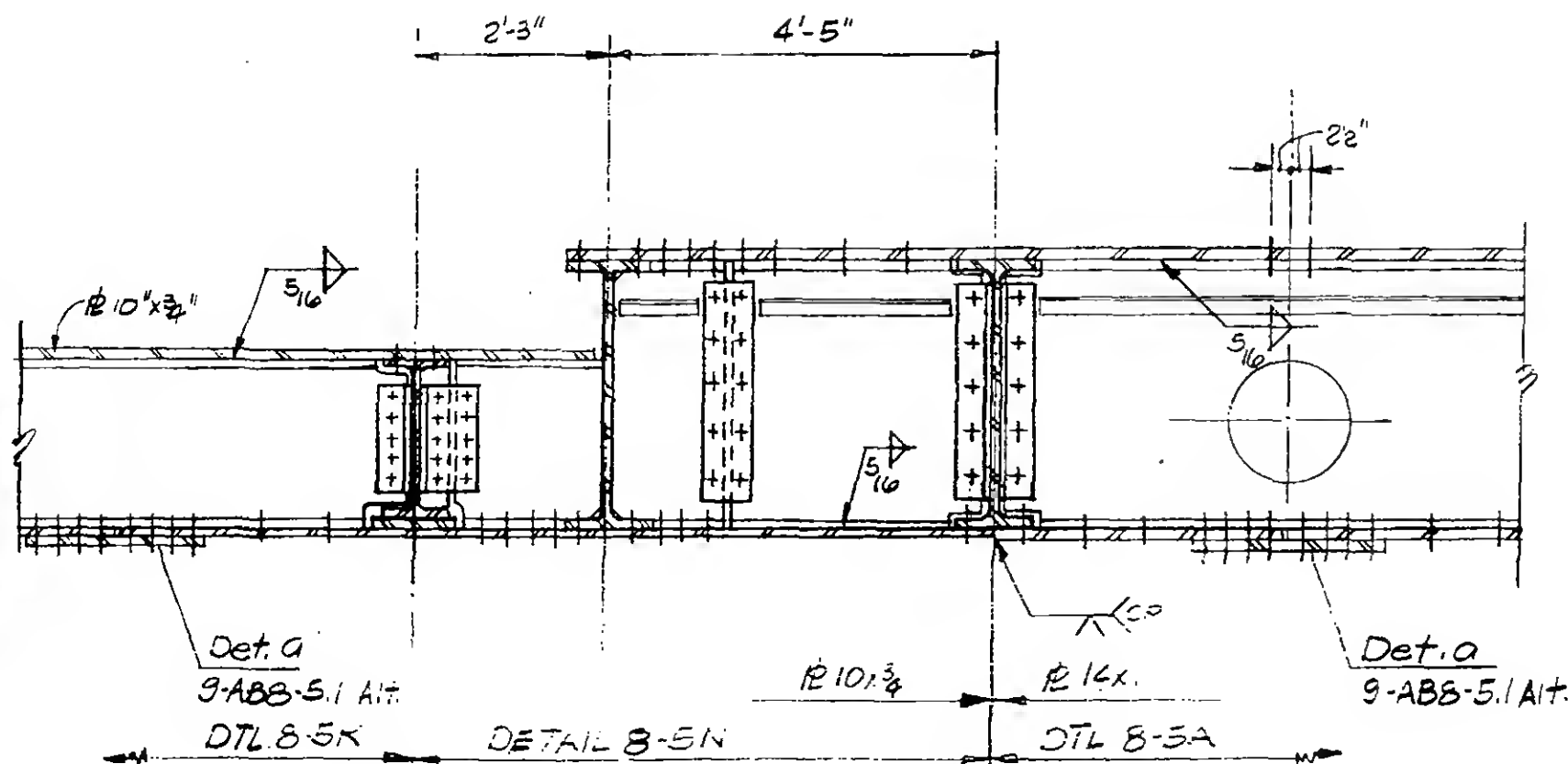
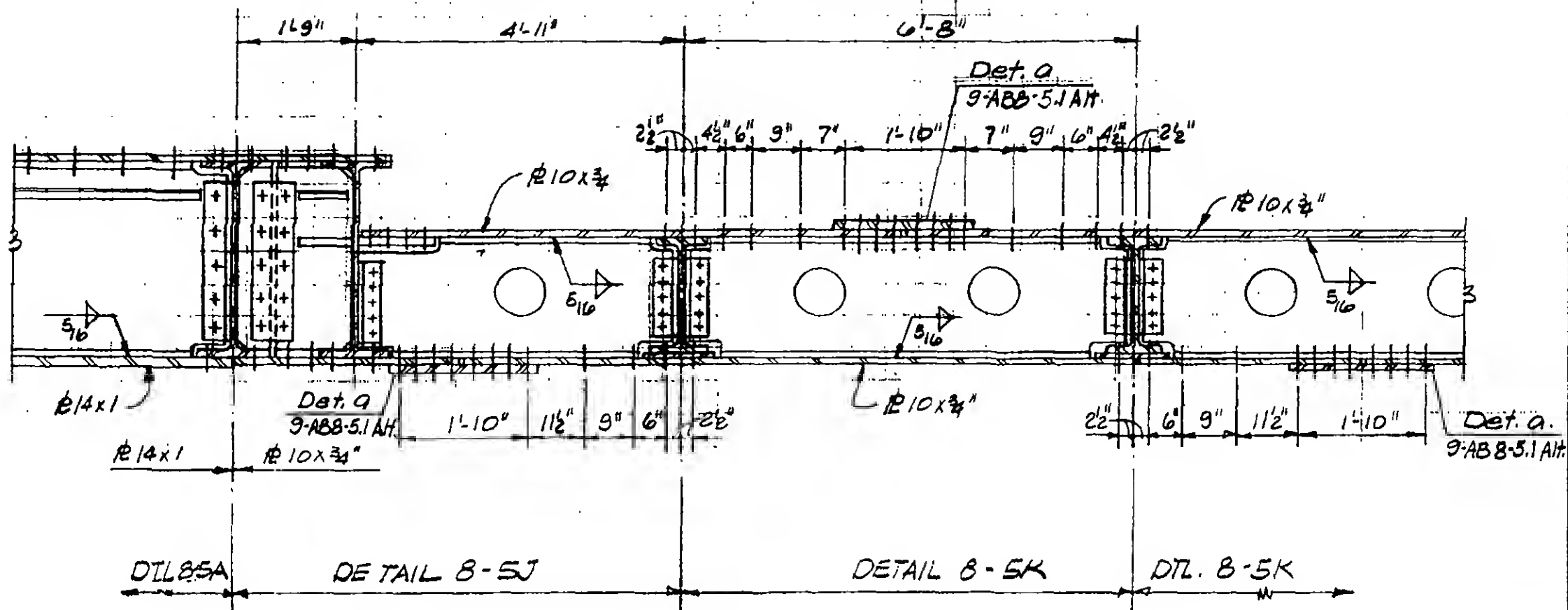
TITLE

FL. 107TH BRIDGING DETAILS

DATE

3-11-70

VISIONS



Note:

All bolts $\frac{3}{4}$ " ϕ A325
except at top
and bottom splice
or as otherwise
noted.



SIGNED

DRAWN

G. J. Green

REVIEWED

3-AB8-5.2 Alt.

PROJECT

THE WORLD TRADE CENTER

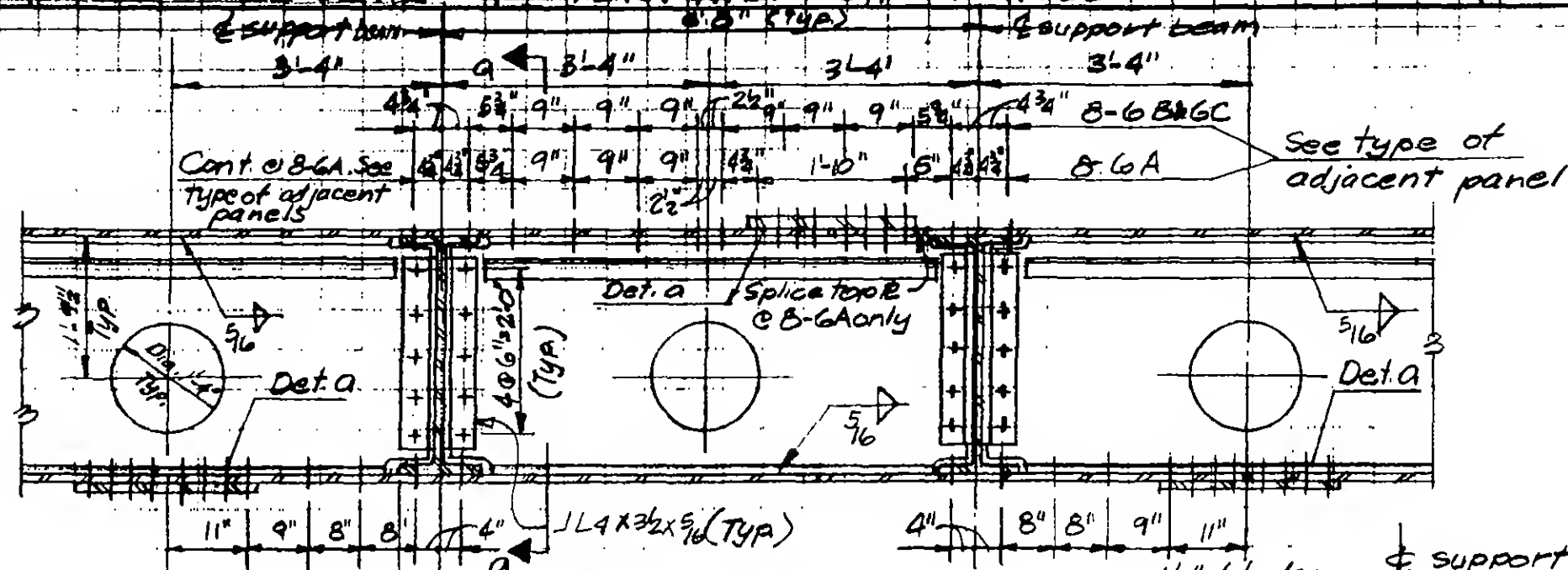
TITLE

FL 107 - RIVER RIDING DETAILS

DATE

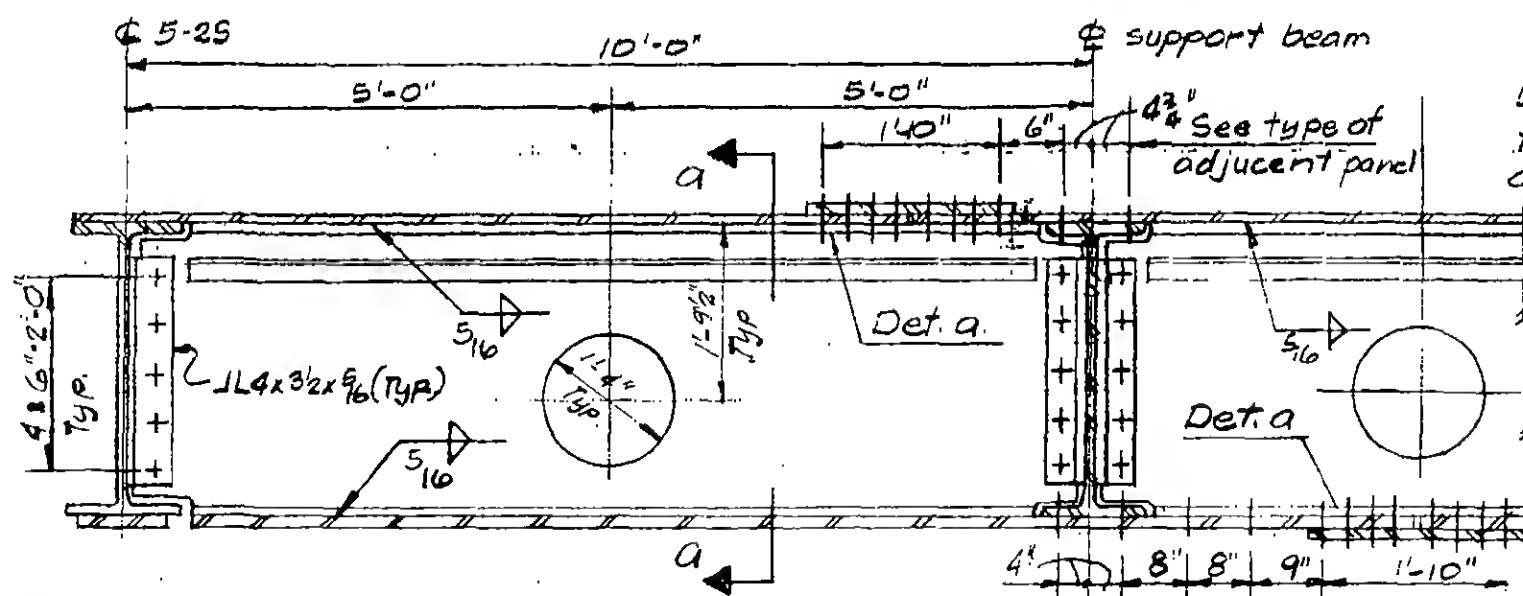
12-14-70

VISIONS

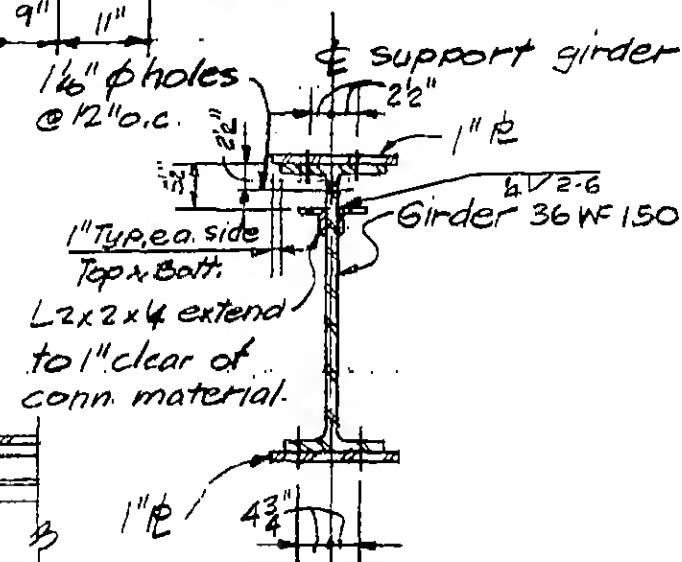


End of top & bottom, 8-6B & 8-6C
8-6B shown, 8-6C opp. hand.

Details B-6A, 6B, 6C



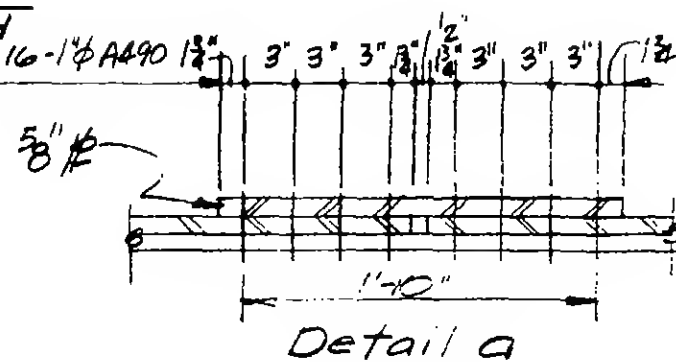
Detail 8-6D shown
Detail 8-6E opp. hand



Section a-a

Note:

All bolts 3/4" φ A325
except at top and
bottom splice plates
and as otherwise
noted



Detail a

9-B8-6



DESIGNED

DRAWN

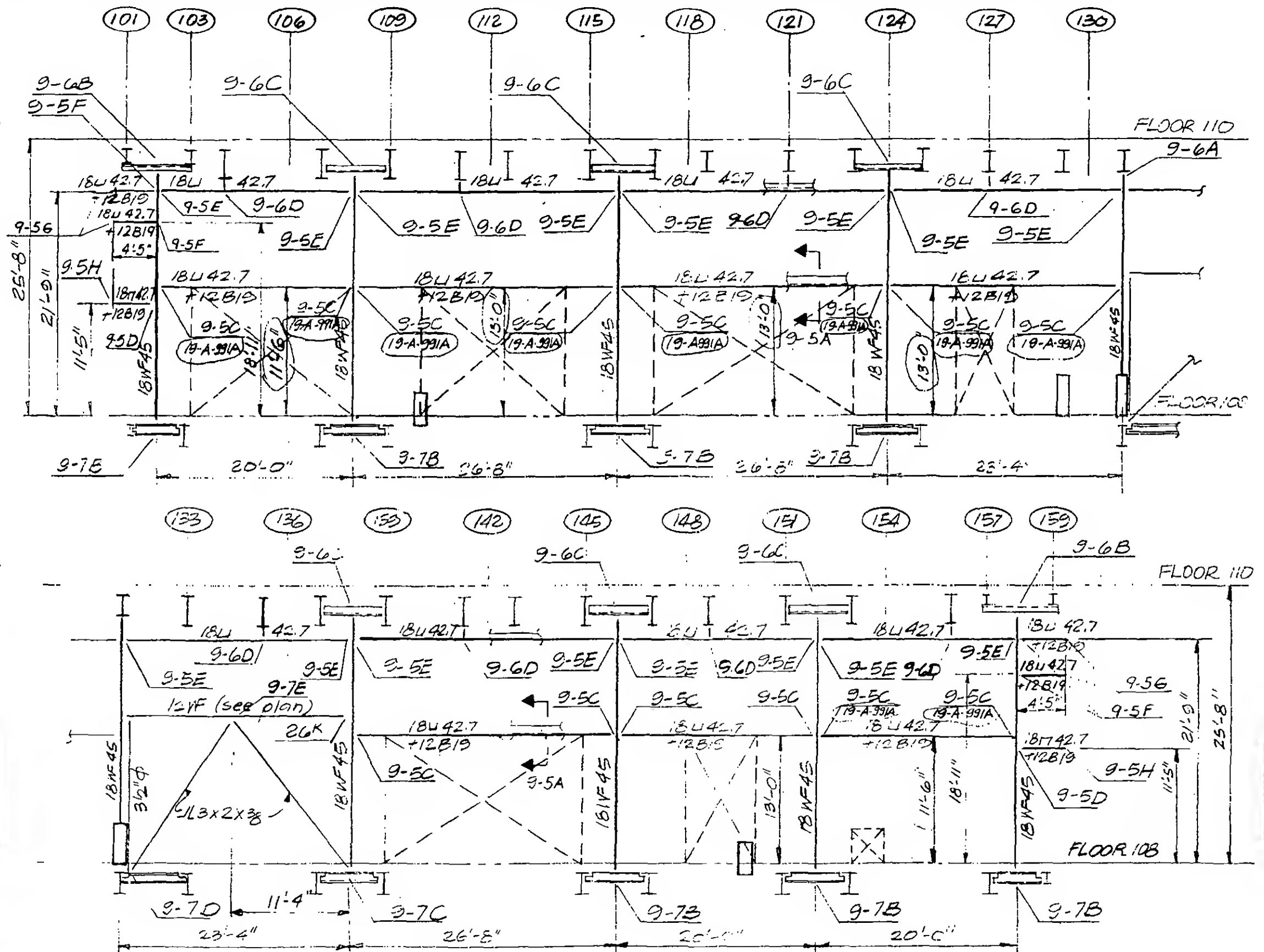
REVIEWED

Structural & Civil Engineers

TITLE FL 107-PH-LOUVER SUPPORTS- ELEVATION WALL 100

DATE 4-1-70

6/5/70 R
2/5/71



Note: 19-A-911 details apply to Toner A only

9-AB9-1



DESIGNED

DRAWN
P. Ozel

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

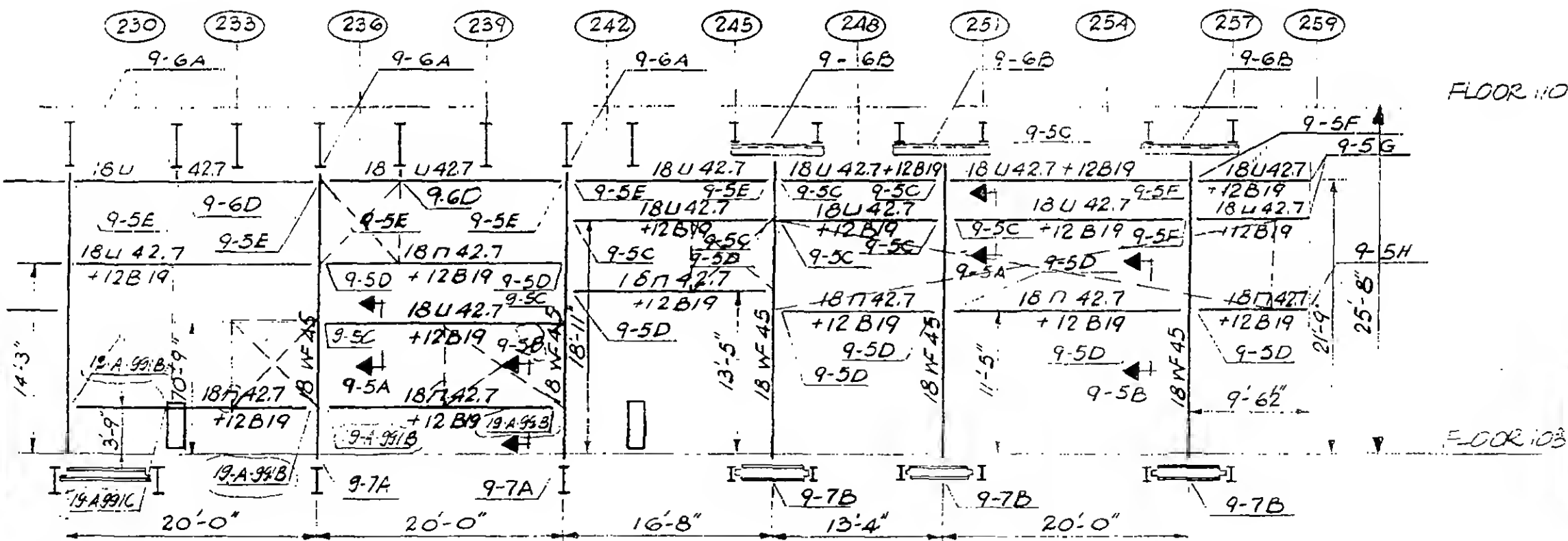
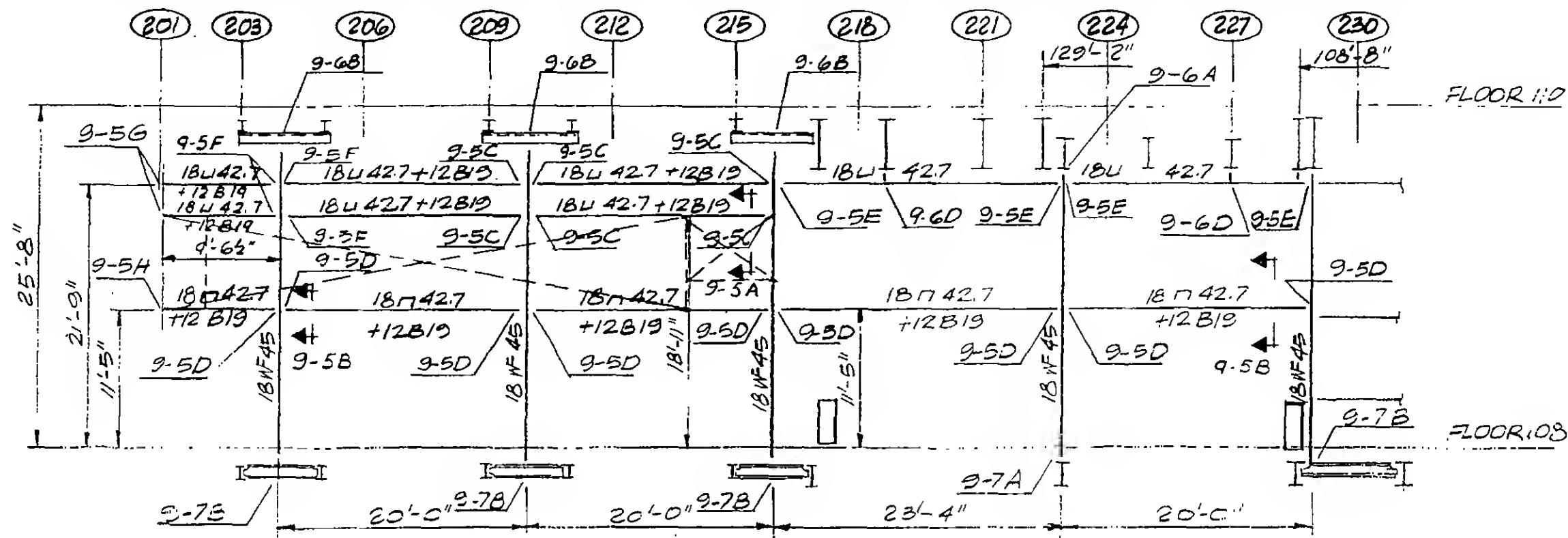
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107 PH LOUVER SUPPORTS - ELEVATION WALL 200

DATE 4-1-70

VISIONS

6/15/70 R
2/5/71

DESIGNED

DRAWN

D. Huggins

REVIEWED

For Tower B see 9-B 9-2.2 & 2.3

9-A 9-2.1

SKILLING, HELLER, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

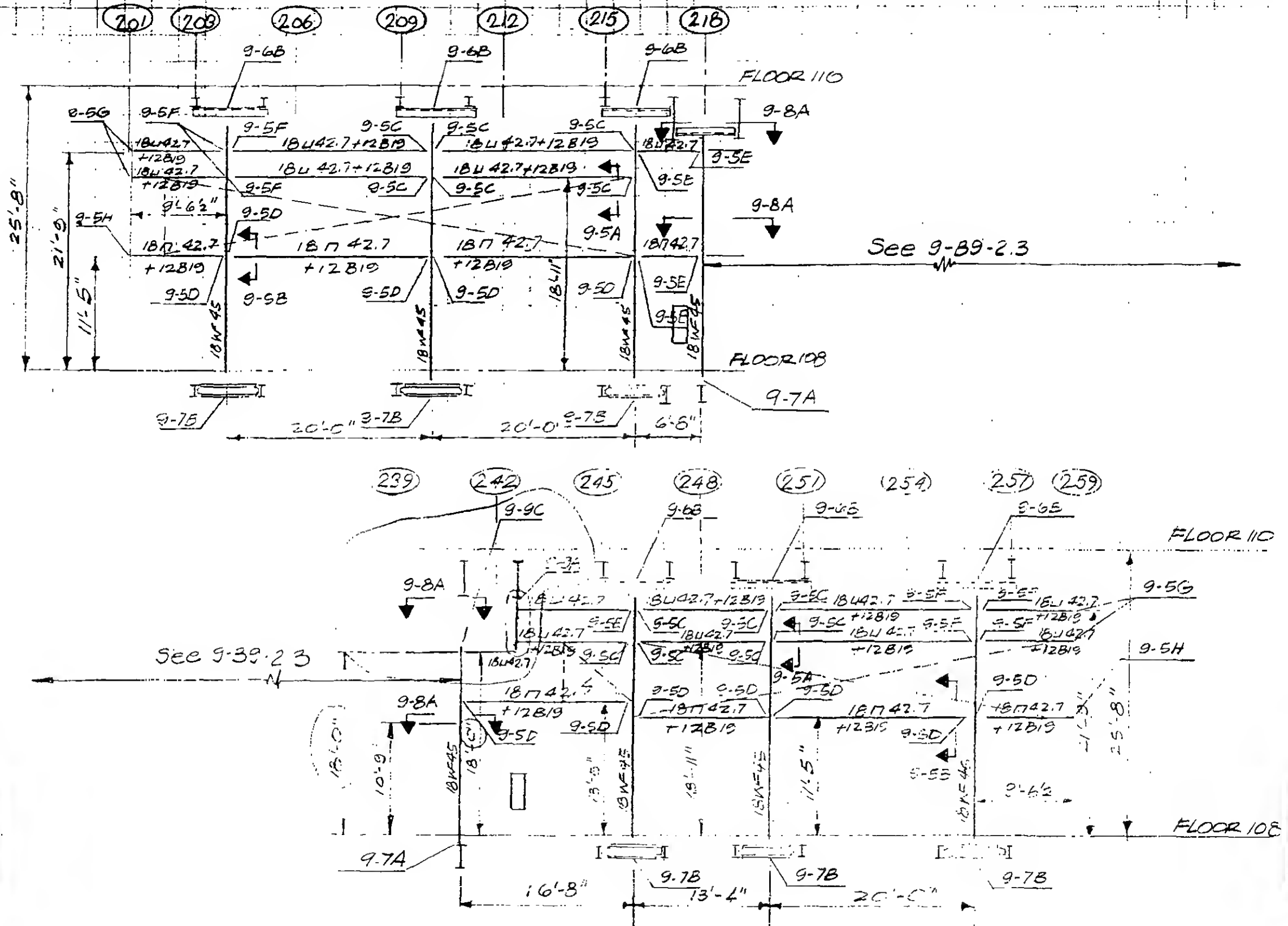
FL 107 AN LOUVER SUPPORTS - ELEVATION WALL 200

DATE

2/5/71

REVISIONS

3-1-71



DESIGNED

DRAWN

D. Jones

REVIEWED

9-B9-2.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

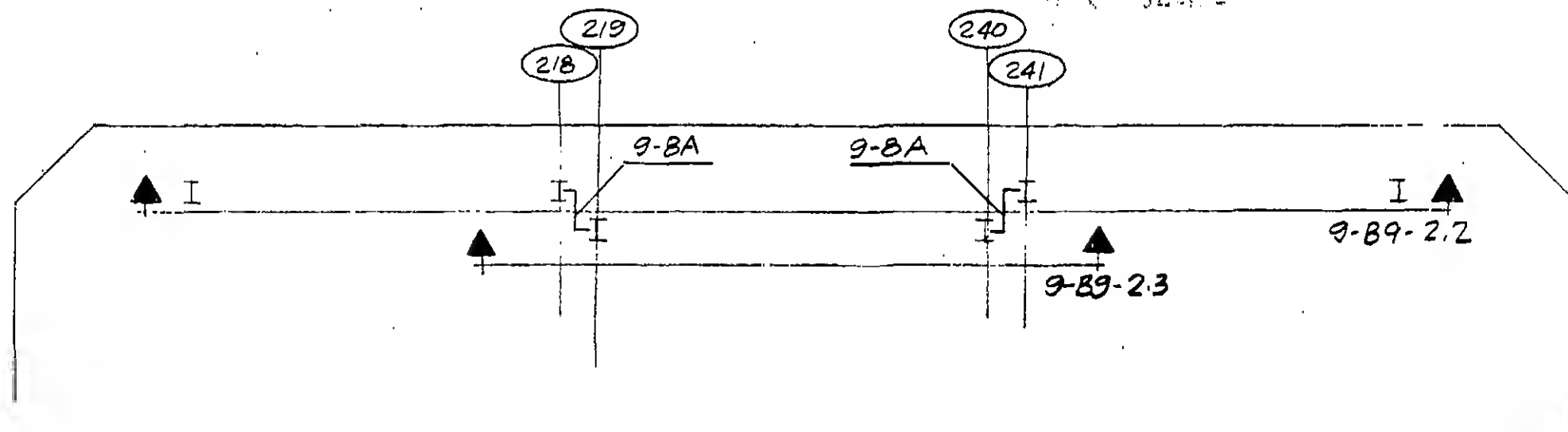
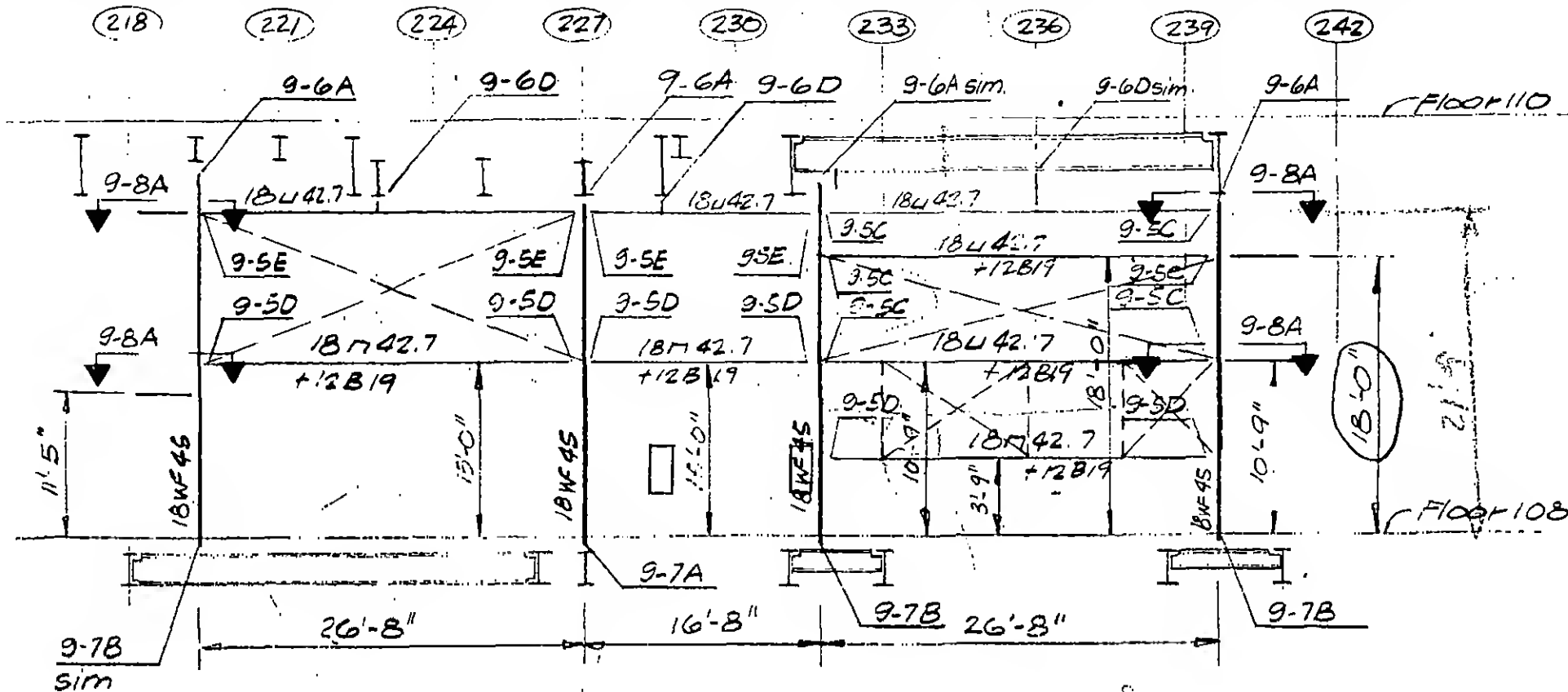
FL 107 PH. LOUVER SUPPORTS - ELEVATION WALL 200

DATE

2/5/71

REVISIONS

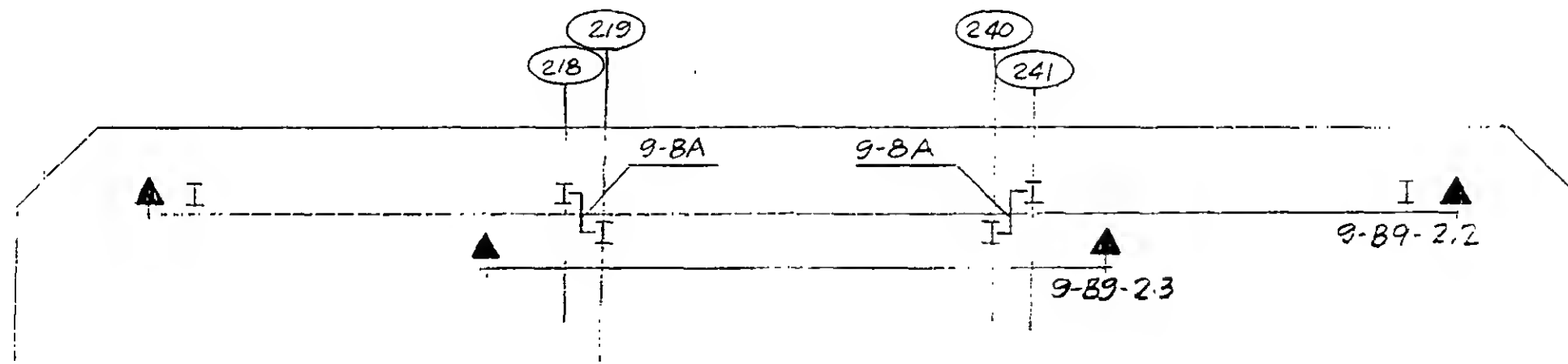
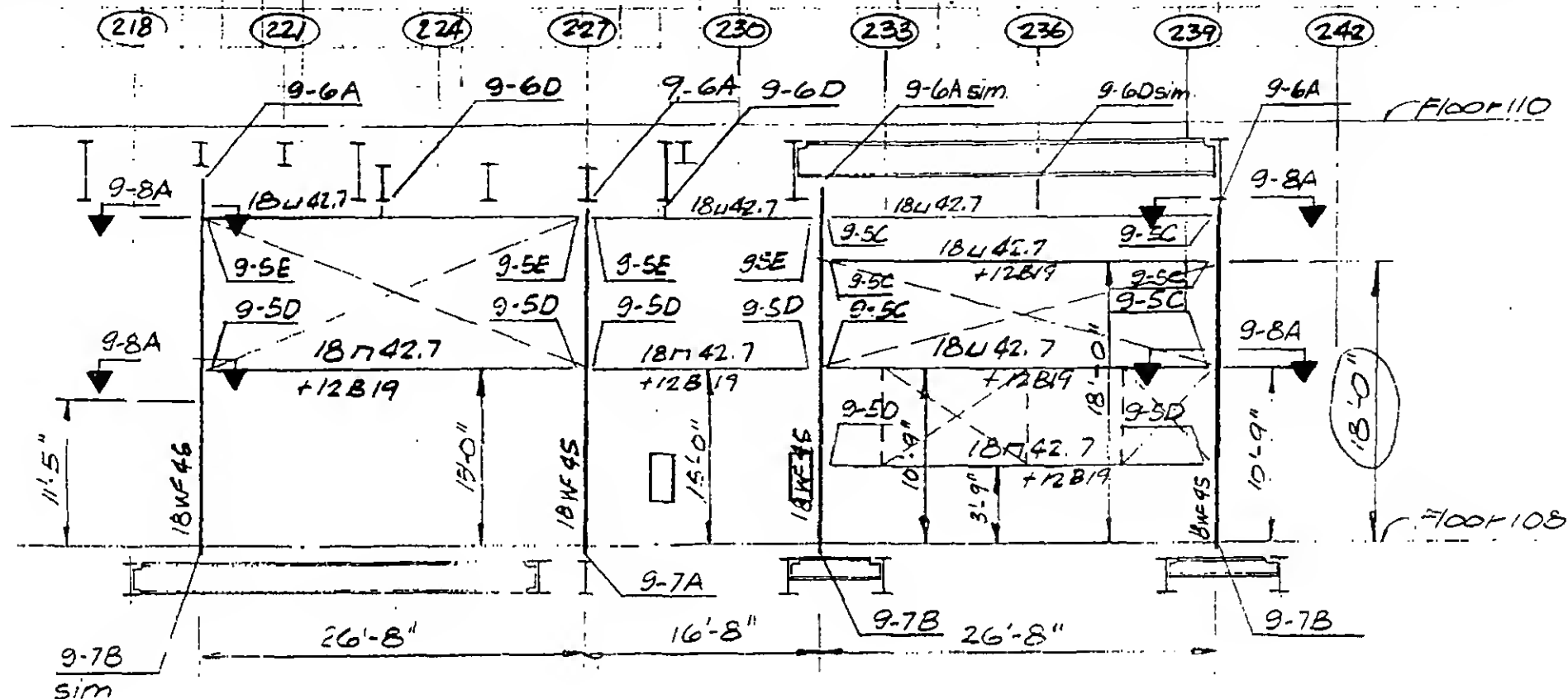
3-1-71



9-89-2.3

VISIONS

3-1-71



IGNIO

DRAWN
C. S. Long

REVIEWED

9.B9-2.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

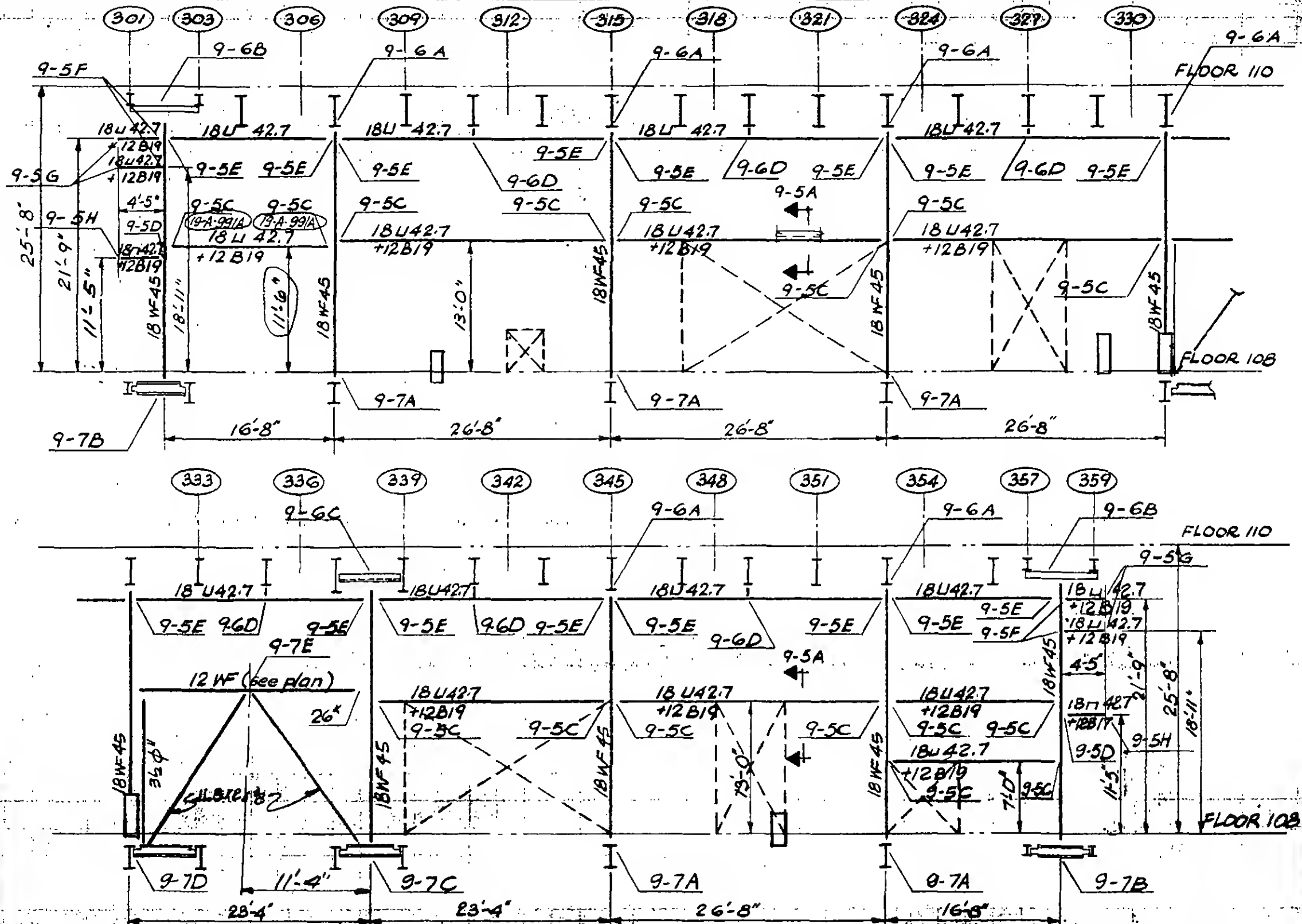
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107 PH-LOUVER SUPPORTS- ELEVATION WALL 300

DATE 4-1-70

REVISIONS

6/15/70 R
2/5/71

DESIGNED

DRAWN
R. Higgins
REVIEWED

9-AB9-3

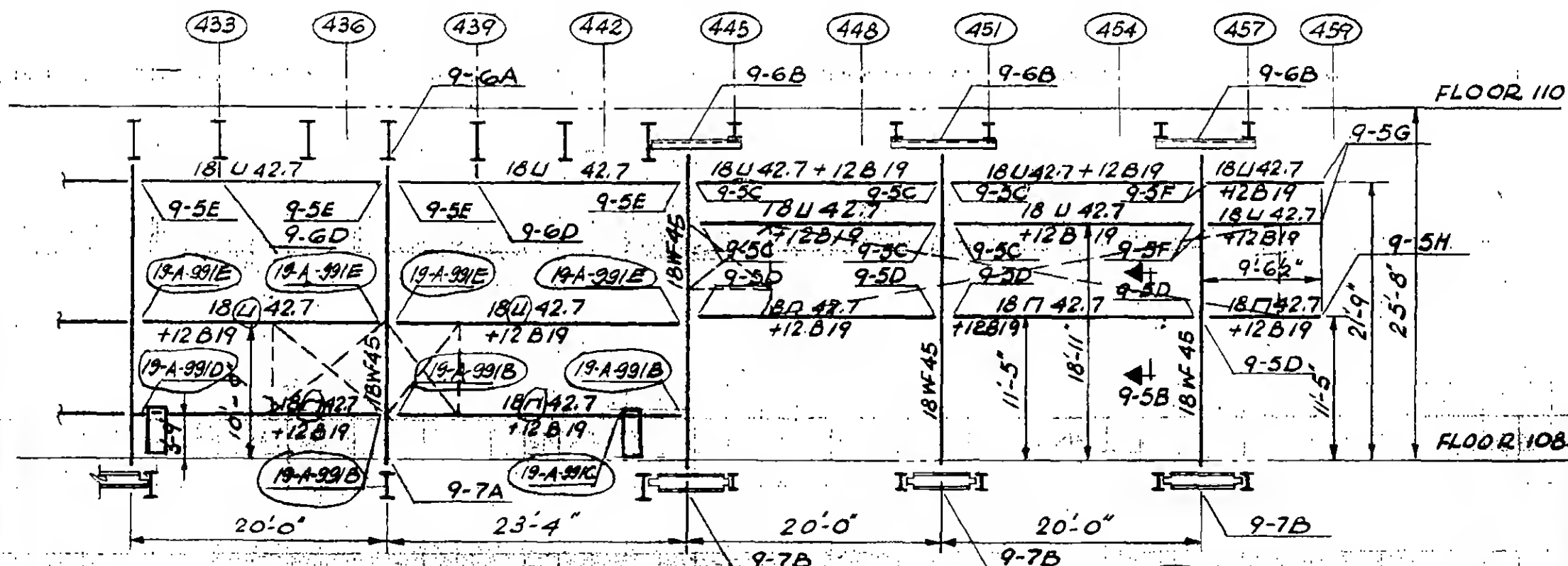
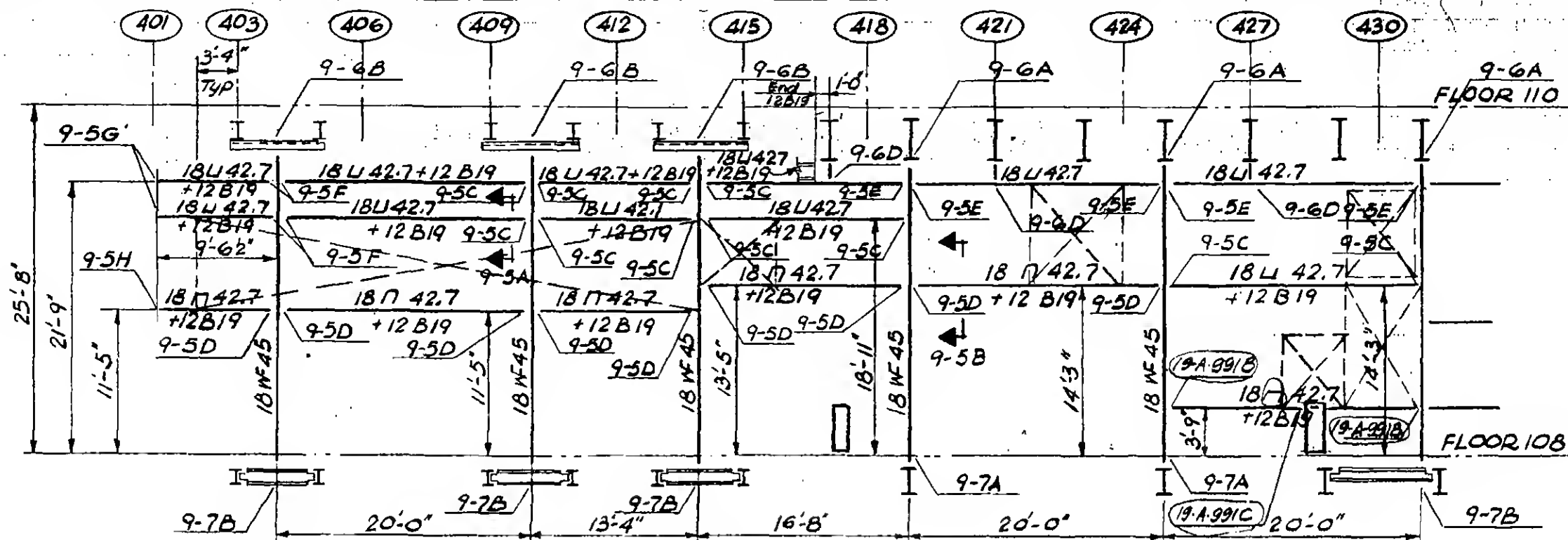
Structural & Civil Engineers

TITLE FL 107 PH-LOUVER SUPPORTS-ELEVATION WALL 400

DATE 4-1-70

REVISIONS

6/15/70 R
2/5/71



For Tower B, see 9-B9-4.2 & 4.3

9-A 9-41



DESIGNED

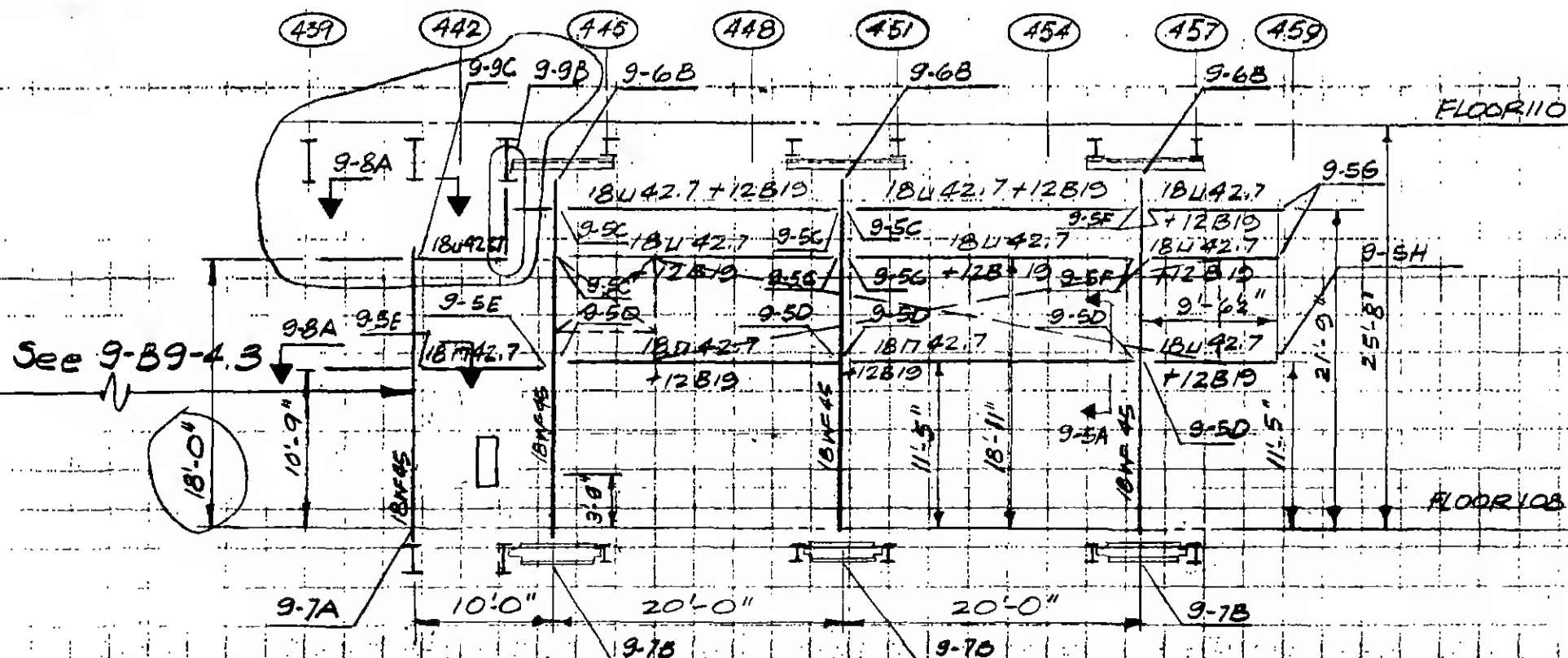
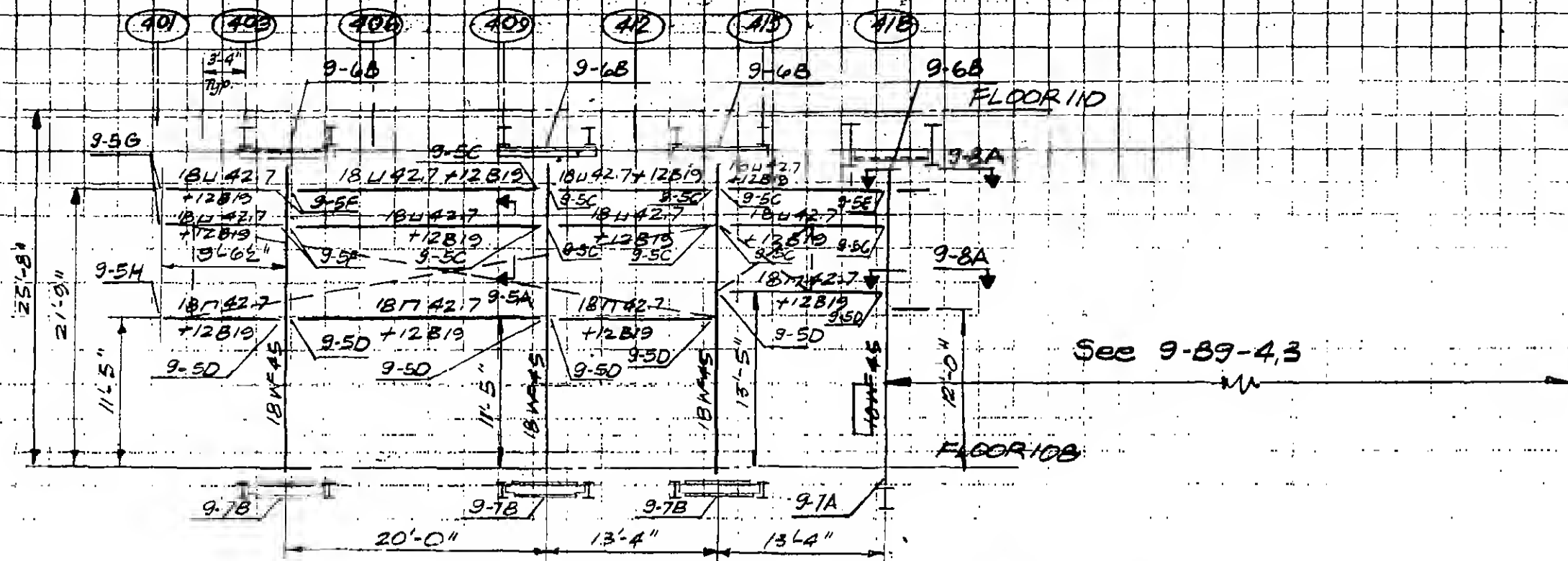
DRAWN

D. Higgins

REVIEWERS

REVISIONS

3-1-71



DESIGNED

DRAWN

A Jones

REVIEWER

9-B9-4.2

Structural & Civil Engineers

THE WORLD TRADE CENTER

TITLE

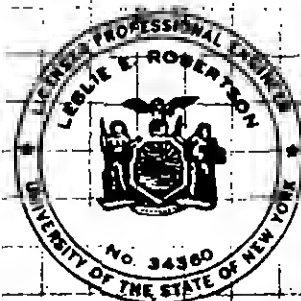
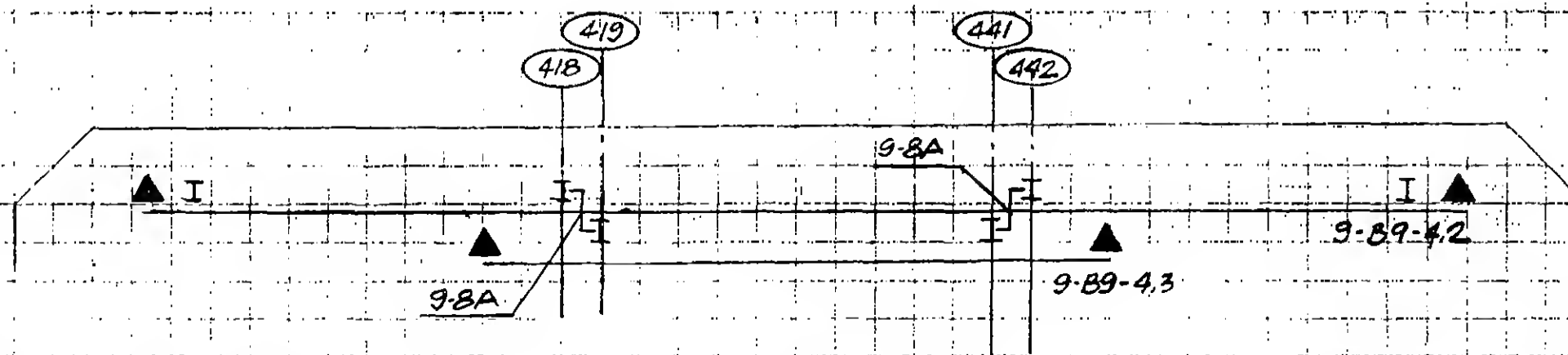
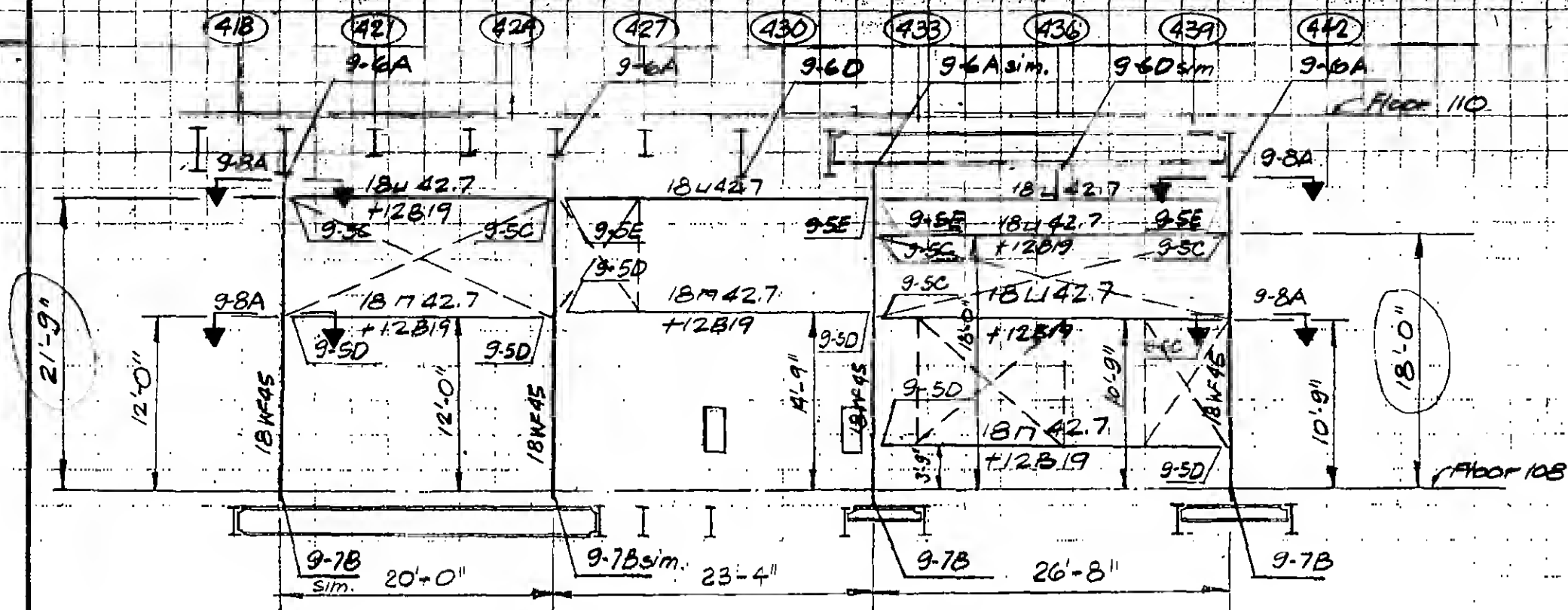
FL 107 PH - LOWER SUPPORTS ELEVATION WALL 400

DATE _____

2/5/71

REVISIONS

3-1-7



DESIGNED

DRAWN

WILLIAM

9-88-4.3

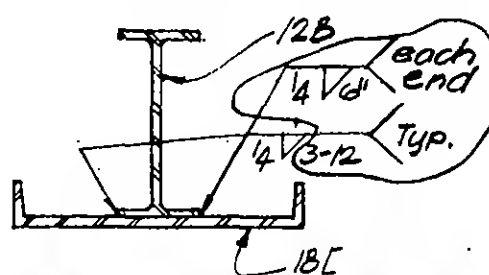
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

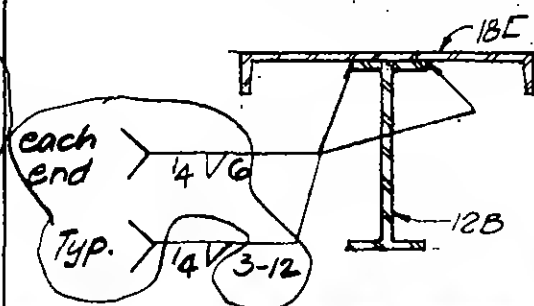
PROJECT THE WORLD TRADE CENTER TITLE FL 107-PH LOUVER WALL SUPPORTS-DETAILS

DATE 4-1-70

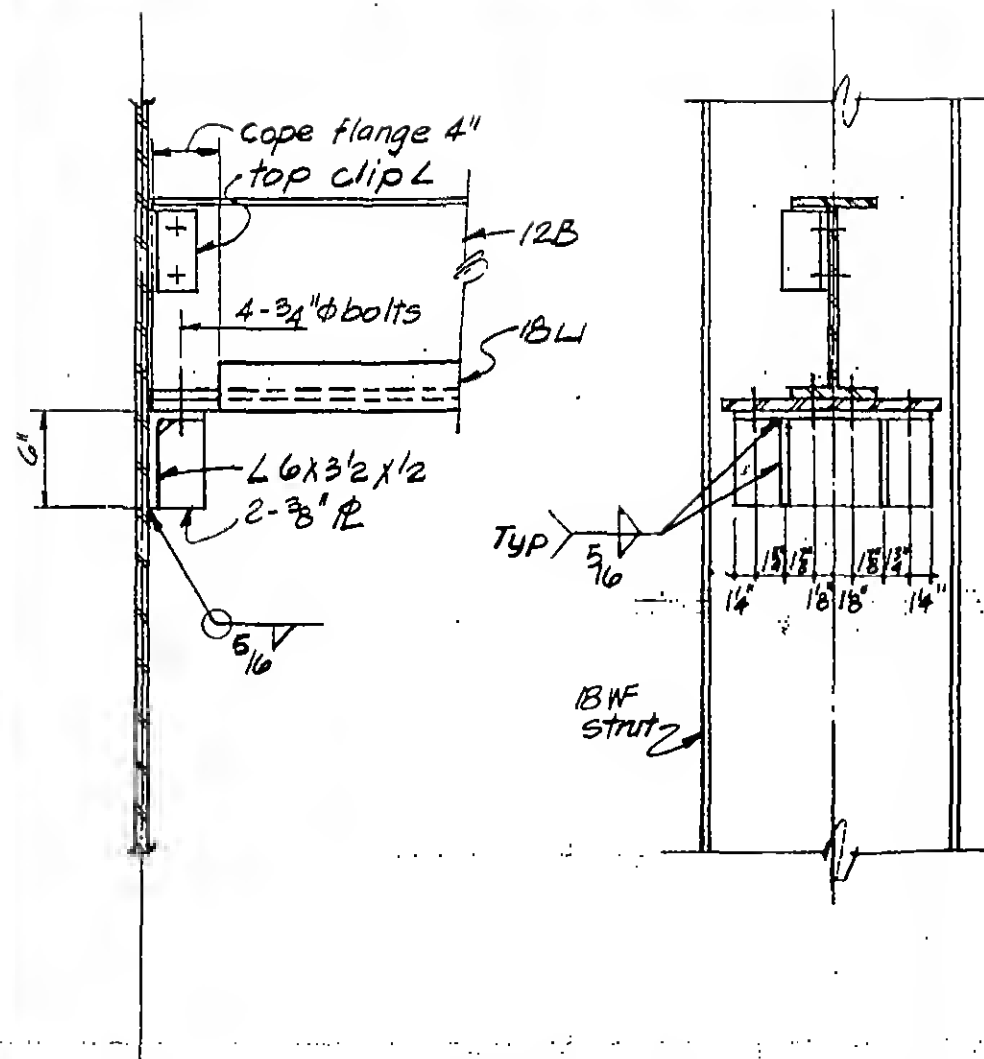
REVISIONS

6/15/70 R
2/5/71

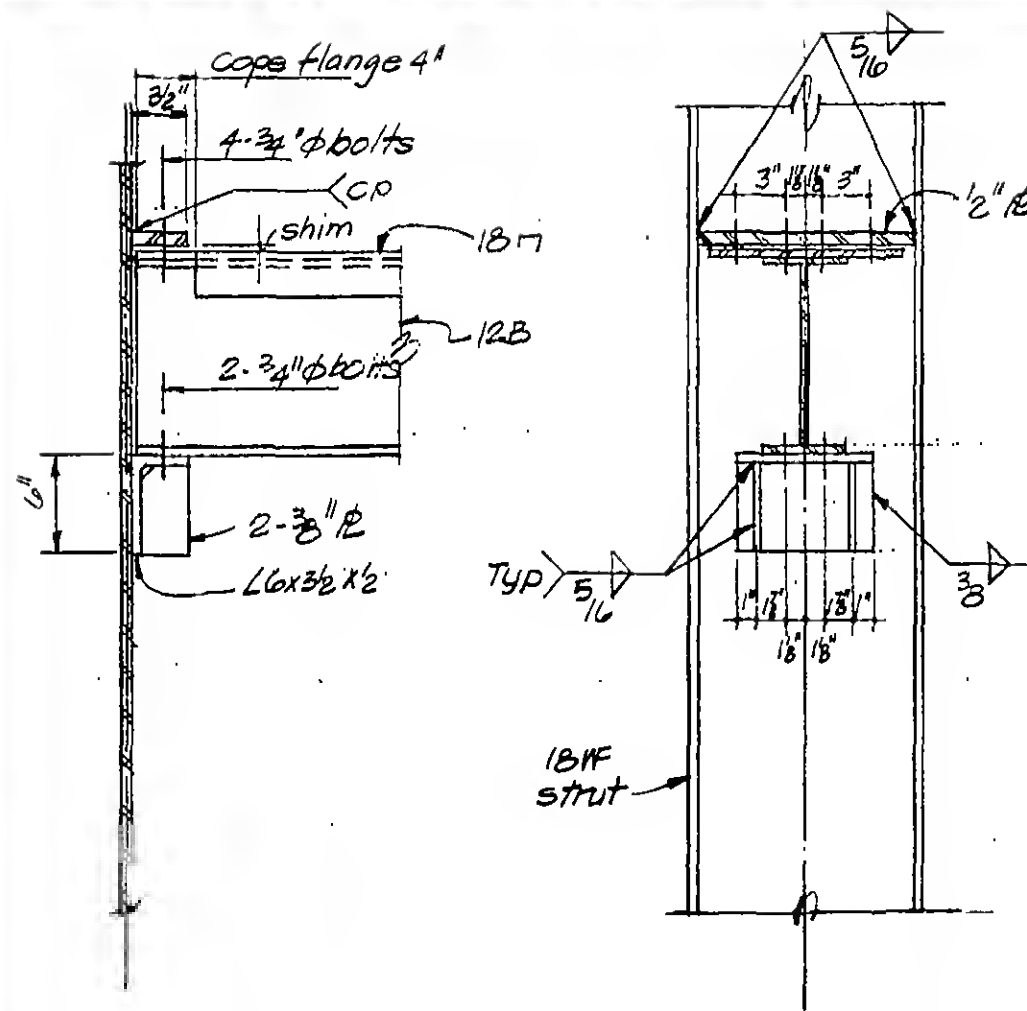
Detail 9-5A



Detail 9-5B



Detail 9-5C



Detail 9-5D



DESIGNED

DRAWN

P. Ozeki

REVIEWED

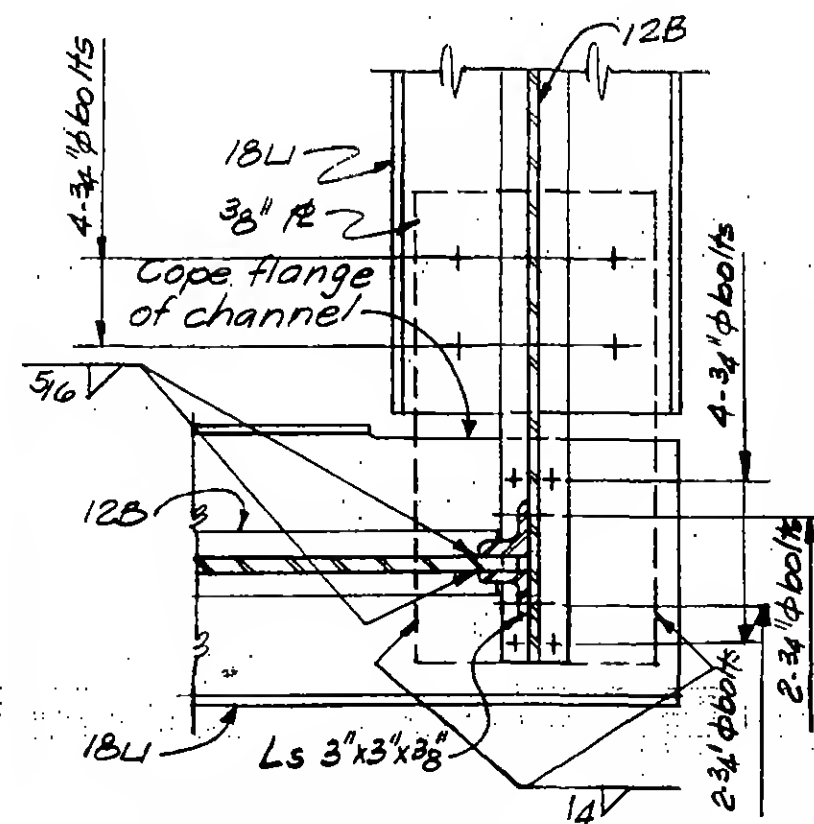
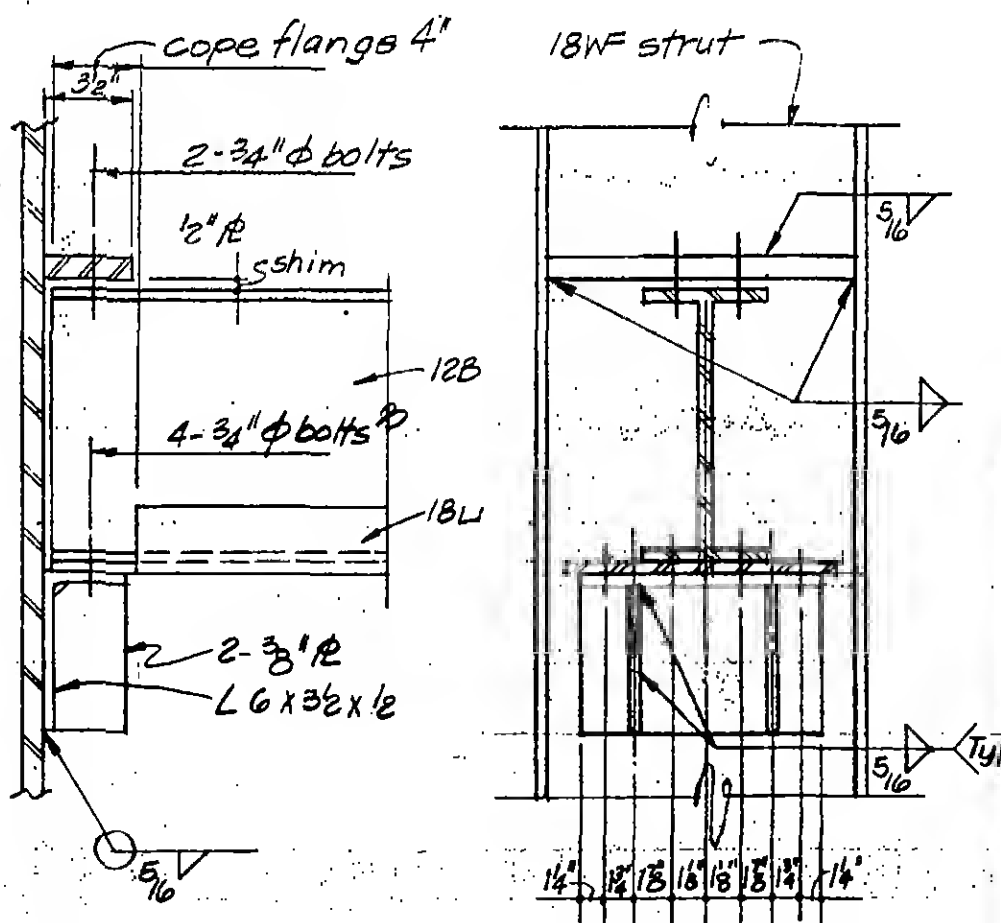
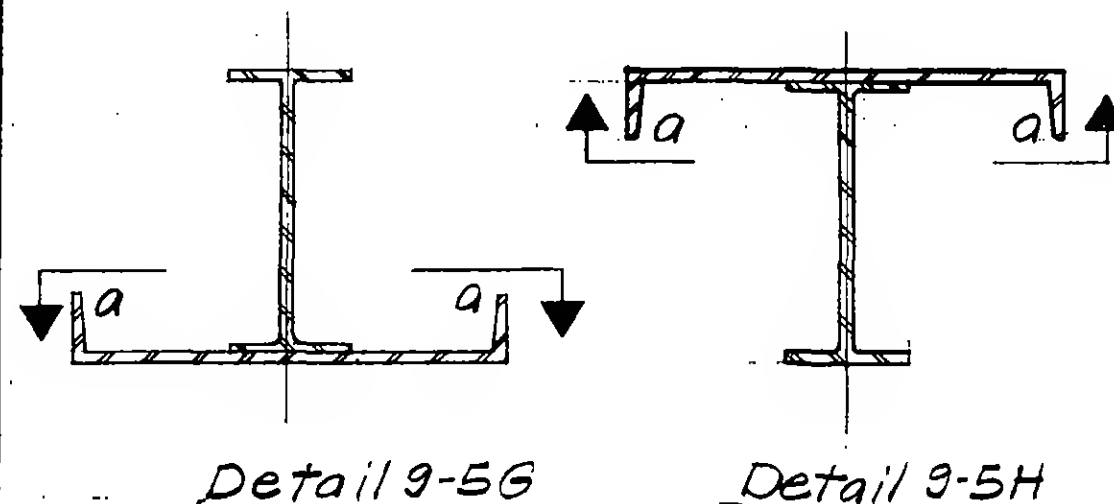
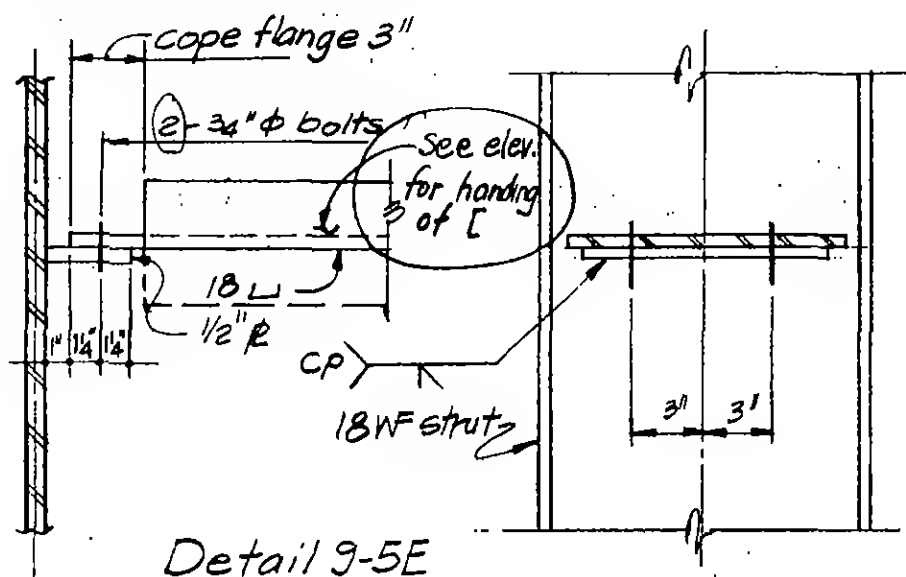
9-AB9-5.1

Structural & Civil Engineers

TITLE FL.107-PH LOUVER WALL SUPPORTS- DETAILS

DATE 4-1-70

6/15/70 R
2/5/71



A circular professional seal for Leslie E. Robertson, a Licensed Professional Engineer in the State of New York. The seal features the text "LICENSED PROFESSIONAL ENGINEER" at the top and "UNIVERSITY OF THE STATE OF NEW YORK" at the bottom. In the center is the coat of arms of the State of New York, with the name "LESLIE E. ROBERTSON" arched above it and the number "No. 34360" at the bottom.

DESIGNED

DRAWN

P. Ozeki

REVIEWED

Section a-a

9-AB9-5.2

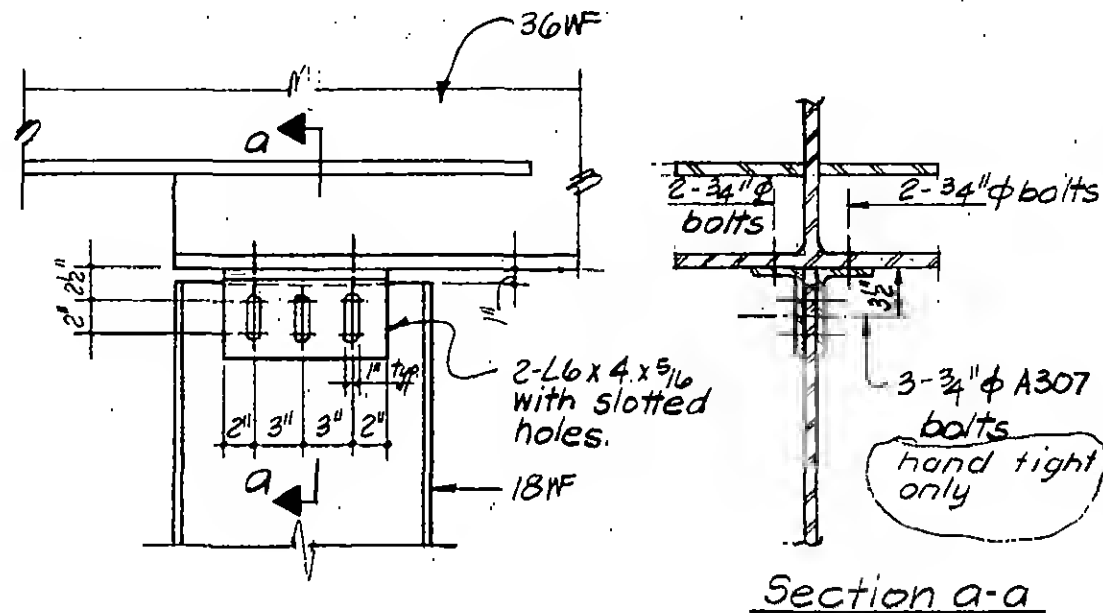
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

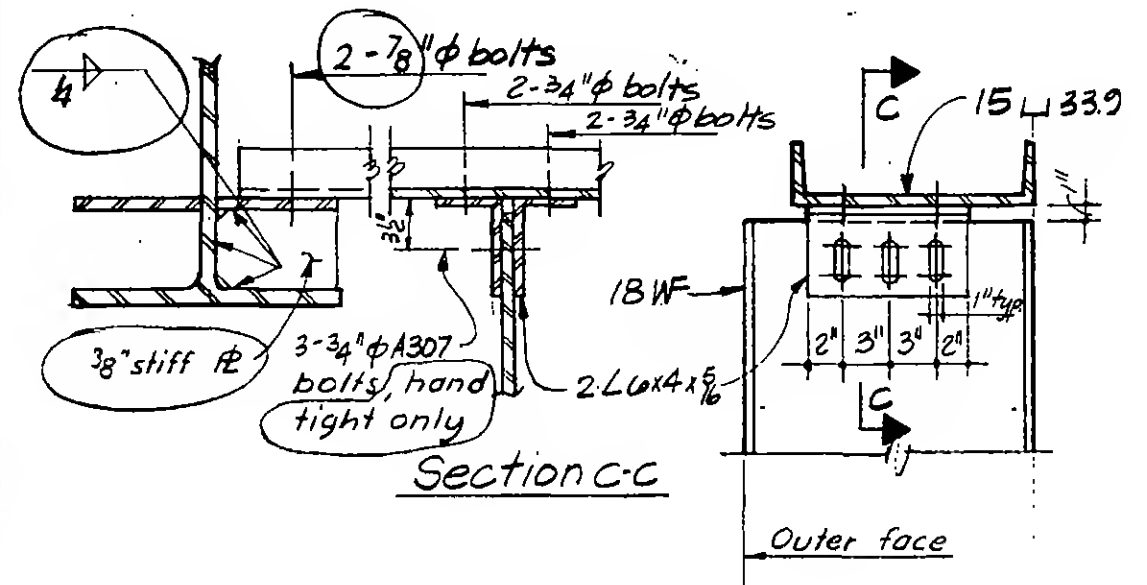
PROJECT THE WORLD TRADE CENTERTITLE FL 107-PH LOUVER WALL SUPPORTS-DETAILSDATE 4-1-70

REVISIONS

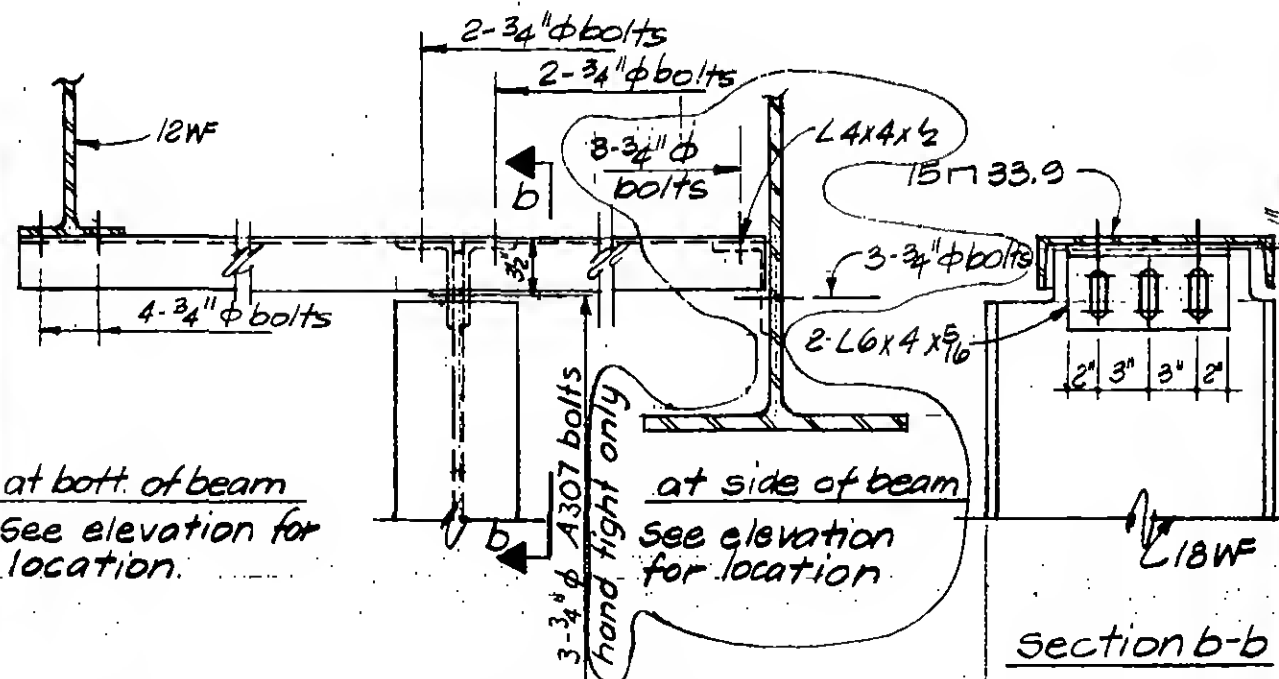
6/15/70 R



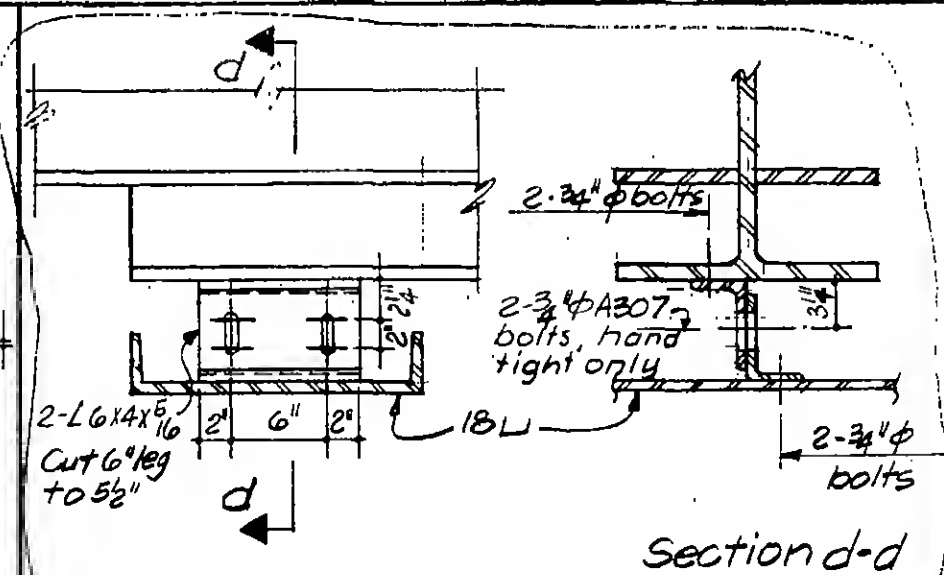
Detail 9-6A



Detail 9-6C



Detail 9-6B



Detail 9-6D



DESIGNED

DRAWN

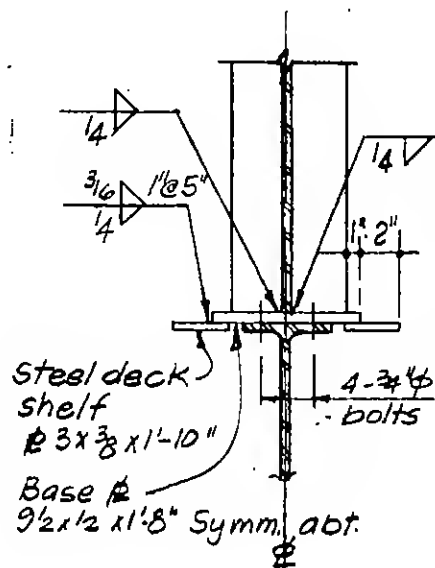
P. Ozeki

REVIEWED

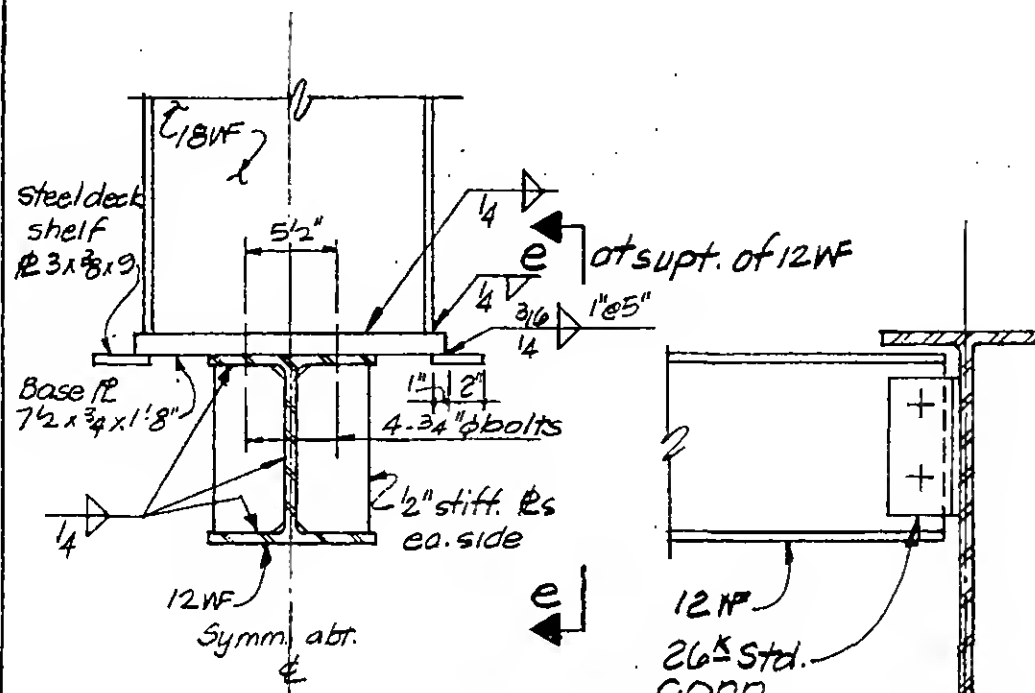
9-AB9-6

REVISIONS

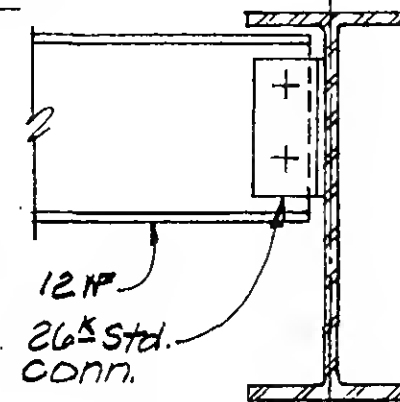
6/15/70 R
7/8/70



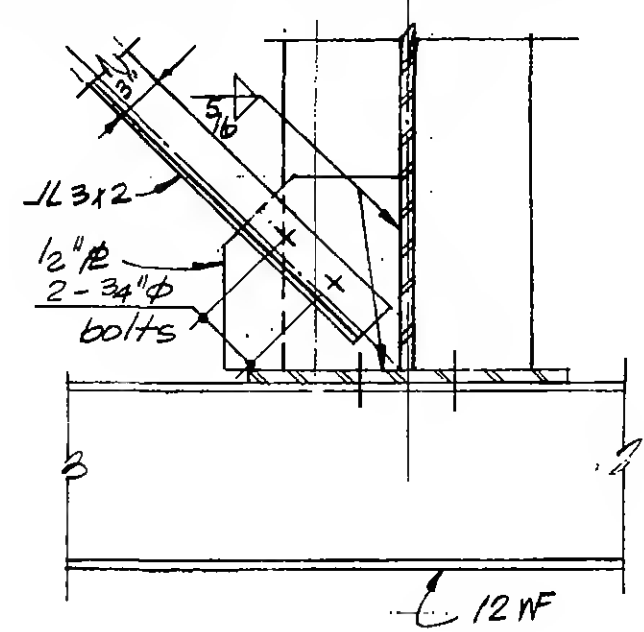
Detail 9-7A



Detail 9-7B

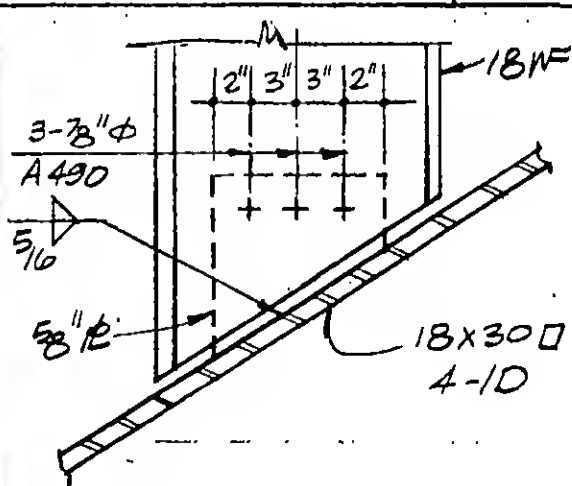


Section e-e

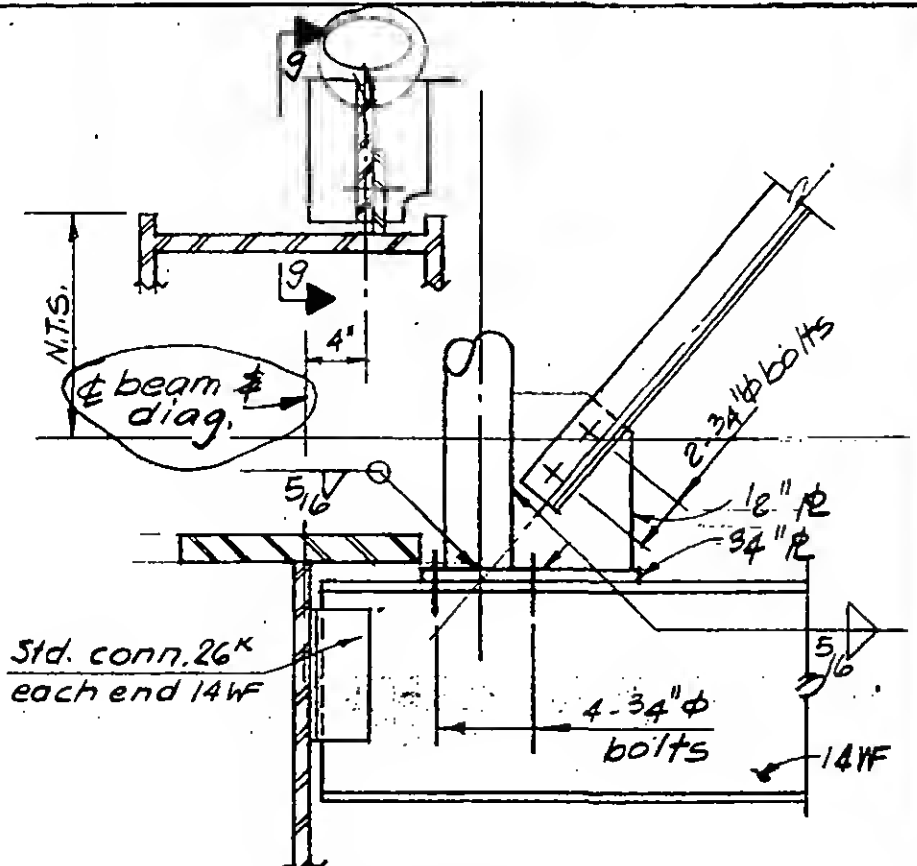


Detail 9-7C

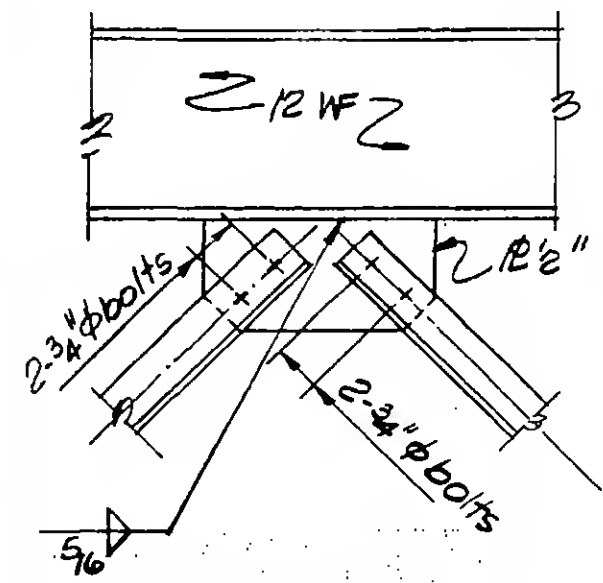
For information not shown
See 9-7B



Section 9-9



Detail 9-7D



Detail 9-7E

9-AB9-7



DESIGNED

DRAWN
P. Ozeki

REVIEWED

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

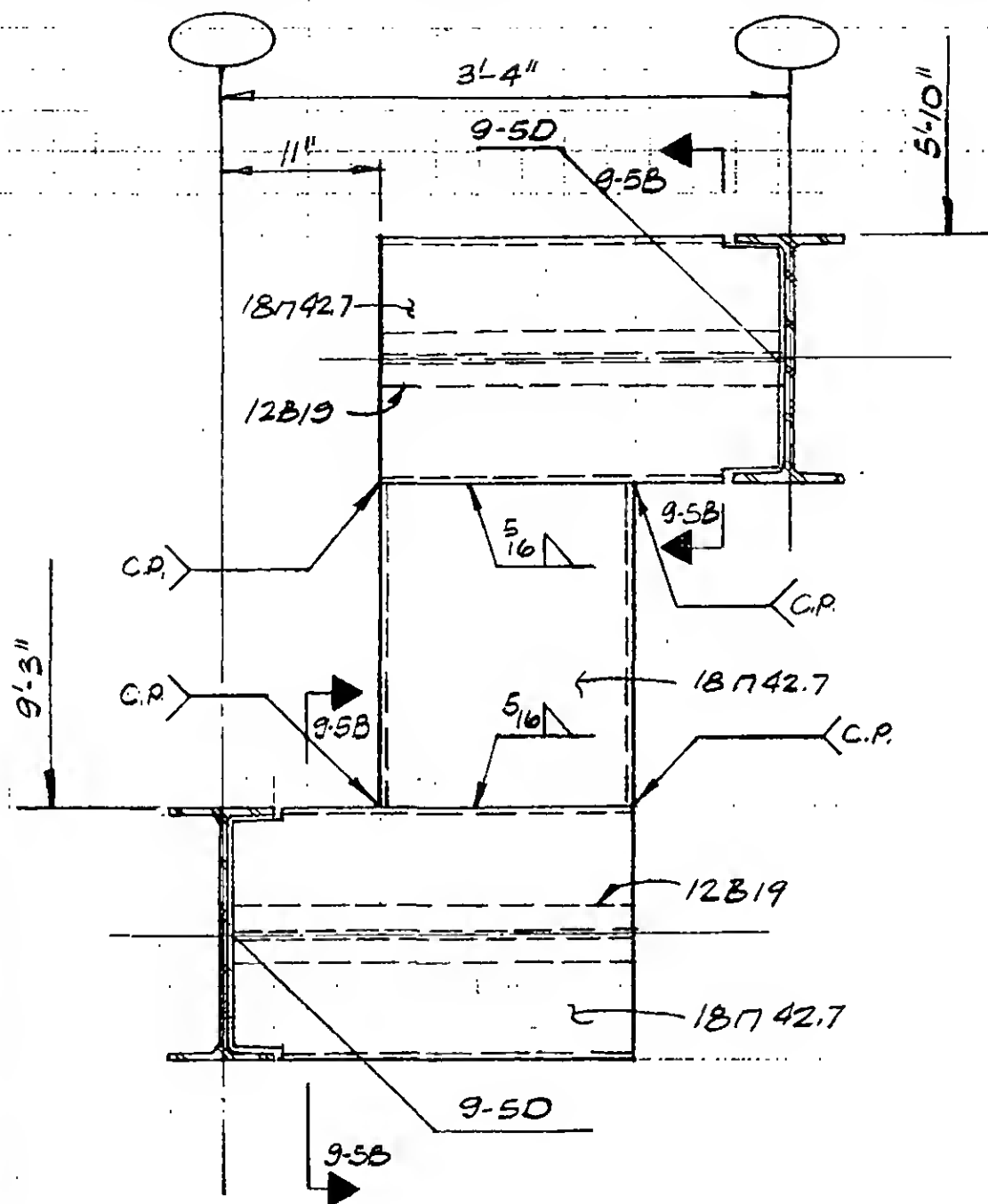
TITLE

FL. 107-PH LOUVER WALL SUPPORTS DETAILS

DATE

2/5/71

REVISIONS



DESIGNED

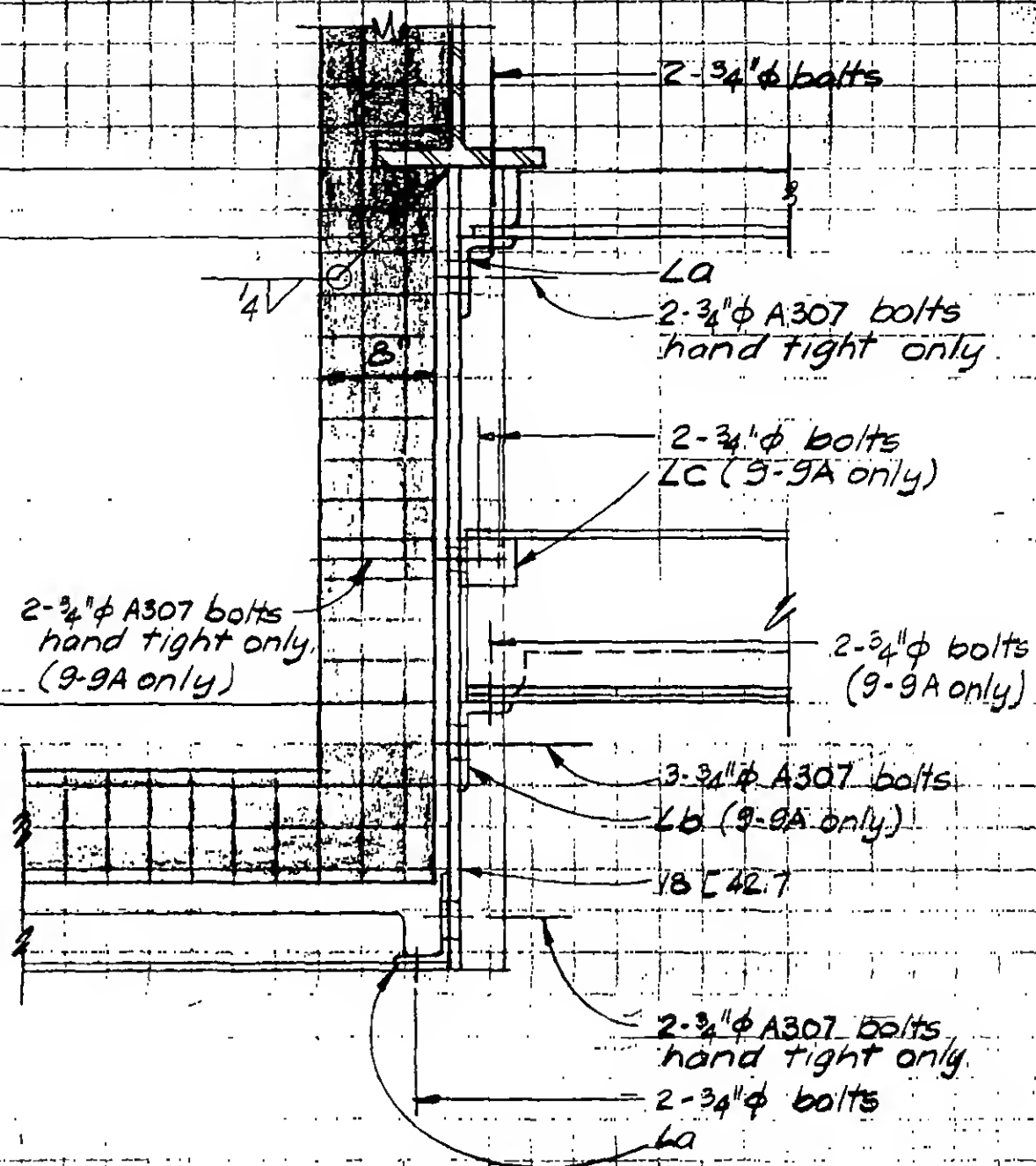
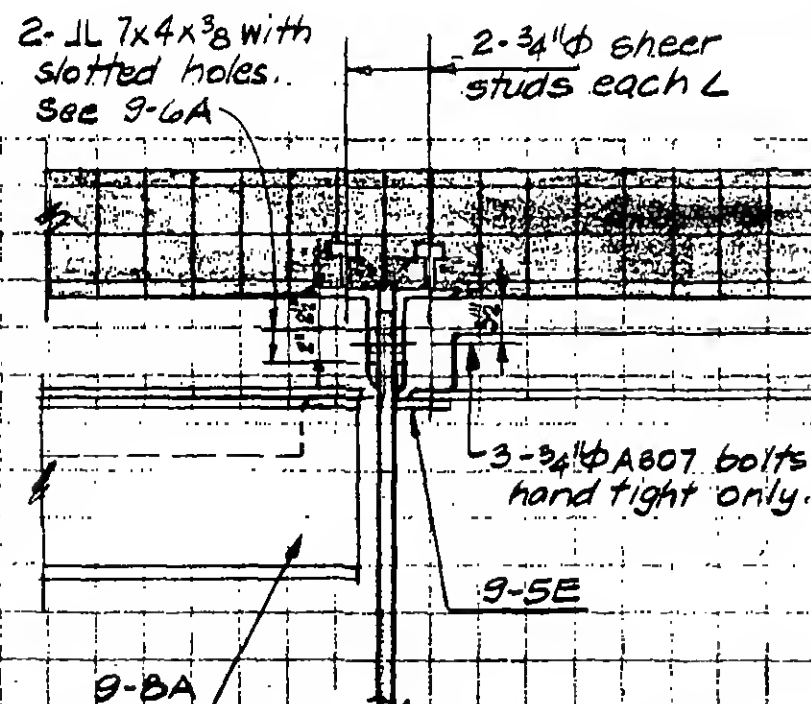
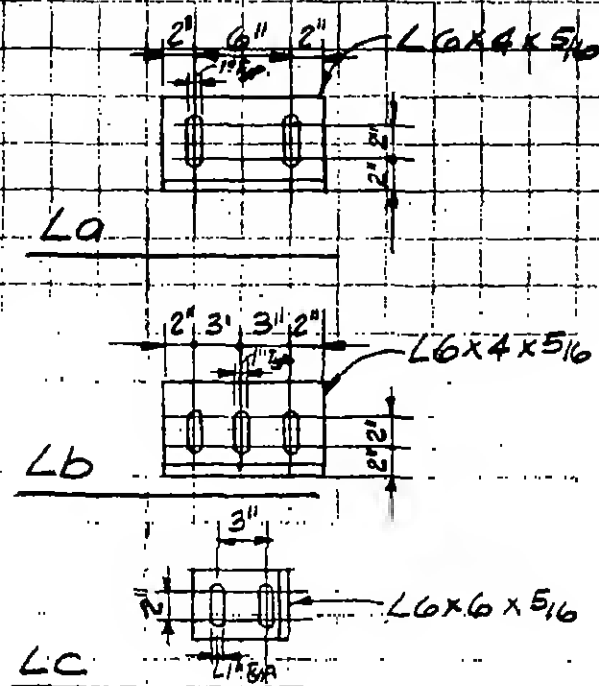
DRAWN

P. O'Brien

REVIEWED

9-89-8

REVISIONS



DATA 109-9C

Detail 9-9A

Detail 9-9B as noted



DESIGNED

WAB

DRAWN

P. Craker

2015/10/10

9-89-5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL-107-PH STRAP ANCHOR GENERAL NOTES

DATE

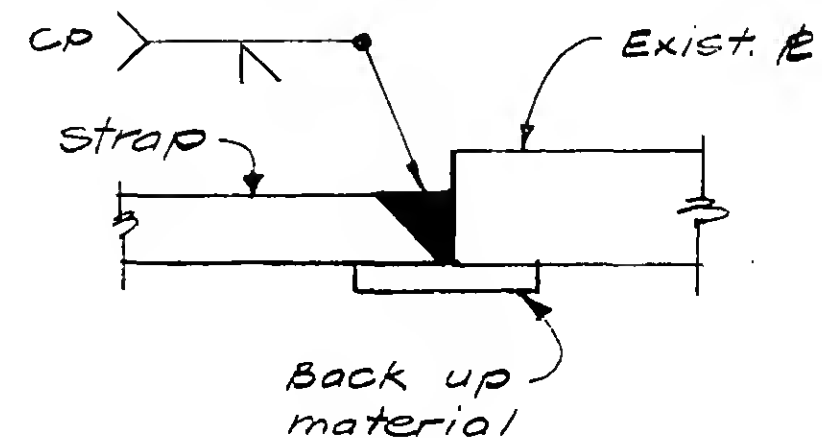
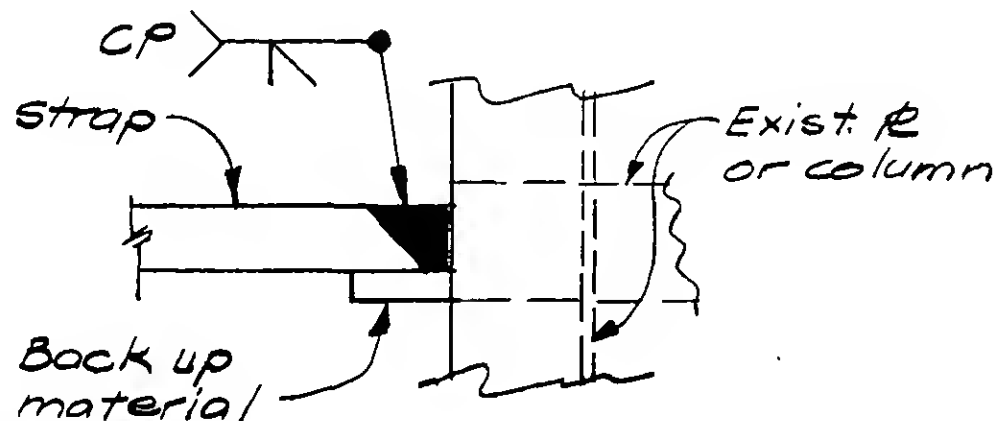
9-15-70

REVISIONS

1. Straps and back up material to be ASTM A36.
2. All welding to be with E70xx low hydrogen electrodes.
3. Back up material for complete penetration welding not to exceed 1" x 4".
4. Stud lengths, see Table A.

Table A

Stud Size	Stud length	Shop Dwg. Stud Designation
1/2	2"	R 420
5/8	2 1/2"	R 524
3/4	3"	R 630
7/8	3 1/2"	R 734



Typical Back up Material Detail



DESIGNED

DRAWN

R. Robertson

REVIEWED

9-AB10-1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

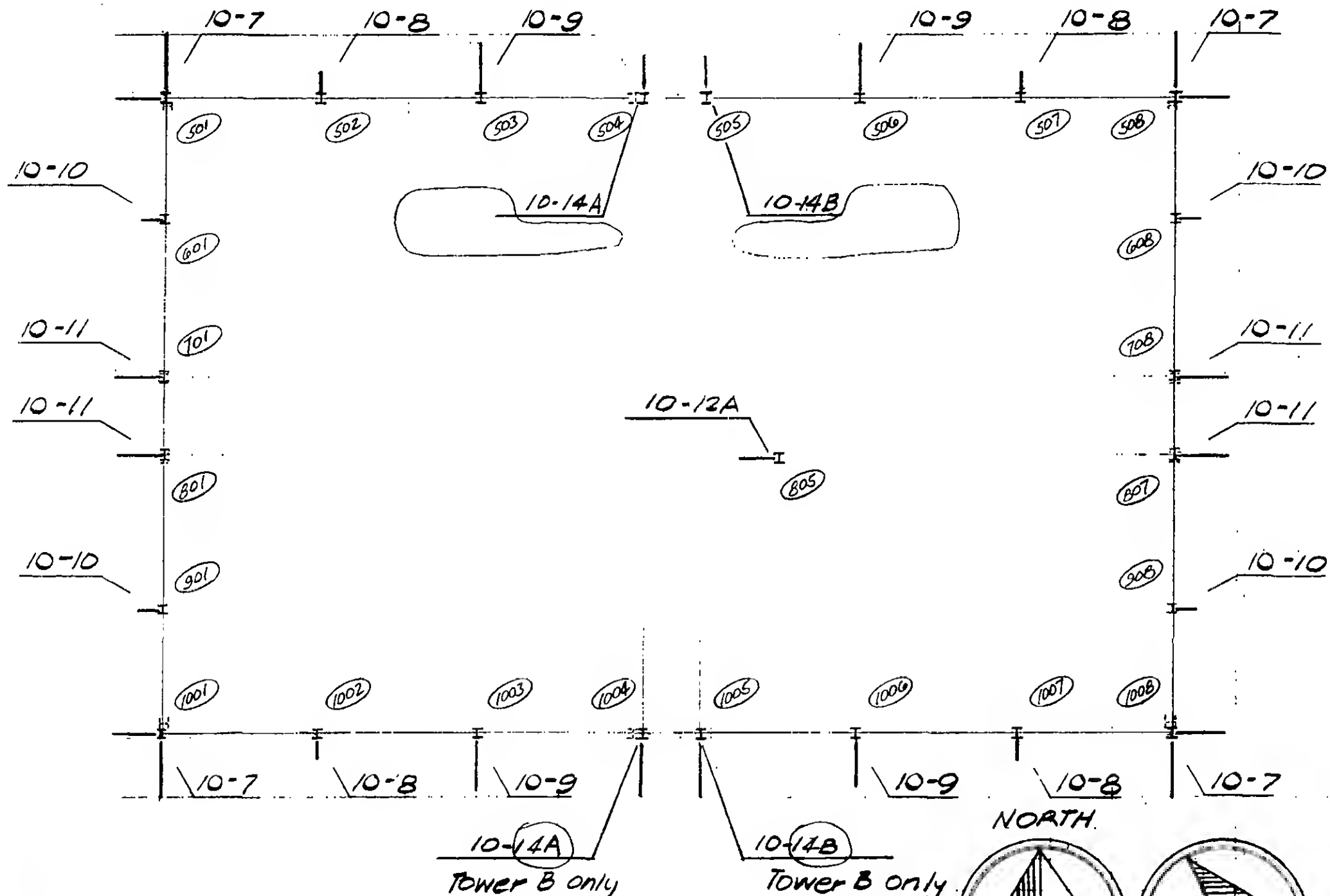
FL 107 - PH STRAP ANCHOR DETAILS - FL 107

DATE

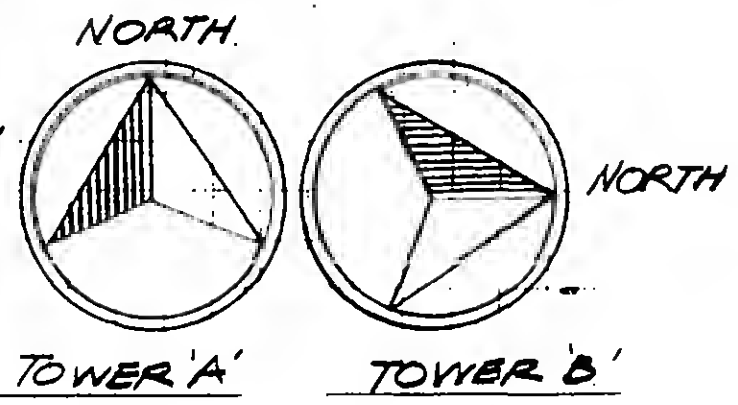
9-15-70

REVISIONS

12/14/70



KEY PLAN - FL 107



9-AB/O-2



DESIGNED

DRAWN

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

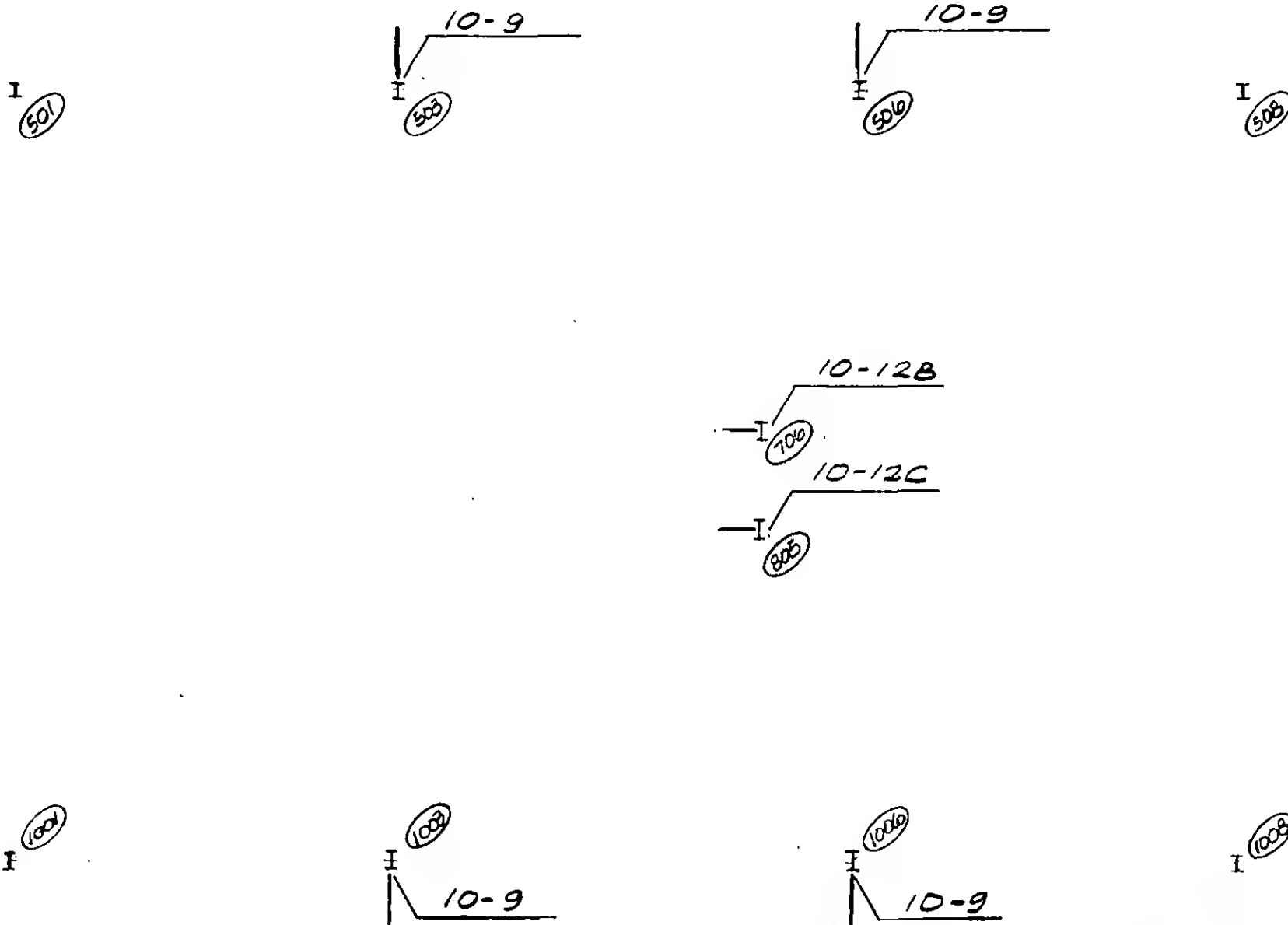
Structural & Civil Engineers

PROJECT **THE WORLD TRADE CENTER**

TITLE **FL 107-PH STRAP ANCHOR DETAILS-FL. 108**

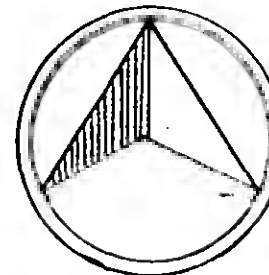
DATE **9-15-70**

REVISIONS

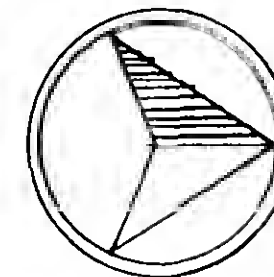


KEY PLAN - FL. 108

NORTH



TOWER 'A'



NORTH

TOWER 'B'

9-AB/0-3



DESIGNED

DRAWN
P. Orelli

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 -PH STRAP ANCHOR DETAILS-FL.109

DATE

9-15-70

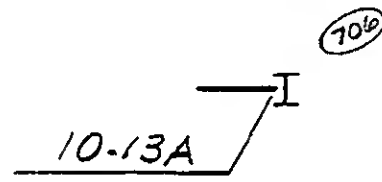
REVISIONS

I

501

I

508



10-13B



I

1001

I

1008



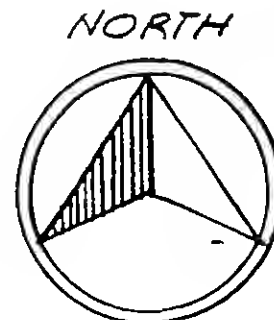
DESIGNED

DRAWN

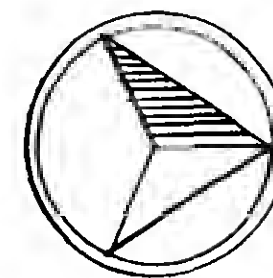
P. O'Brien

REVIEWED

KEY PLAN - FL. 109



TOWER 'A'



TOWER 'B'

NORTH

9-AB10-4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

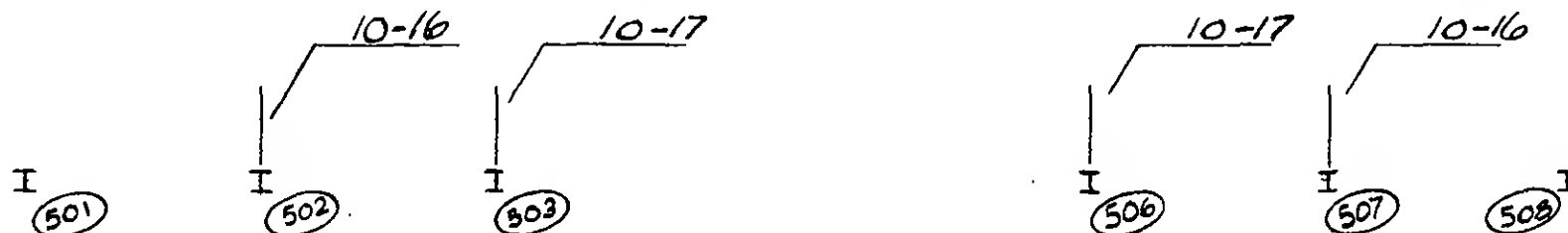
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

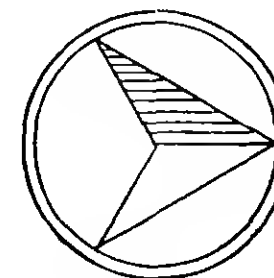
TITLE FL 107-PH STRAP ANCHOR DETAILS - FL 110

DATE 12/14/70

REVISIONS



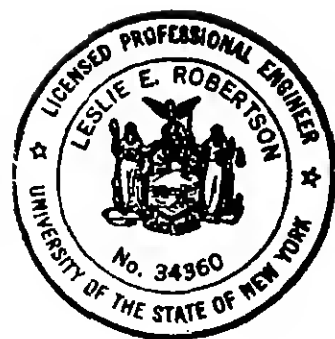
KEY PLAN-FL 110



NORTH

TOWER 'B'

9-B/10-5



DESIGNED

DRAWN

L. Robertson

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

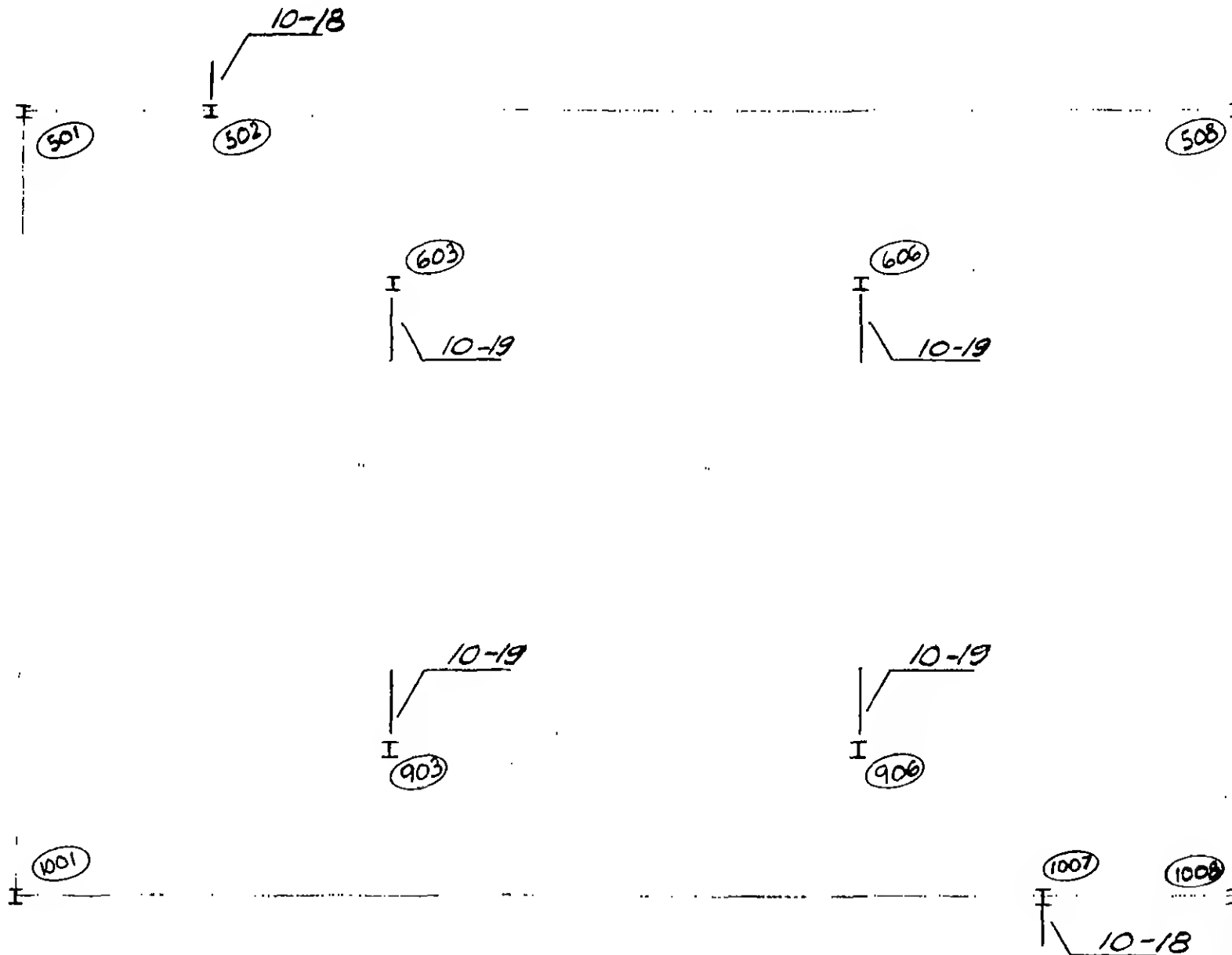
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

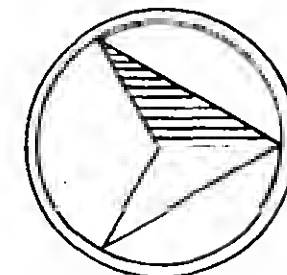
TITLE FL. 107 - PH STRAP ANCHOR DETAILS - PH ROOF

DATE 12/14/70

REVISIONS



KEY PLAN - P.H. ROOF



NORTH

TOWER 'B'

9-B/0-6



DESIGNED

DRAWN

L. Robertson

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

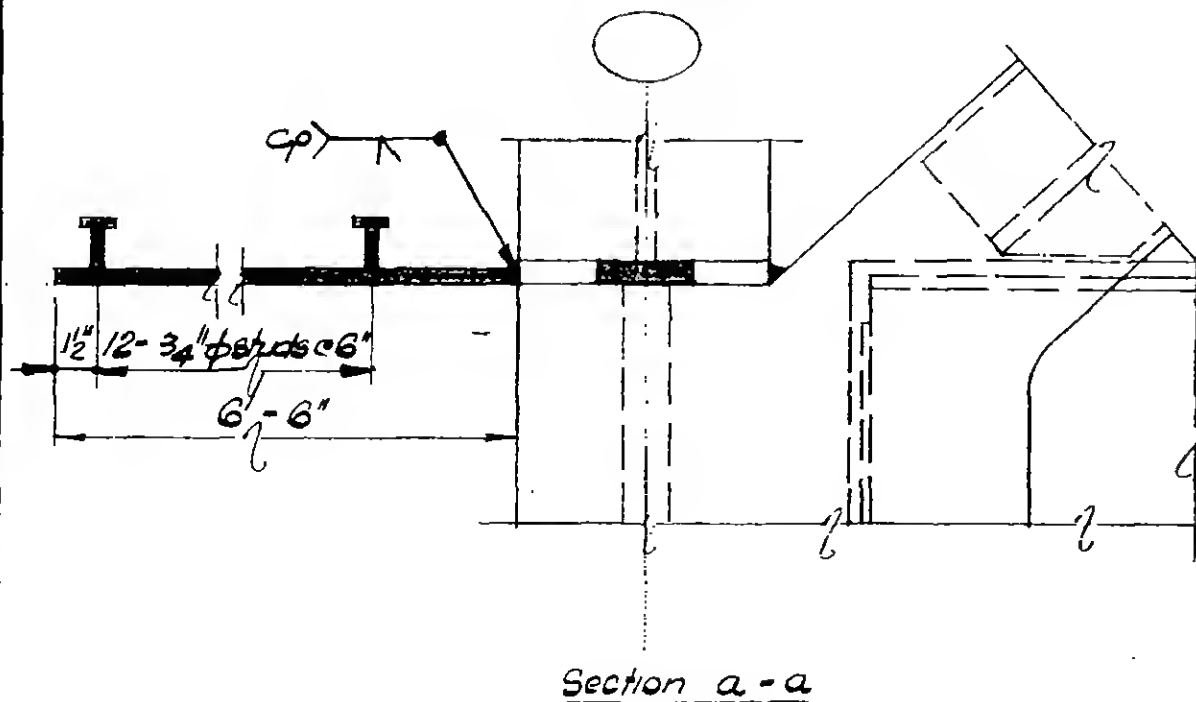
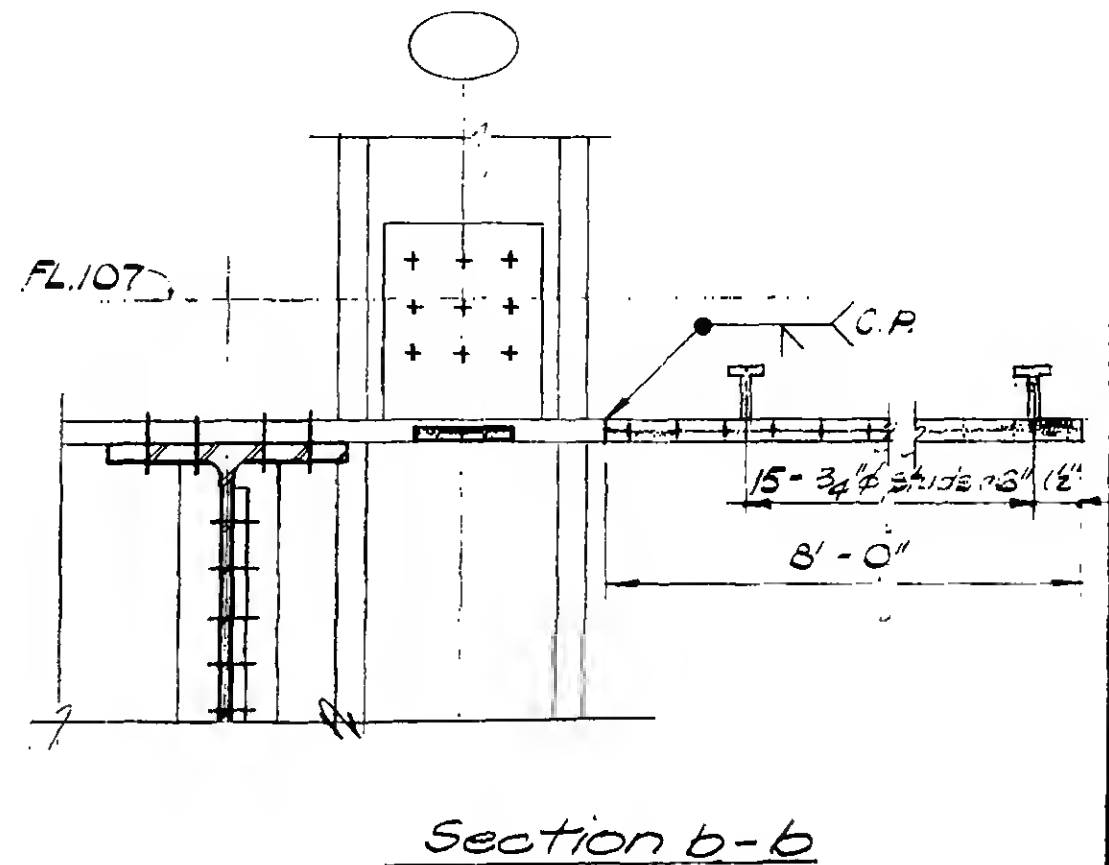
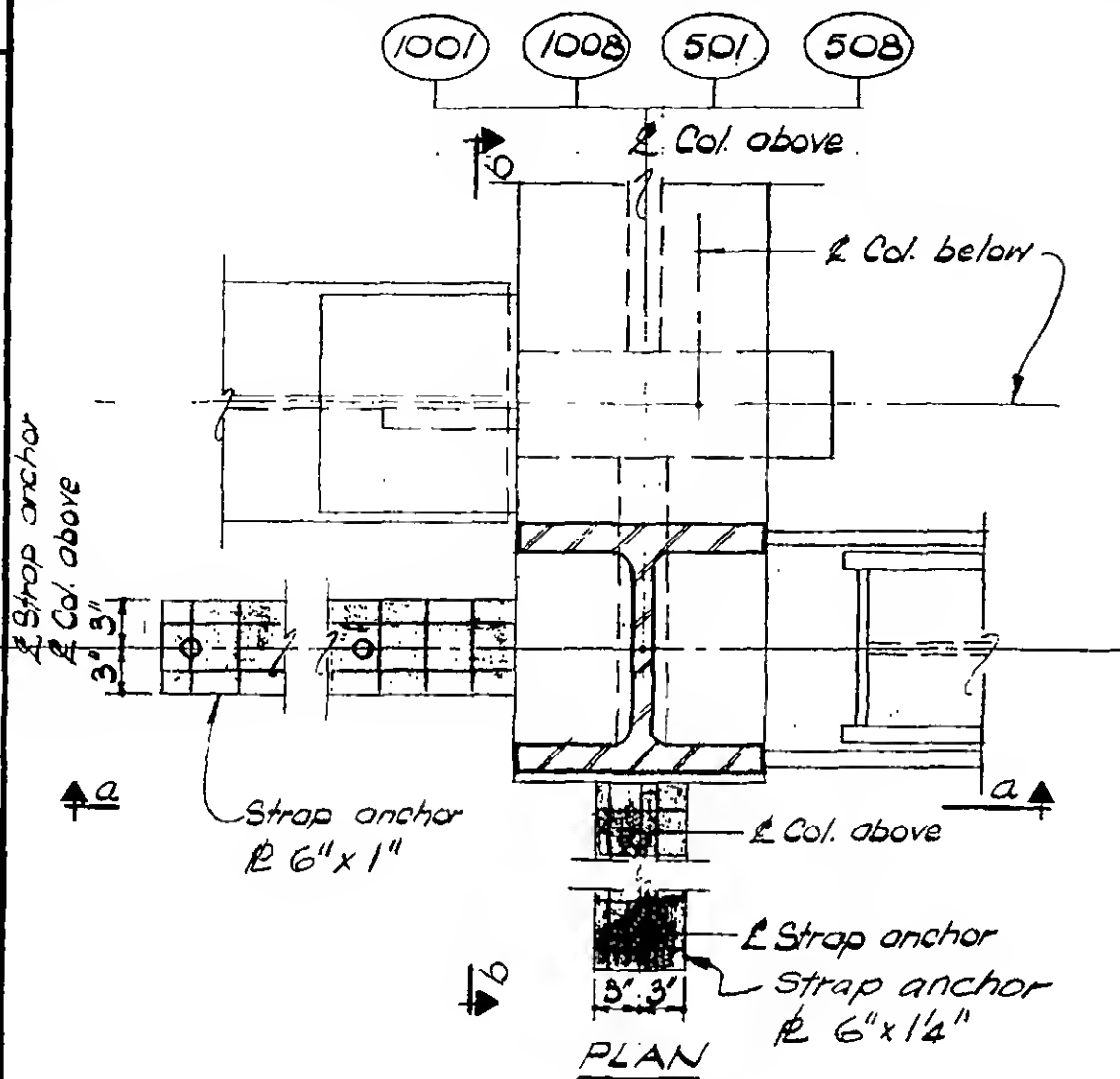
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH STRAP ANCHOR DETAILS

DATE 9-15-70

REVISIONS



DETAIL 10-7

9-AB10-7



DESIGNED

DRAWN

M. Clarke

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - PH STRAP ANCHOR DETAILS

DATE

9-15-70

REVISIONS

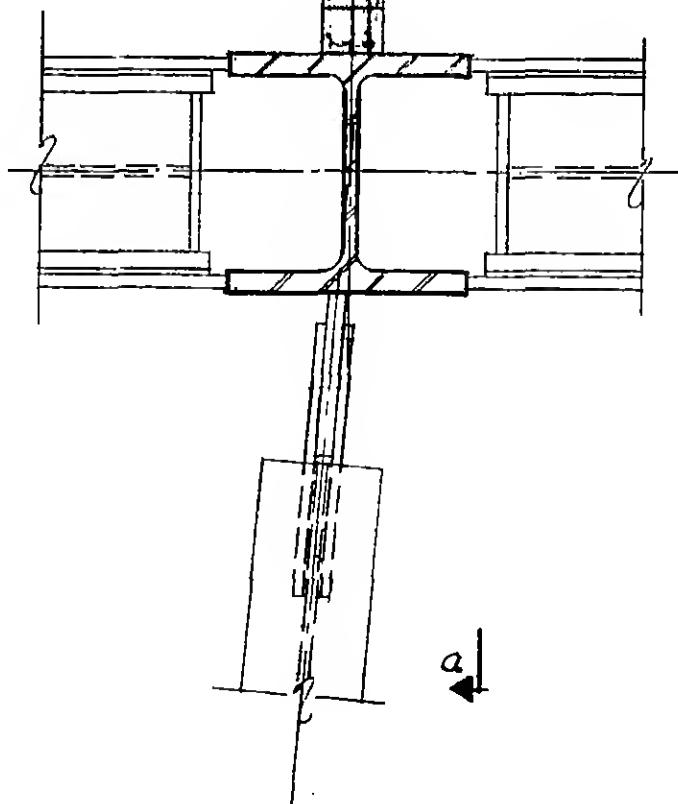
502 507 1002 1007

Strap anchor &
Column &

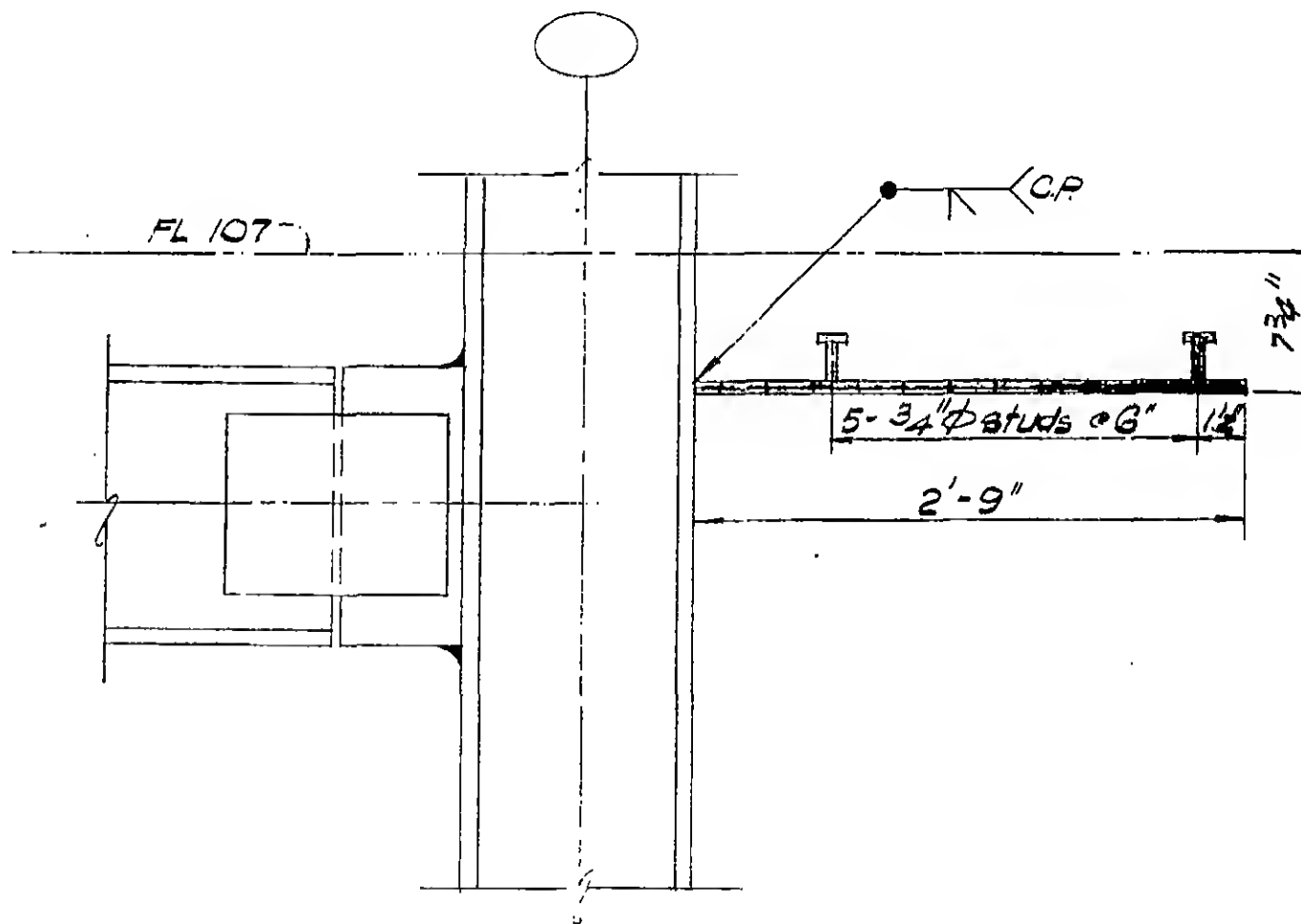
2'2"

a

Strap anchor
4" x 3/4"



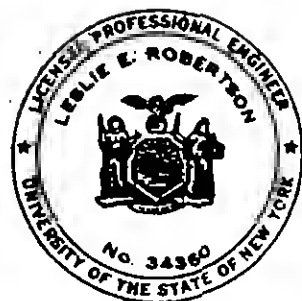
PLAN



Section a-a

DETAIL 10-8

9-AB10-8



DESIGNED

DRAWN

W. Clarke

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

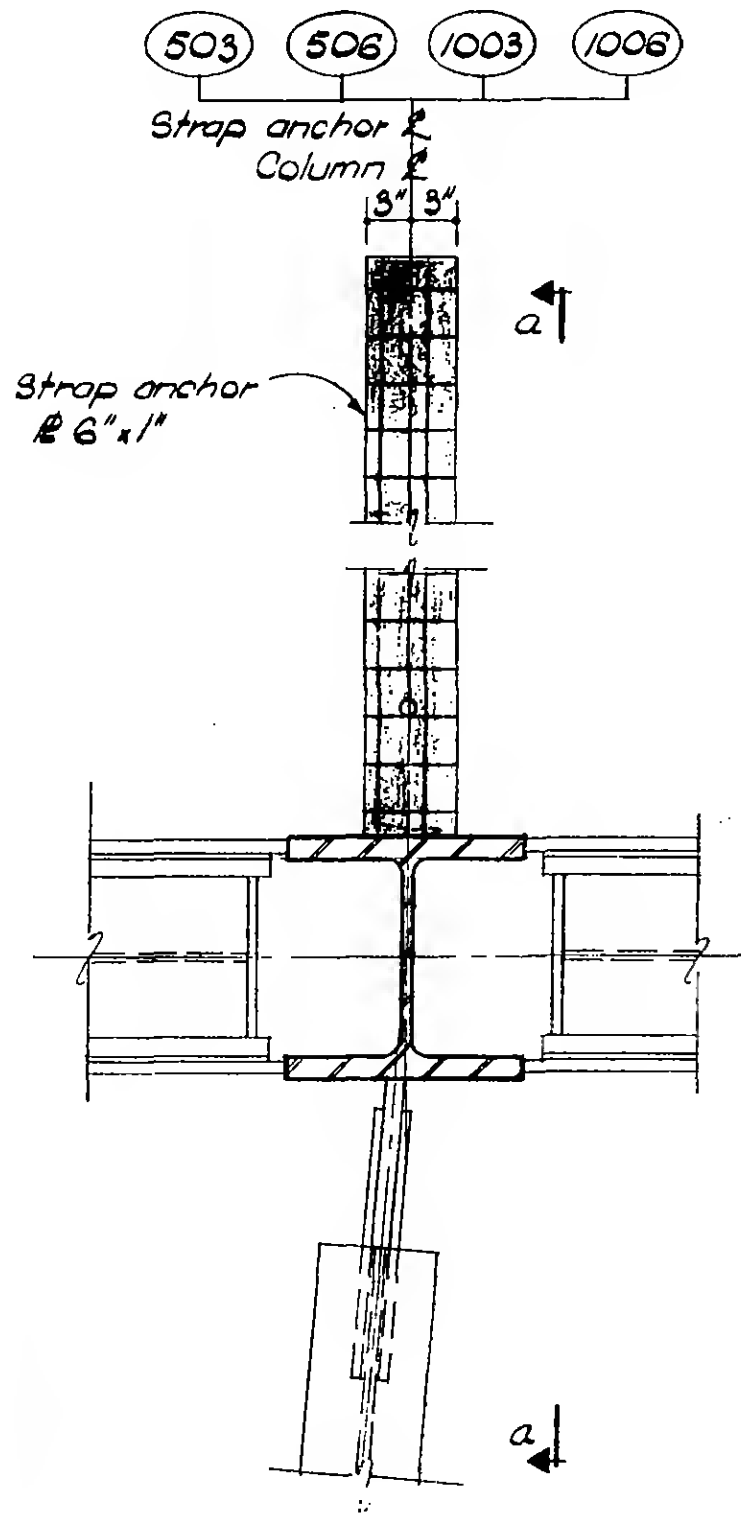
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

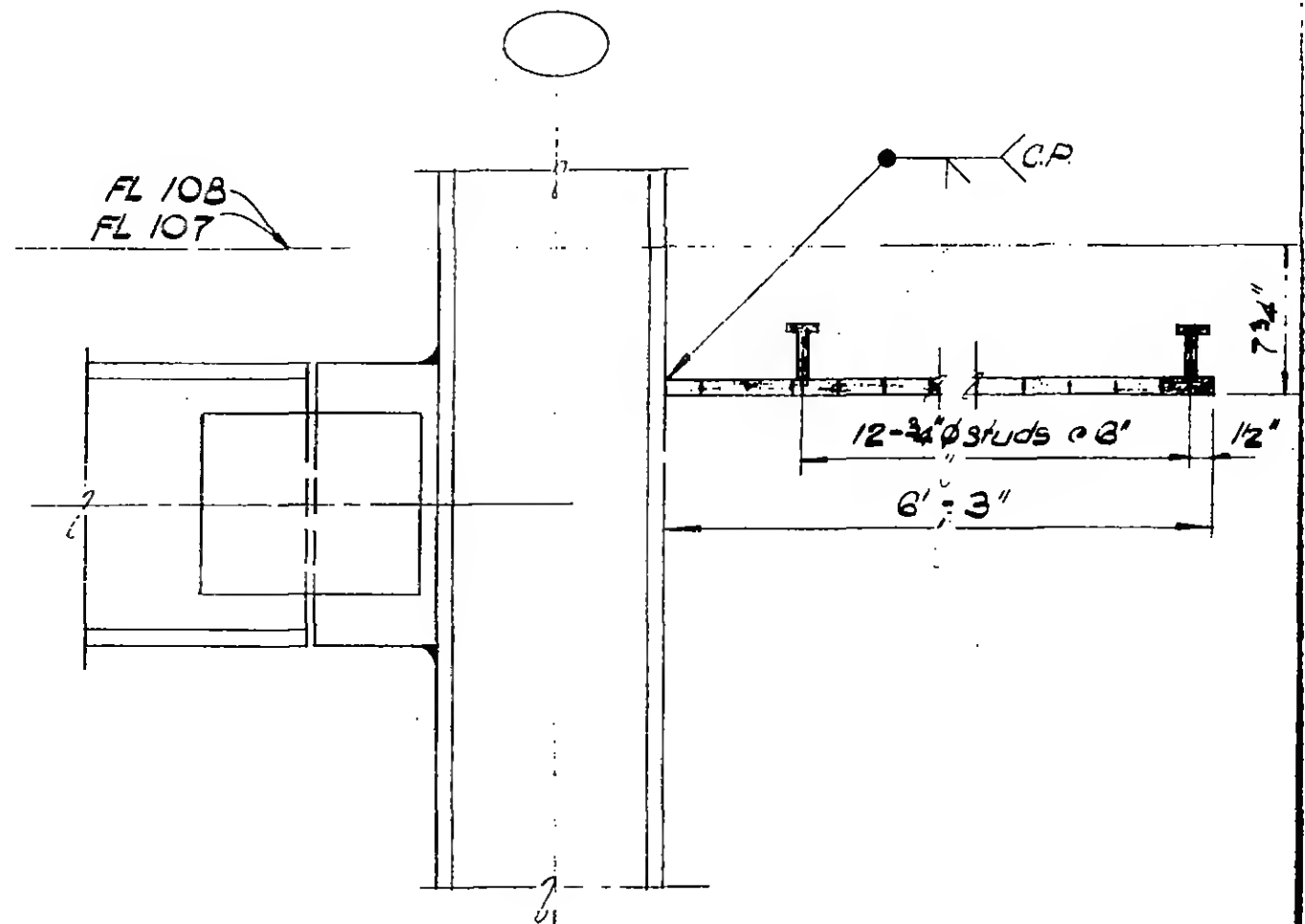
TITLE FL 107 - PH STRAP ANCHOR DETAILS

DATE 9-15-70

REVISIONS



PLAN



Section a-a

DETAIL 10-9

9-AB/O-9



DESIGNED

DRAWN

R. Clarke

REVIEWED

SKILLING, HELLE, CHRISTIANSEN ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

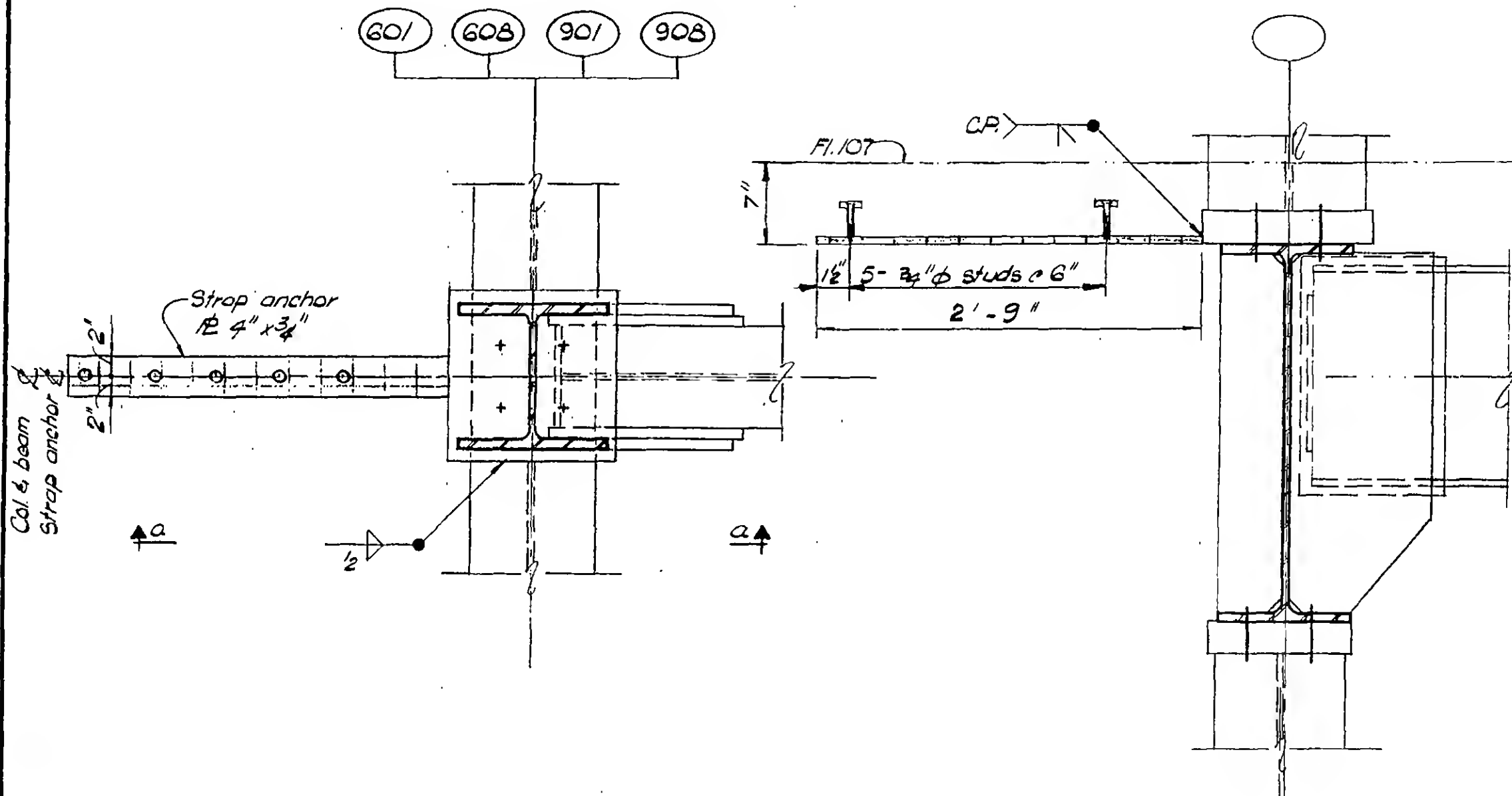
TITLE

FL 107 - RH STRAP ANCHOR DETAILS

DATE

9-15-70

REVISIONS



PLAN

Section a-a

DETAIL 10-10



DESIGNED

DRAWN

W. Clarke

REVIEWED

9-AB/0-10

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL107-PH STRAP ANCHOR DETAILS

DATE _____

9-16-70

REVISIONS



Section a-a

DETAIL 10-11

9-AB/O-11



DESIGNED

DATA

W. Clarke

EXHIBIT

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

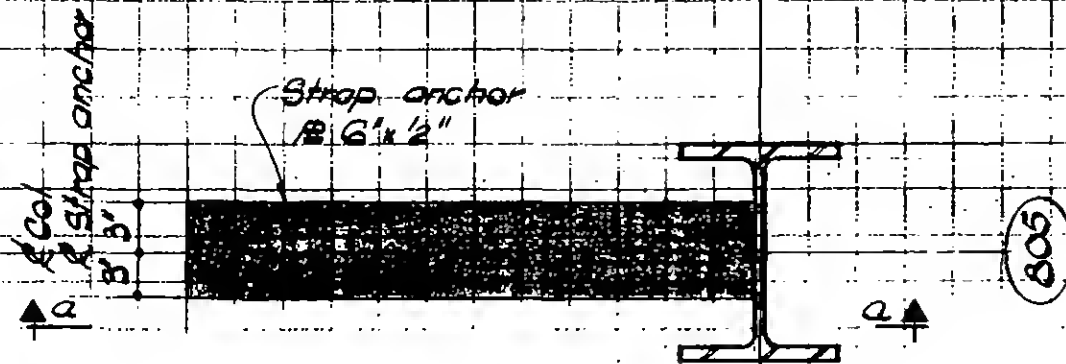
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

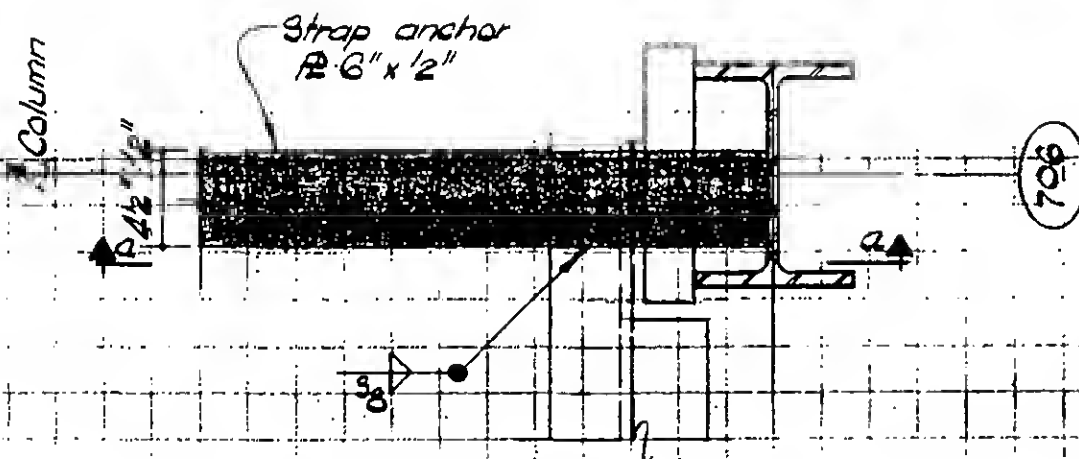
TITLE FL 107-PH STRAP ANCHOR DETAILS

DATE 9-15-70

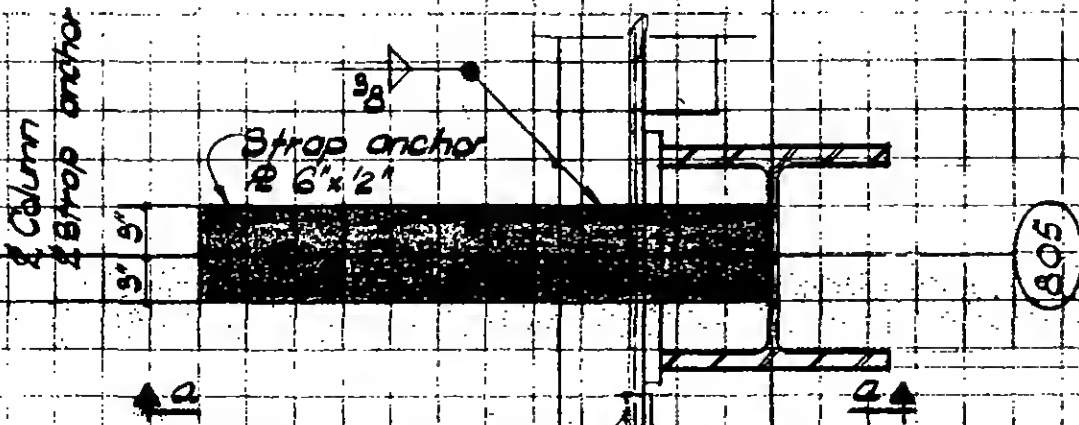
REVISIONS



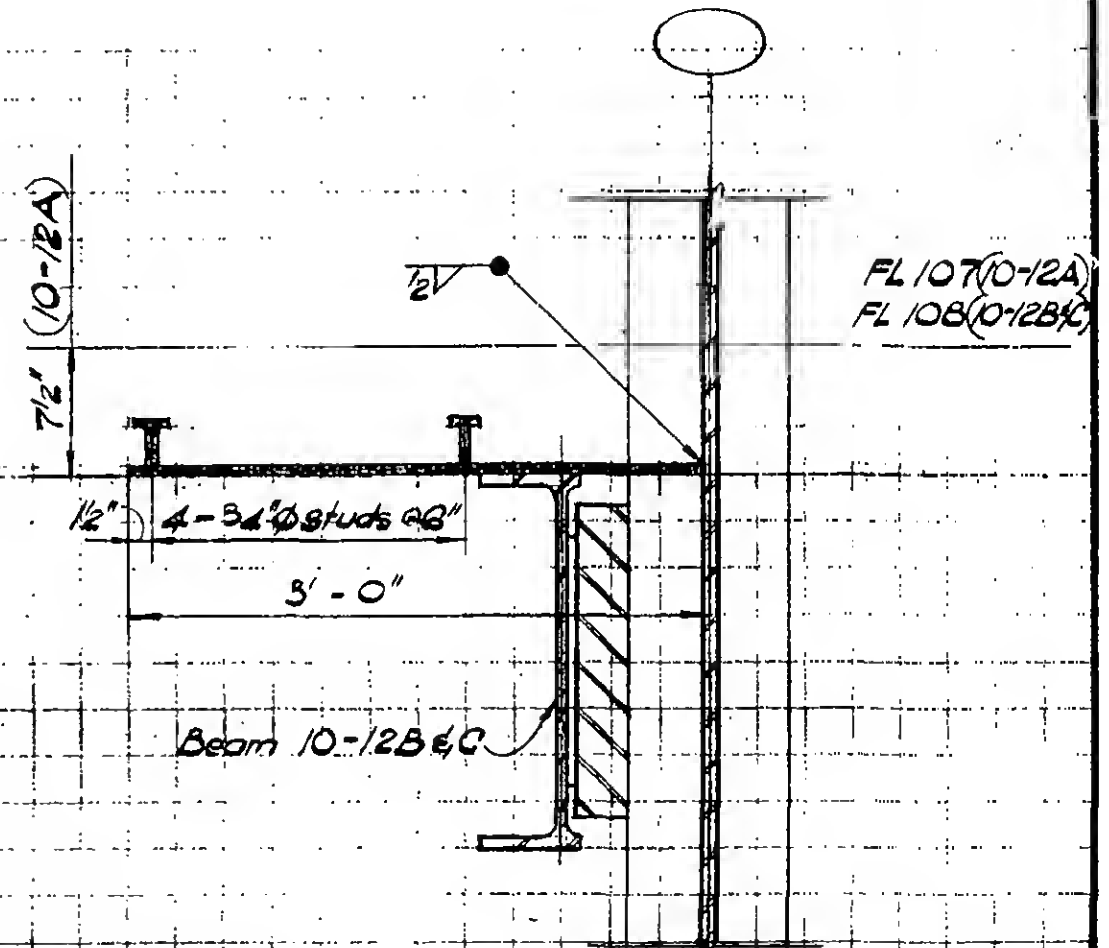
PLAN 10-12A



PLAN 10-12B



PLAN 10-12C



Section A-A

FL 107(10-12A)
FL 108(10-12B/C)



DESIGNED

DRAWN

M. Clarke

REVIEWED

9-AB/10-12

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

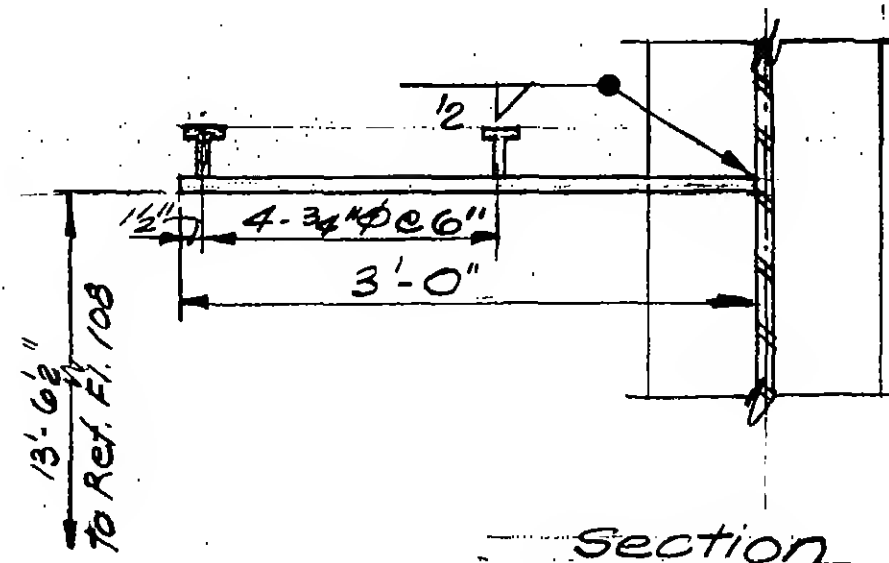
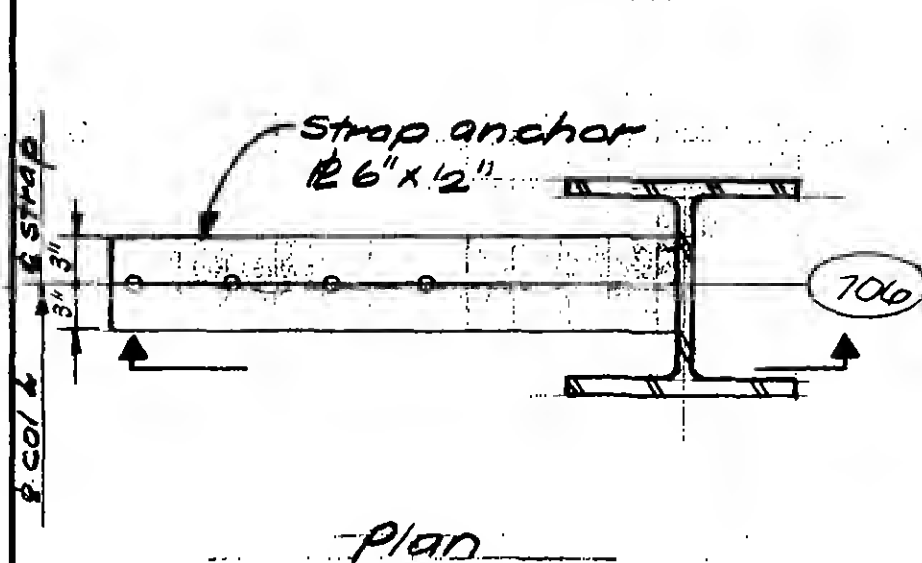
TITLE

FL-107 - PH STRAP ANCHOR DETAILS

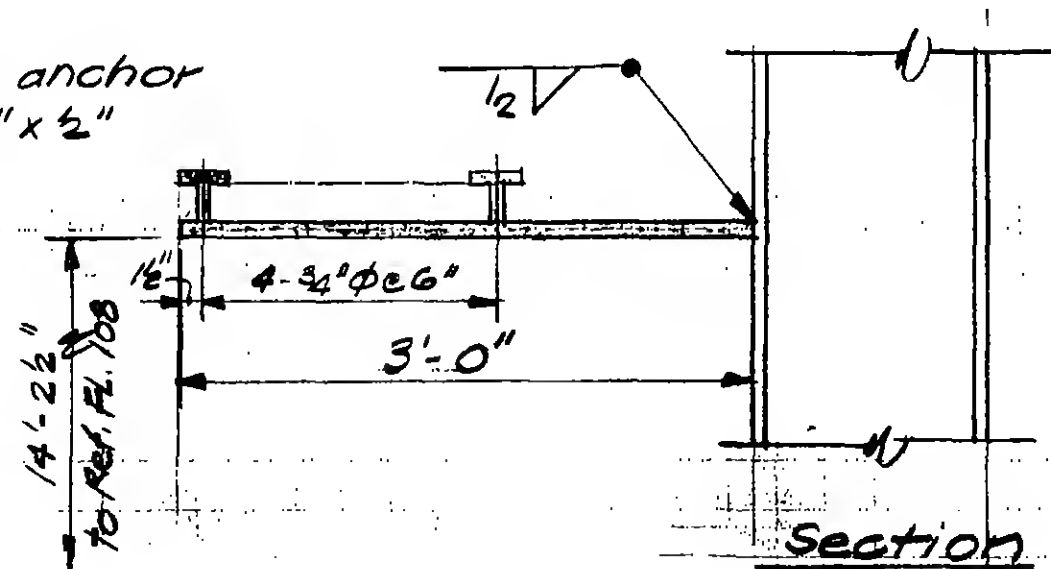
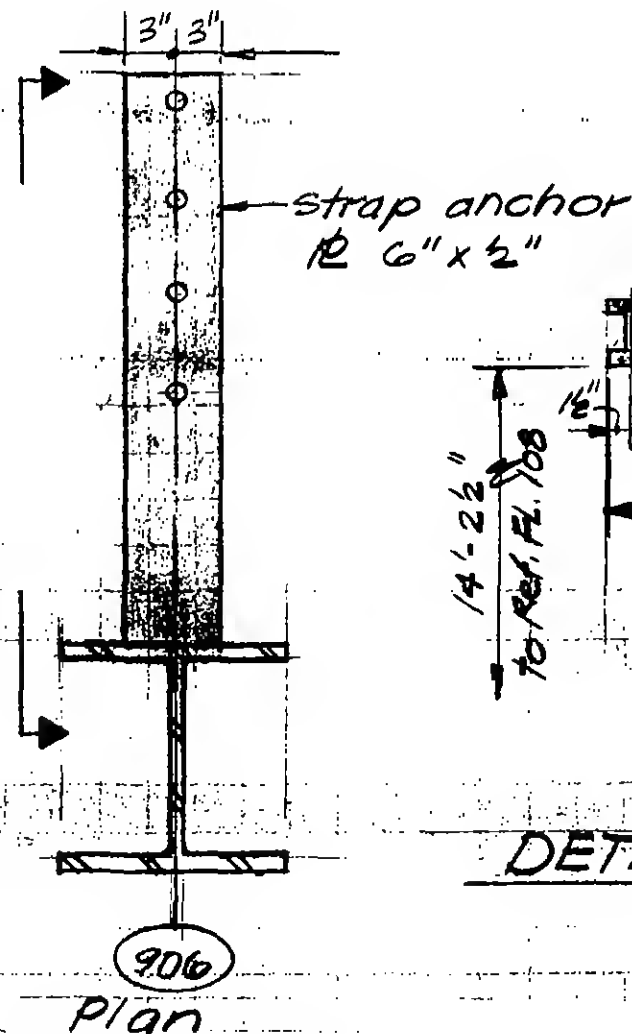
DATE

9-15-70

REVISIONS

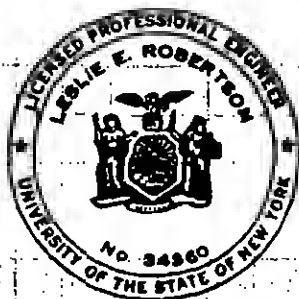


DETAIL 10-13A



DETAIL 10-13B

9-AB10-13



DESIGNED

DRAWN

REVIEWED

PROJECT

THE WORLD TRADE CENTER

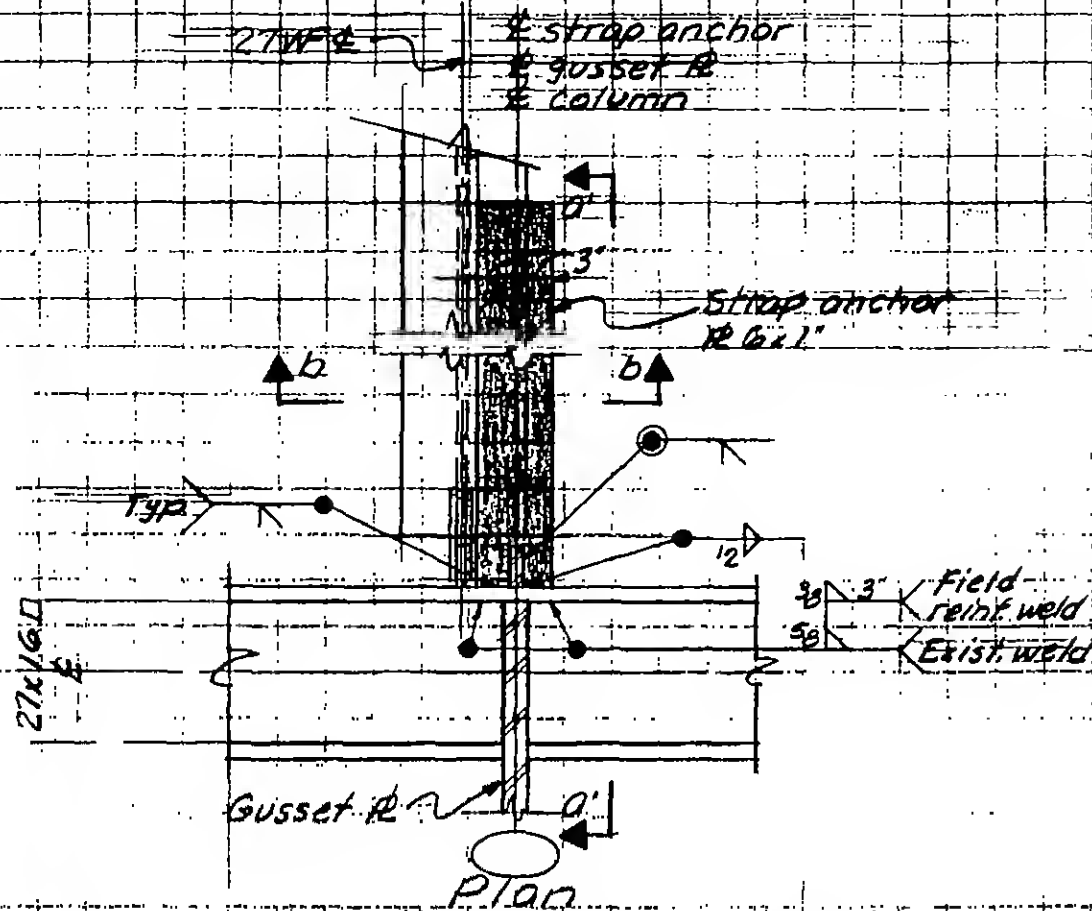
TITLE

FL 107-PH STRAP ANCHOR DETAILS

DATE

12/14/70

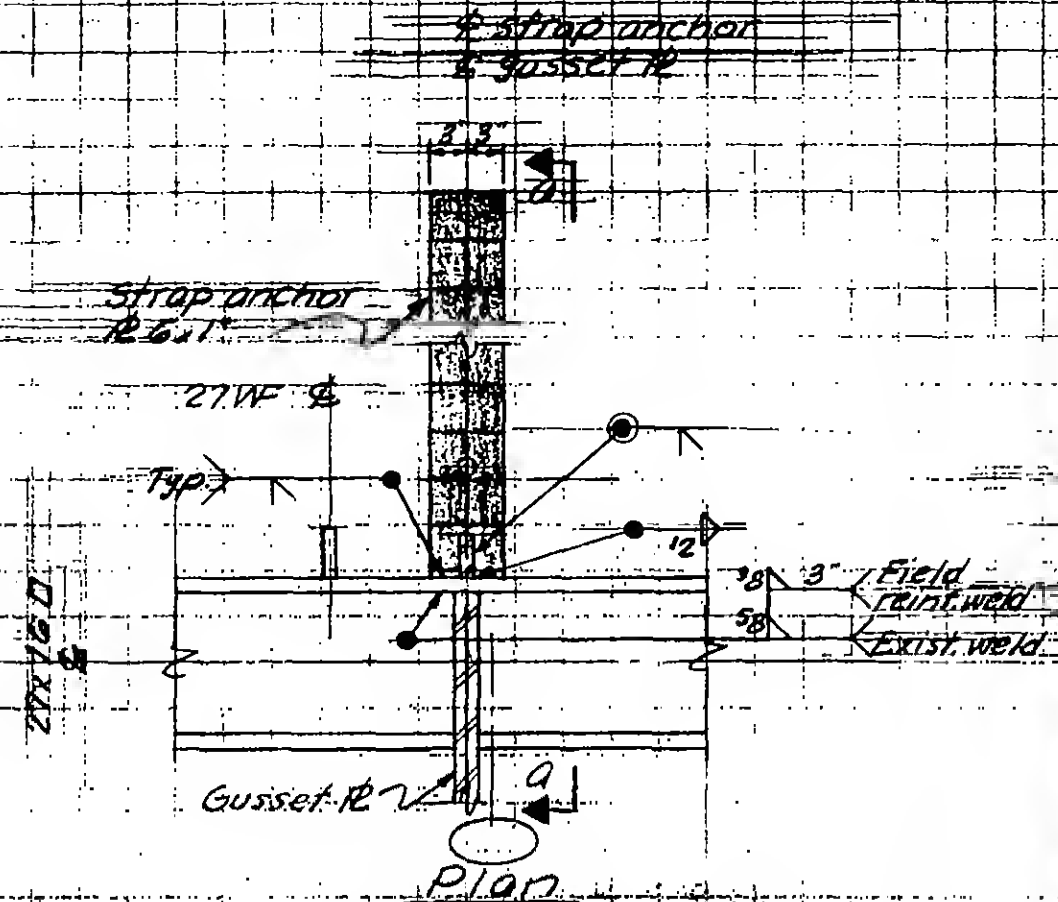
REVISIONS



Col. 504: Tower 'A' & 'B' as shown

Col. 1004: Tower 'B' similar

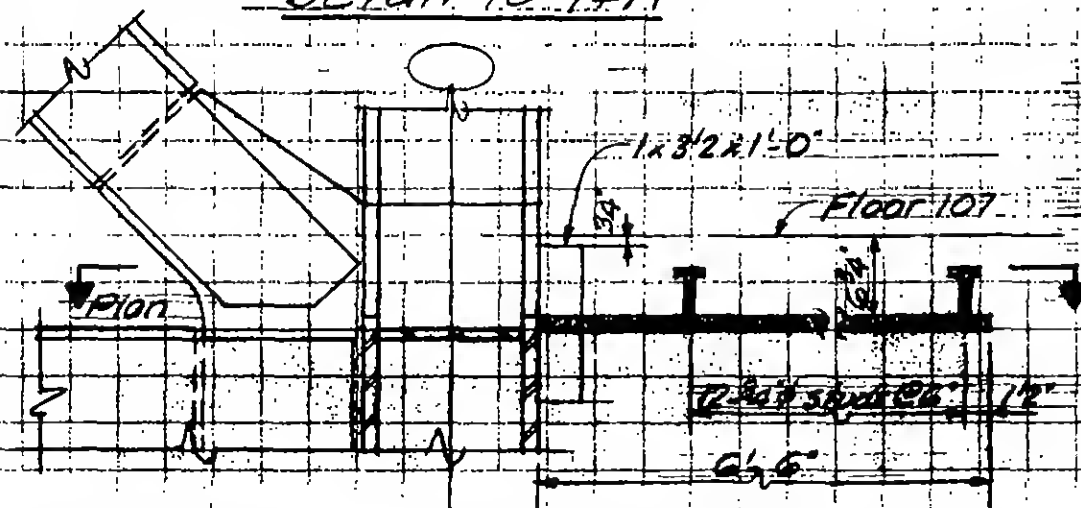
Detail 10-14A



Col. 505: Tower 'A' & 'B' as shown

Col. 1005: Tower 'B' similar

Detail 10-14B



Section a-a (as shown)

Section a-a (similar)

Use "One row" beam
 stud placement
 if necessary to clear
 strap anchor R, this
 end of beam only.

Section b-b



DESIGNED

DRAWN

REVIEWED

9-RBIO-14

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL107 AH STRAP ANCHOR DETAILS

DATE

12/14/70

REVISIONS

strap anchor
R. 6"x1"

8 strap anchor
8 column

3" 3"

F.A. 110

12-3/4" ϕ studs @ 6"

6'-3"

1/2"

14WF

SECTION A-A

502 507 1002 1007

Plan



DRAWN
J. Adams
REVIEWED

9-510-16

REVISIONS

FL 107 PH STRAP ANCHOR

strap anchor
R 6" x 1"

FL 107

FL 107

Section a-a

Section a-a

Plan

9-BID-17



DESIGNED

DRAWN

REVIEWED

503 506 1003 1006

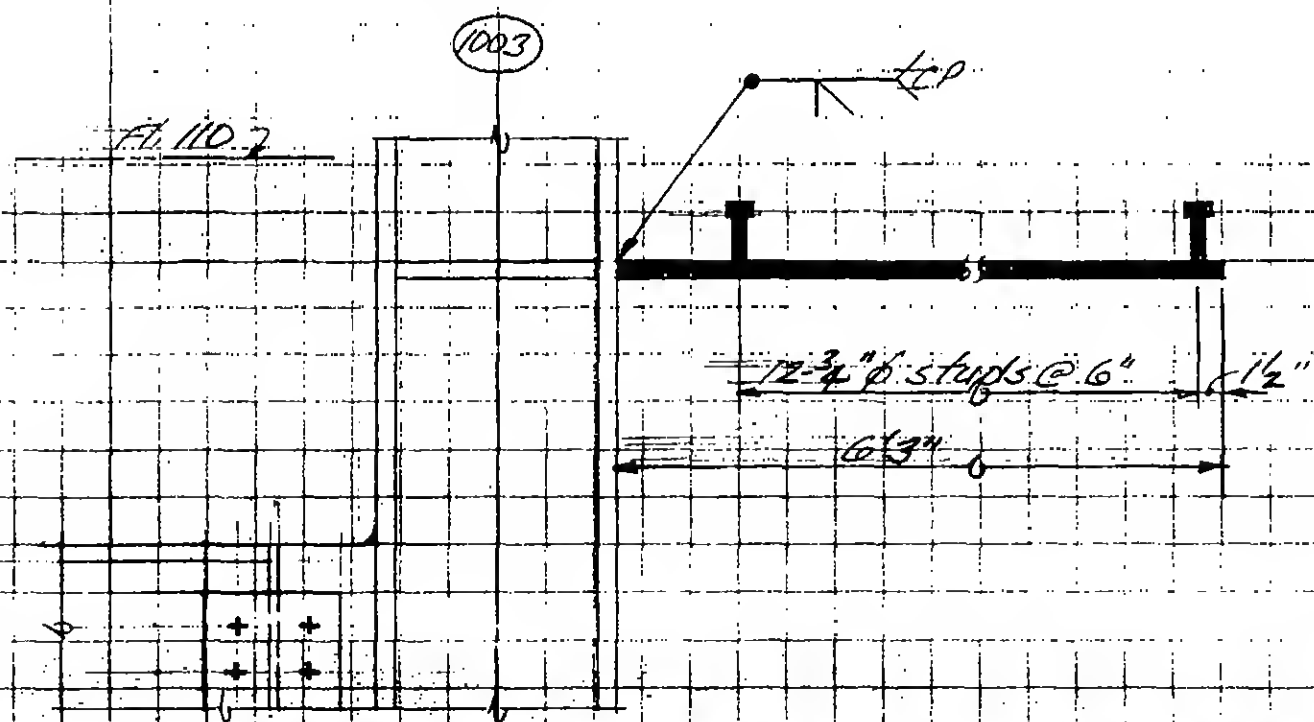
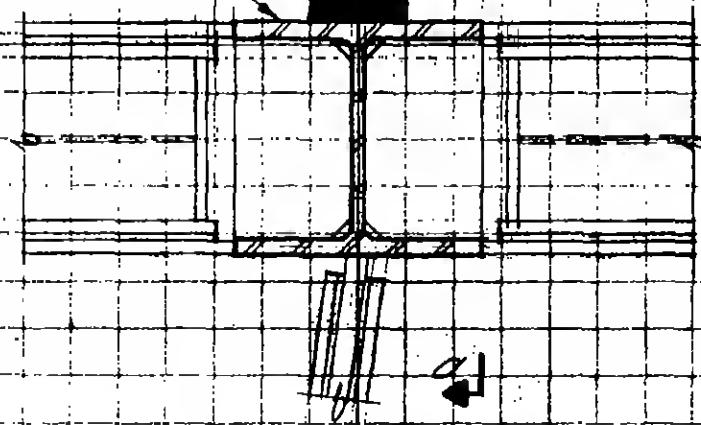
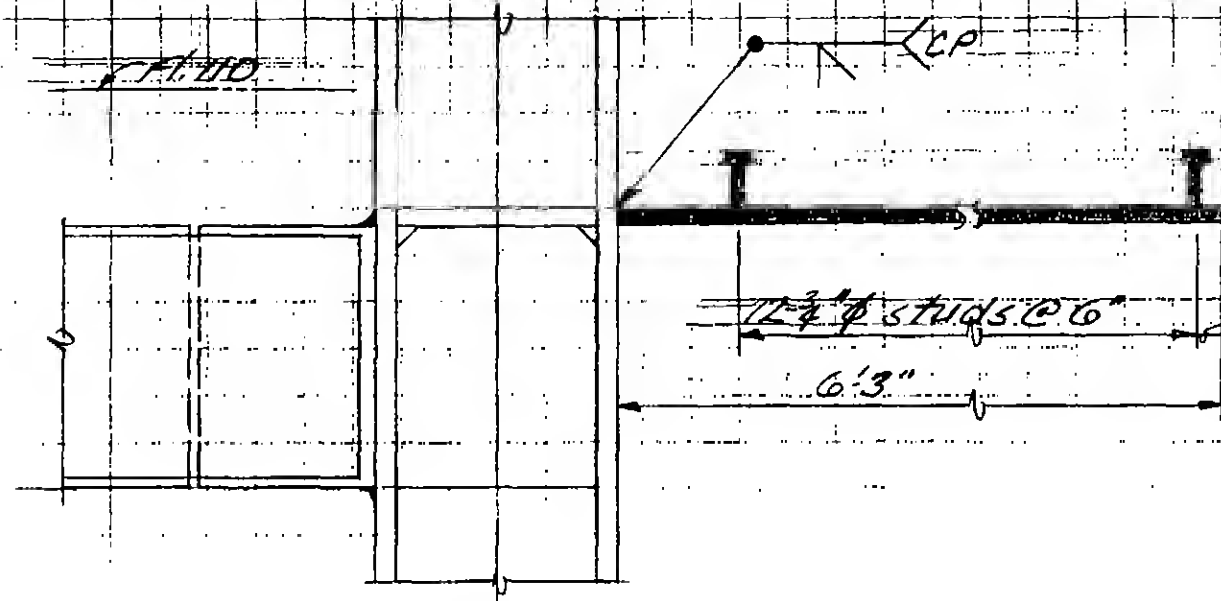
503 506 1006

1003

3" 3"

12-3/4" studs @ 6"
6'3" 1/2"

12-3/4" studs @ 6"
6'3" 1/2"



SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE PH ROOF STRAP ANCHOR DETAILS

DATE 12/14/70

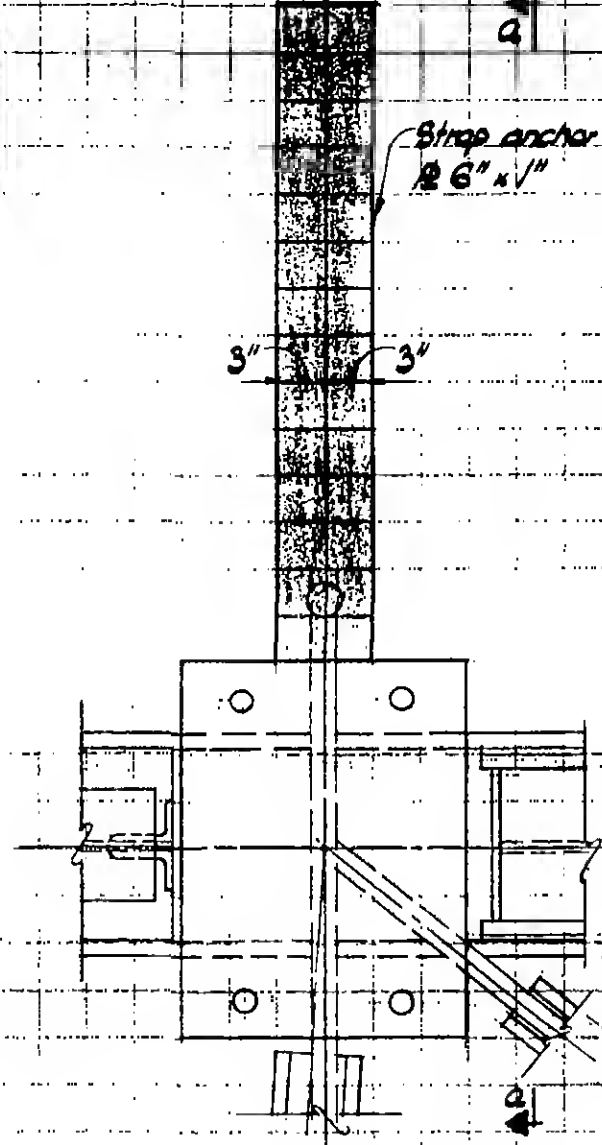
REVISIONS

502

1007

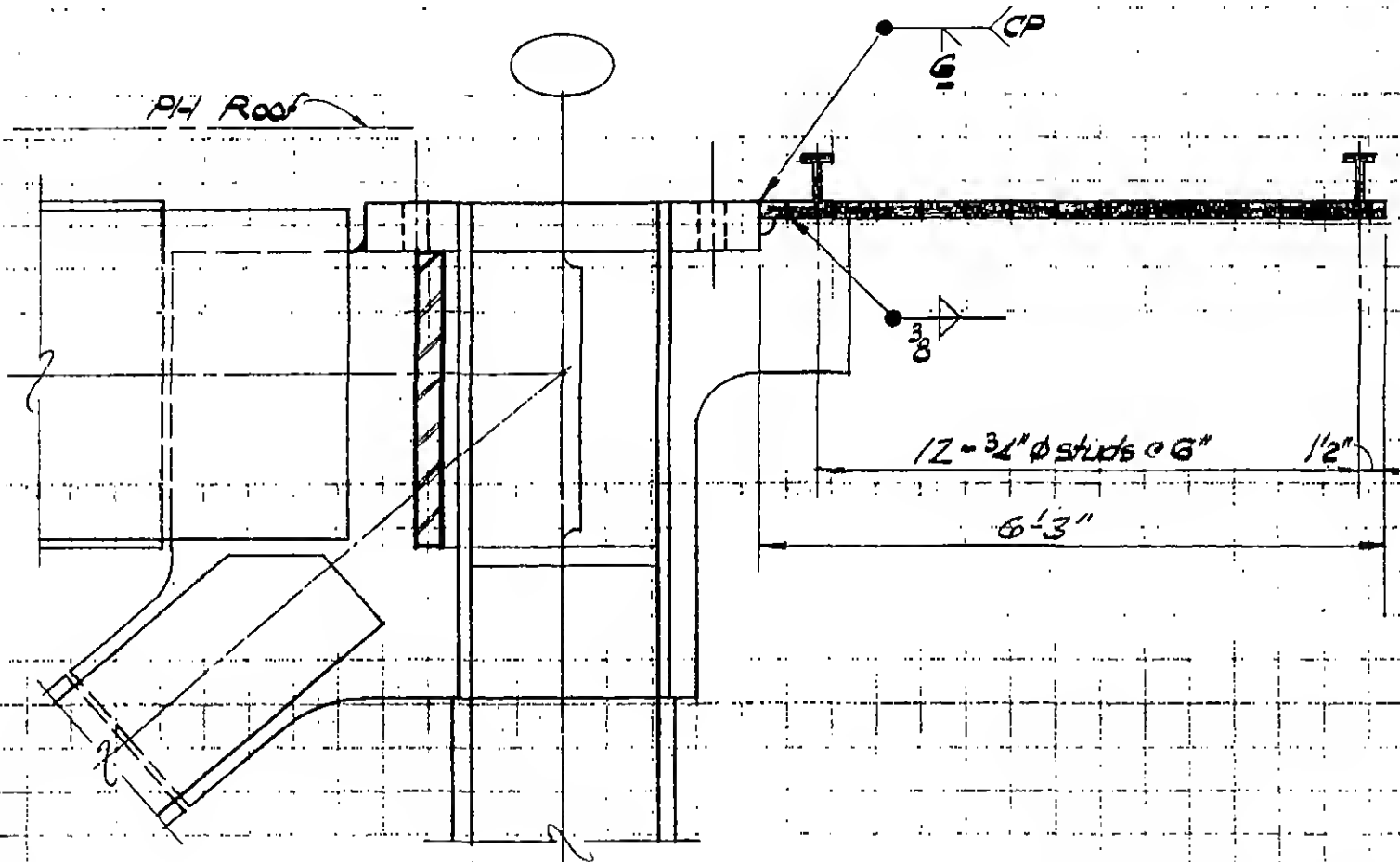
2 Strap anchor
8 Column

Strap anchor
2 6" x 1"



PLAN

PH Roof



Section a-a



DESIGNED

DRAWN
N. Glorke

REVIEWED

9-B/O-18

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

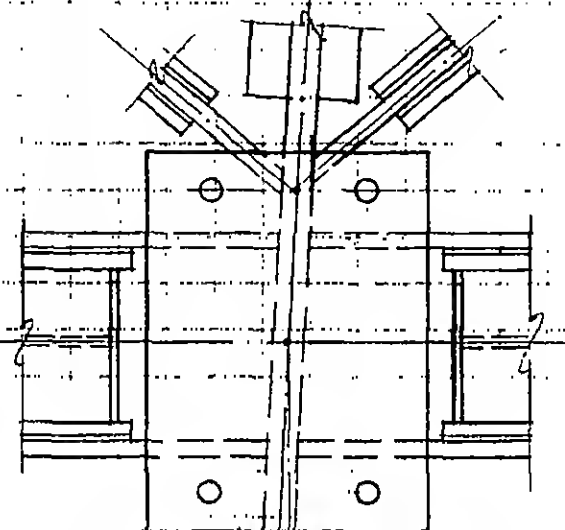
PROJECT THE WORLD TRADE CENTER

TITLE PH ROOF STRAP ANCHOR DETAILS

DATE 12/14/70

REVISIONS

605 606 905 906

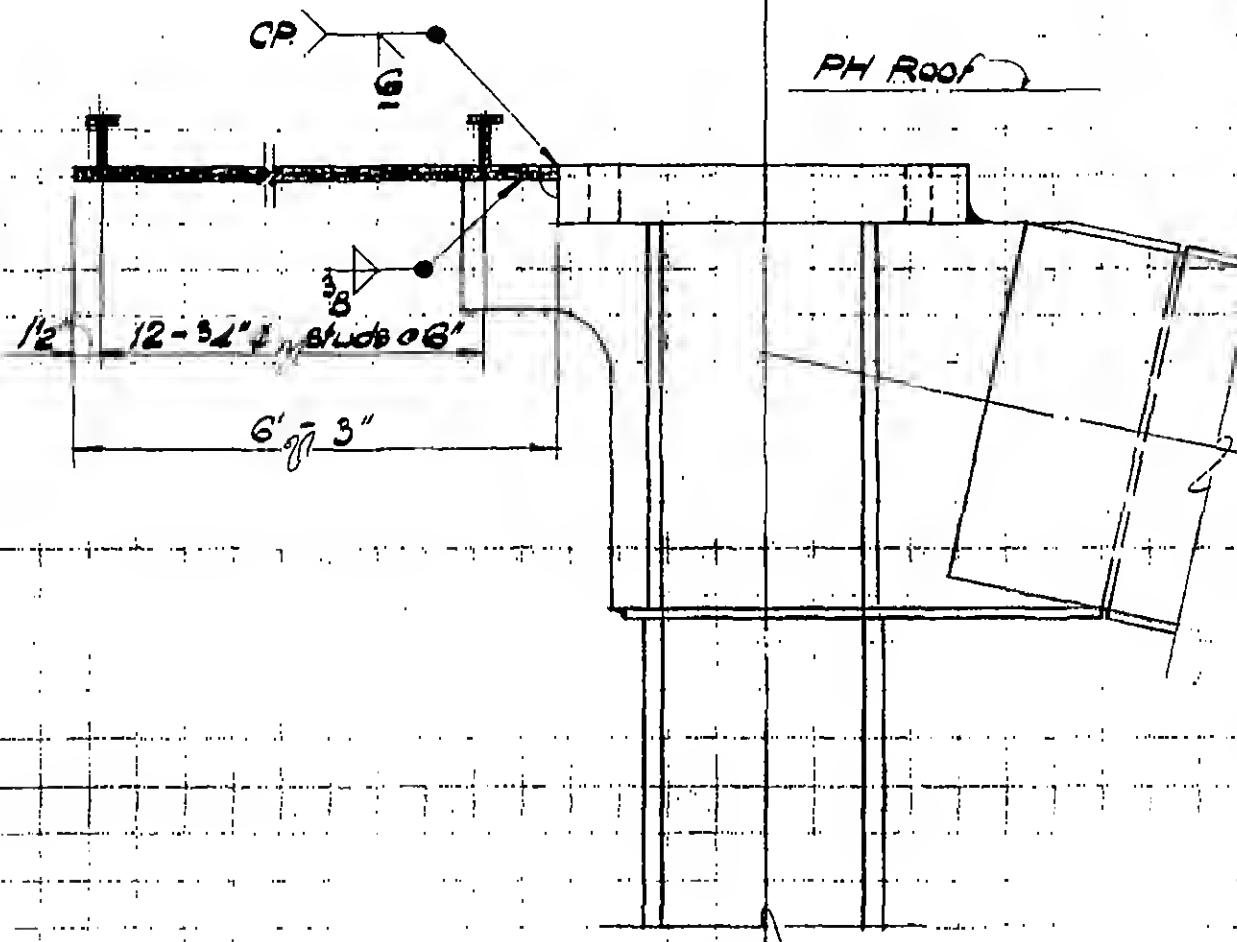


Strap anchor
6" x 1"

3" 3"

2 Strap anchor
& Column

PLAN



Section a-a



DESIGNED

DRAWN

H. Skilling

REVIEWED

9-B10-19

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

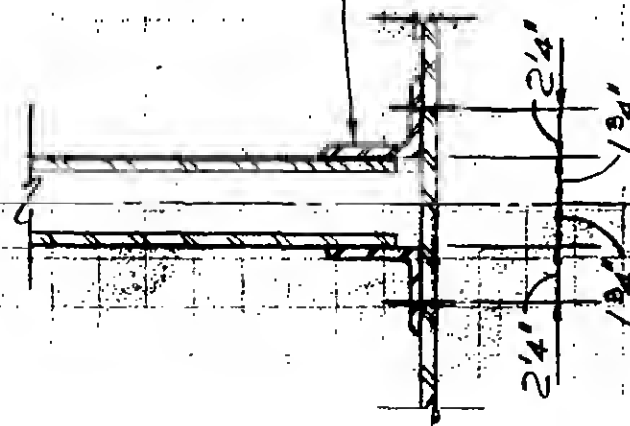
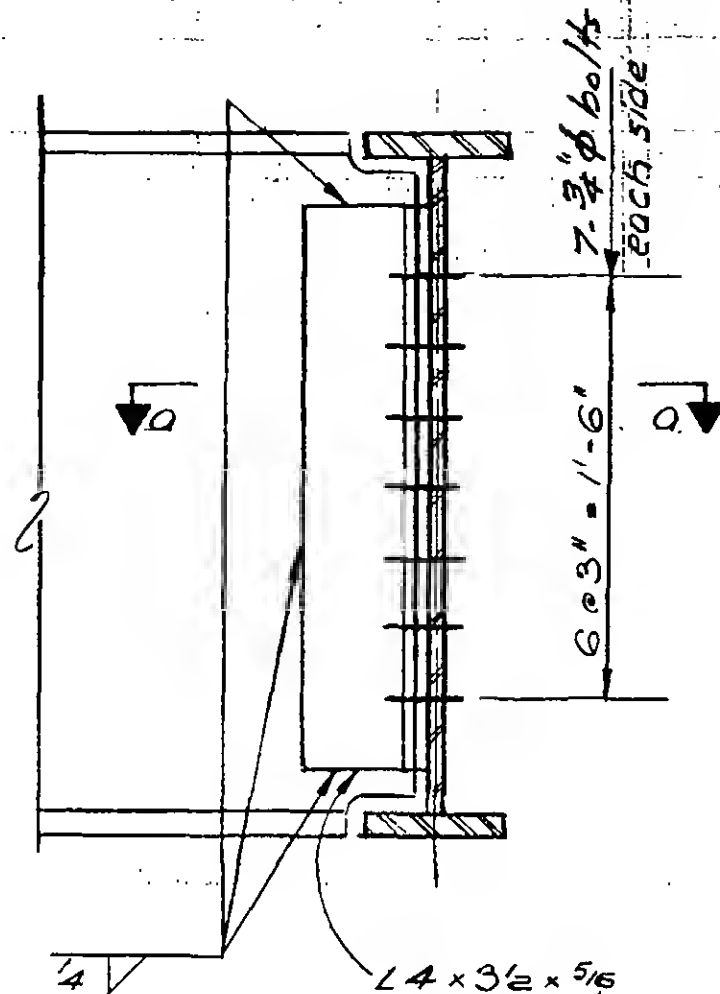
PROJECT THE WORLD TRADE CENTER

TITLE FL.107-PH.CONNECTION DETAILS-BEAM TO BEAM

DATE 4-1-70

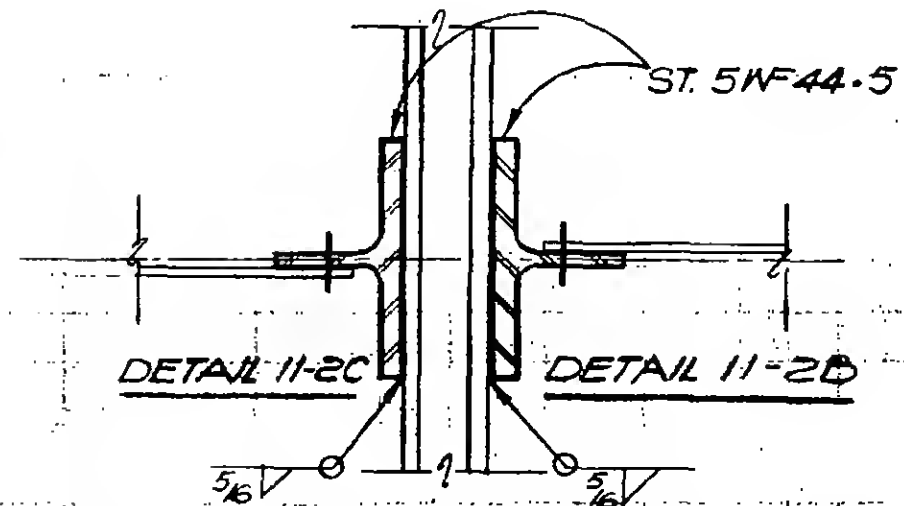
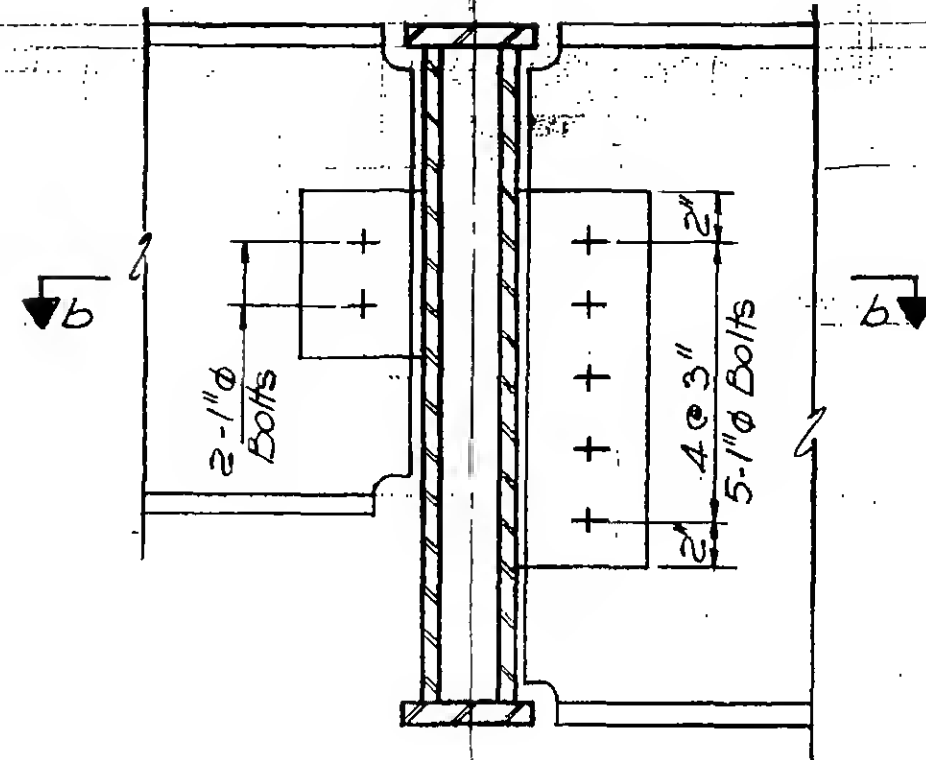
REVISIONS

5/27/70



Section a-a

DETAIL 11-2A



Section b-b

9-AB/1-2



DESIGNED

DRAWN

W. Clarke

REVIEWED

PROJECT

THE WORLD TRADE CENTER

TITLE

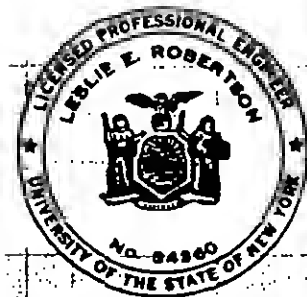
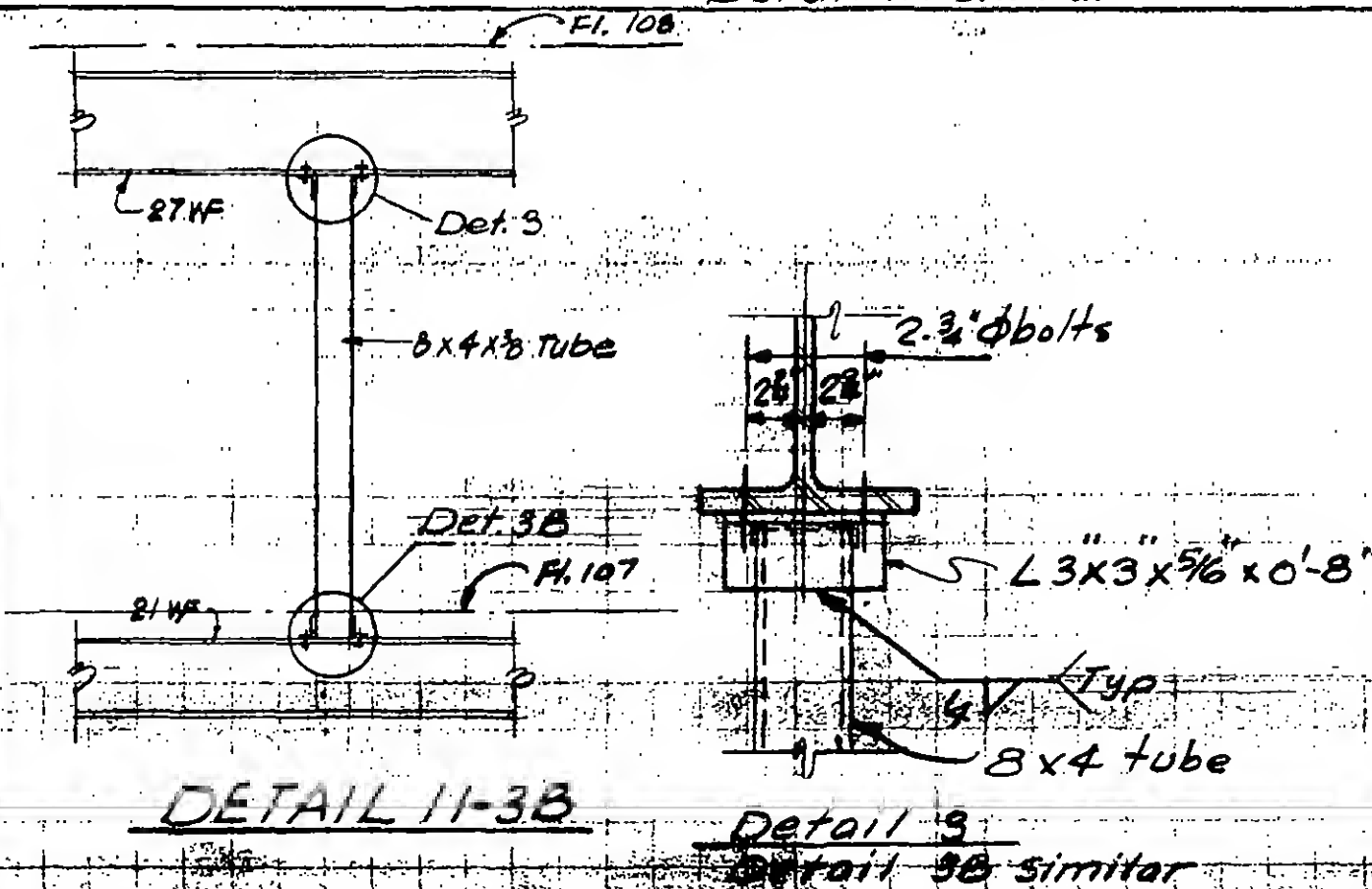
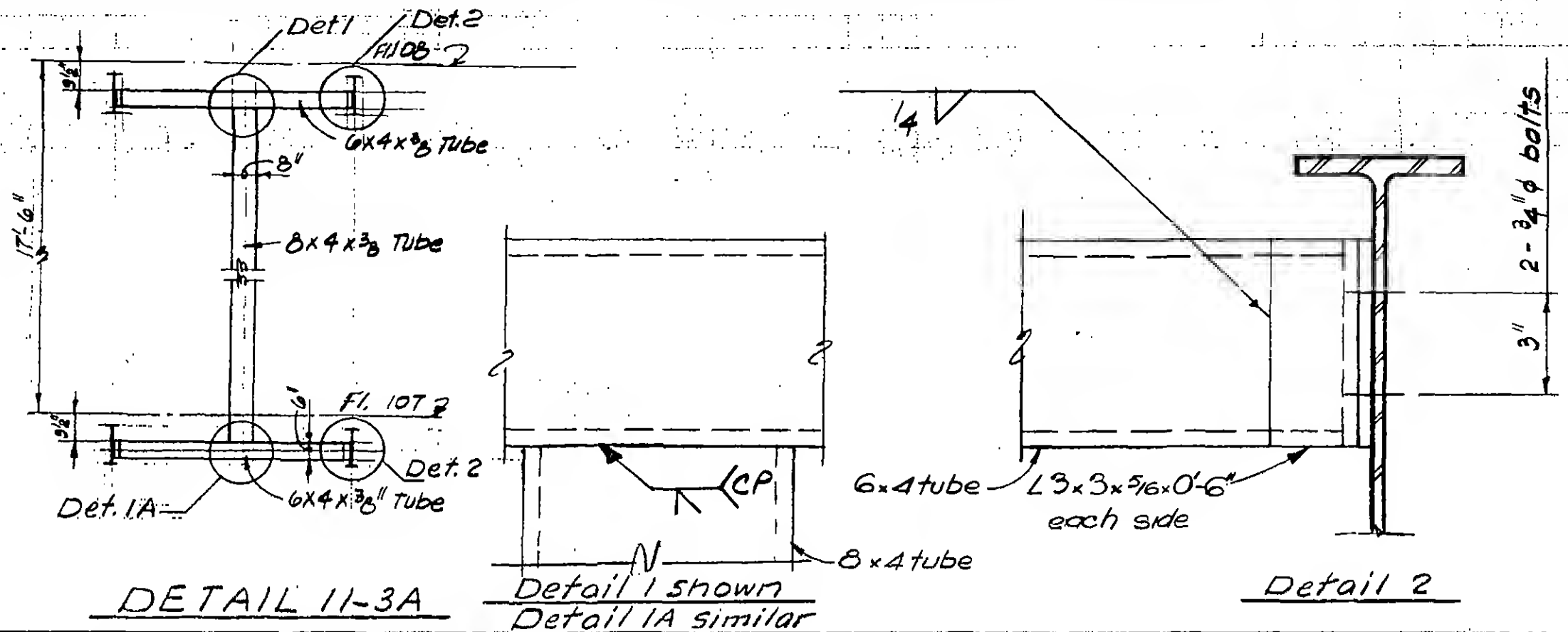
FL. 107-PH CONNECTION DETAILS-BEAM TO BEAM

DATE

4-1-70

REVISIONS

5-27-70



DESIGNED

DRAWN

P.M. Ozeki

REVIEWED

3-AB/11-3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

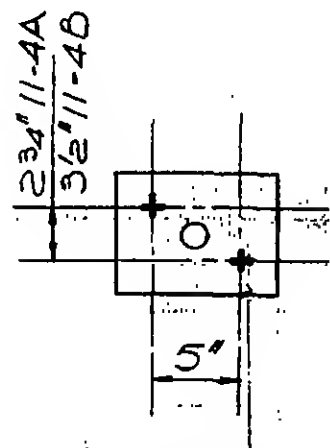
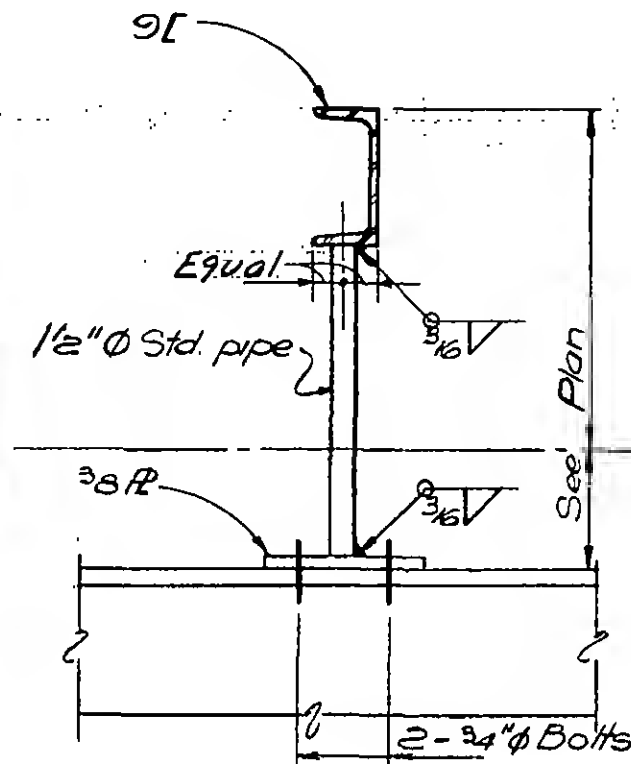
PROJECT THE WORLD TRADE CENTER

TITLE FL107-PH, CONNECTION DETAILS-BEAM TO BEAM

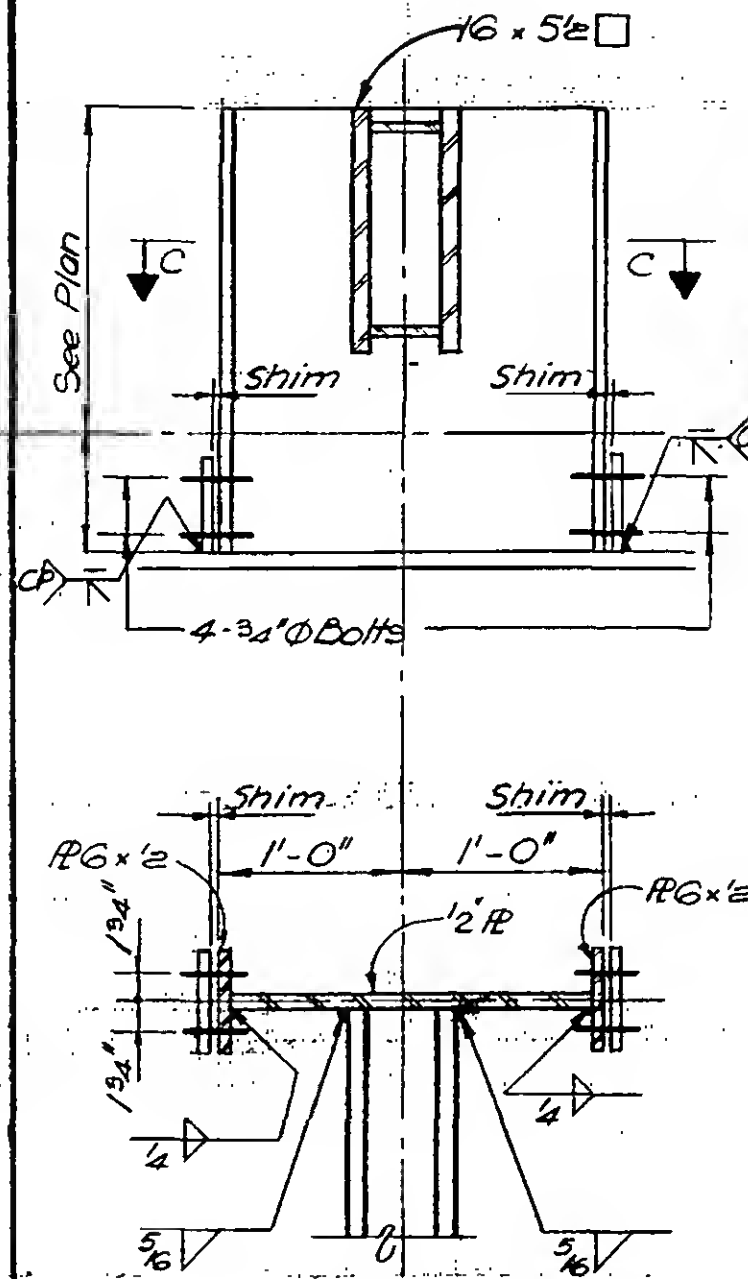
DATE 4-1-70

REVISIONS

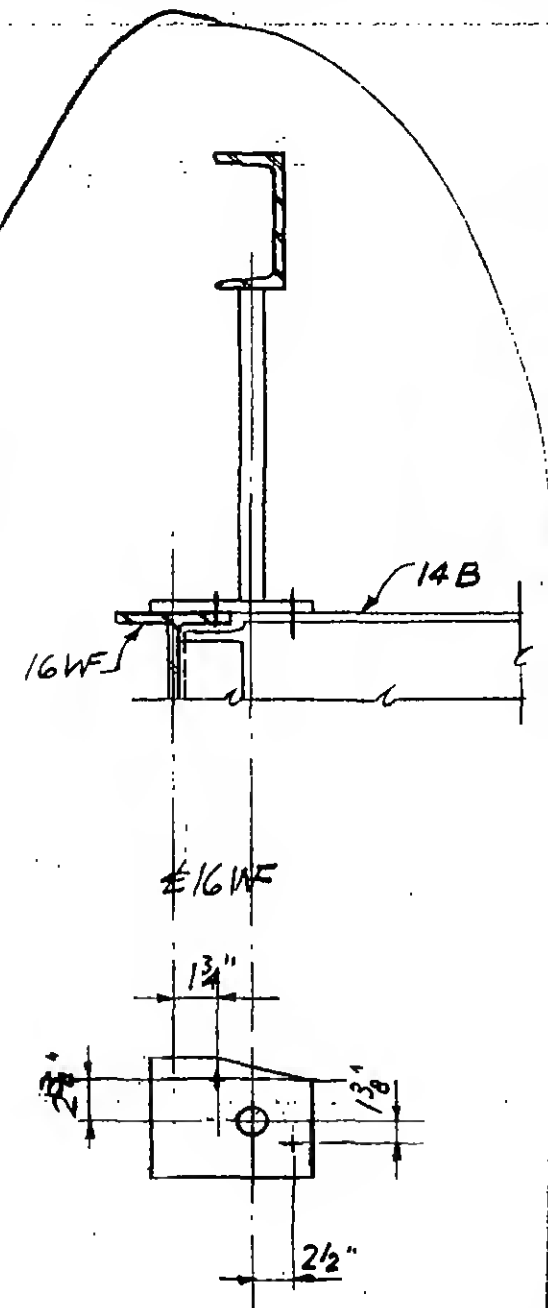
5/27/70
6/17/70



PLAN
DETAIL VI-4A & B



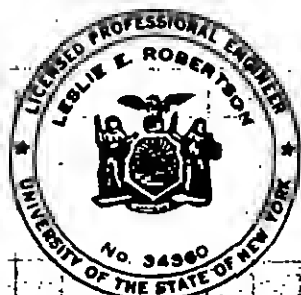
SECTION C-C
DETAIL II-4C



PLAN
DETAIL II-4D

For information not shown - See VI-4A

9-ABII-4



DESIGNED

DRAWN
W. Clarke

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

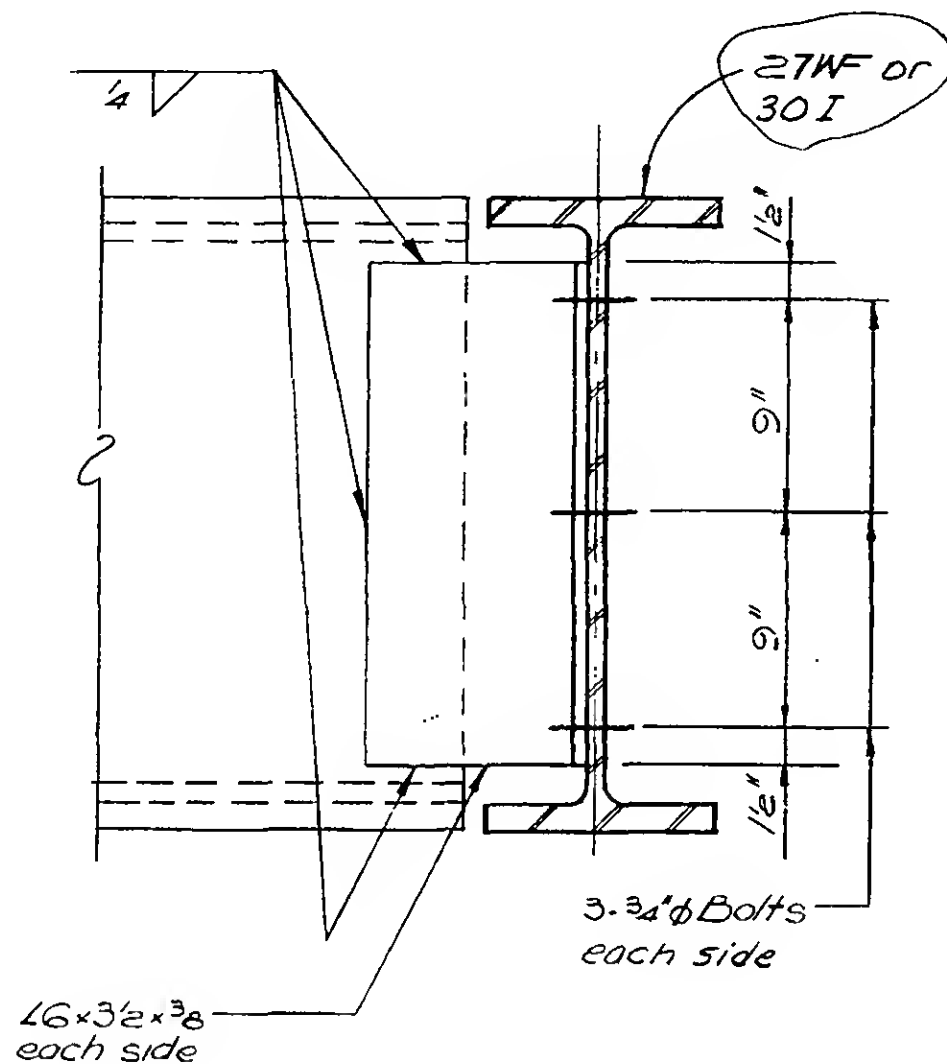
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH. CONNECTION DETAILS-BEAM TO BEAM

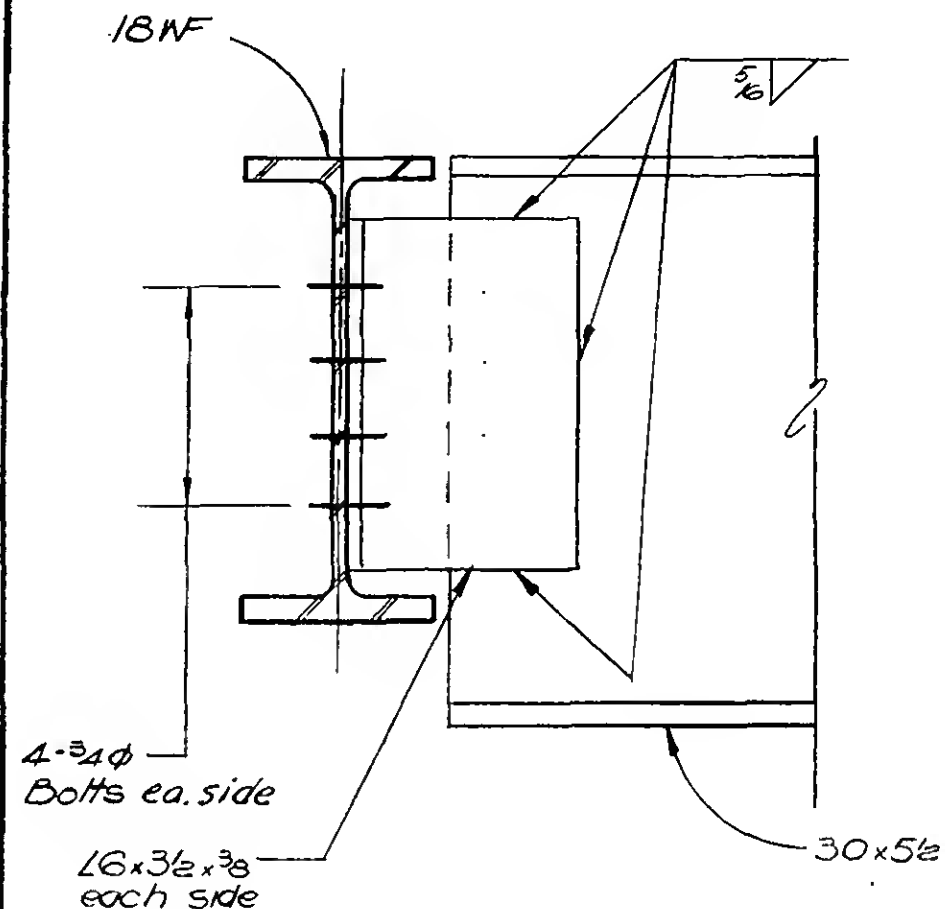
DATE 4-1-70

REVISIONS

5/27/70



DETAIL 11-5A



DETAIL 11-5B



DESIGNED

DRAWN

W. Clarke

REVIEWED

9-AB11-5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

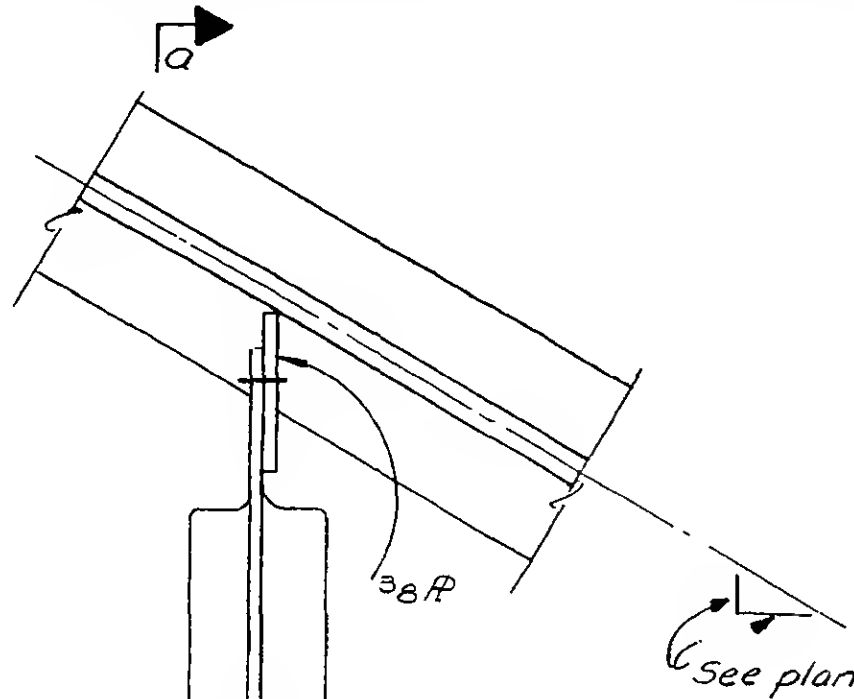
PROJECT THE WORLD TRADE CENTER

TITLE FL.107-PH CONNECTION DETAILS-BEAM TO BEAM

DATE 4-1-70

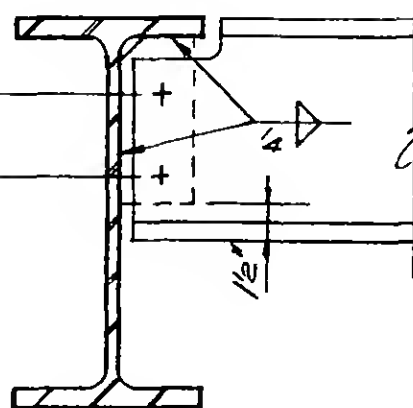
REVISIONS

5/27/70



PLAN

2-7/8" ϕ Bolts 11-G B & C
3-7/8" ϕ Bolts 11-G A & D



Section a-a

DETAIL 11-GA, B, C & D



DESIGNED

DRAWN
W. Clarke

REVIEWED

3-AB/1-6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

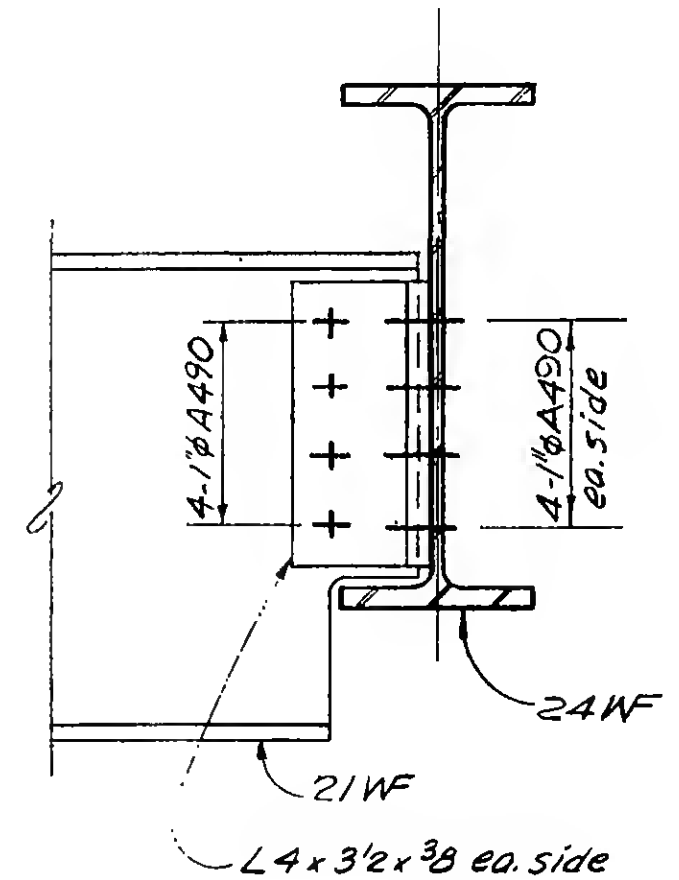
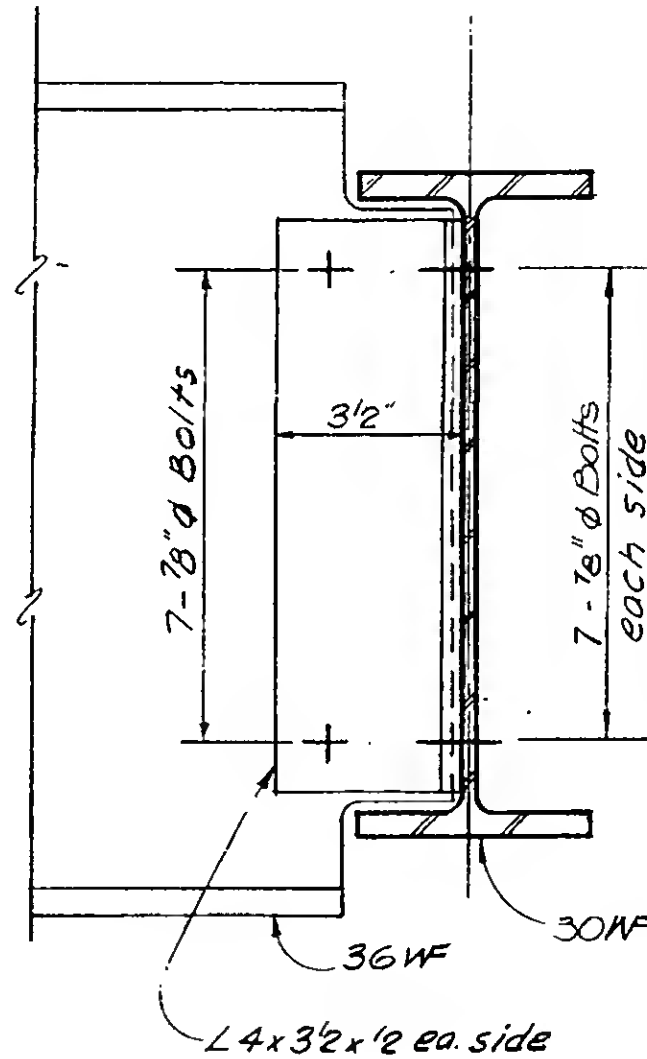
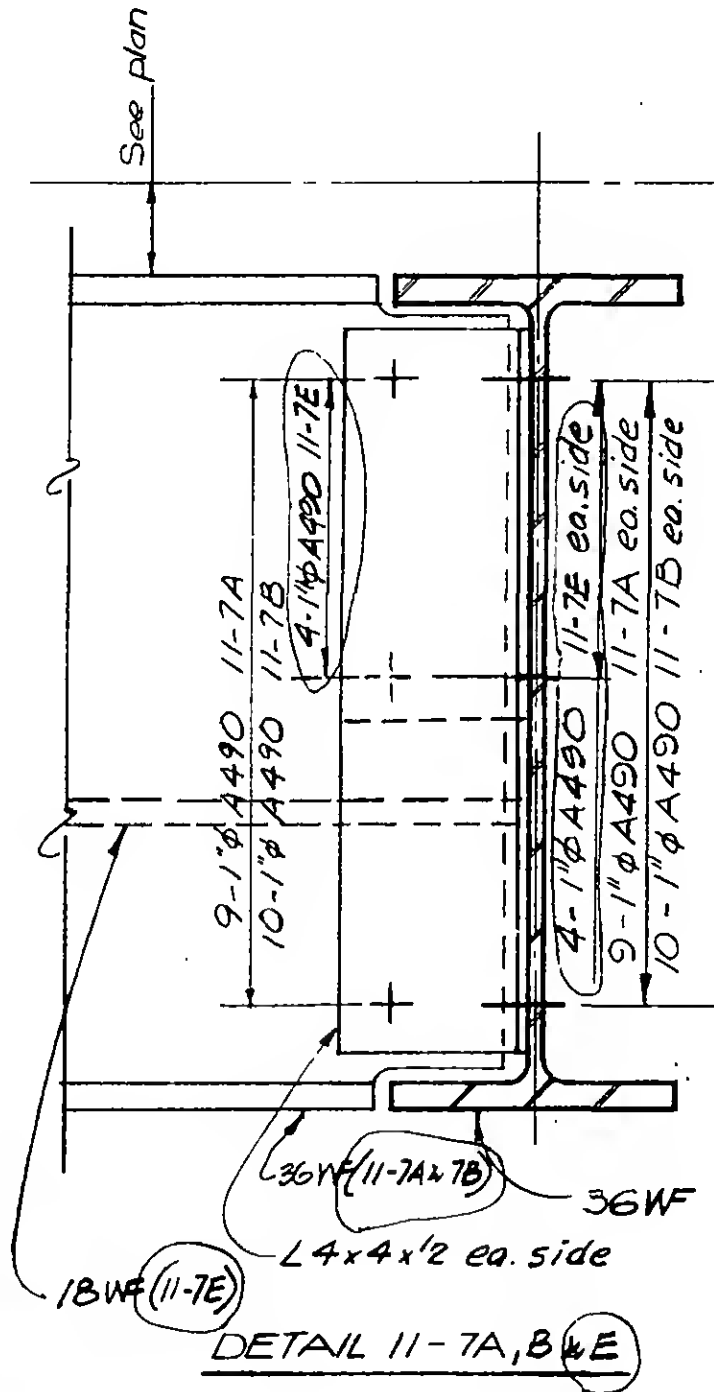
PROJECT THE WORLD TRADE CENTER

TITLE FL107-PH.CONNECTION DETAILS-BEAM TO BEAM

DATE 4-1-70

REVISIONS

5-27-70
12-14-70



DESIGNED

DRAWN

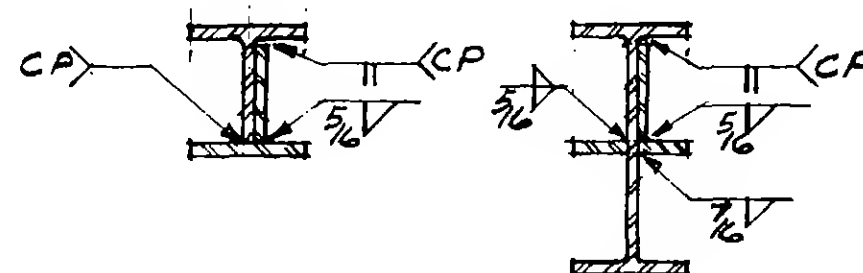
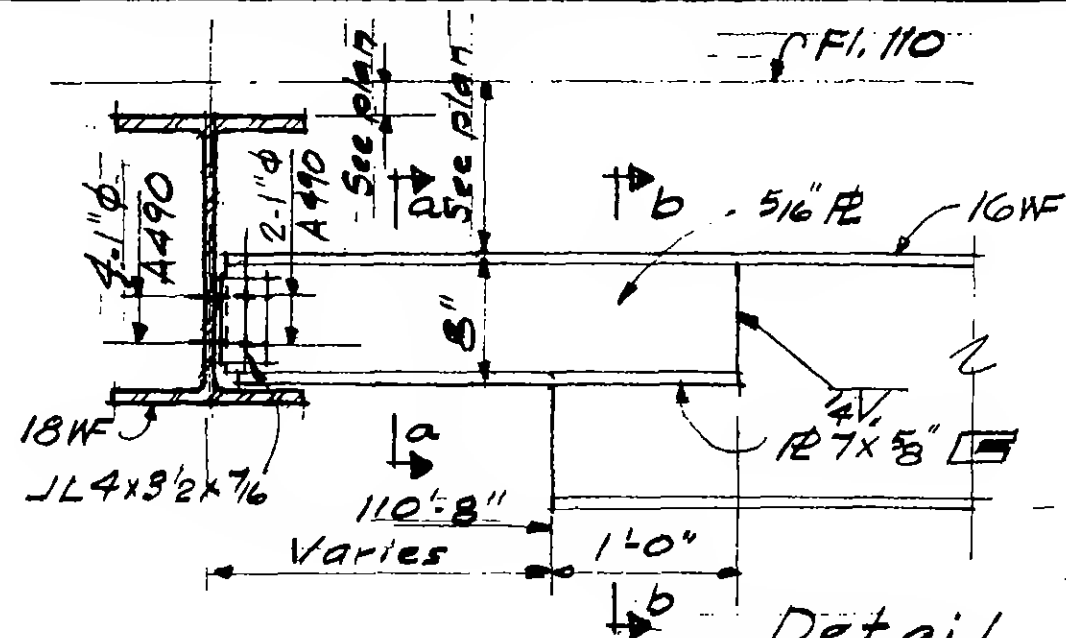
W. Clarke

REVIEWED

9-AB/11-7

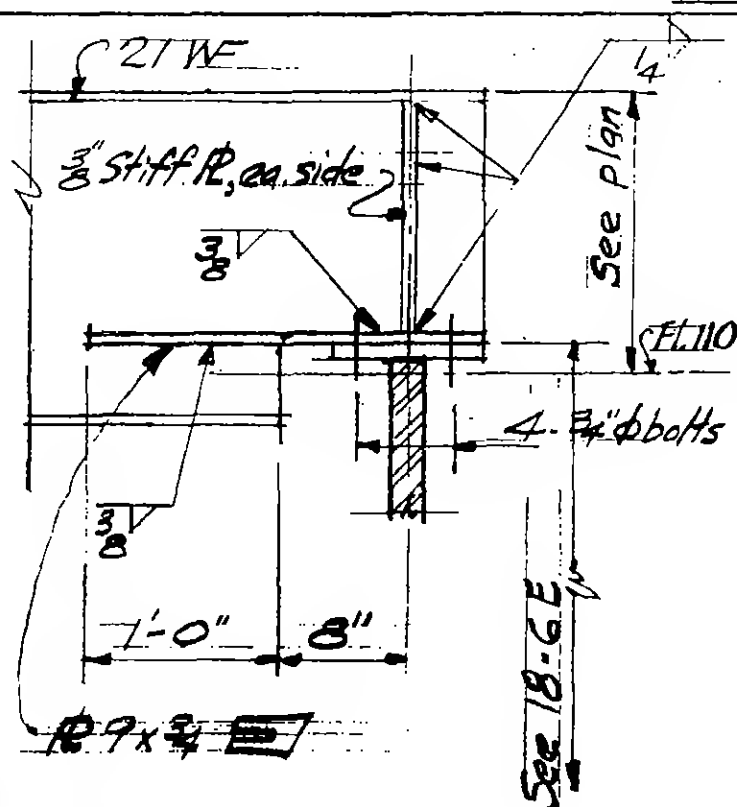
REVISIONS

12-14-70

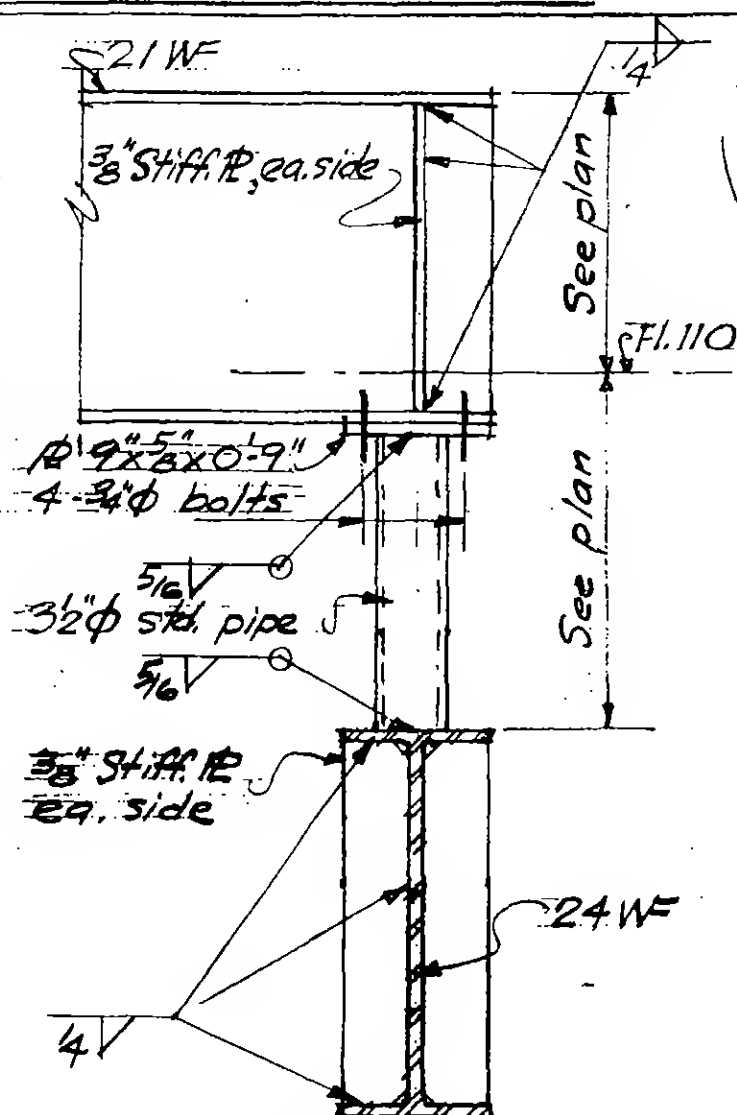


Section a-a Section b-b

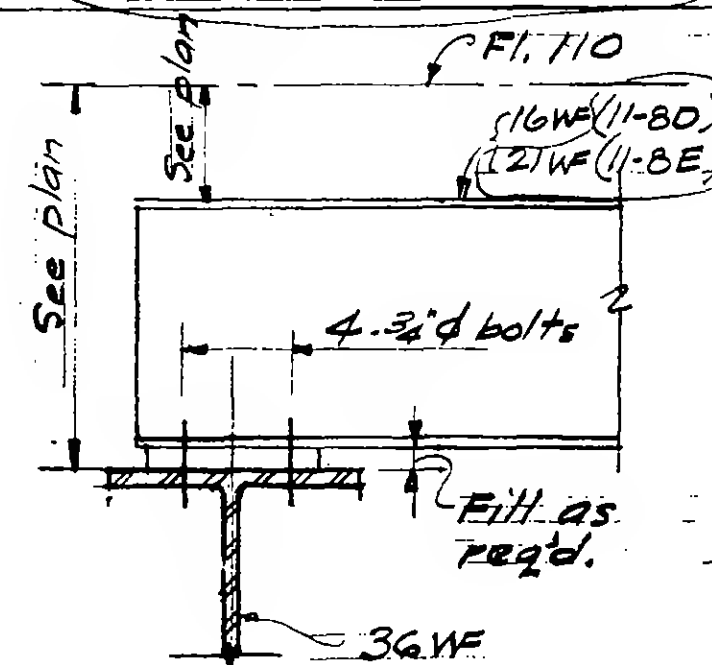
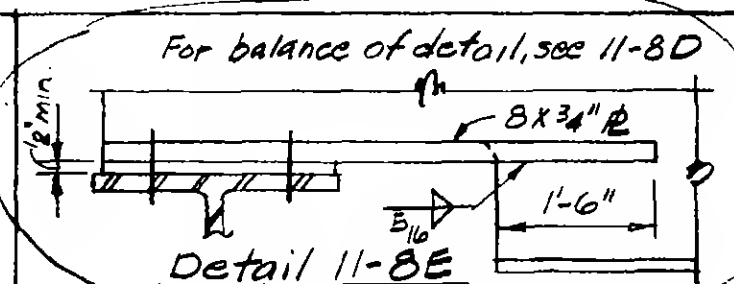
Detail 11-8A



Detail 11-8B



Detail 11-8C



Detail 11-8D

9-AB11-8



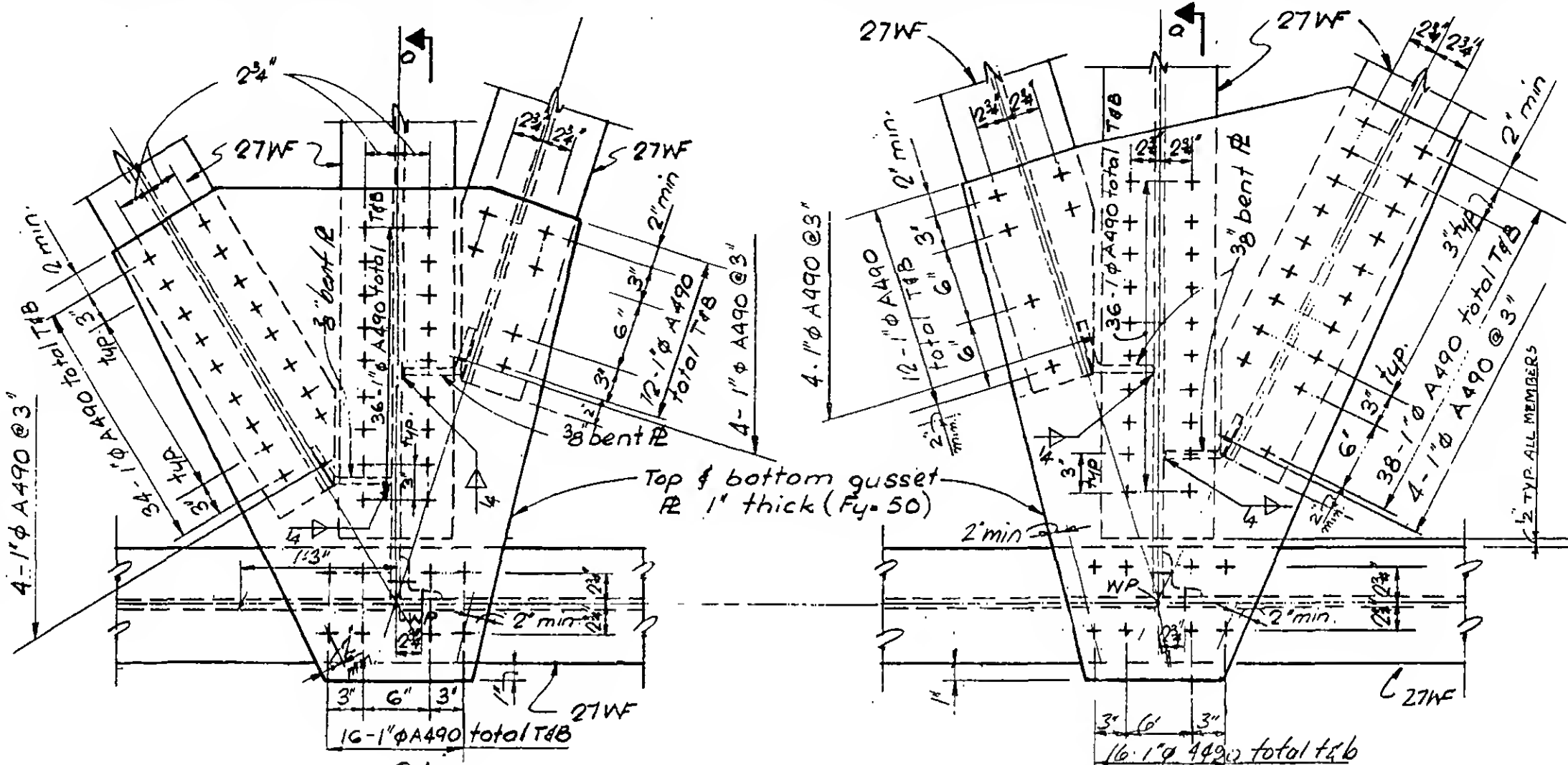
DESIGNED

DRAWN

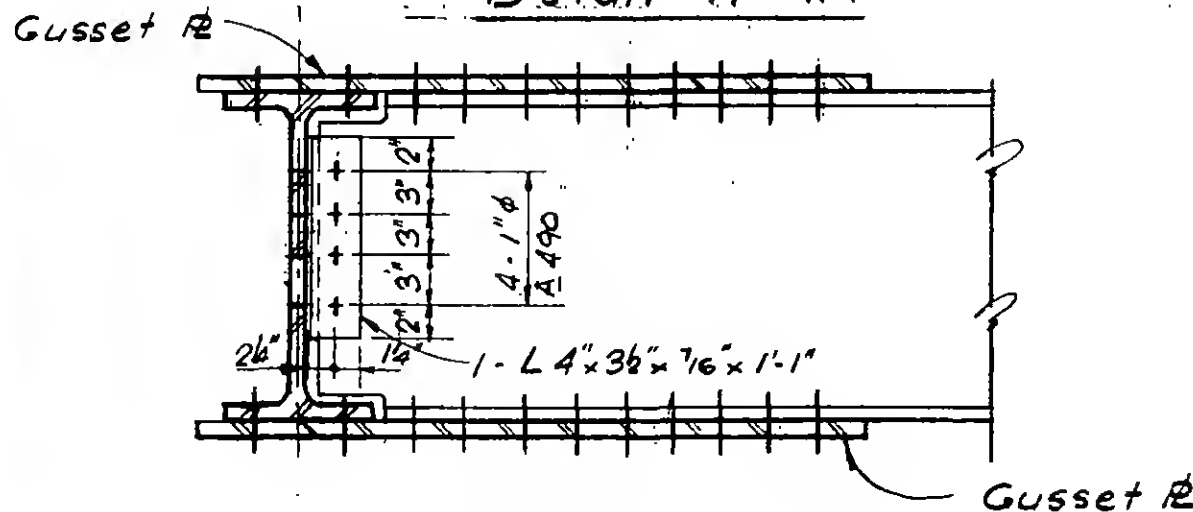
REVIEWED

REVISIONS

7/8/70



Detail 11-9A



Section a-a

Detail 11-9B

4/3/72
In Progress



DESIGNED
M. Romani

DRAWN
T. Terrelonge

REVIEWED

PROJECT

THE WORLD TRADE CENTER

TITLE

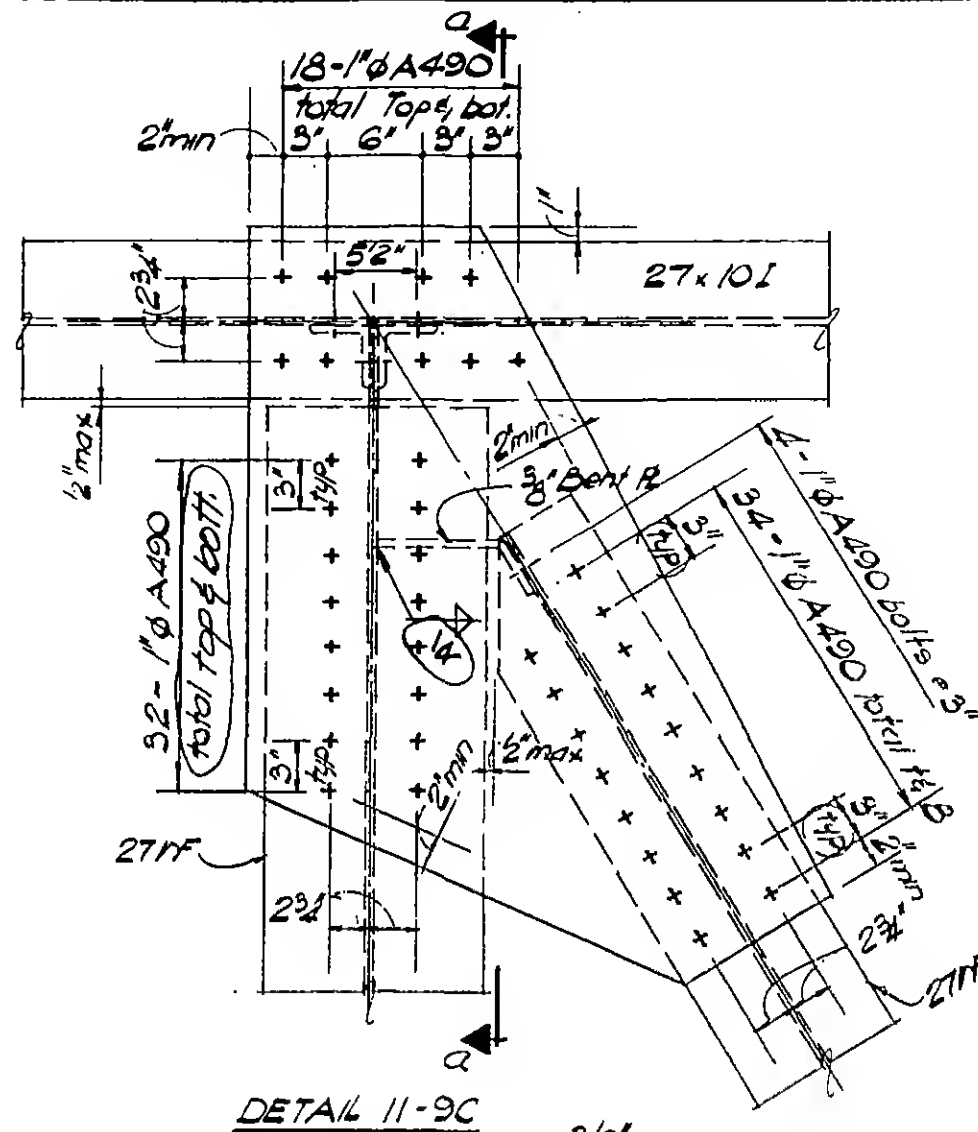
FL 107-PH CONNECTION DETAILS - FL 107

DATE

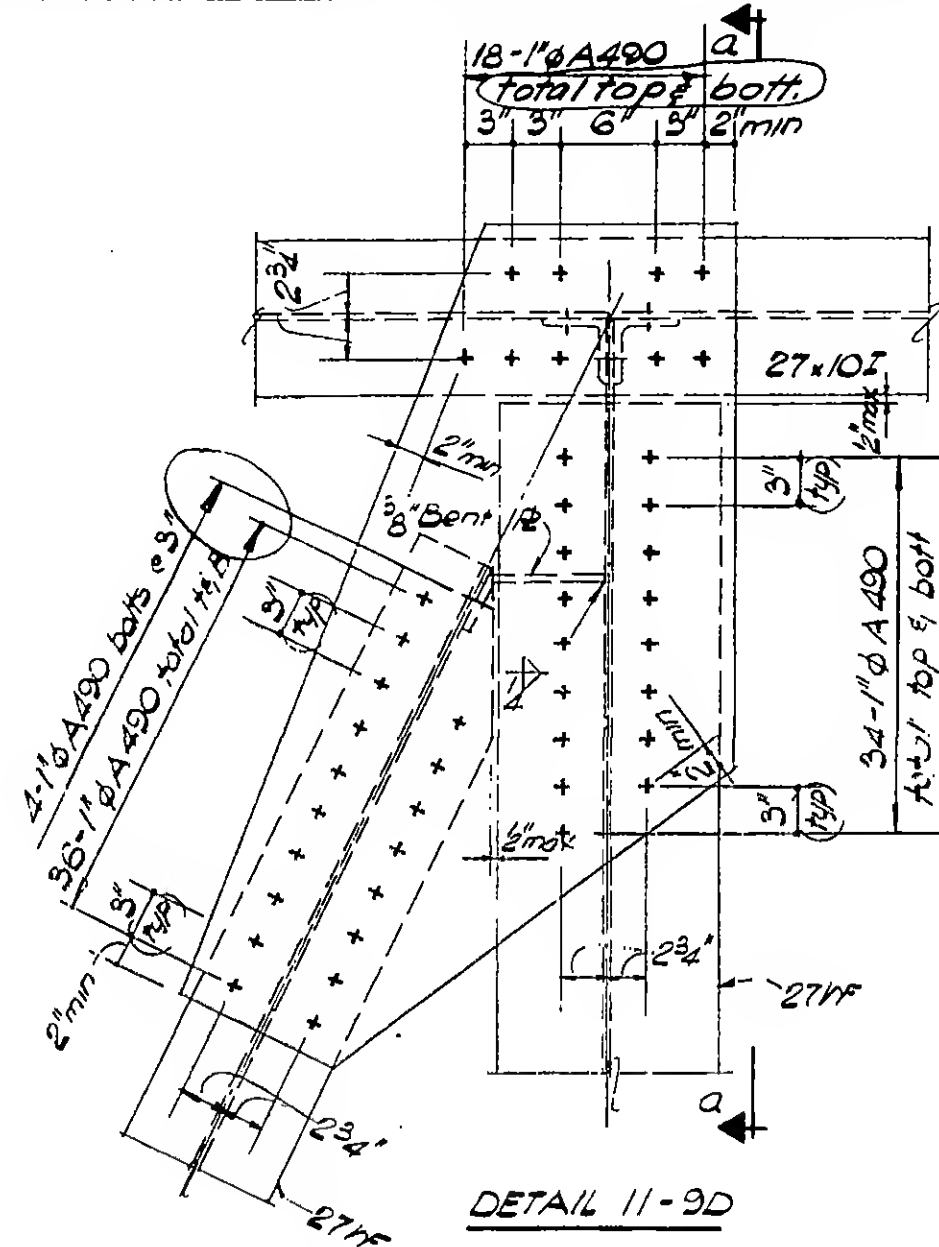
6-17-70

REVISIONS

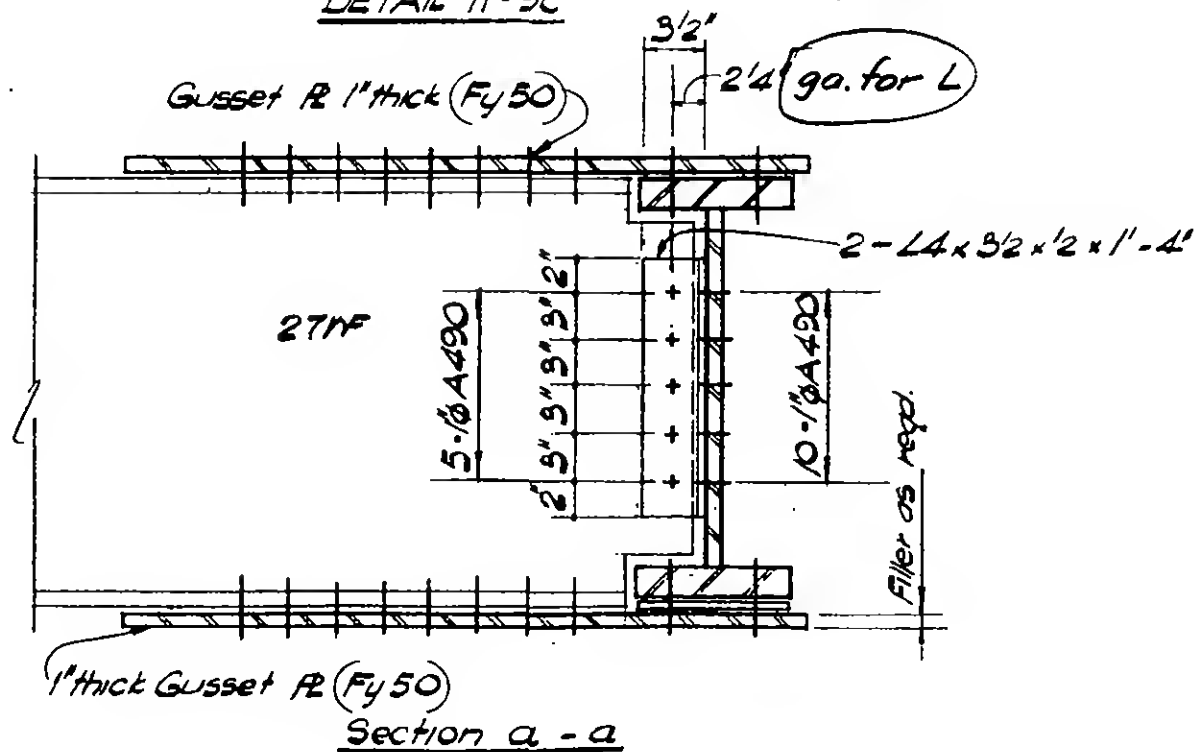
7/8/70



DETAIL 11-9C



DETAIL 11-9D



Section a - a

9-AB11-9.2



DESIGNED

DRAWN

REVIEWED

PROJECT

THE WORLD TRADE CENTER

TITLE

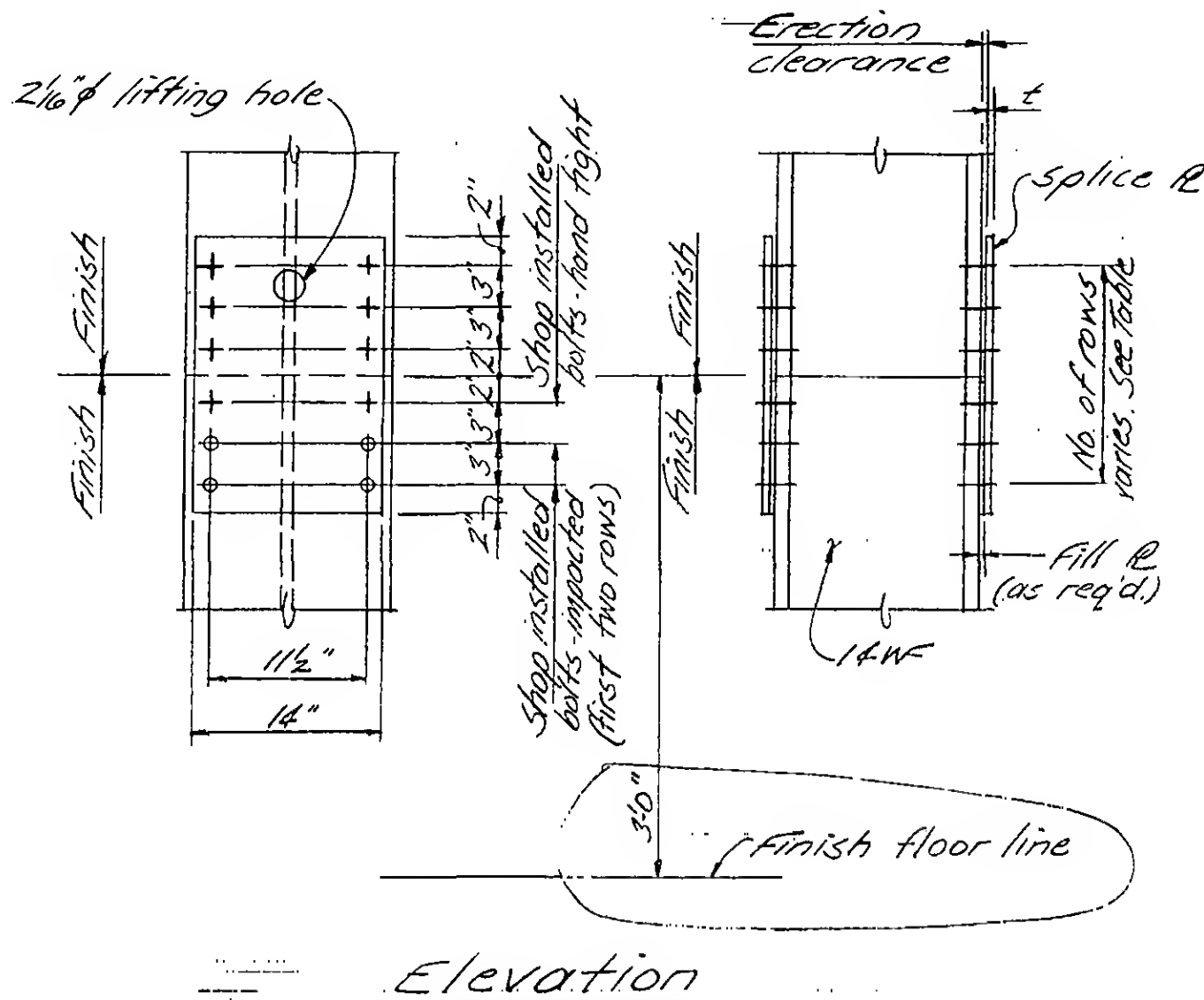
FL. 107-PH CORE COLUMN SPLICE DETAILS

DATE

4-1-70

REVISIONS

5-27-70



SPLICE DETAIL	NO. & SIZE OF BOLTS PER SPLICE R	SPLICE PLATE THICKNESS (E)	NO. OF ROWS
12-1A	12-7/8" ϕ	5/8	6
12-1B	16-7/8" ϕ	3/4	8
12-1C	20-7/8" ϕ	7/8	10

Notes:

1. All splice plates Fy 36
 2. All bolts are friction type, A490.
- All holes in columns and splice plates are 1/16" larger than nominal bolt diameter.



DESIGNED

A. Patel

DRAWN

J. Adams

REVIEWED

E. Draxos

9-AB/2-1

PROJECT

THE WORLD TRADE CENTER

TITLE

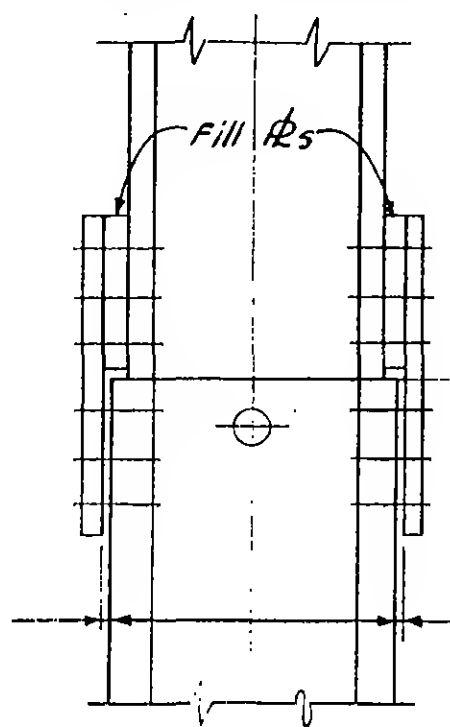
FL. 107-PH CORE COLUMN SPLICE DETAILS

DATE

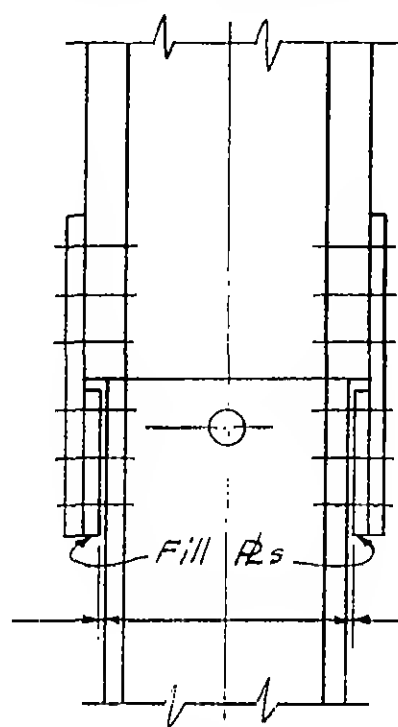
4-1-70

REVISIONS

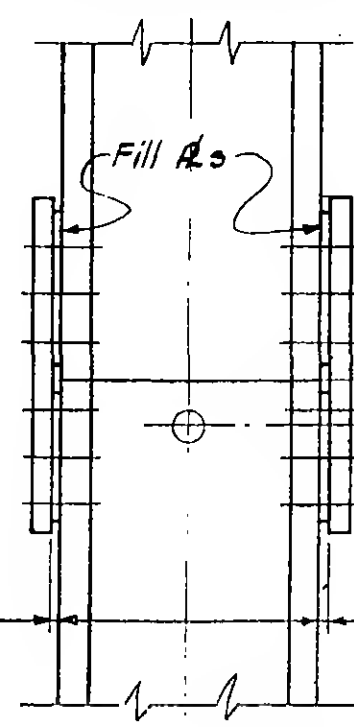
5-27-70



Detail 12-2A



Detail 12-2B

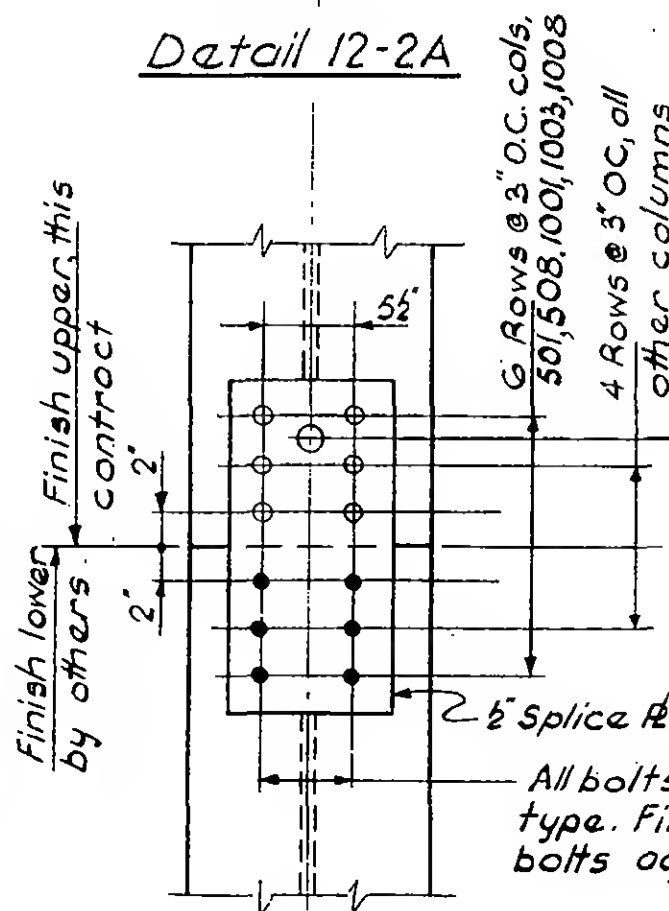


Detail 12-2D

Provide upper columns, all fill R's, shims, bolts, & washers. For lower cols. See Dwg Book 3

2 1/2" ϕ lifting hole if splice R's shop-installed on upper columns.

Erection clearance. Shim as req'd typ all d'tls. Details shown are for splice R's shop-installed on upper cols. If splice R's are shop-installed on lower cols, provide similar erection clearance & shim @ upper columns. Shim shall be 1/8" min to 3/8" max total thickness each face



Typical Elevation
Details 12-2A, B & D

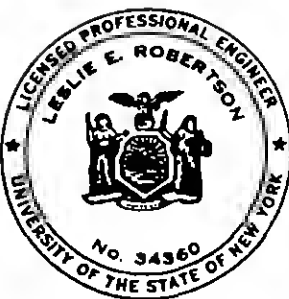
2 1/2" ϕ lifting hole in splice R's if splice R's shop-installed on lower cols.

All bolts 7/8" ϕ A325 friction type. First row of shop-installed bolts adj. to splice shall be hand-tight

Finish lower by others.
Finish upper, this contract

6 Rows @ 3" O.C. cols, 50, 508, 100, 1003, 1008
4 Rows @ 3" O.C., all other columns

2 1/2" Splice R



DESIGNED

DRAWN

D. Huggins

REVIEWED

9-AB12-2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

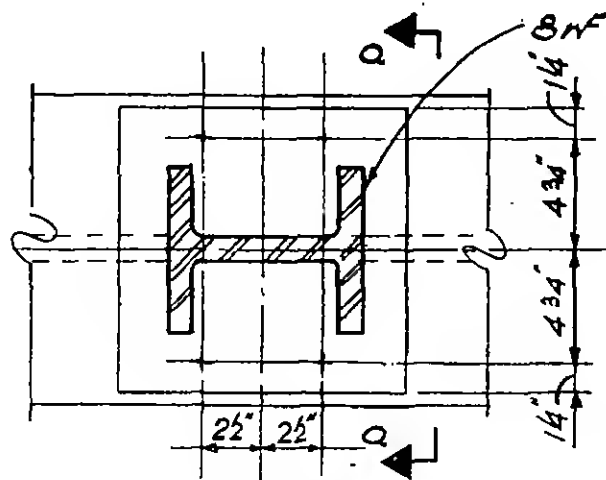
PROJECT THE WORLD TRADE CENTER

TITLE FL. 107-PH COLUMN BASE DETAILS

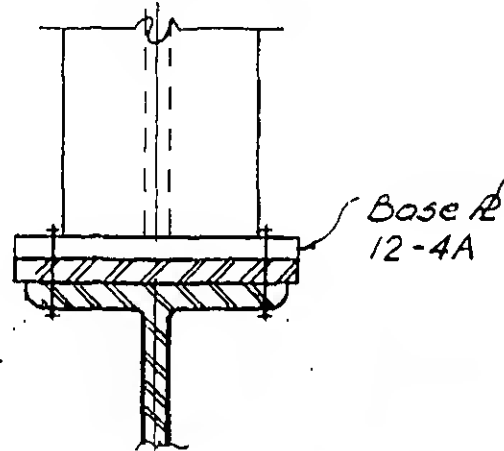
DATE 4-1-70

REVISIONS

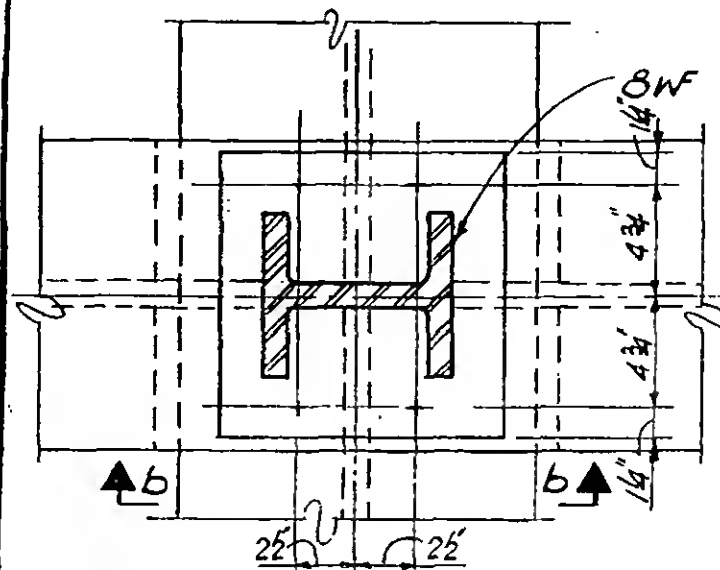
6/15/70
12-14-70



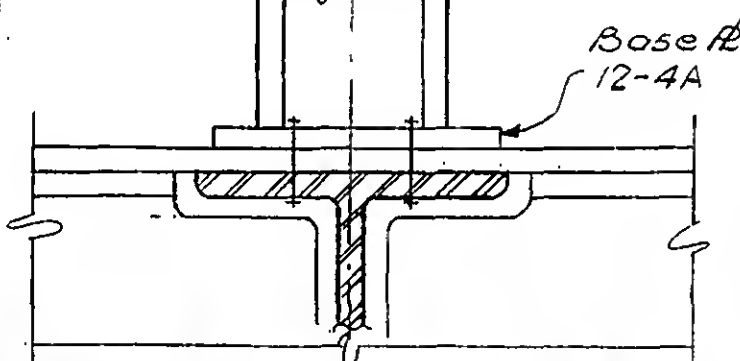
Plan



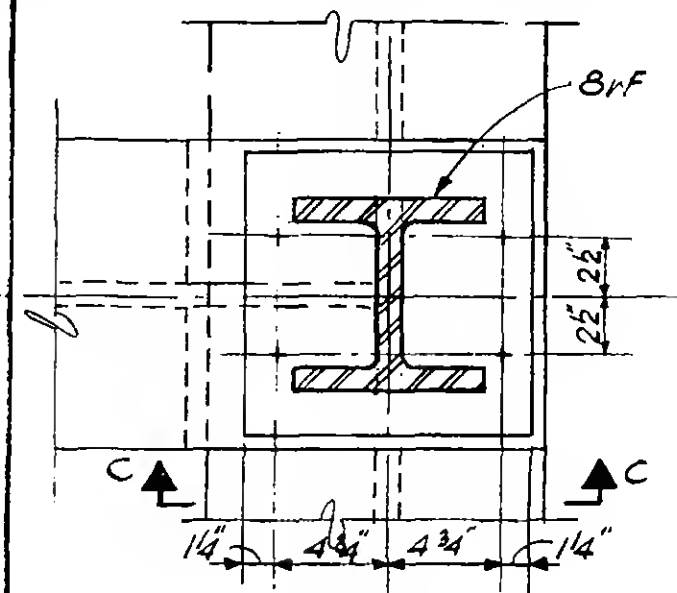
Section a-a
DETAIL 12-3A



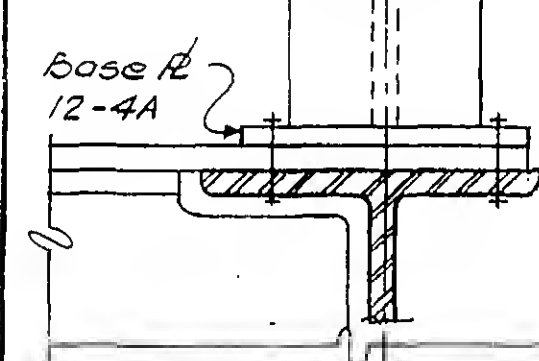
Plan



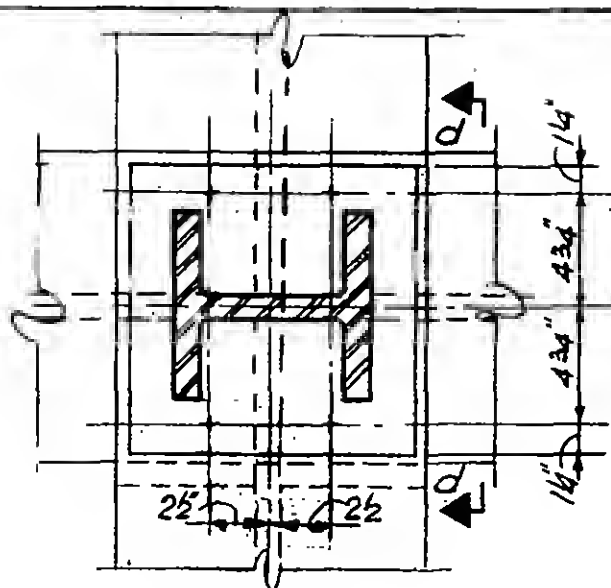
Section b-b
DETAIL 12-3B



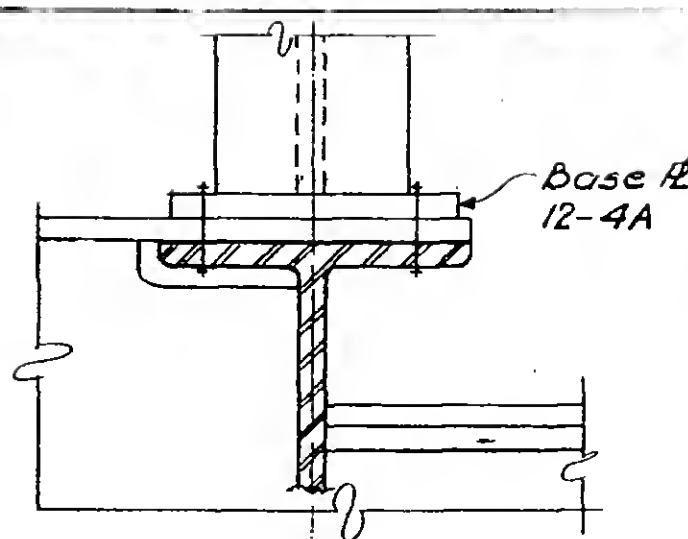
Plan



Section c-c
DETAIL 12-3C



Plan



Section d-d
DETAIL 12-3D

Notes:
1. For bolts see 8-5

9-AB/12-3.1



DESIGNED

DRAWN
D. Huggins

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

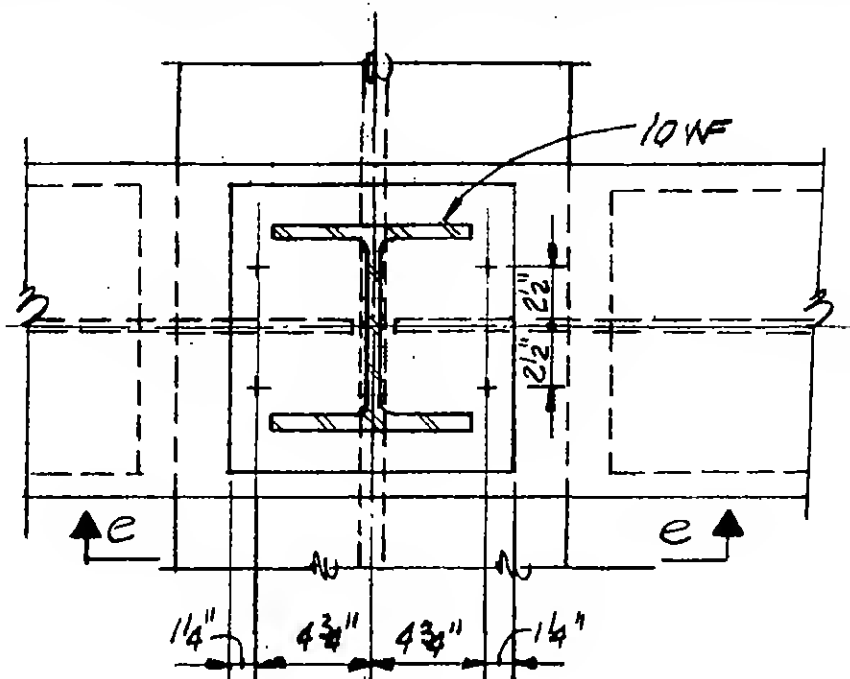
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

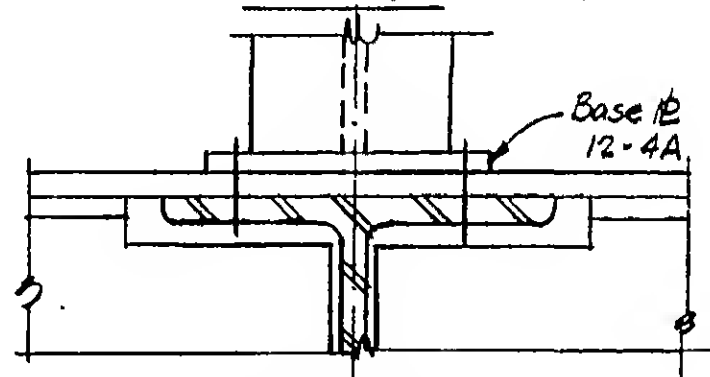
TITLE FL107-PH COLUMN BASE DETAILS

DATE 12-14-70

REVISIONS

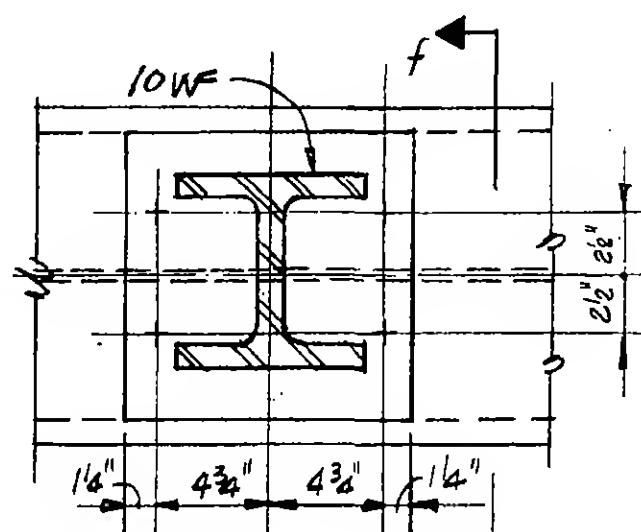


Plan

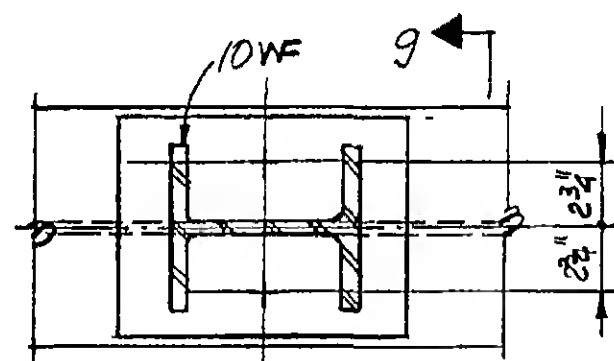


Section e-e

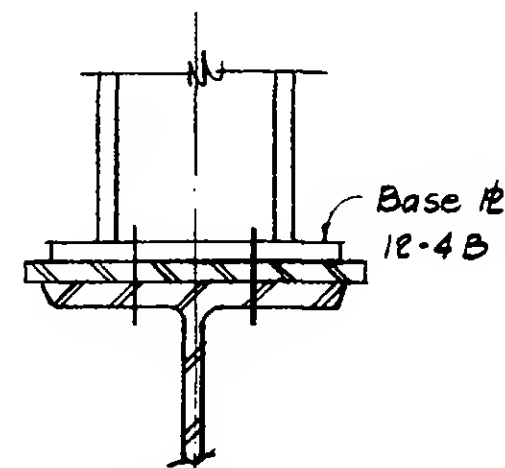
DETAIL 12-3E



Plan

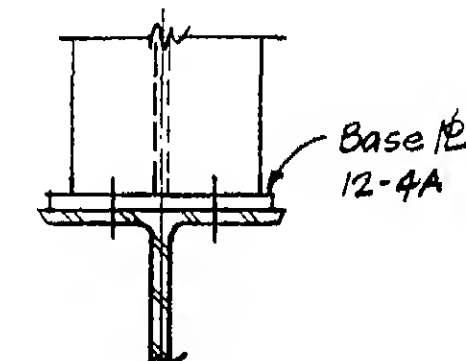


Plan



Section f-f

DETAIL 12-3F



Section g-g

DETAIL 12-3G

Note: All bolts 3/4"φ



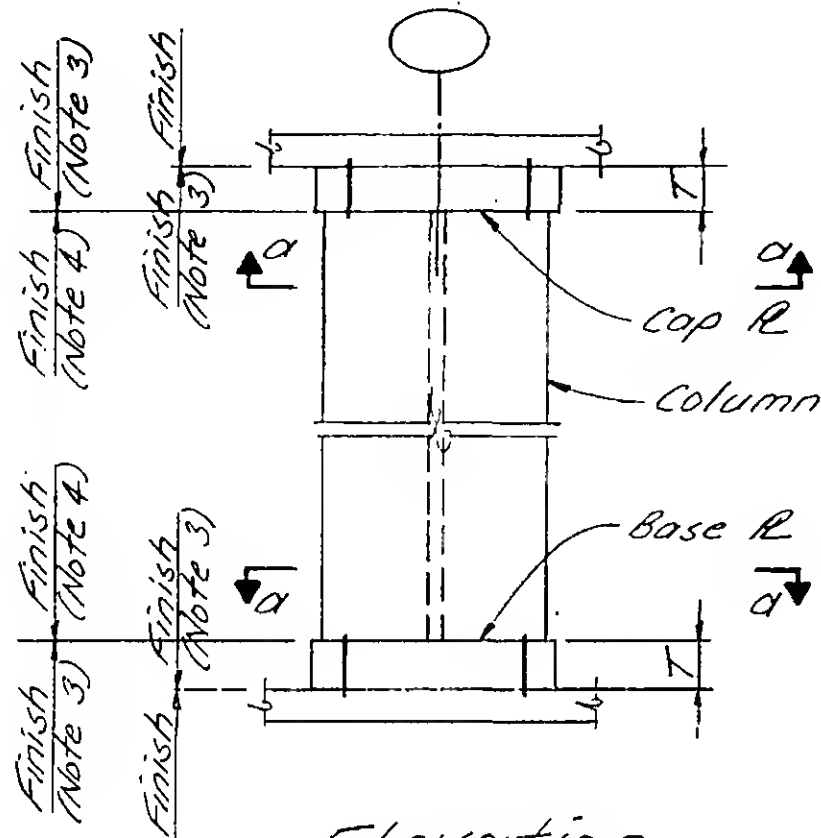
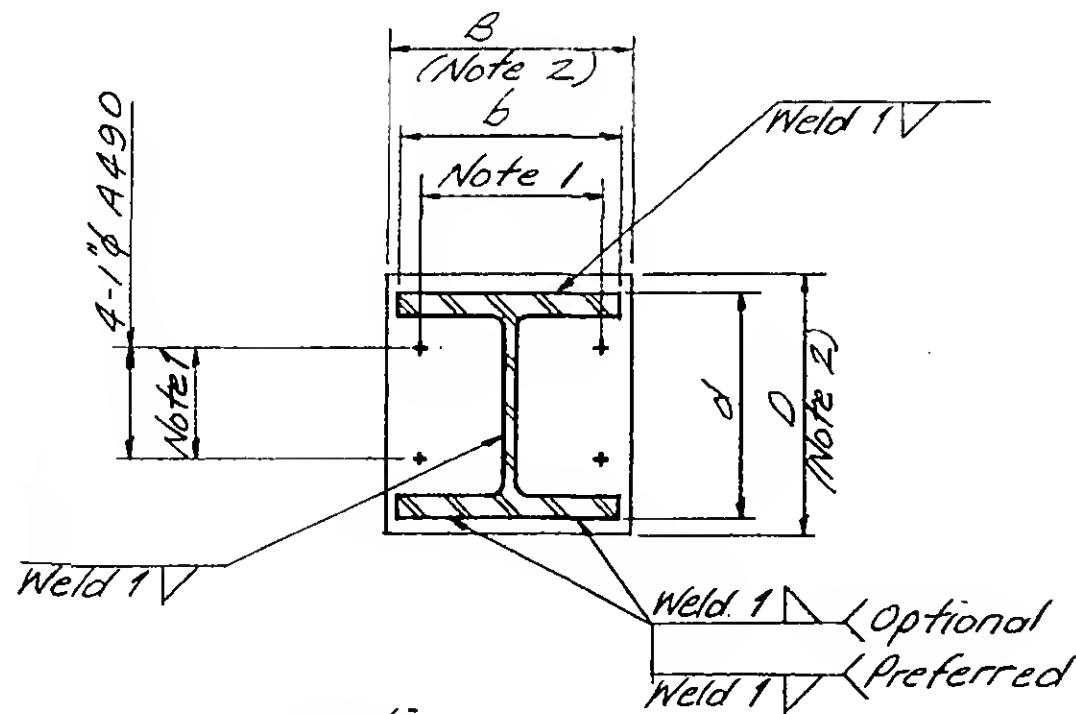
DESIGNED

DRAWN

REVIEWED

9-812-3,2

REVISIONS

ElevationSection a-aColumn Base & Cap Plate Detail

SCHEDULE

TYPE	THICKNESS (T)	WELD 1	REMARKS
12-4A	1"	5/16	
12-4B	2"	3/8	
12-4C	3"	1/2	
12-4D	4"	1/2	
12-4E	5"	5/8	
12-4F	6"	3/4	

Notes:

1. Bolts shall be spread as far as practical.
2. $B \geq b + 1/2$; $D \geq d + 2(\text{Weld 1}) + 1/2$.
3. Base and cap plates shall be finished in accordance with AISC 1.21.3 provisions.
4. column ends shall be saw-cut.
5. Base and cap plates shall be free of internal gross discontinuities.



DESIGNED

DRAWN

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

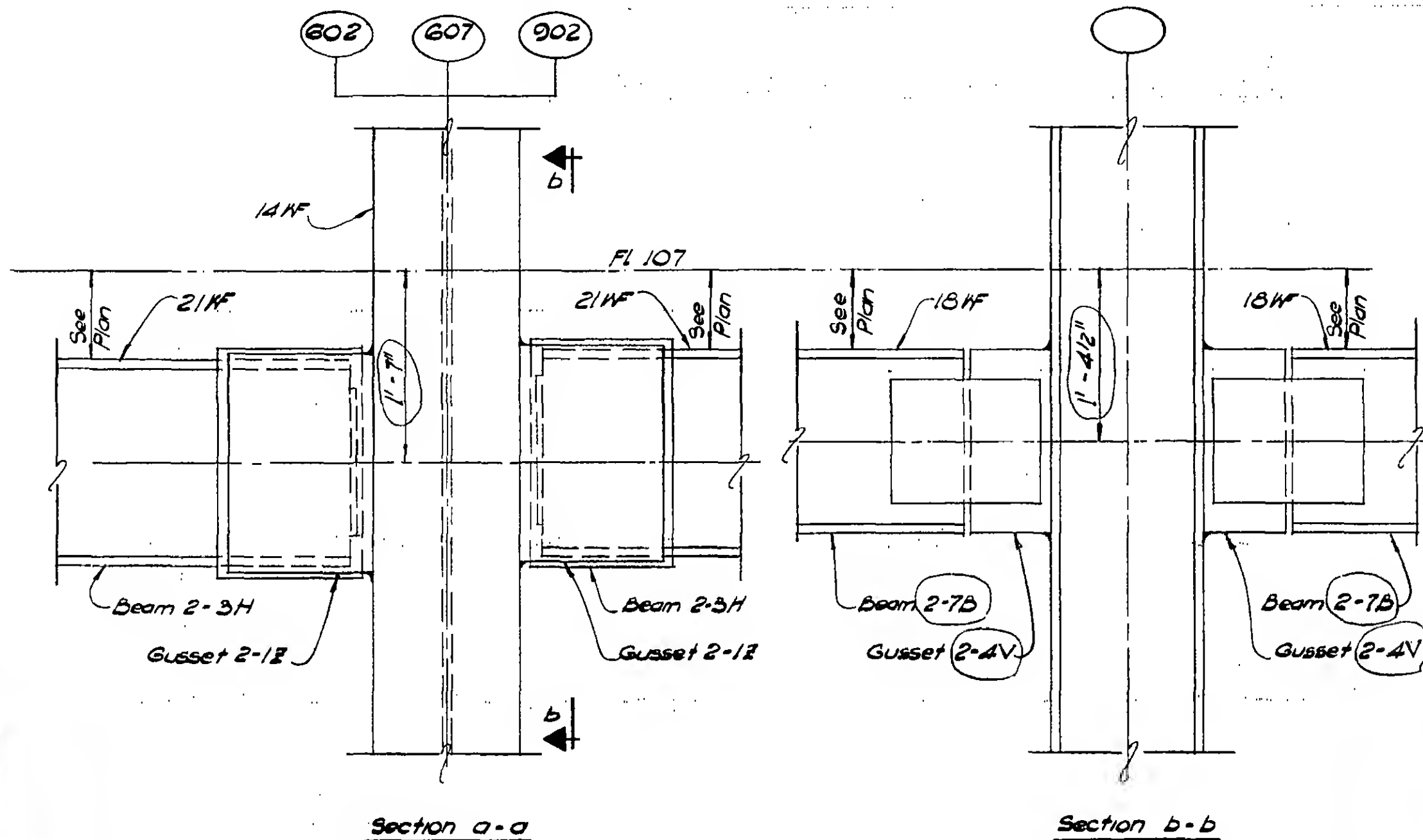
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - FL 107

DATE 4-1-70

REVISIONS

5-27-70



DETAIL 13-4A (Cols 602 & 902 as shown)
 DETAIL 13-4B (Col 607 opp hand.)



DESIGNED

K. Huang

DRAWN

N. Clarke

REVIEWED

E. Drakos

9-AB/3-4.1

PROJECT

THE WORLD TRADE CENTER

TITLE

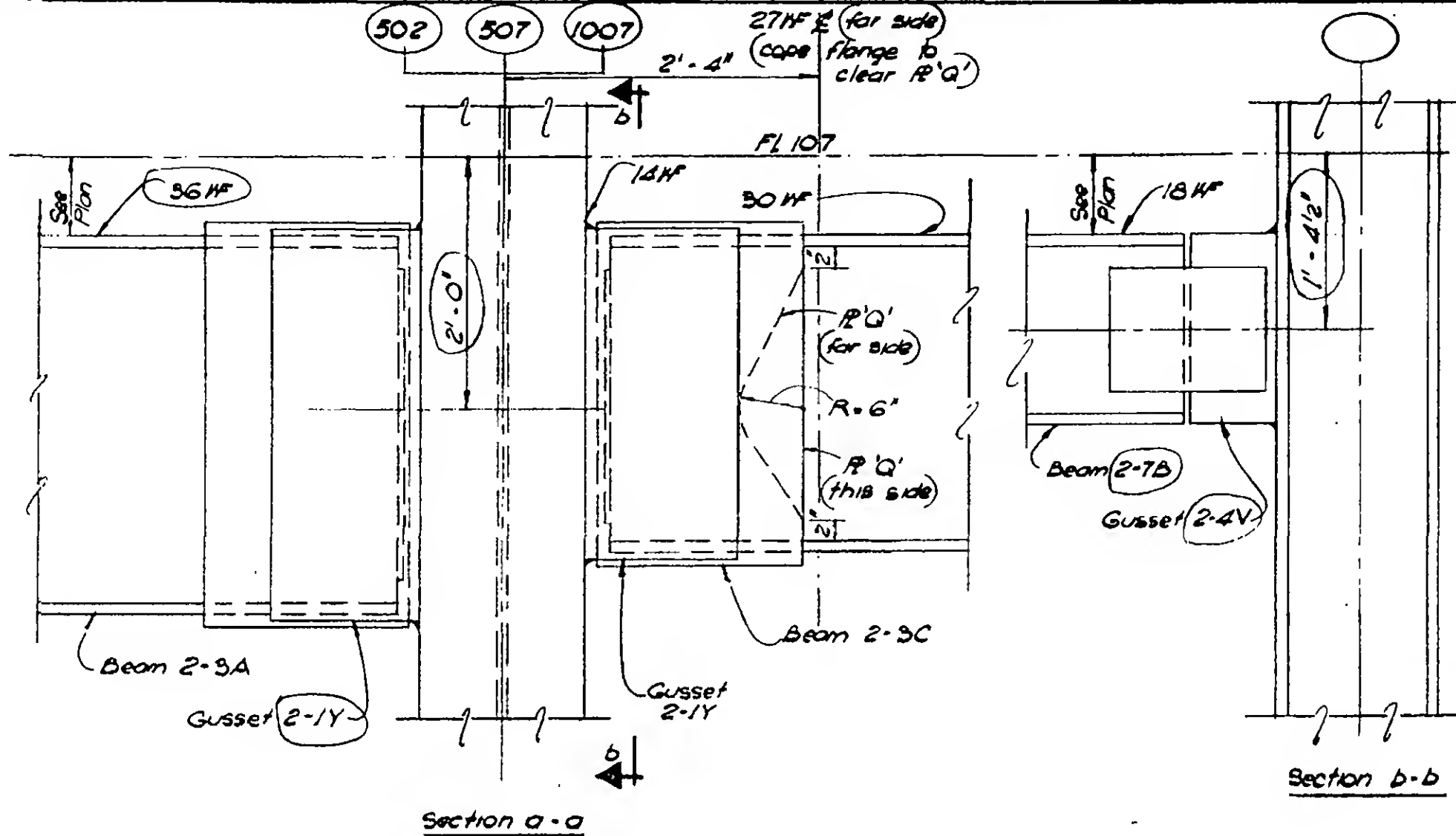
FL 107 - PH CONNECTION DETAILS - FL 107

DATE

4-1-70

REVISIONS

5-27-70



DESIGNED

K. HWANG

DRAWN

M. Clarke

REVIEWED

E. DRAXOS

9-AB13-4.8

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

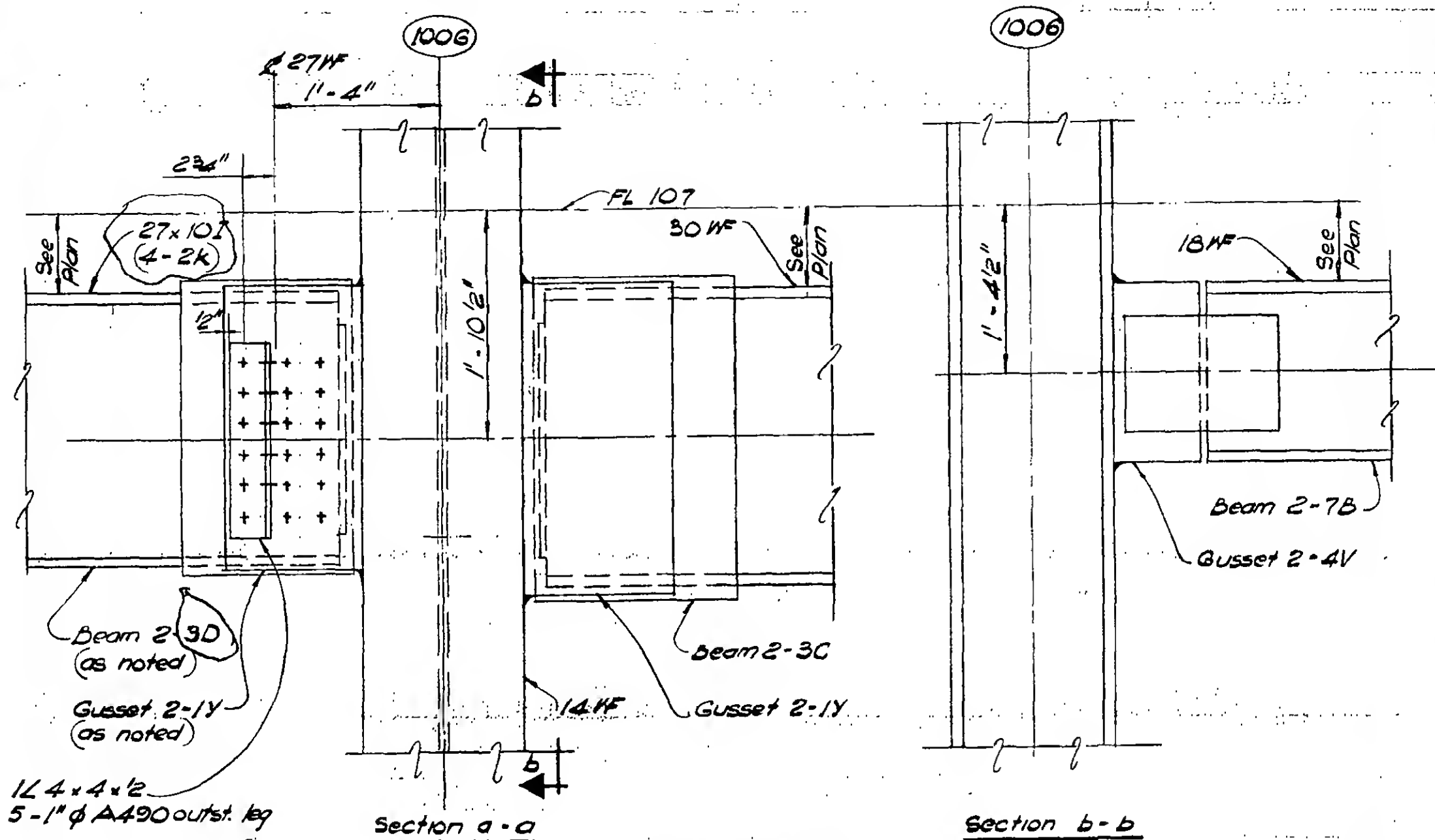
TITLE FL 107 - RH CONNECTION DETAILS - FL 107

DATE 4-1-70

REVISIONS

3-27-70

6-17-70

DESIGNED
K. HwangDRAWN
H. ClarkeREVIEWED
E. Drakos

9-AB13-4.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

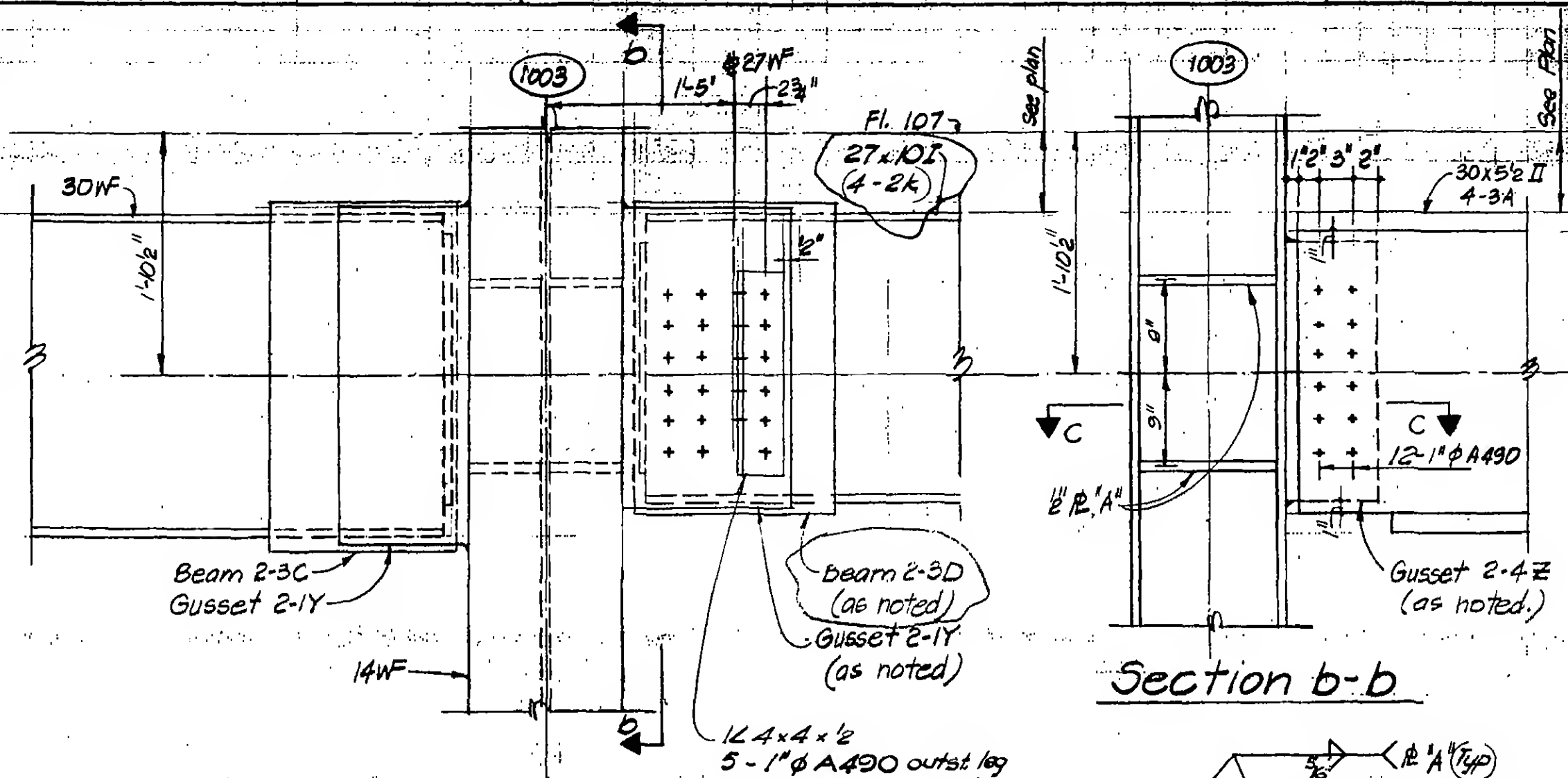
TITLE PL 107-PH CONNECTION DETAILS - FL 107

DATE 4-1-70

REVISIONS

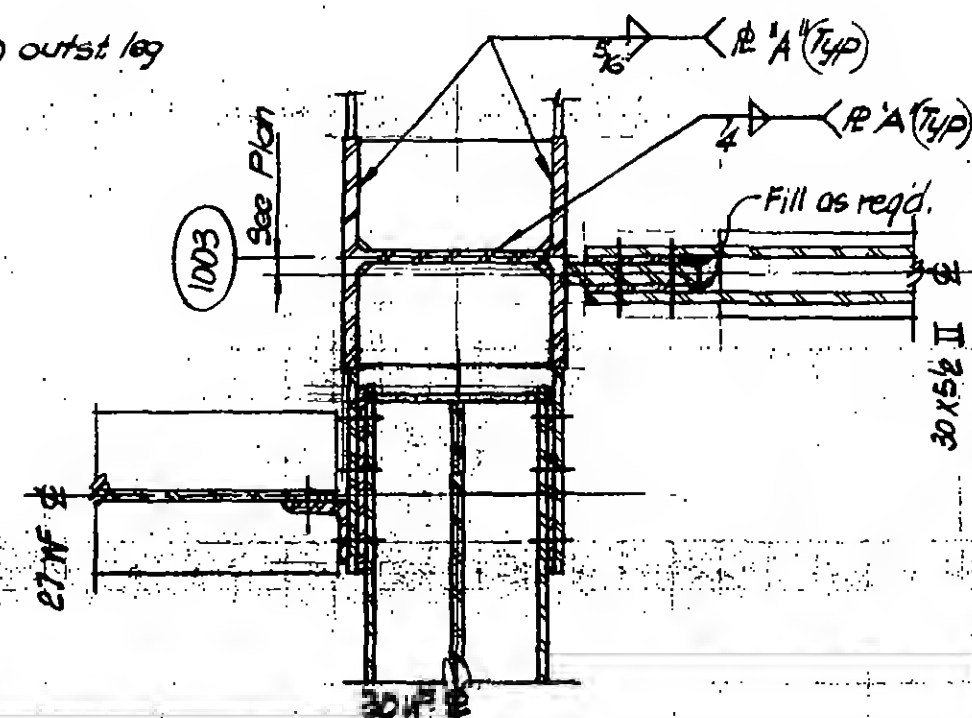
5-27-70

6-17-70



Section a-a

DETAIL 13-4F



Section c-c

9-1013-4.4



DESIGNED K. Hwang

DRAWN F. Drakos

REVIEWED E. Drakos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

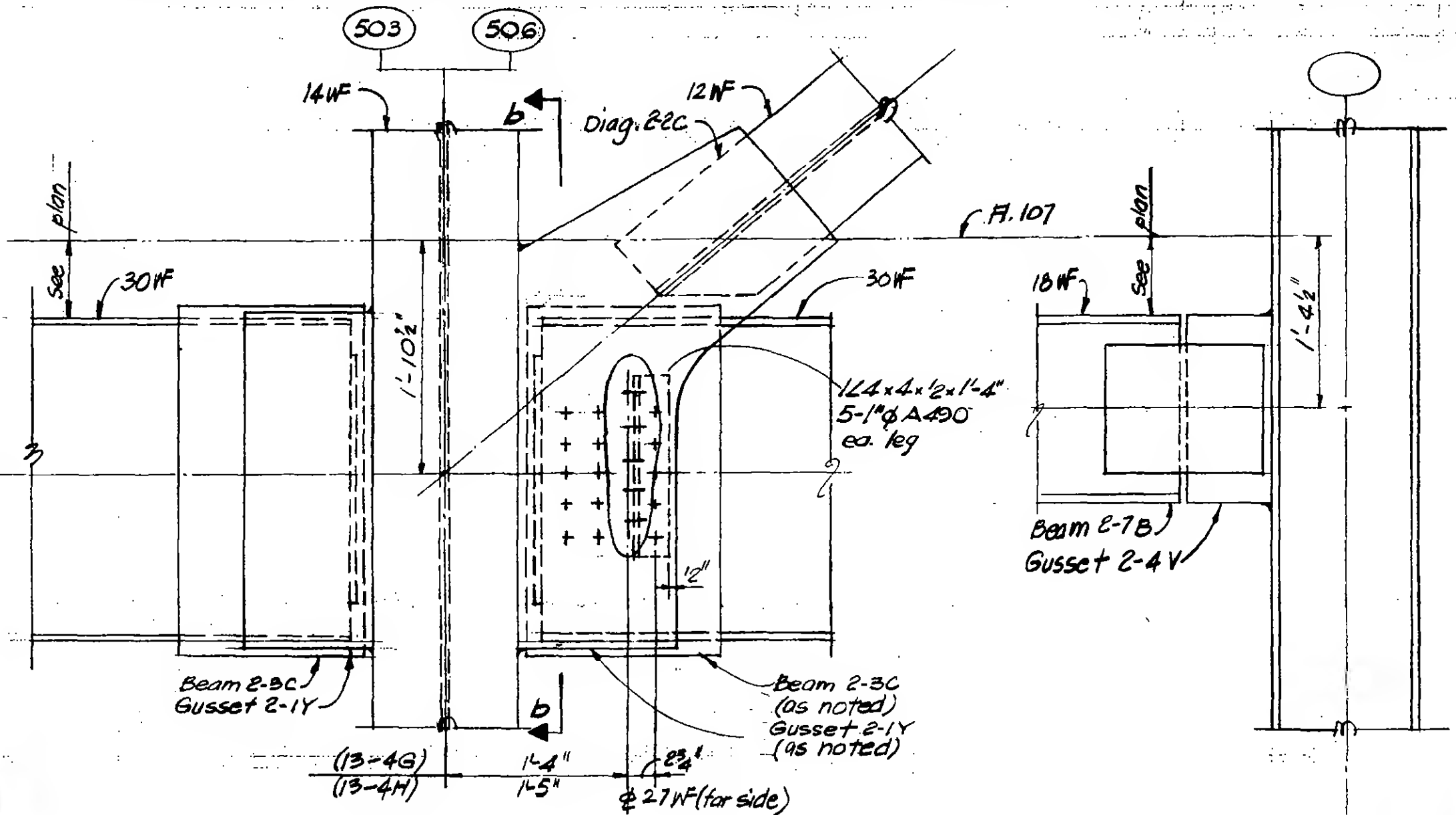
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - FL 107

DATE 4-1-70

REVISIONS

5-27-70
7-8-70

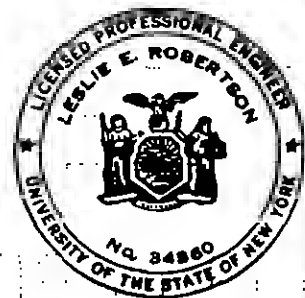


Section a-a

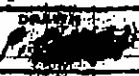
Section b-b

DETAIL 13-4G (Col. 503 as shown)

DETAIL 13-4H (Col. 506 opp hand & as noted)



DESIGNED
K. Hwang



REVIEWED
E. Dracos

8-AB/AT-4.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

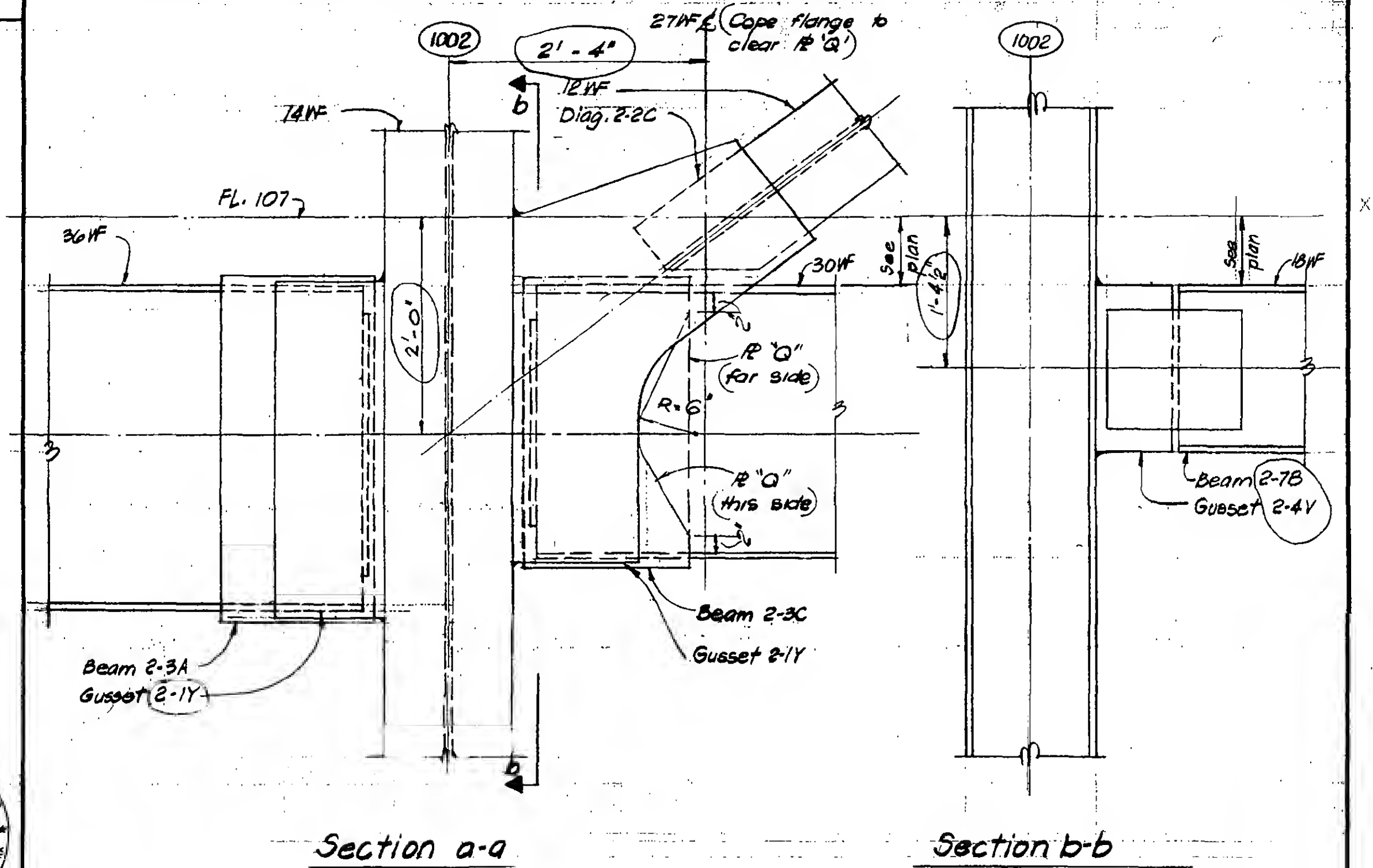
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - FL 107

DATE 4-1-70

REVISIONS

5-27-70



Section a-a

Section b-b

DETAIL 13-4K



DESIGNED

E. HALL

DRAWN

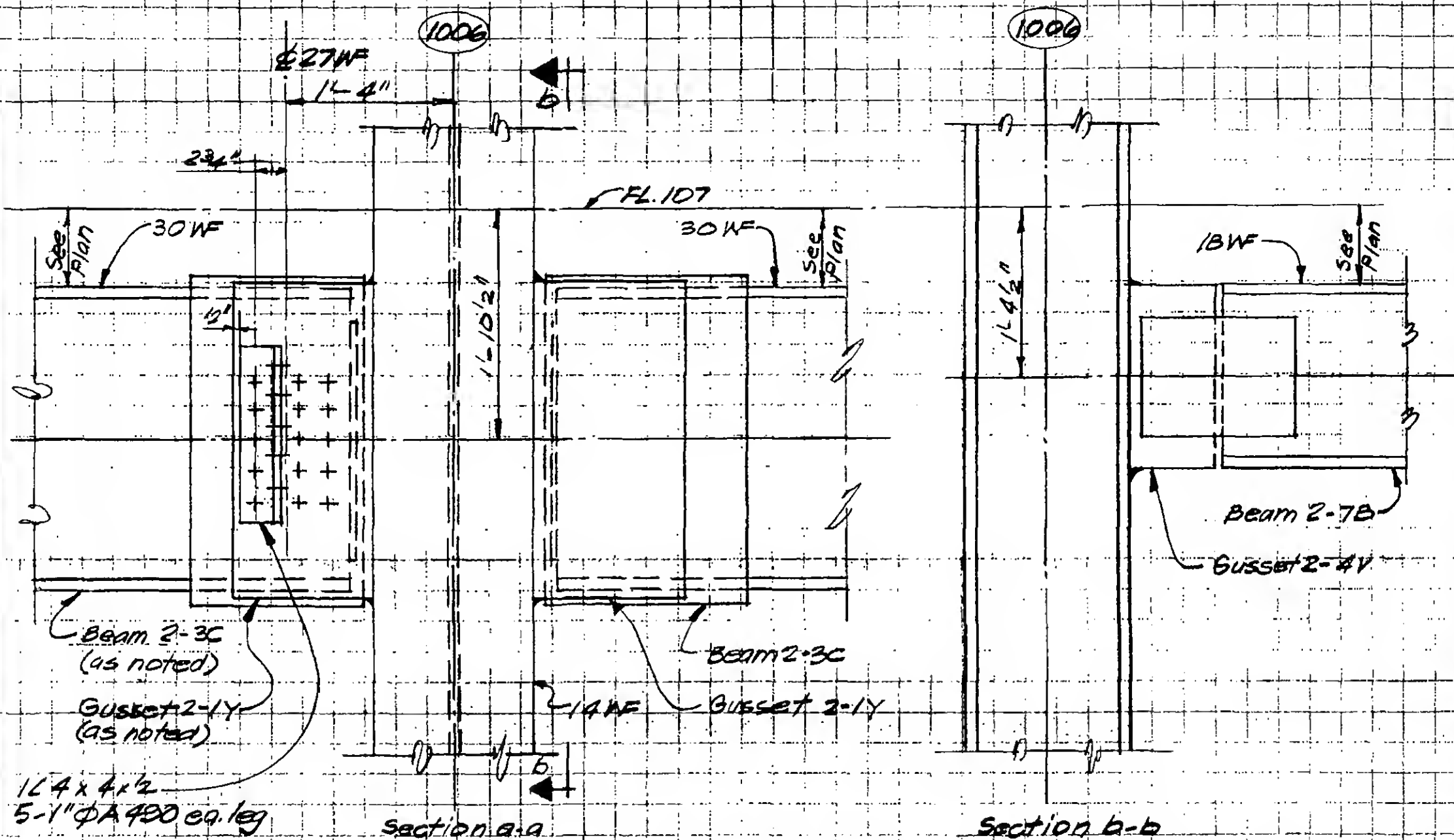
E. DRAKOS

REVIEWED

E. DRAKOS

9-10-10

REVISIONS



DETAIL 1/3-4M



DESIGNED

DRAWN

P. Ozaki

REVIEWED

2-8/3-4.7

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

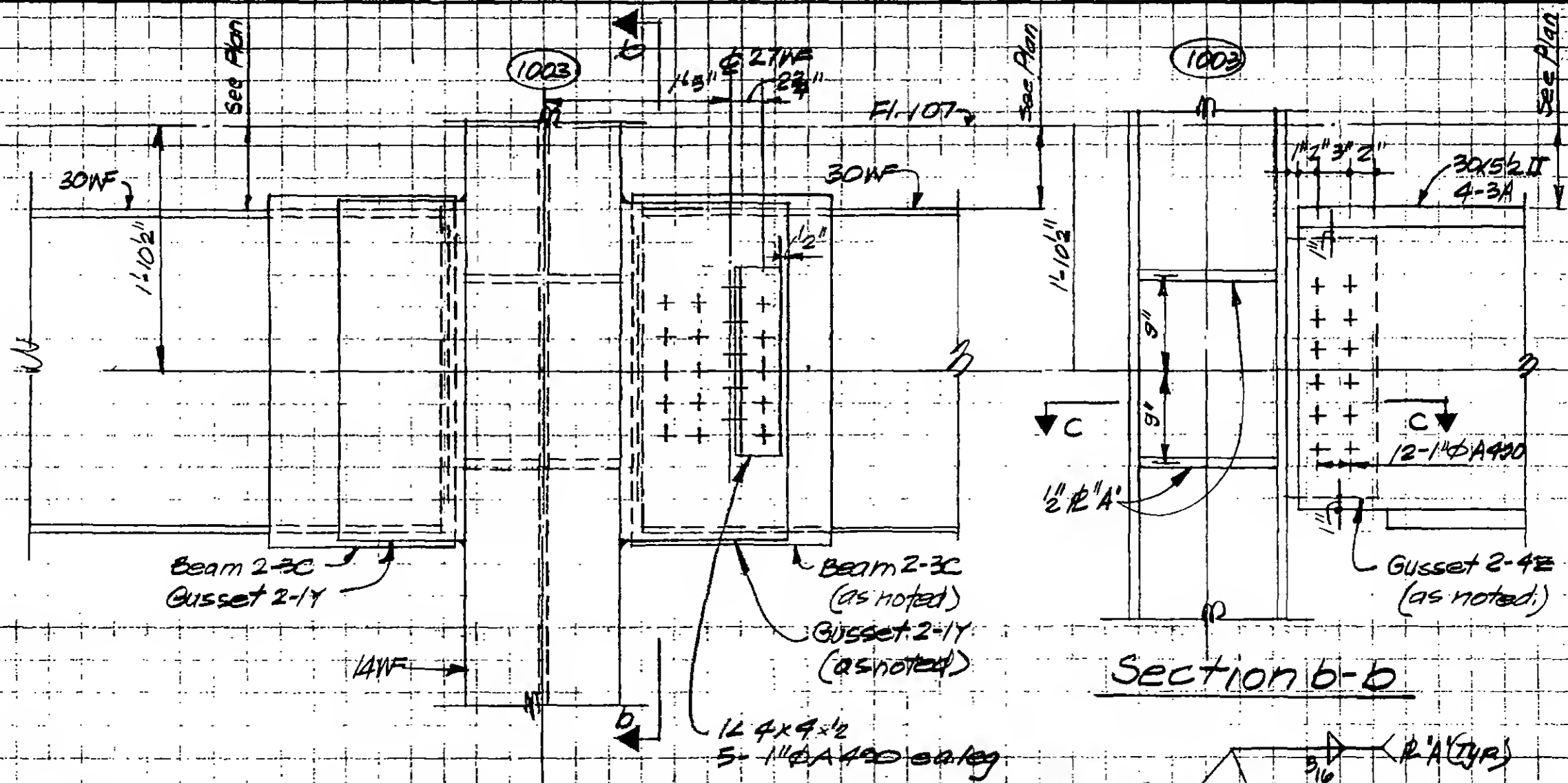
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-P.H. CONNECTION DETAILS- FL 107

DATE 8-3-70

REVISIONS



Section a-a

Section b-b

DETAIL 13-4N

Section c-c

9-B/3-4.B



DES ONE

DRAWN

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

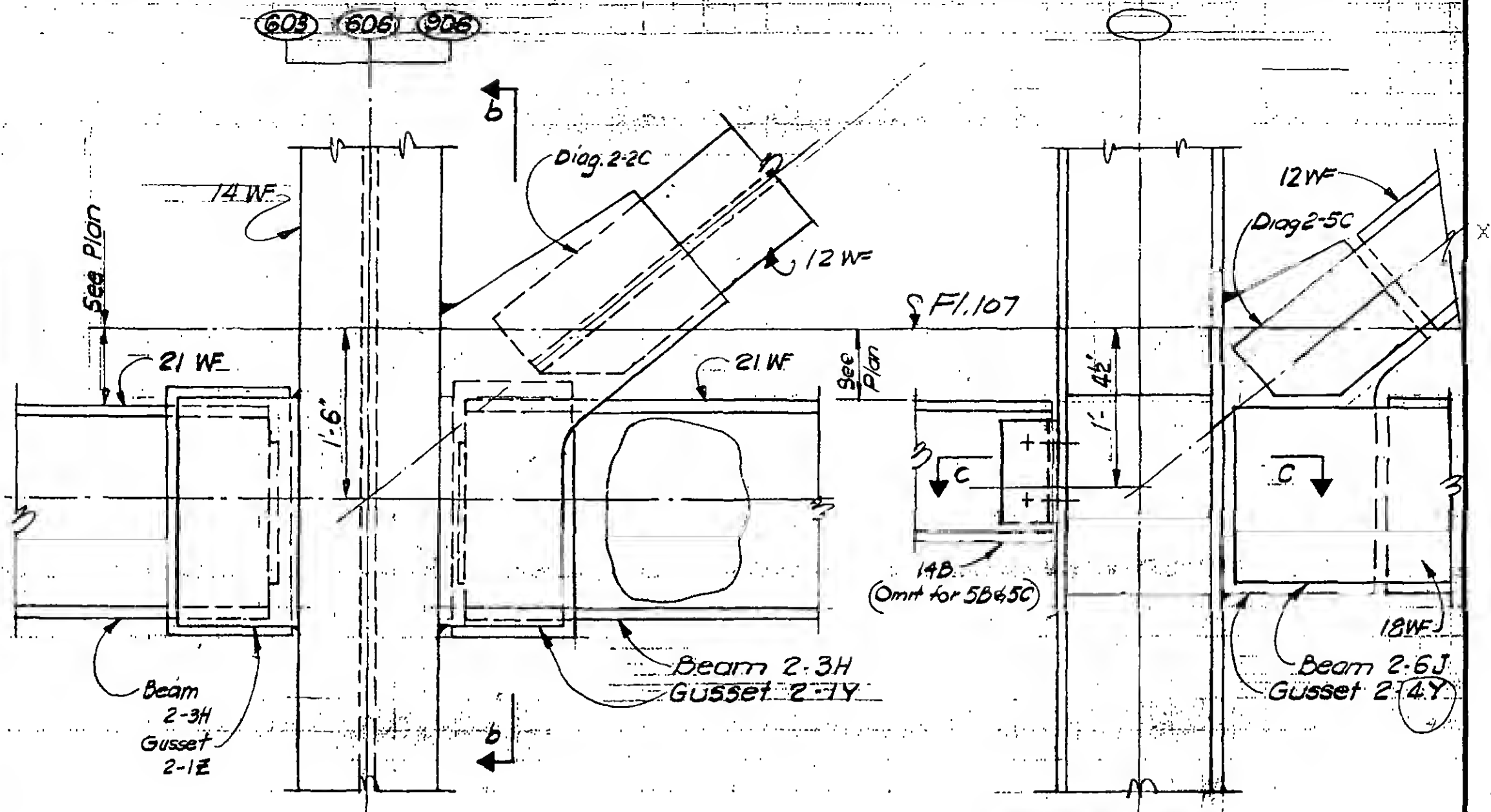
PROJECT THE WORLD TRADE CENTER

TITLE FL.107-PH CONNECTION DETAIL - FL 107

DATE 4-1-70

REVISIONS

5-27-70



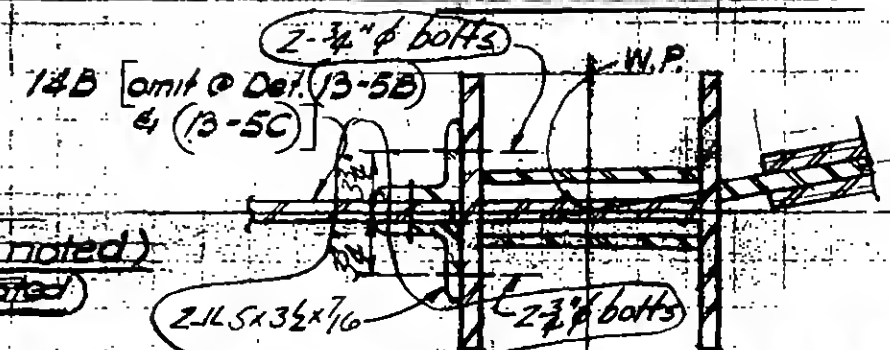
Section a-a

Section b-b

Detail 13-5A (Col. 603 as shown)

Detail 13-5B (Col. 606 opp. hand & as noted)

Detail 13-5C (Col. 906 similar & as noted)



Section c-c

9-AB/3-5.1

DESIGNED
K. HWANGDRAWN
P. DRACOSREVIEWED
E. DRACOS

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

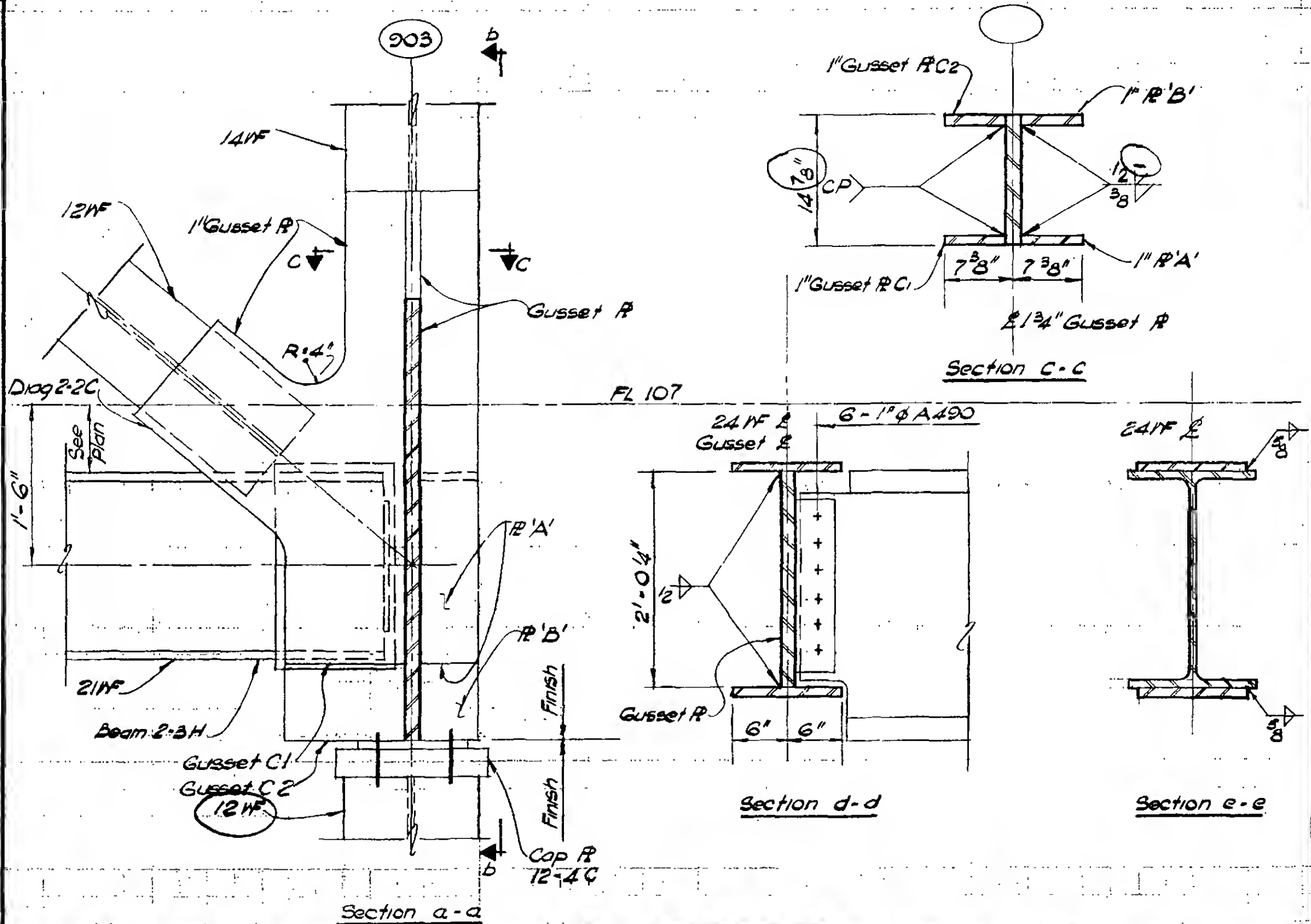
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - FL 107

DATE 4-1-70

REVISIONS

5-27-70
7-8-70



DESIGNED

W. V. V.

DRAWN

H. Clarke

REVIEWED

E. Drakos

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - PH CONNECTION DETAILS - FL 107

DATE _____

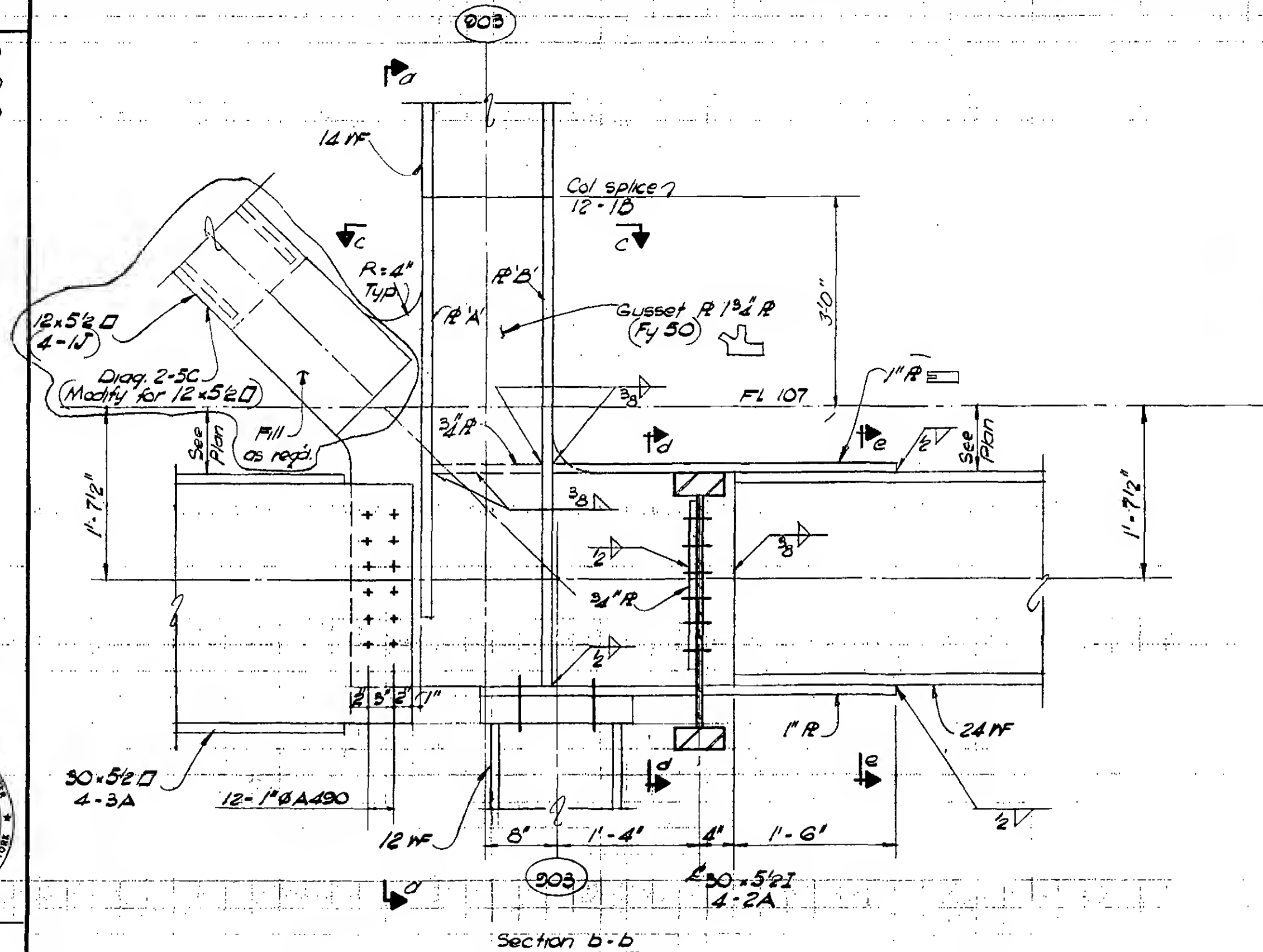
4-1-70

REVISIONS

5-27-70

7-8-70

7-13-70



DESIGNED

H. Varr

TRAVEL

N. Clarke

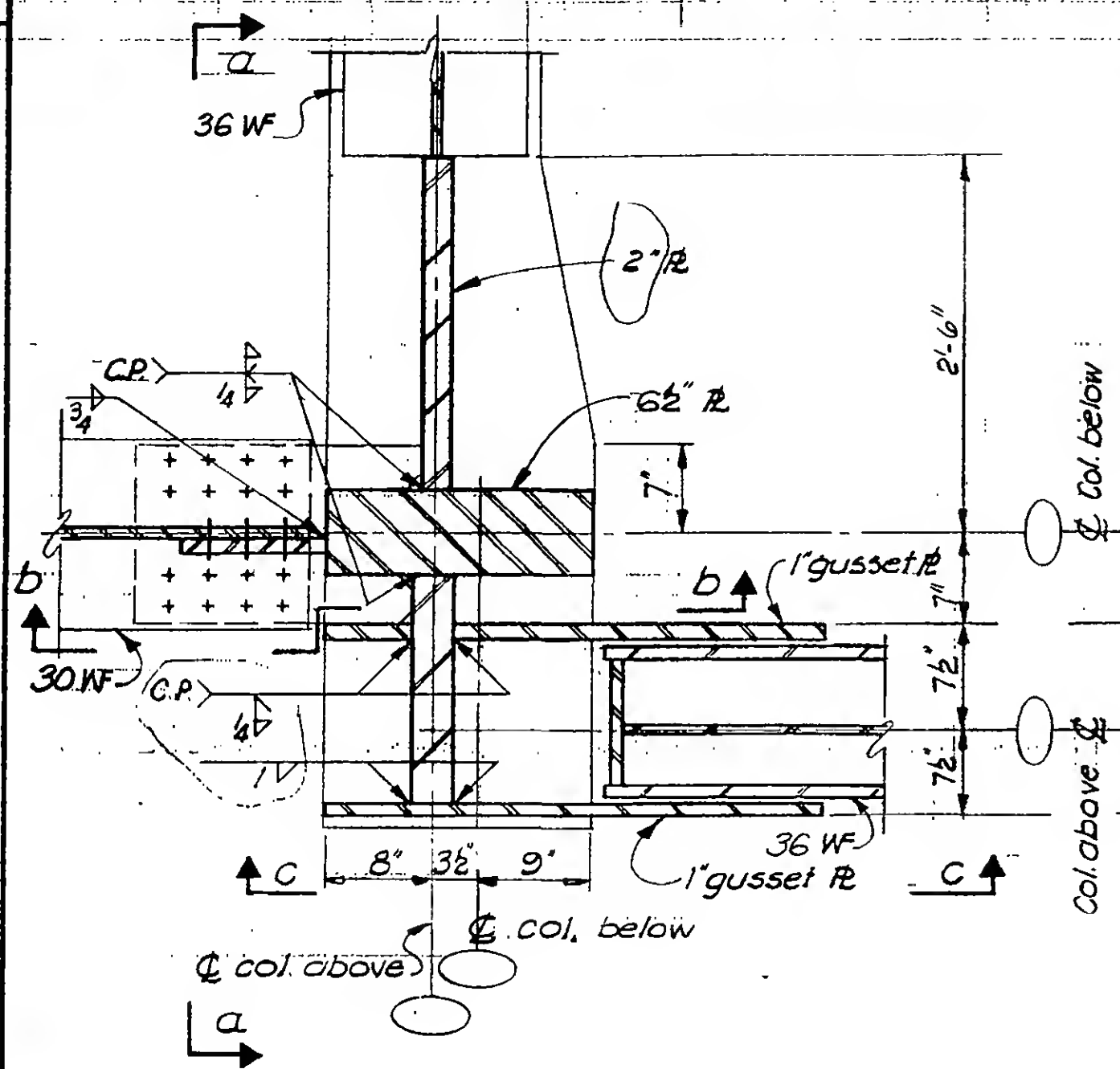
REVIEWED

REVIEWED
E. Drakos

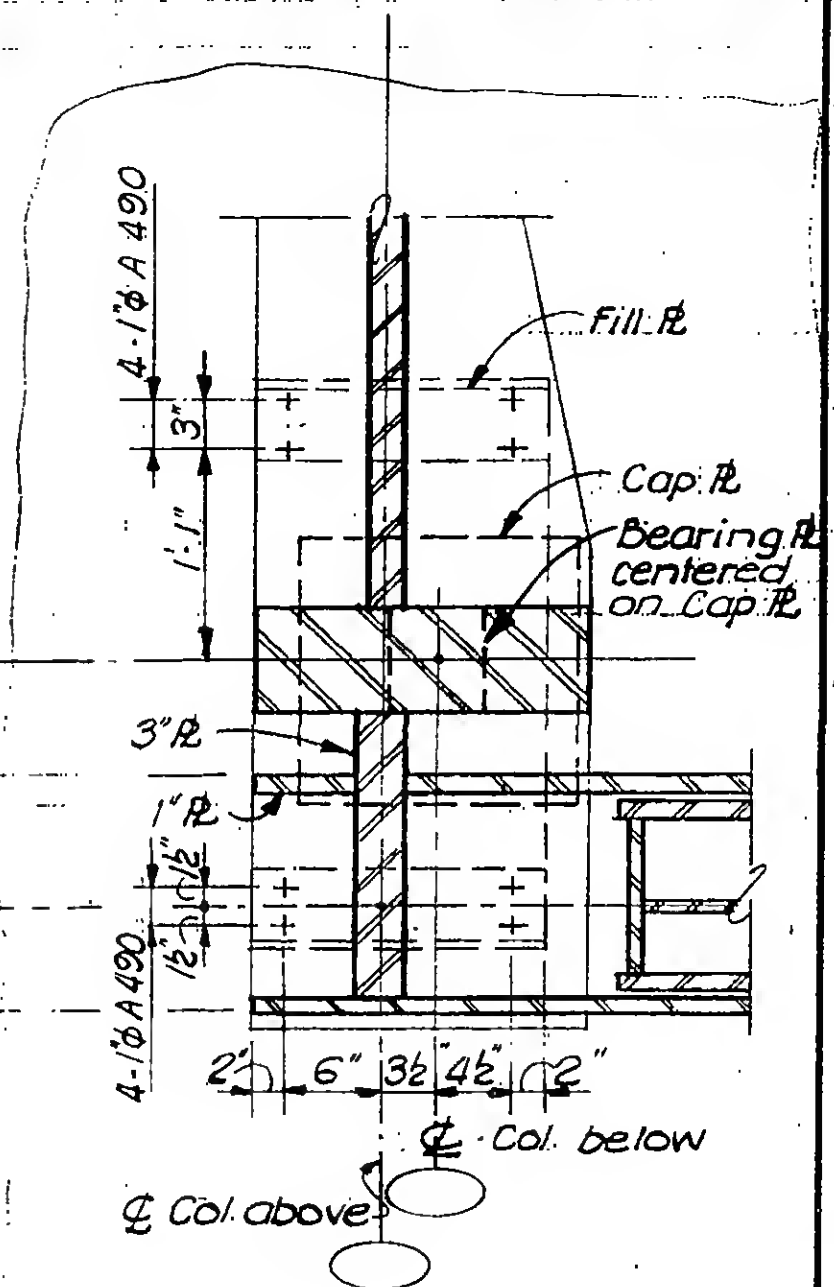
9 - AB/3-5,3

REVISIONS

5/27/70



Plan A-A



Plan B-B

Detail 13-7A

Col. 1001 as shown
Col.'s 501, 508 & 1008 similar

- Notes:
1. - All R's and detail material on this detail consist of $F_y = 50$ ksi material.
 2. - All R's designated as gusset R's shall have holes $3/16"$ larger than nominal bolt diameter, for all remaining R's and members shall be $1/16"$ larger

9-AB13-7.1



DESIGNED
Vox
DRAWN
J. Grieco
REVIEWED
J. Dracos

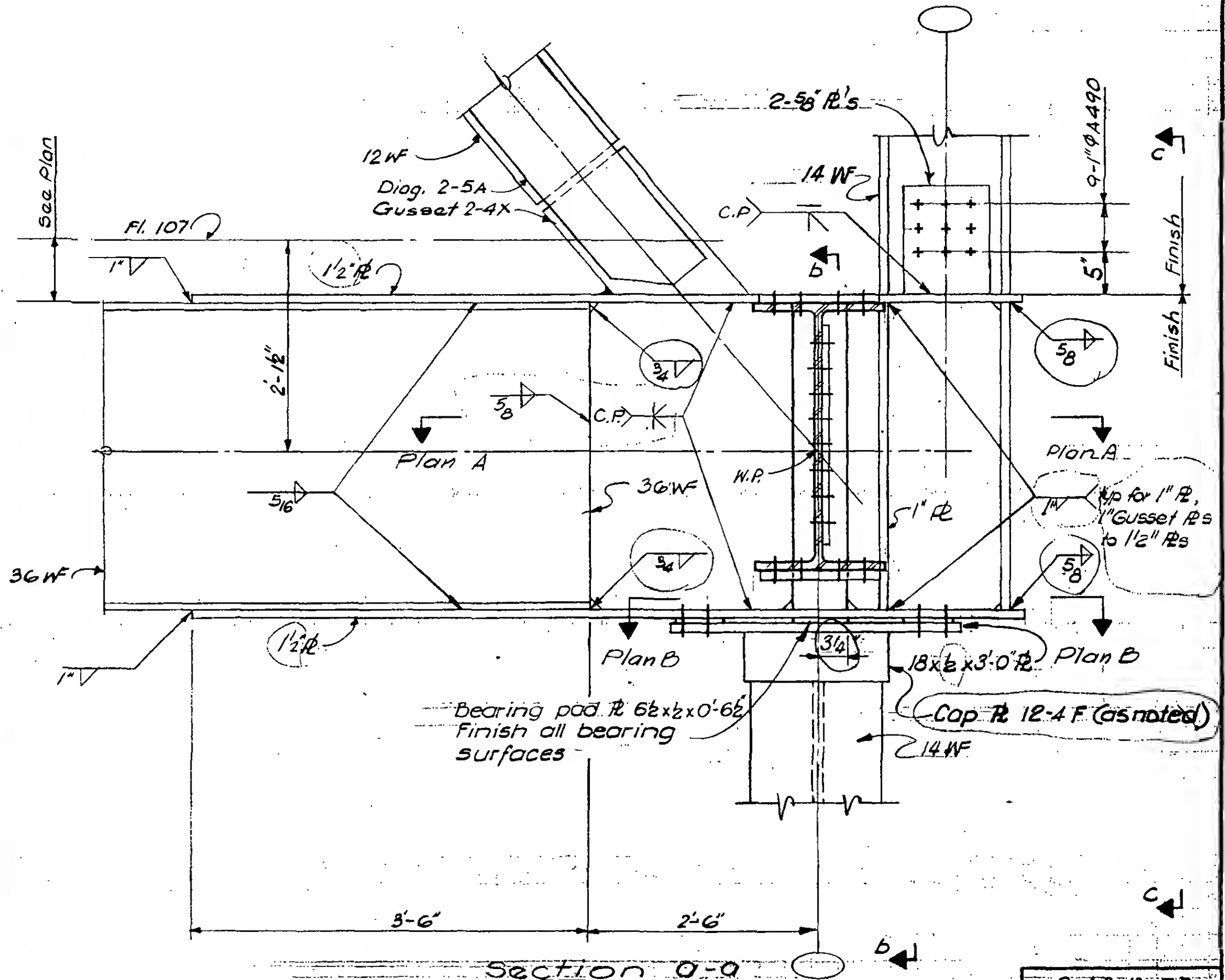
PROJECT THE WORLD TRADE CENTER

TITLE FI. 107-PH CONNECTION DETAIL - FLOOR 107

DATE 4-1-70

REVISIONS

5/27/70



DESIGNED H. Von

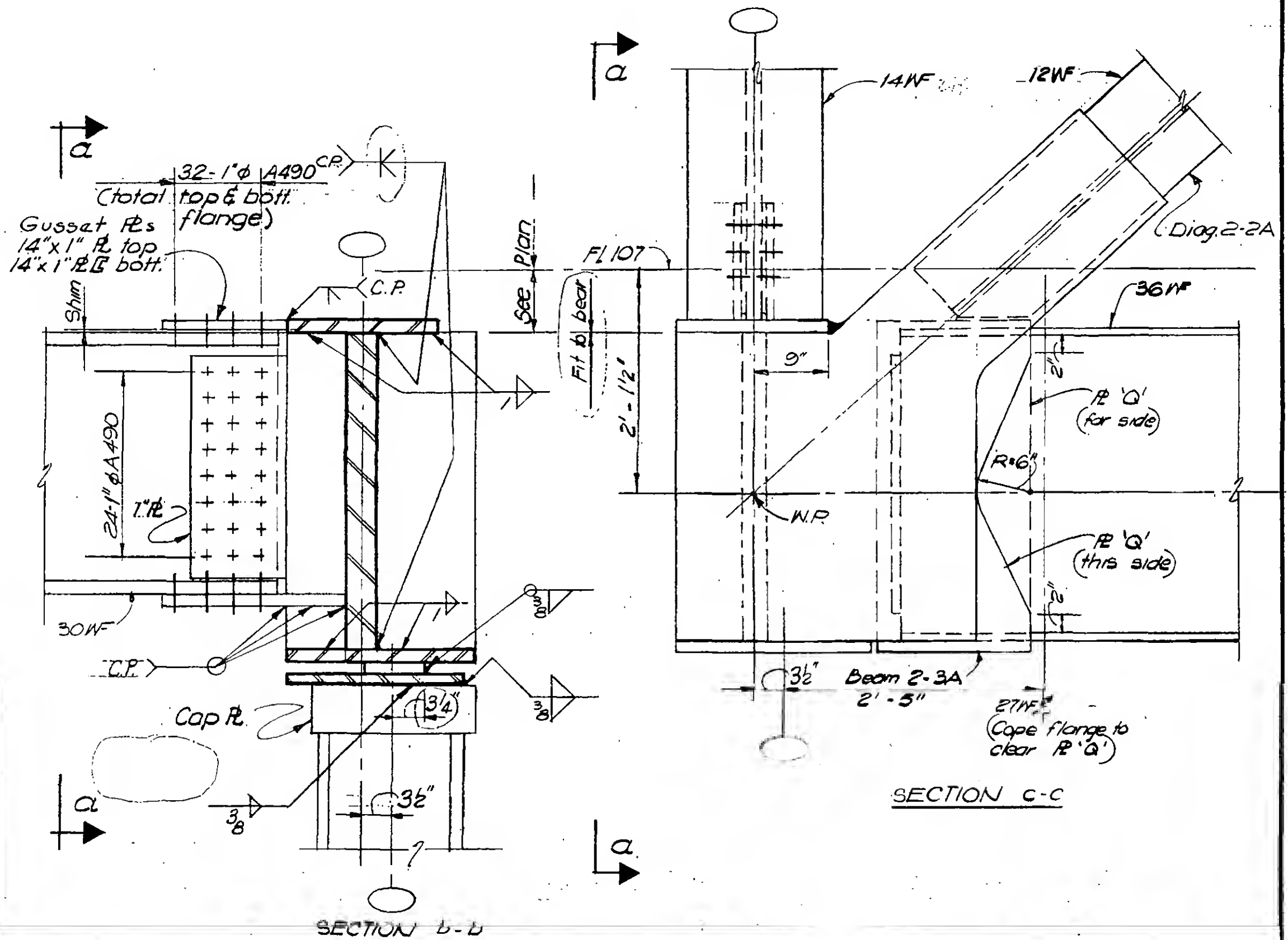
DRAWN J. Gracius

REVIEWED

E. Drakos

REVISIONS

5/27/70



DESIGNED

H. Von

DRAWN

W. Clarke

REVIEWED

E. Dravos

9 - AB/3-7.9

PROJECT

THE WORLD TRADE CENTER

TITLE

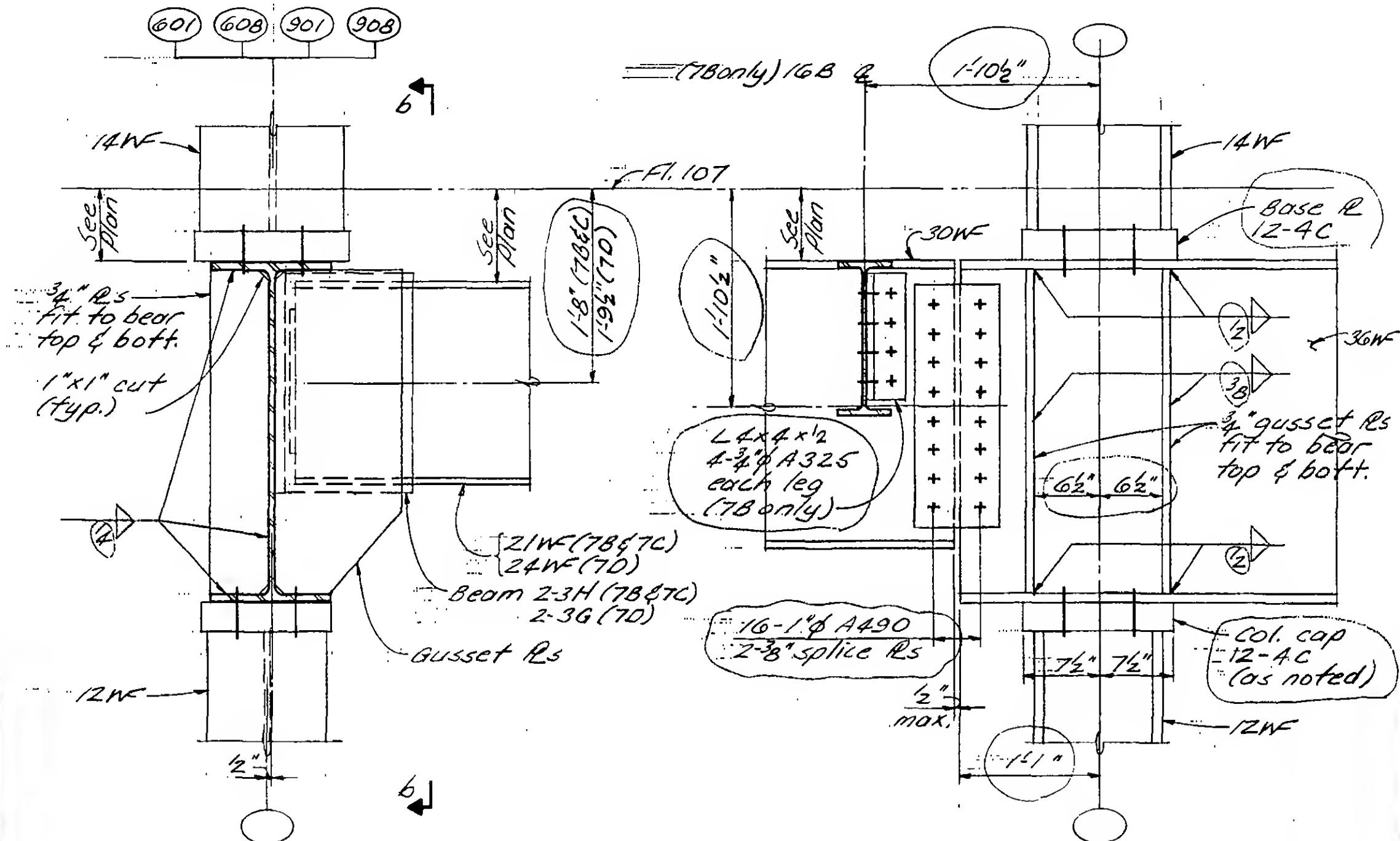
FL 107-PH CONNECTION DETAILS - FLOOR 107

DATE

4-1-70

REVISIONS

5/27/70



Section a-a

Cols. 601 & 901 as shown

Cols. 608 & 908 opp. hand

Section b-b

Detail 13-7B Cols. 601 & 608

Detail 13-7C Col. 901

Detail 13-7D Col. 908

9-AB13-7.4



DESIGNED

H. Voss

DRAWN

J. Adams

REVIEWED

E. Draxos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

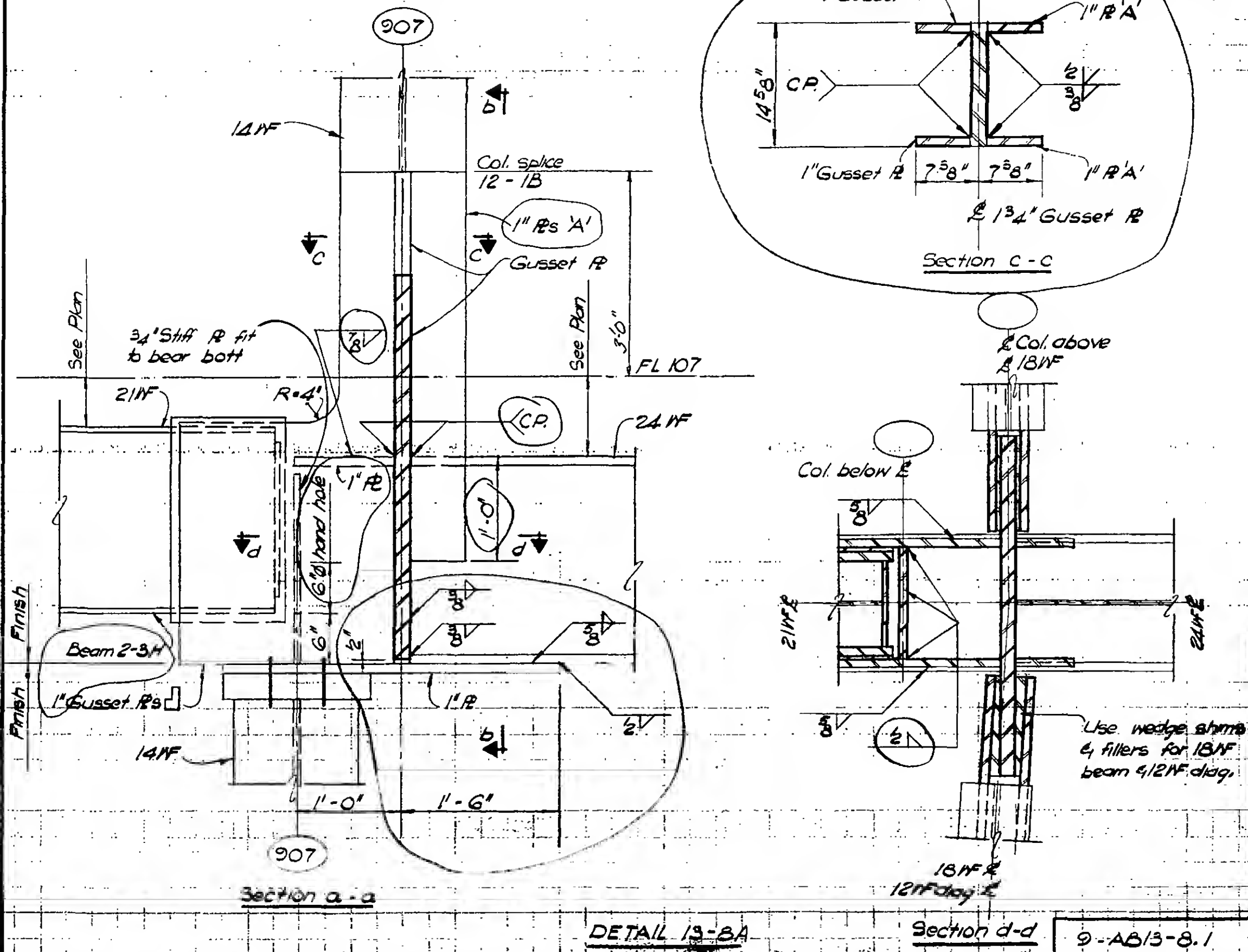
FL 107 - PH CONNECTION DETAILS - FL 107

DATE

4-1-70

REVISIONS

5-27-70



DESIGNED
V. V. V.

DRAWN
N. Clarke

REVIEWED
E. Dracos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

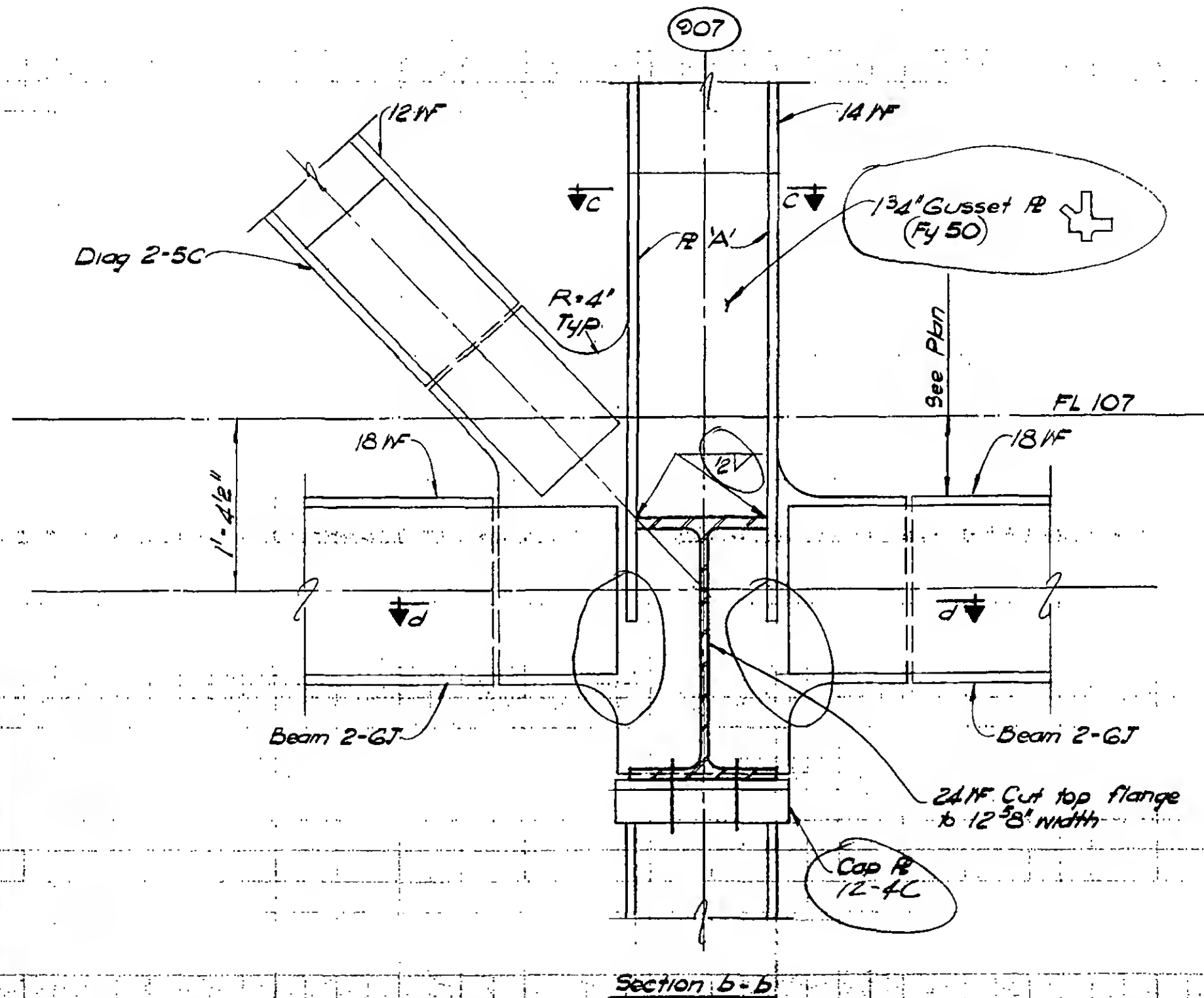
FL 107 - PH CONNECTION DETAILS - FL 107

DATE

4-1-70

REVISIONS

5-27-70



DESIGNED

H. Von

DRAWN

W. Clarke

REVIEWED

E. Drakos

9-AD/3-8.2

PROJECT

THE WORLD TRADE CENTER

TITLE

FLOOR 107-PH CONNECTION DETAIL - FL 107

DATE

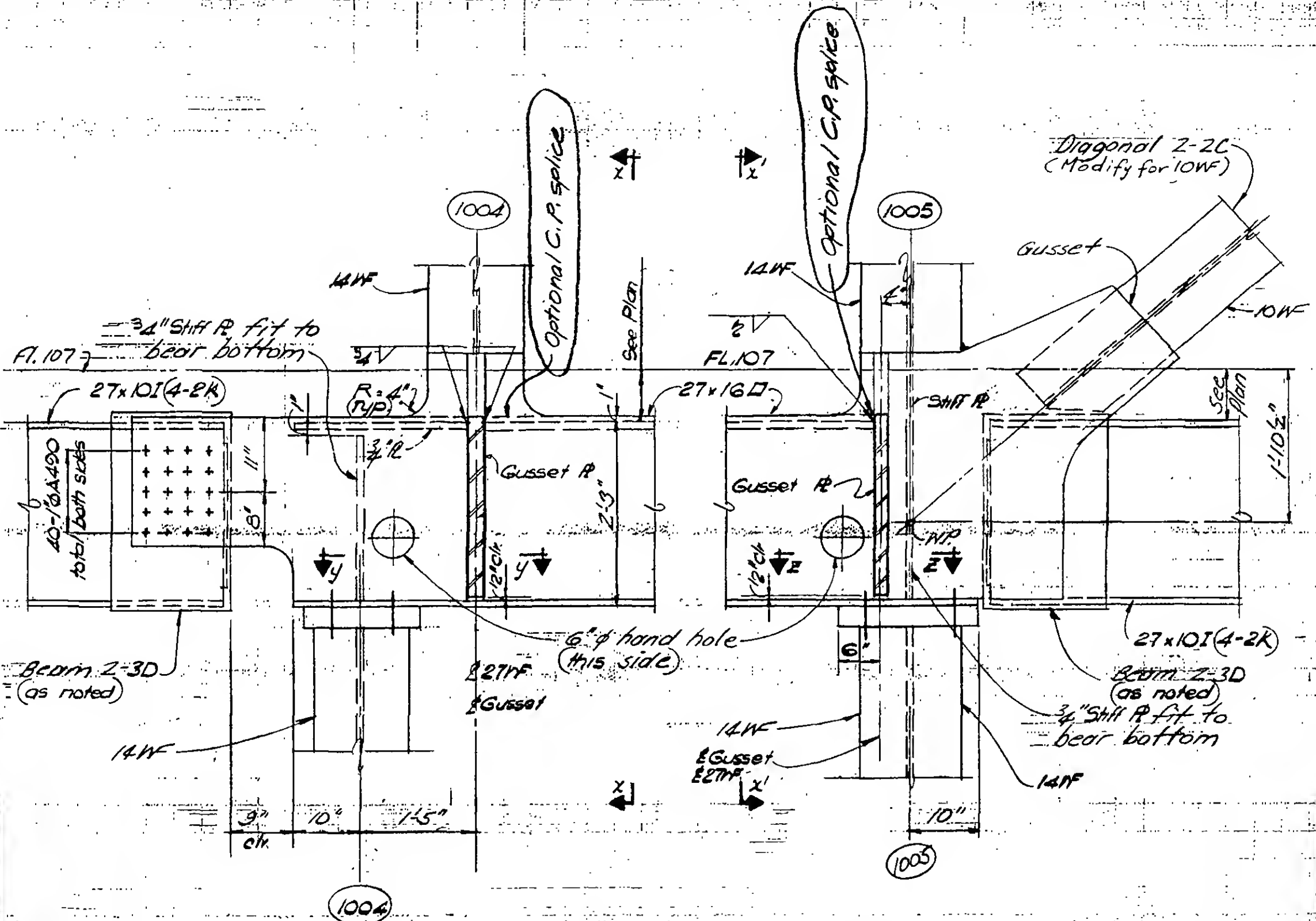
4-1-70

REVISIONS

5/27/70

6/17/70

7/8/70



Section N - N

DETAIL 13-9A

Section N - N

DETAIL 13-9C

9-AB13-9.1



DESIGNED

Quirk

DRAWN

Hagans

REVIEWED

E. Drakos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

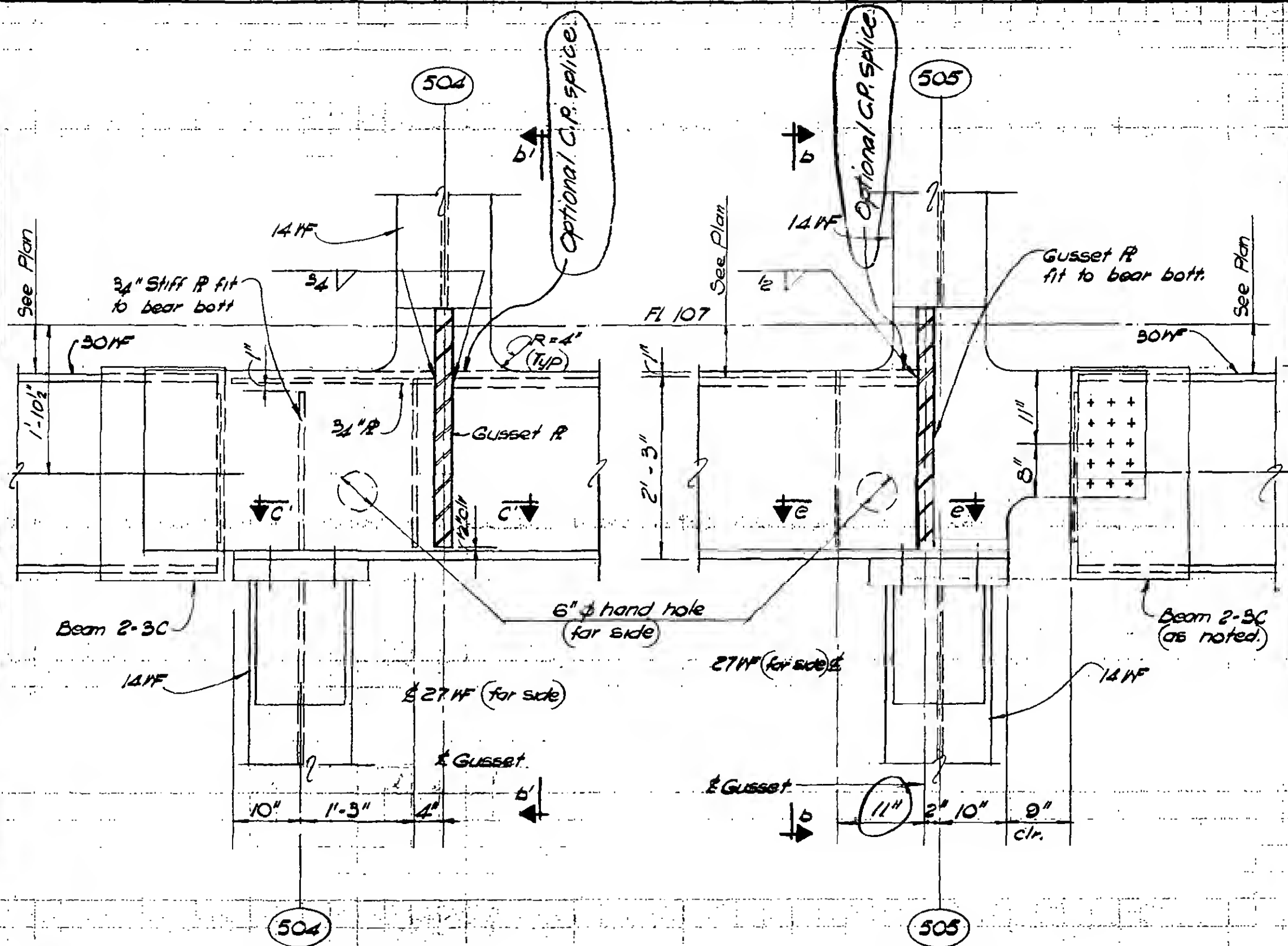
TITLE

FL 107 - PH CONNECTION DETAILS - FL 107

DATE

4-1-70

REVISIONS

5/27/70
7/8/70

DESIGNED

L. Quirk

DRAWN

H. Clarke

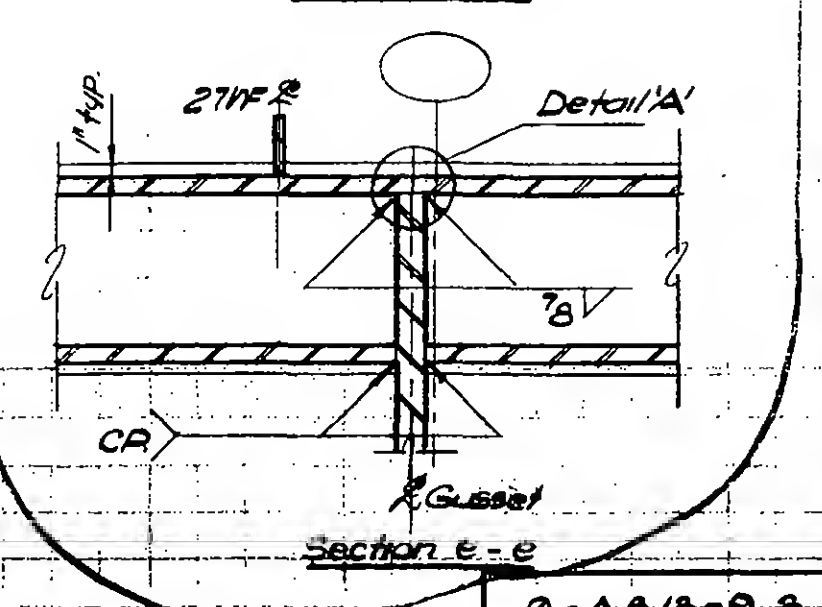
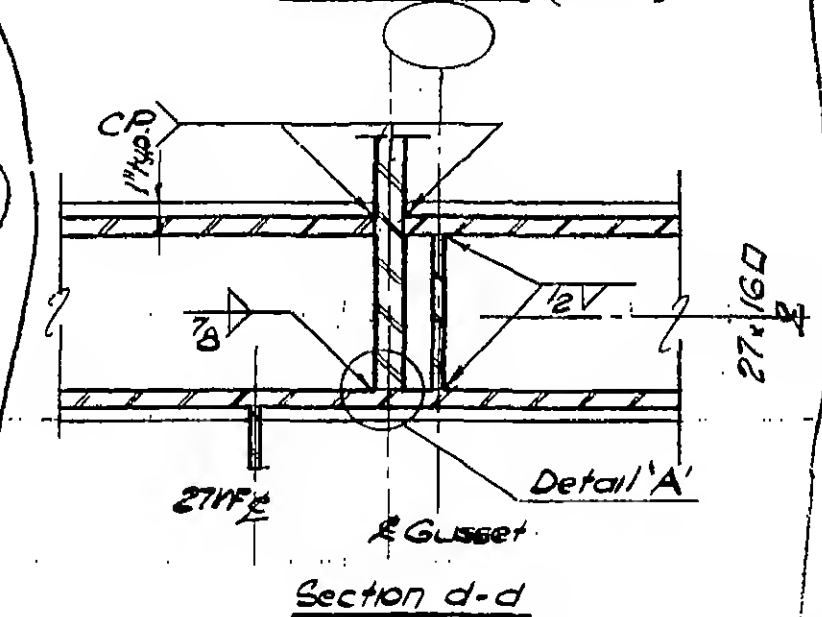
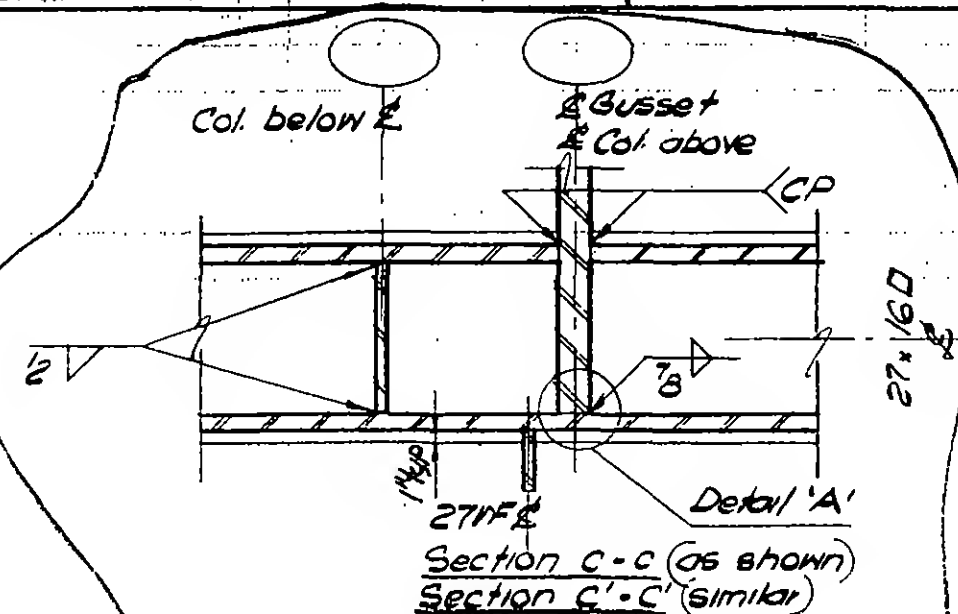
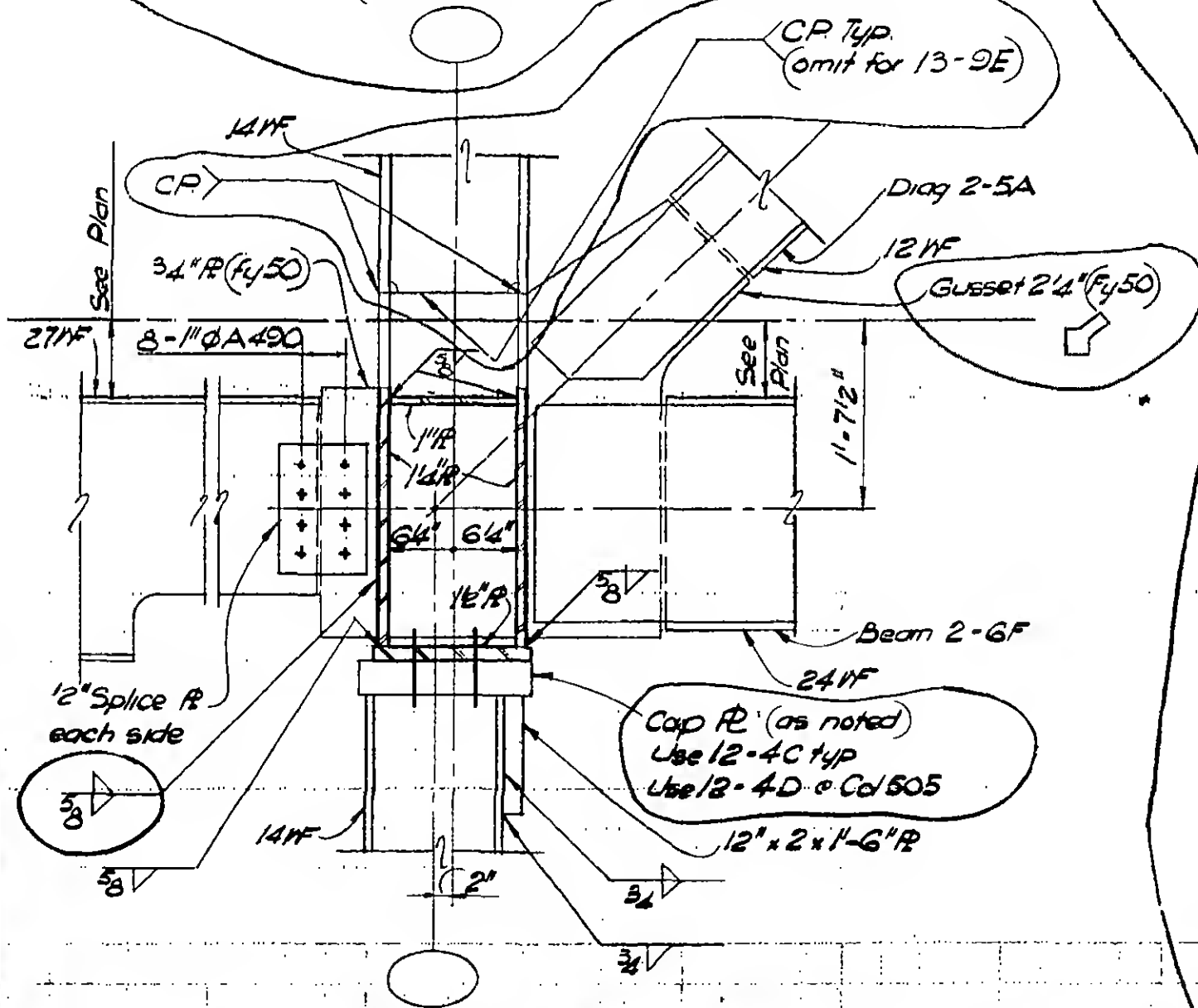
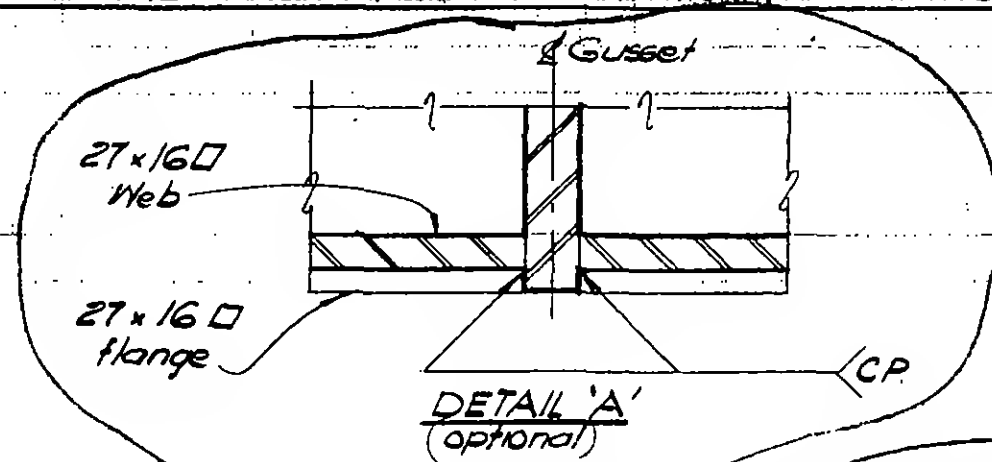
REVIEWED

E. Dracos

9-AB/3-9.2

REVISIONS

5/27/70



DESIGNED Quirk

DRAWN W. Clarke

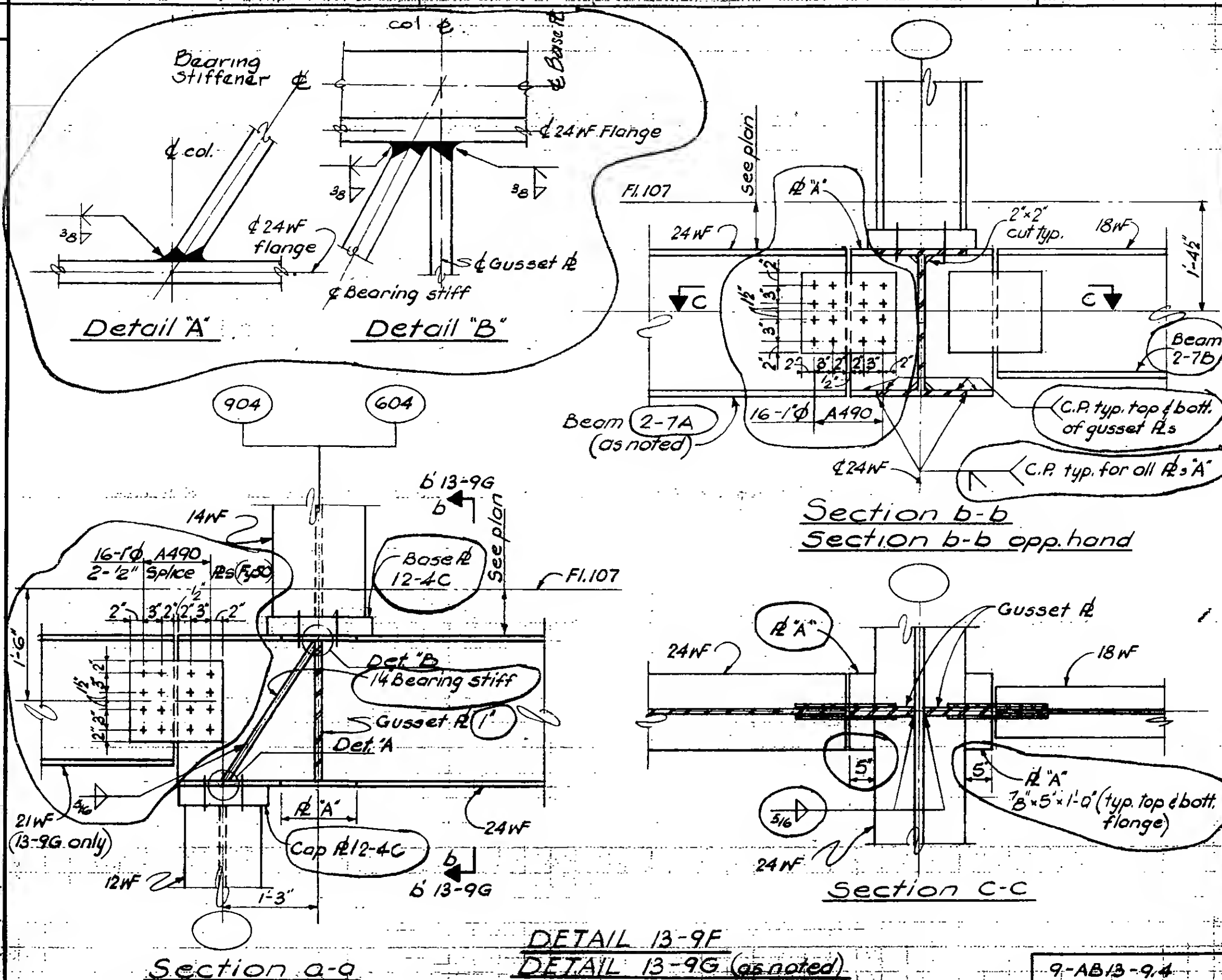
REVIEWED

E. Drakos

9-AB/3-9.3

REVISIONS

5/27/70



SIGNED

∴ Quirko

DRAWN

D. Huggins

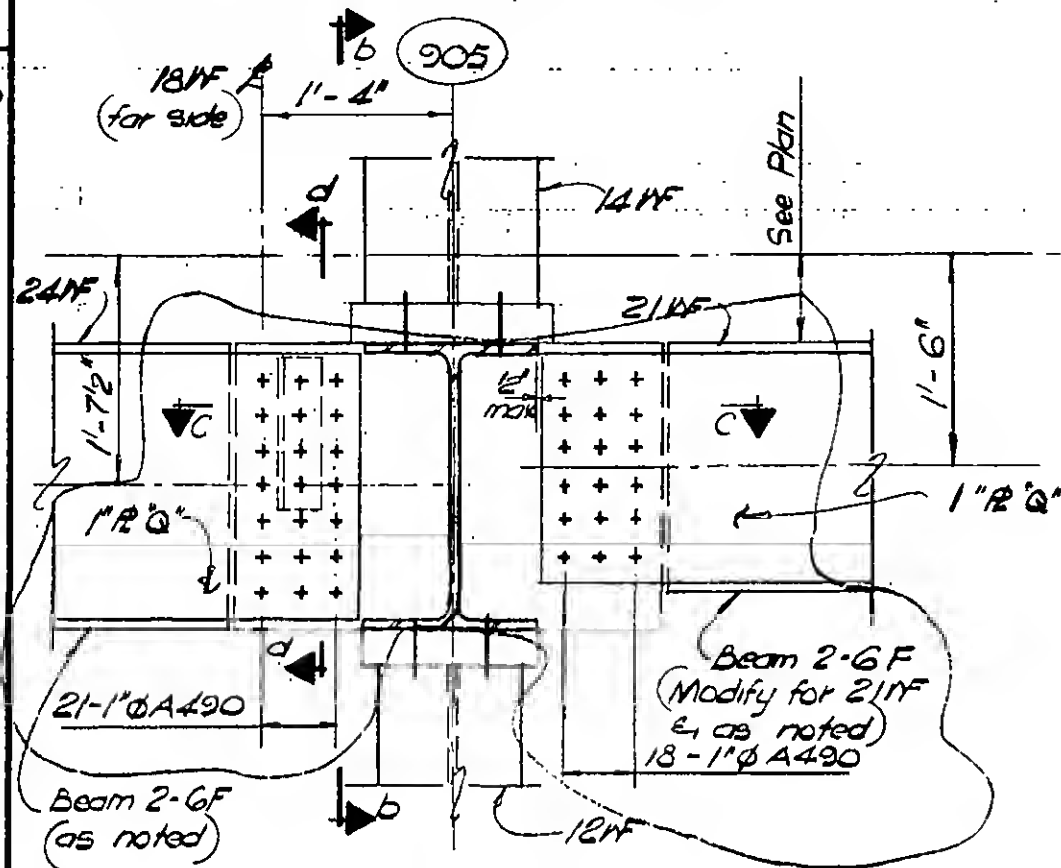
REVIEWED

E. Ougalos

9-AB/3-9.4

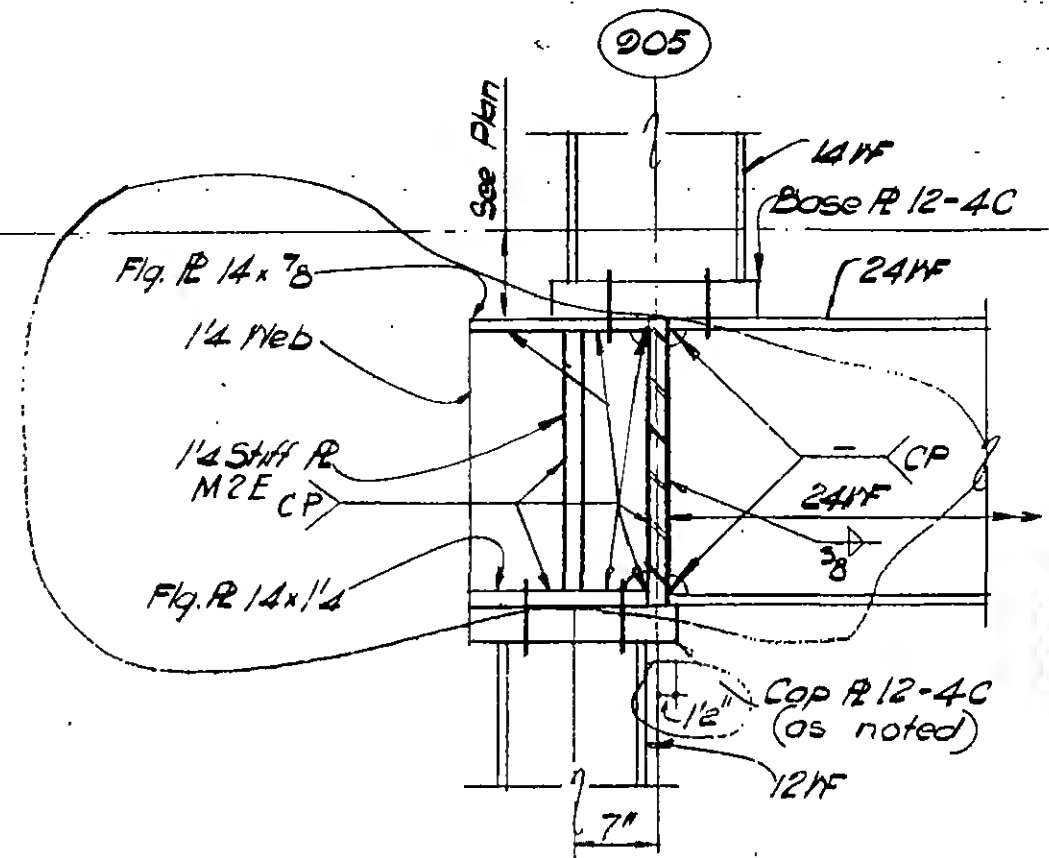
REVISIONS

5/27/70
7/15/70

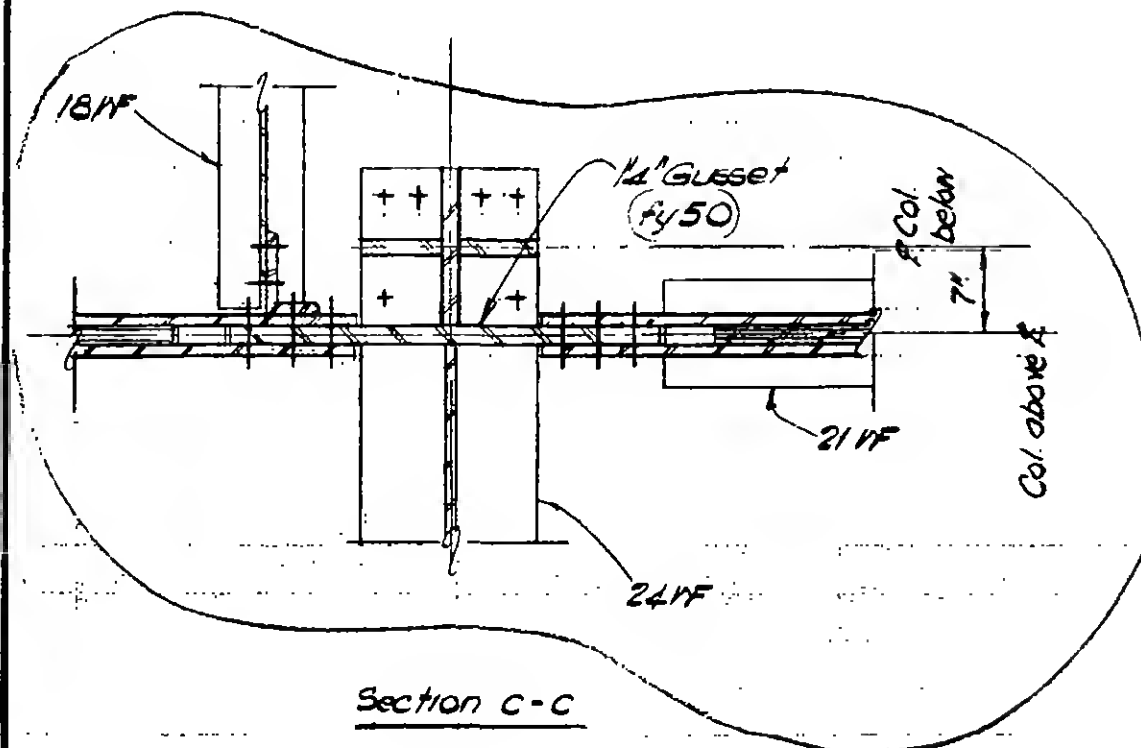


Section a-a

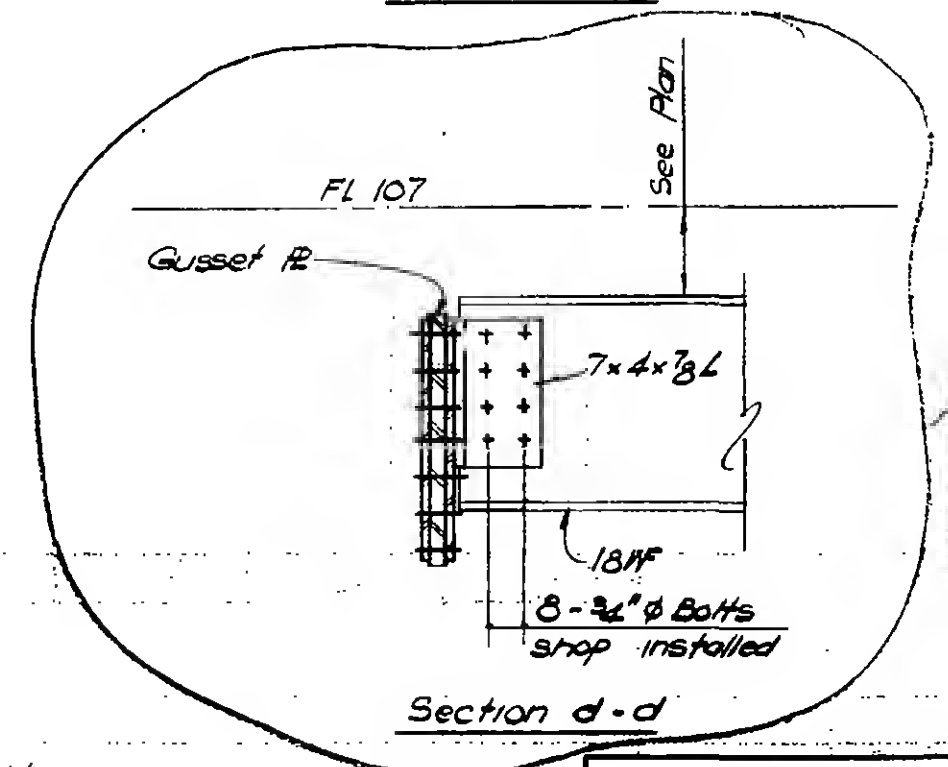
FI 107



Section b-b



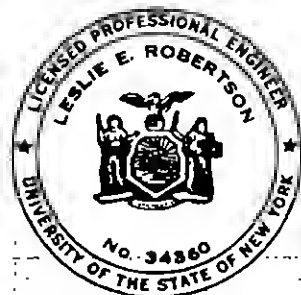
Section C-C



Section d-d

DETAIL 13-24

9-AB/3-9.5



DESIGNED

Quirk

DRAWN

W. Clarke

REVIEWED

E. Draxos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

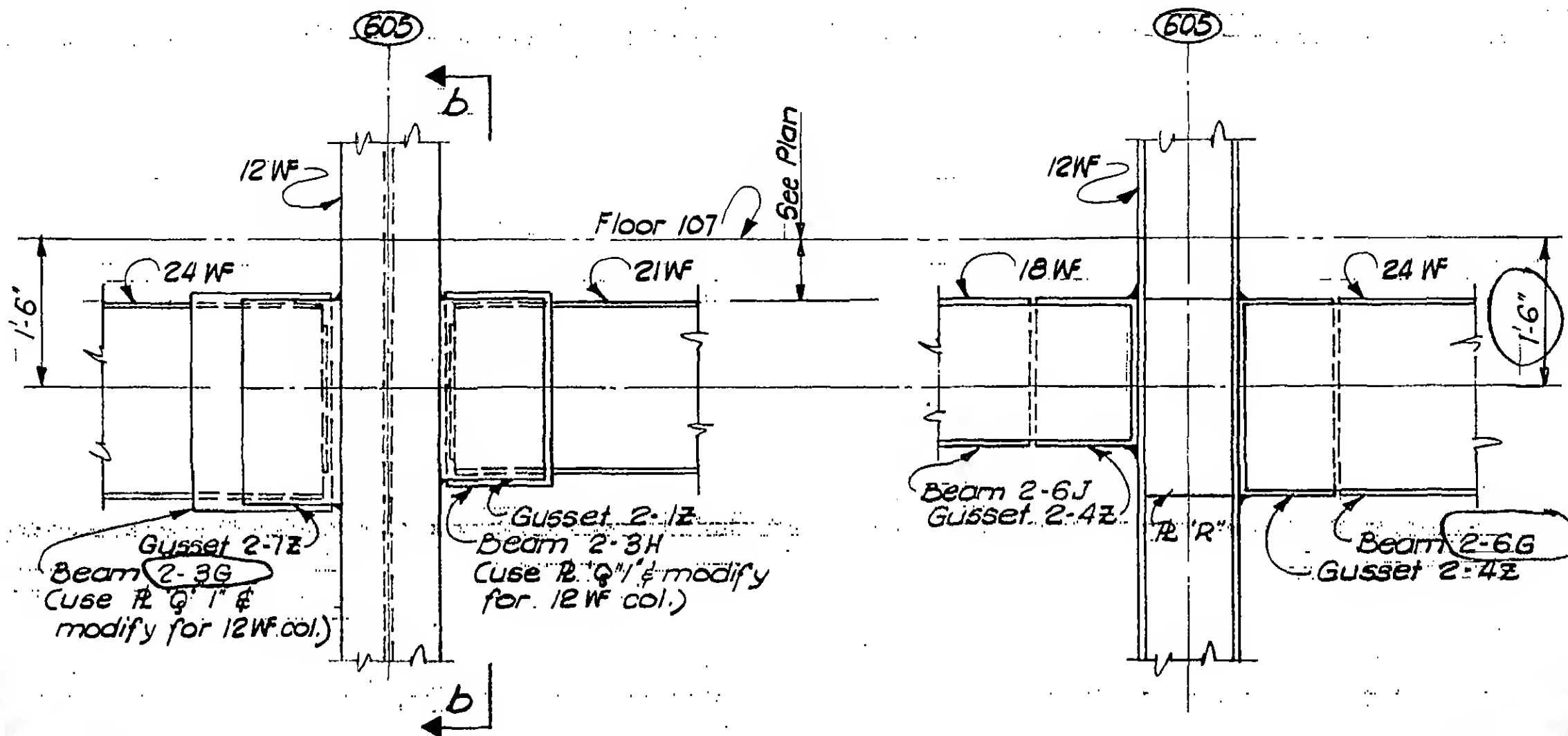
FL 107 - PH. CONNECTION DETAILS - FL 107

DATE

4-1-'70

REVISIONS

5/27/70

Section a-aSection b-bDetail 13-9K

DESIGNED

L. Quirk

DRAWN

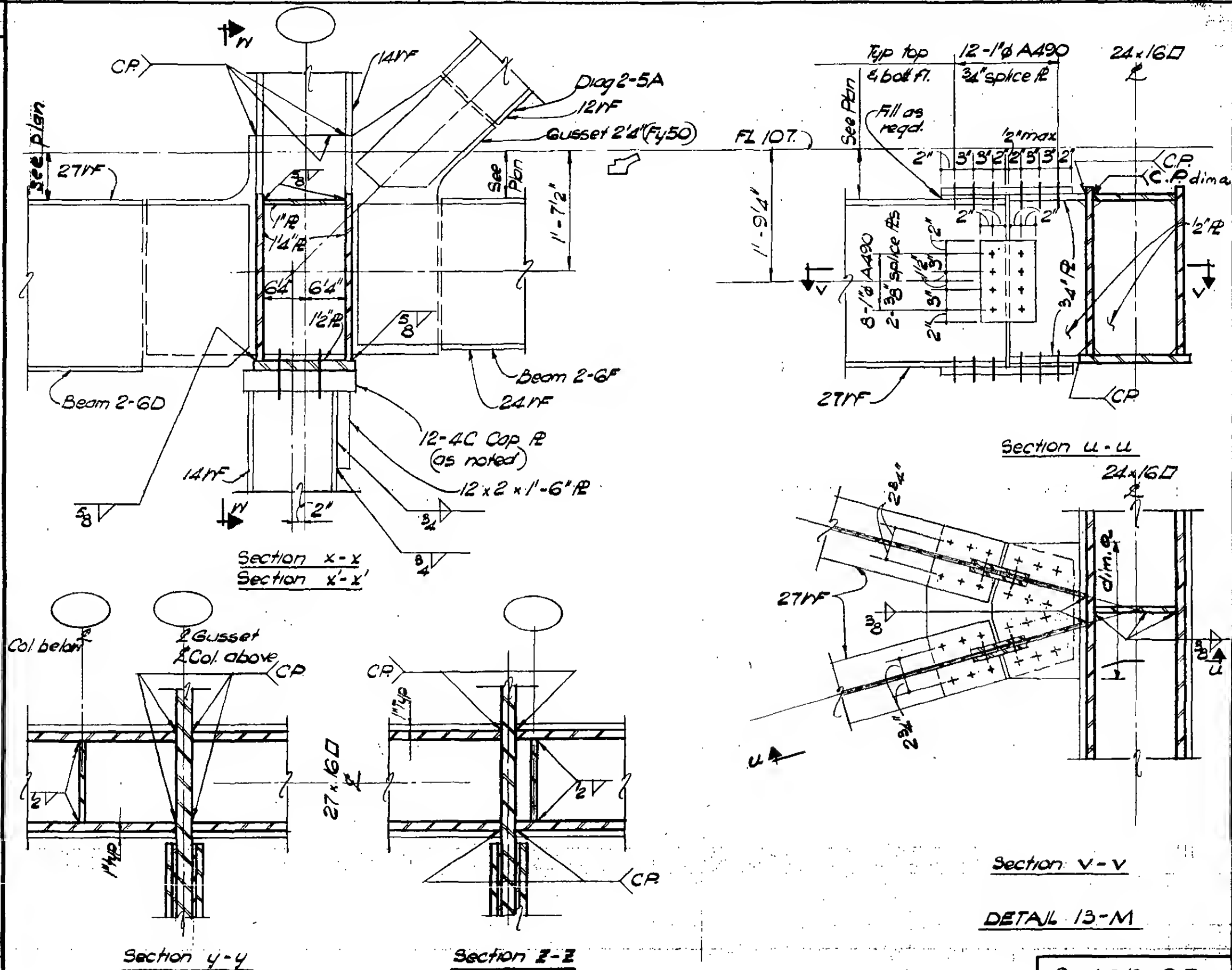
M. Nichols

REVIEWED

E. Draxos

9-AB13-9.6

REVISIONS



DESIGNED

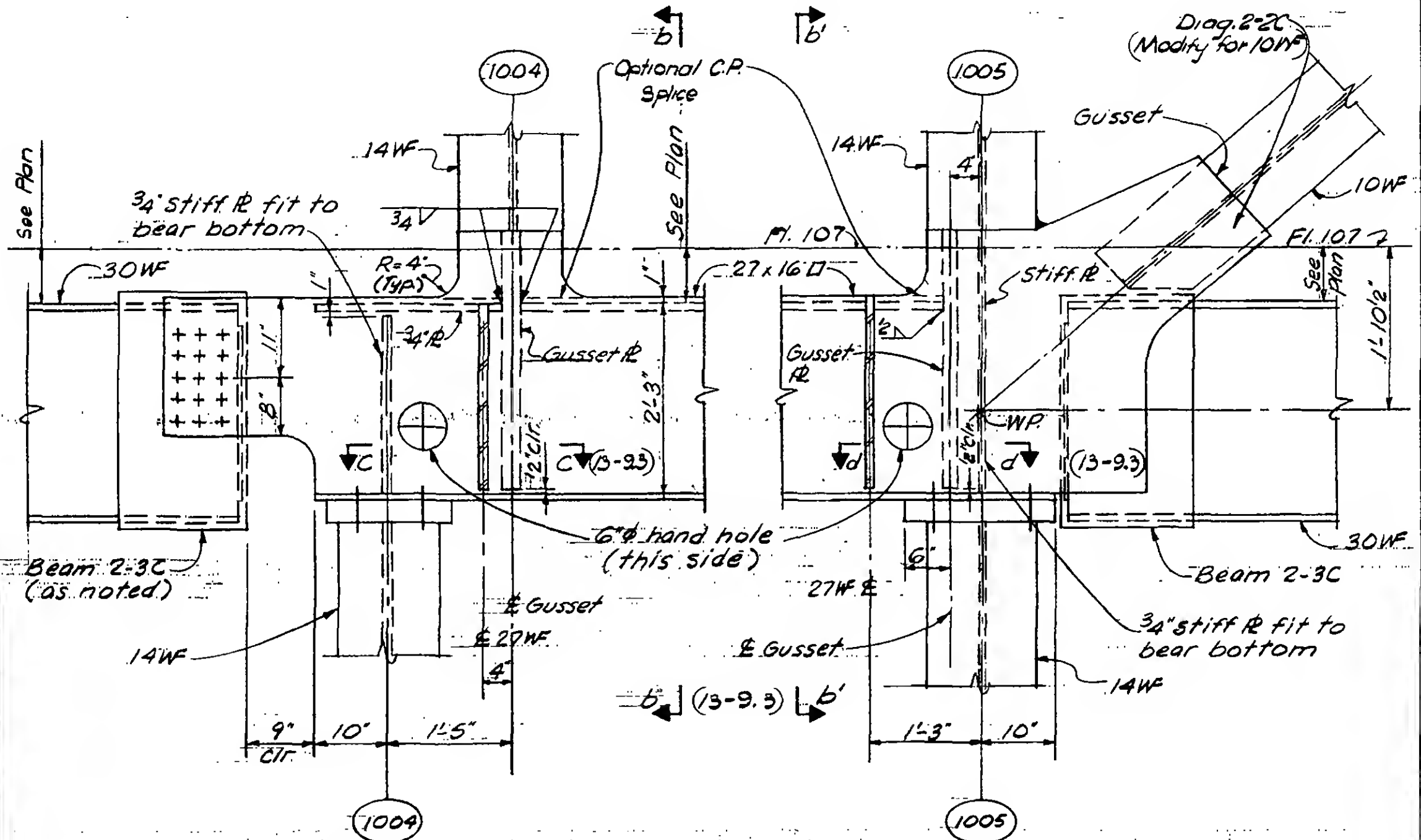
DRAWN

W. ... Clarke

REVIEWED

9-AB/3-9.7

REVISIONS



DESIGNED

DRAWN
A. FRANQUI

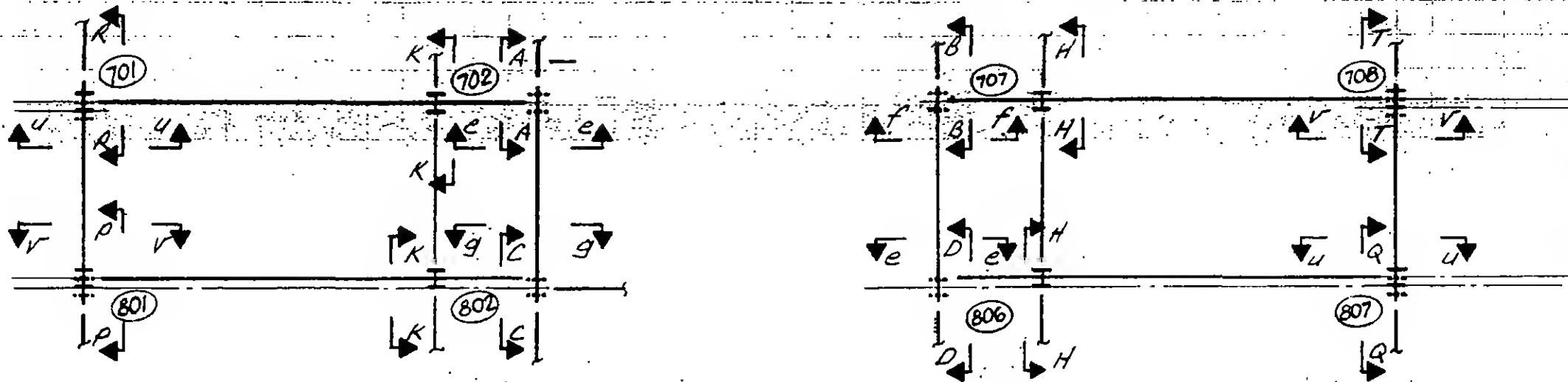
REVIEWED

PROJECT THE WORLD TRADE CENTER

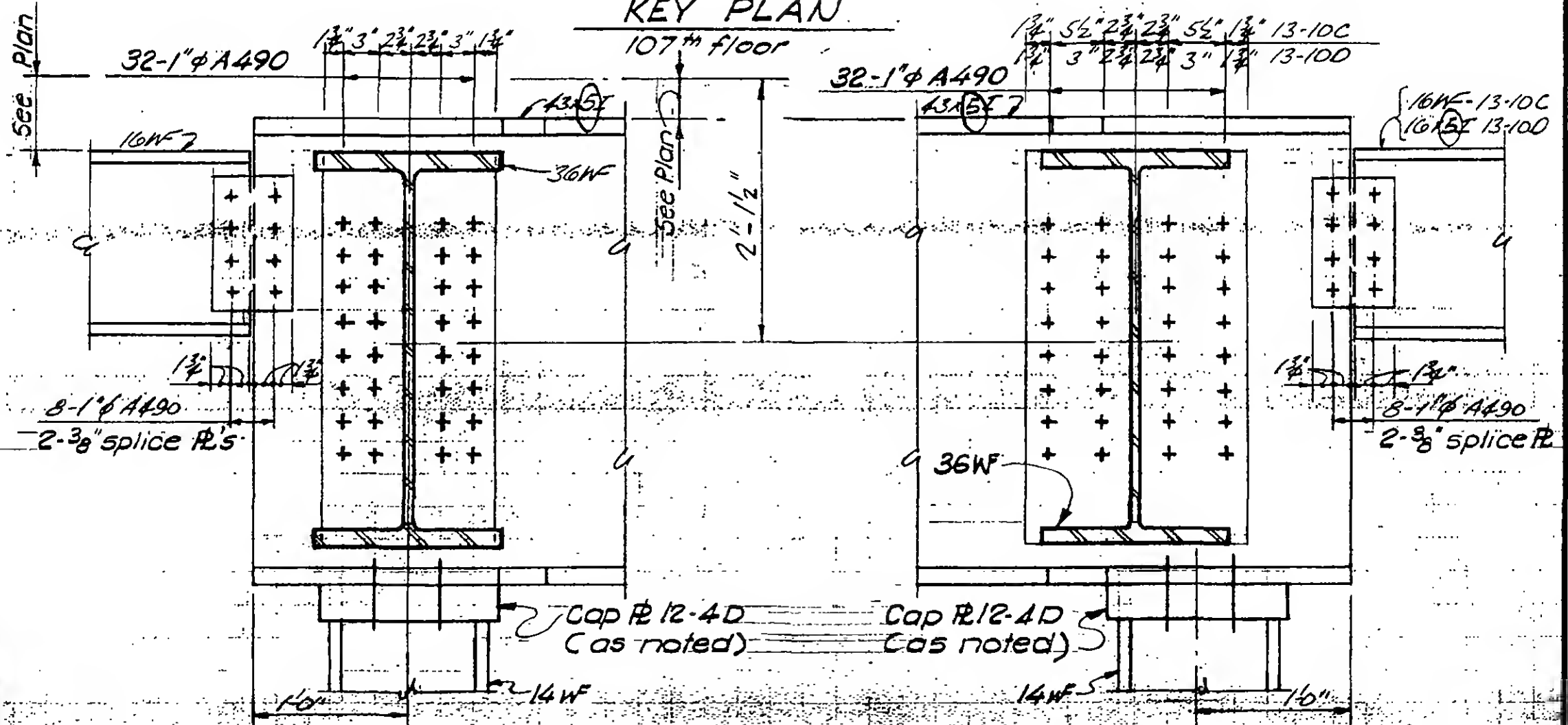
TITLE FLOOR 107-PH CONNECTION DETAIL - FL 107

DATE 4-1-70

REVISIONS

5/27/70
7/8/70

KEY PLAN

107th floor

DESIGNED

Quirko

DRAWN

J. Gricius

REVIEWED

E. Dracos

Section A-A

Section B-B (opp. hand)

Section C-C

Section D-D (opp. hand)

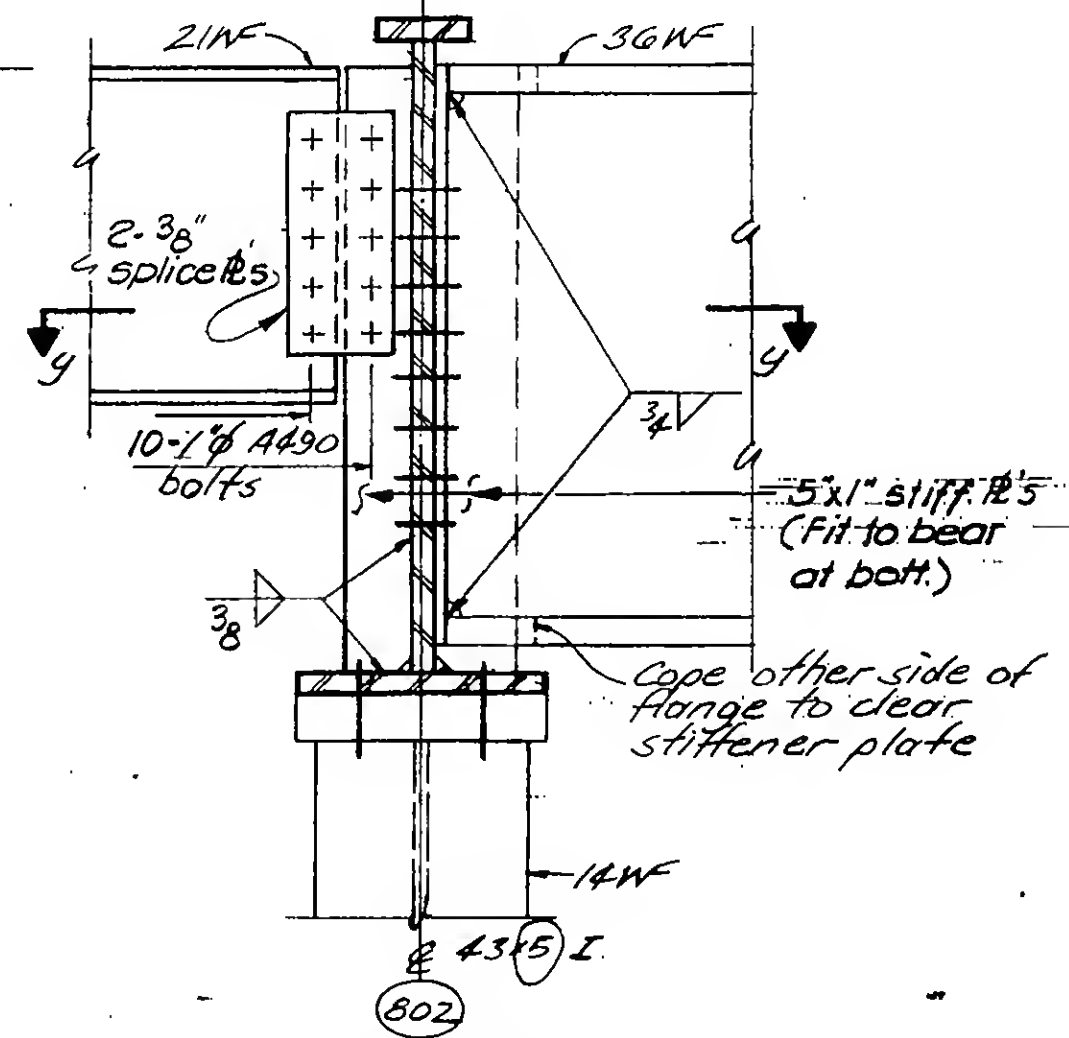
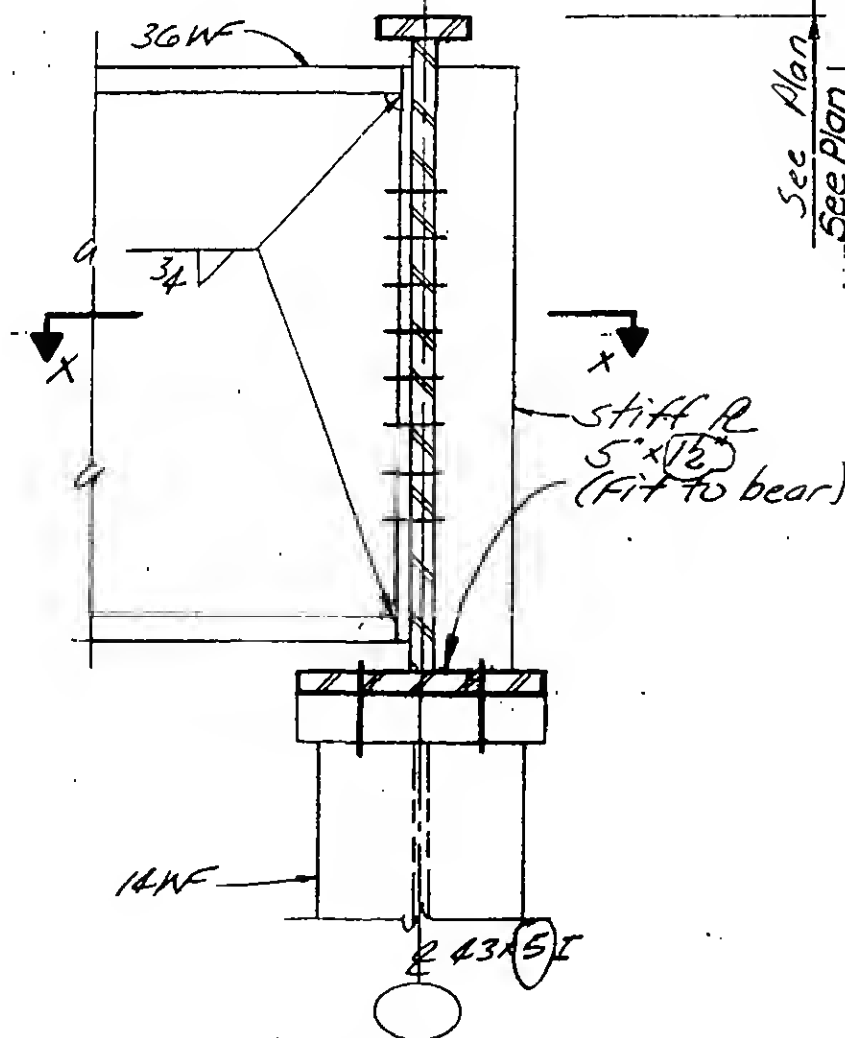
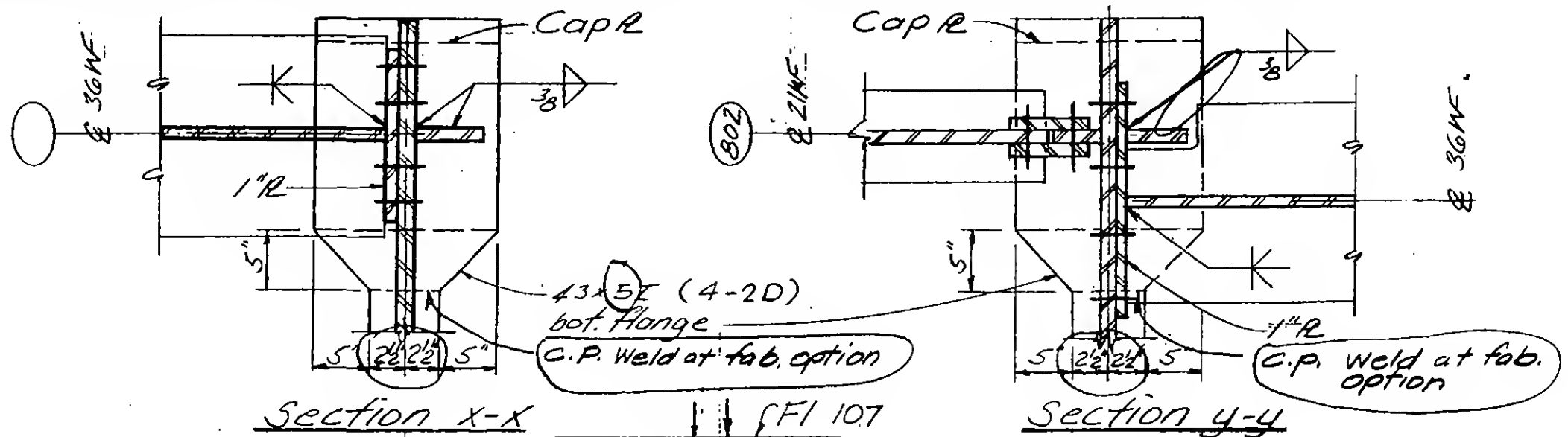
9-AB13-101

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTERTITLE FL. 107-PH CONNECTION DETAIL - FL 107DATE 4-1-70

REVISIONS

5/27/70
7/8/70

Section e-e
Section f-f (opp. hand)

Section g-g

DESIGNED
L. QuirkDRAWN
J. GriciusREVIEWED
E. Dracos

9-AB13-10.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

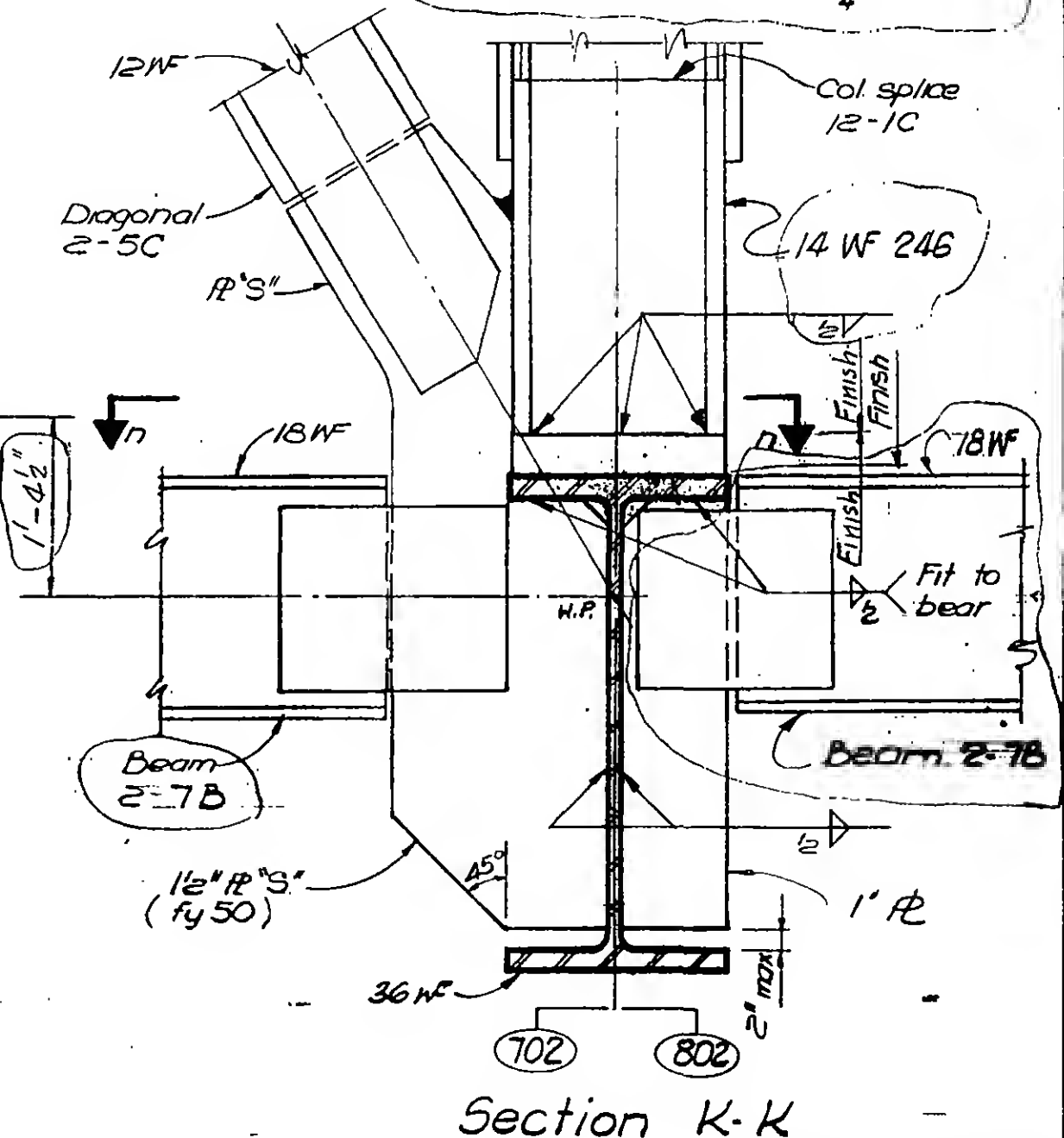
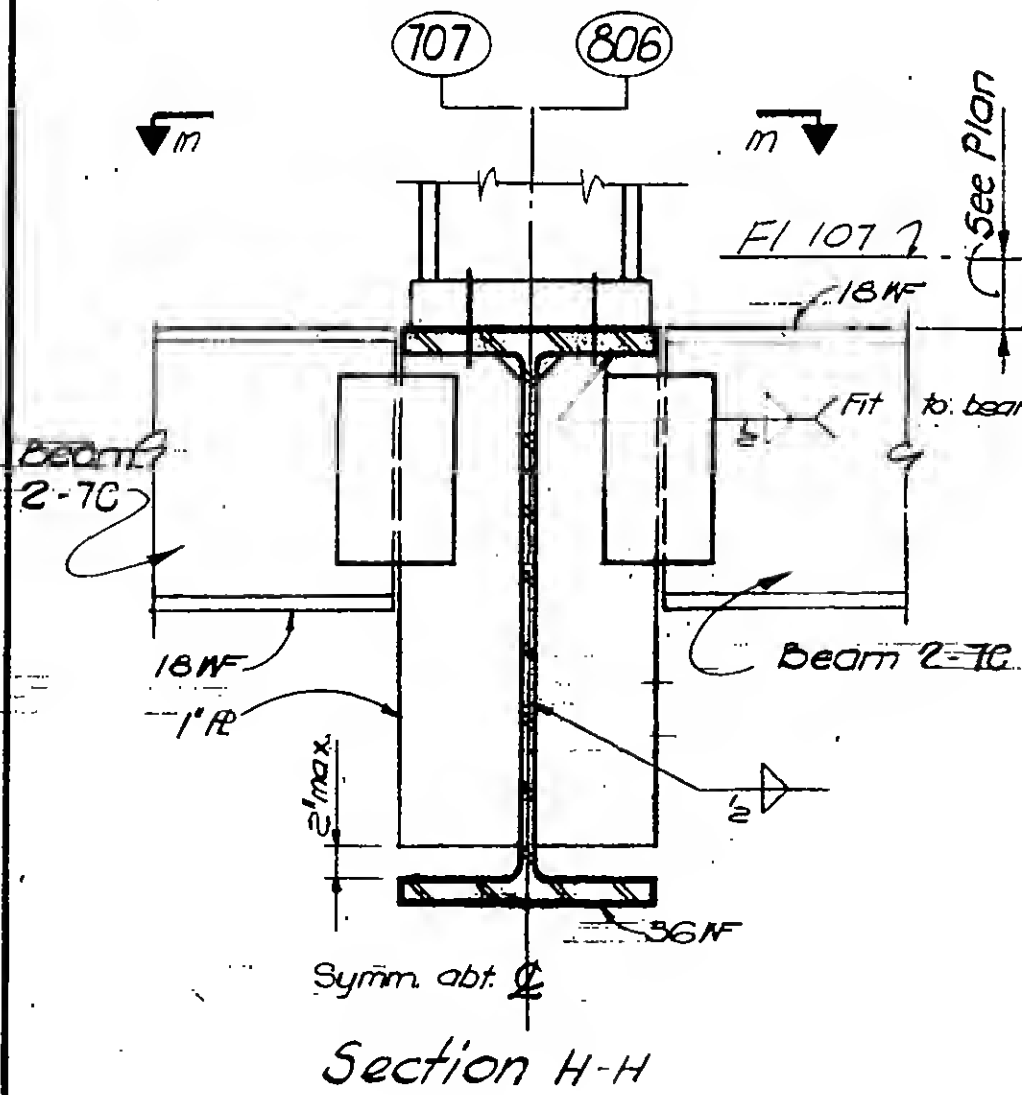
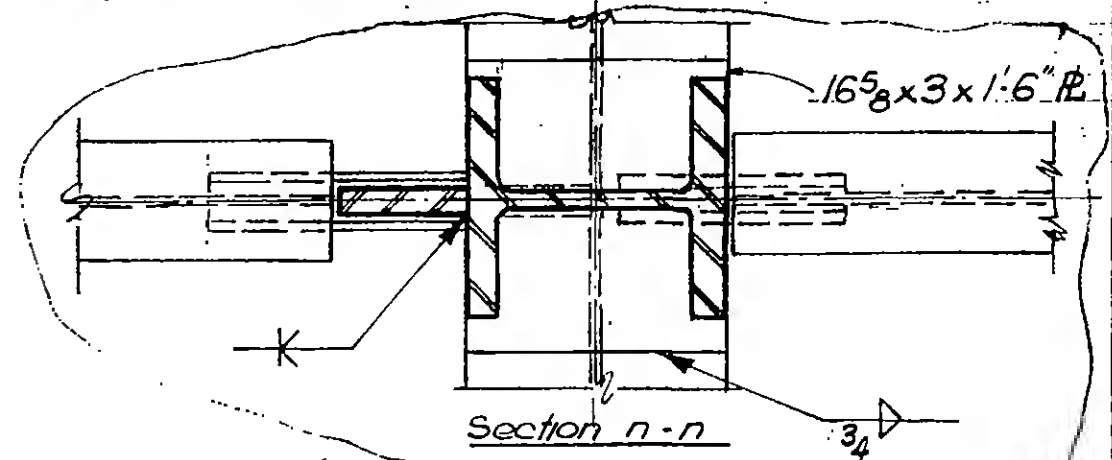
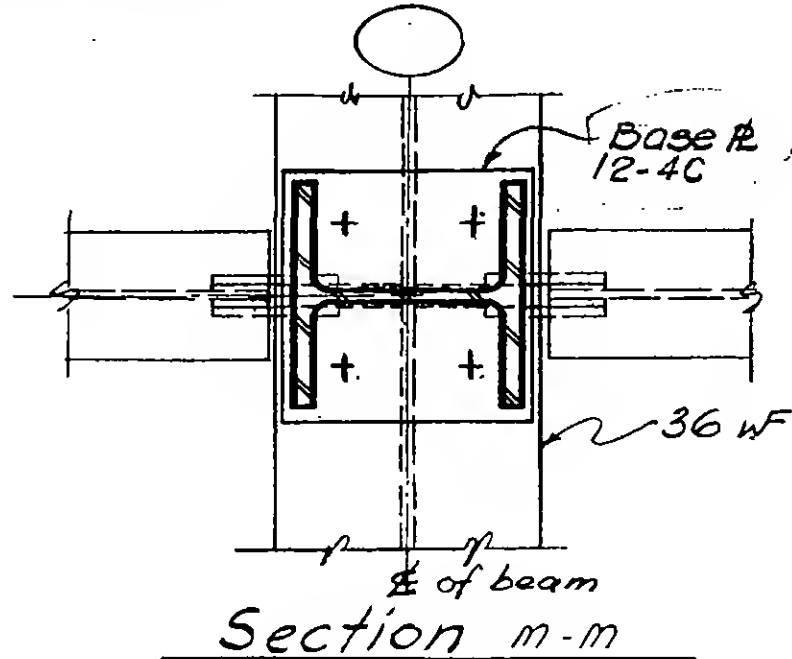
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH. CONNECTION DETAIL - FL 107

DATE 4-1-70

REVISIONS

5/27/70



DESIGNED L. Quirko

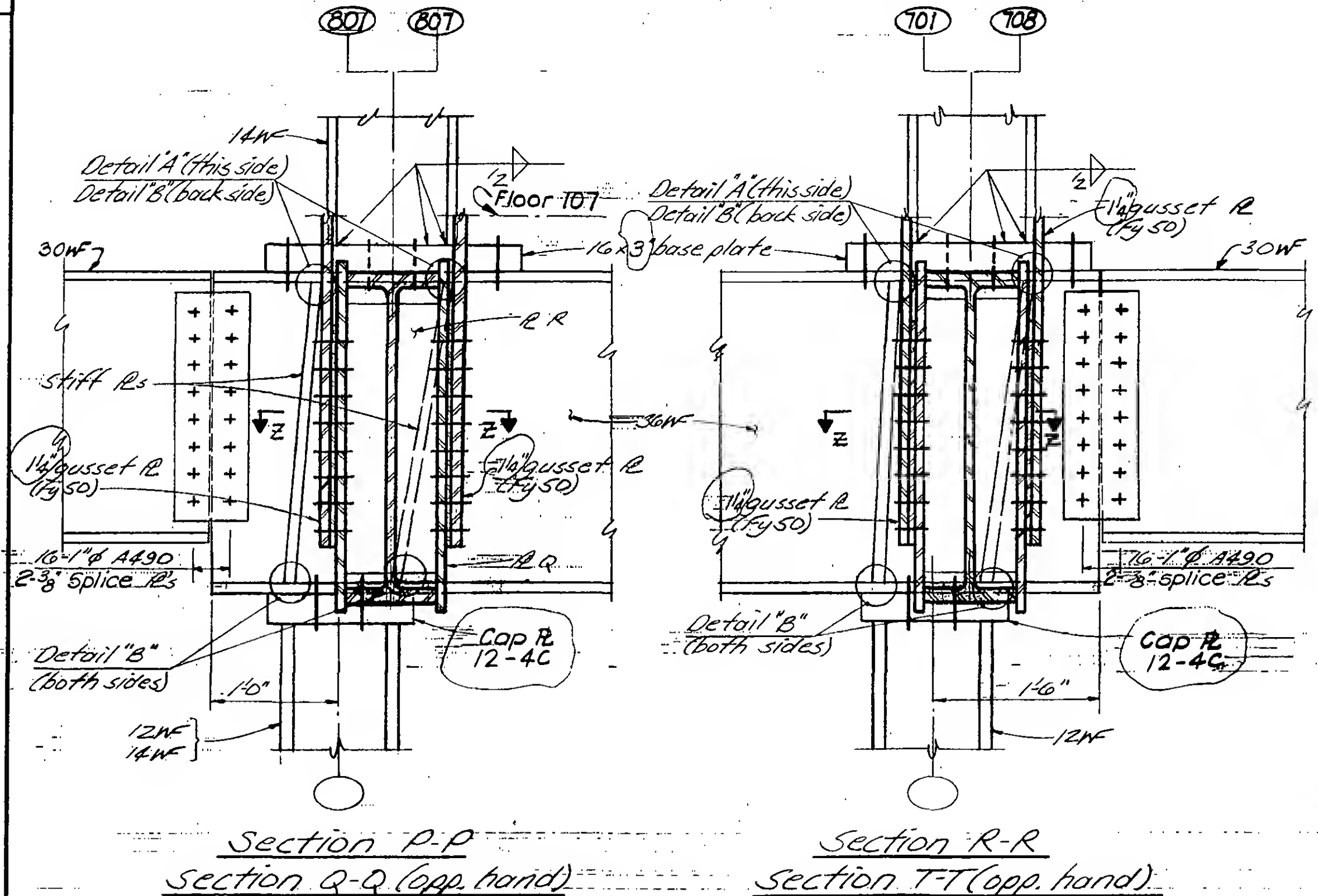
DRAWN J. Gricius

REVIEWED E. Drakos

9-AB/3-10.3

REVISIONS

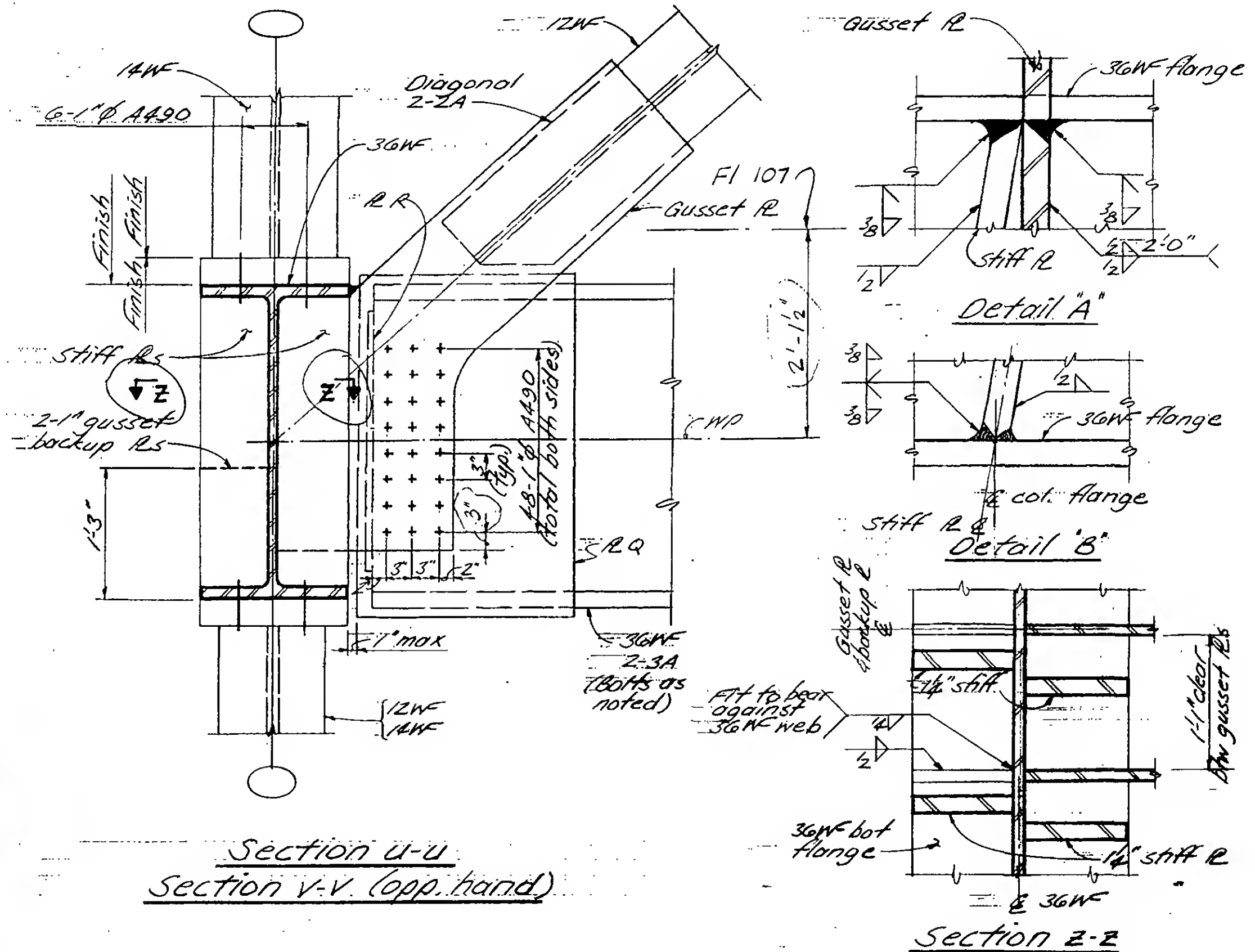
5/27/70

DESIGNED
L. QuirkDRAWN
J. GriciusREVIEWED
E. Drakos

9-AB13-104

REVISIONS

5/27/70



DESIGNED
L. Quirk

DRAWN
J. Helms

REVIEWED
E. DYAKOS

9-AB13-10.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - PH CONNECTION DETAILS - EXTERIOR WALL

DATE

4-1-70

REVISIONS

5/27/70

GENERAL NOTES - CHAPTER 14

The following provisions apply to details this chapter unless specifically shown otherwise in this chapter.

1. All steel plates, sections, and detail material shall be $F_y = 50$ ksi
2. All bolts shall be ASTM A490, friction type, 1" ϕ unless otherwise shown.
3. Spacing of bolts shall be 3" in each direction.
4. Edge distance between the last line of bolts and edge of plate shall be 2".
5. Shim stock shall be 1/8" minimum to 3/8" maximum.
6. Bolts at beam seats floor 107 to be A307 or A325 hand tightened. If A325 are torqued, loosen after top R is welded and before concrete is cast.
7. Damping units to be installed after slab has been cast.



DESIGNED

DRAWN

W. Clarke

REVIEWED

C. Brewer

9-AB/4-1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

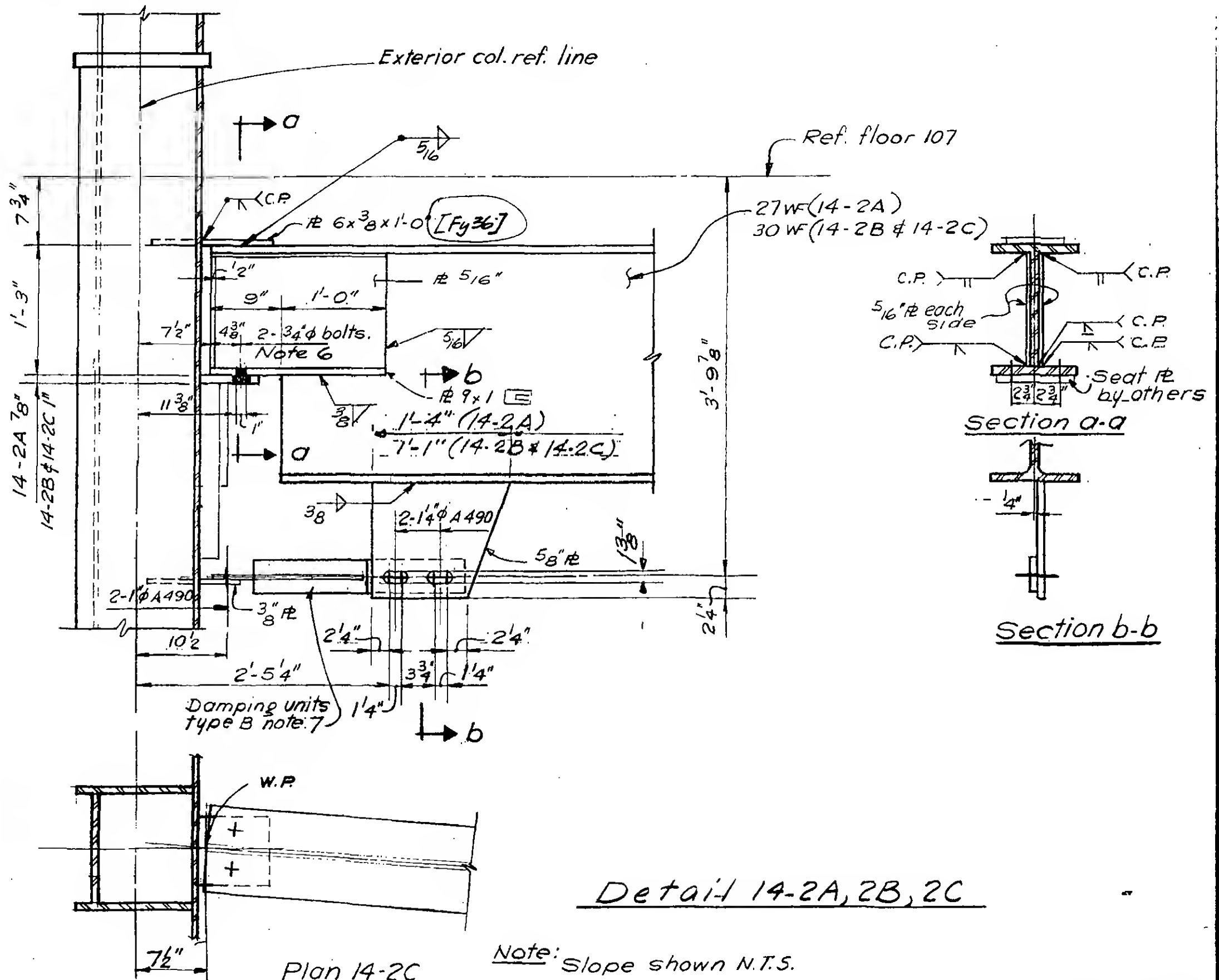
PROJECT THE WORLD TRADE CENTER

TITLE FL. 107-P.H. CONNECTION DETAILS-EXT WALL-FL 107

DATE 4-1-70

REVISIONS

5/27/70
6/17/70
7/8/70



DESIGNED

DRAWN
V.H.A.

W. Brewer

9-AB14-2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

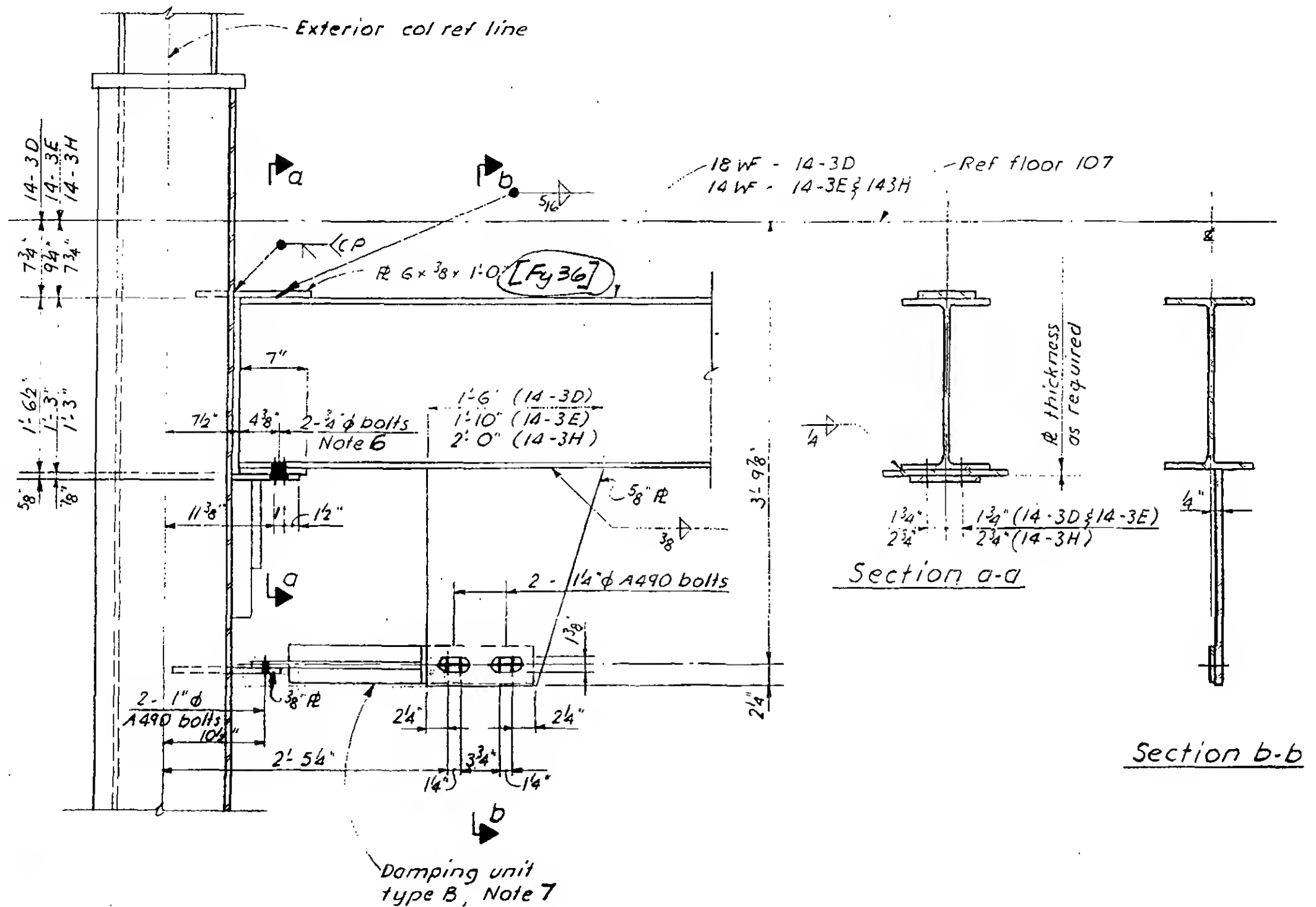
PROJECT THE WORLD TRADE CENTER

TITLE FL.107-PH CONNECTION DETAILS-EXT WALL-FL 107

DATE 4-1-70

REVISIONS

5/27/70
6/17/70
7/8/70



Detail 14-3D, 3E



DESIGNED

DRAWN
F. Smith

REVIEWED
W. Brewer

9-AB14-3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

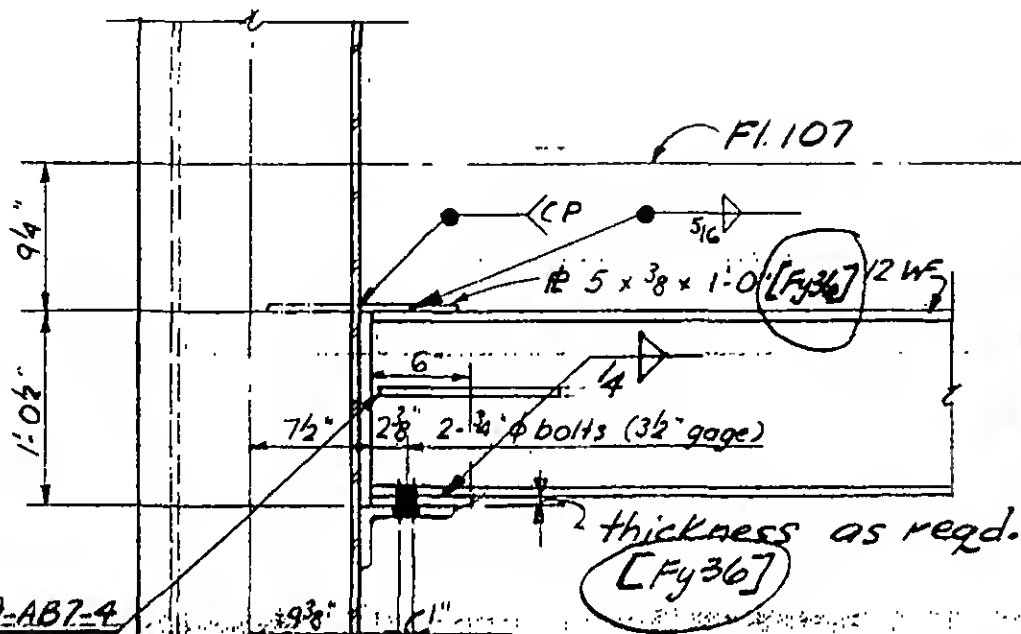
TITLE

FL.107-PH CONNECTION DETAILS-EXT WALL-FL.107

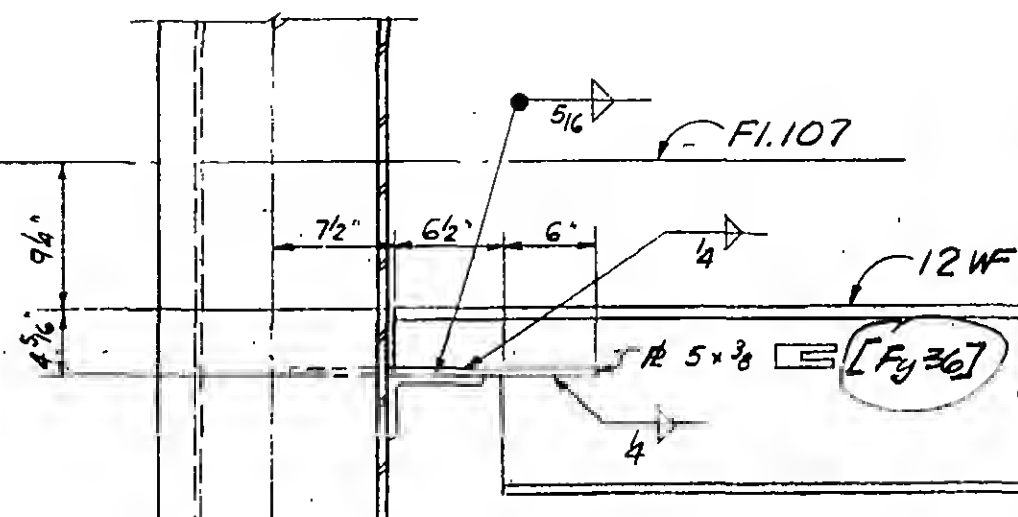
DATE

4-1-70

REVISIONS

5/27/70
7/8/70R.9-AB7-4
E.9-AB7-EC
[Fy 36]

Detail 14-4F



Detail 14-4G



DESIGNED

DRAWN

E. Smith

REVIEWED

W. Brown

9-AB14-4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

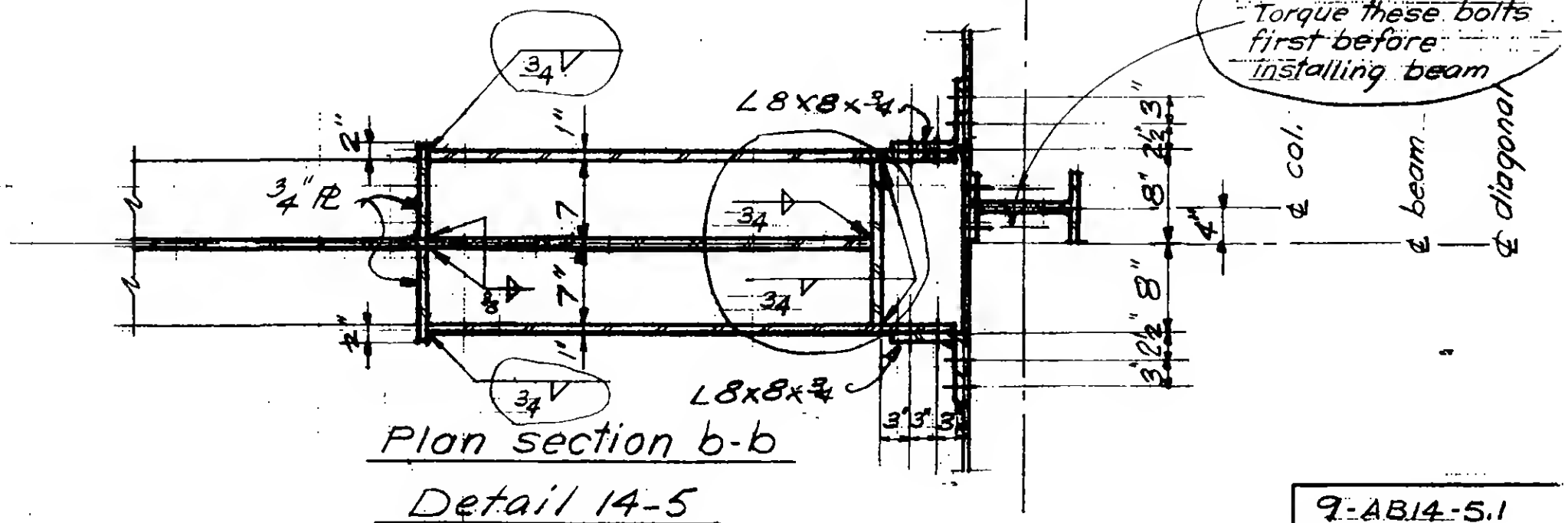
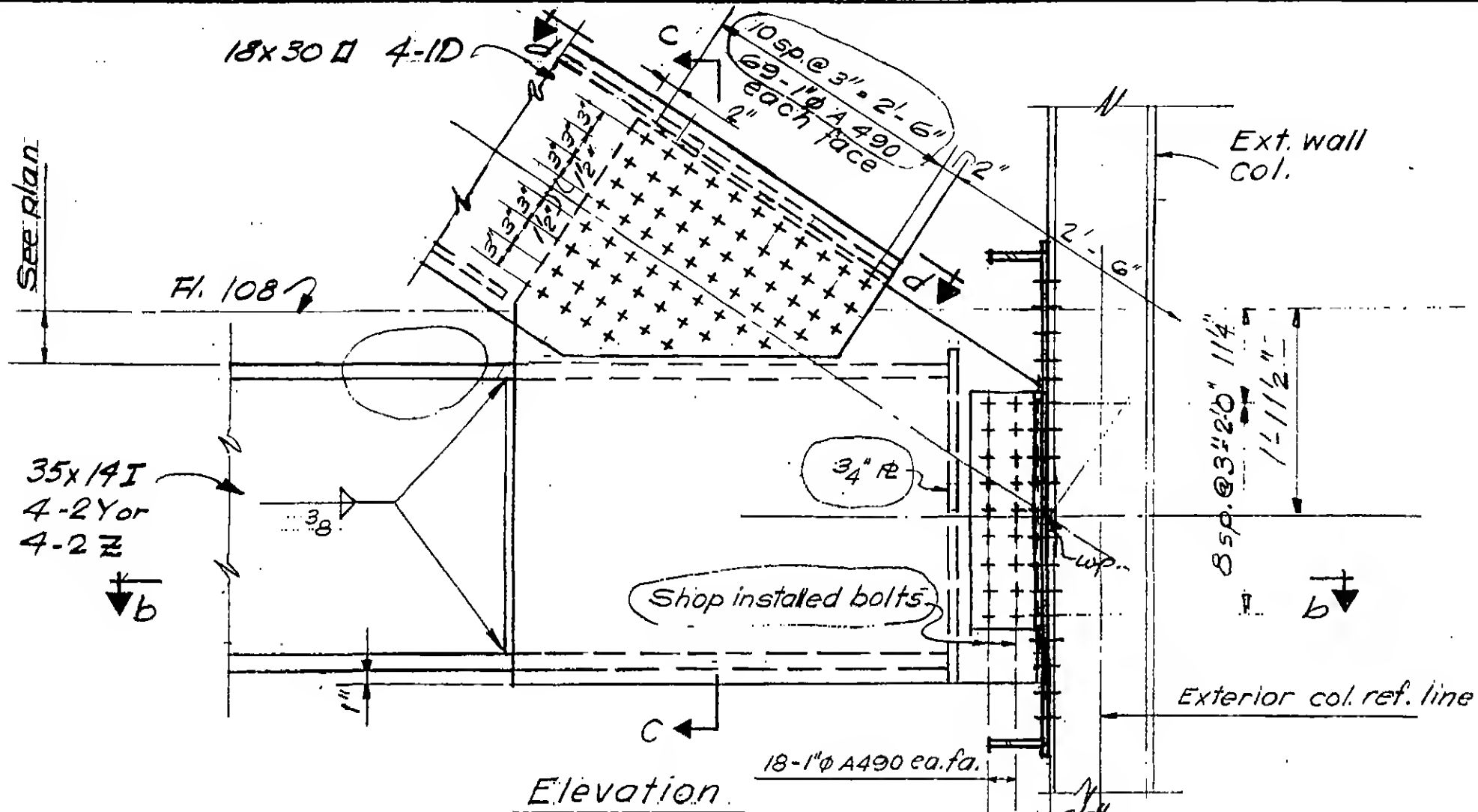
PROJECT THE WORLD TRADE CENTER

TITLE FL. 107-PH CONNECTION DETAILS-EXT. WALL-FL. 107

DATE 4-1-70

REVISIONS

5/27/70



DESIGNED

DRAWN V.H.A.

REVIEWED H. Brewer

Plan section b-b

Detail 14-5

9-AB14-5.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

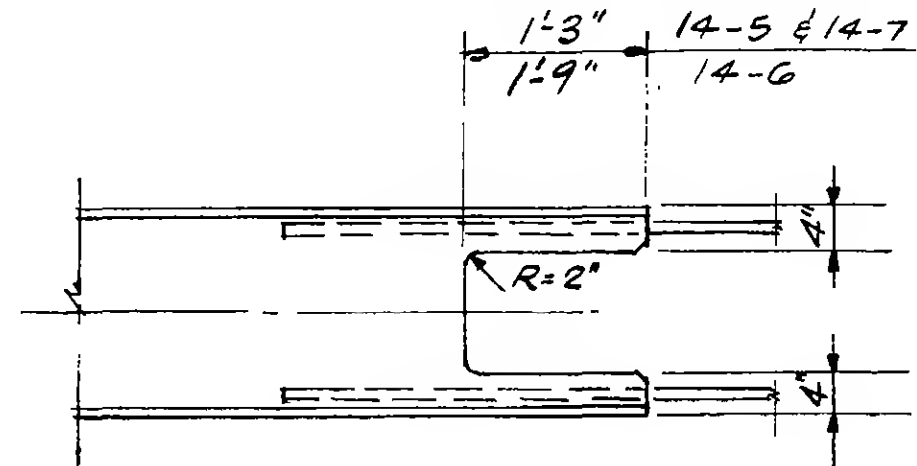
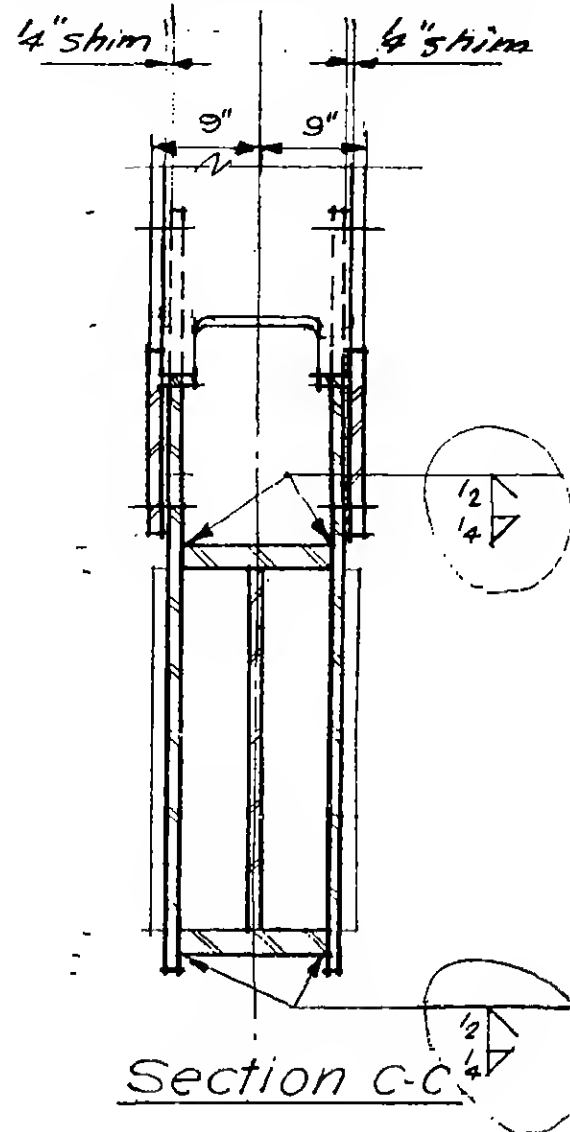
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-RH CONNECTION DETAILS-EXT WALL-FL 107

DATE 4-1-70

REVISIONS

5/27/70



Section d-d



DESIGNED

DRAWN

V. H. A.

REVIEWED

W. Brewer

9-AB/4-5.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

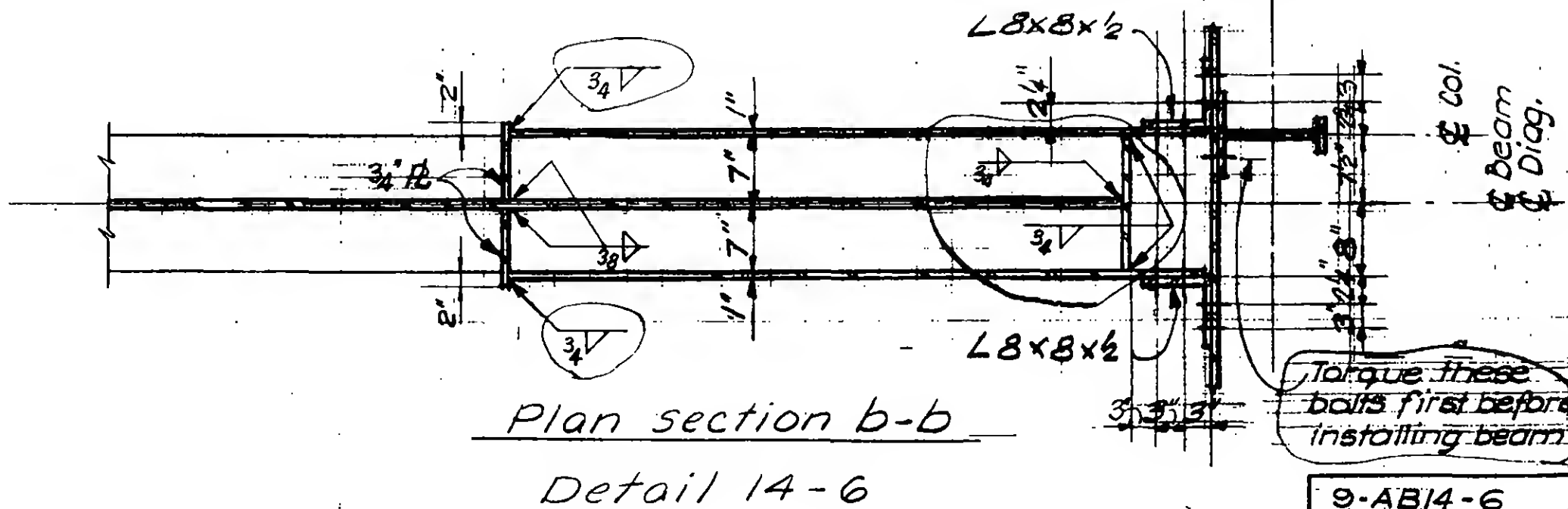
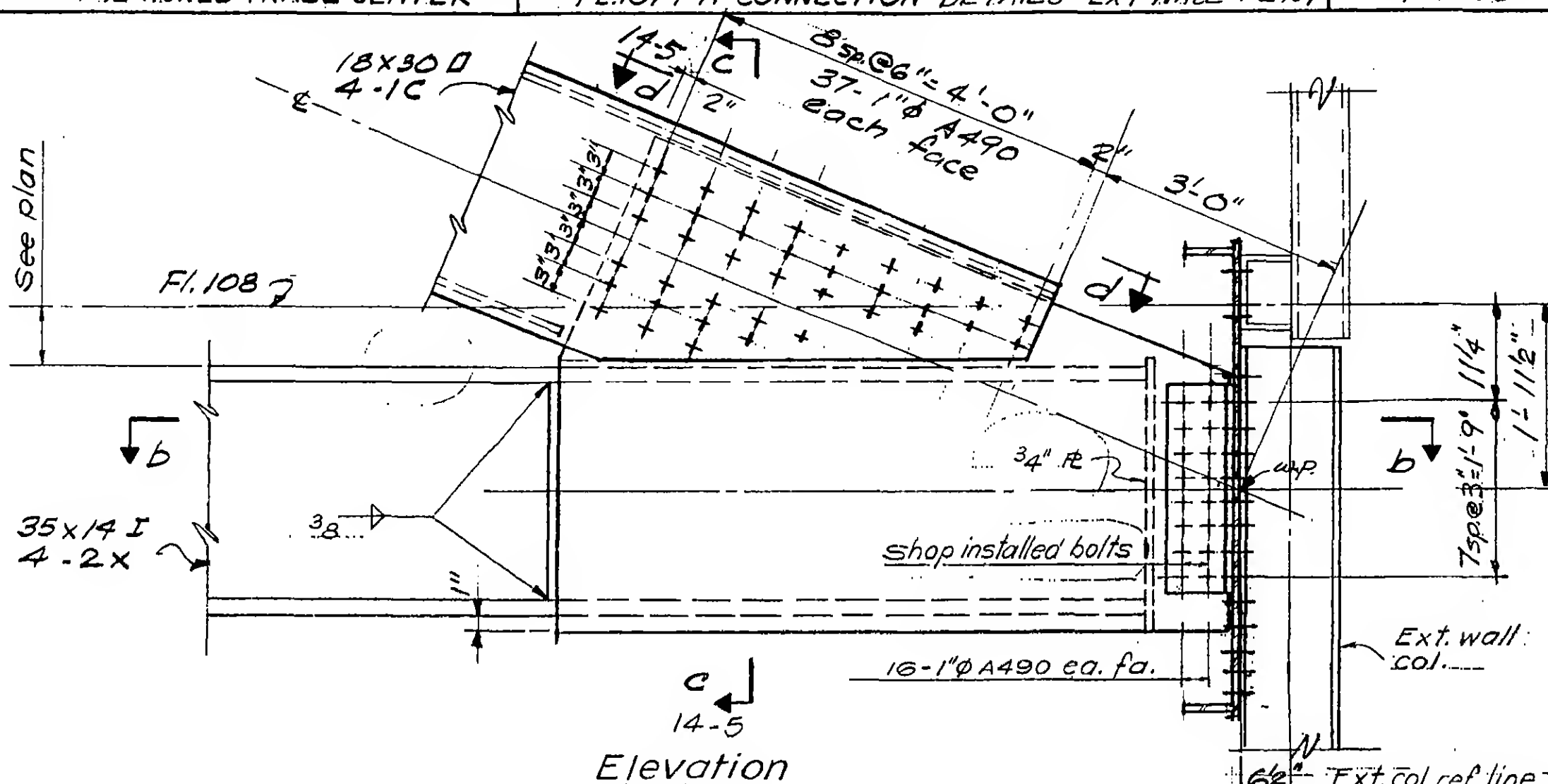
PROJECT THE WORLD TRADE CENTER

TITLE FL.107-PH CONNECTION DETAILS-EXT WALL-FL.107

DATE 4-1-70

REVISIONS

5/27/70



DESIGNED

DRAWN V.H.A.

REVIEWED H.W. Brewer

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

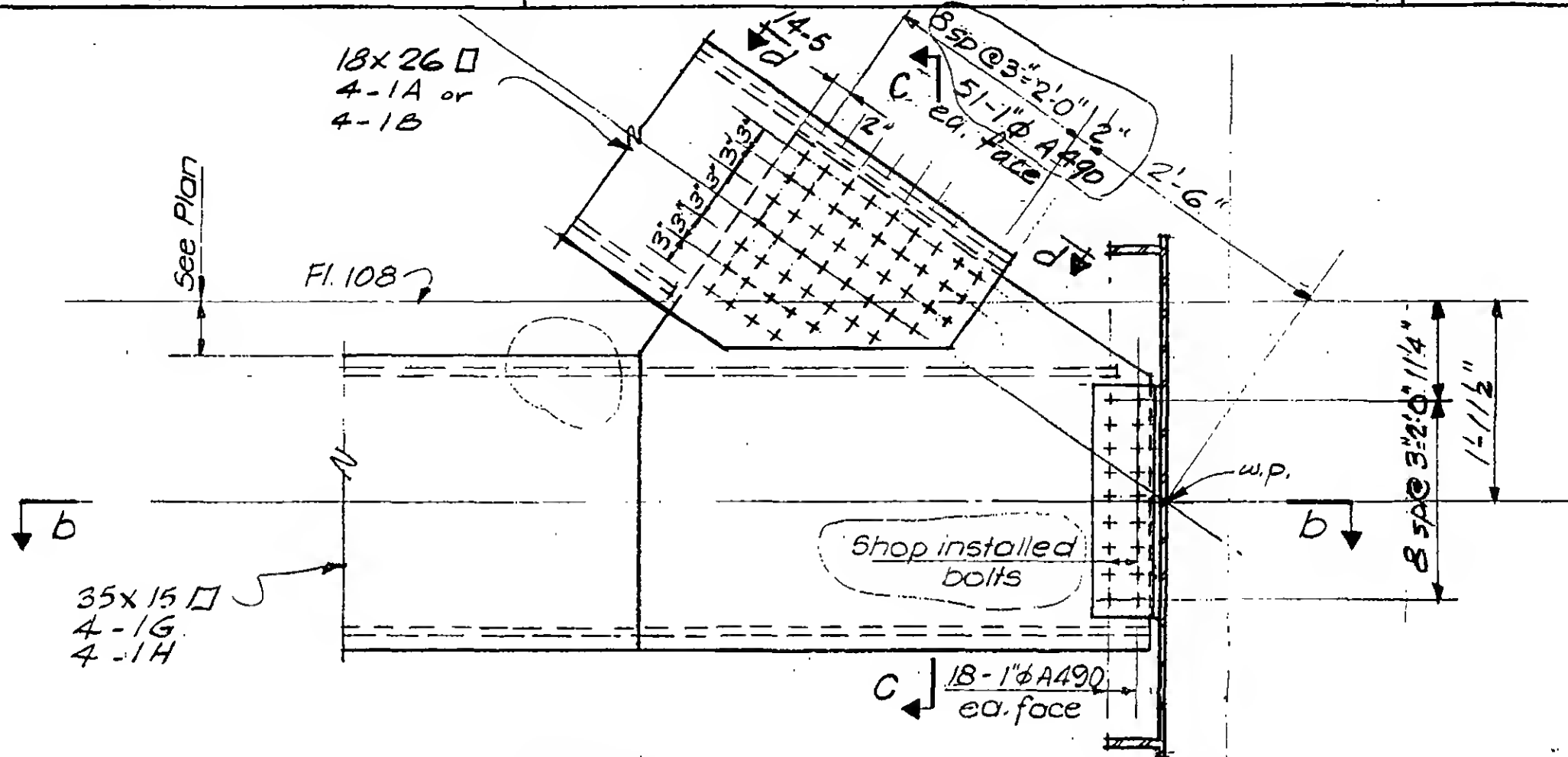
PROJECT THE WORLD TRADE CENTER

TITLE FL107-PH CONNECTION DETAILS - EXT. WALL - FL 107

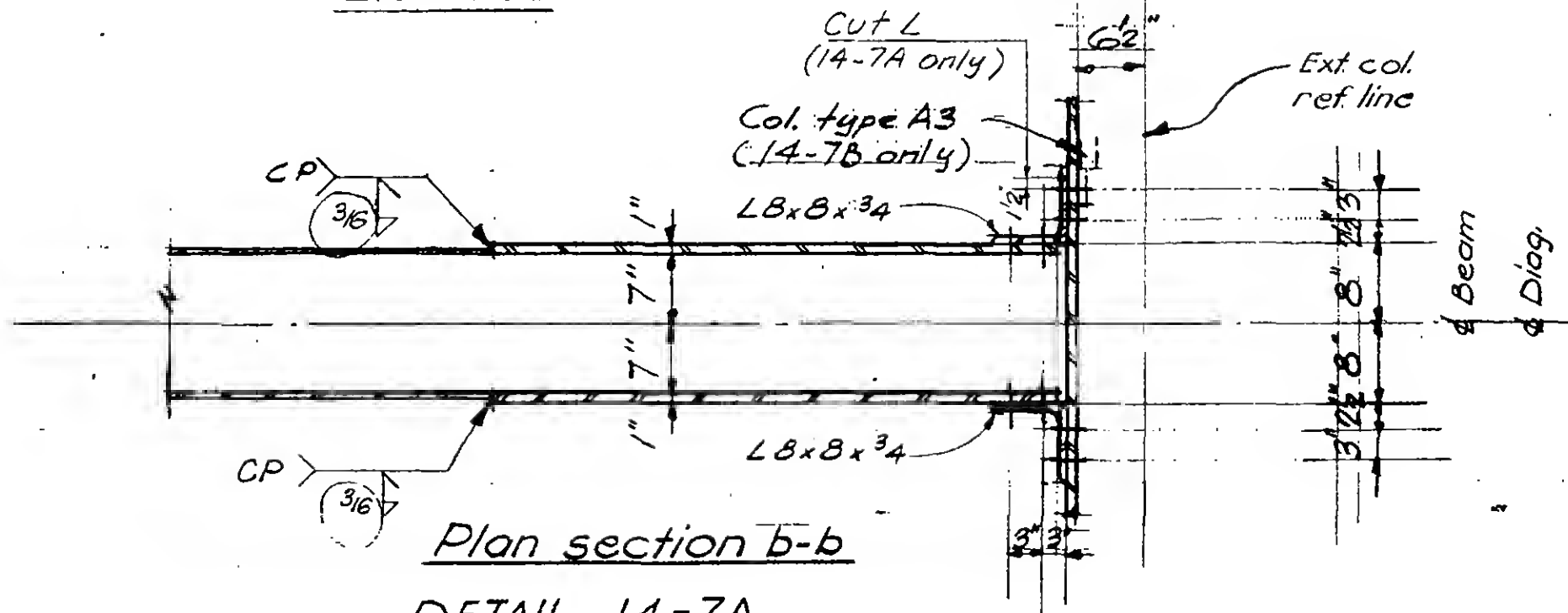
DATE 4-1-70

REVISIONS

5/27/70



Elevation



Plan section b-b

DETAIL 14-7A

DETAIL 14-7B as noted



DESIGNED

DRAWN

V.H.A.

REVIEWED

W. Brewer

9-AB14-7.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

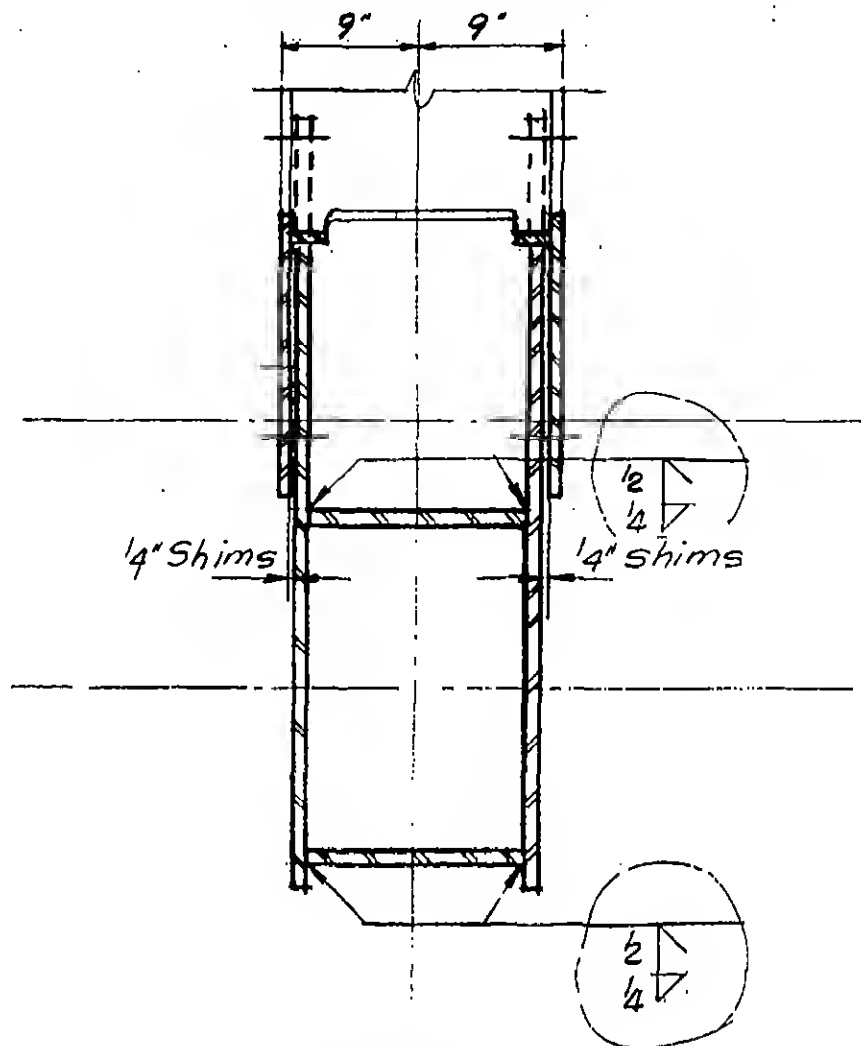
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - EXT. WALL - FL 107

DATE 4-1-70

REVISIONS

5/27/70



Section C-C



DESIGNED

DRAWN V.H.A.

REVIEWED

W. Brewer

9-AB14-7.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

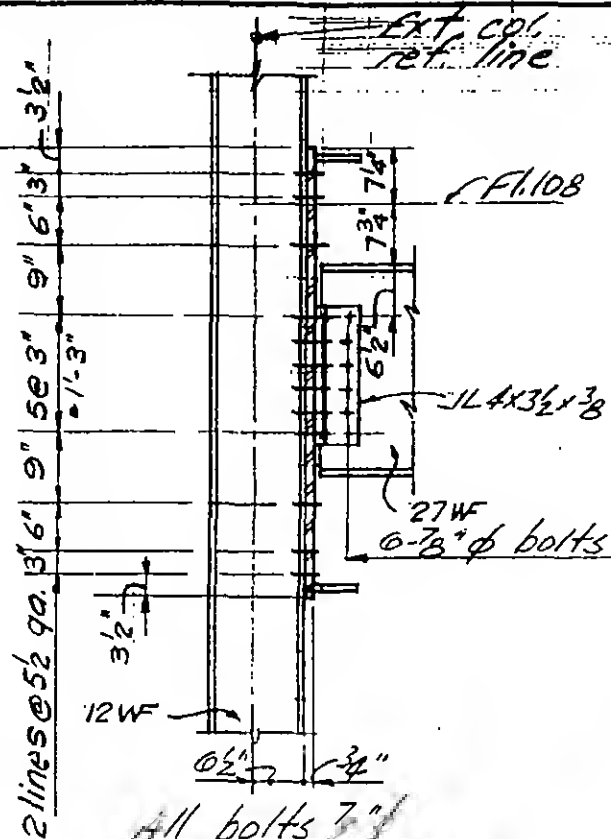
FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FL 108

DATE

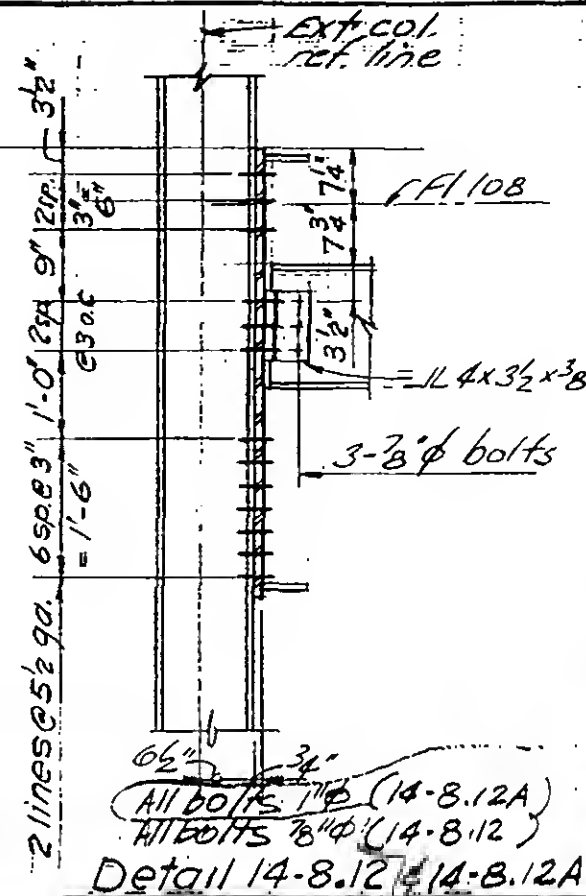
4-1-70

REVISIONS

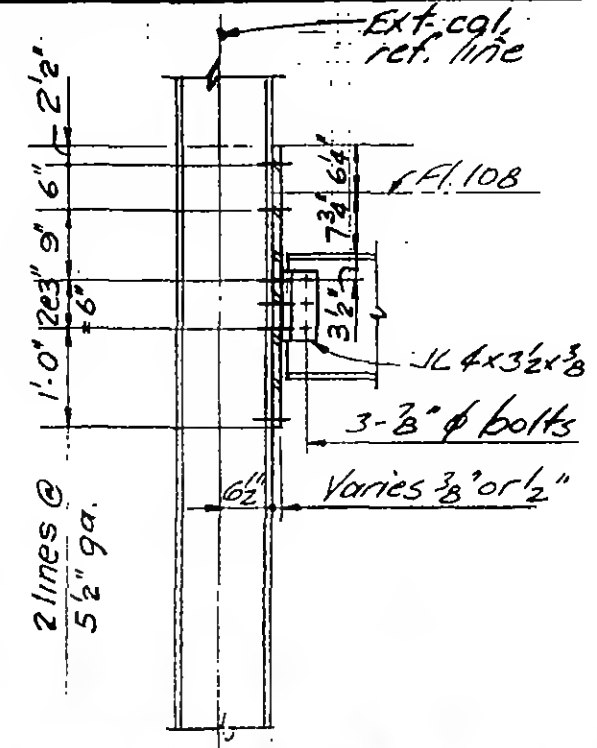
5-27-70
8-3-70



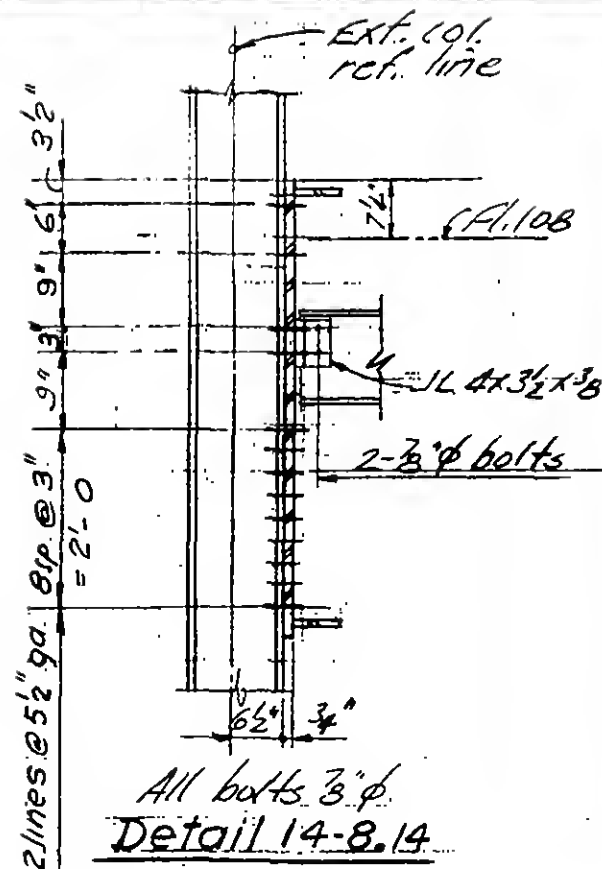
All bolts 3"
Detail 14-8.11



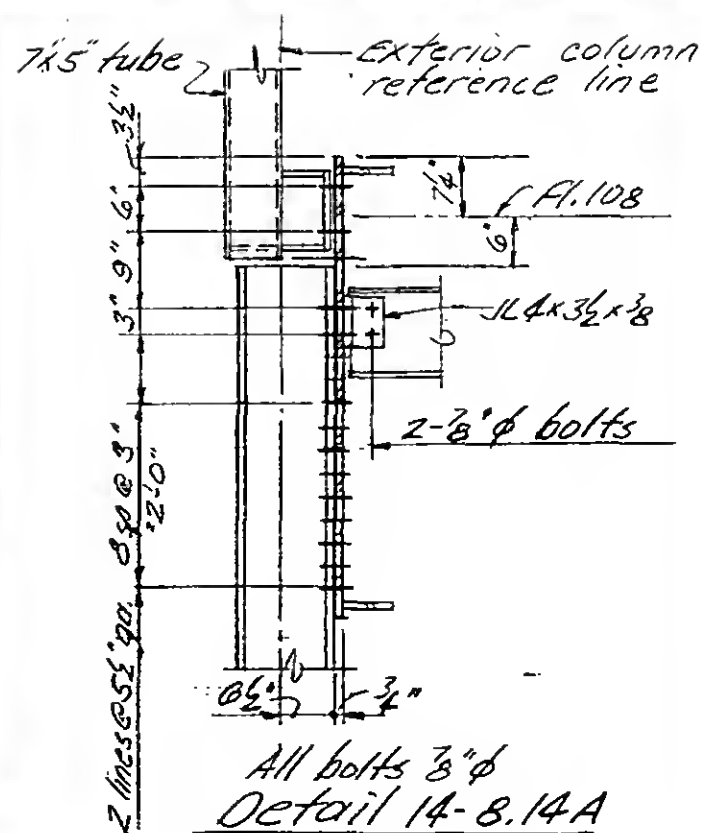
Detail 14-8.12 (14-8.12A)



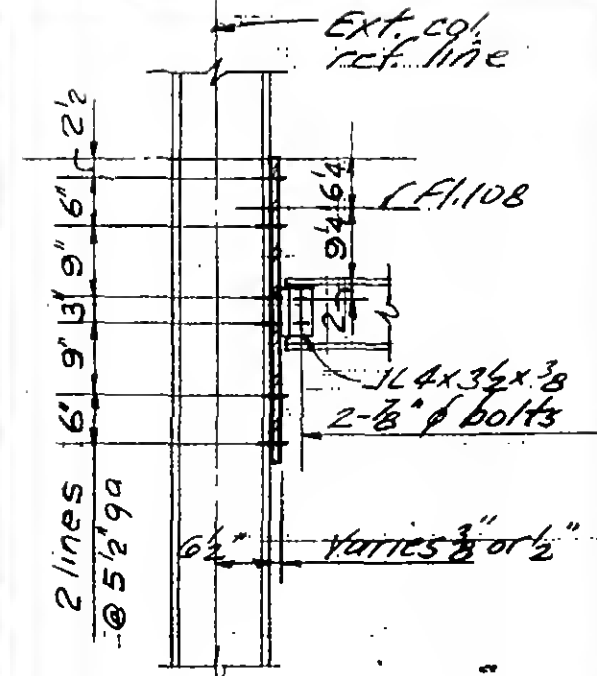
All bolts 3/8"
Detail 14-8.13



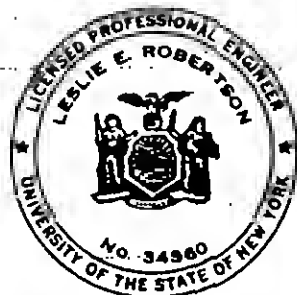
All bolts 3/8"
Detail 14-8.14



All bolts 3/8"
Detail 14-8.14A



All bolts 3/8"
Detail 14-8.15



DESIGNED

DRAWN

V.H.A.

REVIEWED

W. P. Stewart

9-AB14-8.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

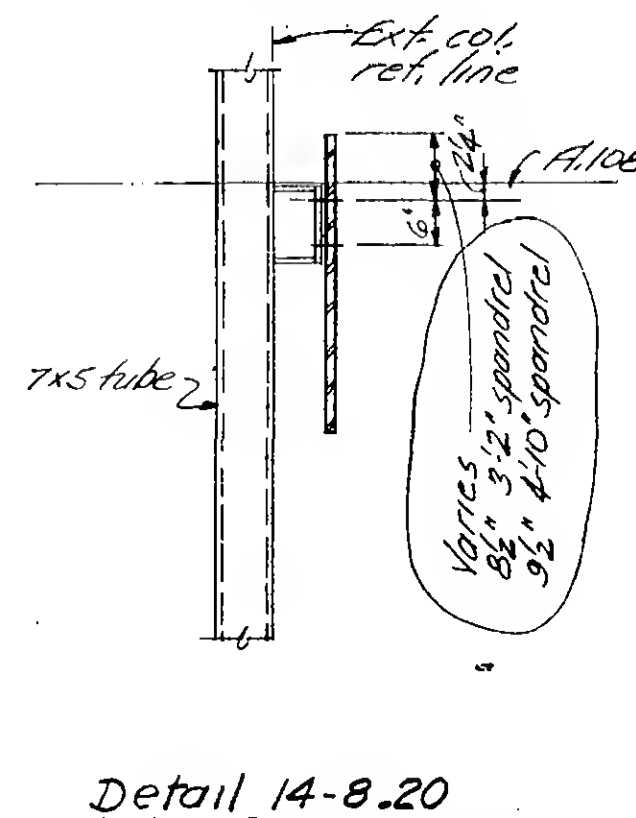
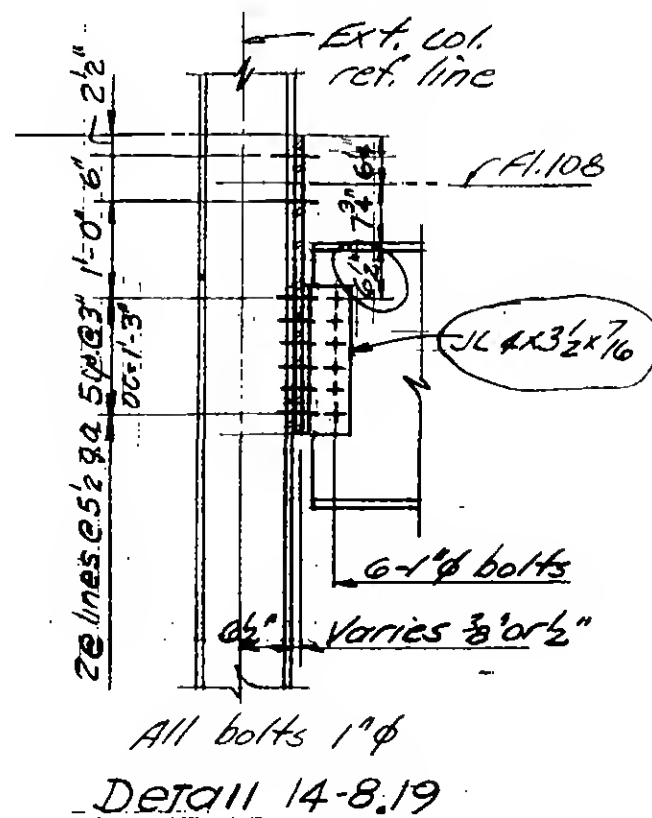
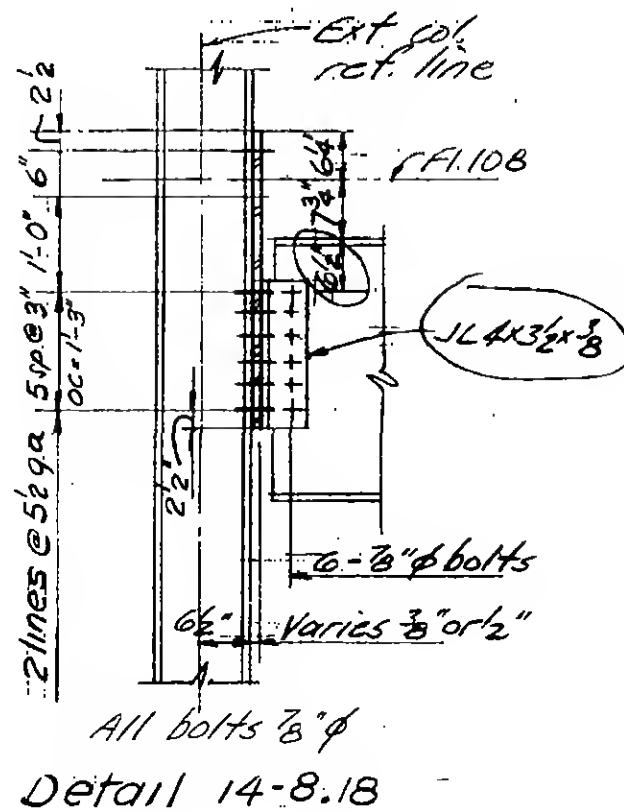
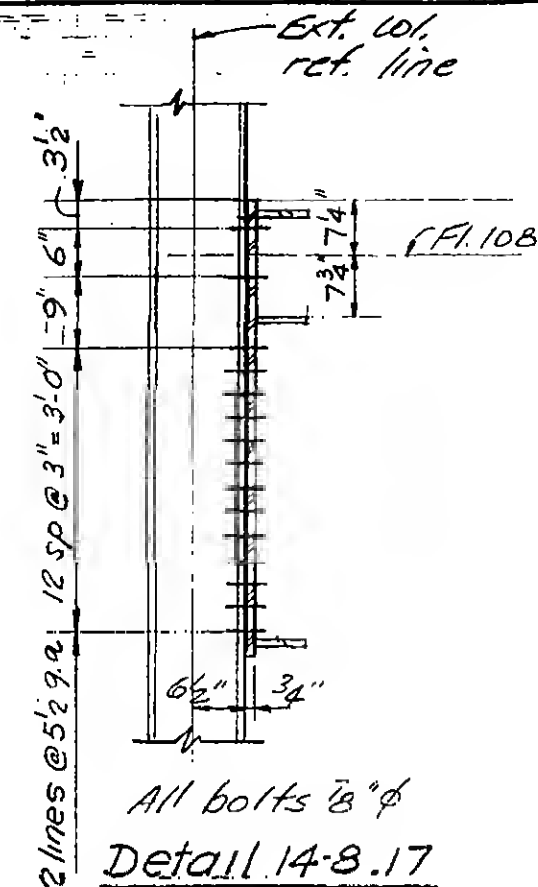
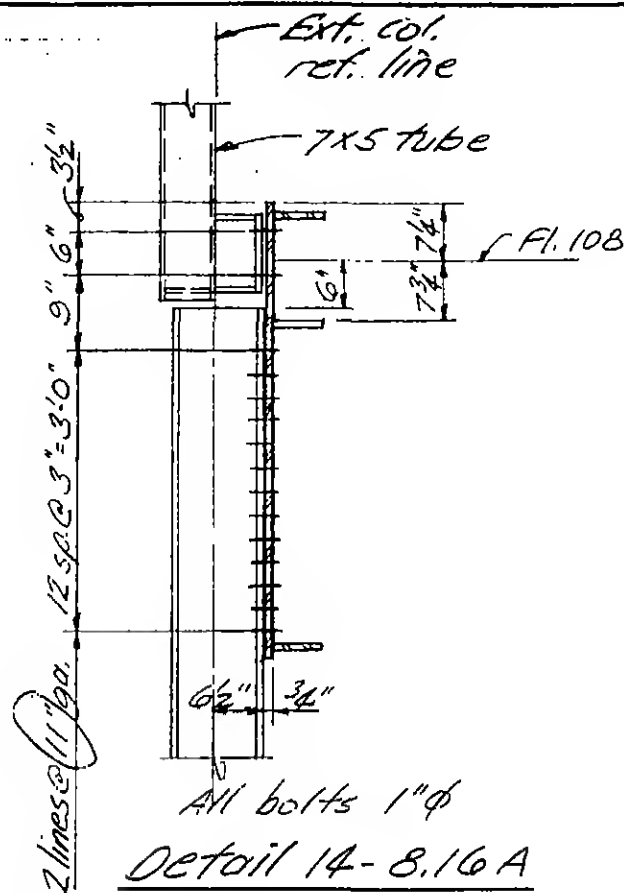
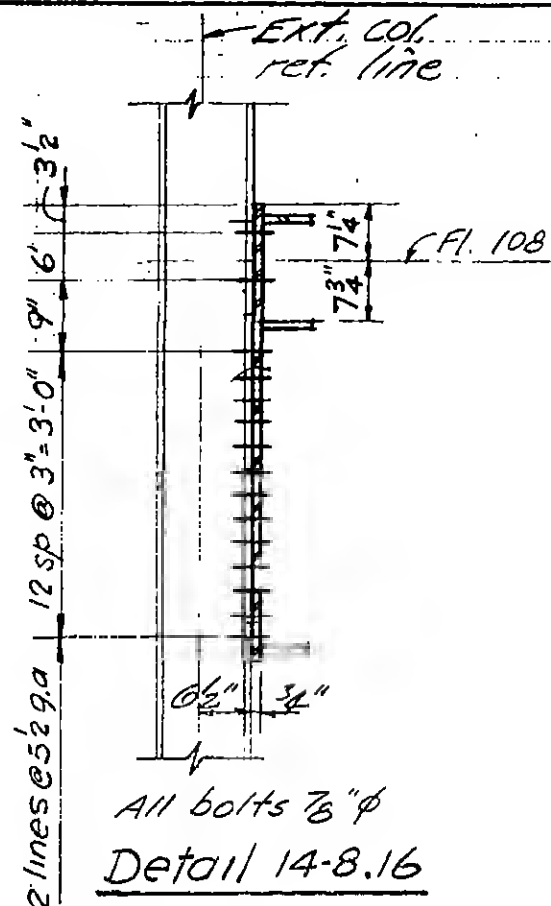
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - EXTERIOR WALL - FL 108

DATE 4-1-70

REVISIONS

S-27-70



DESIGNED

DRAWN
V.H.A.

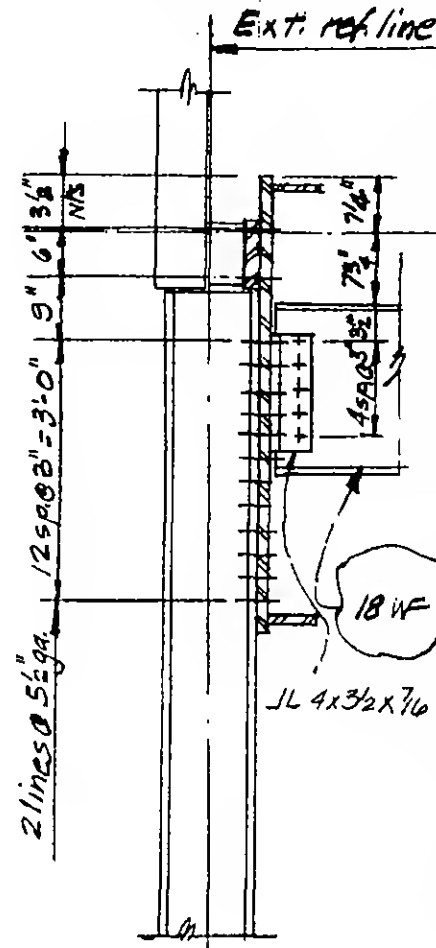
REVIEWED

W. Brewer

9-AB/4-8.2

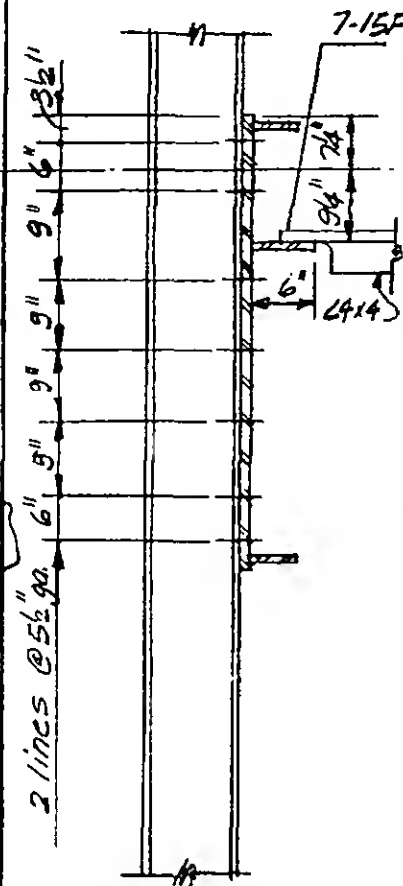
REVISIONS

9-8-70



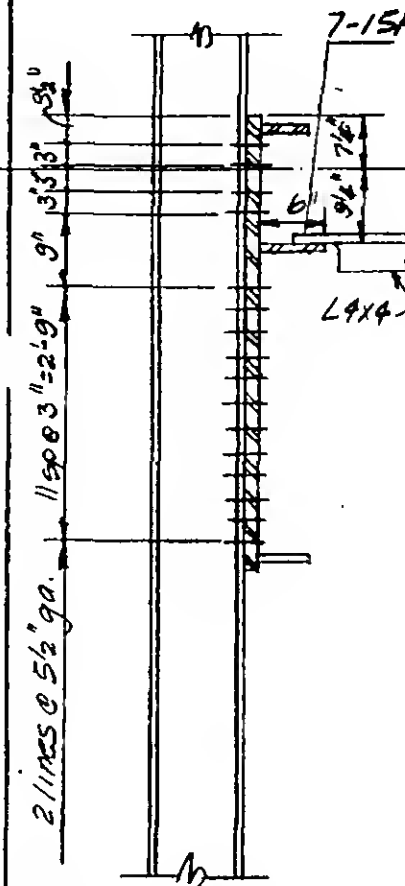
All bolts 1" ϕ

DETAIL 14-8:17A



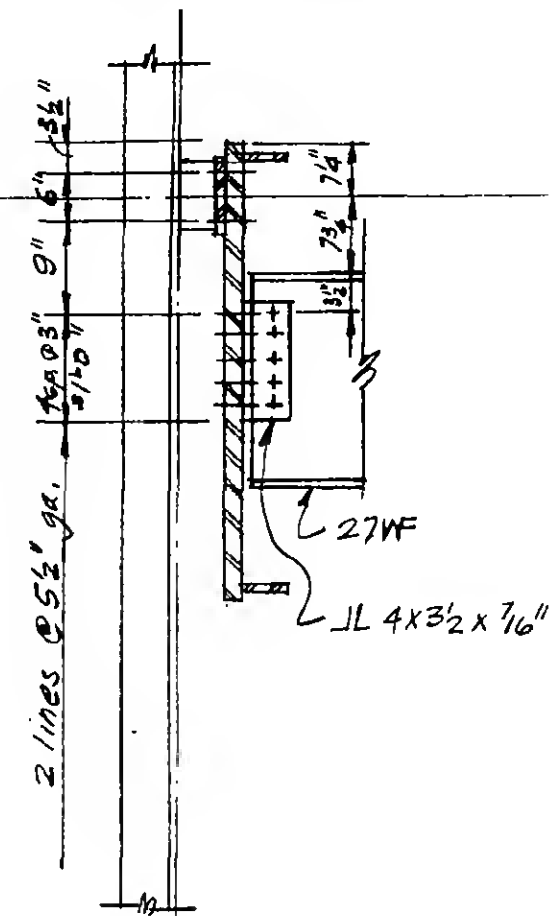
All bolts $7/8"$ ϕ

DETAIL 14-8.17B



All bolts: 3/8"

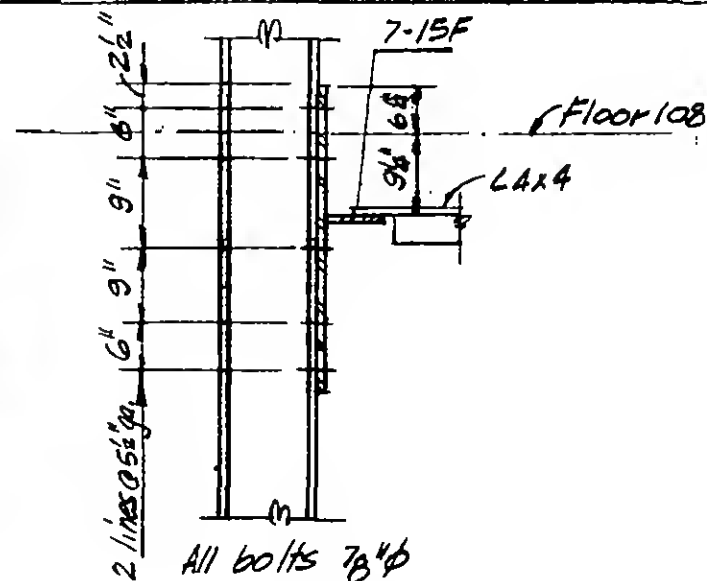
DETAIL 14-817C



All bolts $\frac{7}{8}" \phi$

DETAIL 14-B.19A

Floor 108



All bolts 7/8" ϕ

DETAIL 14-8.13A



DESIGNED

DRAWN
P. Ceeki

REVIEWED

9-B/4-8.3

PROJECT

THE WORLD TRADE CENTER

TITLE

FL.107-PH.CONNECTION DETAILS EXTERIOR WALLS FL.110

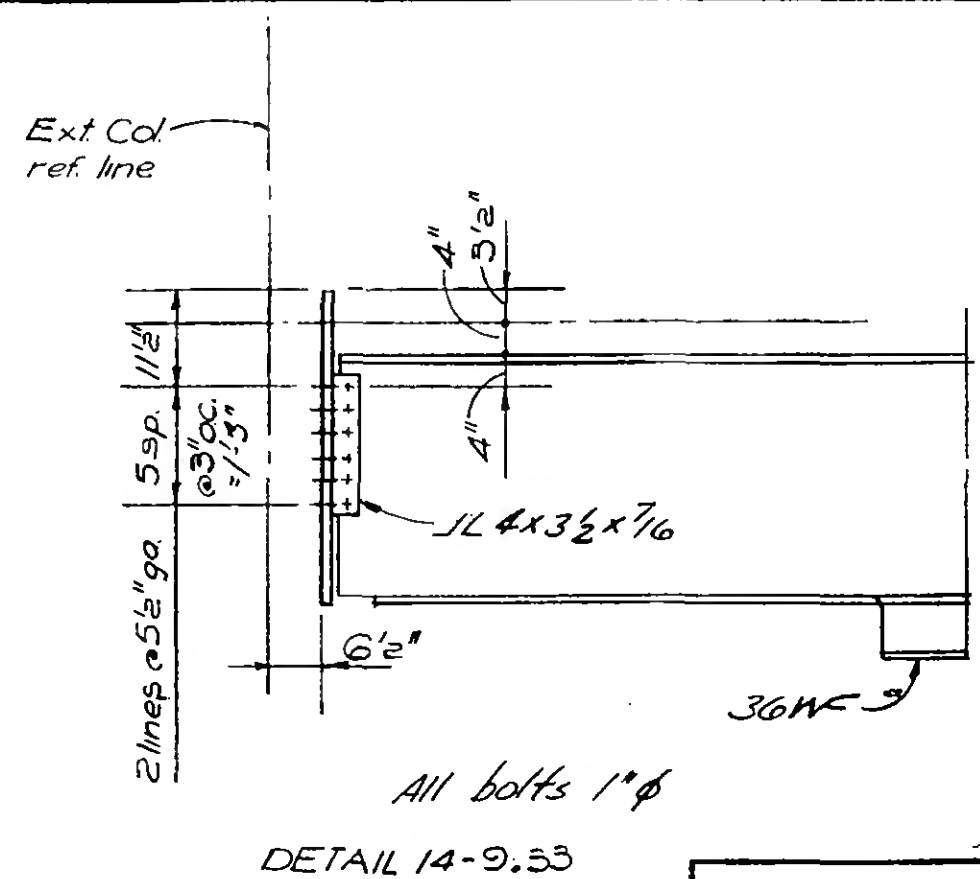
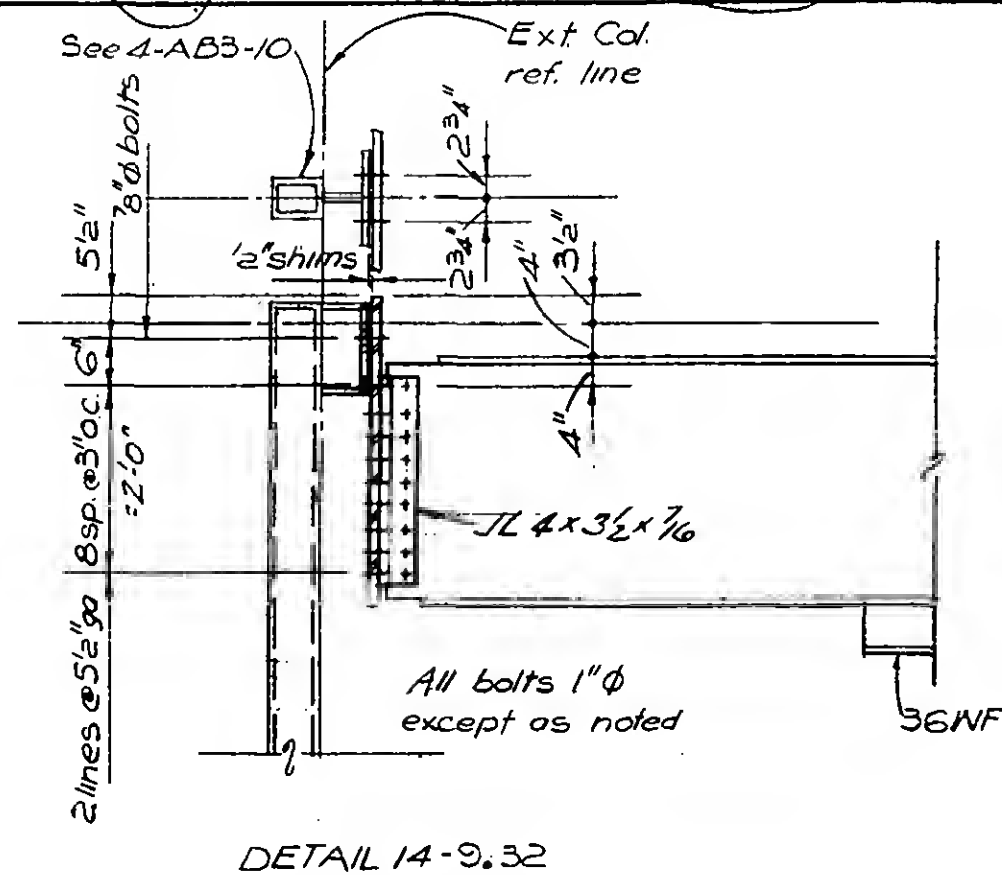
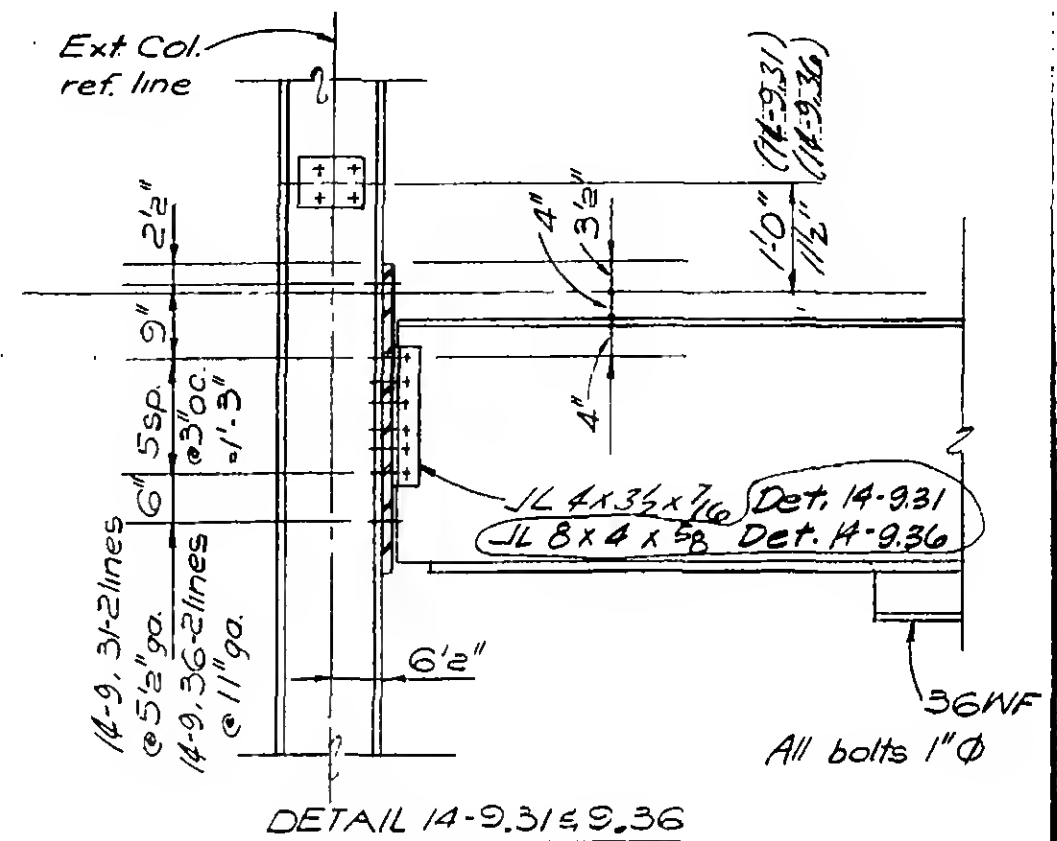
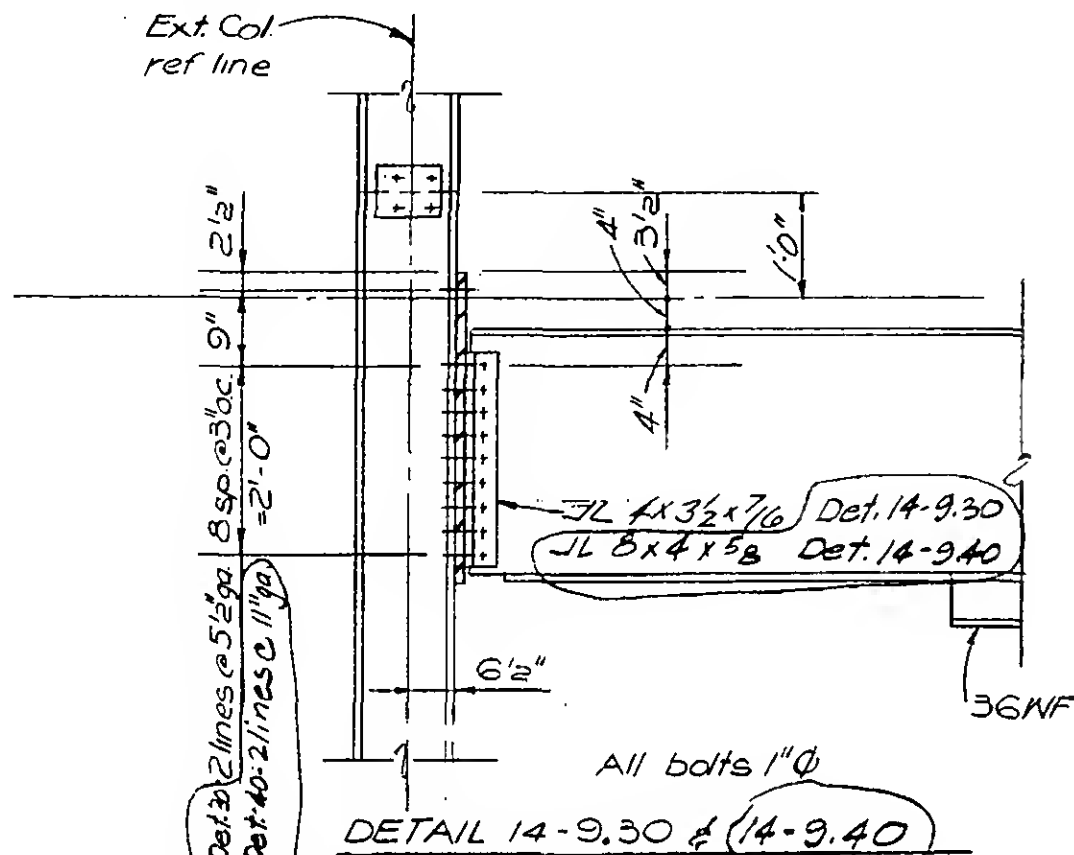
DATE

4-1-70

REVISIONS

6/15/70

8/3/70



DESIGNED

DRAWN

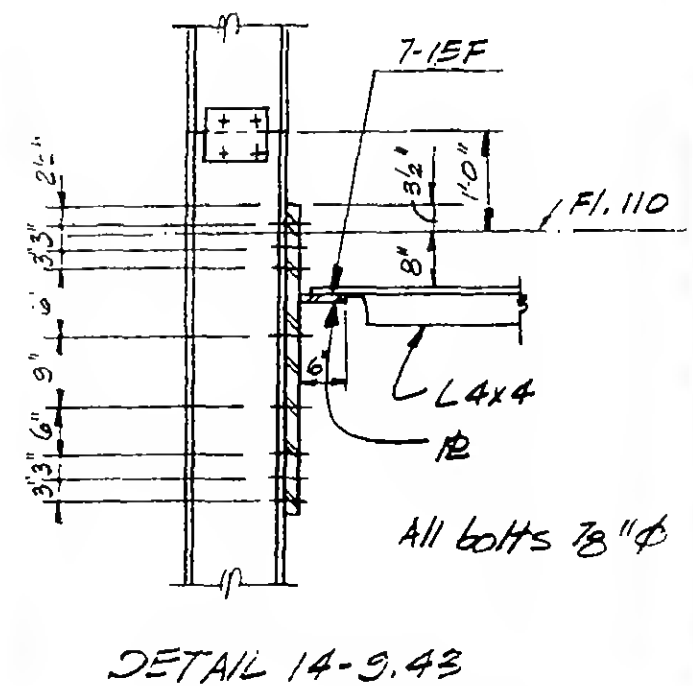
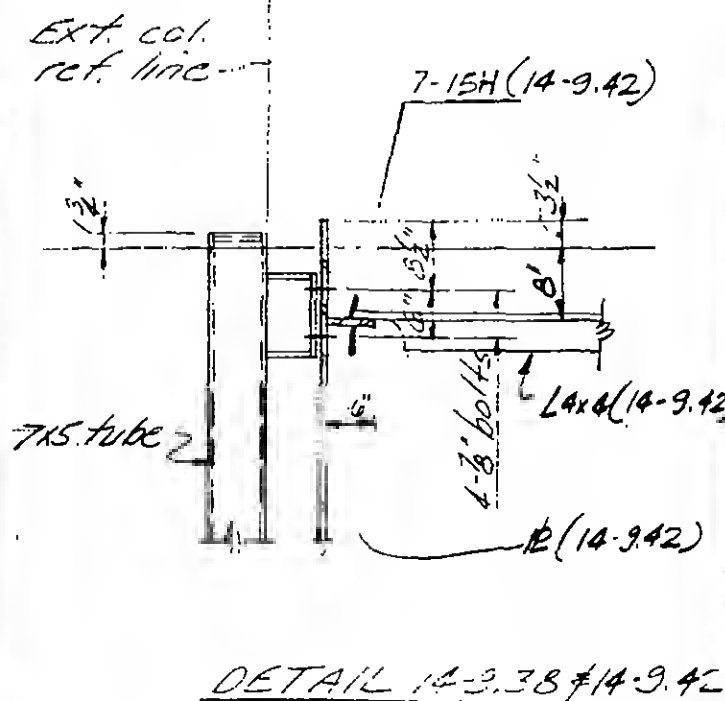
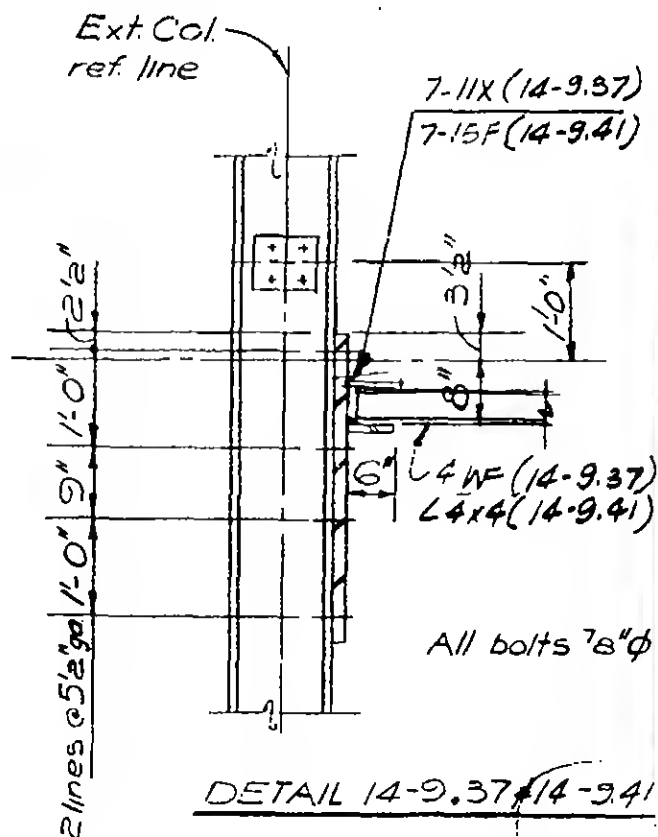
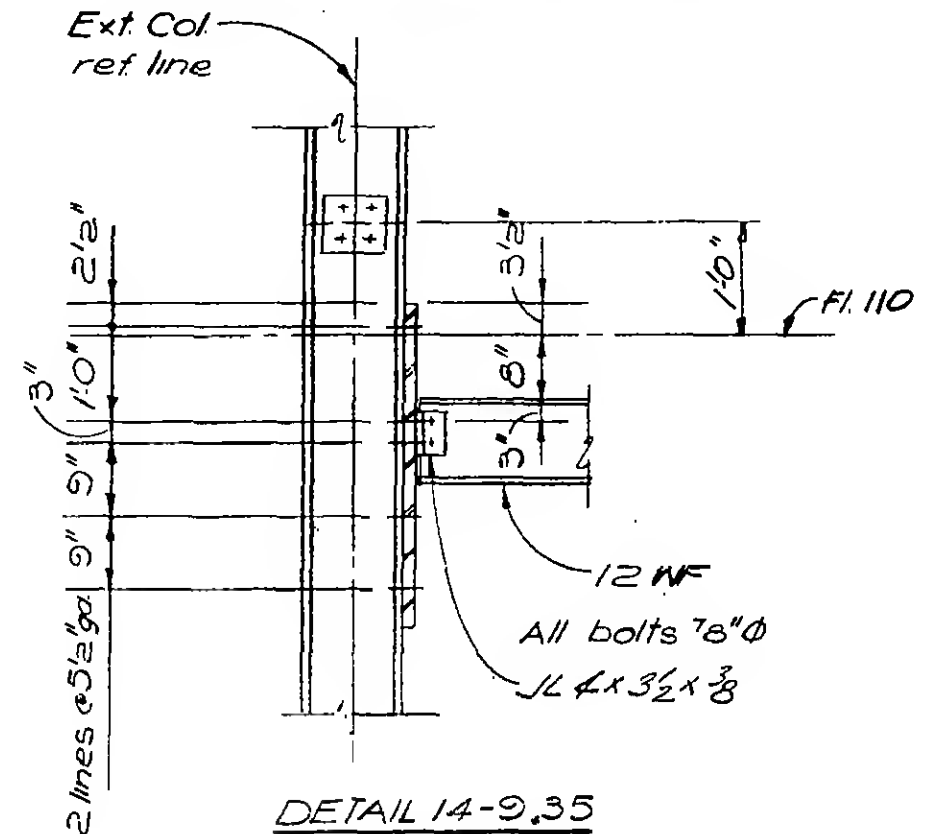
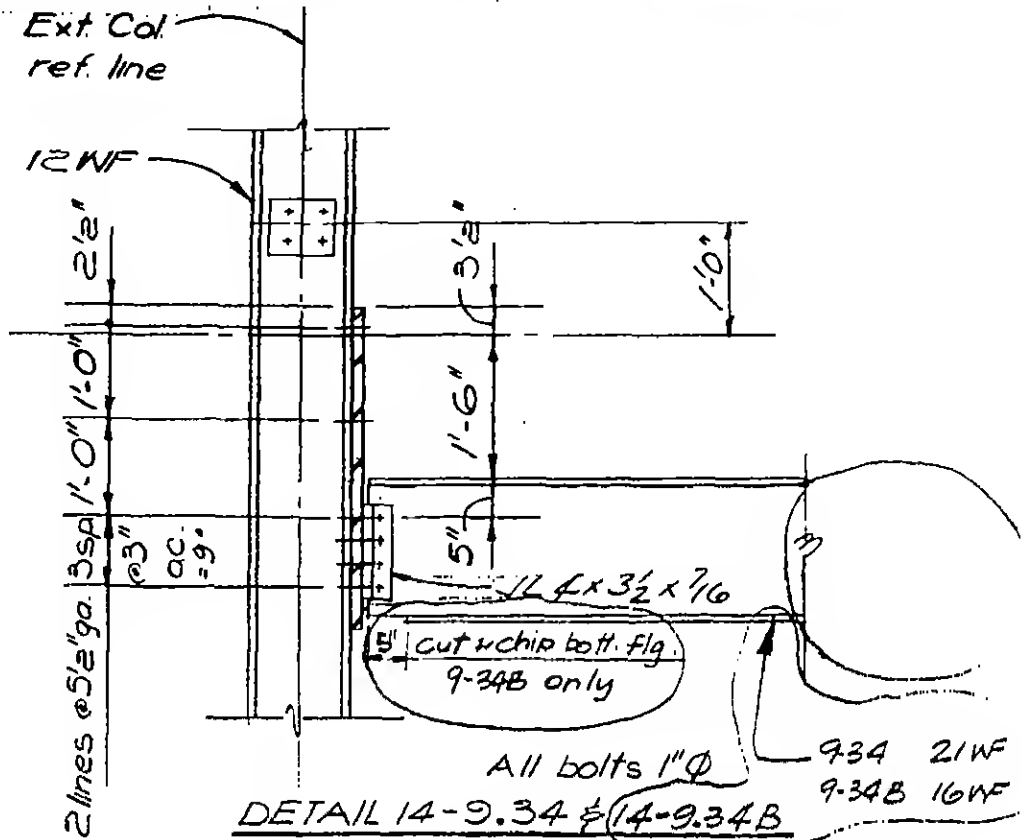
W. Clarke

REVIEWED

9-AB/4-9:1

REVISIONS

6-15-70
8-3-70
12-14-70



9-AB 14-9.2



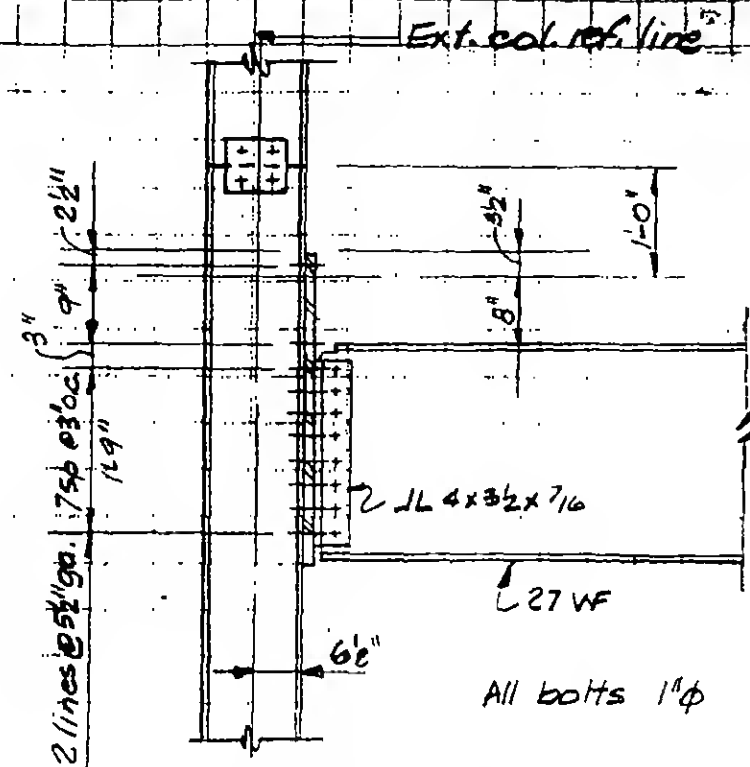
DESIGNED

DRAWN

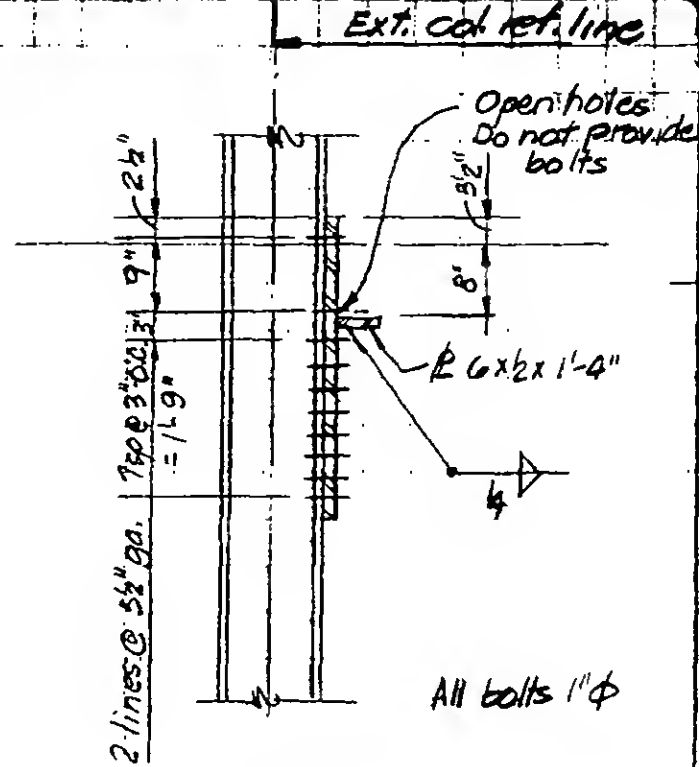
W. Clarke

REVIEWED

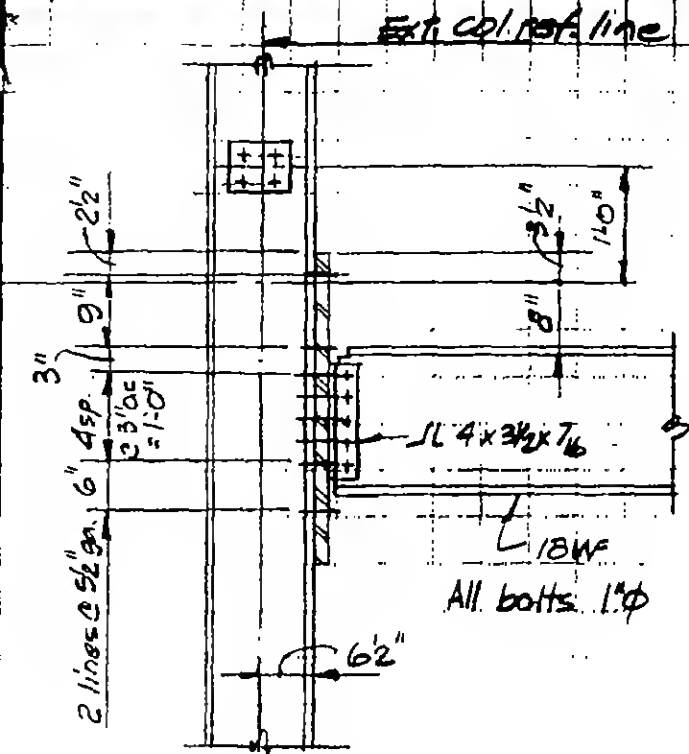
VISIONS



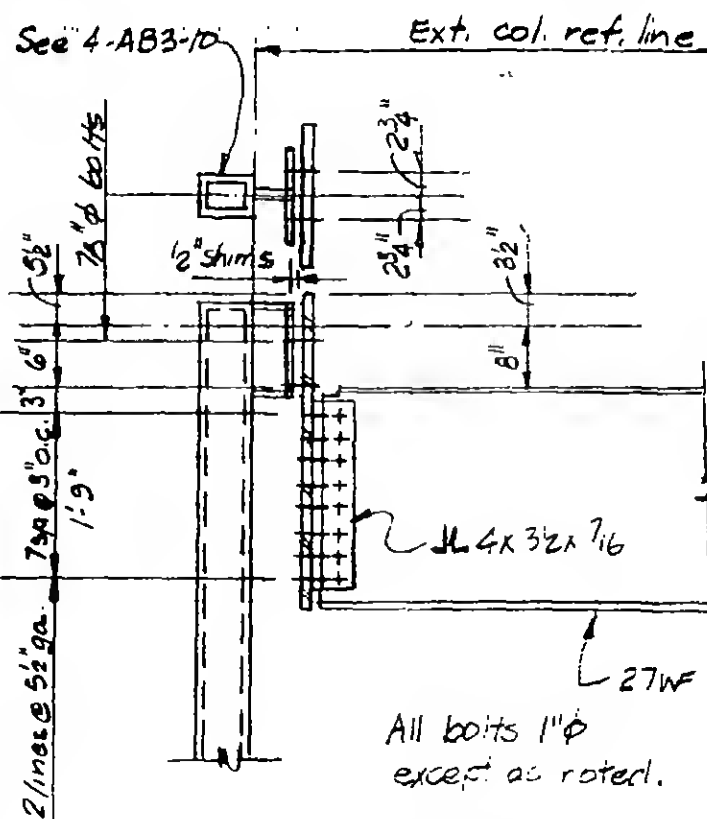
DETAIL 14-9.30B



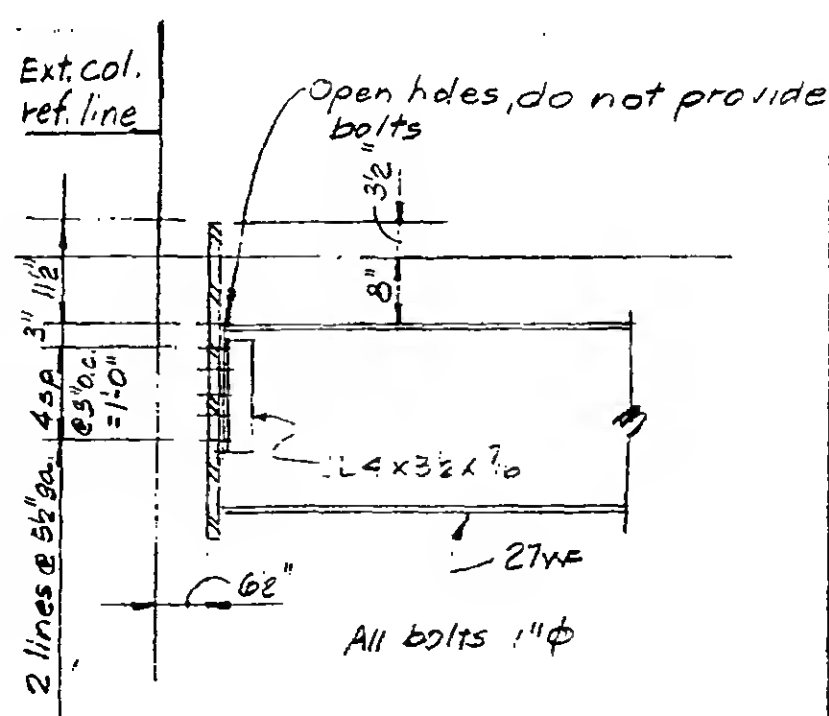
DETAIL 14-9.30C



DETAIL 14-9.31B



DETAIL 14-9.32B



DETAIL 14-9.33B

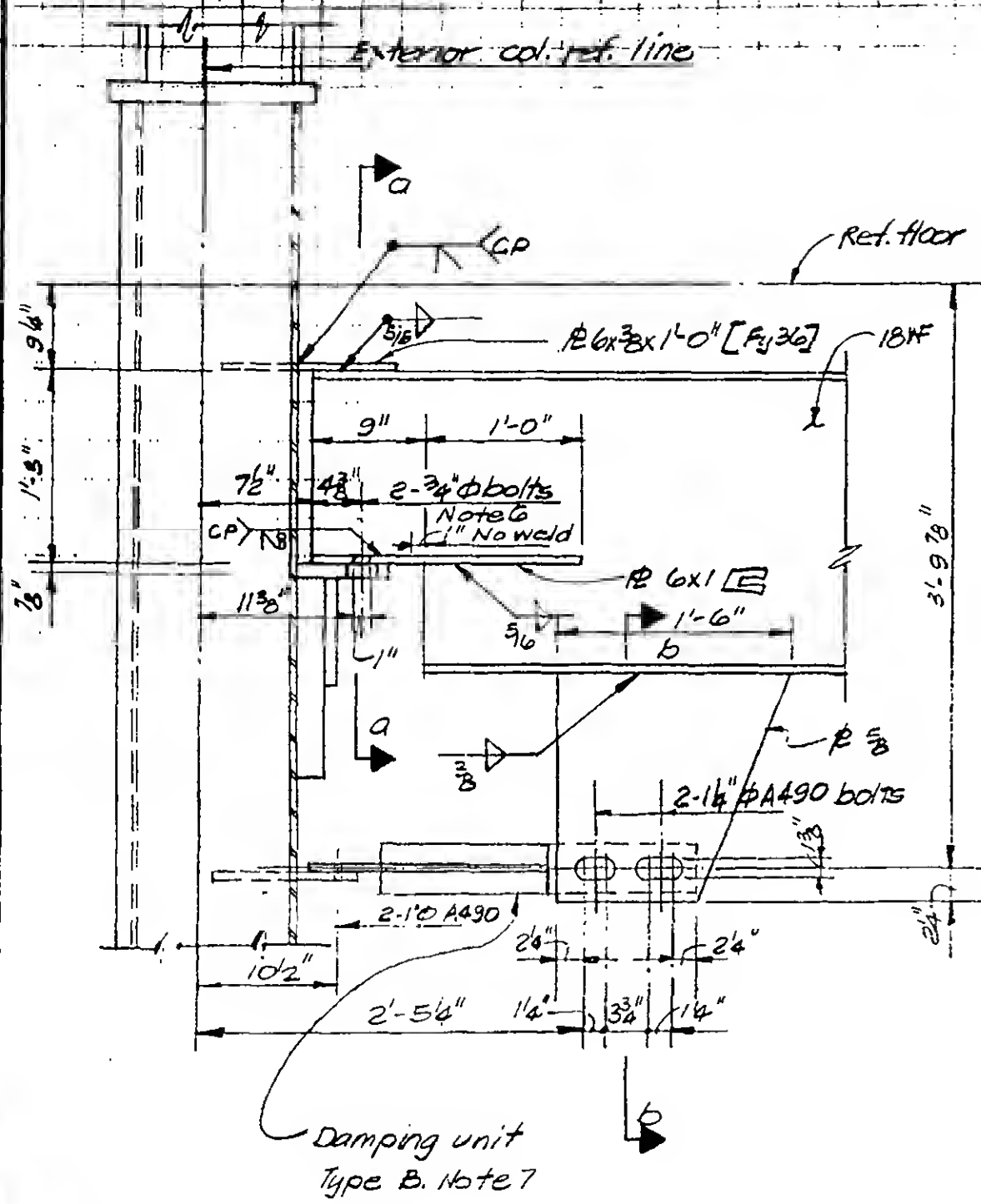


DESIGNED

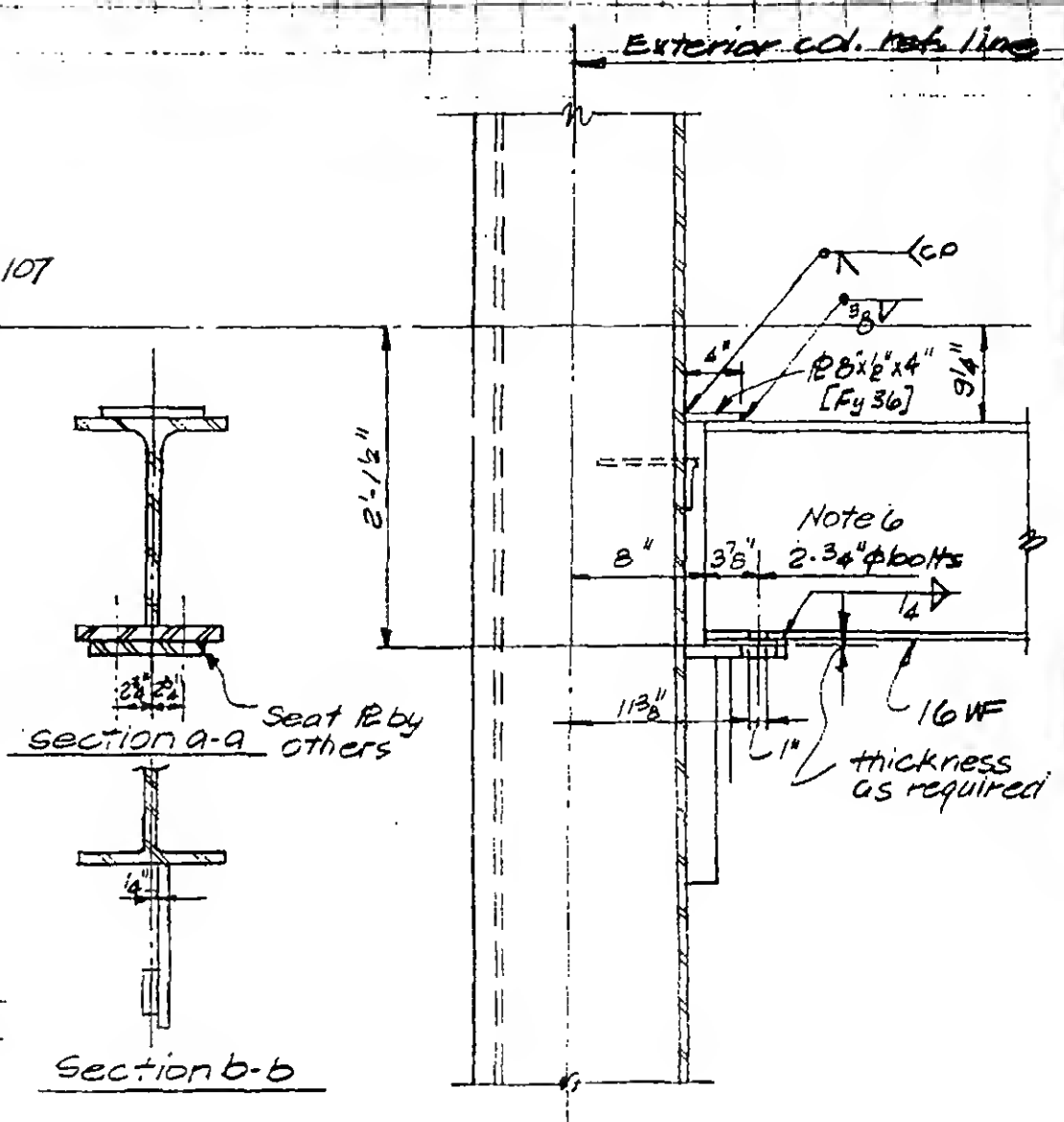
DRAWN

REVIEWED

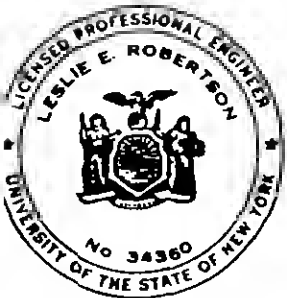
REVISIONS



DETAIL 14-10A



DETAIL 14-10B



DESIGNED

DRAWN

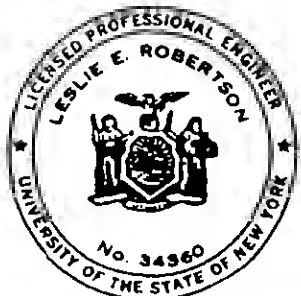
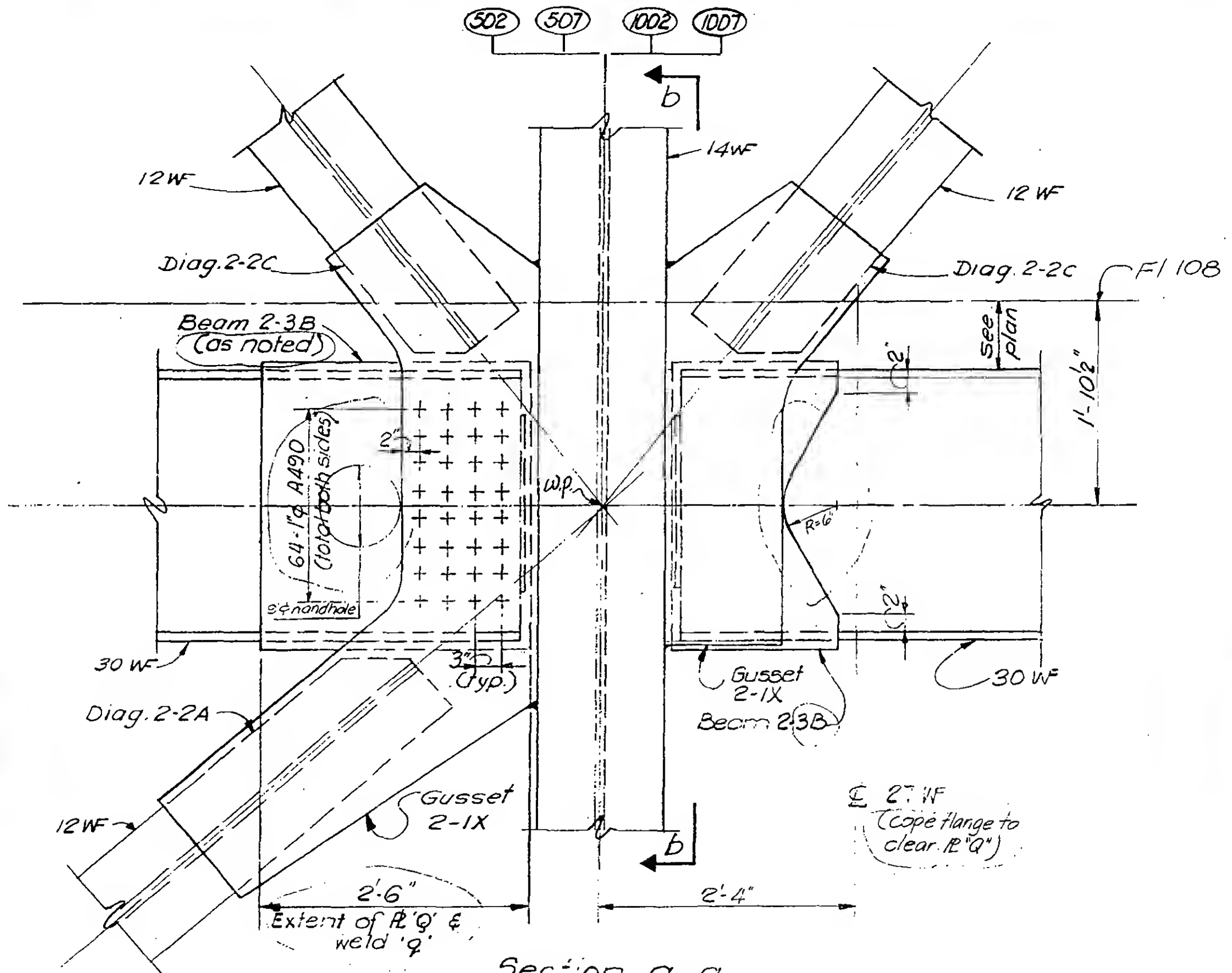
P. Ozdeci

REVIEWED

9A3:4-10

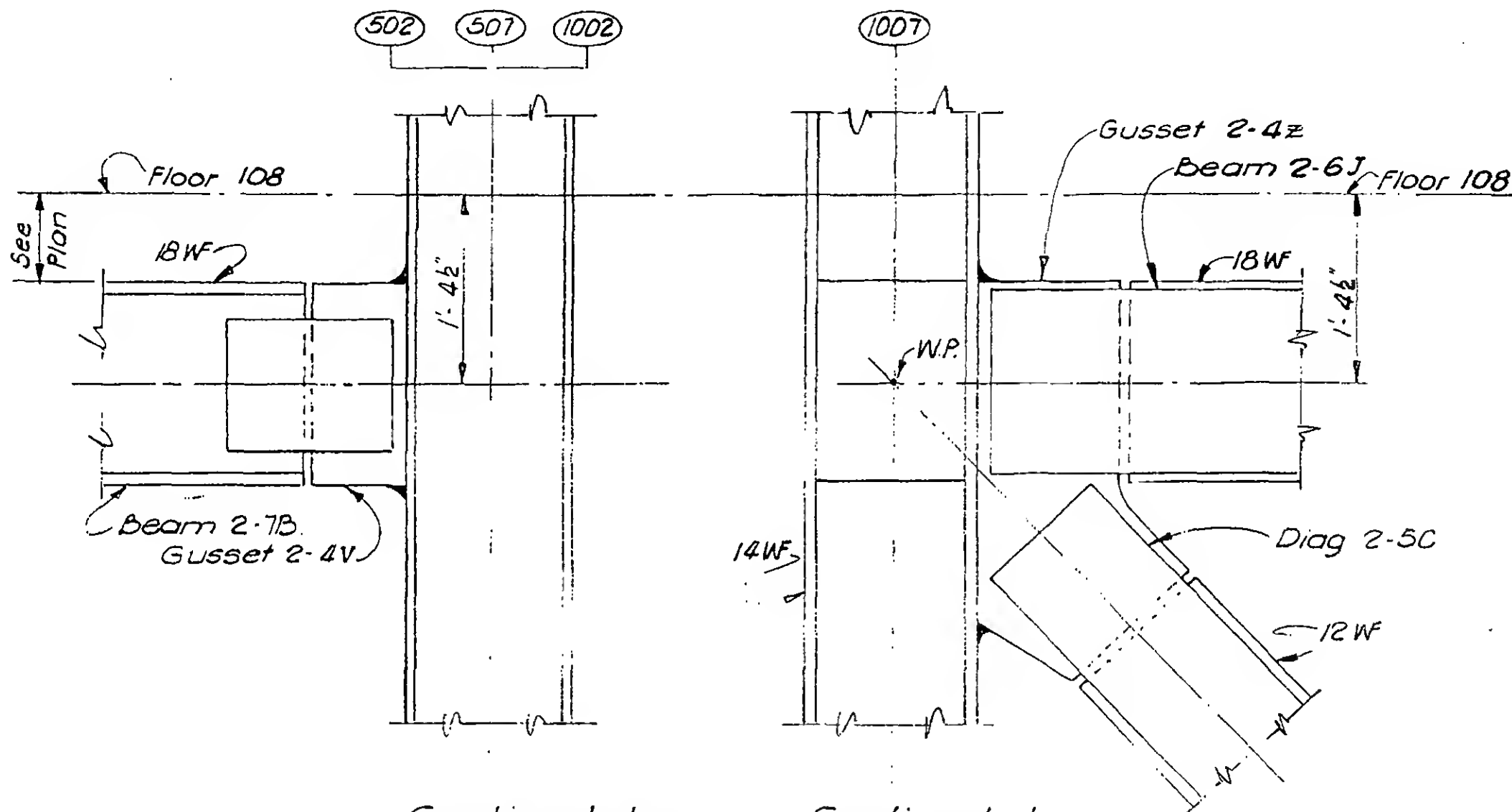
REVISIONS

5/27/70



REVISIONS

5/27/70



Section b-b
(Col. 502 & 507 as shown)
(Col. 1002 opp. hand)

Section b-b
(Col. 1007)



DESIGNED
K. Hwang

DRAWN

REVIEWED

E. Drakos

9-AB15-1.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

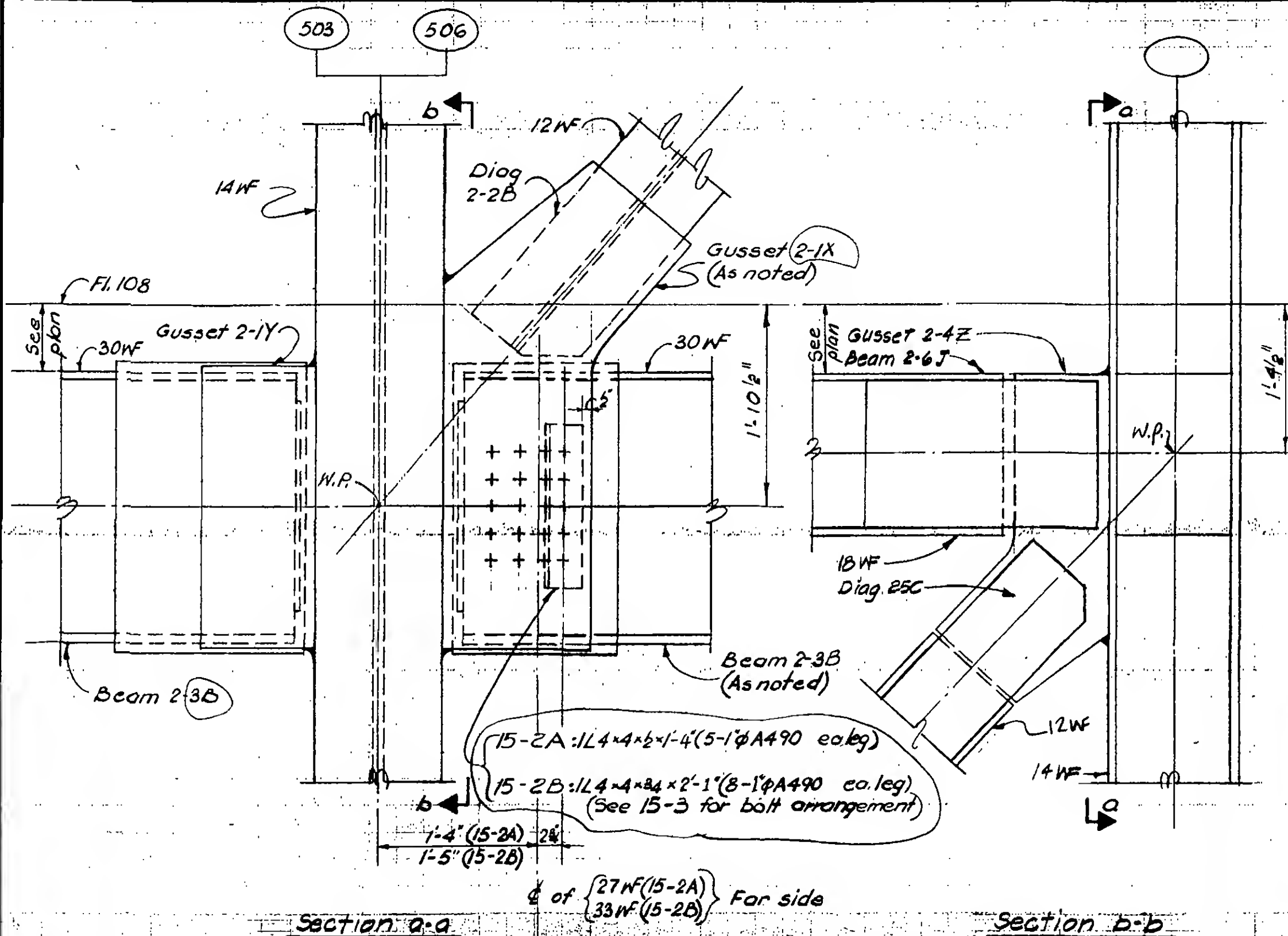
FL 107 - PM CONNECTION DETAILS - FL 108

DATE

4-1-70

REVISIONS

5/27/70



DESIGNED

K. Hwang

DRAWN

P. Dzeki

REVIEWED

E. Drakos

DETAIL 15-2A (col 503 as shown)

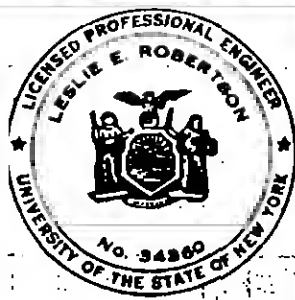
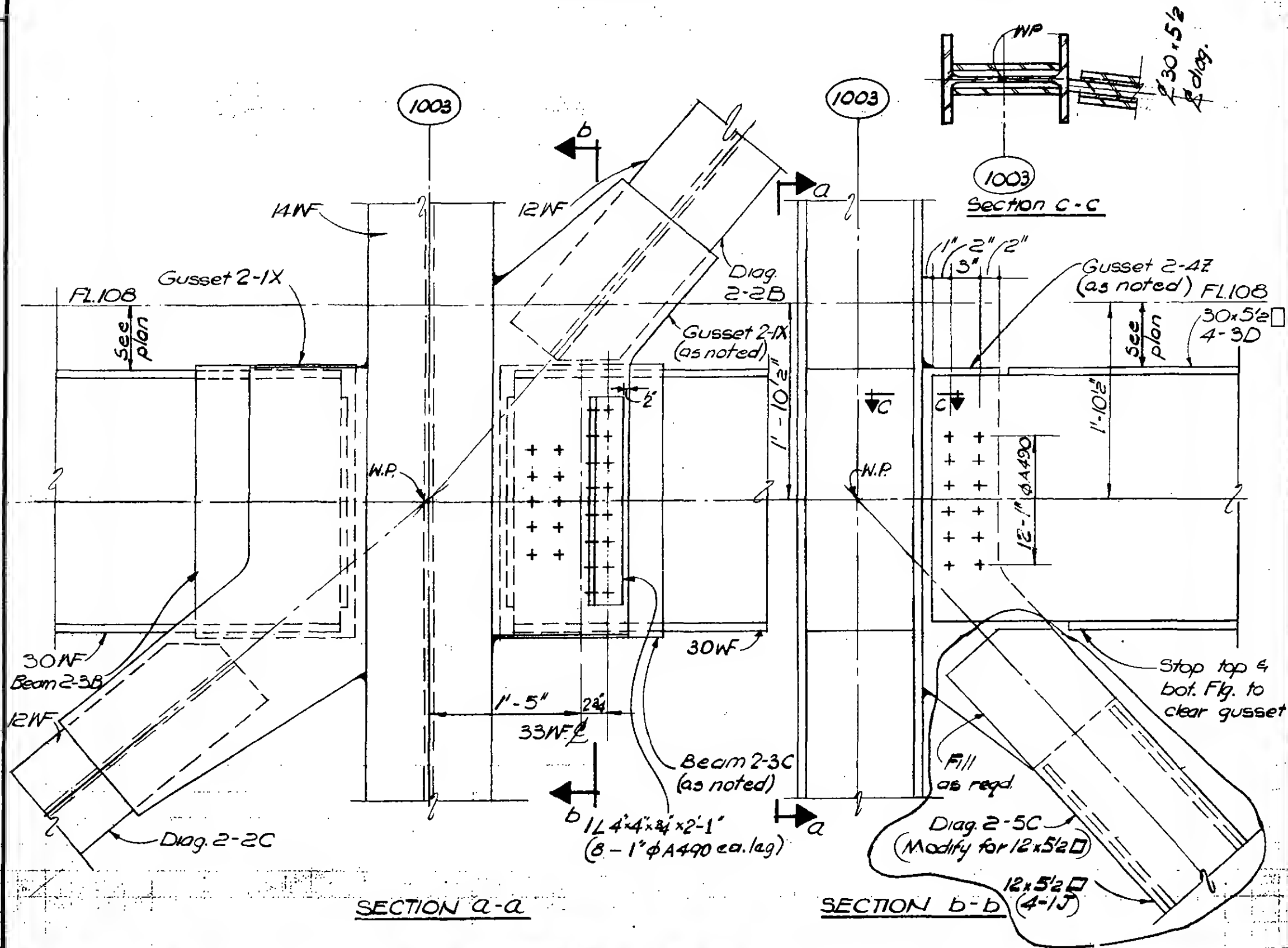
DETAIL 15-2B (col 506 as shown)

9-AB 15-2

REVISIONS

5/27/70

7/13/70



DESIGNED
J. HWANG

DRAWN
N. Clarke

REVIEWED
E. Drakos

~~DETAIL 15-3~~

9-AB/5-3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

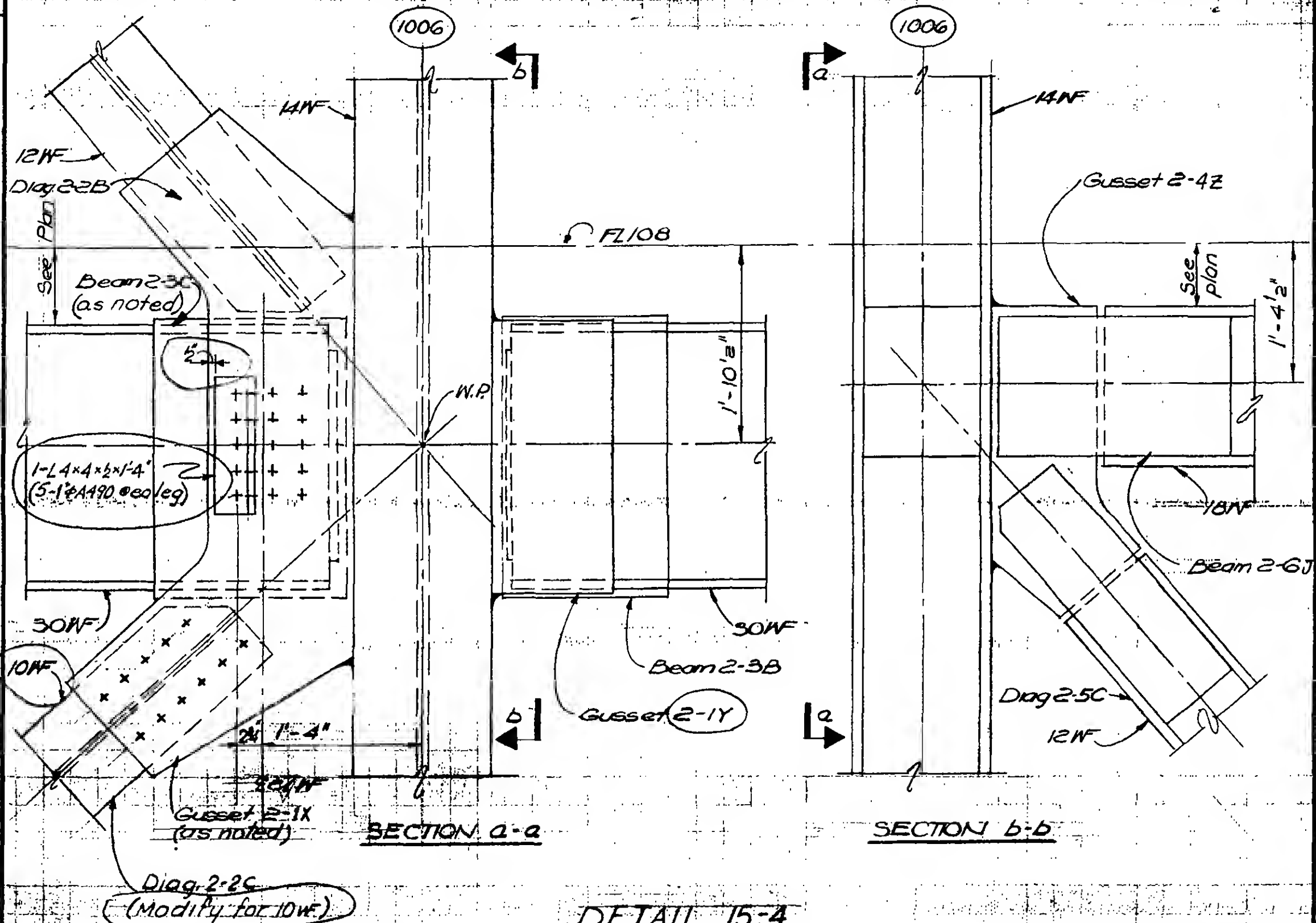
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 PH CONNECTION DETAIL - FL 108

DATE 4-1-70

REVISIONS

5/27/70



DESIGNED C. HWANG

DRAWN W. CLARK

REVIEWED

E. DRAYOS

9-AB/5-4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

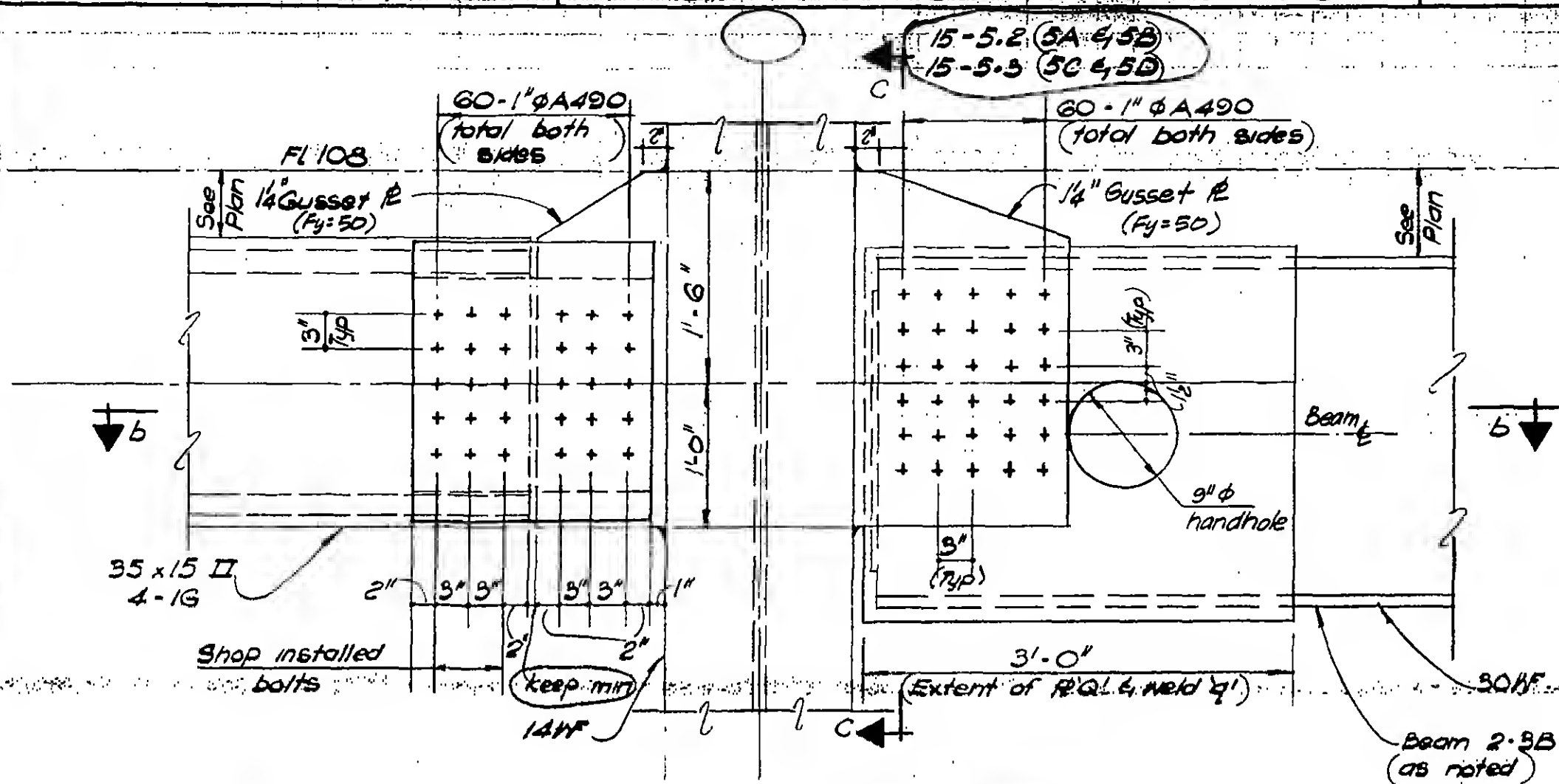
TITLE

FL 107 - PH CONNECTION, DETAILS - FL 108

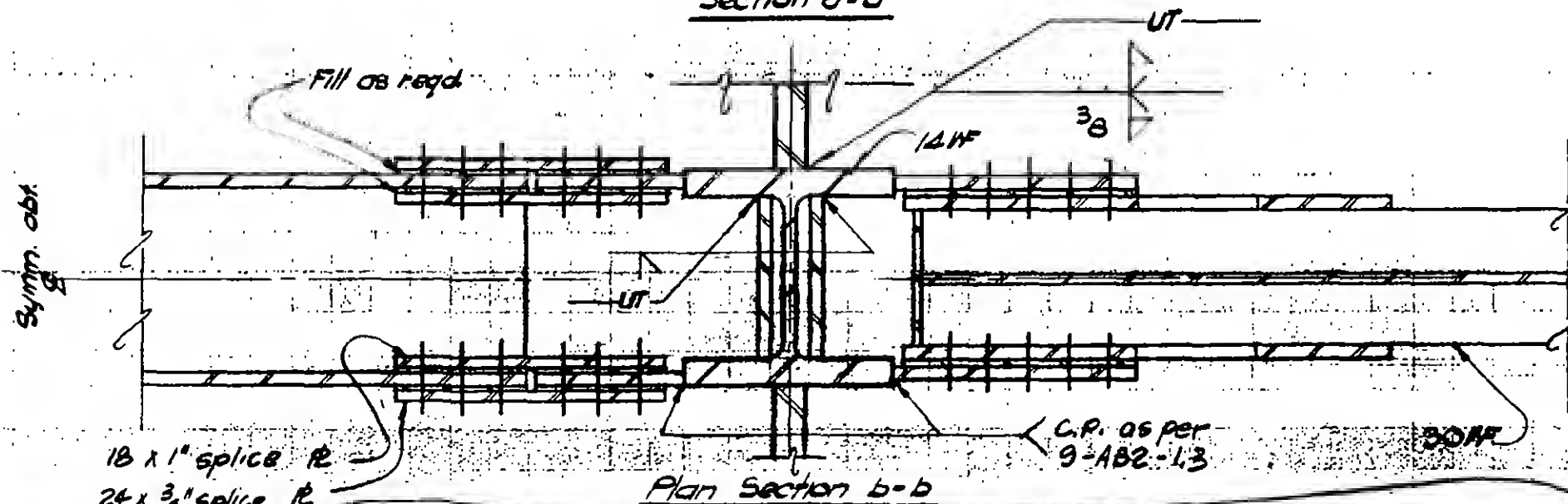
DATE

4-1-70

REVISIONS

5/27/70
8/3/70

Section a-a



Plan Section b-b

18 x 1" splice P
24 x 3/4" splice P
(both Fy=50)

DETAIL 15-5A Tower "A": Cols 501 & 1001 as shown. Tower "B": Col. 501 as shown
 DETAIL 15-5B Tower "A": Cols 508 & 1008 opp hand. Tower "B": Col. 1008 opp hand
 DETAIL 15-5C Tower "B": Col. 1001 as shown
 DETAIL 15-5D Tower "B": Col. 508 opp hand & as noted.

9-AB15-5



DESIGNED

DRAWN

N. Clarke

REVIEWED

E. D. [unclear]

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

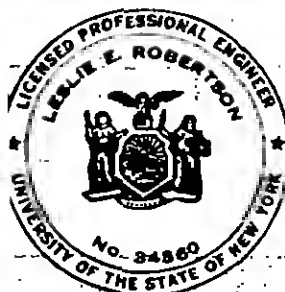
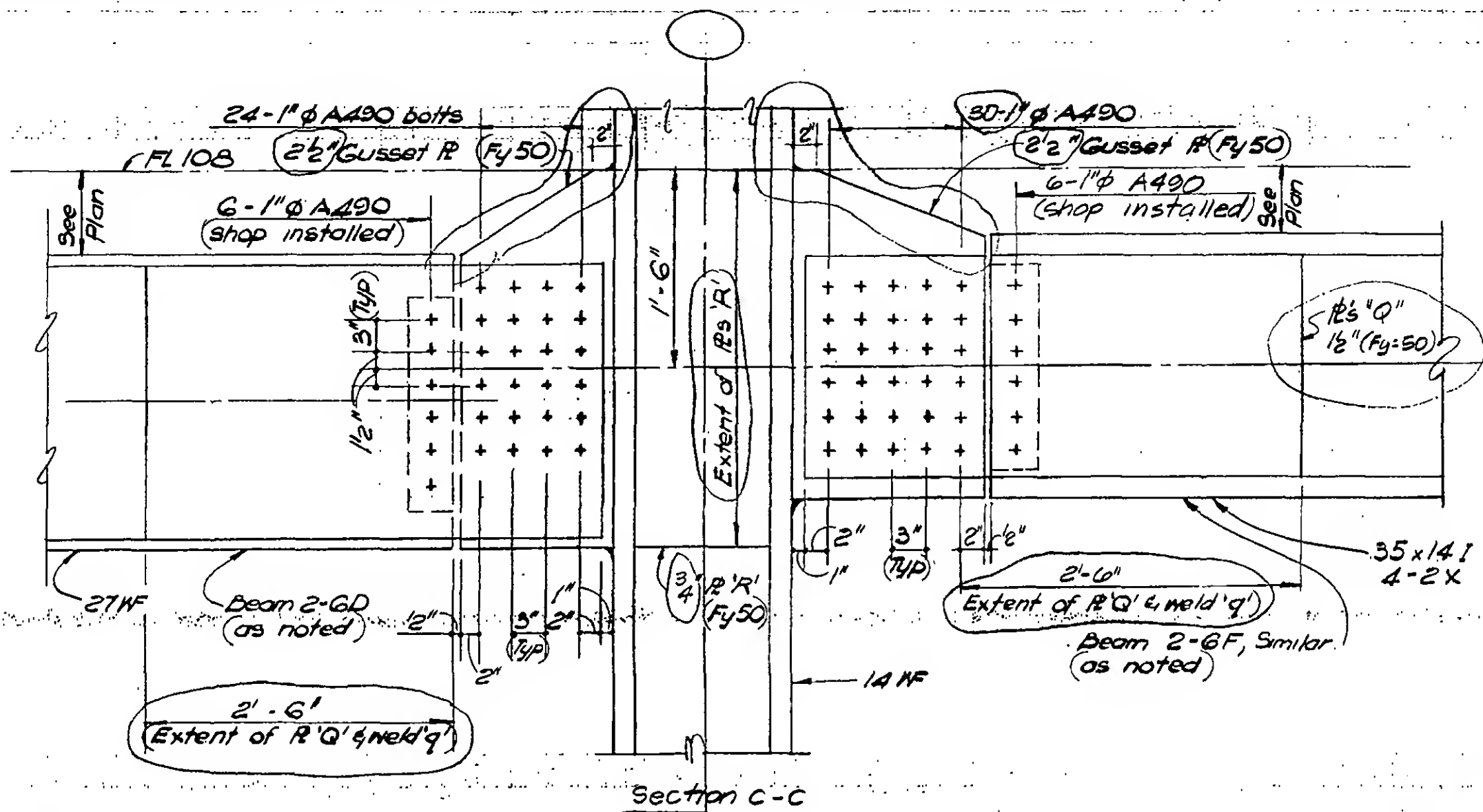
FL 107 - PH. CONNECTION DETAILS - FL 108

DATE _____

4-1-70

REVISIONS

5/27/70



SIGNED

A bin

W. Drake

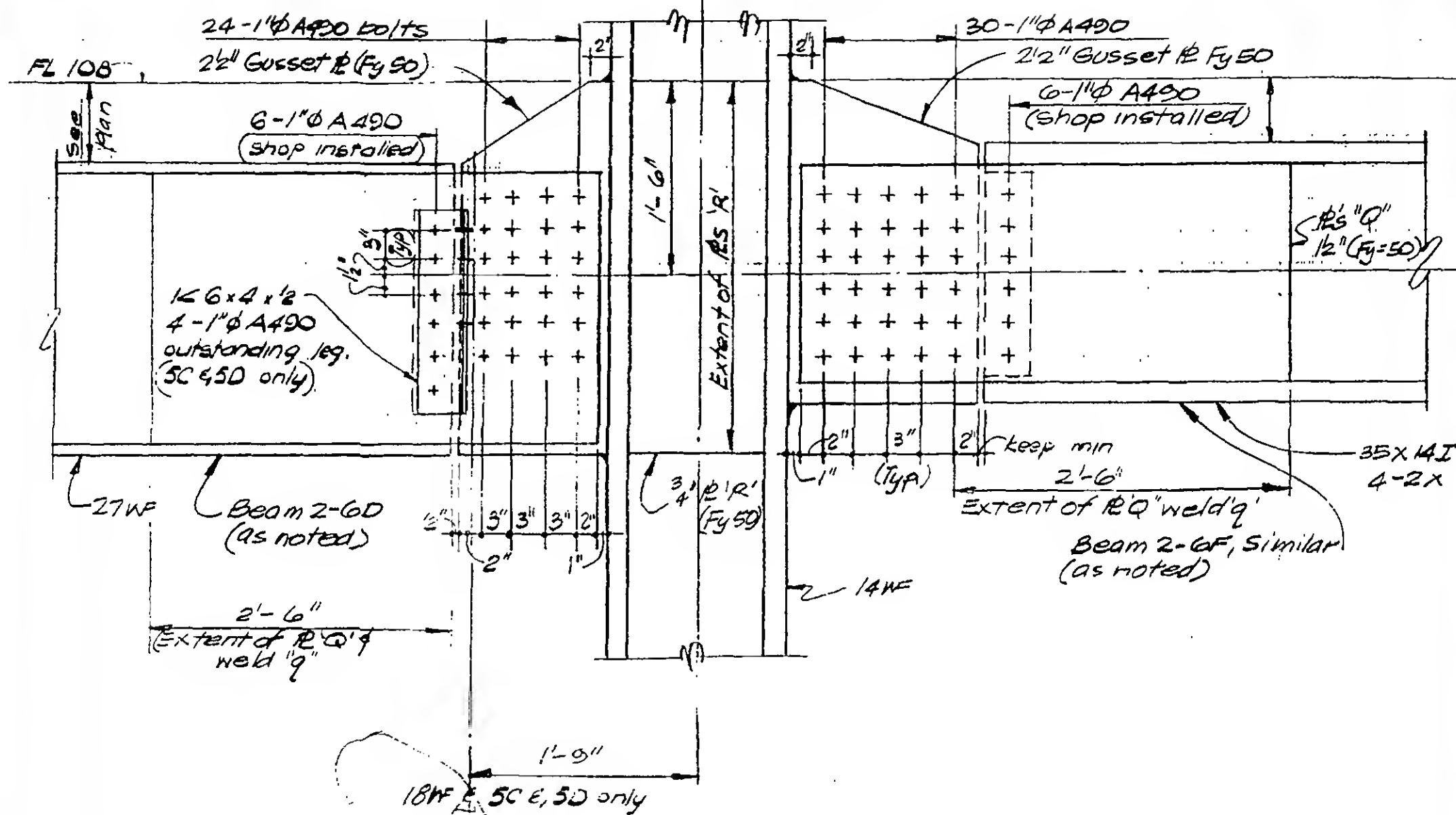
REVIEWING

E. Drakos

9-AB/5-5-2

REVIEWS

9-8-76



Section C-C



DESIGNED

DRAWN

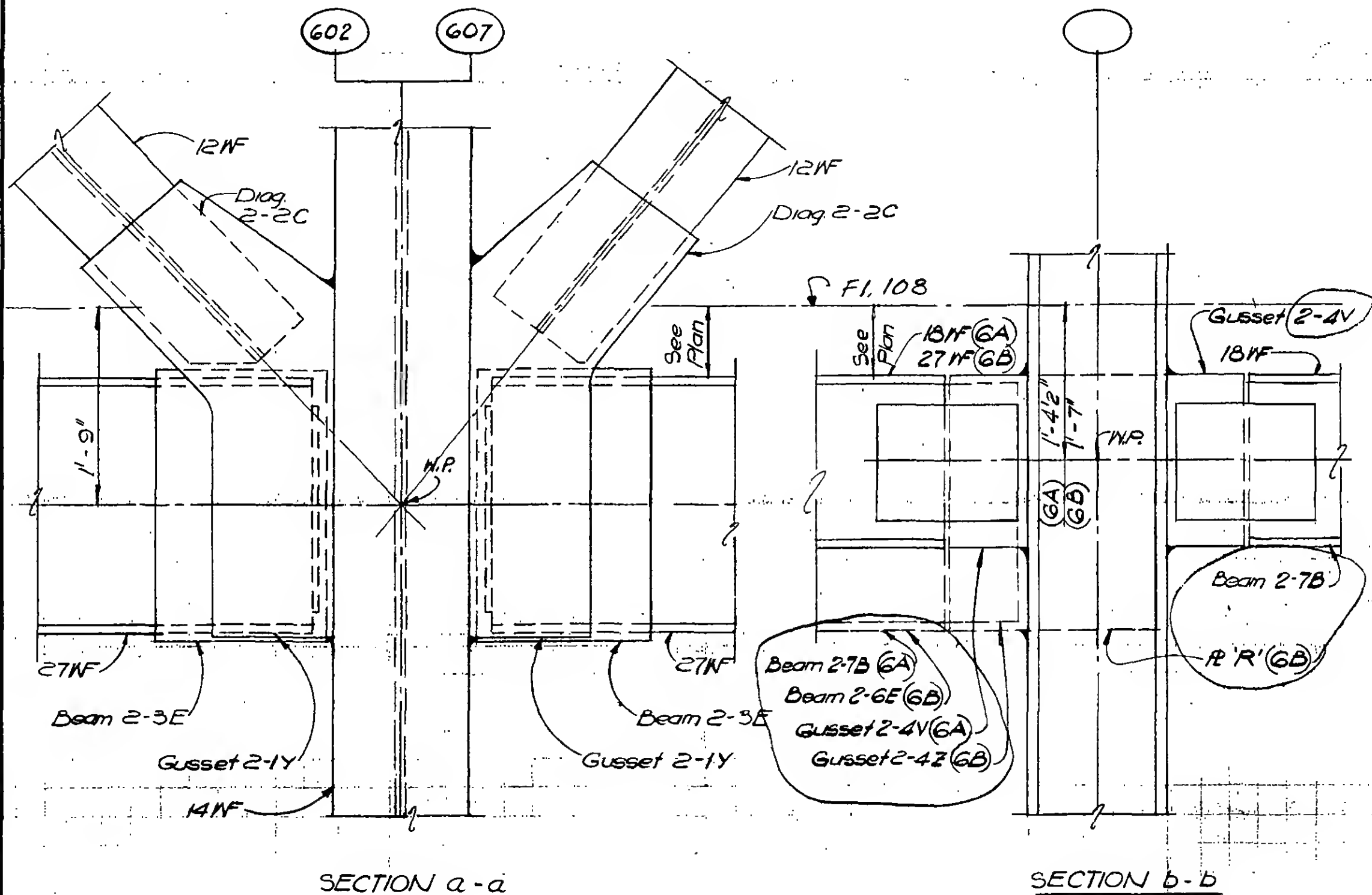
P. Ozeki

REVIEWED

9-615-5.3

REVISIONS

5/27/70



ASSIGNED
HWANG

DRAWN
W. CARKE

REVIEWED
Drakos

DETAIL 15-6A (col. 602 as shown)

DETAIL 15-6B (col. 607 opp. hand as noted)

9-AB/5-6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

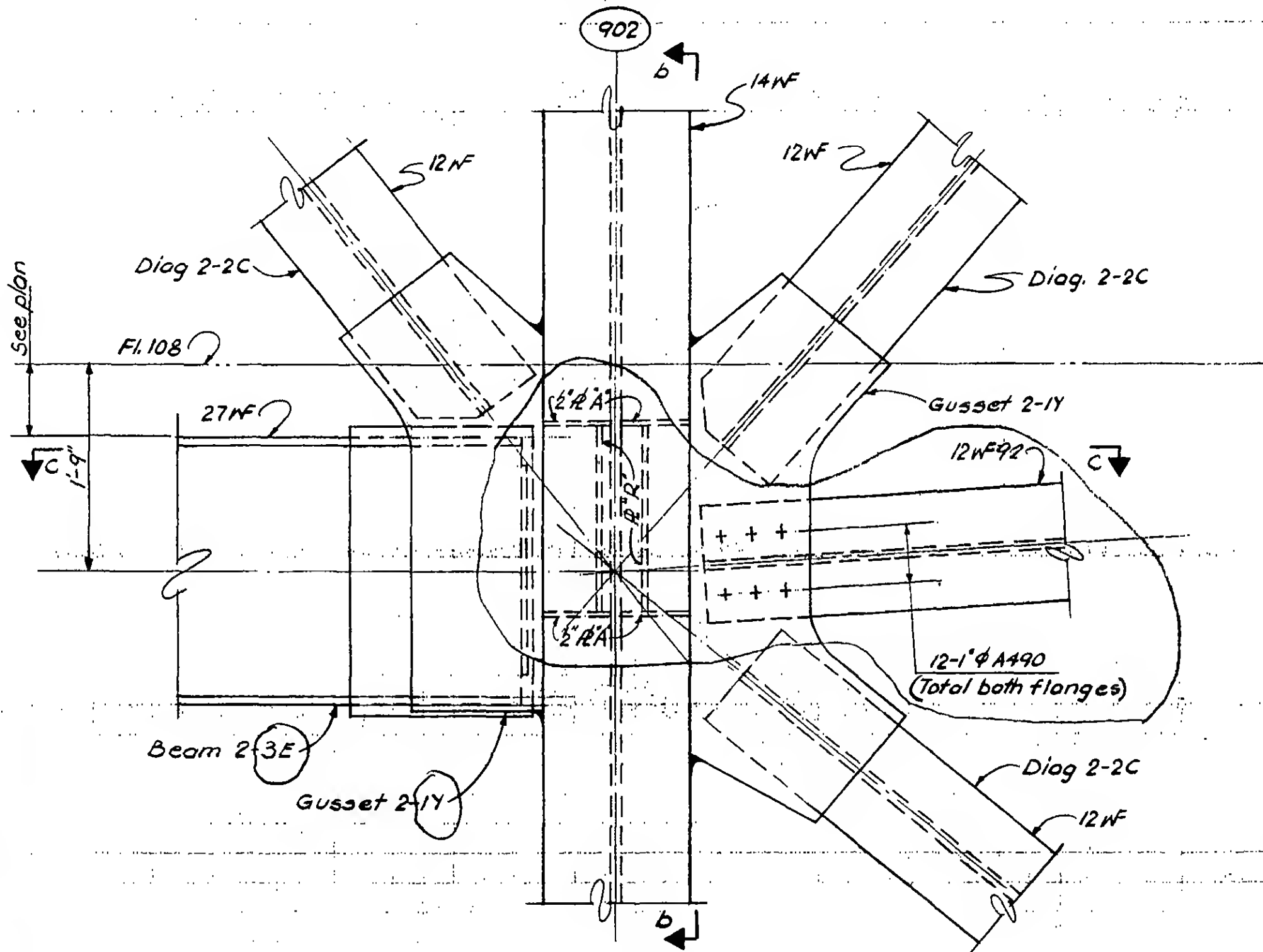
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAIL-FL 108

DATE 4-1-70

REVISIONS

5-27-70



Section a-a
DETAIL 15-7



DESIGNED

DRAWN
D. Huggins

REVIEWED

E. Drakos

9-AB/5-7.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

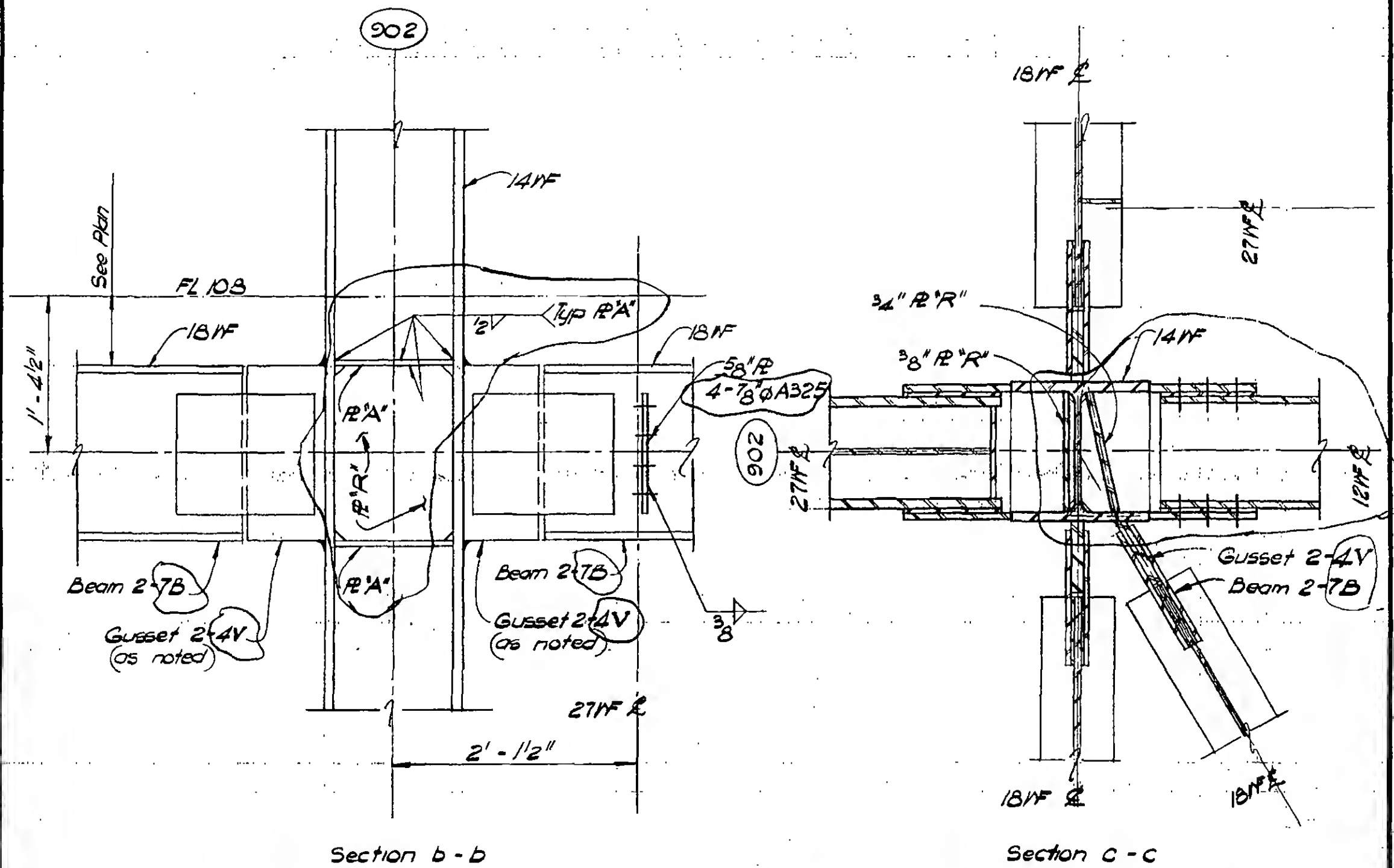
FL 107 - PH CONNECTION DETAILS - FL 108

DATE

4-1-70

REVISIONS

5-27-70



DESIGNED

H. Van

DRAWN

N. Clarke

REVIEWED

E. Drakos

9-AB/5-7-8

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

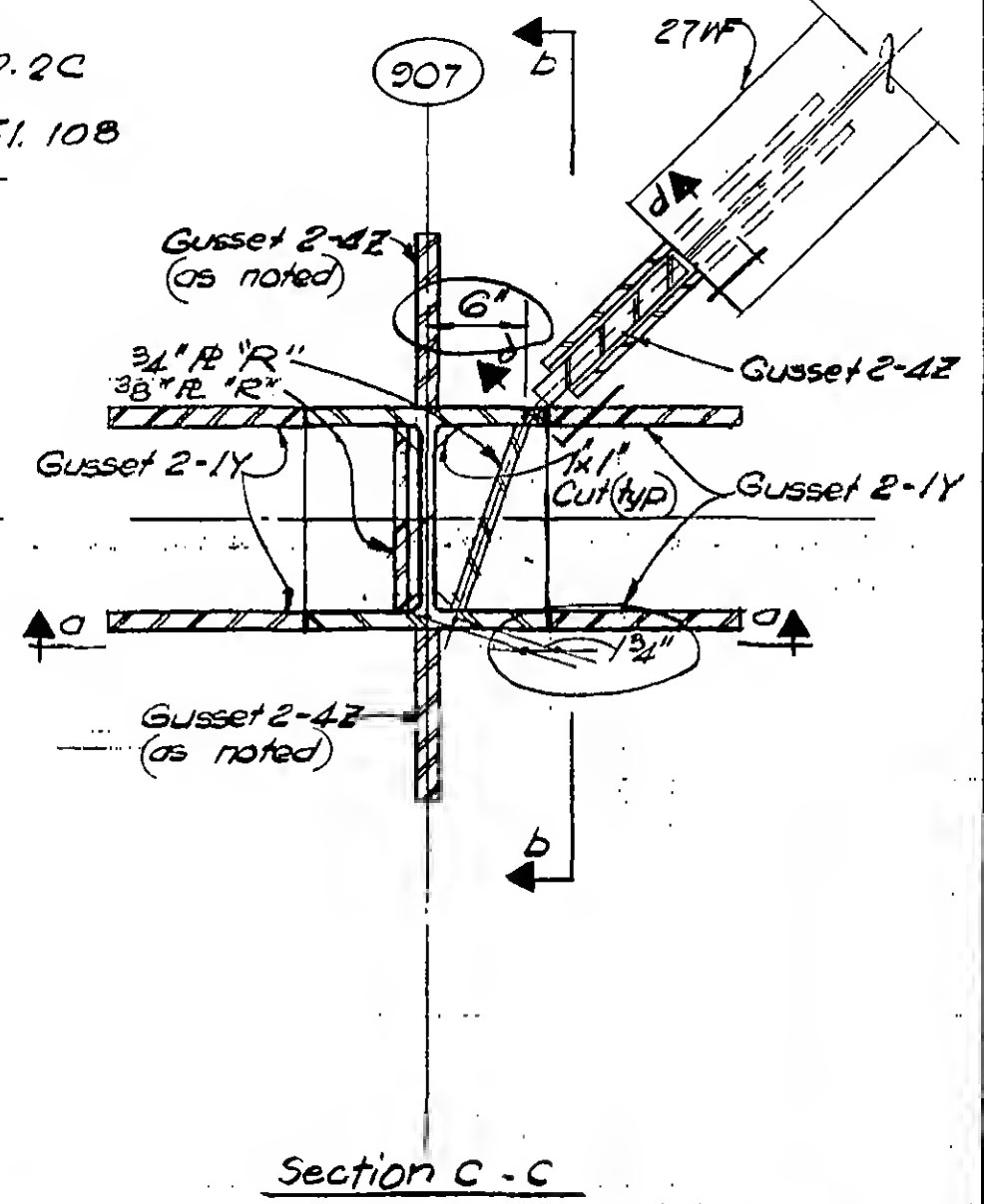
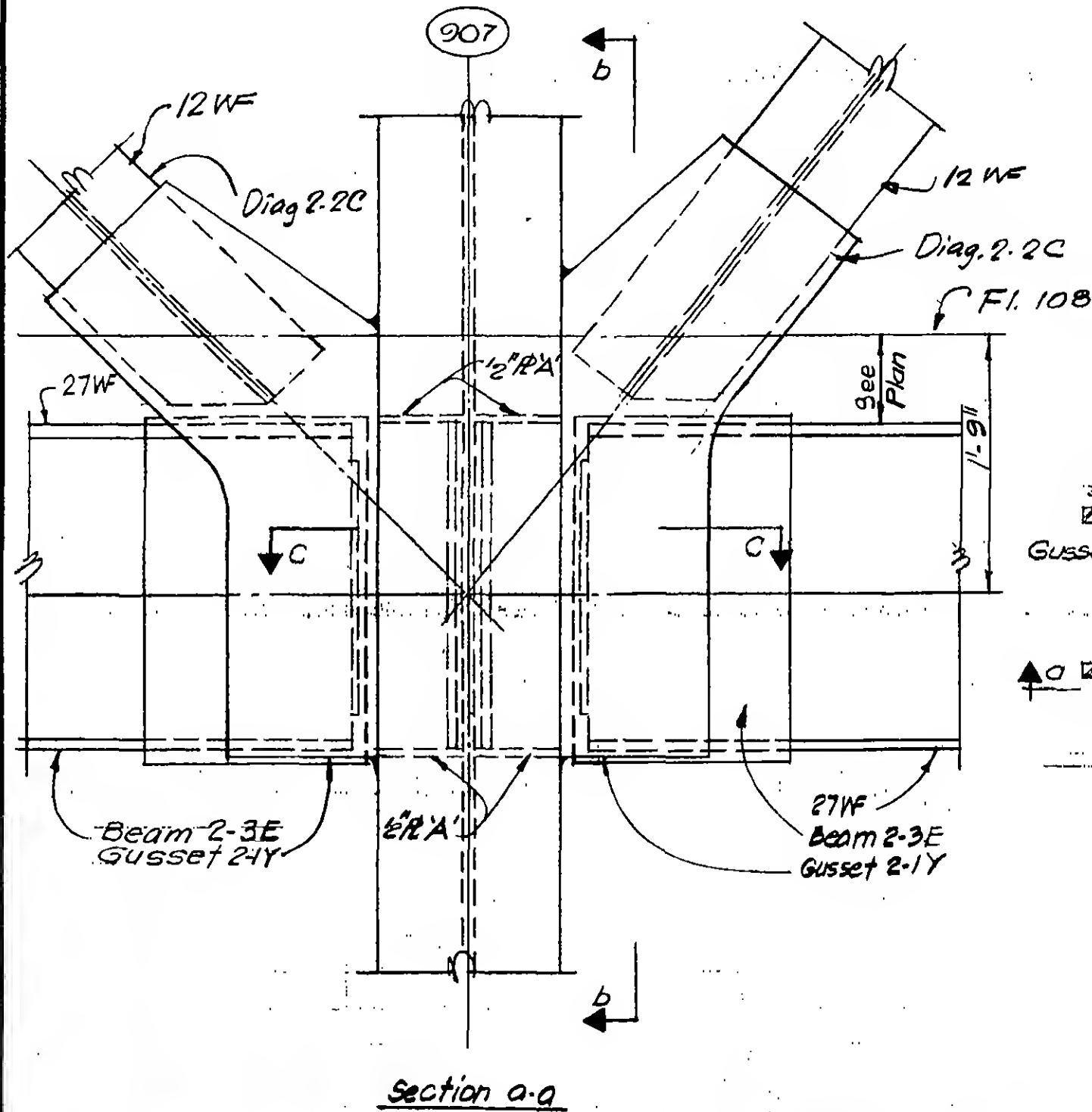
FL. 107-PH CONNECTION DETAIL - FL. 108

DATE

4-1-70

REVISIONS

5/27/70



DESIGNED

Hwang

DRAWN

P. Green

REVIEWED

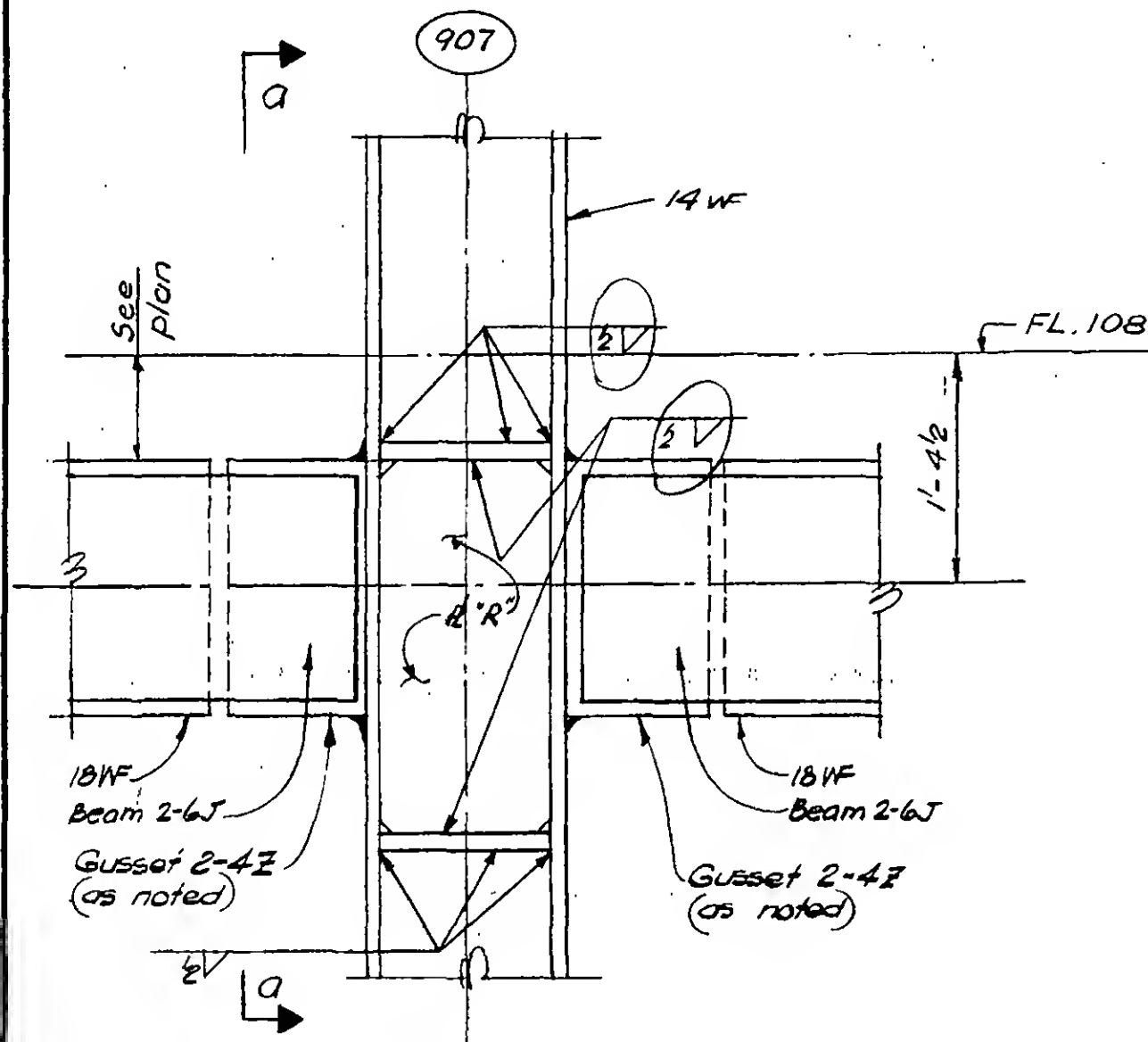
E. Dravos

DETAIL 15-8

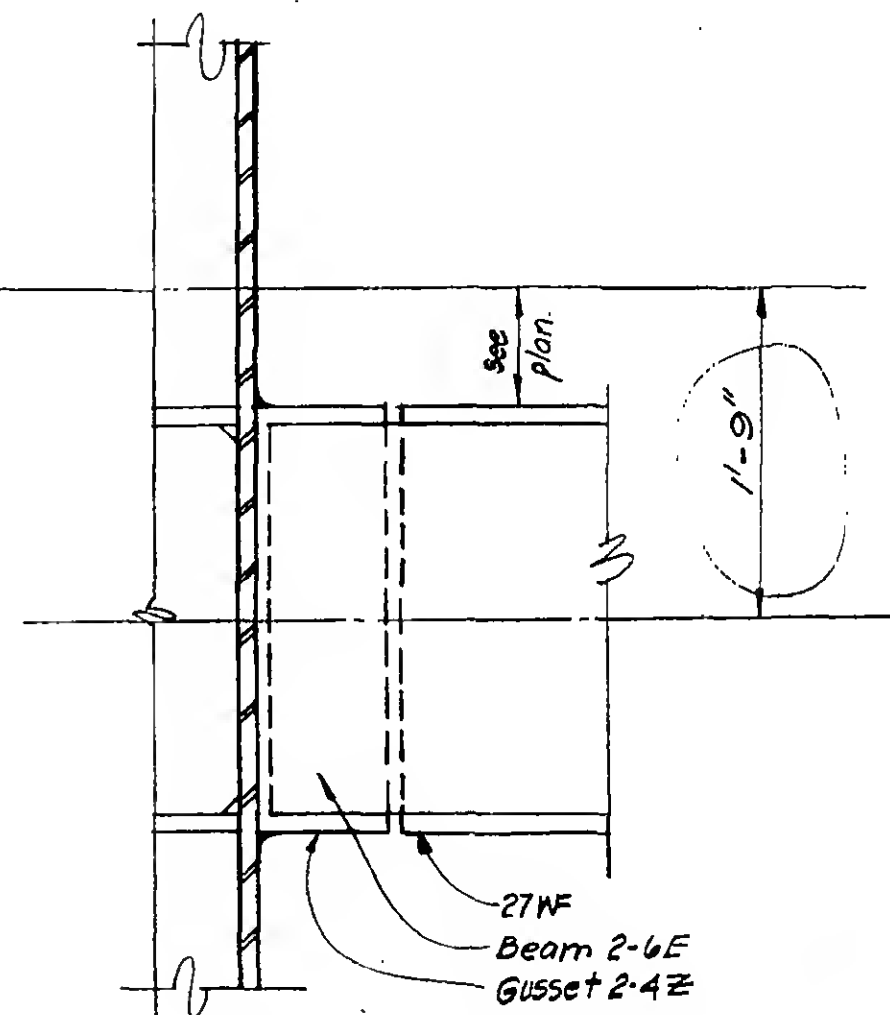
9-AB/5-8.1

REVISIONS

5/27/70



Section b - b



Section d-d

DETAIL 15-8



DESIGNED

H WANG

DRAWN

P. Ozeki

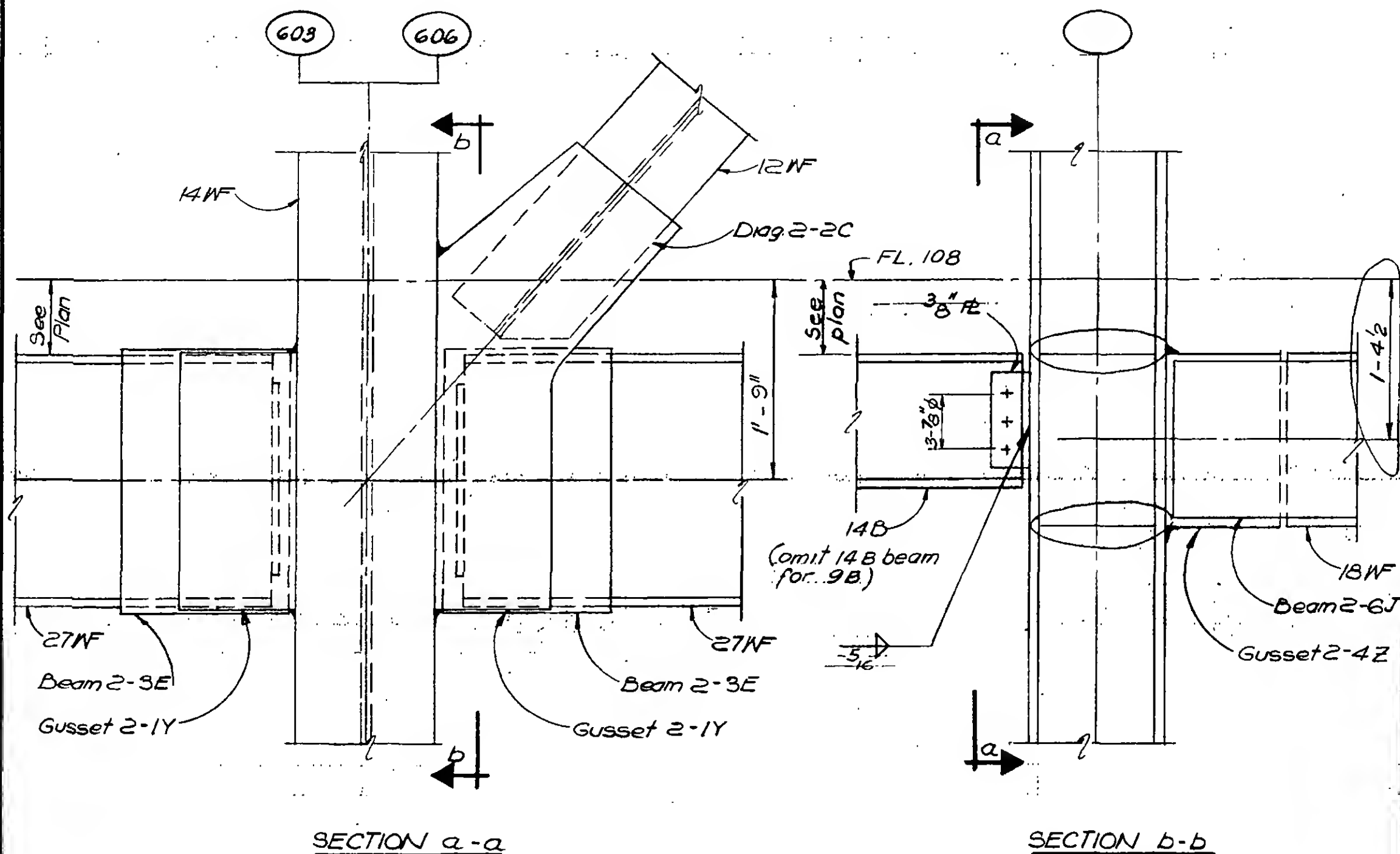
REVIEWED

E. Drakos

9-AB 15-8.2

REVISIONS

5/27/70



DETAIL 15-9A (col. 603, as shown)

DETAIL 15-98 (col. 606, opposite as noted)



SIGNED

HWANG

DRAWN

J. Clarke

REVIEWED

Draxos

9-AB/5-9

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

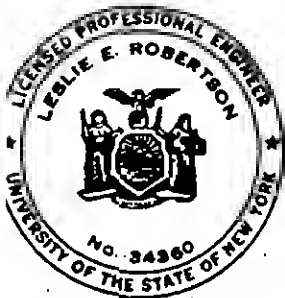
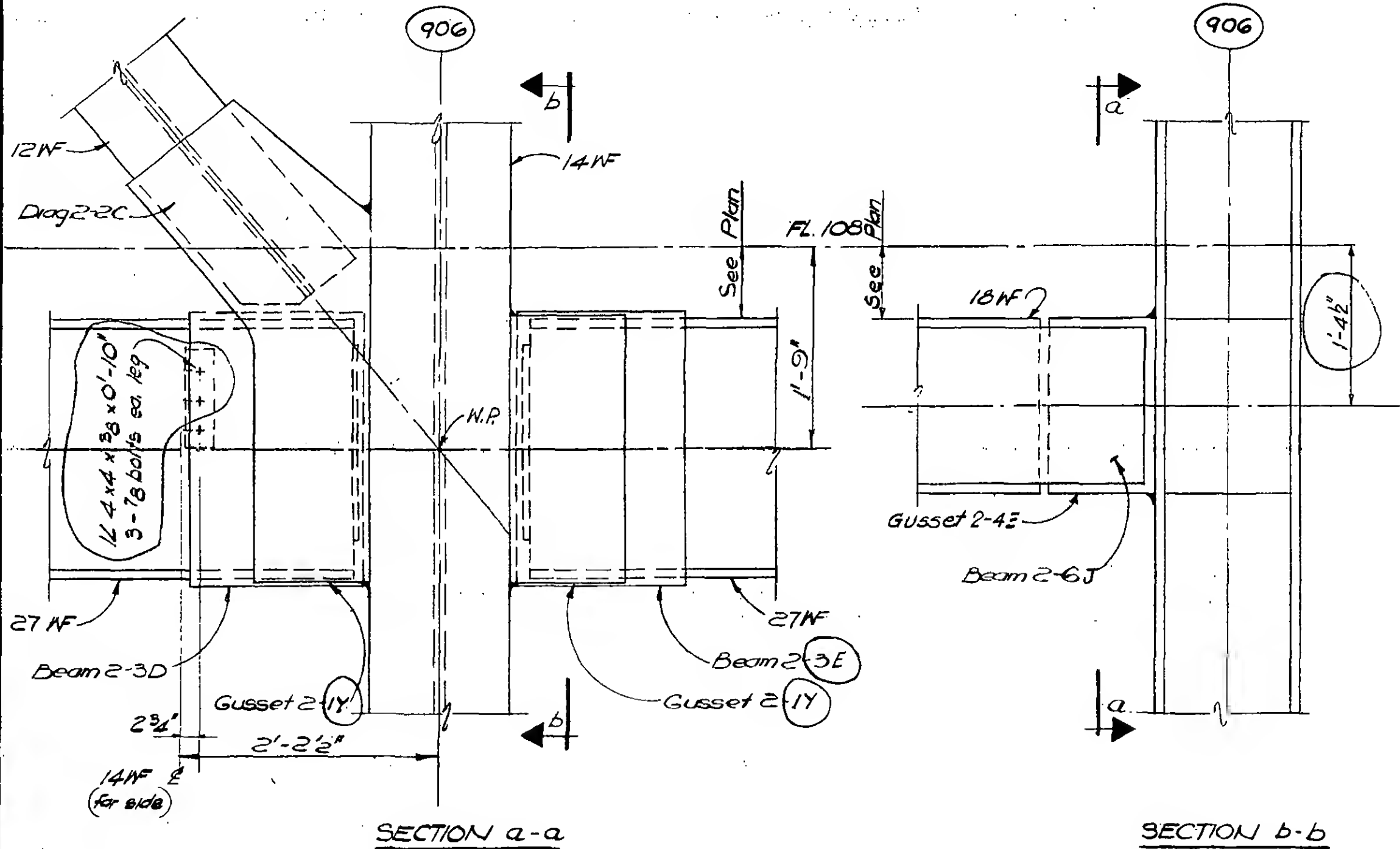
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH, CONNECTION DETAIL - FL 108

DATE 4-1-70

REVISIONS

5/27/70



SIGNED H. Hwang

DRAWN W. Clarke

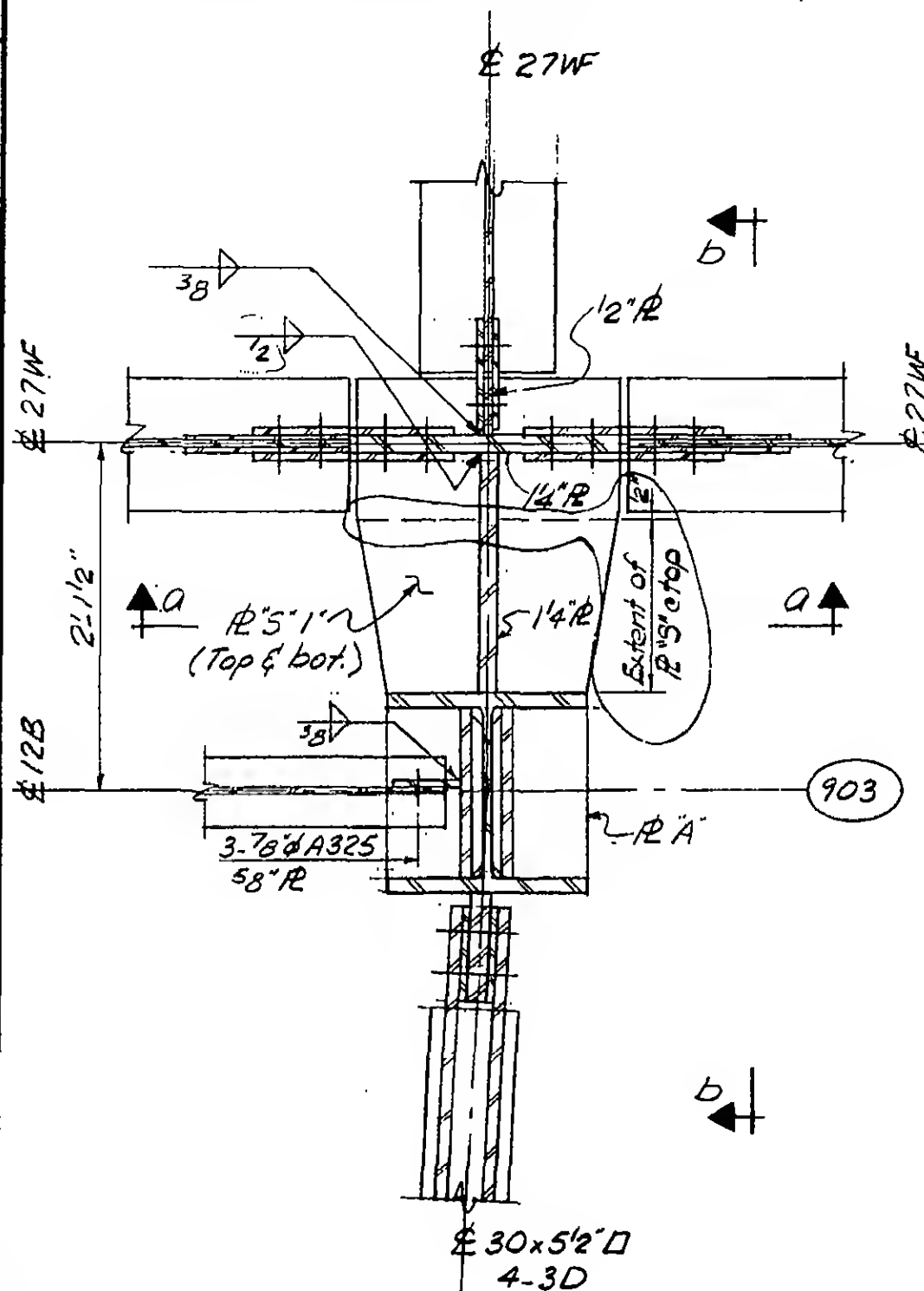
REVIEWED E. Drakos

9-AB/5-10

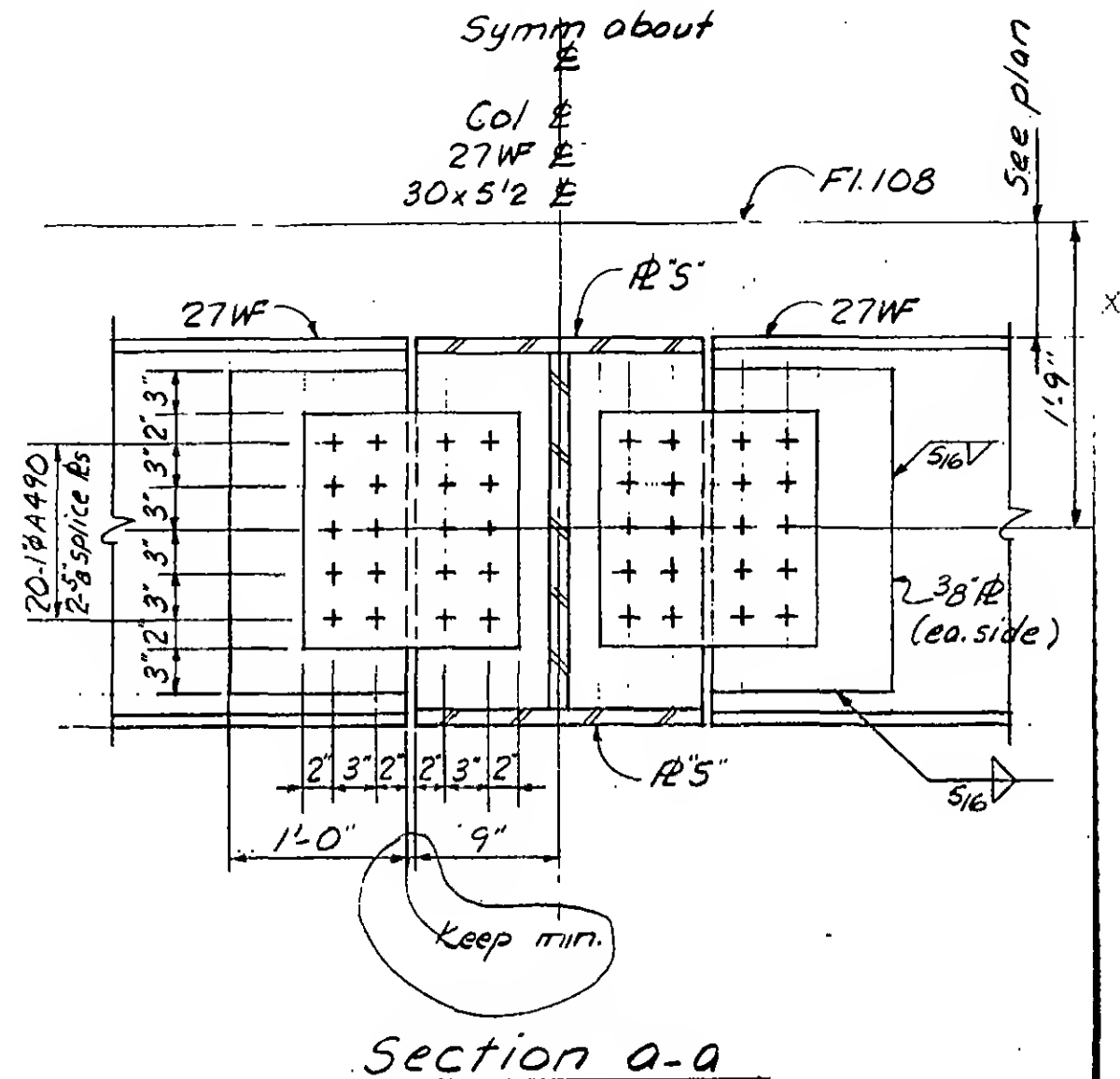
REVISIONS

5/27/70

7-15-70



PLAN



Section a-a



DESIGNED

Ar. Voss

DRAWN
A. FRANQUI

REVIEWED

E. Dravos

9-AB15-11.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL. 107-PH CONNECTION DETAIL-FL. 108

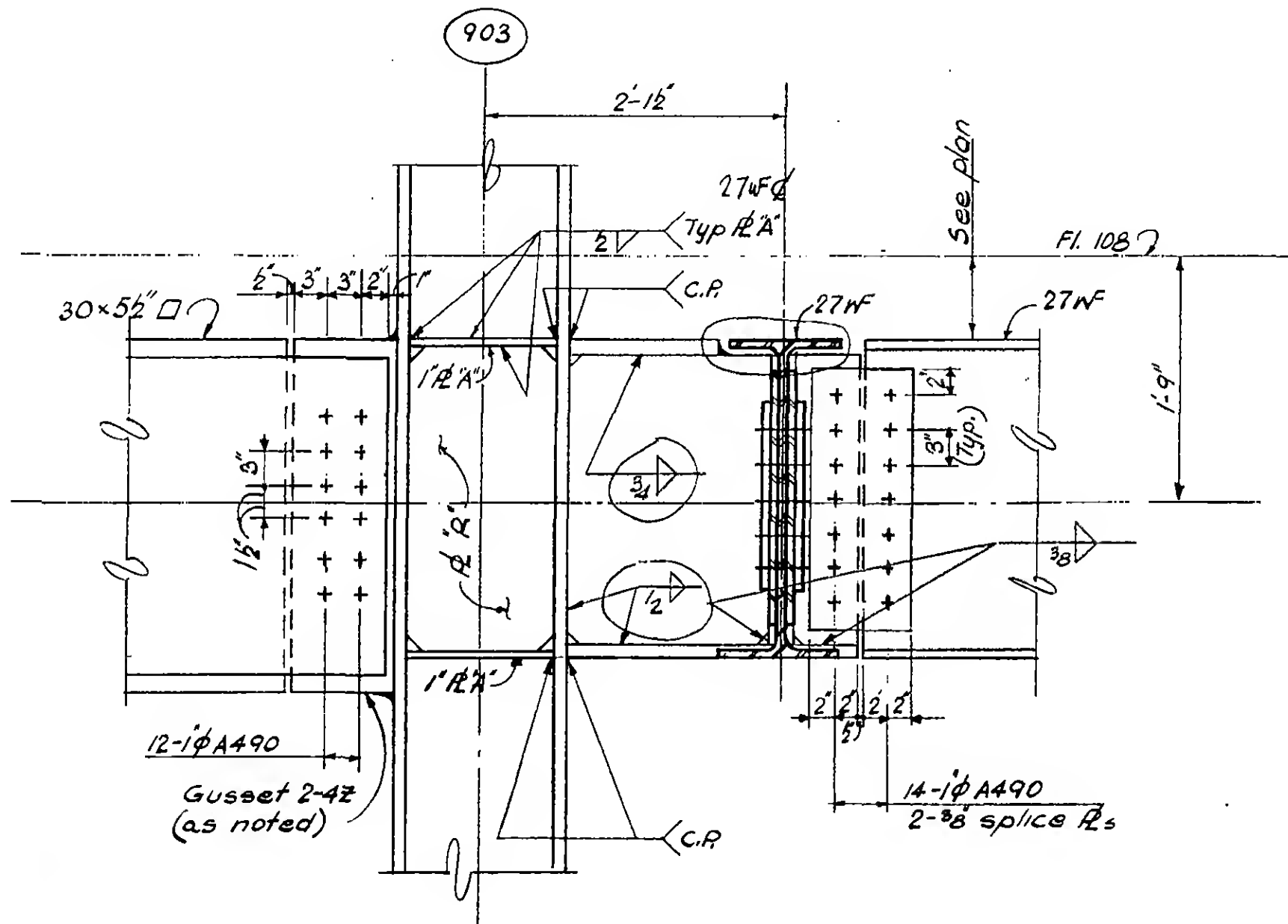
DATE

4-1-70

REVISIONS

5-27-70

7-15-70

Section b-b

DESIGNED

H. Van

DRAWN

D. Huggins

REVIEWED

E. Drakos

9-AB15-11.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

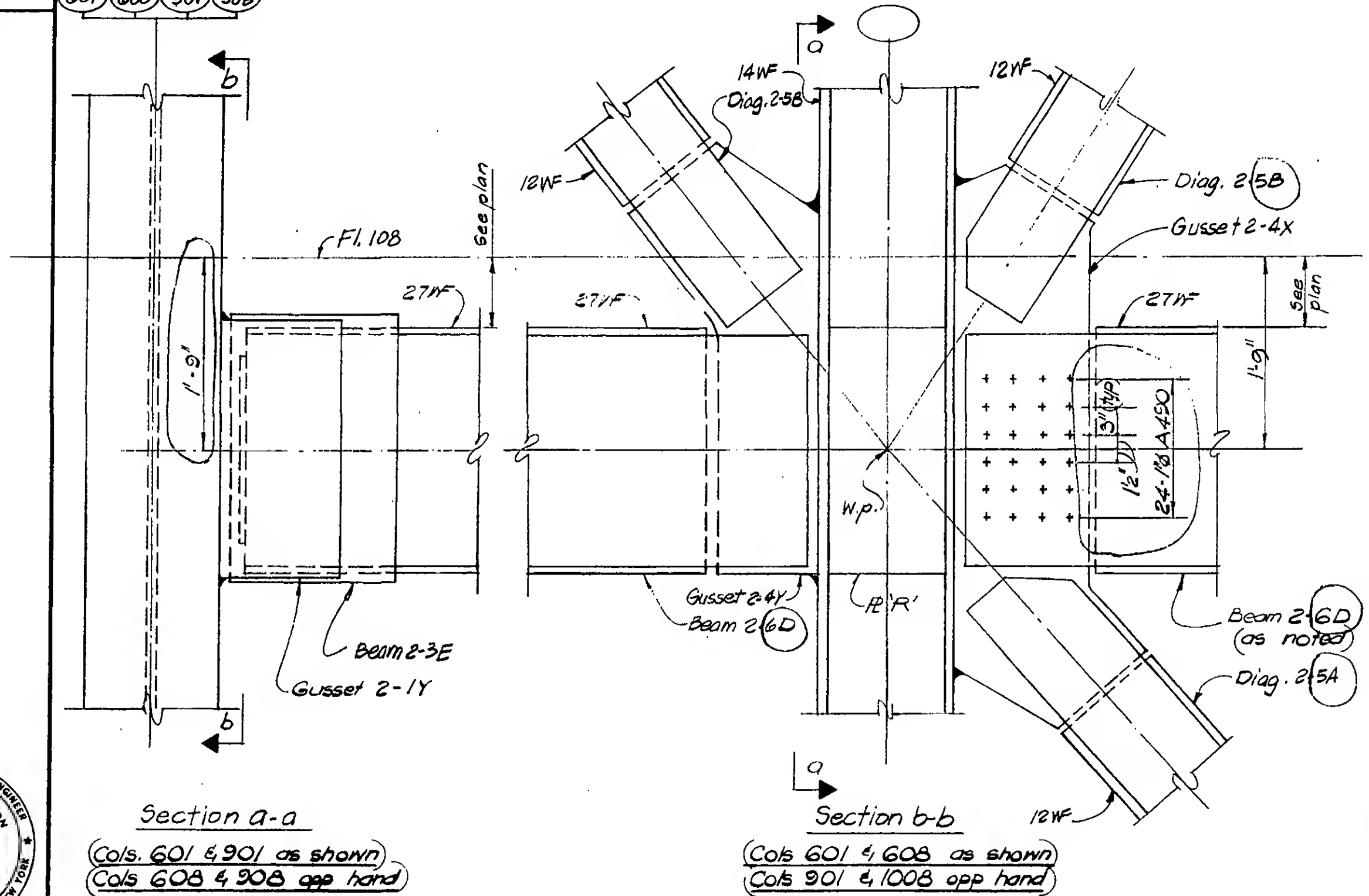
TITLE FL 107-RH. CONNECTION DETAILS - FL 108

DATE 5 - -70

REVISIONS

5/27/70

(601) (608) (901) (908)

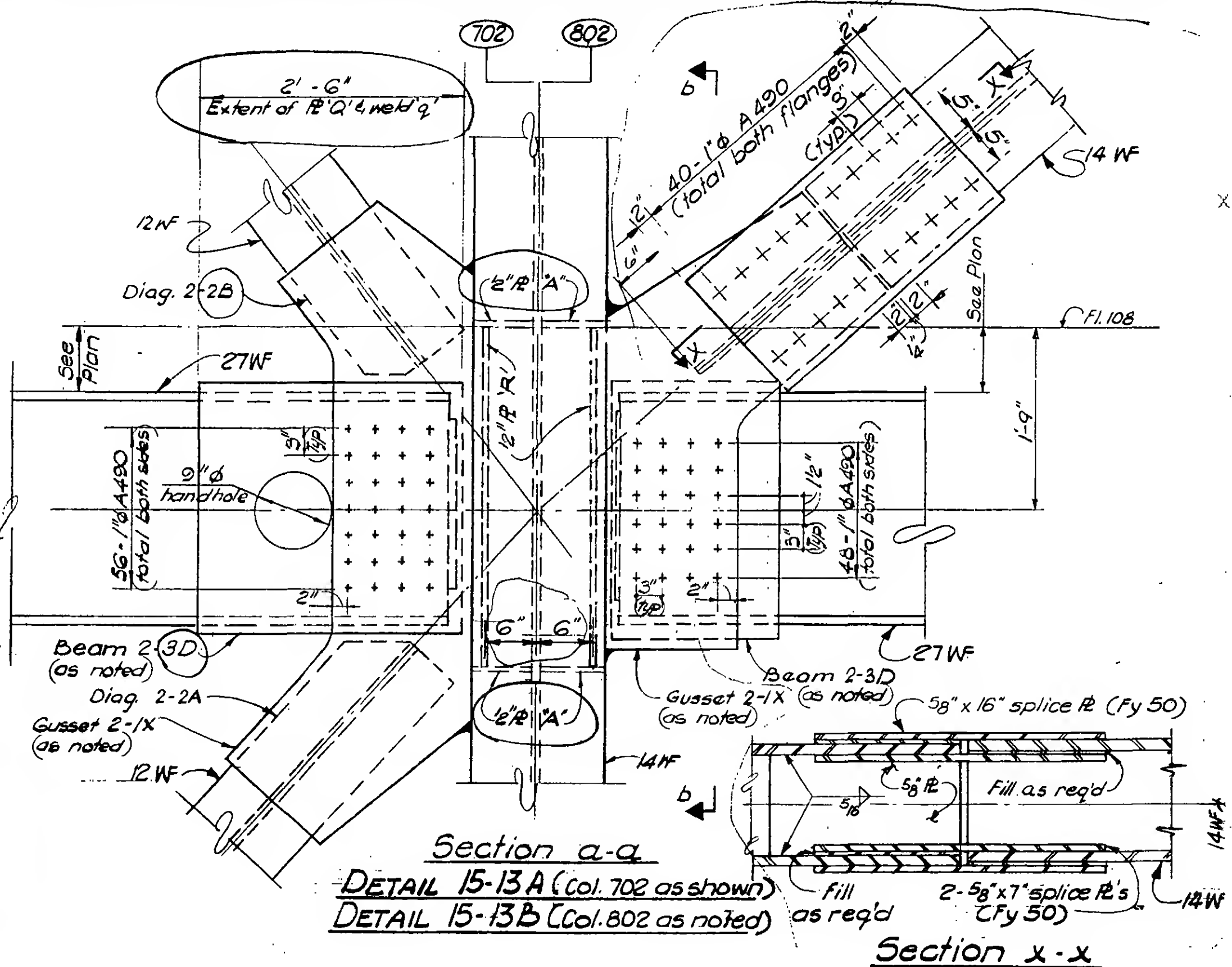
DESIGNED
K. HwangDRAWN
P.M. OzekiREVIEWED
E. Drakos

DETAIL 15-12

9-AB/5-12

REVISIONS

5/27/70



DESIGNED

H. Van

DRAWN

D. Huggins

REVIEWED

E. Drakos

9-AB/15-13.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

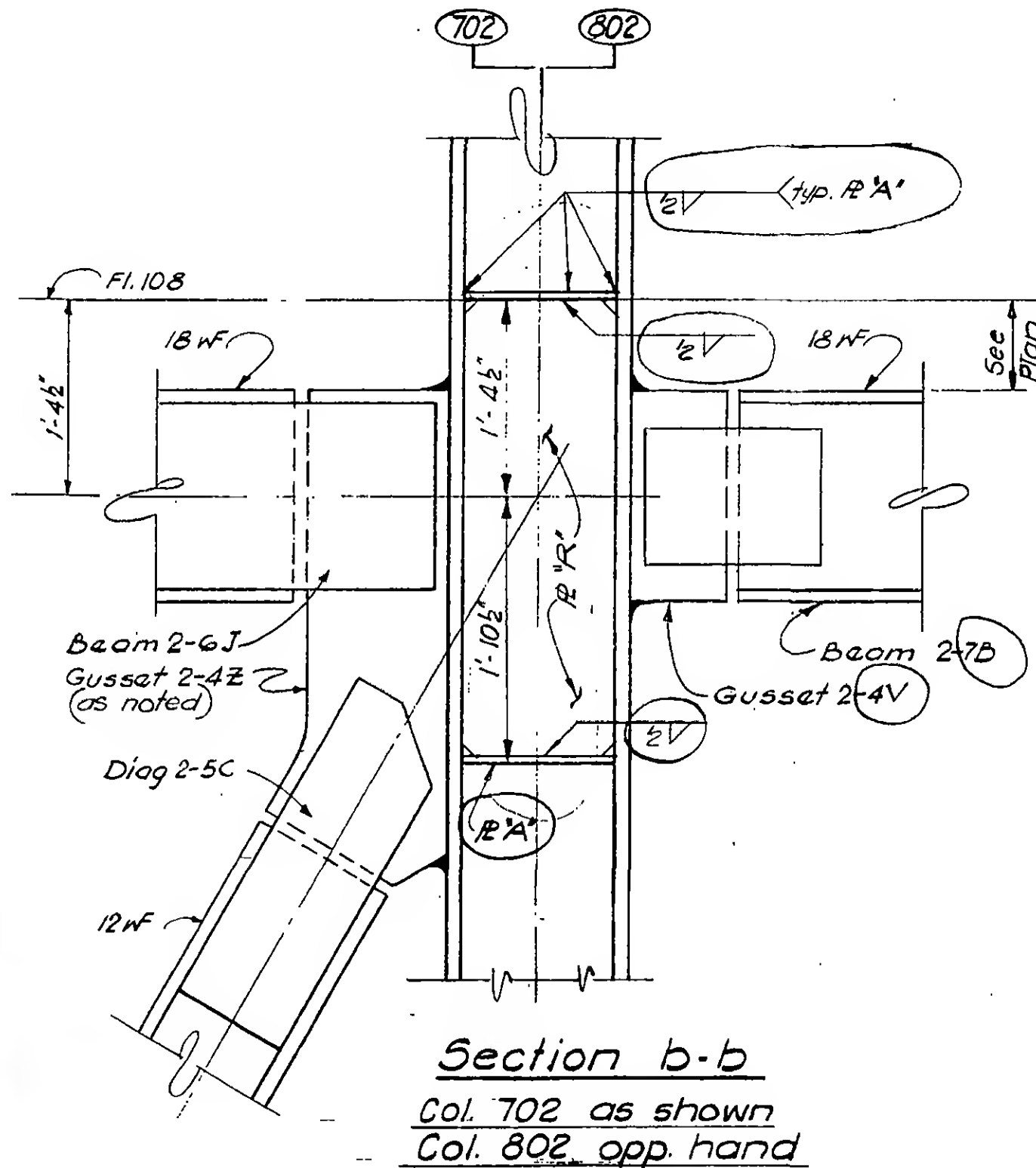
PROJECT THE WORLD TRADE CENTER

TITLE FL.107-PH CONNECTION DETAILS-FL.108

DATE 4-1-70

REVISIONS

5/27/70

DESIGNED
Ar VonDRAWN
D. HugginsREVIEWED
E. Dracos

9-AB 15-13.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

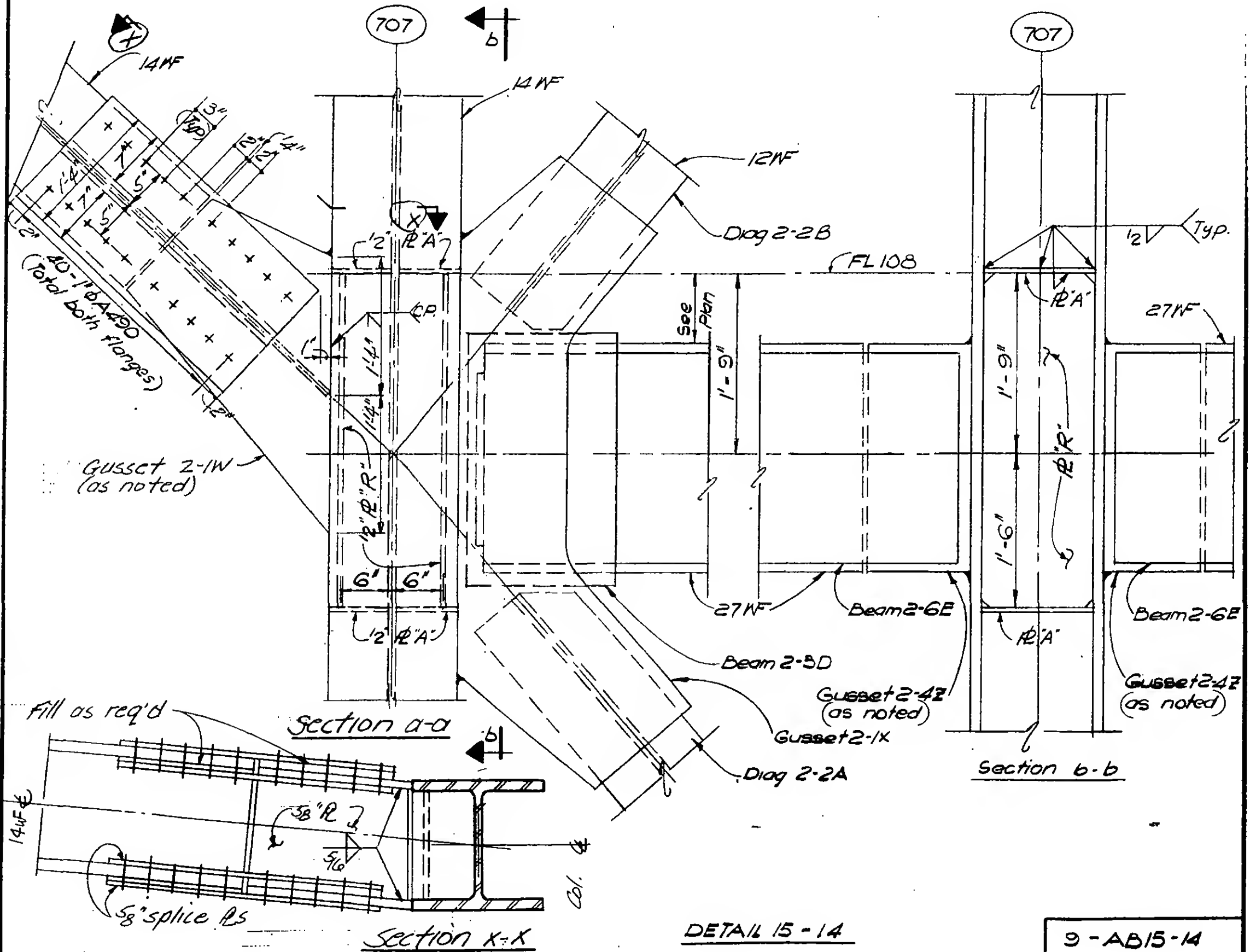
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS-FL 108

DATE 4-1-70

REVISIONS

5/27/70
7/8/70



DESIGNED
H. Von
DRAWN
W. Clarke
REVIEWED
E. Dravos

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

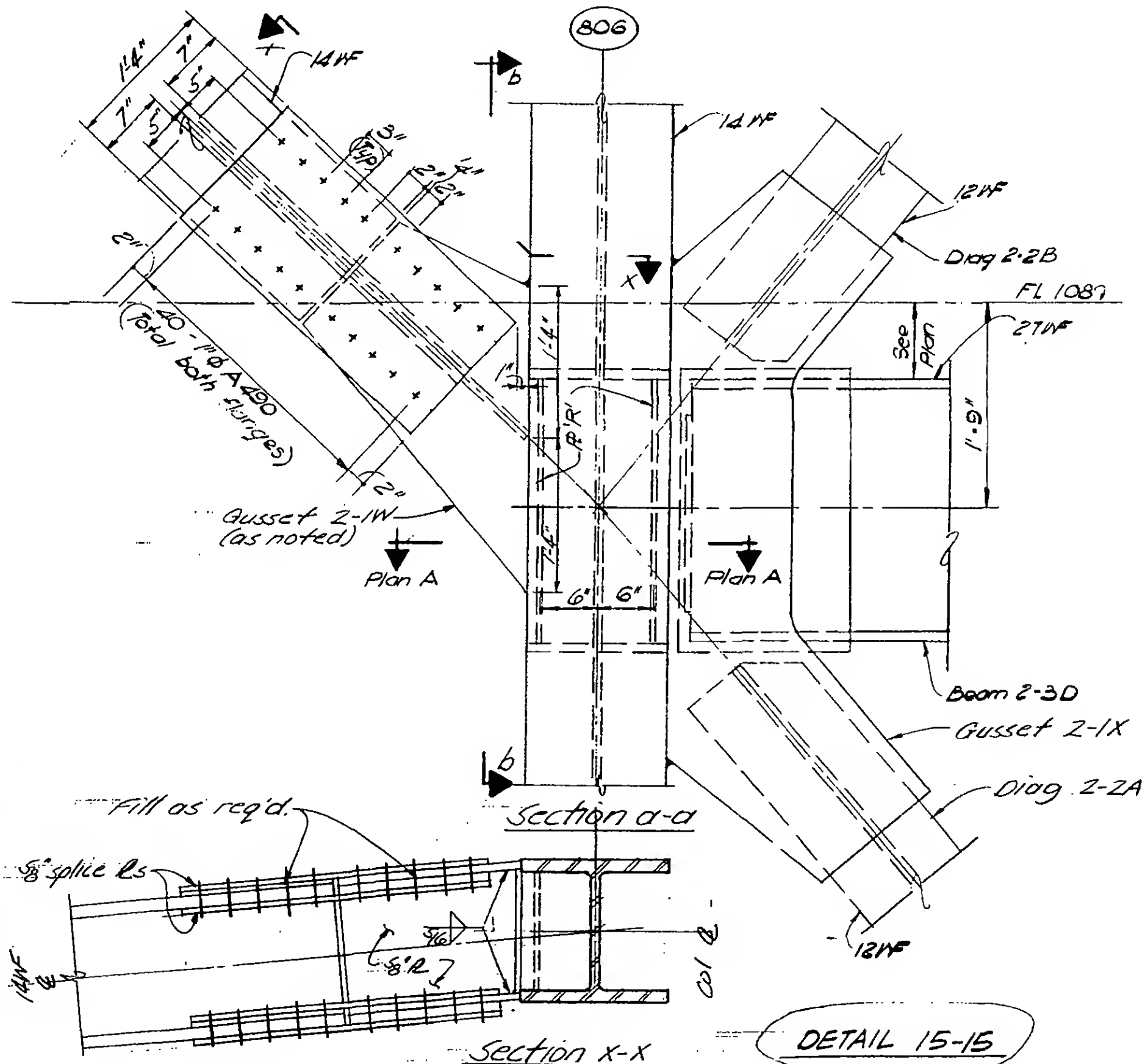
FL 107 - PH CONNECTION DETAILS - FL.108

DATE

^E 4-1-70

REVISIONS

5/27/70
7/8/70



DESIGNED

DRAWN :
W. Clarke

REVIEWED

REVIEWED
E. Drakos

DETAIL 15-15

9 - AB/5-15.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

PL 107 - PH CONNECTION DETAILS - FL 108

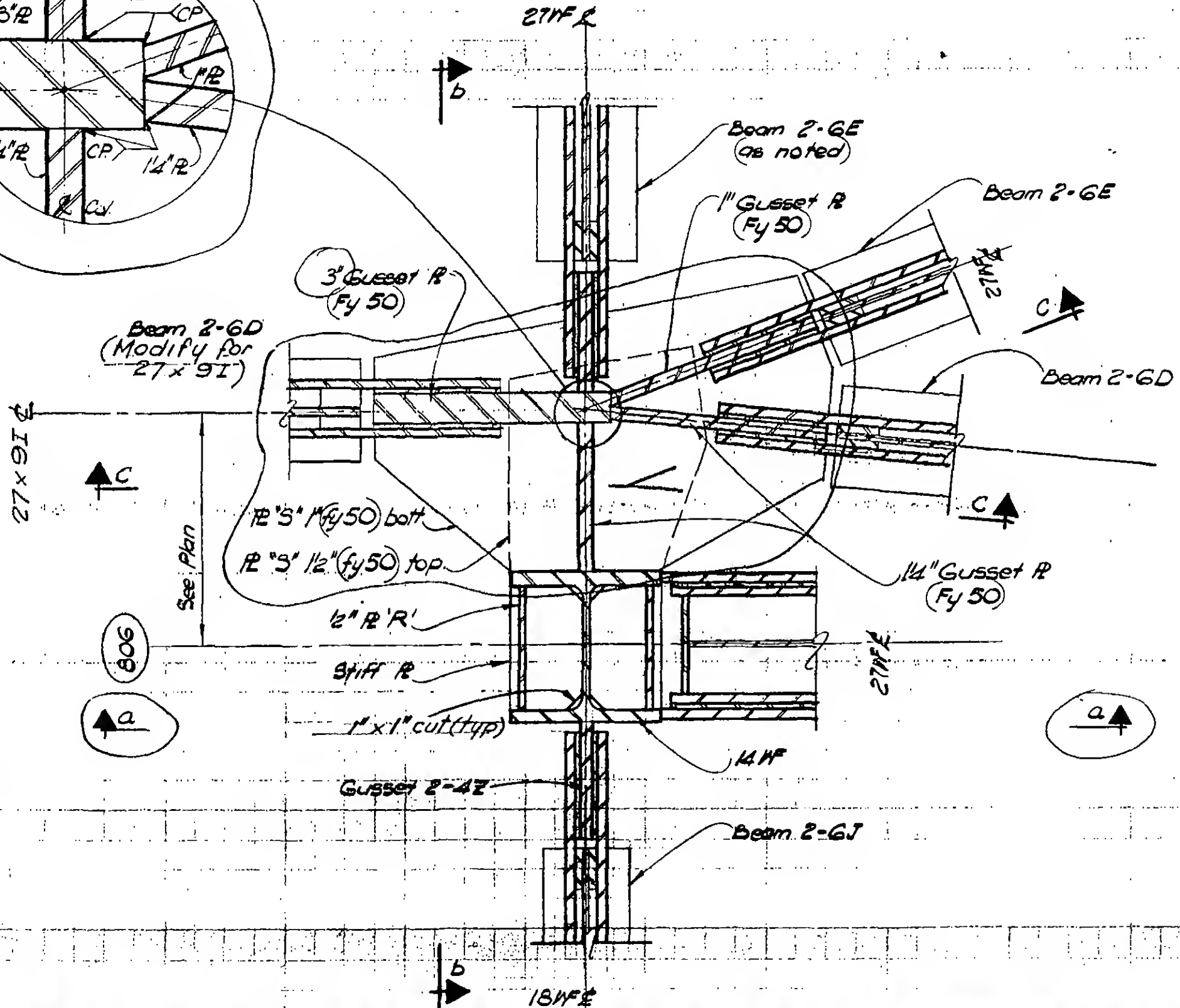
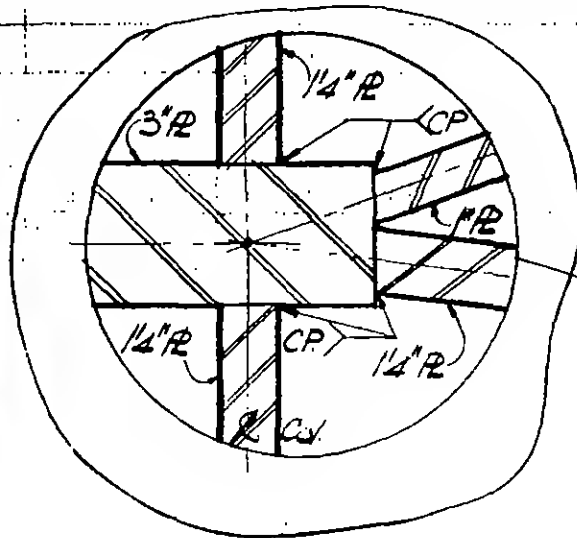
DATE

4-1-70

REVISIONS

5/27/70

7-15-70



SIGNED

W. Von

DRAWN

H. Clarke

REVIEWED

E. Drakos

PLAN A-A

9-AB15-15.2

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - PH CONNECTION

DETAILS - FL 108

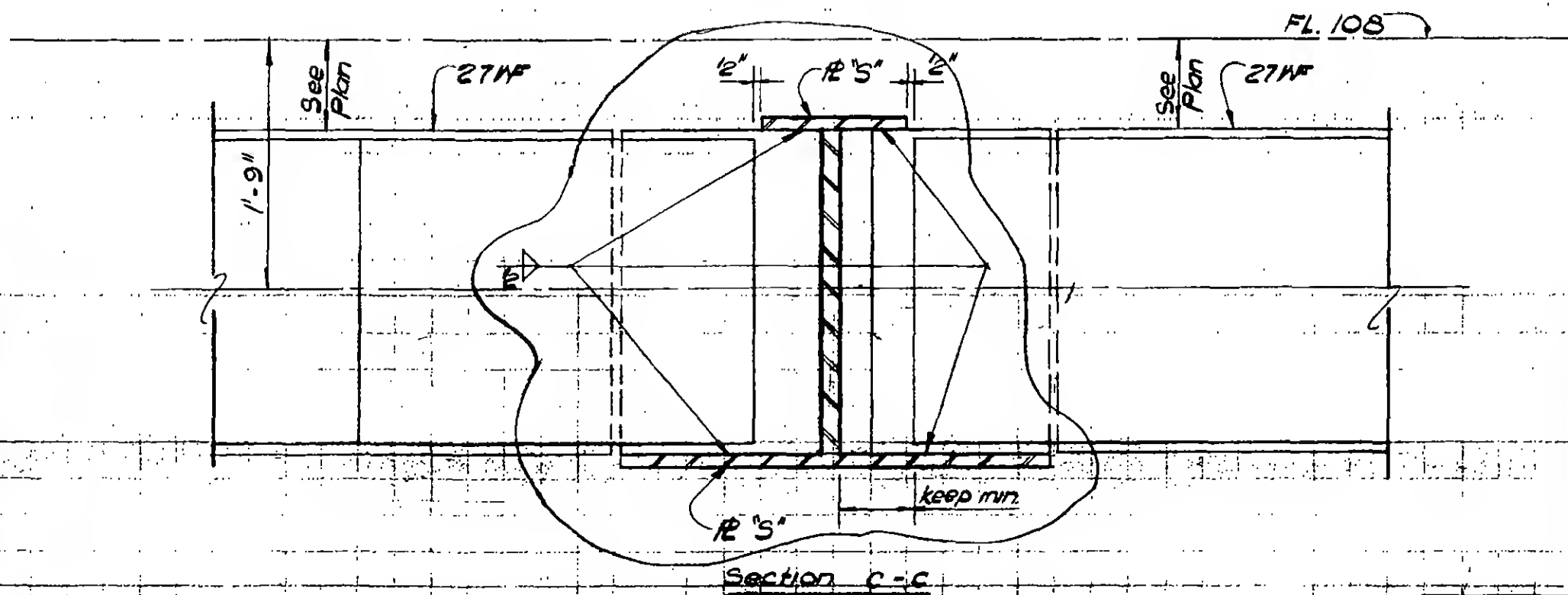
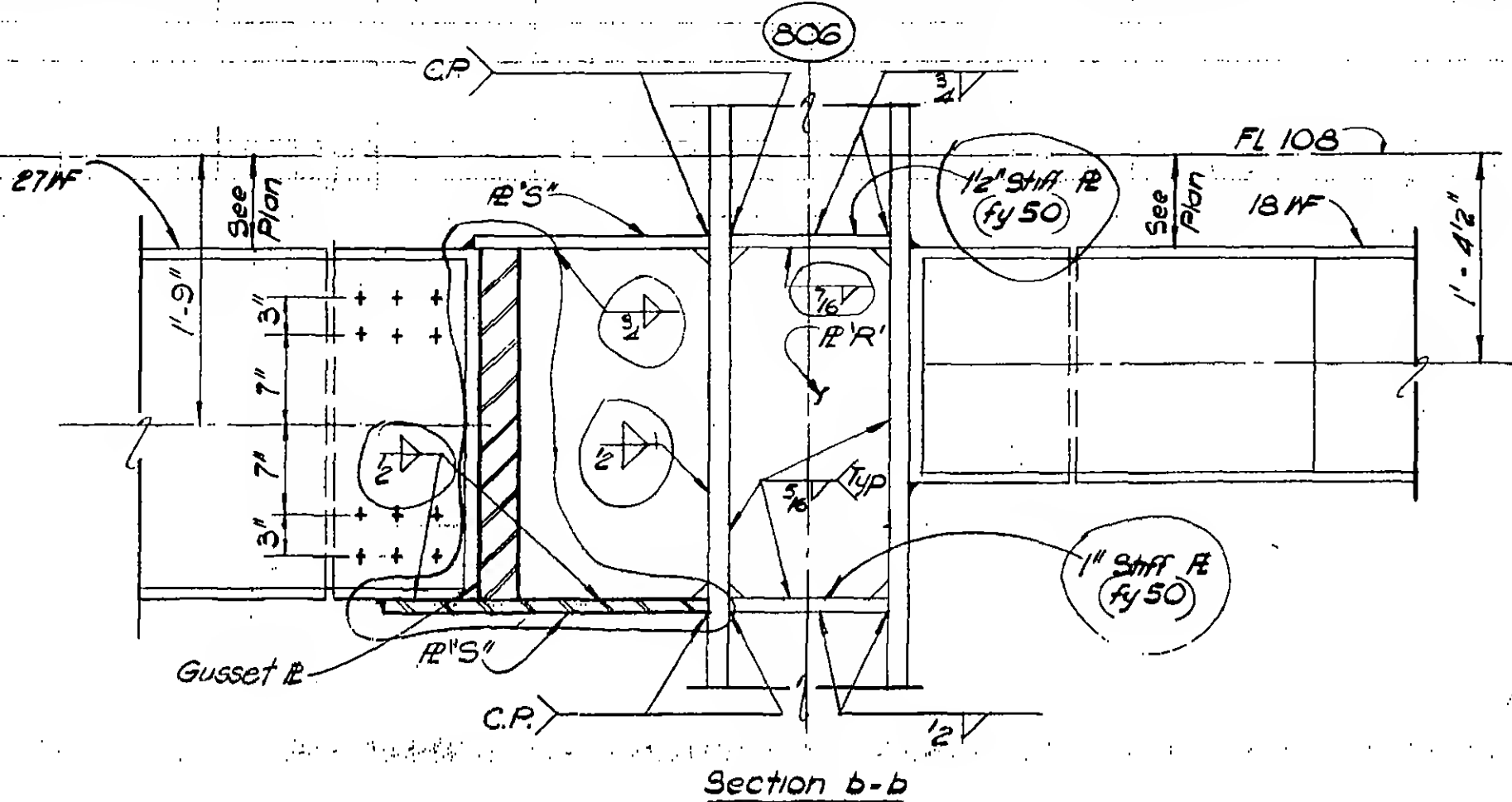
DATE

4-1-70

REVISIONS

5/27/70

7-15-70



DESIGNED

A. Van

DRAWN

H. Clarke

REVIEWED

E. Drakos

D-AB/5-15.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

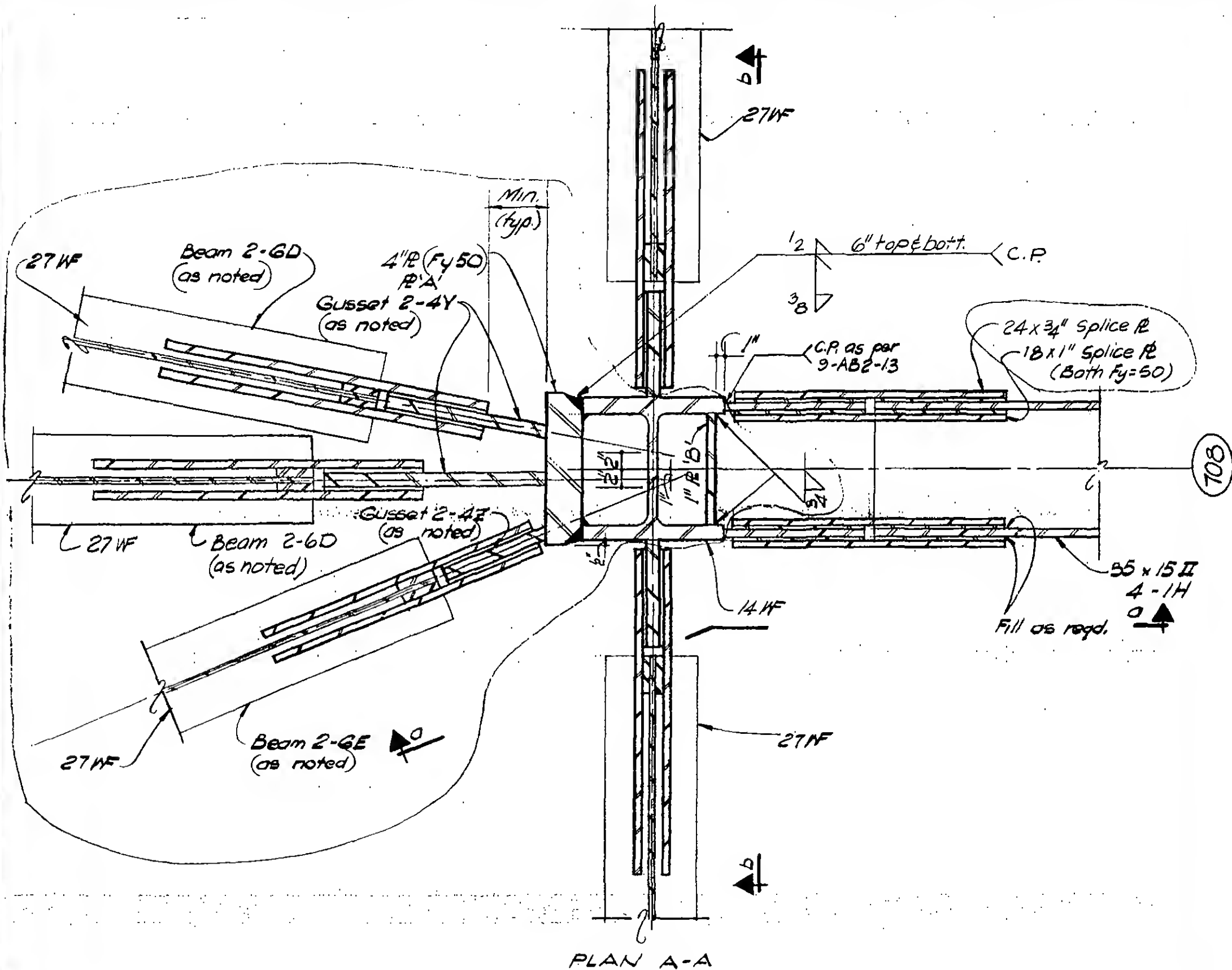
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS-FL 108

DATE 4-1-70

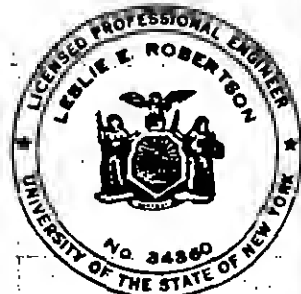
REVISIONS

5/27/70



DETAIL 15-16

9-AB/5-16.1



DESIGNED

DRAWN

H. Clarke

REVIEWED

E. Dravos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

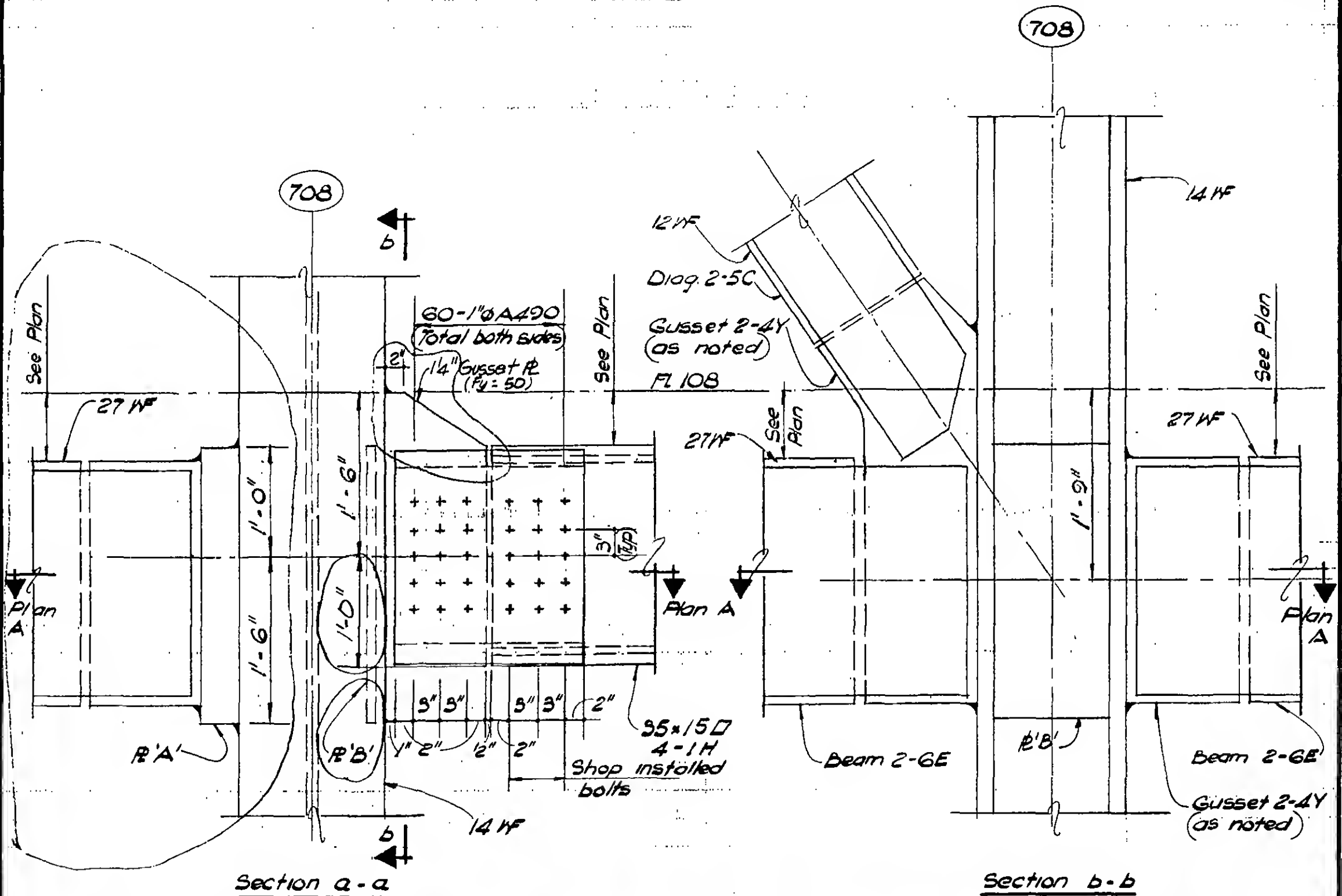
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - FL. 108

DATE 4-1-70

REVISIONS

5/27/70



DESIGNED

DRAWN

W. Clarke

REVIEWED

E. Drakos

9-AB/5-16.2

PROJECT

THE WORLD TRADE CENTER

TITLE

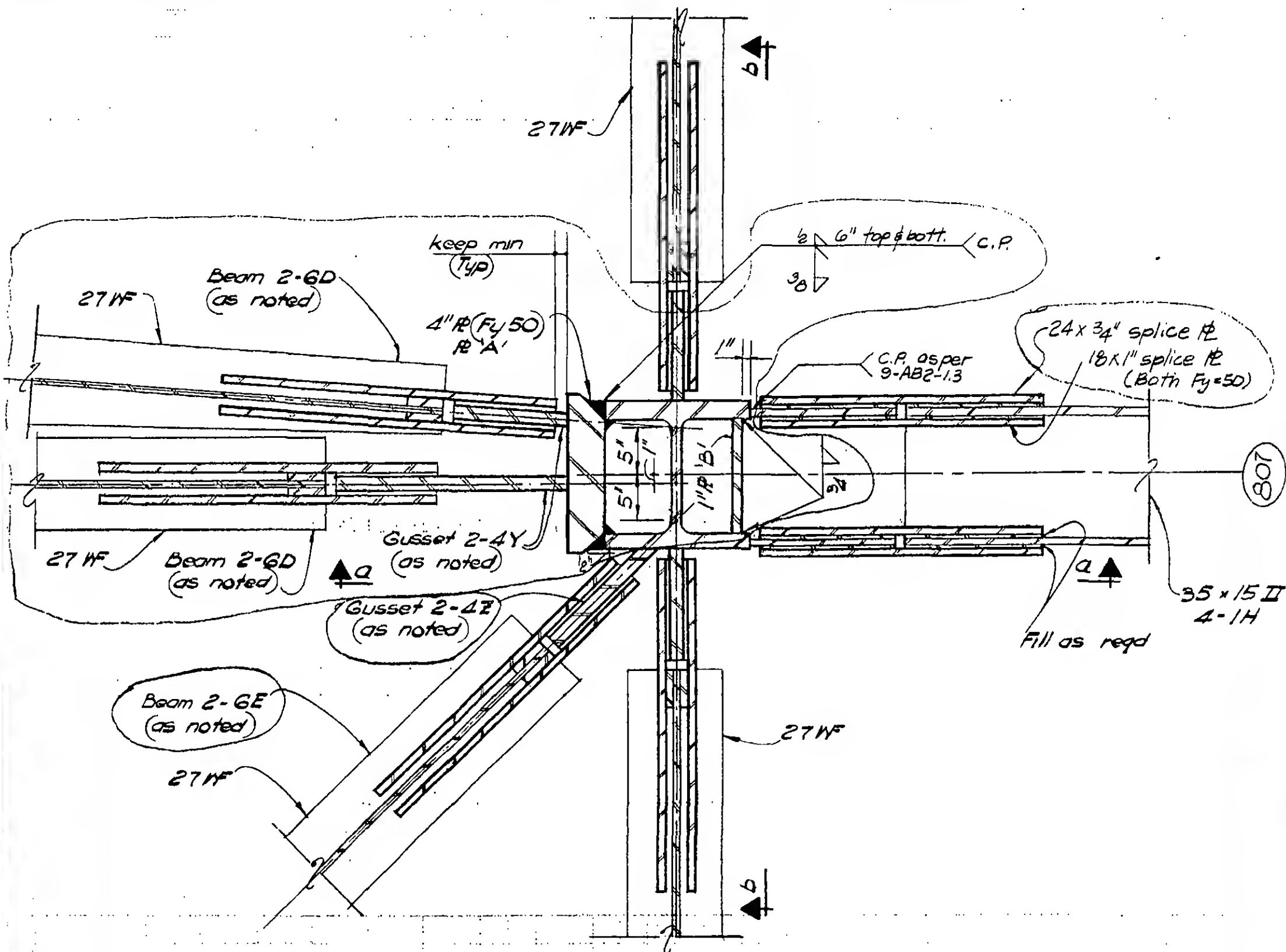
FL 107 - PH CONNECTION DETAILS - FL. 108

DATE

4-1-70

REVISIONS

5/27/70



PLAN A-A

DETAIL 15-17

9-AB/5-17.1



DESIGNED

J. bon

DRAWN

H. Clarke

REVIEWED

E. Orakos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

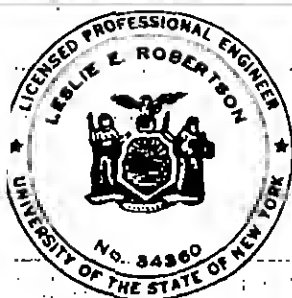
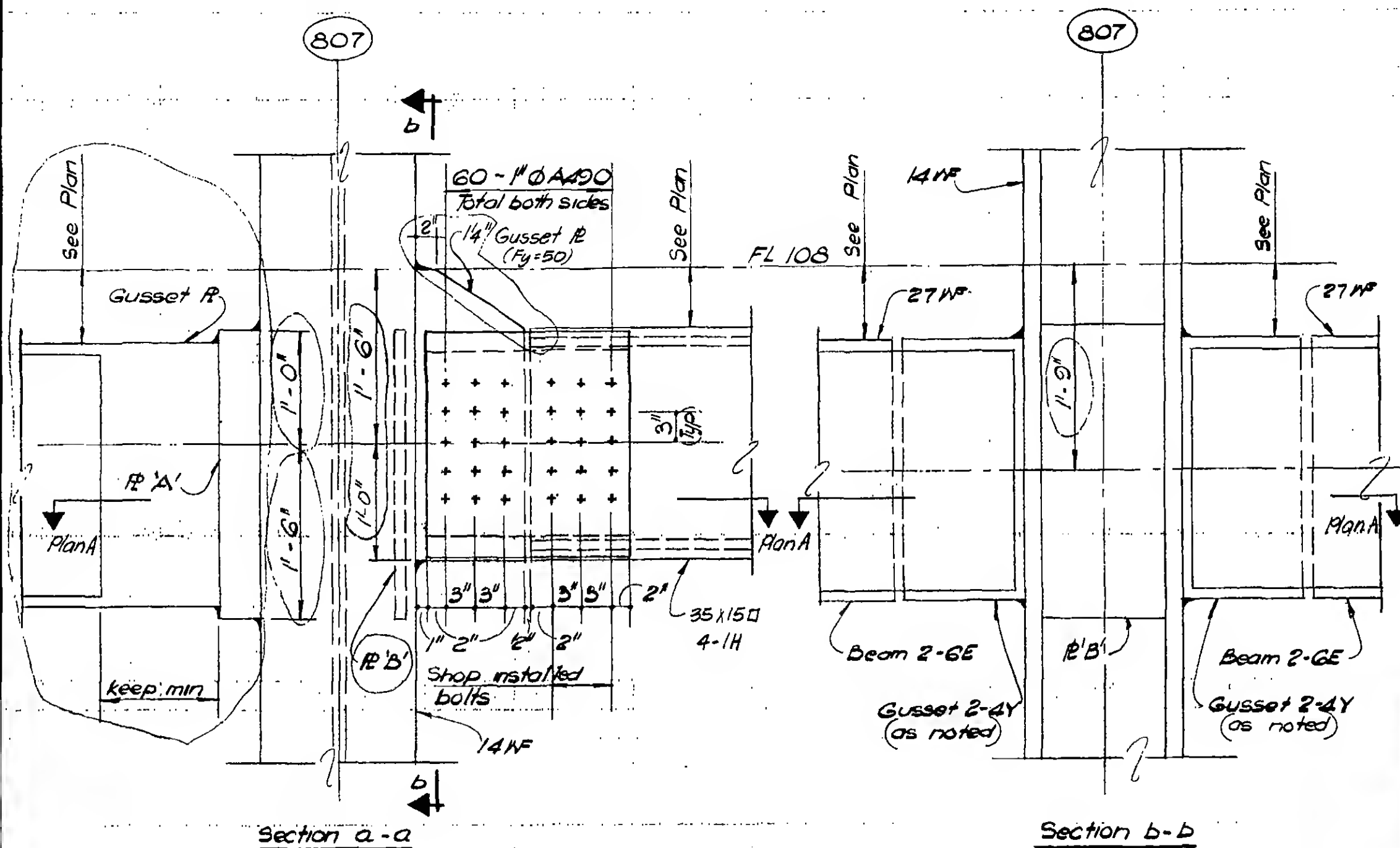
TITLE

FL 107 - PH CONNECTION DETAILS - FL 108

DATE

5-27-70

REVISIONS



DESIGNED

DRAWN

H. Clarke

REVIEWED

E. Oravos

2-AB/5-17.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

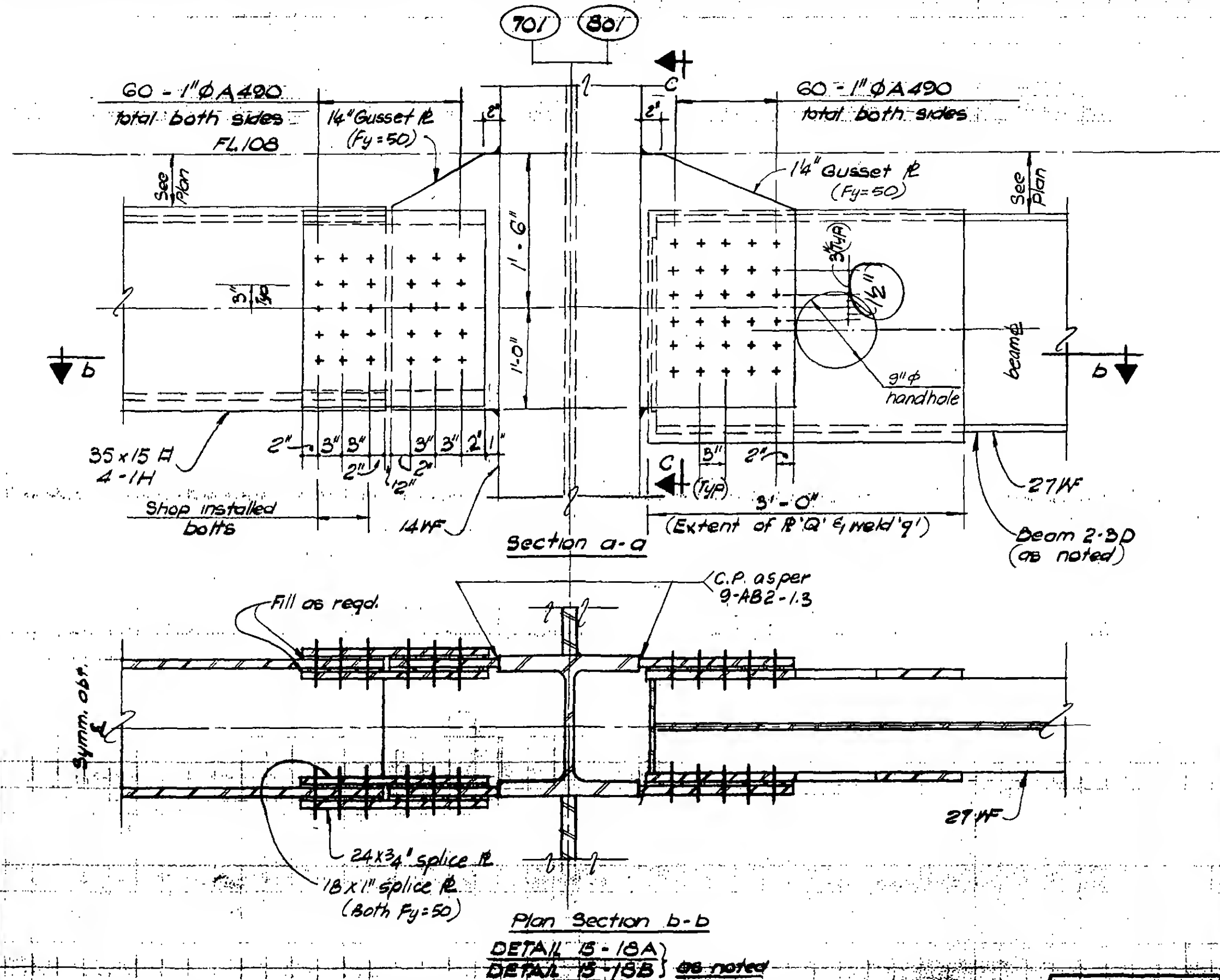
TITLE

FL 107 - PH CONNECTION DETAILS - FL 108

DATE

4-1-70

REVISIONS

5/27/70
7/8/70

DESIGNED

A. V. V.

DRAWN

A. Clarke

REVIEWED

E. Drakos

9-AB15-18.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

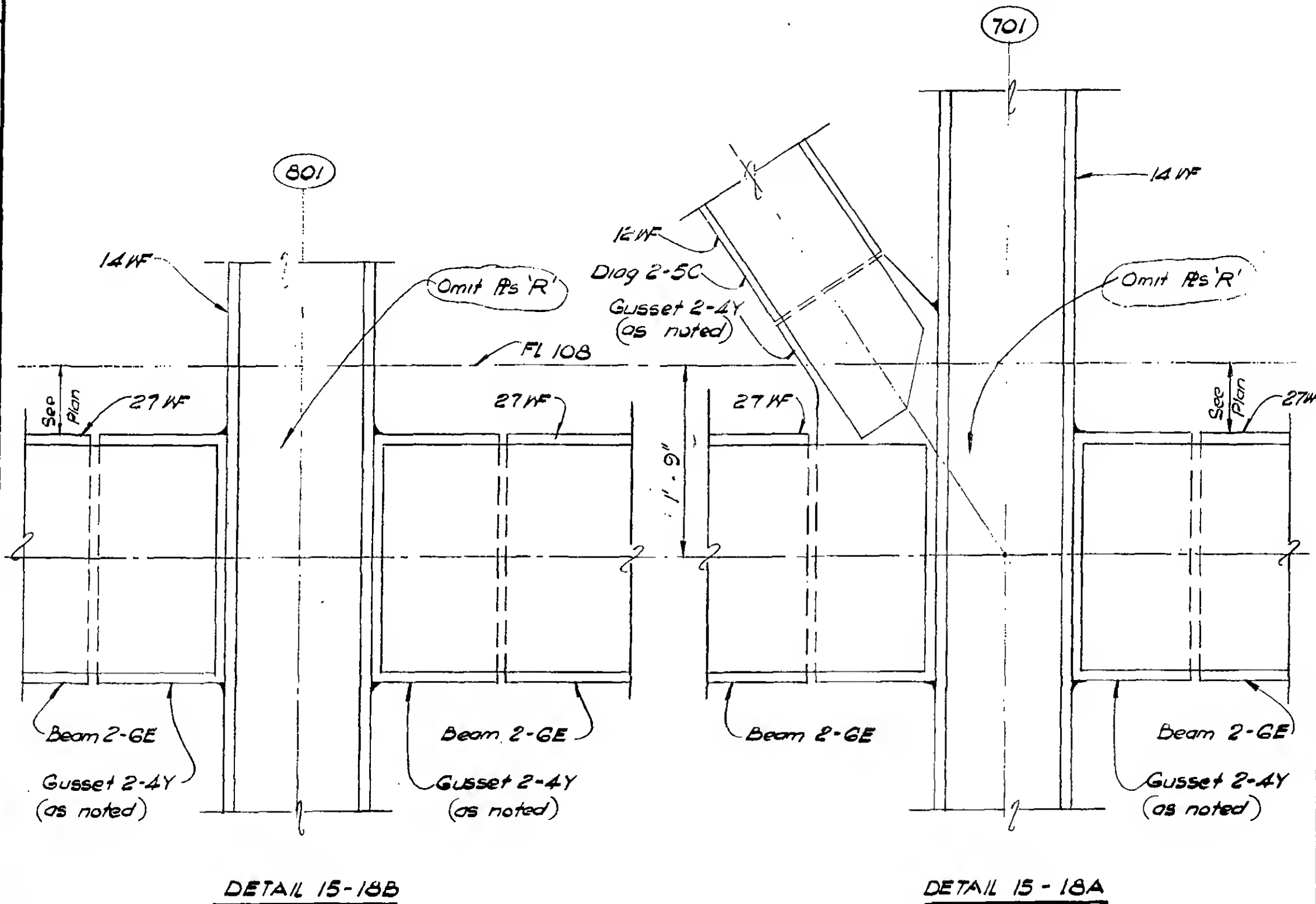
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - FL. 108

DATE 4-1-70

REVISIONS

5/27/70



DESIGNED

H. Von

DRAWN

W. Clarke

REVIEWED

E. Dracos

9-AB/5-18.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

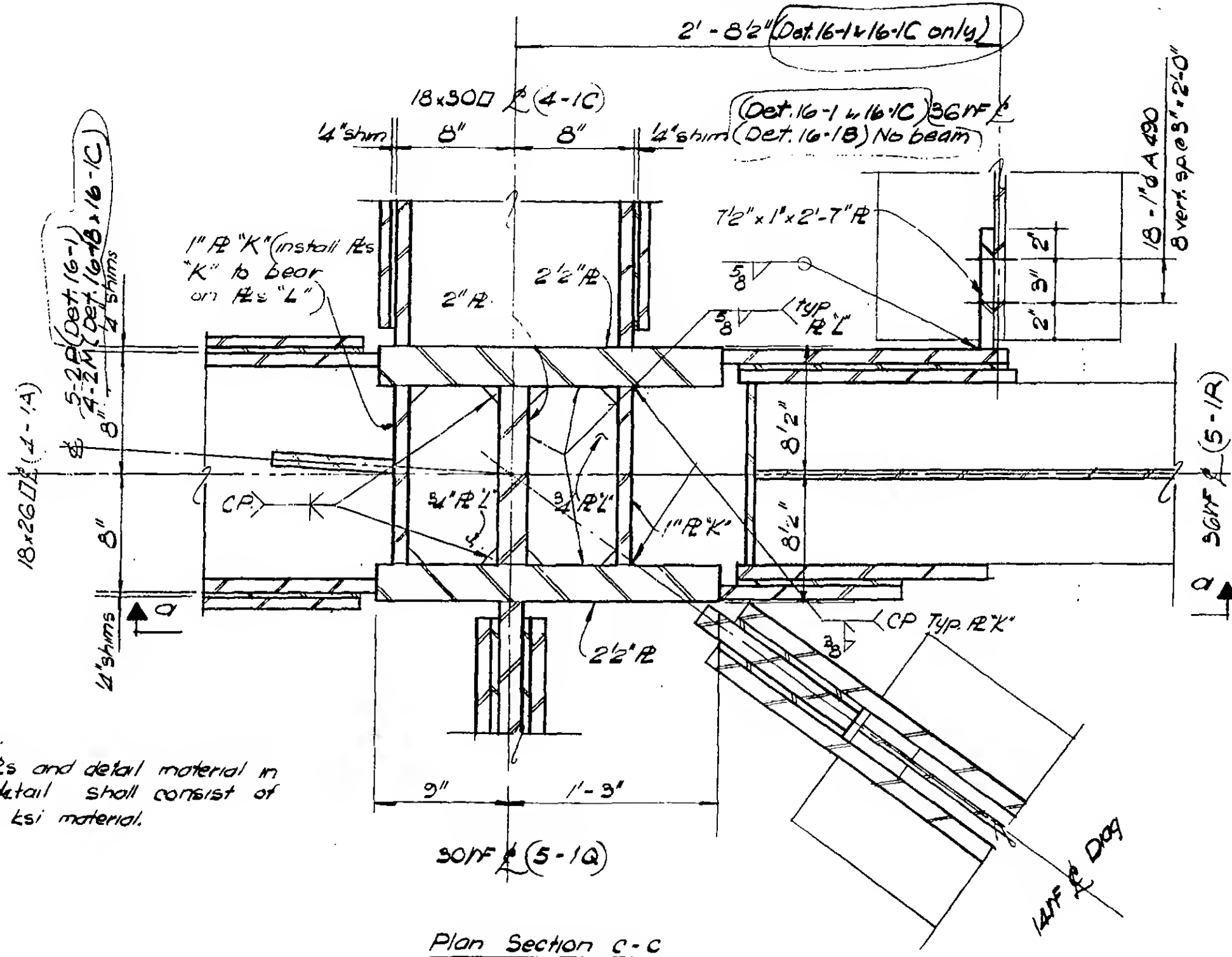
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - FL 110

DATE 4-1-70

REVISIONS

6/18/70
12/14/70

Notes

- All PLs and detail material in this detail shall consist of $f_y = 50$ ksi material.



DESIGNED

DRAWN

W. Clarke

REVIEWED

E. Drakos

DETAIL 16-1 Col. 501 as shown, Cols 508, 1001 & 1008 similar Tower A

DETAIL 16-1B Col. 501 as shown, col. 1008 similar Tower B

DETAIL 16-1C Col. 508 & 1001 similar Tower B

9-AB/6-1.1

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FLOOR 107-RH CONNECTION DETAIL - FL 110

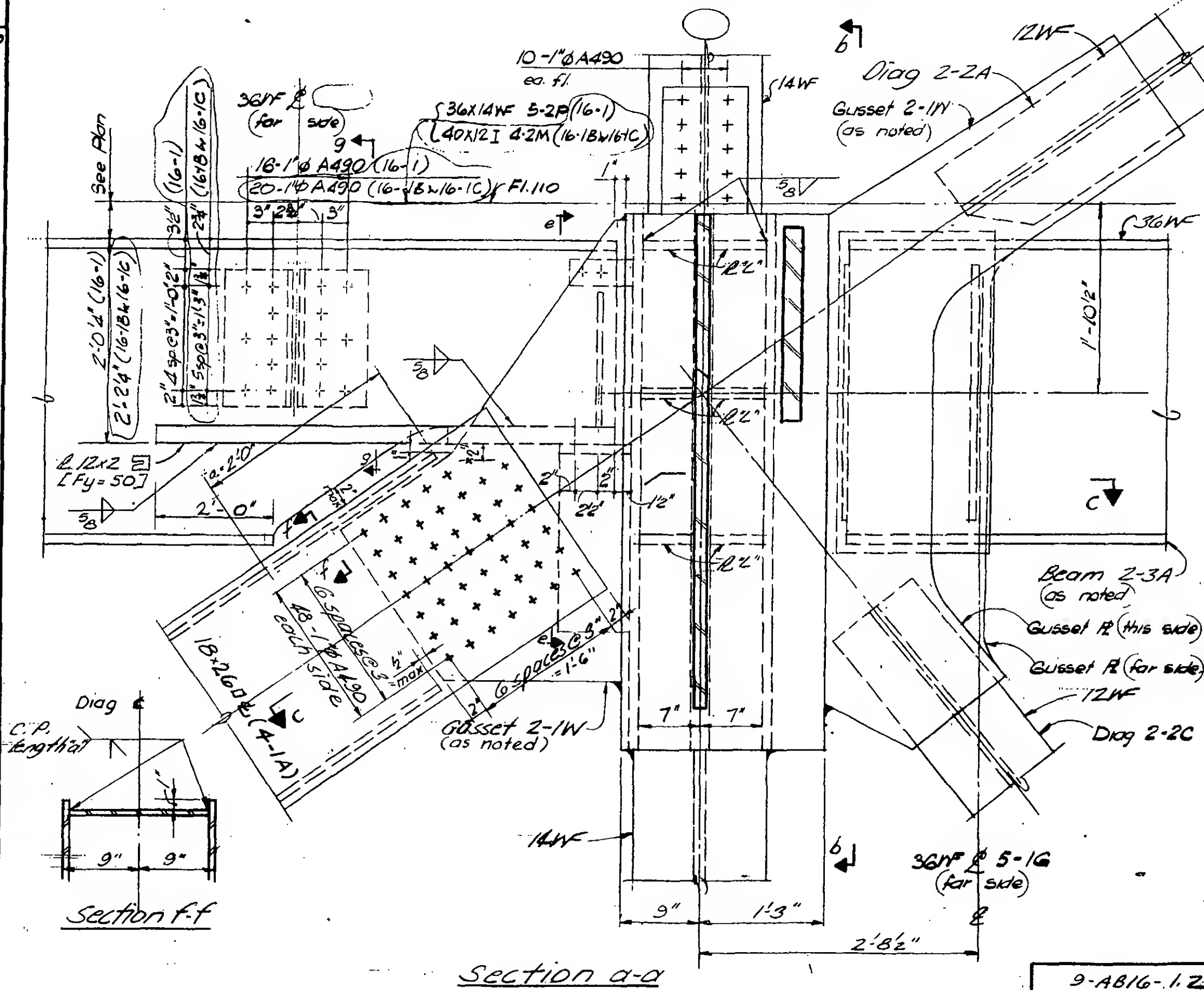
DATE _____

4-1-70

REVISIONS

6/18/70

12/14/70



DESIGNED

E. Drakos

9-AB16-1.2

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

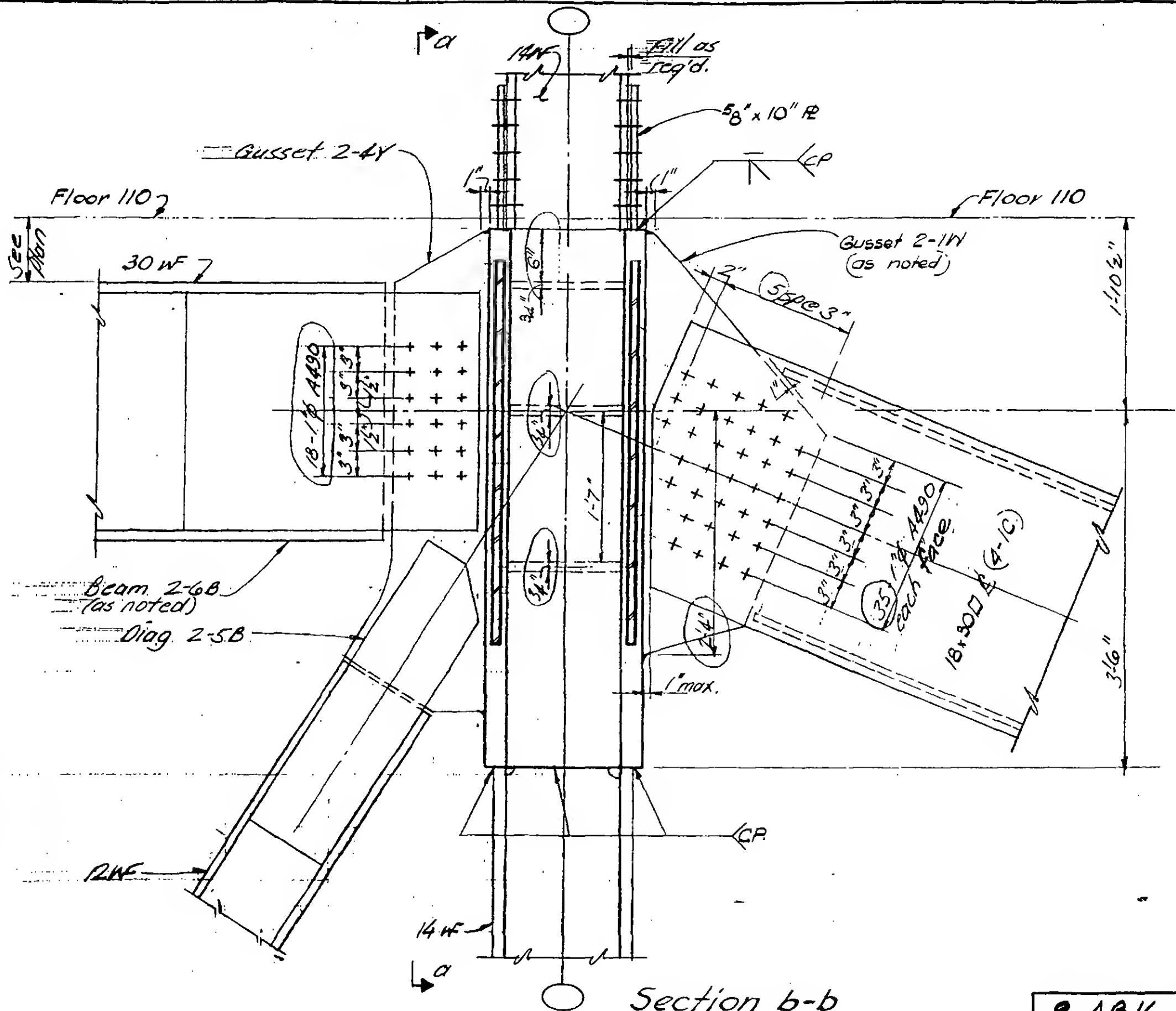
FLOOR 107-PH CONNECTION DETAILS-FL 110

DATE _____

4-1-70

REVISIONS

6/15/70



DESIGNED

DRAWN

L. Gracius

REVIEWER

E. Drakos

Section b-b

9-AB16-1.3

Structural & Civil Engineers

PROJECT *THE WORLD TRADE CENTER*

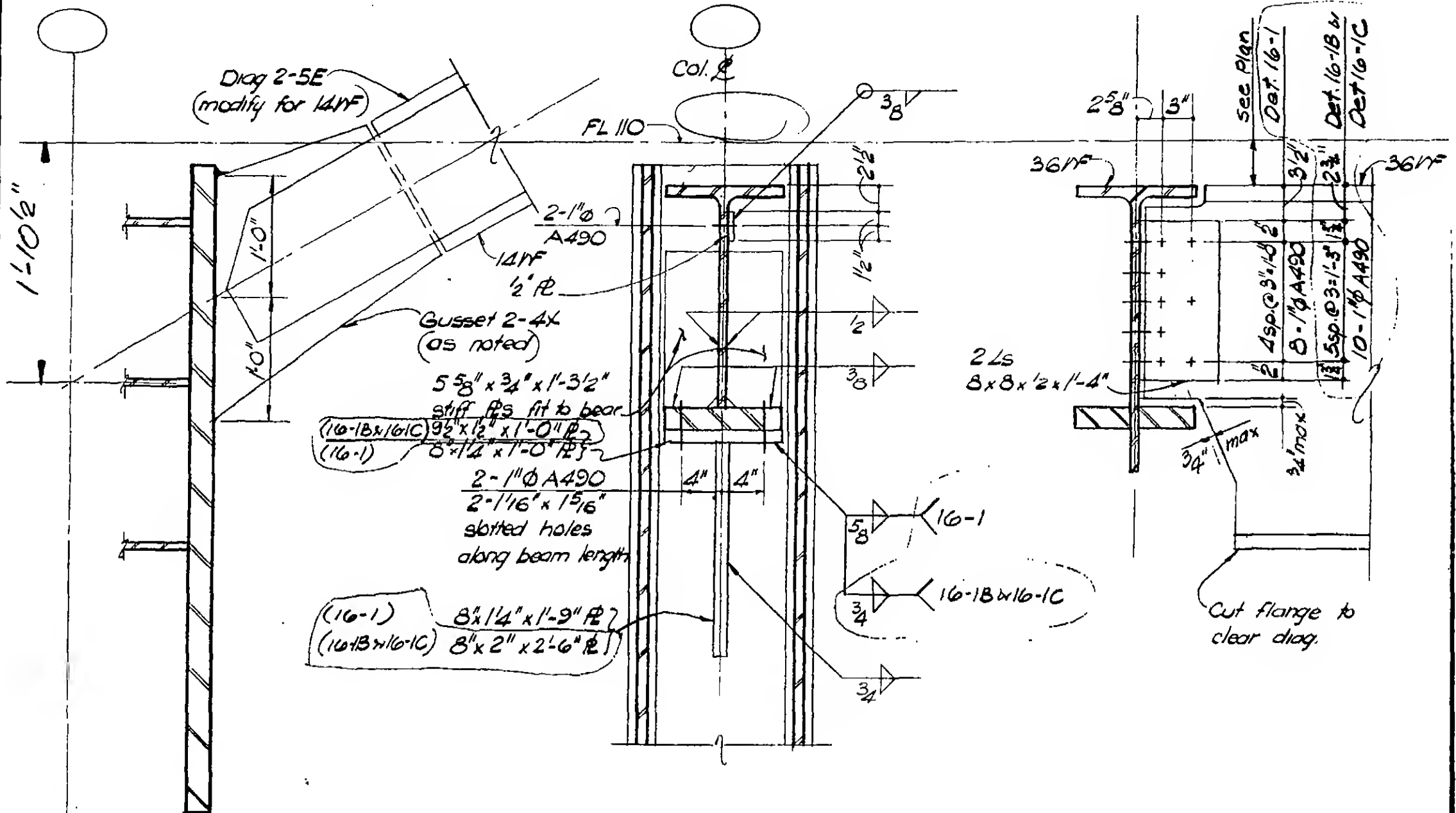
TITLE *FL 107 - PH CONNECTION DETAILS - FL 110*

DATE 4-1-70

REVISIONS

6/18/70

12/14/70



Section d-d

Section e - e

Section 9-9



DESIGNED

DRAWN

W. Clarke

REVIEWED

REVIEWED
E. Drakos

9 - AB/6-1.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

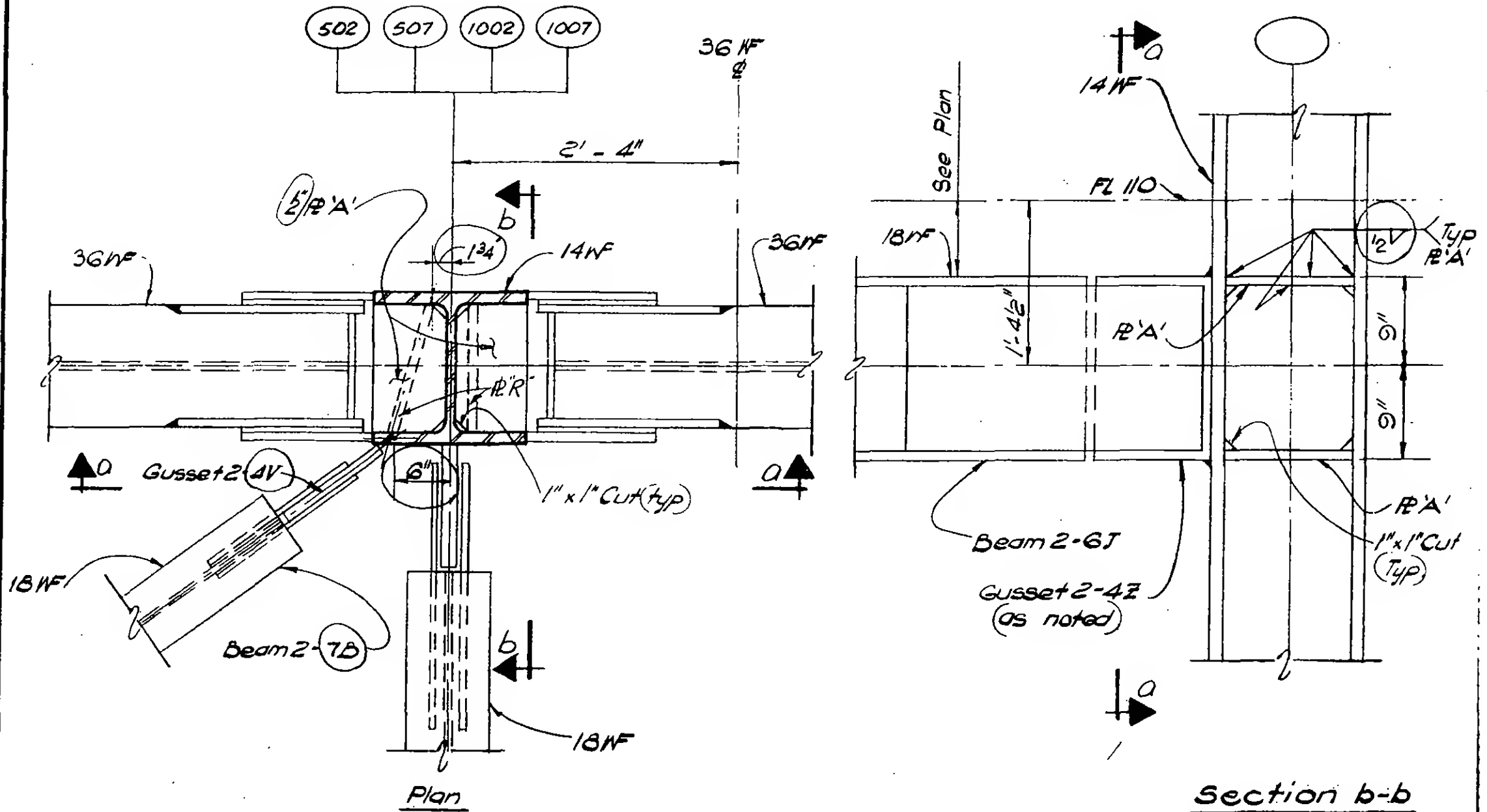
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - FL 110

DATE 4-1-70

REVISIONS

6/15/70



DETAIL 16-2 { Col 502 as shown
Cols 507, 1002 & 1007 similar



DESIGNED
K. HWANG

DRAWN
N. Clarke

REVIEWED
E. Dravos

9-AB 16-2-1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

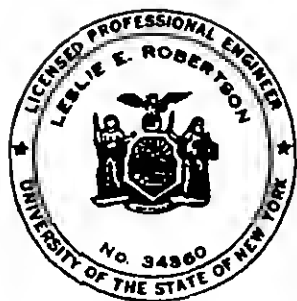
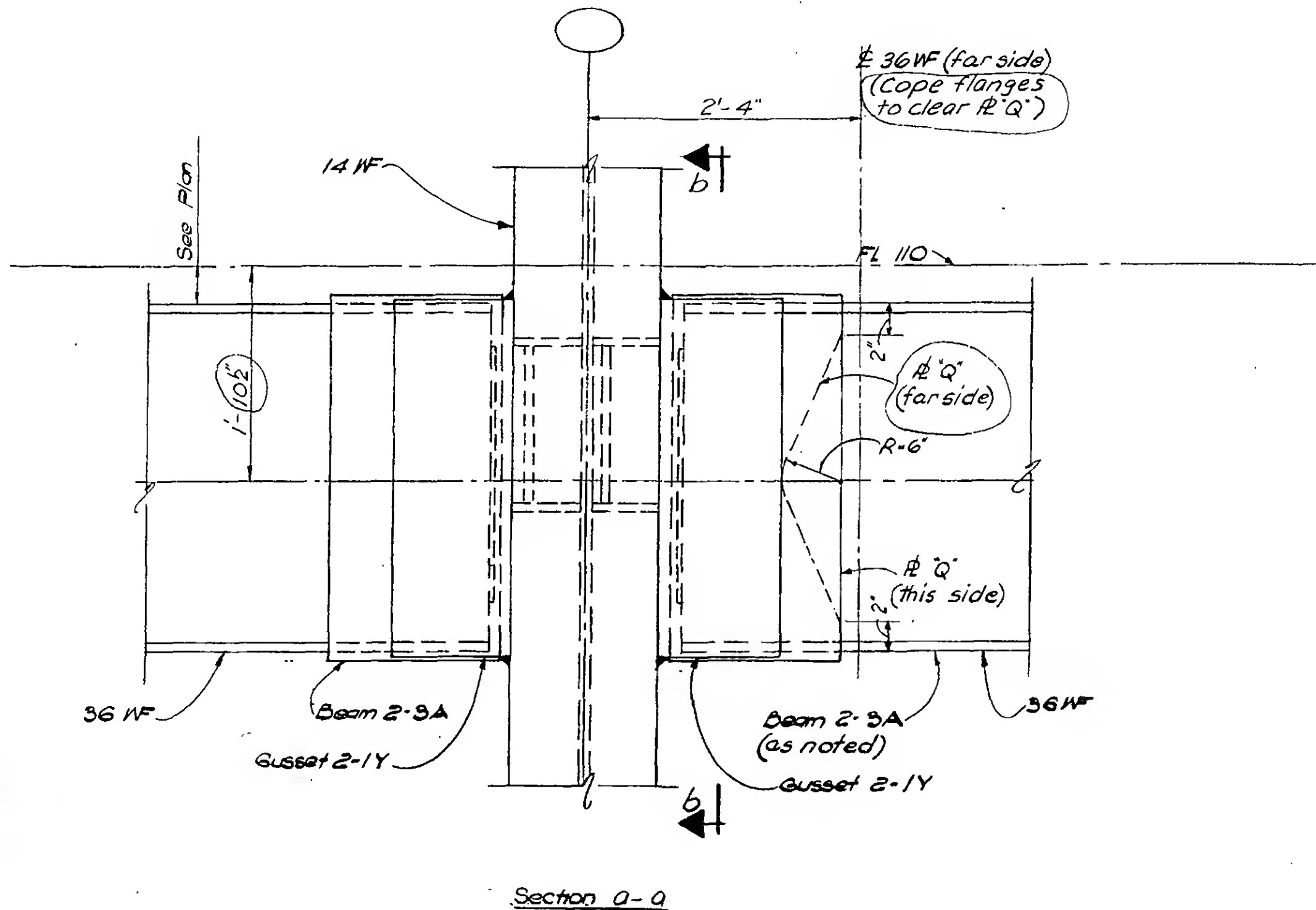
PROJECT THE WORLD TRADE CENTER

TITLE FL. 107 PH. CONNECTION DETAILS - FL. 110

DATE 4-1-70

REVISIONS

6-15-70



DESIGNED
K. HWANG

DRAWN
W. Clarke

REVIEWED
E. Draxos

9-AB/6-2.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

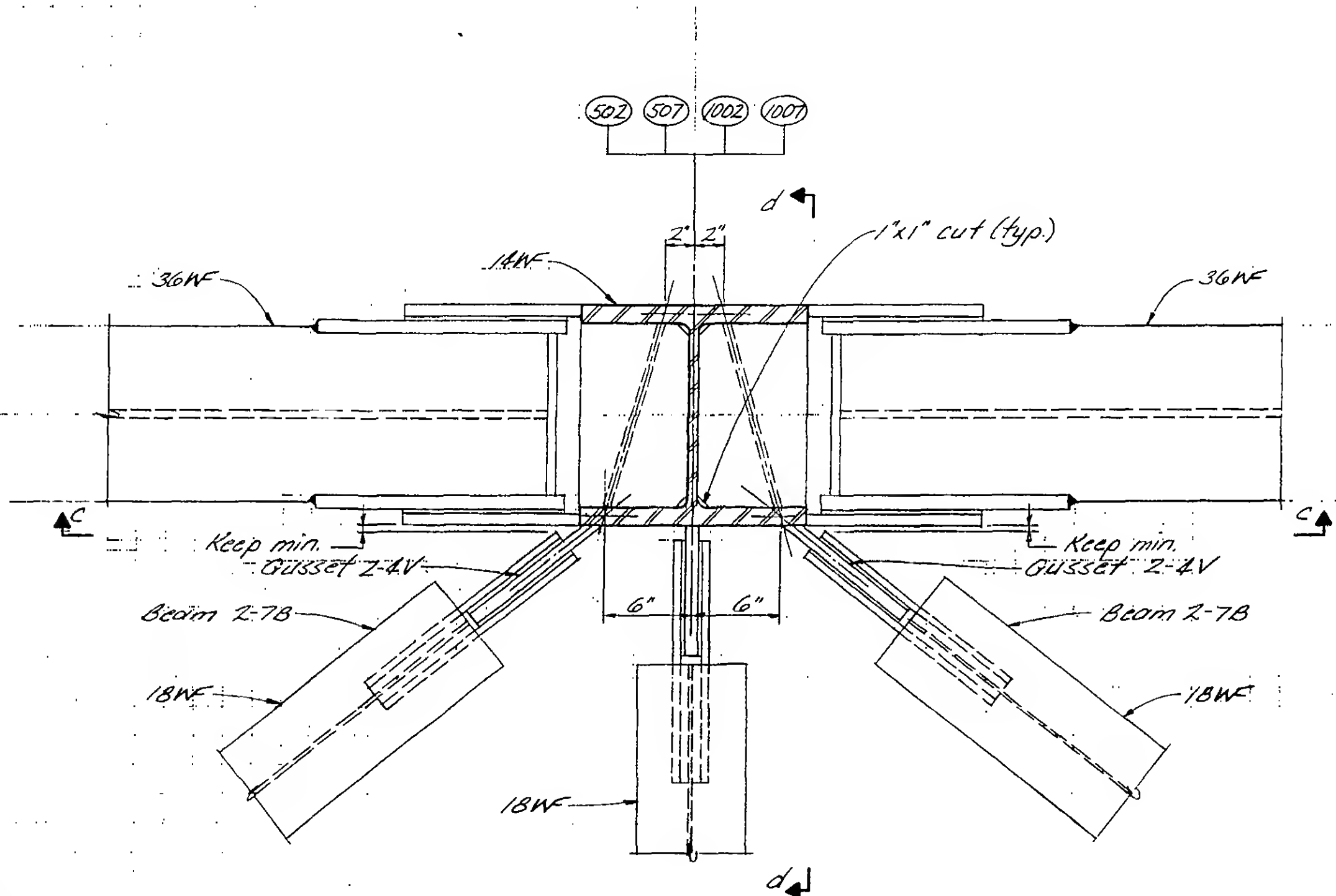
Structural & Civil Engineers

PROJECT ~~THE WORLD TRADE CENTER~~

TITLE FL 107-PH CONNECTION DETAILS - FL 110

DATE 12-14-70

REVISIONS



Plan

Detail 16-2B

(Col. 502 as shown)

(Cols. 507, 1002 & 1007 similar)



DESIGNED

DRAWN

REVIEWED

9-B16-2.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

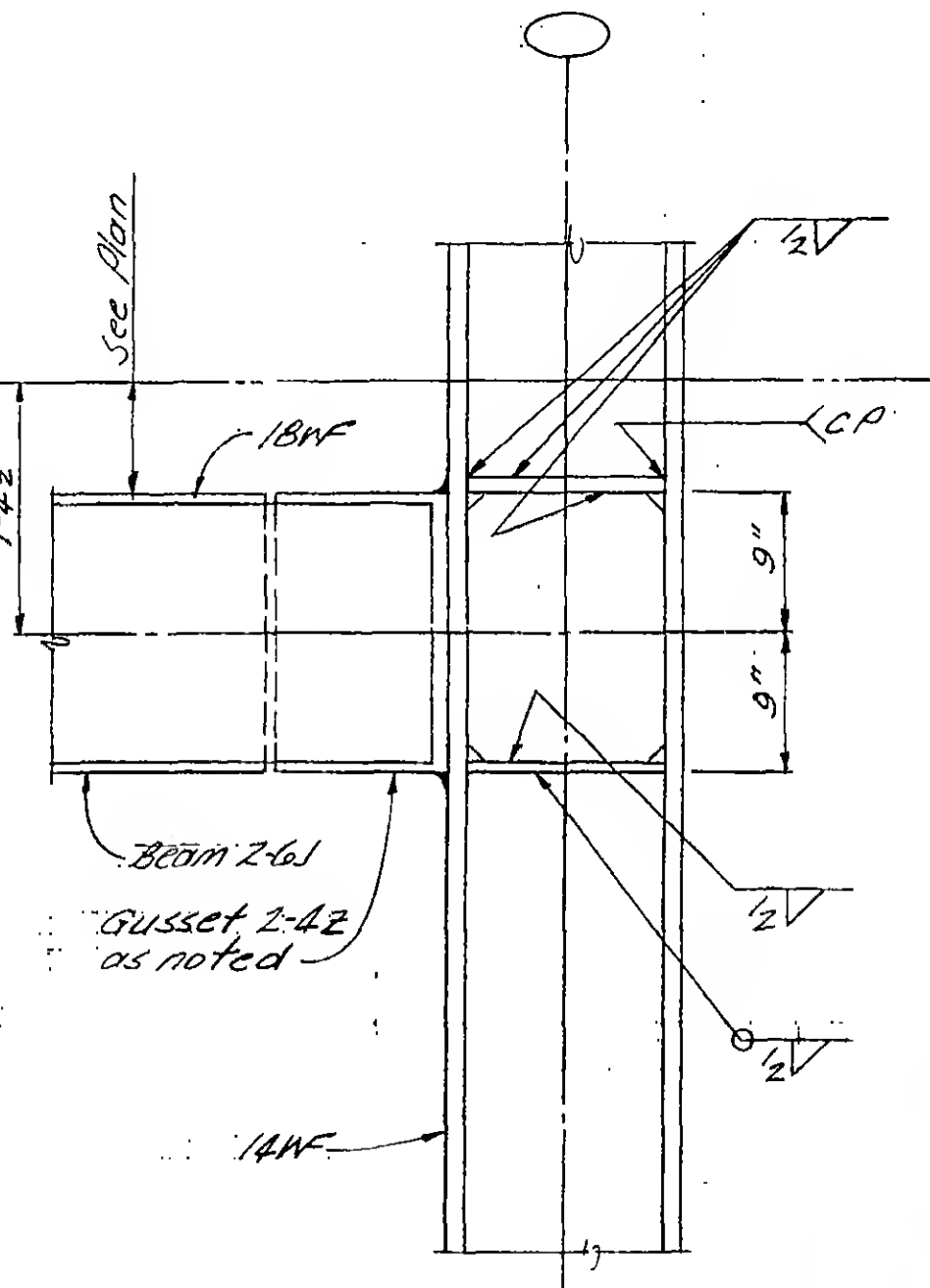
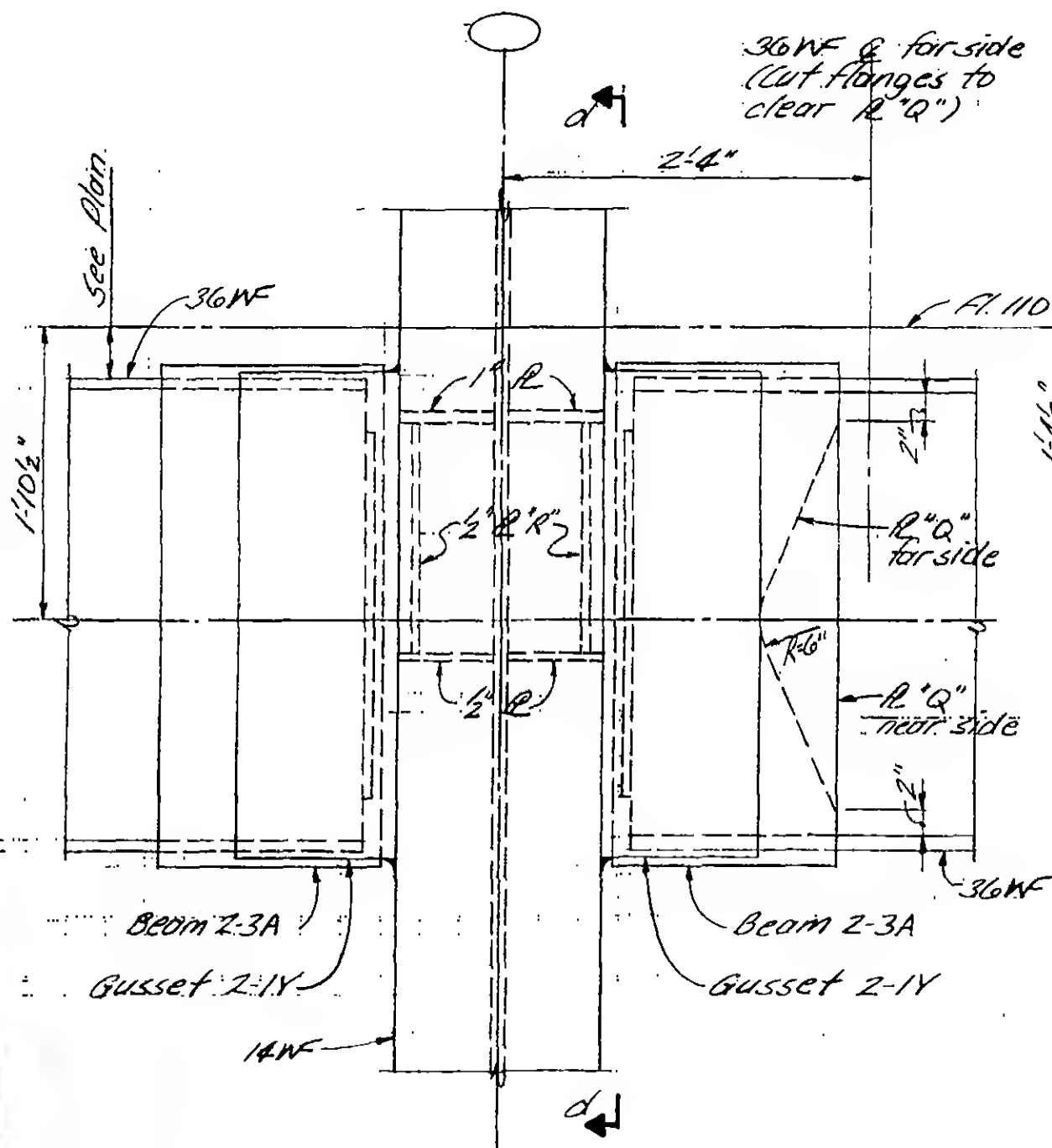
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-RH CONNECTION DETAILS - FL 110

DATE 12-14-70

REVISIONS



DESIGNED

DRAWN

J. Adams

REVIEWED

9-B16-2.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

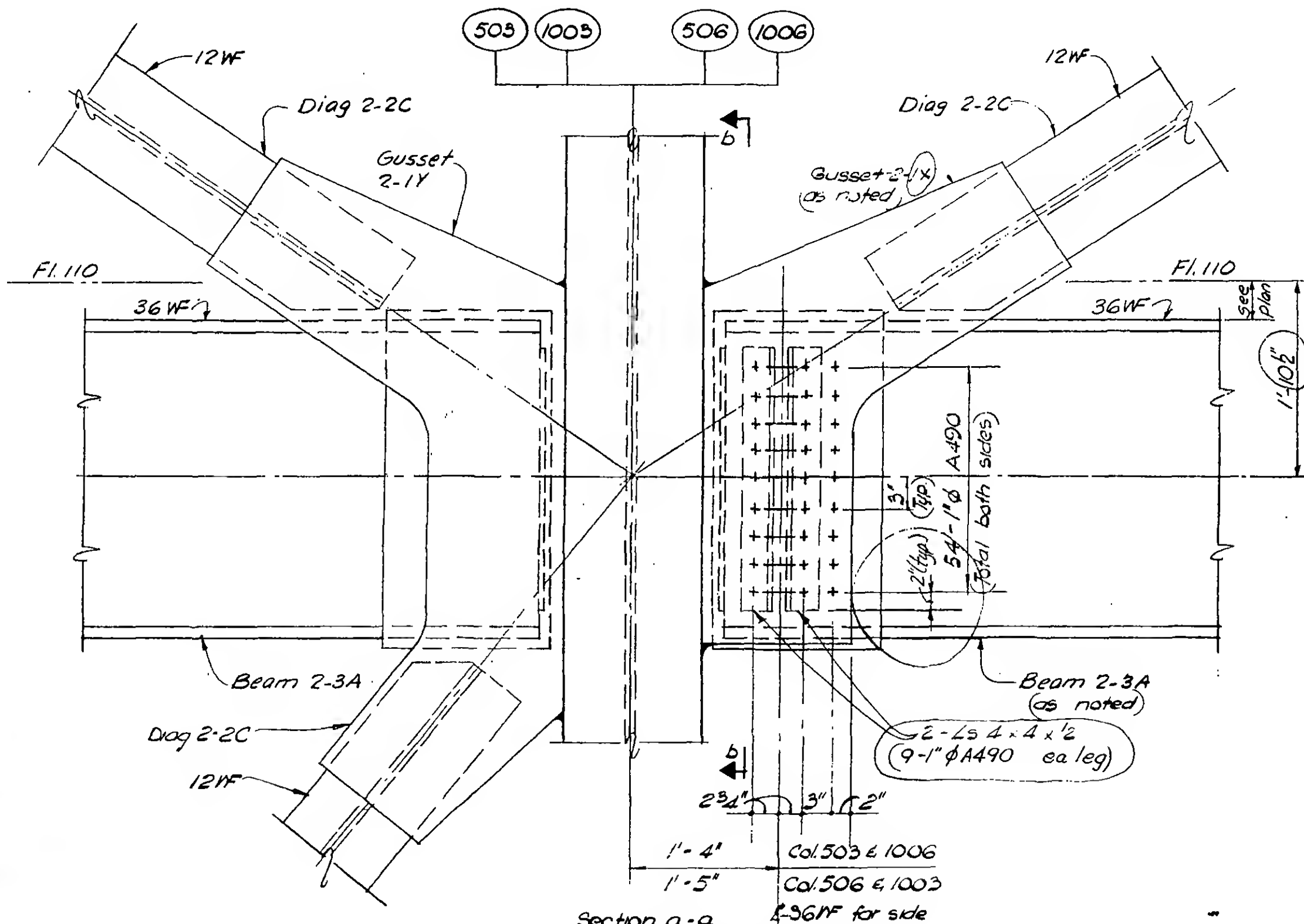
FL 107-PH CONNECTION DETAILS - FL 110

DATE

4-1-70

REVISIONS

6/15/70

DESIGNED
K. HWANGDRAWN
A.F.REVIEWED
E. Drakos

Section a-a

DETAIL 16-3A (Col. 503 as shown)

DETAIL 16-3B (Col. 1003)

DETAIL 16-3C (Col. 1006)

DETAIL 16-3D (Col. 506)

Similar to
as noted

9-AB16-3-1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

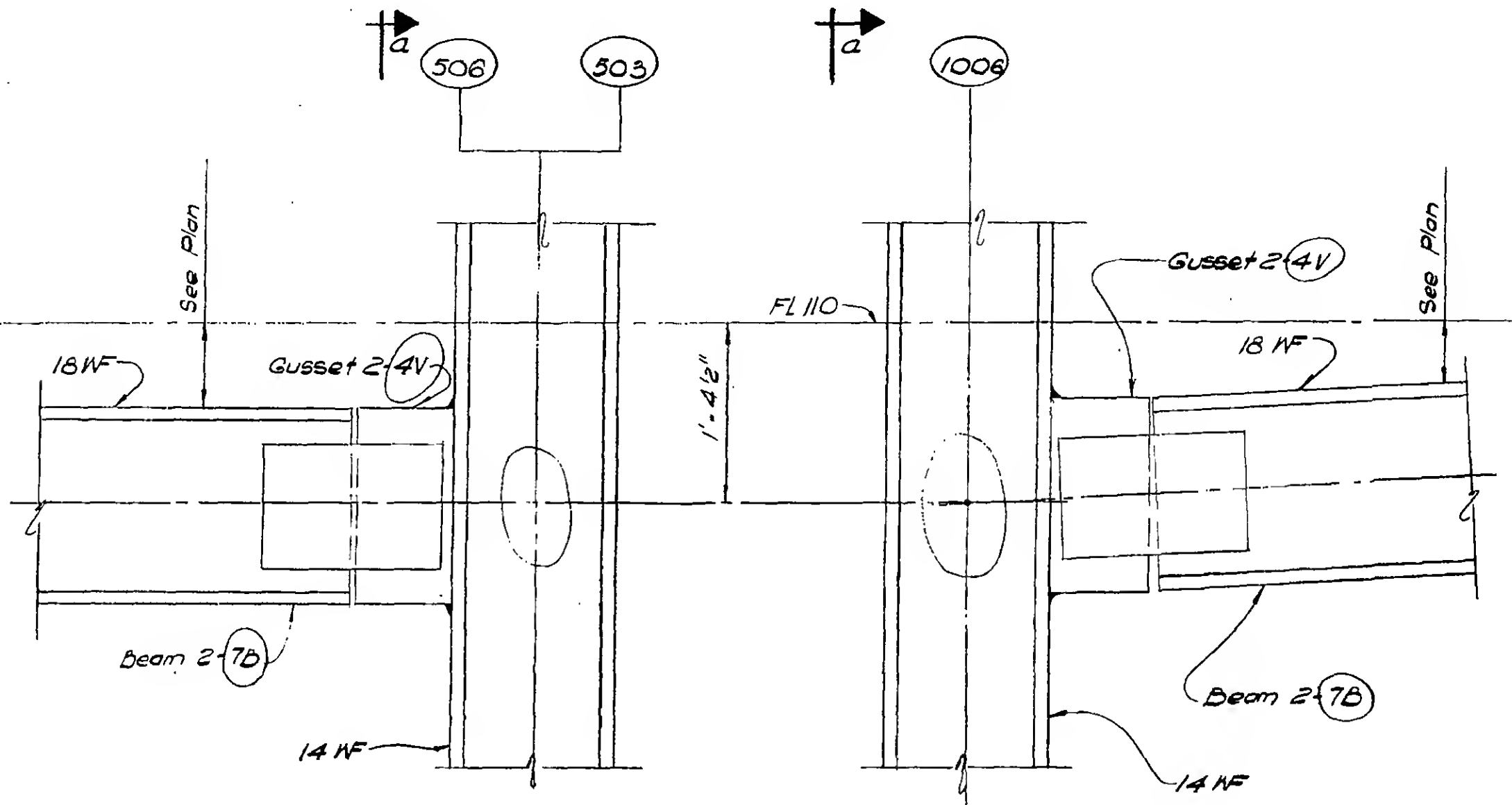
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 PH CONNECTION DETAILS - FL 110

DATE 4 - 1 - 70

REVISIONS

6/15/70



Section b-b
(16-3A & 16-3D)

Section b-b
(16-3C)



DESIGNED
K. HWANG

DRAWN
W. Clarke

REVIEWED
E. Drakos

9-AB/6-3-2

Structural & Civil Engineers

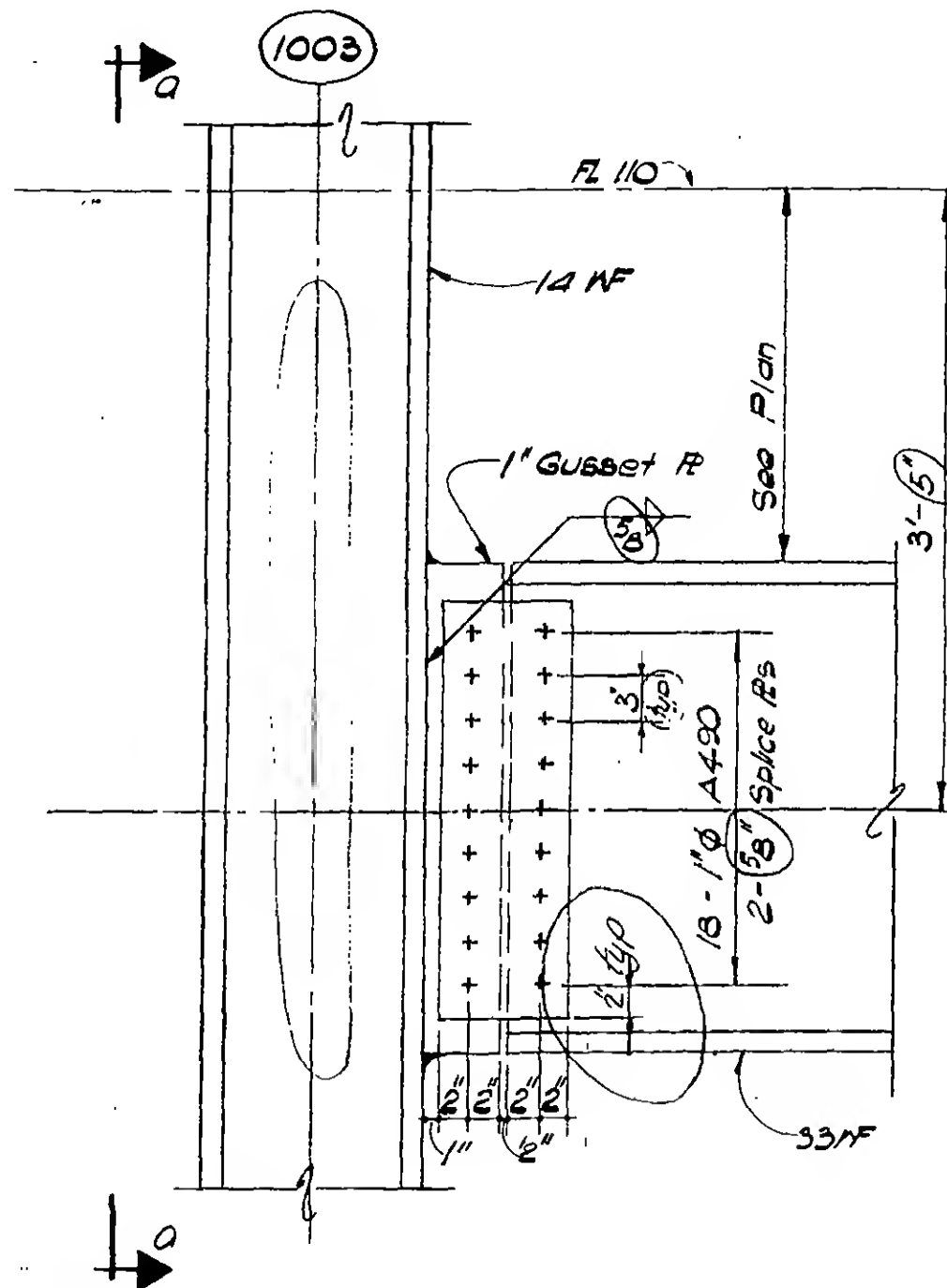
PROJECT *THE WORLD TRADE CENTER*

TITLE *FL 107 PH CONNECTION DETAILS - FL 110*

DATE 4-1-70

REVISIONS

6/15/70



Section b-b
(16-3 B)



DESIGNED

K. HWANG

DRAWN

W. Clarke

REVIEWED

E. Drakos

9-AB/6-3.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

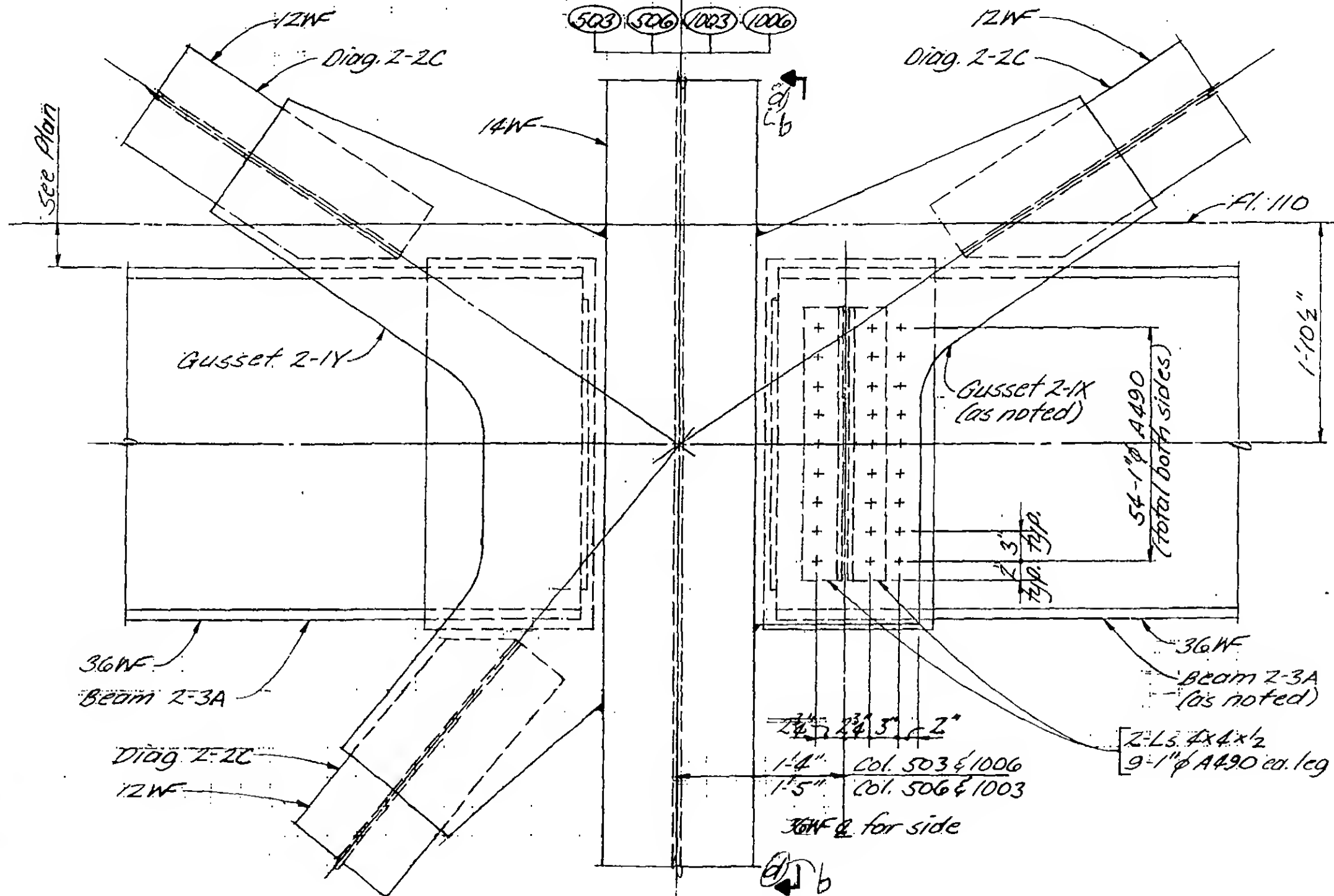
TITLE

FL 107-110 CONNECTION DETAILS - FL 110

DATE

12-14-70

REVISIONS



Section C-C

Detail 16-3E (Col. 503) as shown

Detail 16-3F (Col. 1003)

Detail 16-3G (Col. 1006)

Detail 16-3H (Col. 506)

similar
and as
noted

DESIGNED

DRAWN

REVIEWED

9-B16-3.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

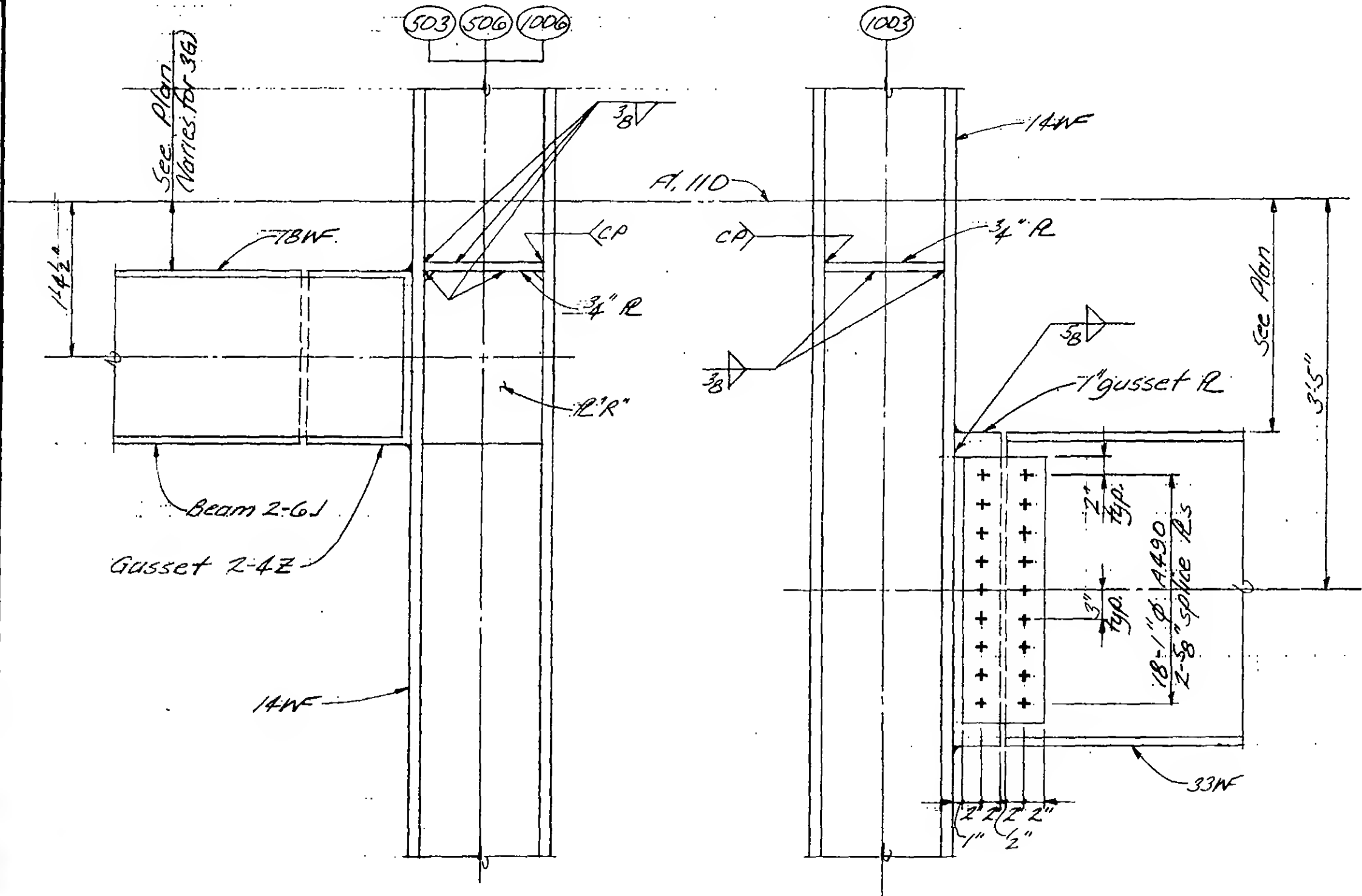
TITLE

FL 107-RH CONNECTION DETAILS - FL 110

DATE

12/14/70

REVISIONS



Section b-b
(16-3E, 16-3G, 16-3H)

Section b-b
(16-3F)



DESIGNED

DRAWN

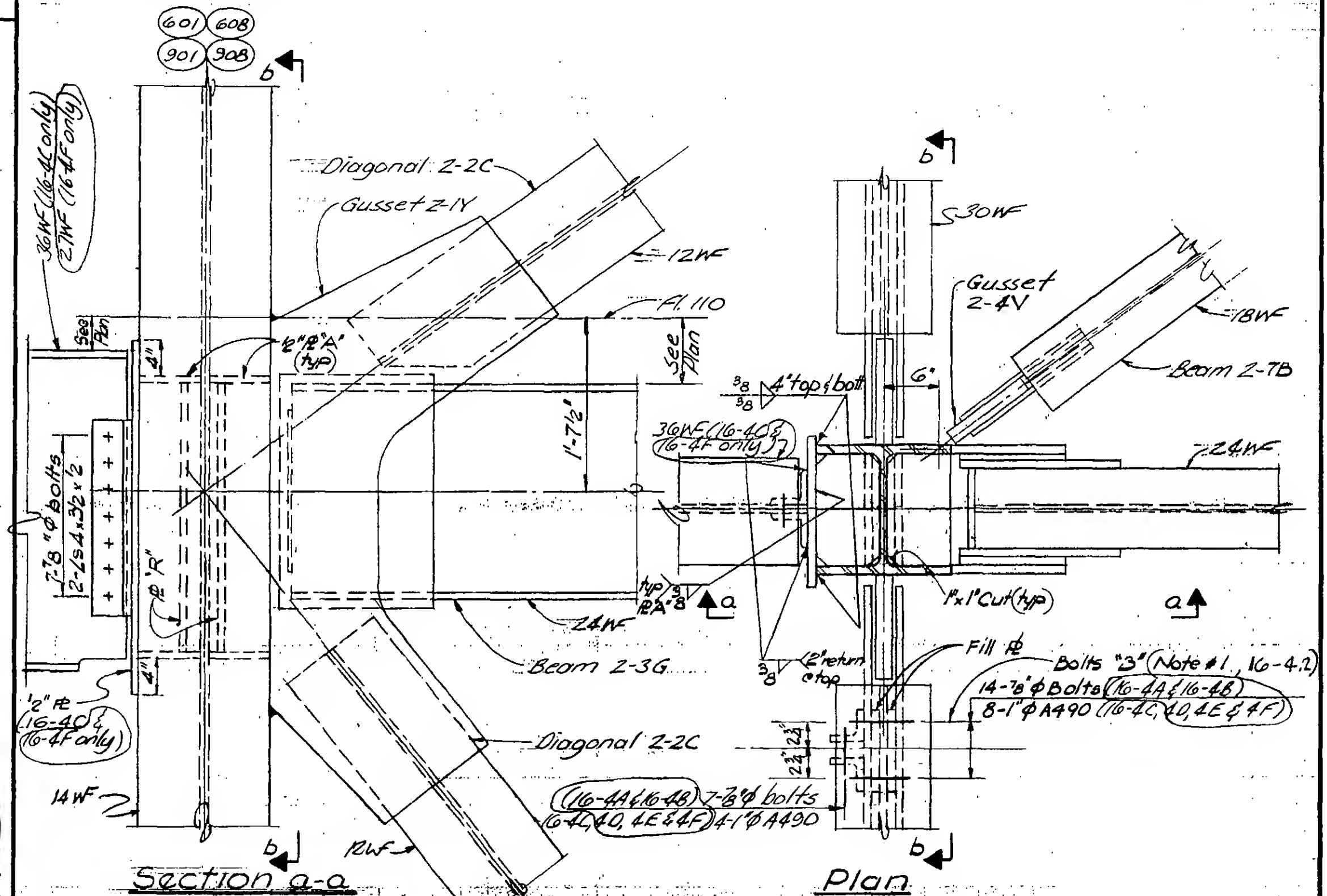
J. Adams

REVIEWED

9-B/16-35

REVISIONS.

6/15/70
12/14/70



RESIGNED
C. HWANG

DRAWN

REVIEWED

REVIEWED
E. Orakos

TOWER B
DETAIL 16-4D (col. 601)
DETAIL 16-4E (col. 901-903)
DETAIL 16-4F (col. 608)

TOWER A
DETAIL 16-4A (col. 601 as shown.)
DETAIL 16-4B (col. 901 & 908) similar &
DETAIL 16-4C (col. 608) as noted

9-AB16-41

PROJECT

THE WORLD TRADE CENTER

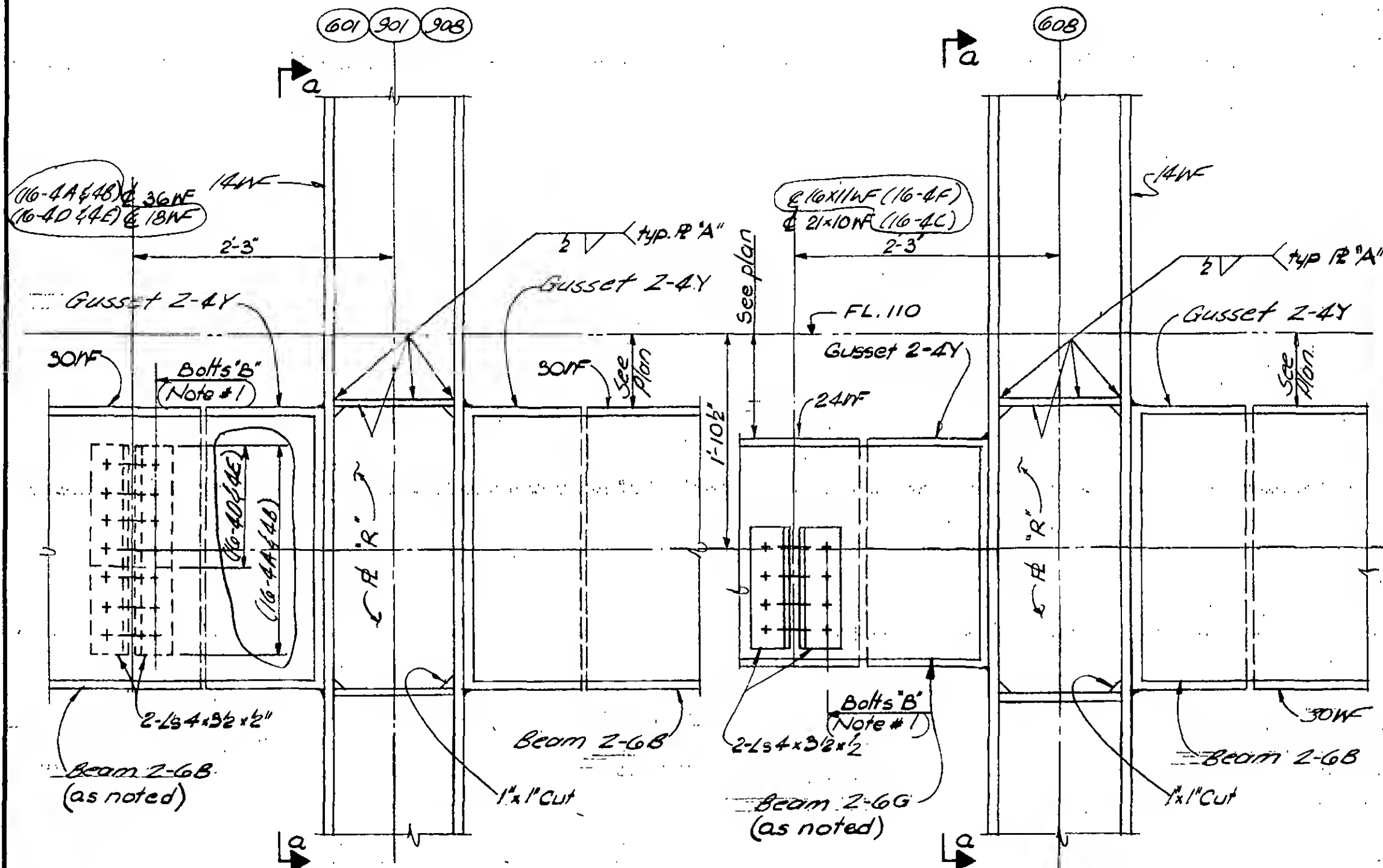
TITLE

FLOOR 107-RH CONNECTION DETAIL - FL 110

DATE

4-1-70

REVISIONS

6/15/70
12/14/70

Section b-b

(16-4A, 4B, 4D & 4E)

Notes:

1. Bolts 'B' shown in this detail to be used in lieu of 9-AB 2-6.1 requirements

Section b-b

(16-4C & 16-4F)

9-AB 16-4-1

DESIGNED
K. HWANG

DRAWN

REVIEWED
E. DRAXOS

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

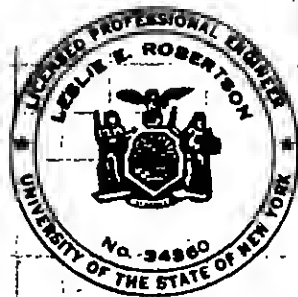
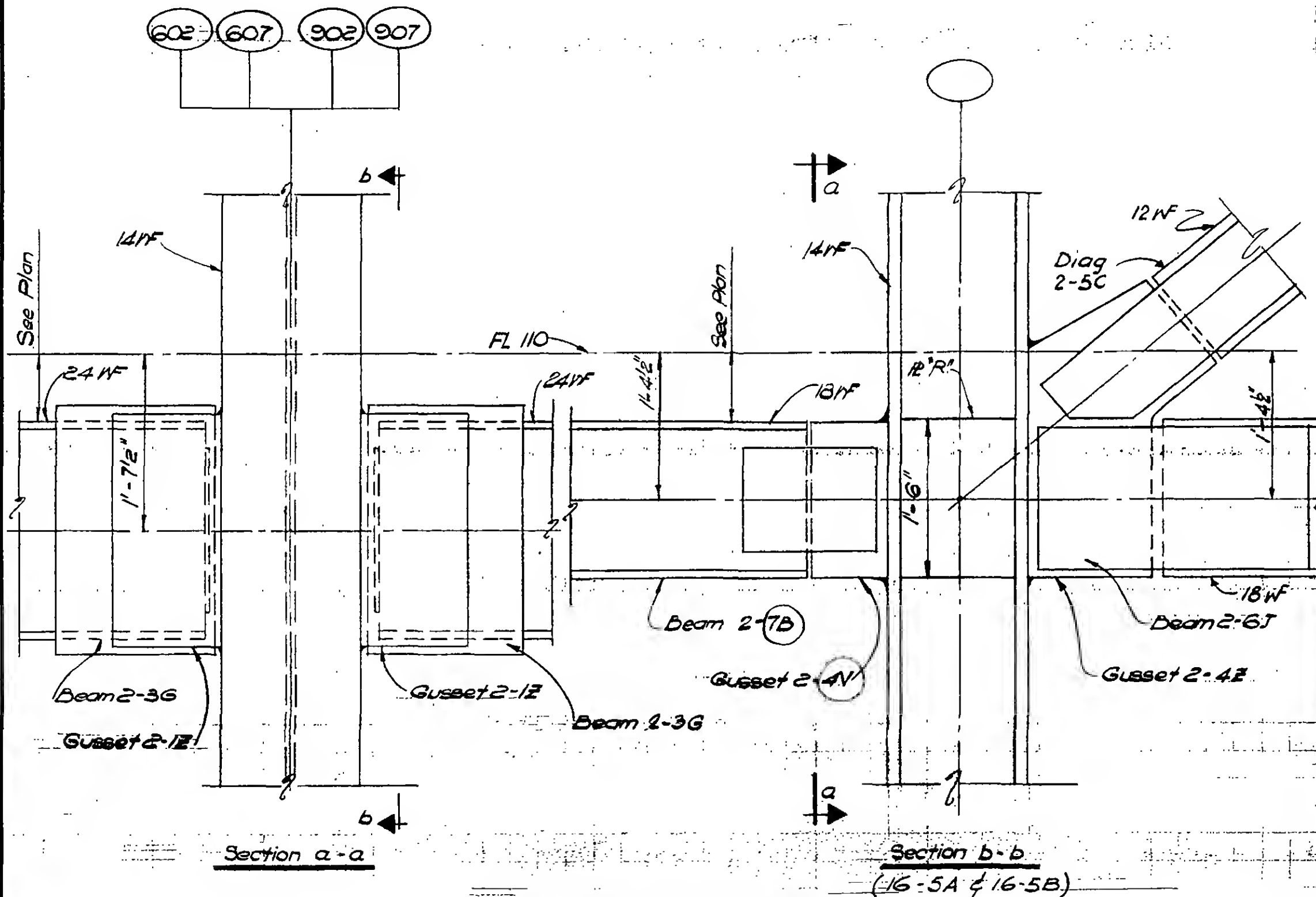
FL 107 PH. CONNECTION DETAILS - FL 110

DATE

4-1-70

REVISIONS

6/15/70



DESIGNED

K. Hwang

DRAWN

W. Clarke

REVIEWED

E. Drakos

DETAIL 16-5A (Col. 602 as shown)

DETAIL 16-5B (Col. 902 & 907) similar &

DETAIL 16-5C (Col. 607) as noted

9 AD 16-5.1

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

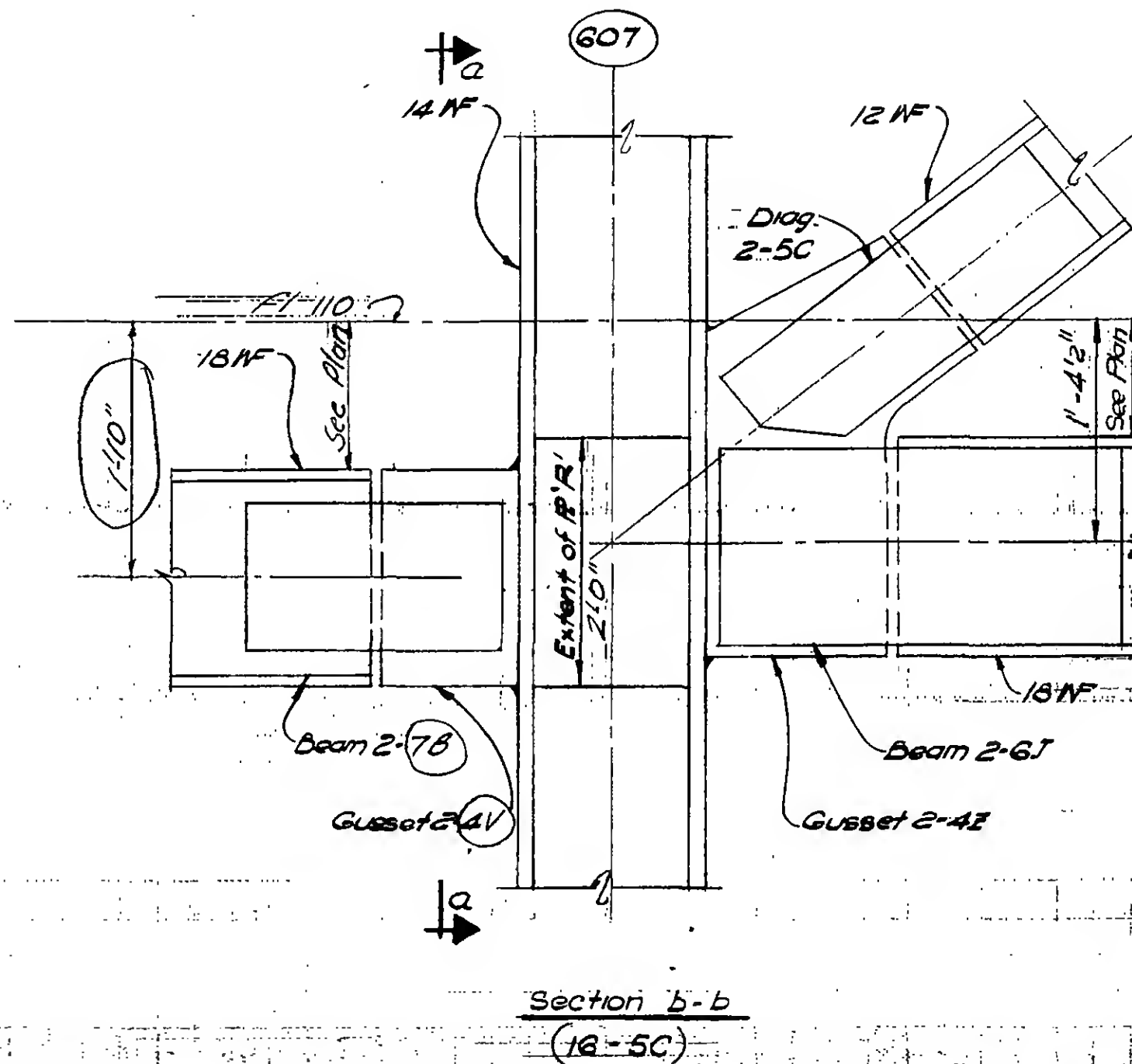
FL 107 PH CONNECTION DETAILS - FL 110

DATE _____

4 - 1 - 70

REVISIONS

6/15/70



DESIGNED

DRAWN

W. Clarke

REVIEWED

9-AB/B-5-2

PROJECT

THE WORLD TRADE CENTER

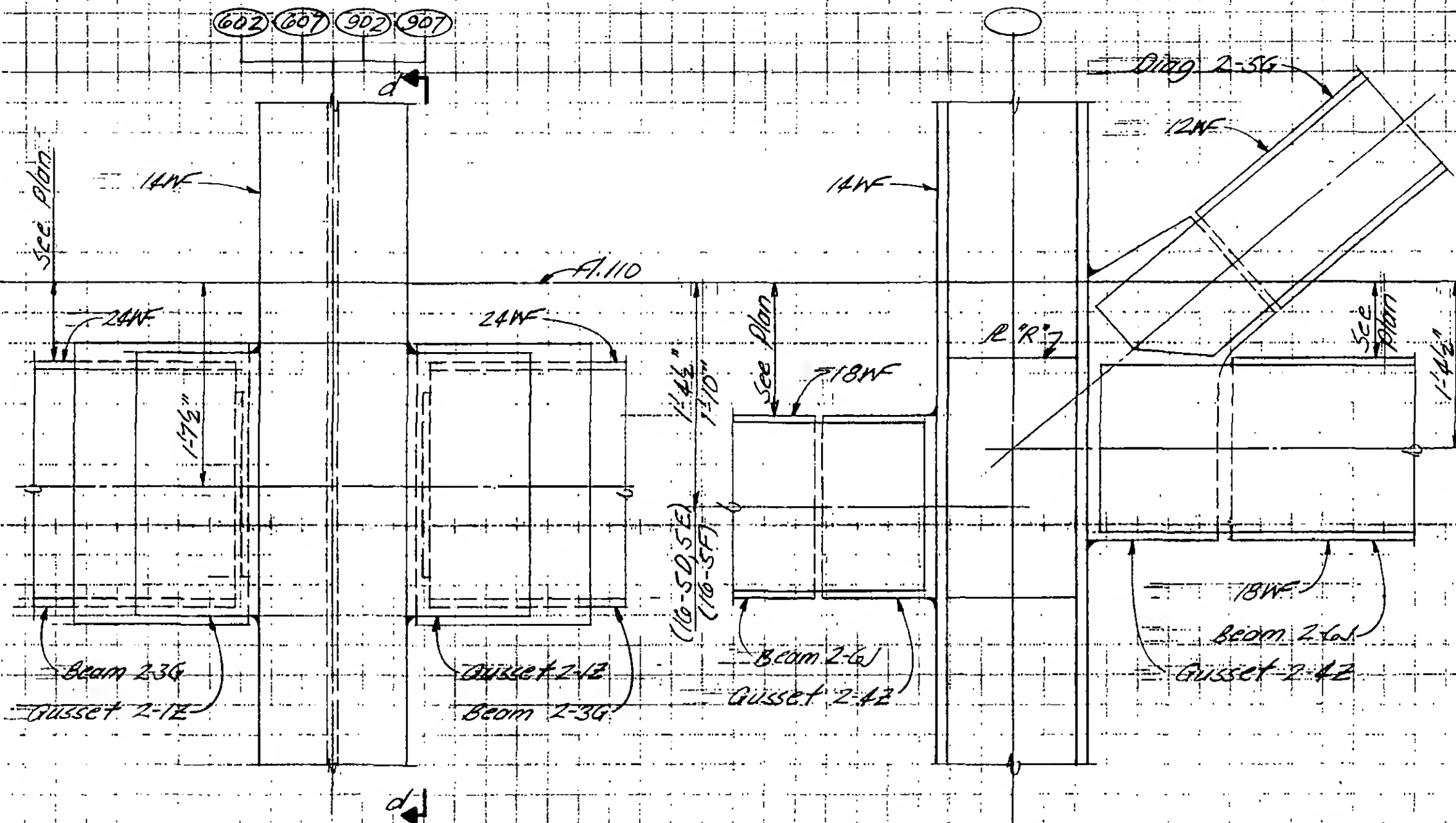
TITLE

FL 107 BM CONNECTION DETAILS FL 110

DATE

12-14-79

REVISIONS



Section C-C

Section D-D

Detail 16-5D (Col. 602 as shown)

Detail 16-5E (Cols. 902 & 907) Similar

Detail 16-5F (Col. 607) and as noted



DESIGNED

DRAWN

REVIEWED

9-B/16-53

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

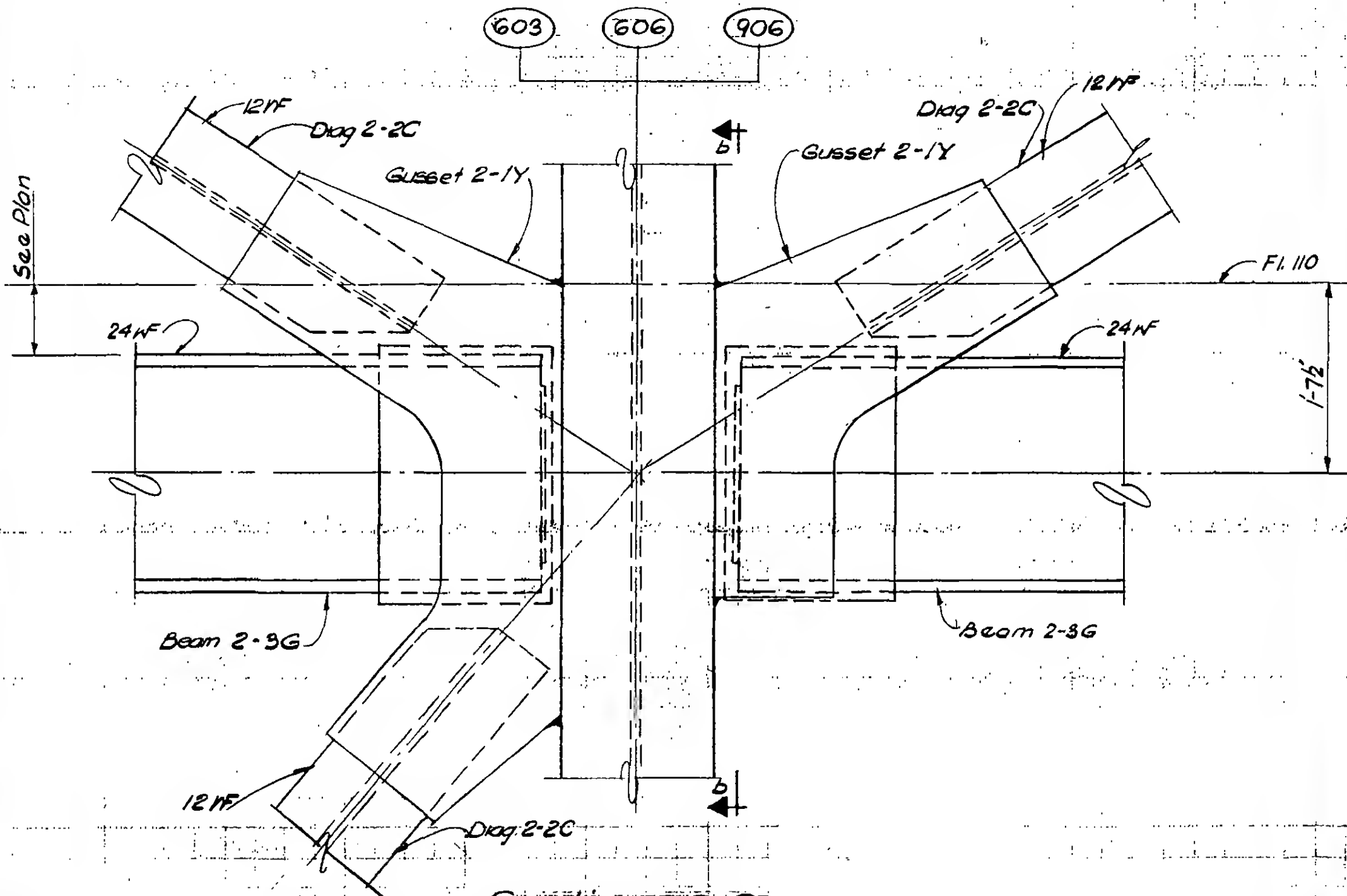
TITLE FI 107-PH CONNECTION DETAIL - FL 110

DATE 4-1-70

REVISIONS

6-15-70

12-14-70



Section a-a

TOWER B	TOWER A
DETAIL 16-GH	DETAIL 16-GD (Col. 603 as shown)
DETAIL 16-GG	DETAIL 16-GC (Col. 606 similar &)
DETAIL 16-GE	DETAIL 16-GA (Col. 906) as noted

P-AB16-G.1



DESIGNED

V. Patel

DRAWN

D. Huggins

REVIEWED

E. Drakos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

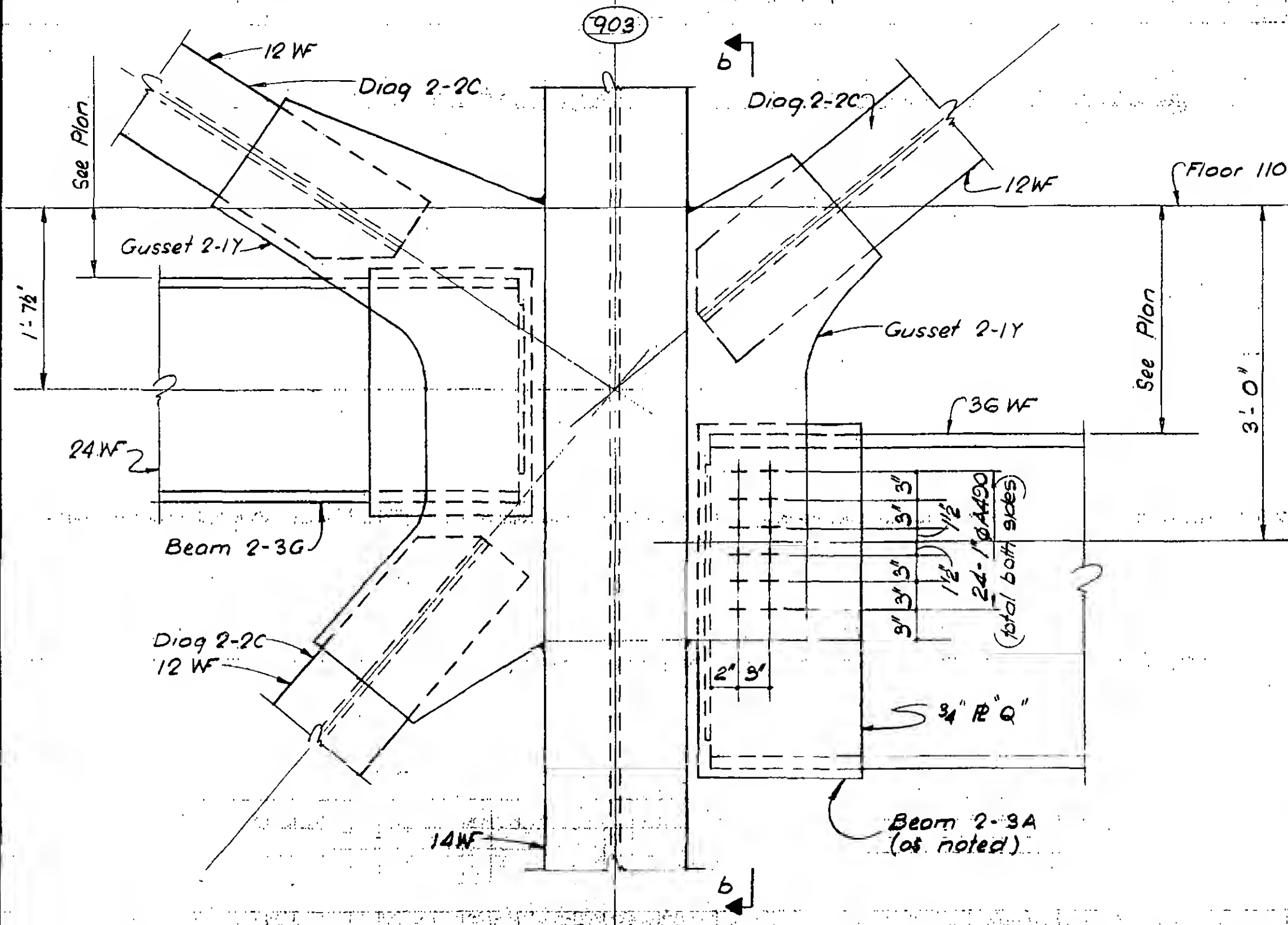
PROJECT THE WORLD TRADE CENTER

TITLE FLOOR 107-PH CONNECTION DETAILS - FL 110

DATE 4-1-70

REVISIONS

6-15-70
12-14-70



Section a-a

DETAIL 16-6B Tower A

DETAIL 16-6F Tower B

9-AB16-6.2



DESIGNED
K. HWANG

DRAWN
T. Terrelange

REVIEWED
E. Draxos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

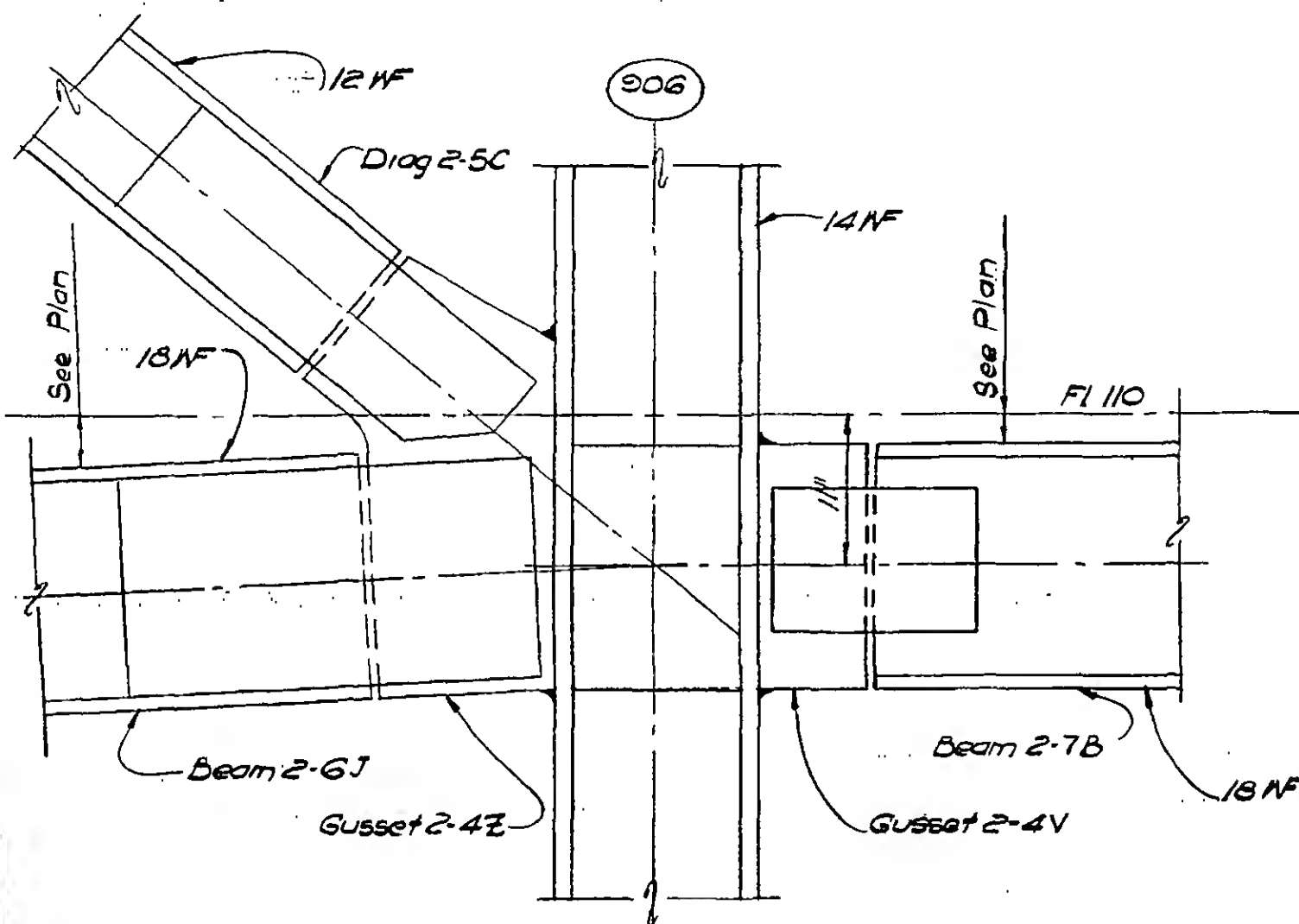
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 PH. CONNECTION DETAILS - FL 110

DATE 4-1-70

REVISIONS

6-15-70



DESIGNED

DRAWN

W. Clarke

REVIEWED

9-AB18-6.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

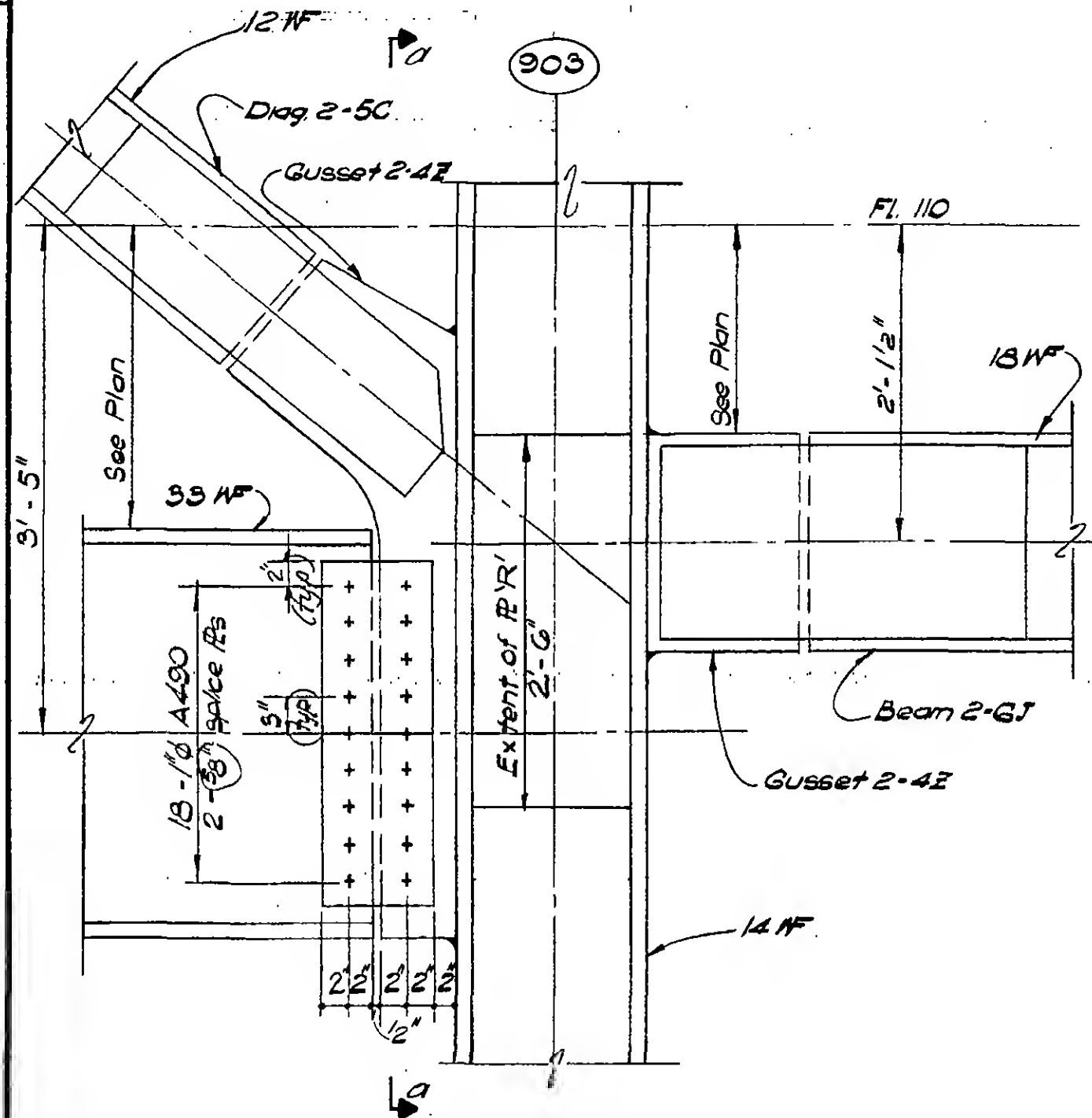
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS-FL 110

DATE 4-1-70

REVISIONS

6-15-70

Section b-b
16-6BDESIGNED
K. HWANGDRAWN
W. ClarkeREVIEWED
E. Draxos

9-AB16-6.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - PH CONNECTION DETAILS - FL 110

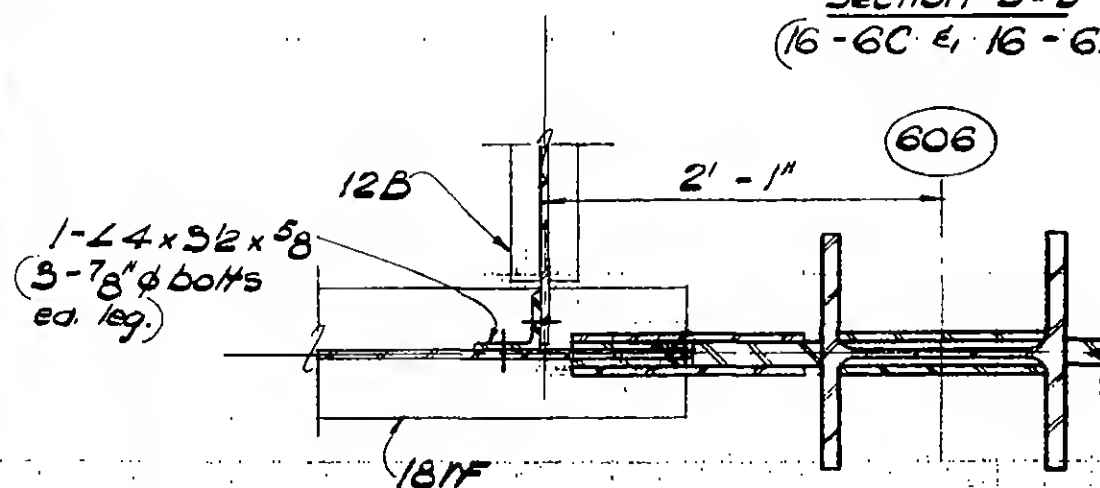
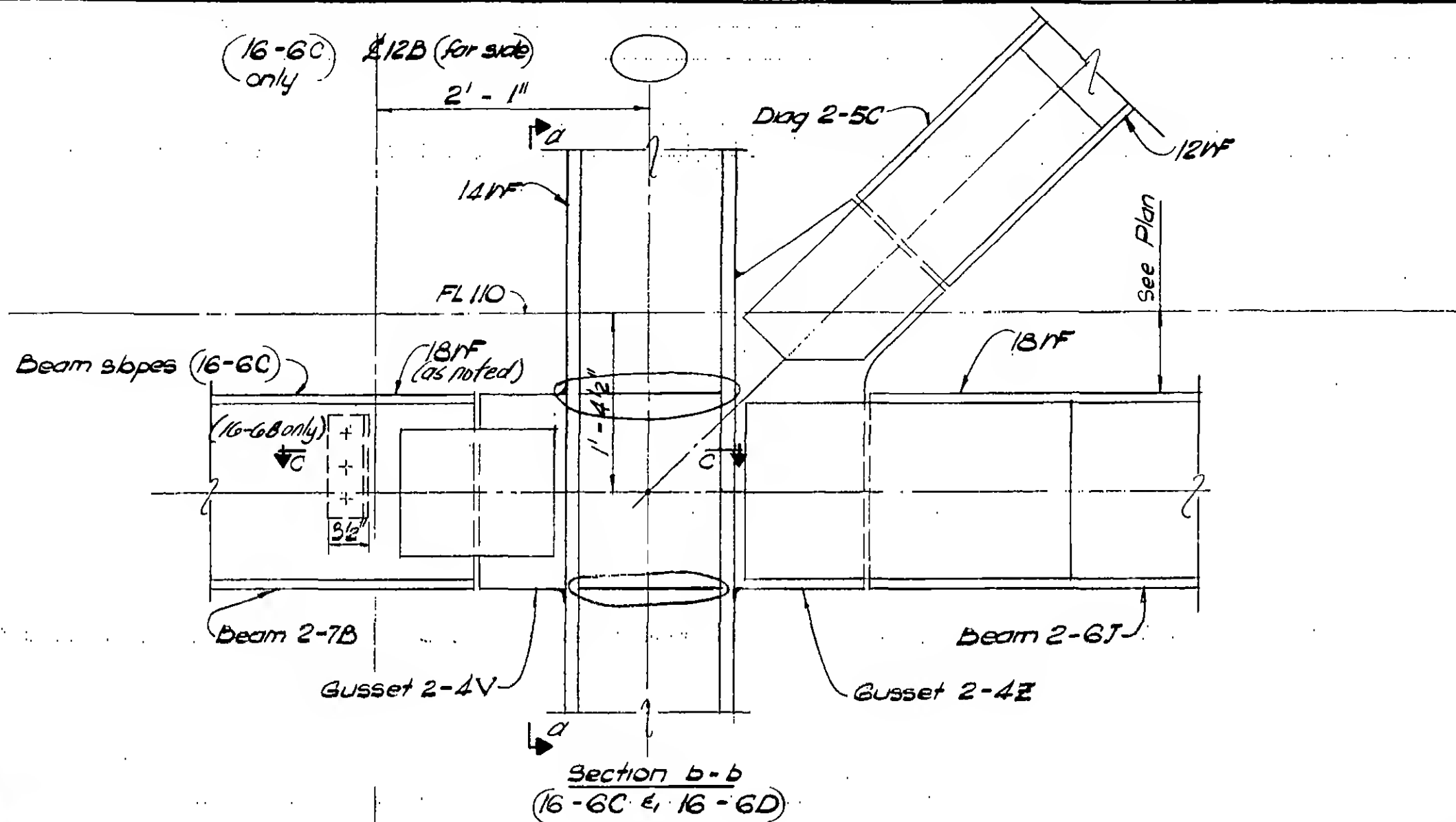
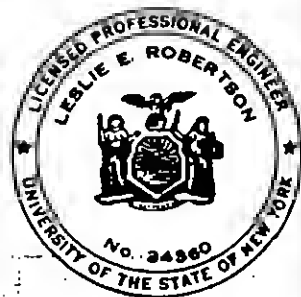
DATE

4-1-70

REVISIONS

6-15-70

7-8-70

Section C-C
(16-6C only)DESIGNED
K. HWANGDRAWN
W. ClarkeREVIEWED
E. Drakos

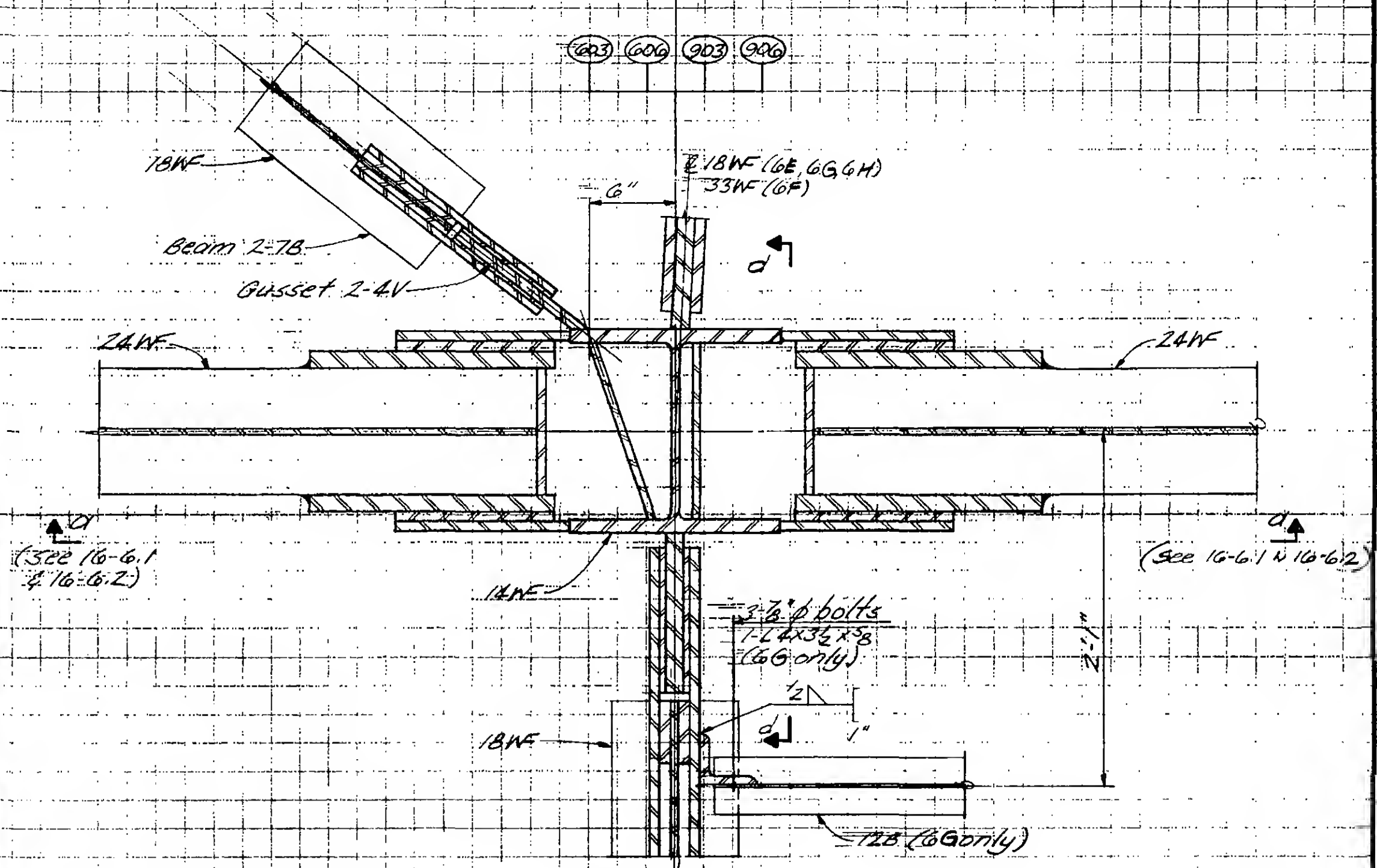
9-AB/6-6.5

PROJECT THE WORLD TRADE CENTER

TITLE AL 107-PH CONNECTION DETAILS - FL 110

DATE 12-14-70

REVISIONS



DESIGNED

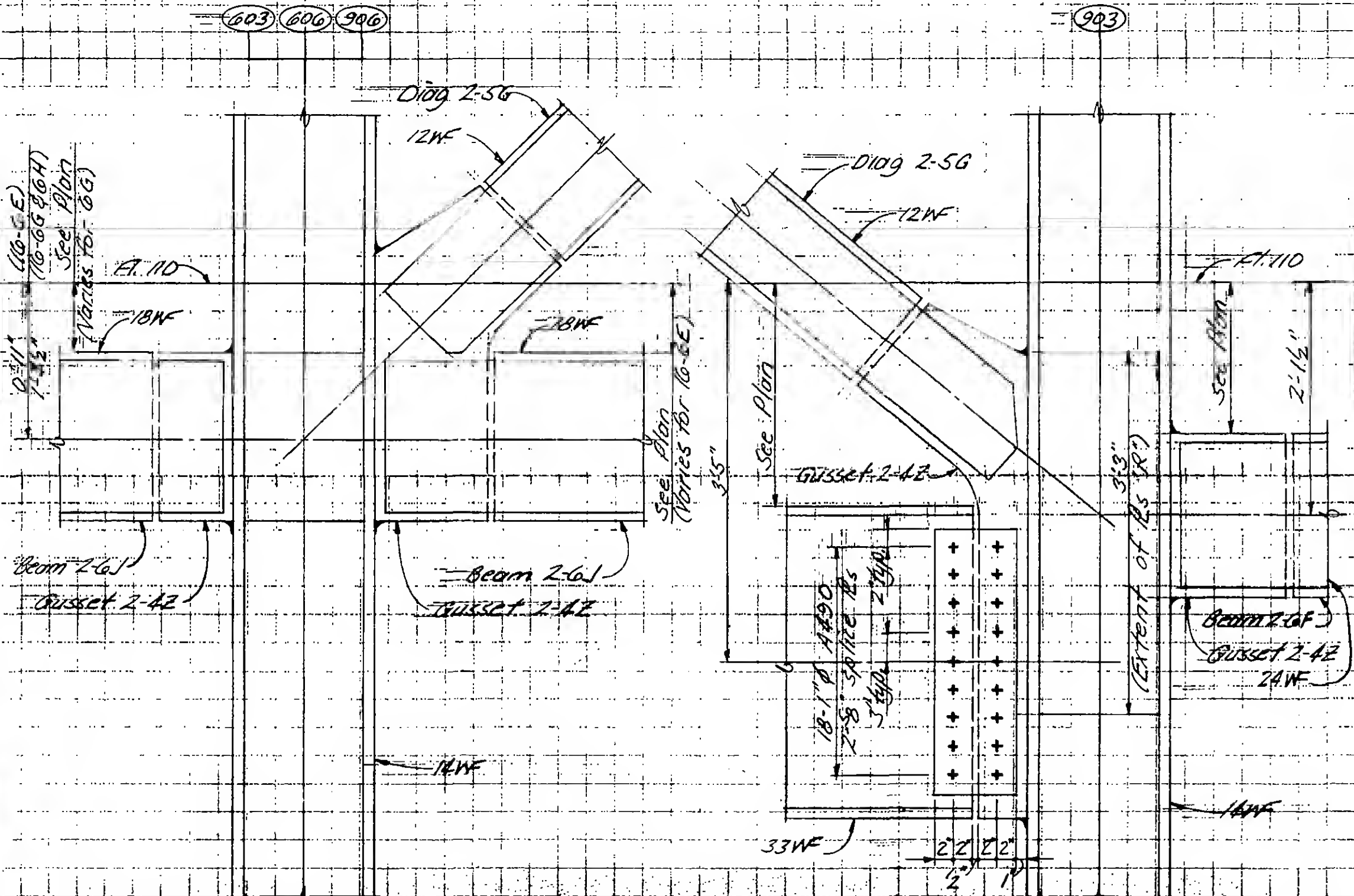
DRAWN

REVIEWED

Plan
 Detail 16-6 E (Col. 906)
 Detail 16-6 F (Col. 903) Similar and
 Detail 16-6 G (Col. 606) as noted
 Detail 16-6 H (Col. 603) AS SHOWN

9-B/6-6.6

REVISIONS



Section d-d
(10-GE, GG & GH)

Section d-a
(16-GF)

9-816-67



Structural & Civil Engineers

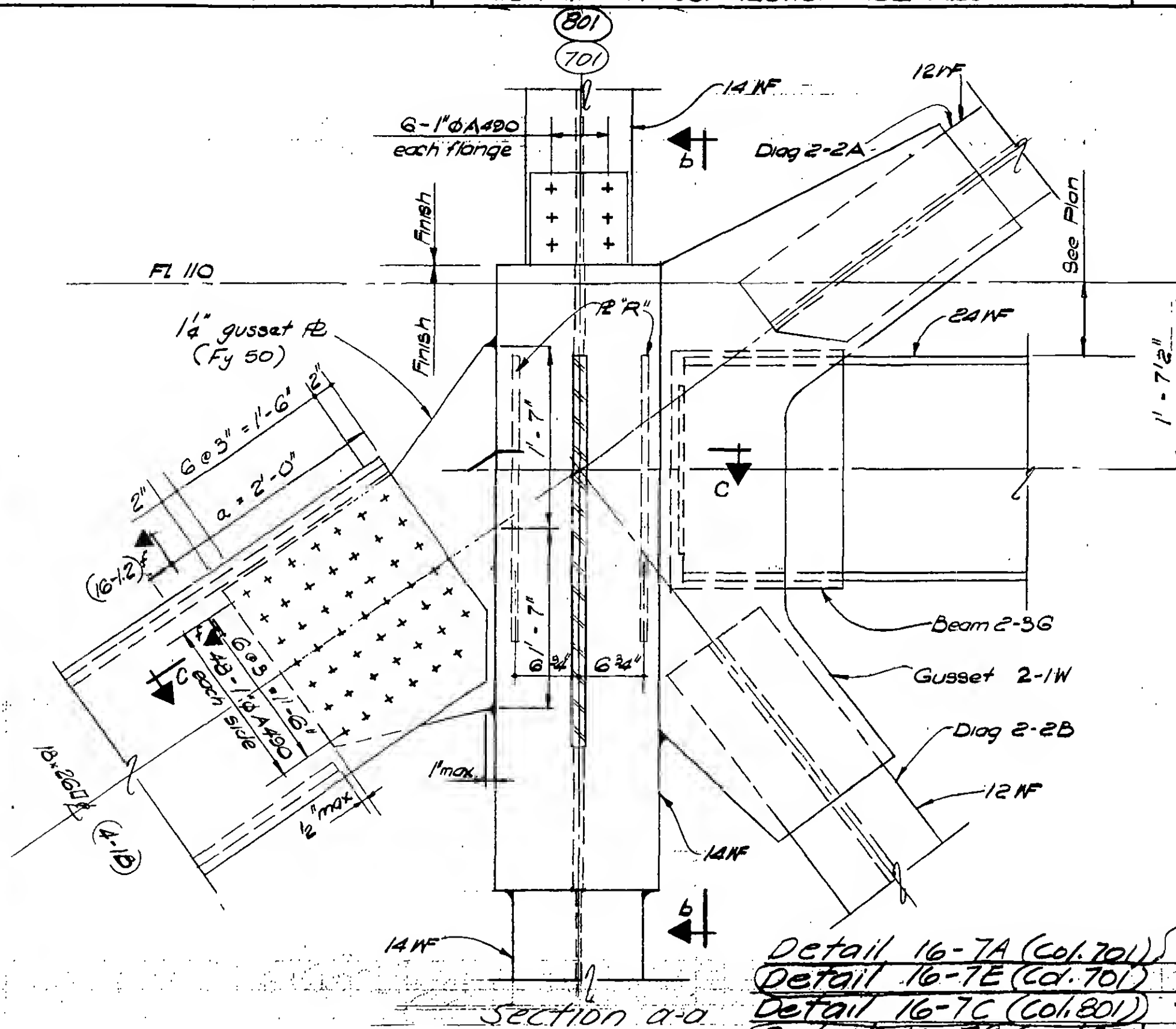
TITLE *FL 107 - PH CONNECTION DETAILS - FL 110*

DATE 4-1-70

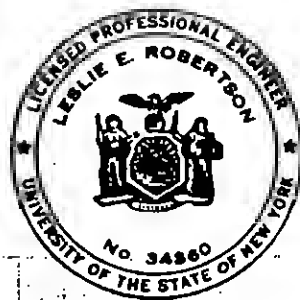
REVISIONS

6-18-70

12-14-70



Detail 16-7A (Col. 701)	Tower A
Detail 16-7E (Col. 701)	Tower B
Detail 16-7C (Col. 801)	Tower A
Detail 16-7G (Col. 801)	Tower B



DESIGNED

H. Voss

DRAWN
H. Clarke

REVIEWED

Ed. Drakos

9-AB/6-77

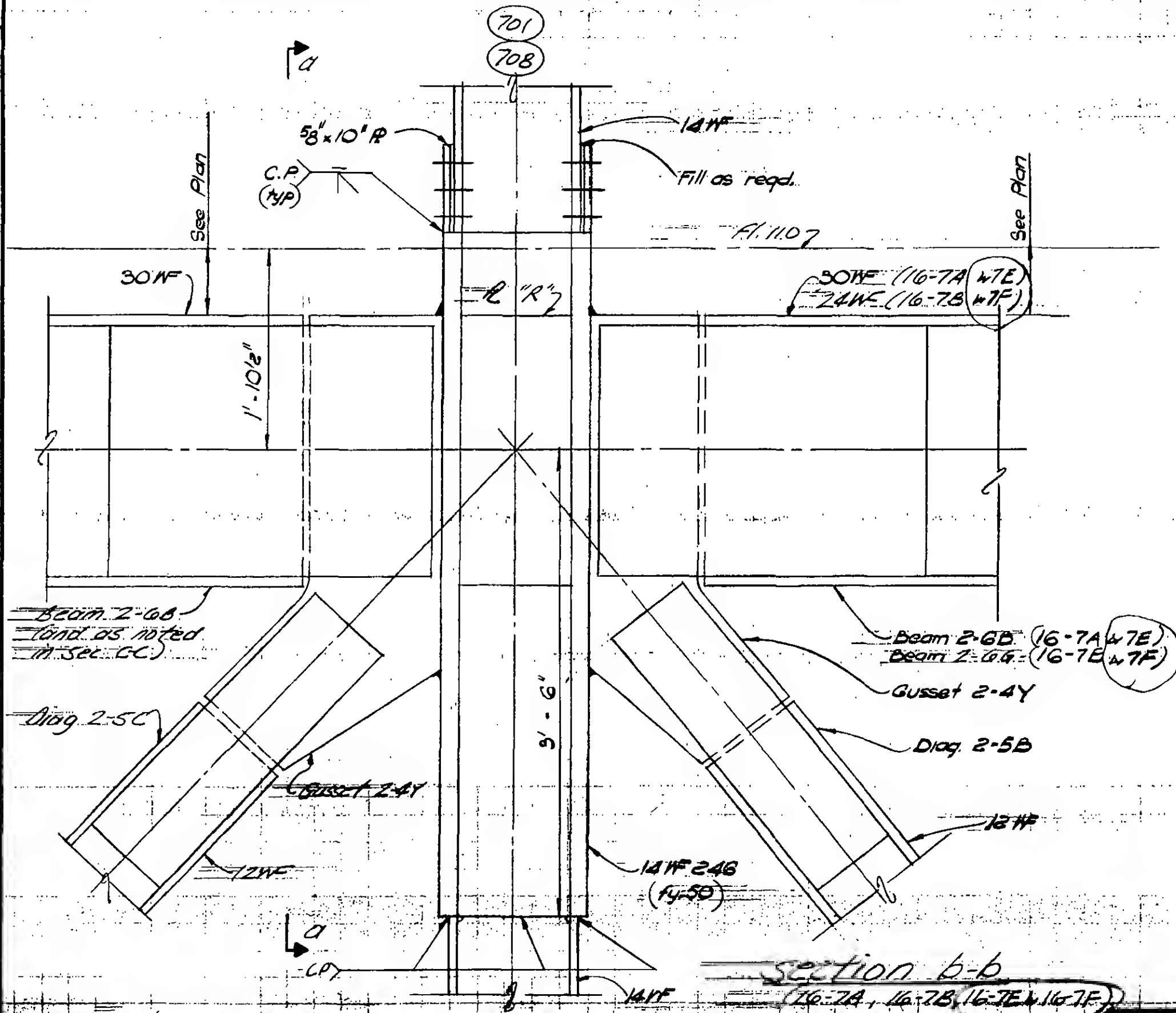
Structural & Civil Engineers

TITLE *FL 107 PH CONNECTION DETAILS - FL 110*

DATE 4-1-70

REVISIONS

6-18-70
12-14-70



DESIGNED

DRAWN
US Clerk

INDEX

E. Dracos

9-AB/6-7.2

Structural & Civil Engineers

PROJECT

: TITLE

FL 107-PH CONNECTION DETAILS - FL 110

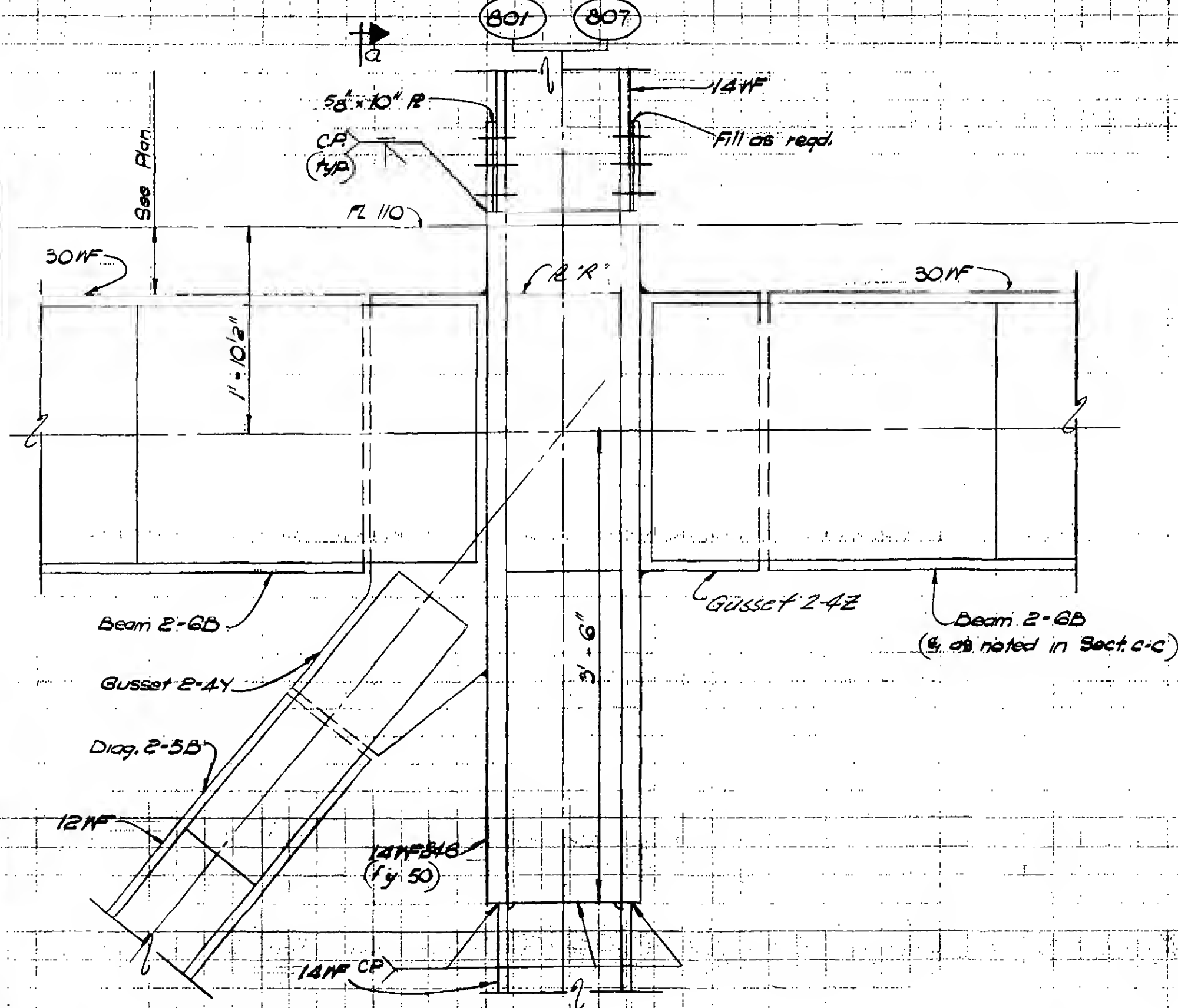
DATE

4-1-70

REVISIONS

6-18-70

12-14-70



Section b-b

(16-7C, 16-7D, 16-7G & 16-7H)

9-AB/8-7.3



DESIGNED

A. Cost

DRAWN		
<i>[Signature]</i>		

REVIEWED

E. Drago:

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

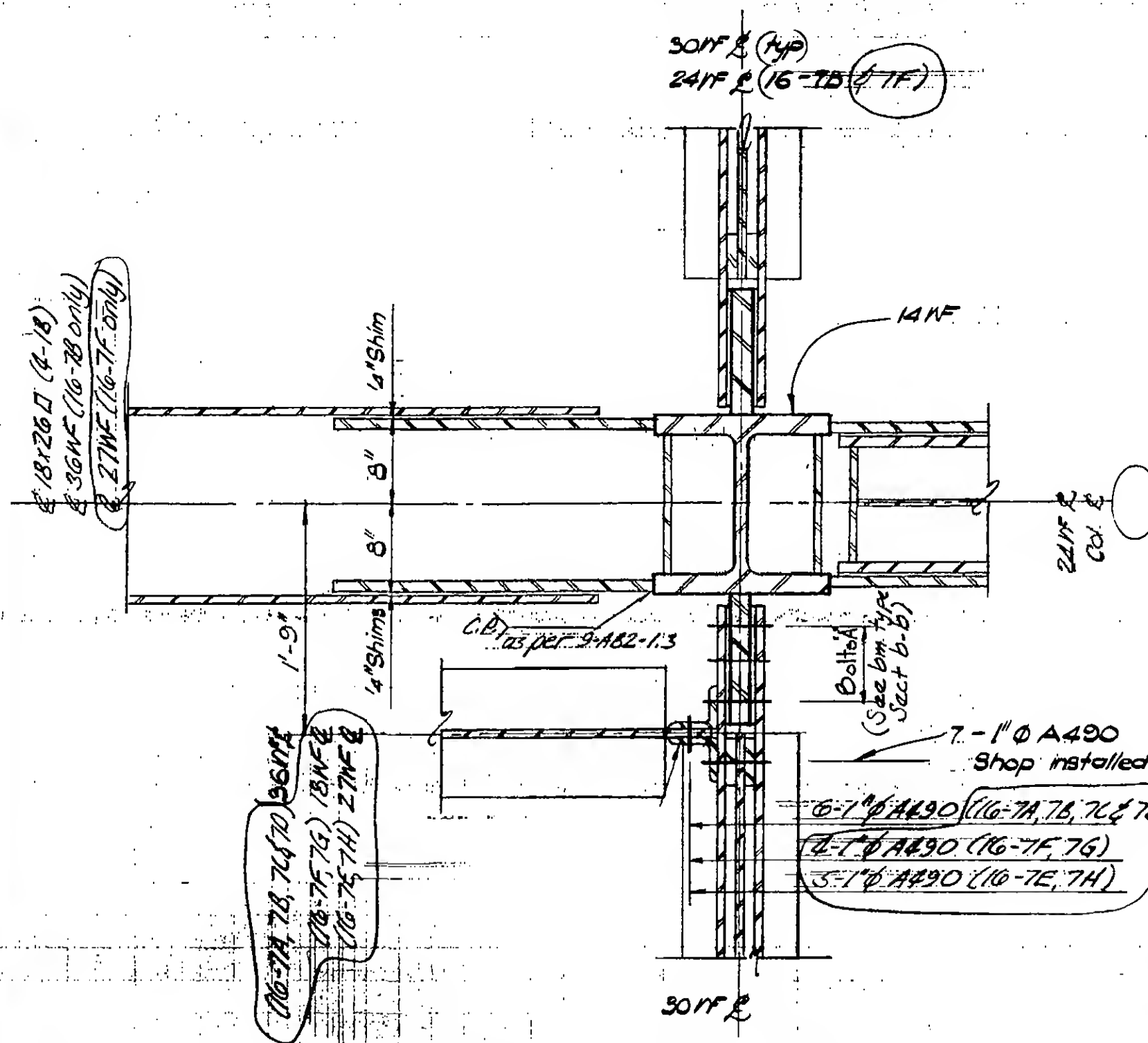
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - FL 110

DATE 4-1-70

REVISIONS

6/18/70
12/14/70



30WF

Section C-C

16-7A, 16-7E as shown

16-7B, 16-7F

16-7C, 16-7G

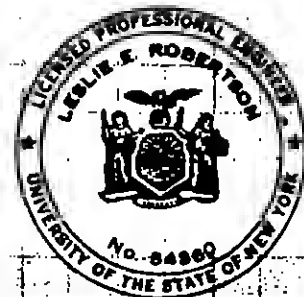
16-7D, 16-7H

similar to
as noted

Notes:

- All P's designated as gussets shall have holes 3/16" larger than nominal bolt diameter, all other holes shall be 1/16" larger.

9-AB16-7:4



DESIGNED

DRAWN

REVIEWED

E. Dracos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

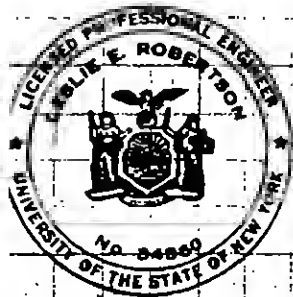
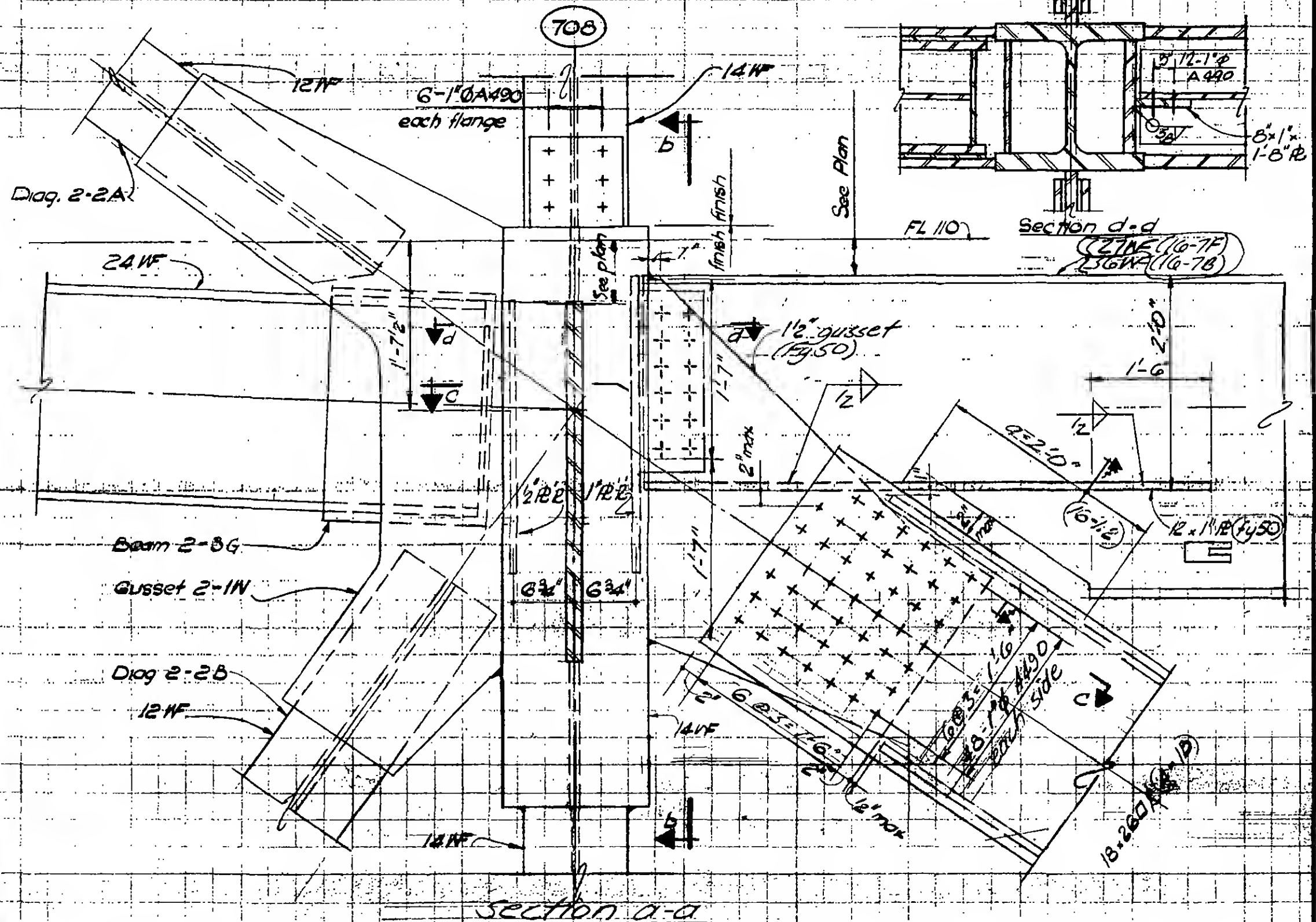
FL 107 PH CONNECTION DETAILS - FL 110

DATE

4-1-70

REVISIONS

6/18/70
12/14/70



DESIGNED

W. Clarke

DRAWN

W. Clarke

REVIEWED

E. Drakes

Detail 16-7B (Col. 703) TOWER A
Detail 16-7F (Col. 703) TOWER B

D-16-7-75

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

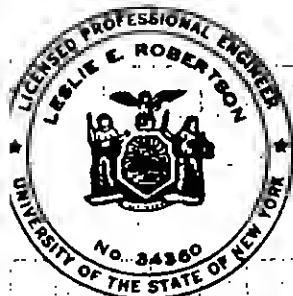
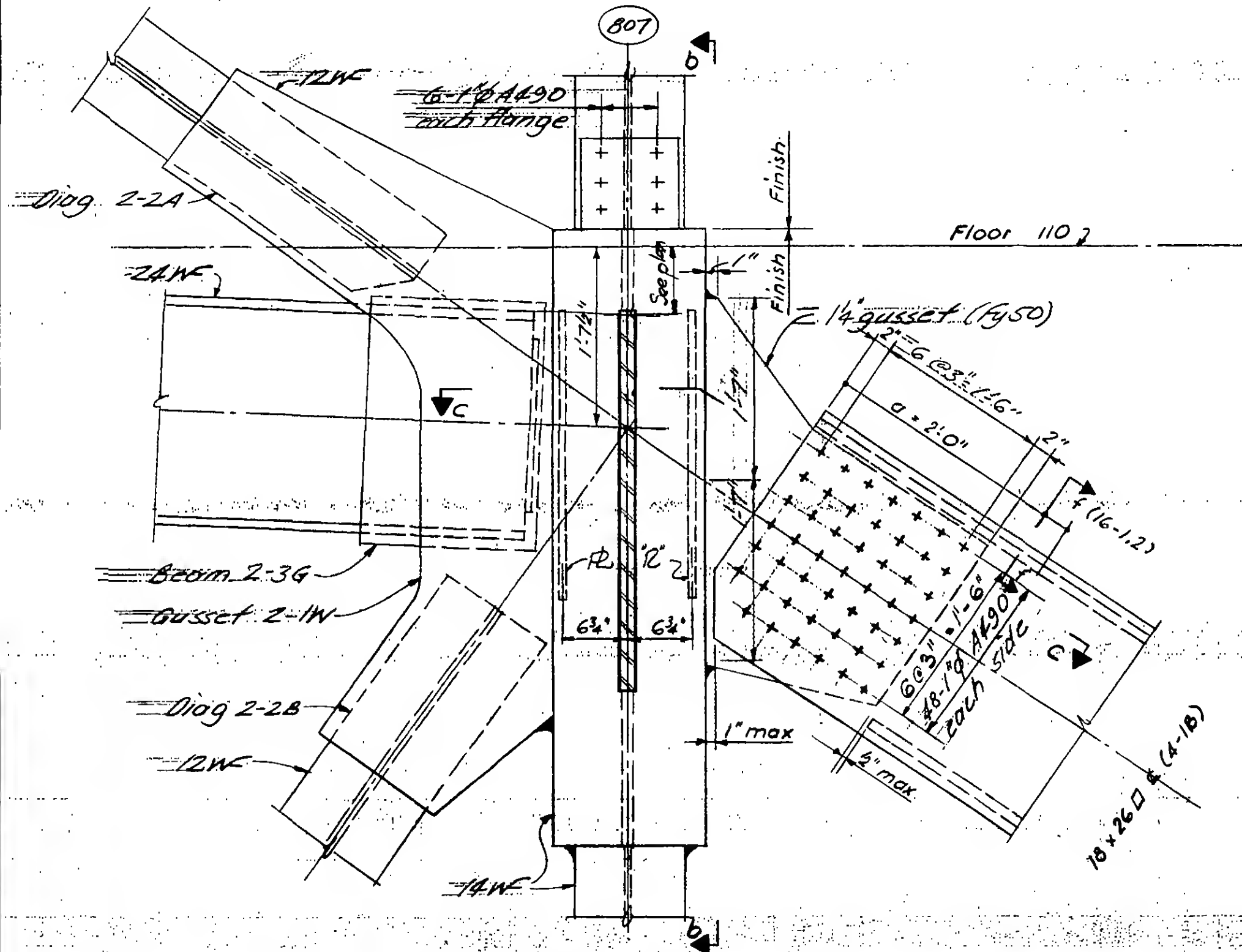
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS FL 110

DATE 6-18-70

REVISIONS

12/14/70



Signed Von

Drawn

E. Draper

9-1816-26

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

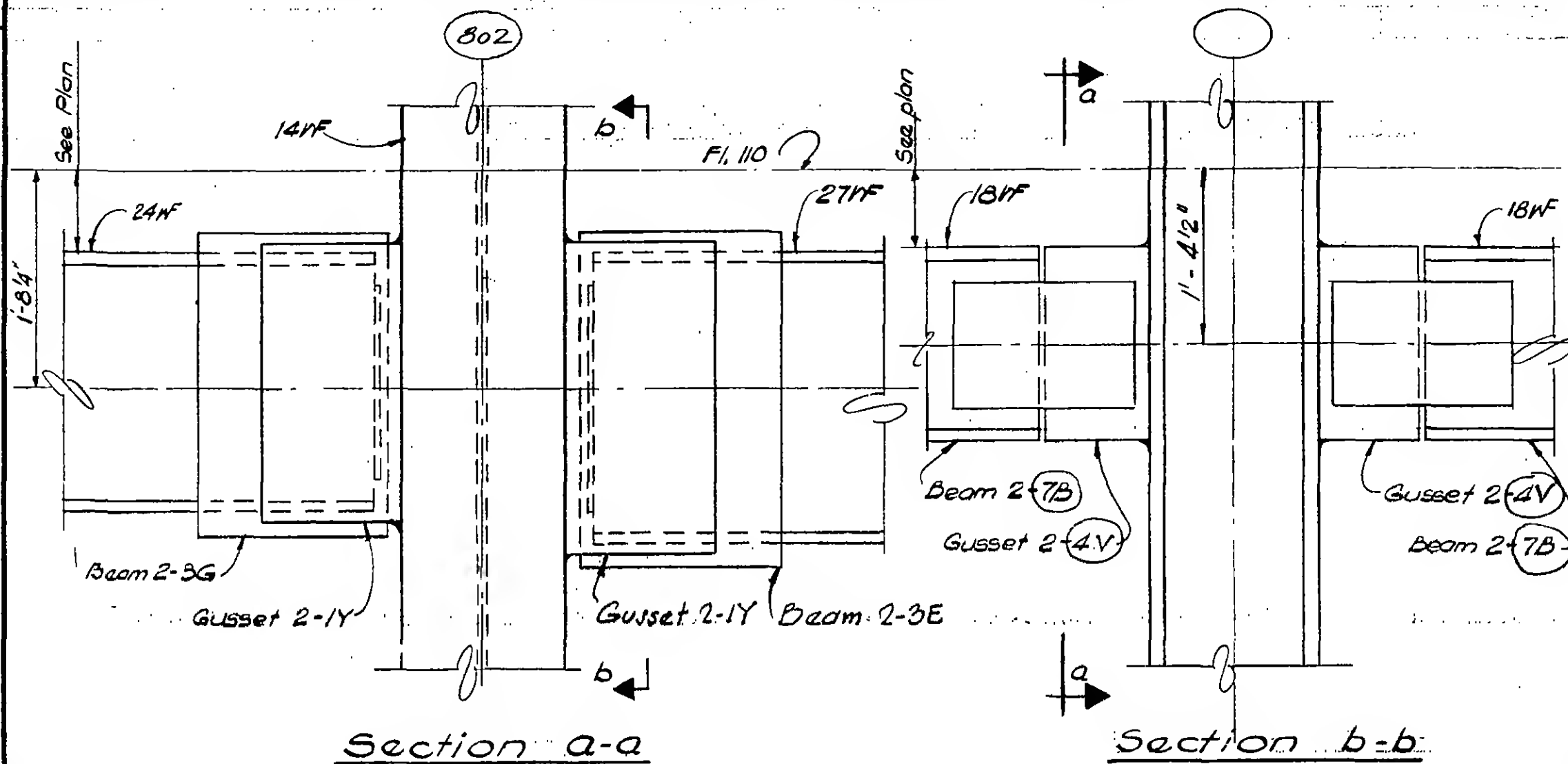
FL 107 PH CONNECTION DETAILS - FL 110

DATE

4-1-70

REVISIONS

6-15-70



DETAIL 16-8A



DESIGNED

Petal

DRAWN

D. Huggins

REVIEWED

E. Draxos

9-AB 16-8.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

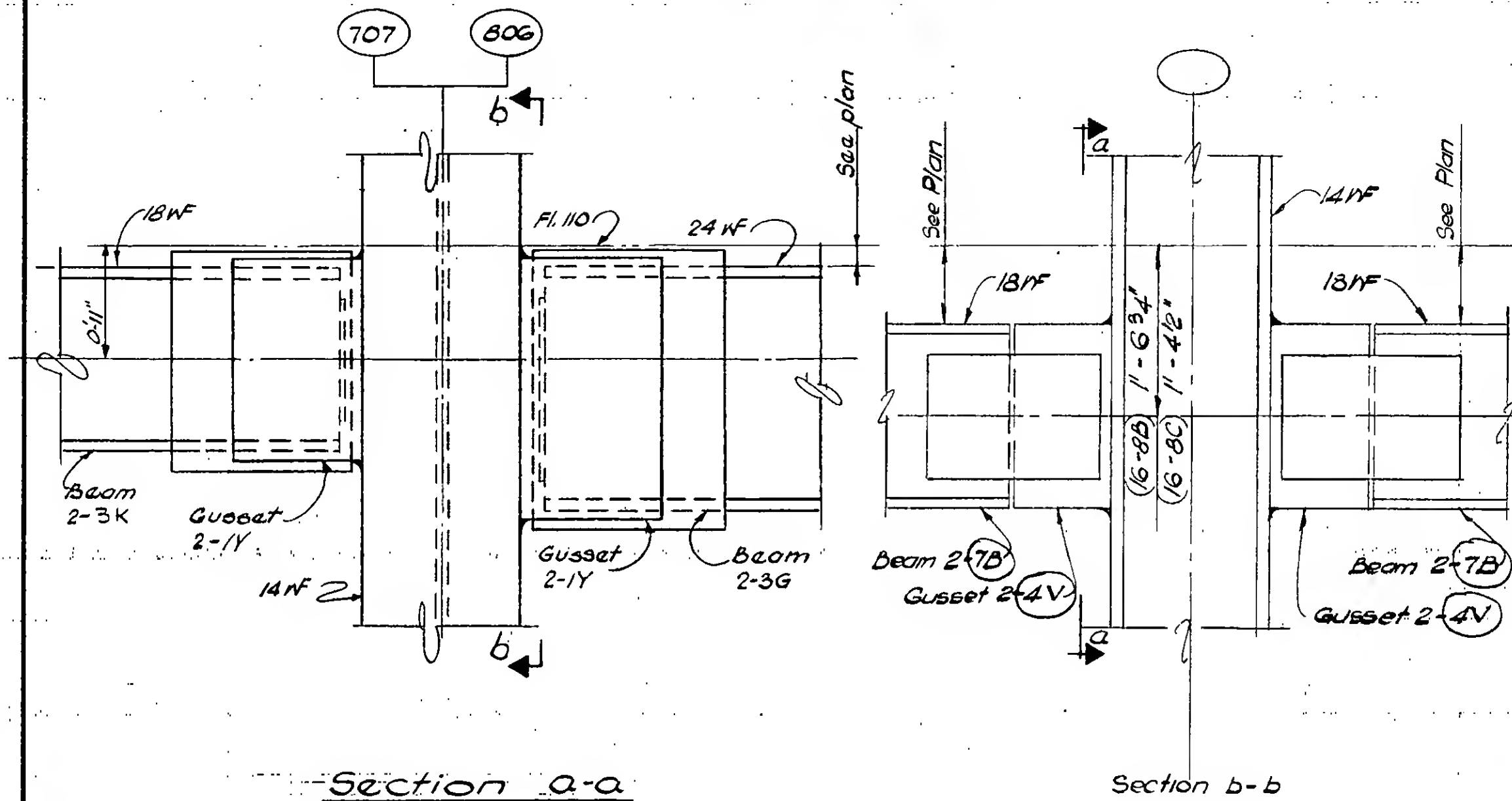
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAIL - FL 110

DATE 4-1-70

REVISIONS

6-15-70



DETAIL 16-8B (Col. 707)

DETAIL 16-8C (Col. 806)

DESIGNED
J. PoteDRAWN
D. HigginsREVIEWED
E. Drakos

9 AB/G-22

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

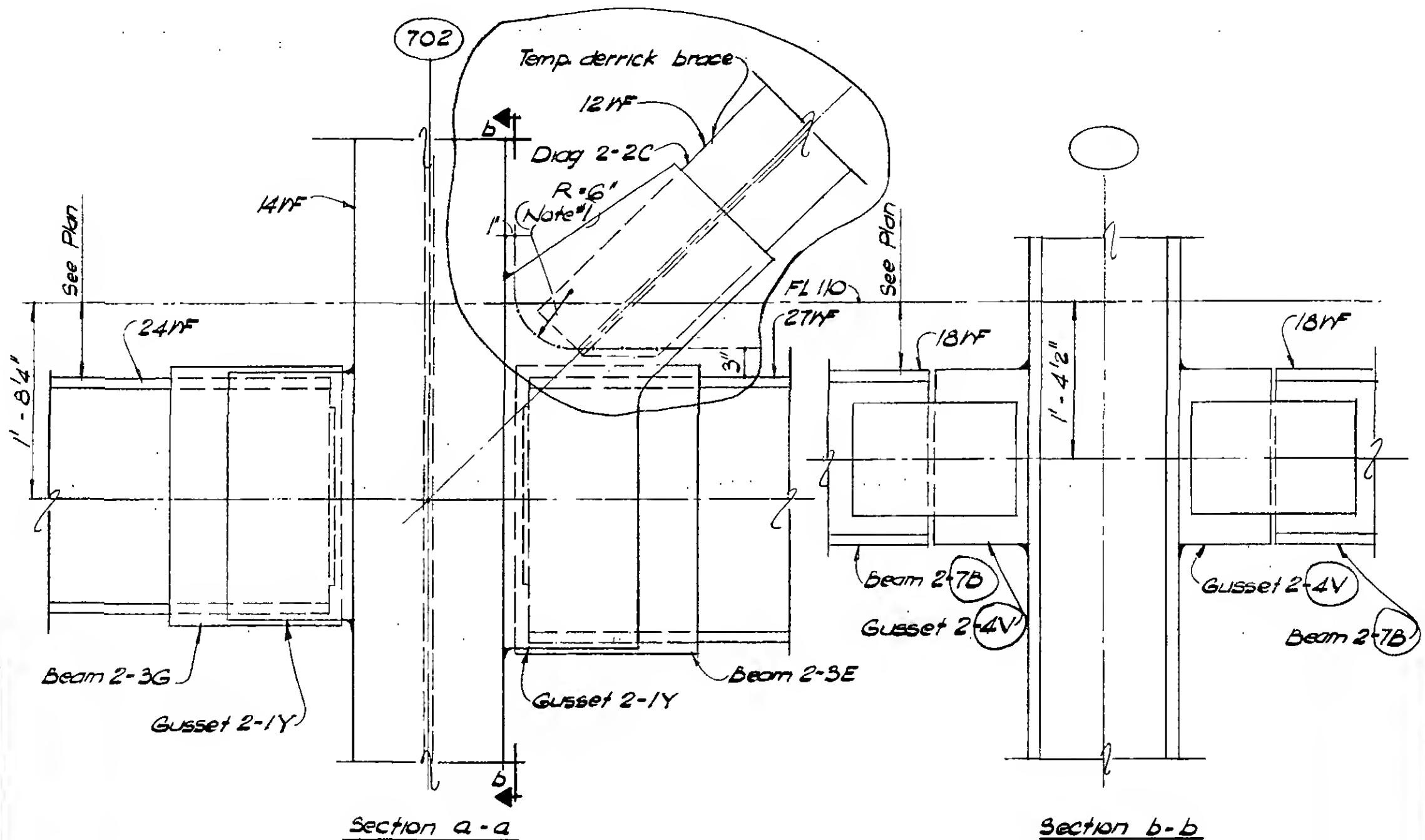
FL 107-PH CONNECTION DETAILS - FL 110

DATE

4-1-70

REVISIONS

6-15-70



DETAIL 16-8D

Notes:

1. ——— Indicates smooth notch-free gusset R cut (ASA 250), following removal of temporary derrick brace.

9-AB16-8.9



DESIGNED

DRAWN

W. Clarke

REVIEWED

E. Draxos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

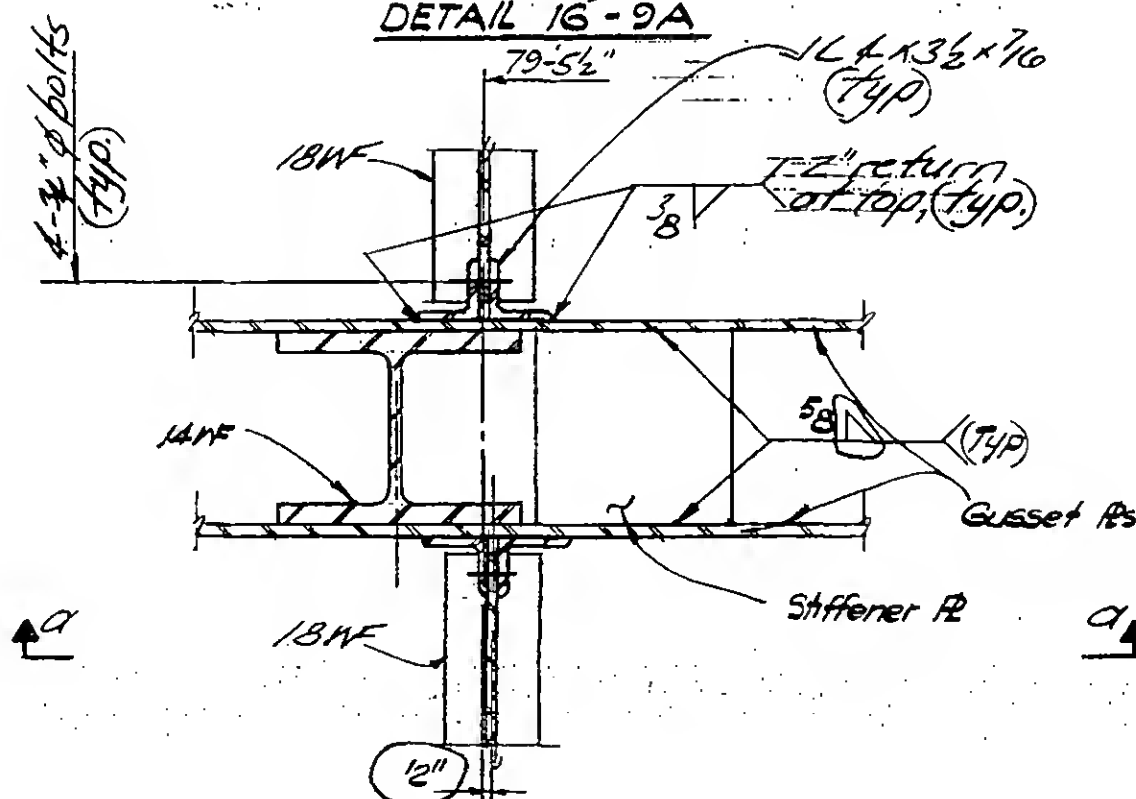
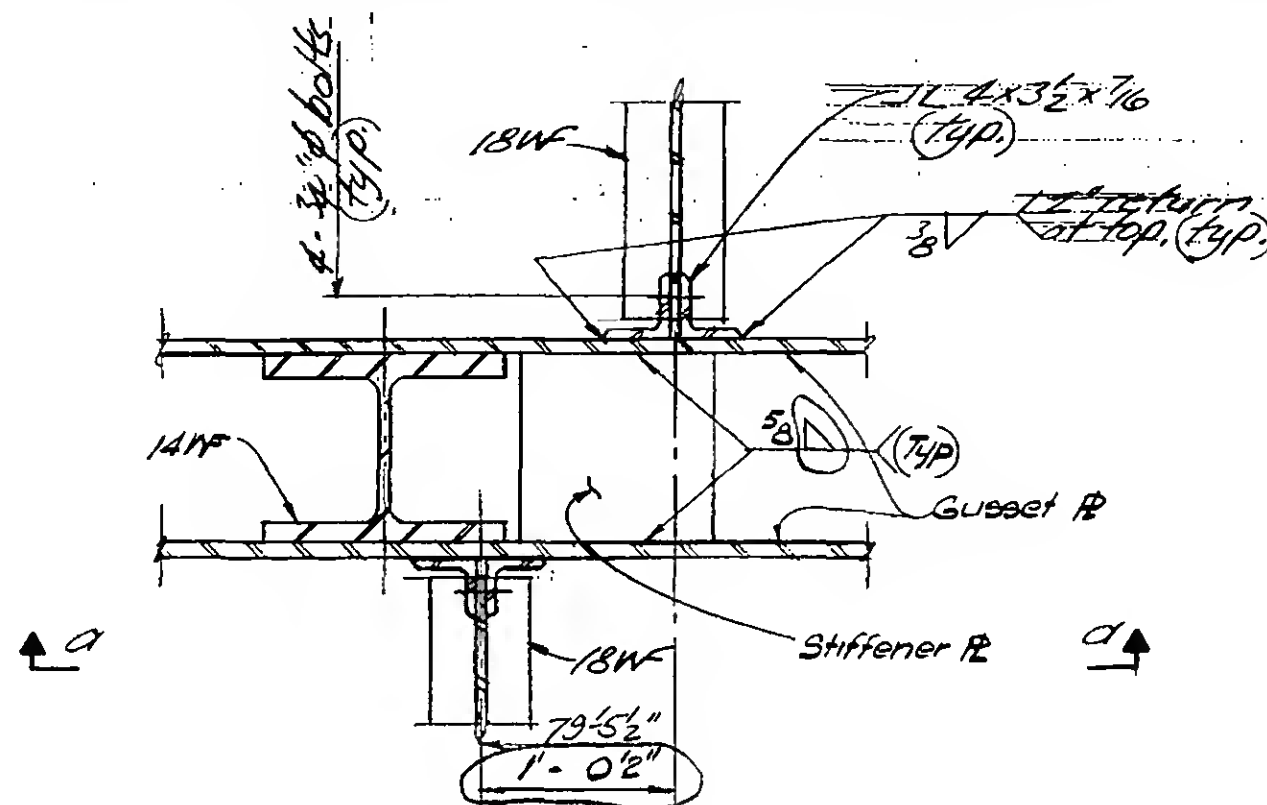
FLOOR 107 PH CONNECTION DETAIL FL 110

DATE

4-1-70

REVISIONS

6-15-70



Section b-b
(16-9B)
DETAIL 16-9B

9-A876-9.1



DESIGNED

K. HWANG

DRAWN

N. Clarke

REVIEWED

E. Drakos

PROJECT

THE WORLD TRADE CENTER

TITLE

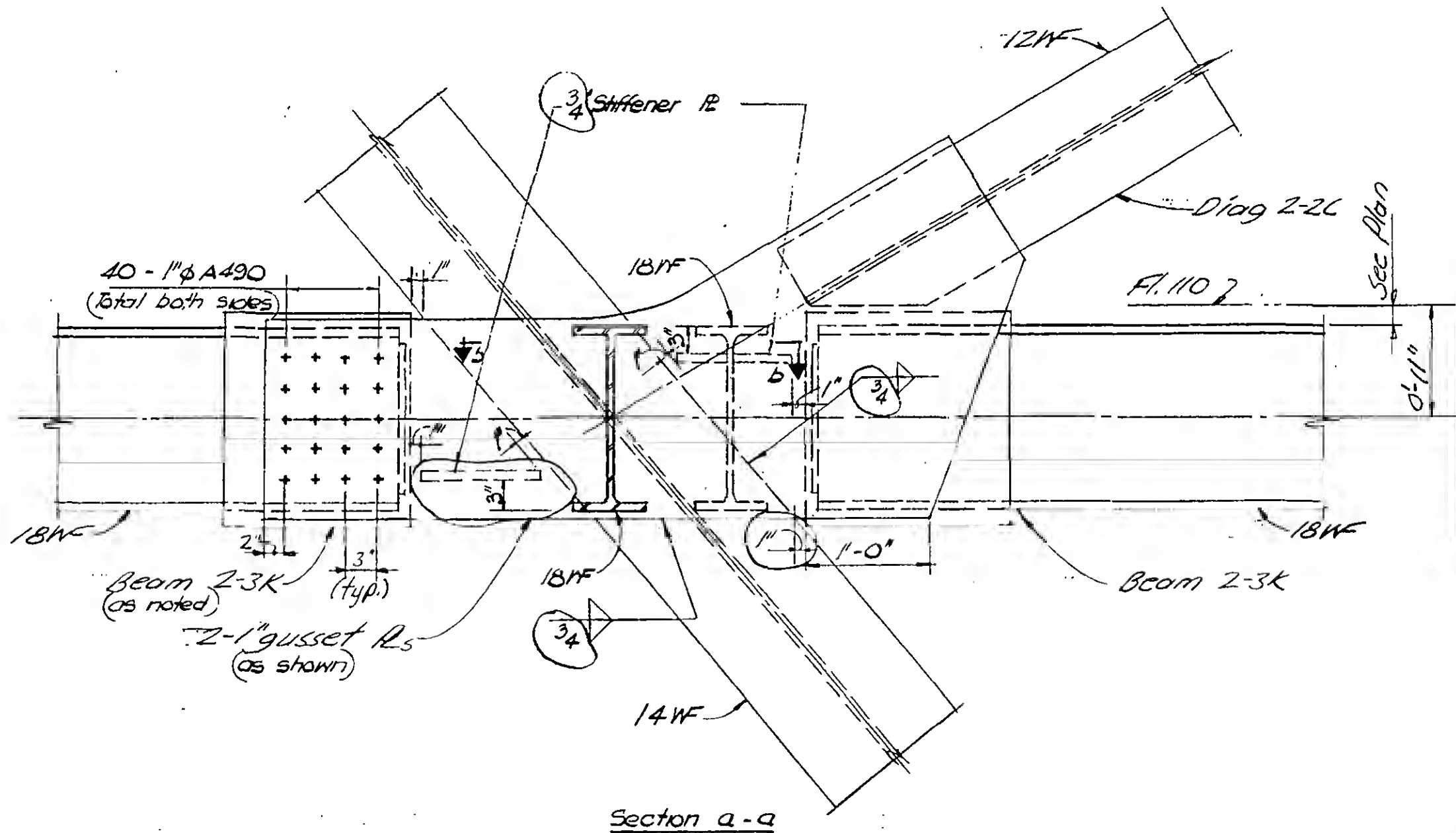
FLOOR 107-PH CONNECTION DETAIL - FL 110

DATE

4-1-70

REVISIONS

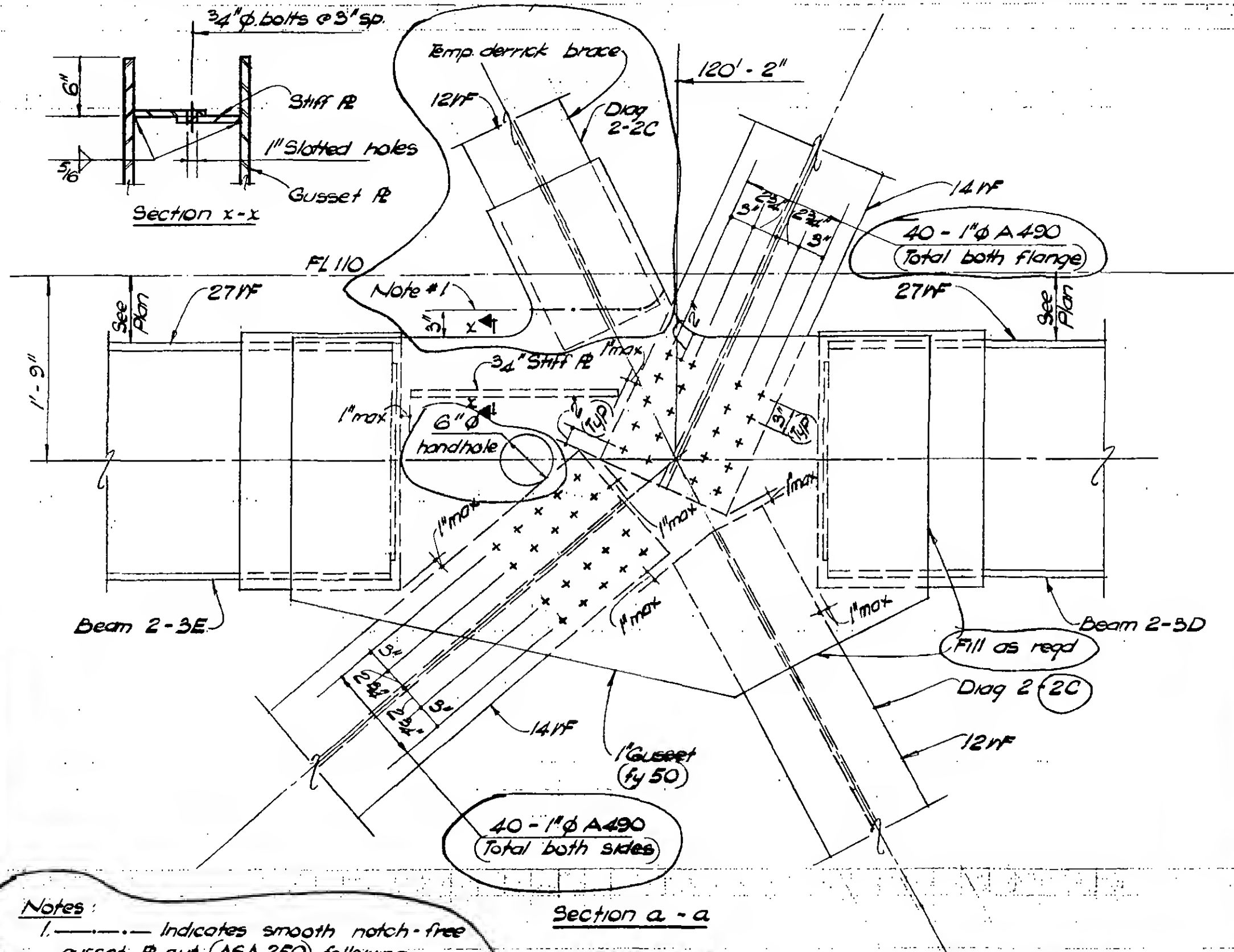
6-15-70

DESIGNED
K. HwangDRAWN
W. ClarkeREVIEWED
E. DrakosDETAIL 16-9A (as shown)
DETAIL 16-9B (similar)

9-AB16-9.2

REVISIONS

6-15-70



Notes :

1. ——— Indicates smooth notch-free gusset R cut (ASA 250), following removal of temporary derrick brags

Section a - a

DETAIL 12-10



DESIGNED

DRAWN

DRAWN
N. Clarke

REVIEWED

E. Dravos

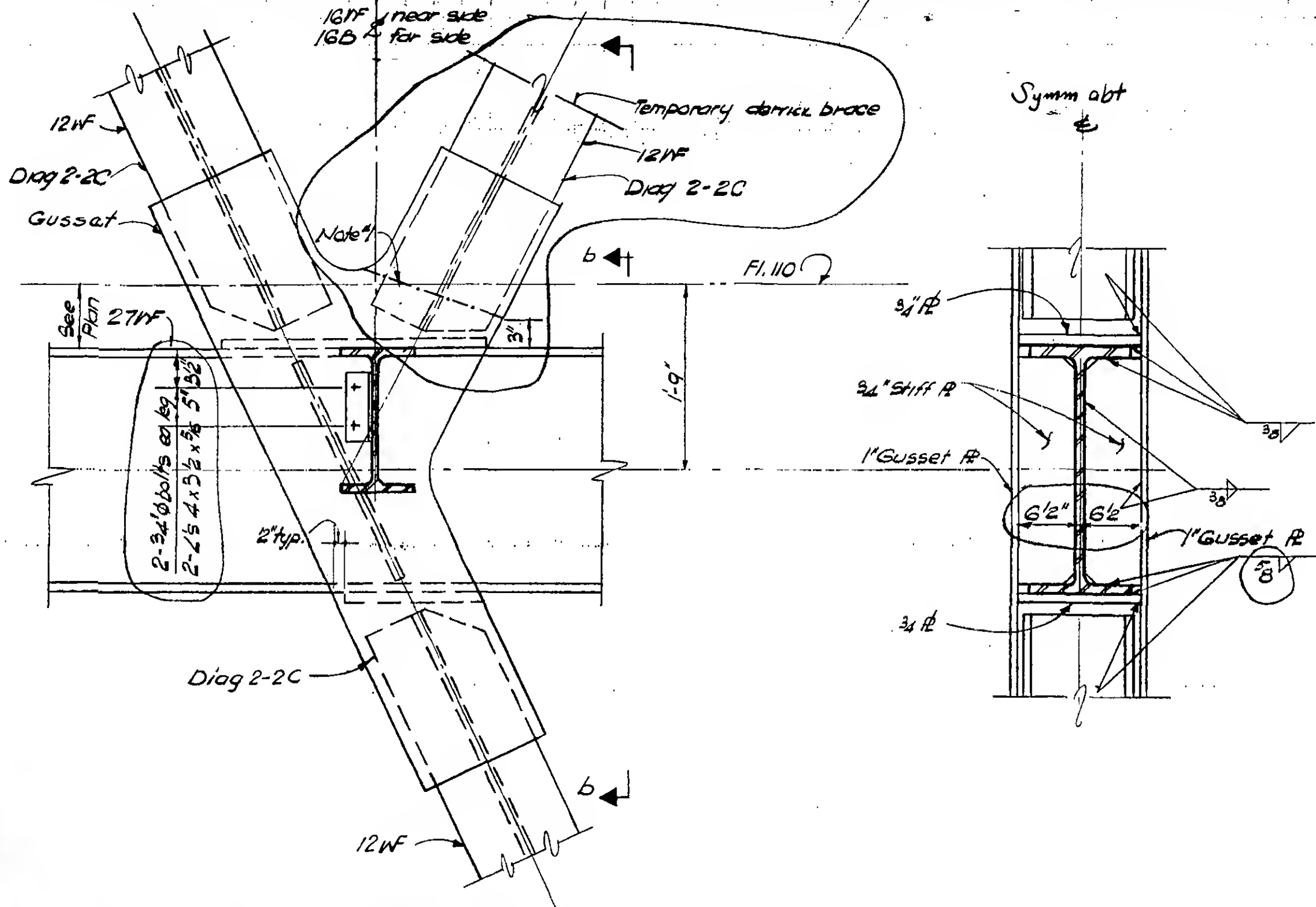
9-AB/6-10

Structural & Civil Engineers

TITLE *FI. 107-PH CONNECTION DETAILS-FL 110*

DATE 4-1-70

6-15-70



Section a-a

Section b-b



DRAWN
D. Huggins

REVIEWED
E. Drakos

Notes:

1. —. —. — Indicates smooth notch-free gusset R cut (ASA 250), following removal of temporary derrick brace.

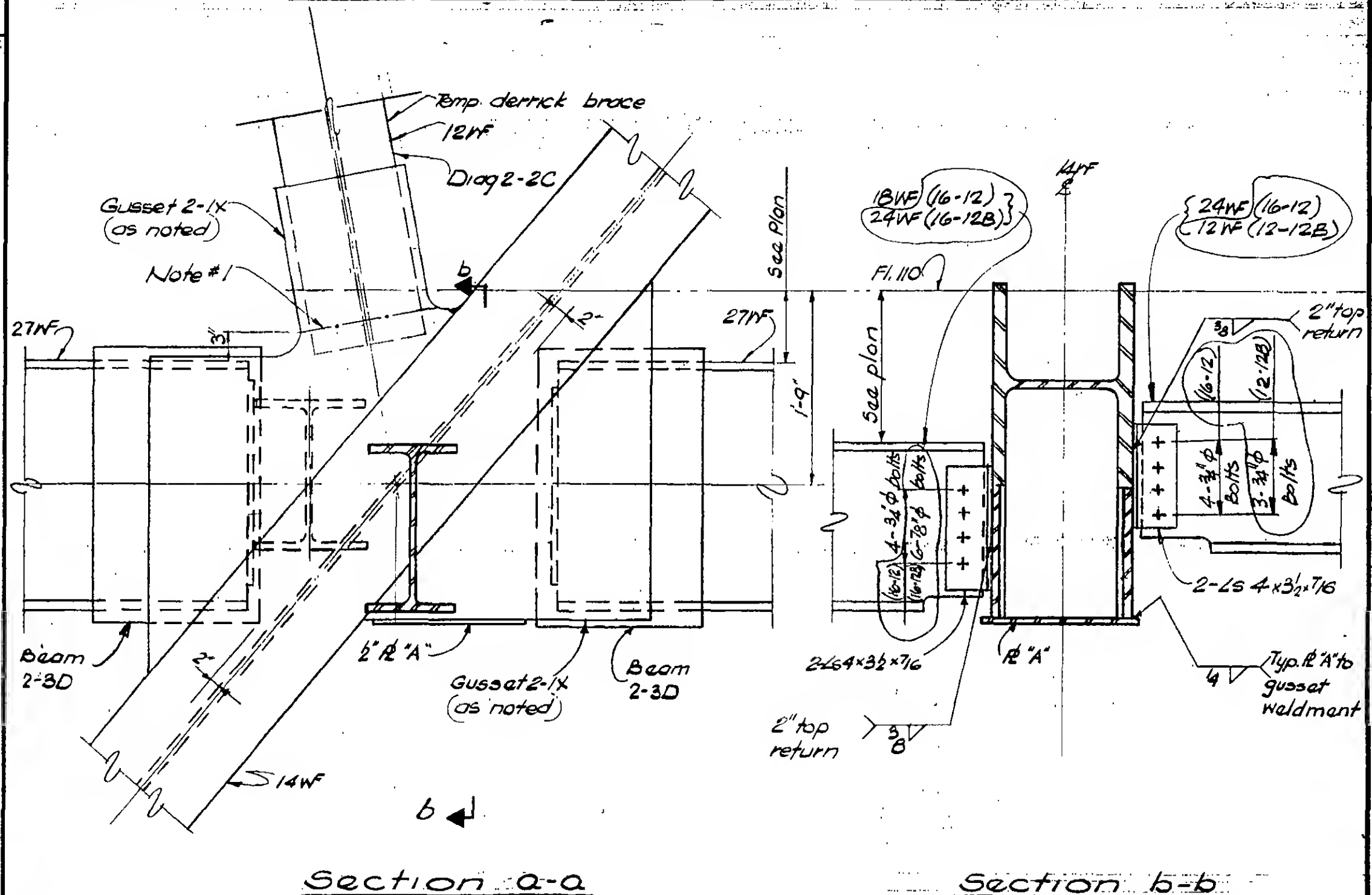
DETAIL 16-11'

9-AB-16-11...

REVISIONS

6-15-70

12-14-70



DETAIL 16-12

DETAIL 16-12B as noted

Notes:

1. - - - - Indicates smooth notch-free gusset R cut (ASA 250), following removal of temporary derrick brace.

DESIGNED
H. CzajkowskiDRAWN
D. HugginsREVIEWED
E. Draxos

9-AB 16-12

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

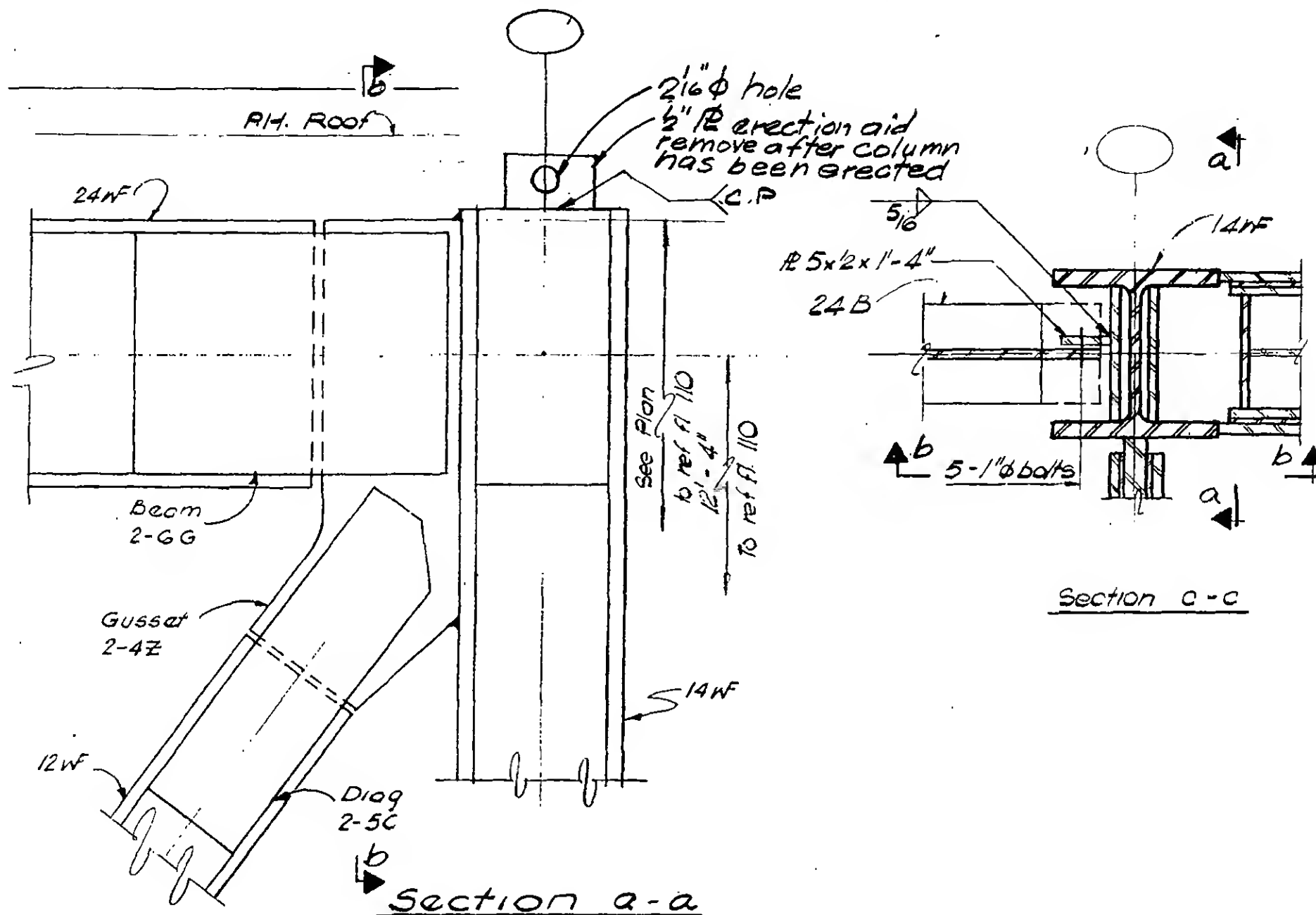
PROJECT THE WORLD TRADE CENTER

TITLE FI. 107-PH CONNECTION DETAILS-PH ROOF

DATE 4-1-70

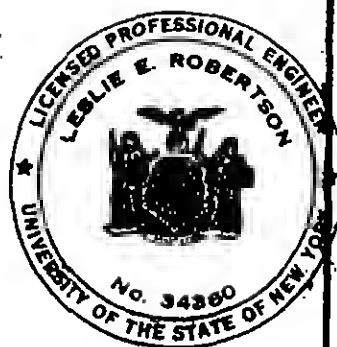
REVISIONS

6/18/70
 VOID 9/25/70
 6/18/70



DETAIL 17-1A, 17-1B, 17-1C

9-AB/7-1.1



DESIGNED

Patel

DRAWN

D. Huggins

REVIEWED

E. Drakos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

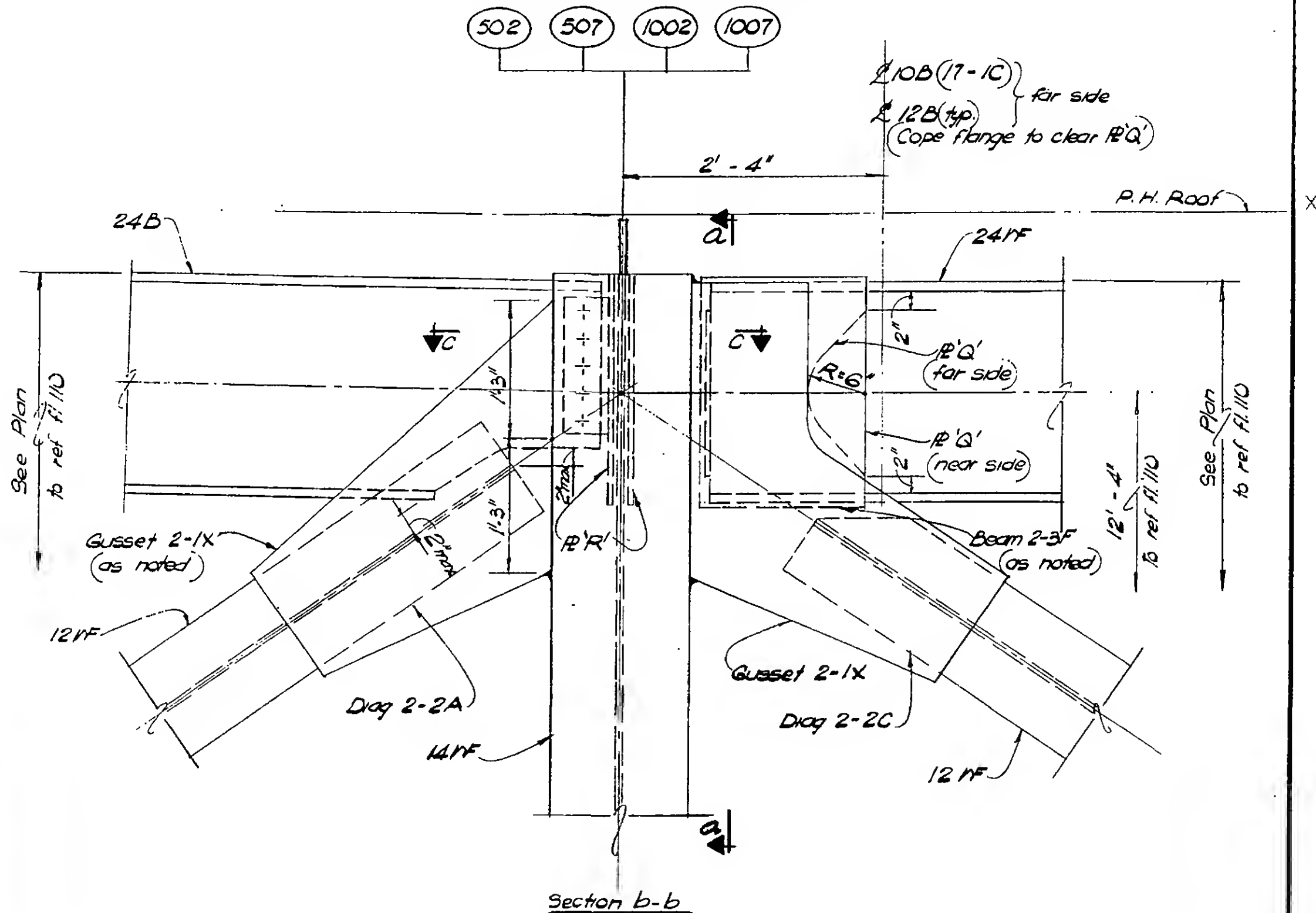
FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE

4 - 1 - 70

REVISIONS

6/18/70
 void 9/25/70
 6/18/70

DESIGNED
K. HWANGDRAWN
W. ClarkeREVIEWED
E. Drakos

DETAIL 17-1A (Col. 502 as shown)

DETAIL 17-1B (Cols. 1002 & 1007)

DETAIL 17-1C (Col. 507)

similar &
as noted

9-AB17-1.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

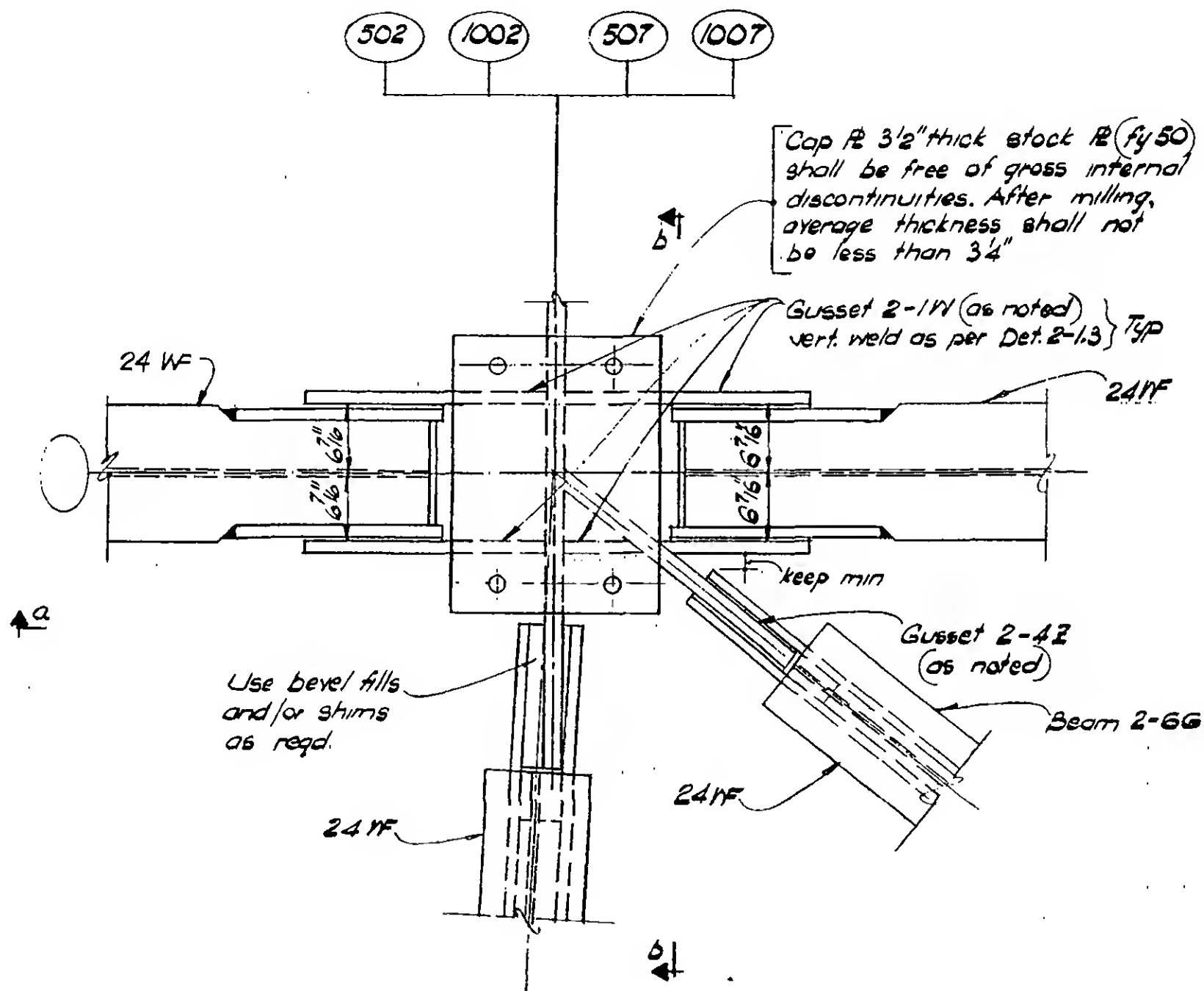
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE 12/14/70

REVISIONS



PLAN

DETAIL 17-1D (Col. 502 as shown)
 DETAIL 17-1E (Col. 1002) } similar
 DETAIL 17-1F (Col. 507) } and as
 DETAIL 17-1G (Col. 1007) } noted



DESIGNED

DRAWN
W. Clarke

REVIEWED

9-B17-1.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

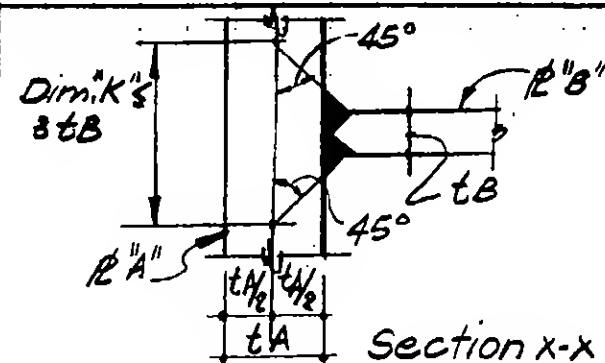
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

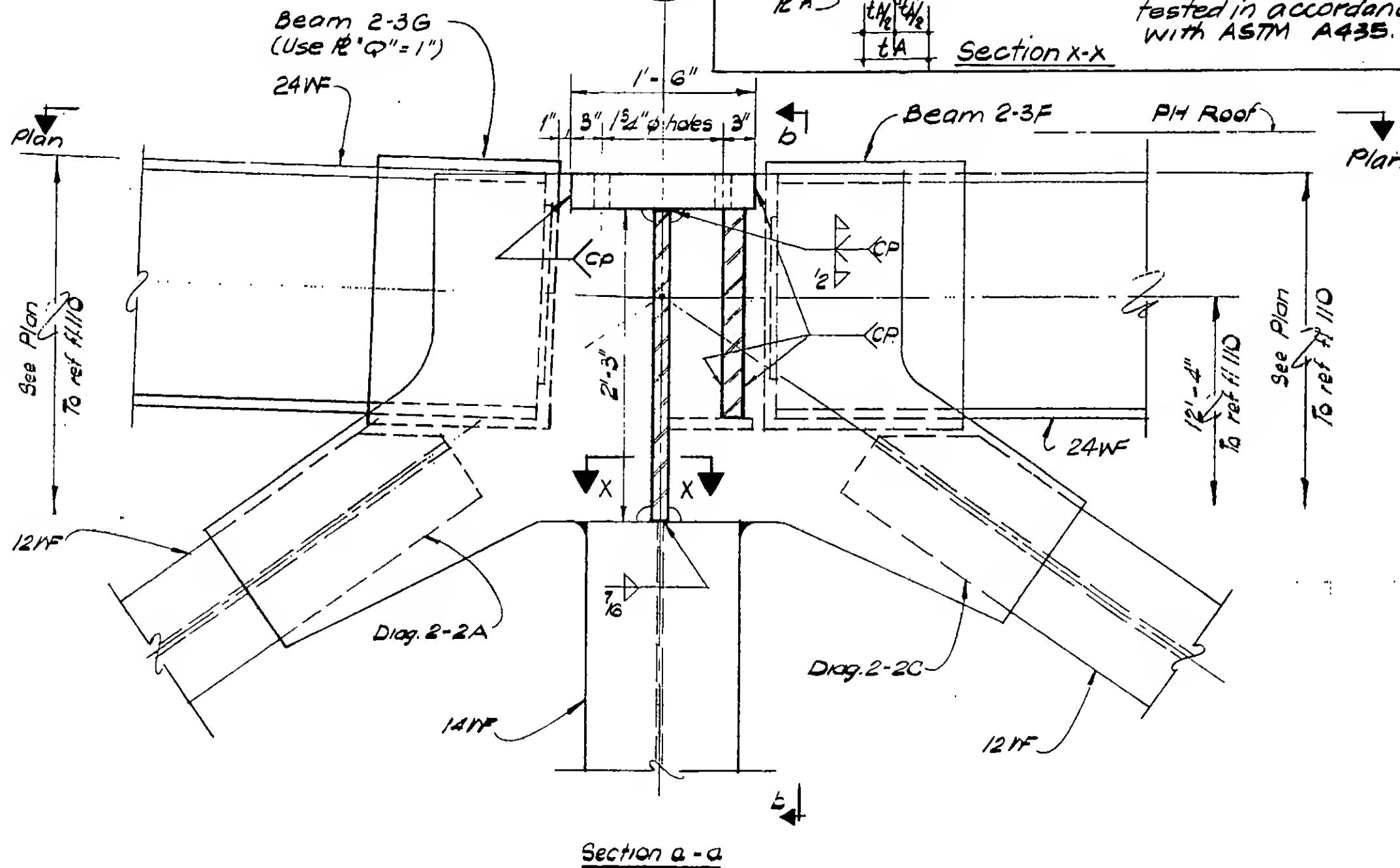
TITLE FL 107-PH CONNECTION DETAILS - PH ROOF

DATE 12/14/70

REVISIONS



Volume of R'A" =
Dim. "K" x depth of C.P.
weld, shall be free
from gross internal
discontinuities when
tested in accordance
with ASTM A435.



DESIGNED

DRAWN
W. Clarke

REVIEWED

9-B/7-1.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

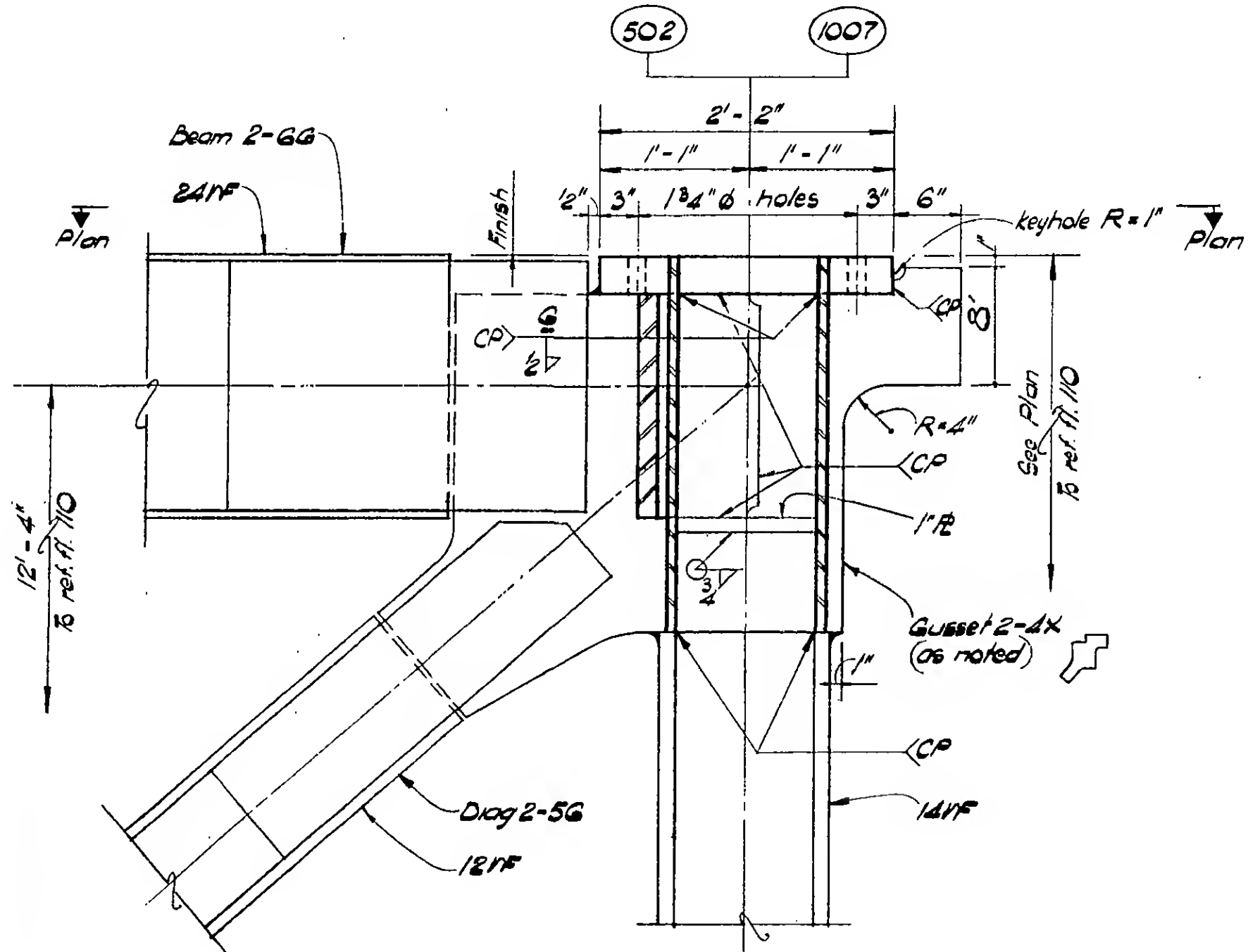
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - PH. ROOF

DATE 12/14/70

REVISIONS



Section b-b

DETAIL 17-1D (Col. 502 as shown)
 DETAIL 17-1G (Col. 1007 opp hand)



DESIGNED

DRAWN

N. Clarke

REVIEWED

9-B/7-1.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

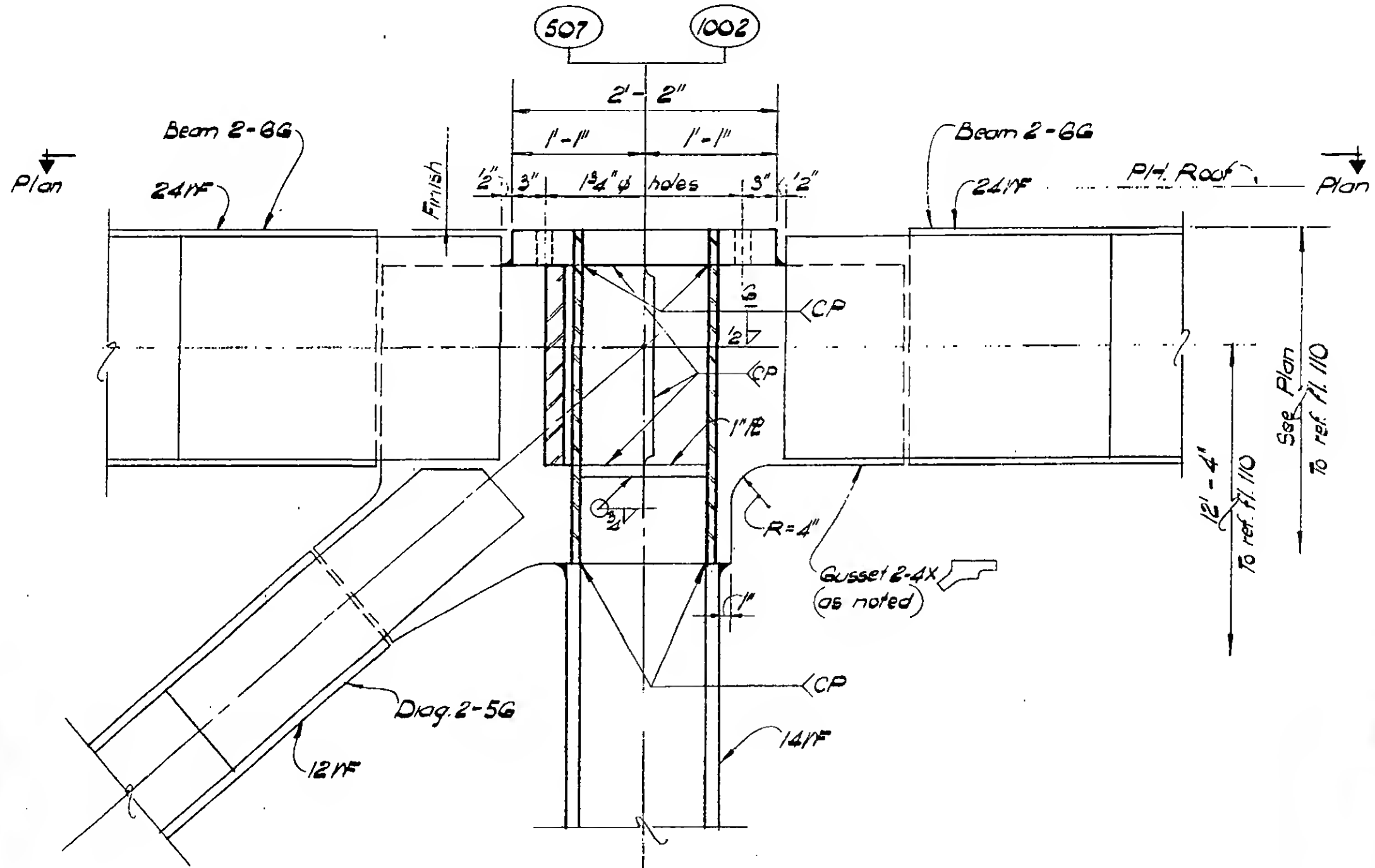
Structural & Civil Engineers

PROJECT: THE WORLD TRADE CENTER

TITLE: FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE: 12/14/70

REVISIONS



Section b-b

DETAIL 17-1F (Col. 507 as shown)
 DETAIL 17-1E (Col. 1002 opp. hand)



DESIGNED

DRAWN

W. Clarke

REVIEWED

9-B/7-1.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

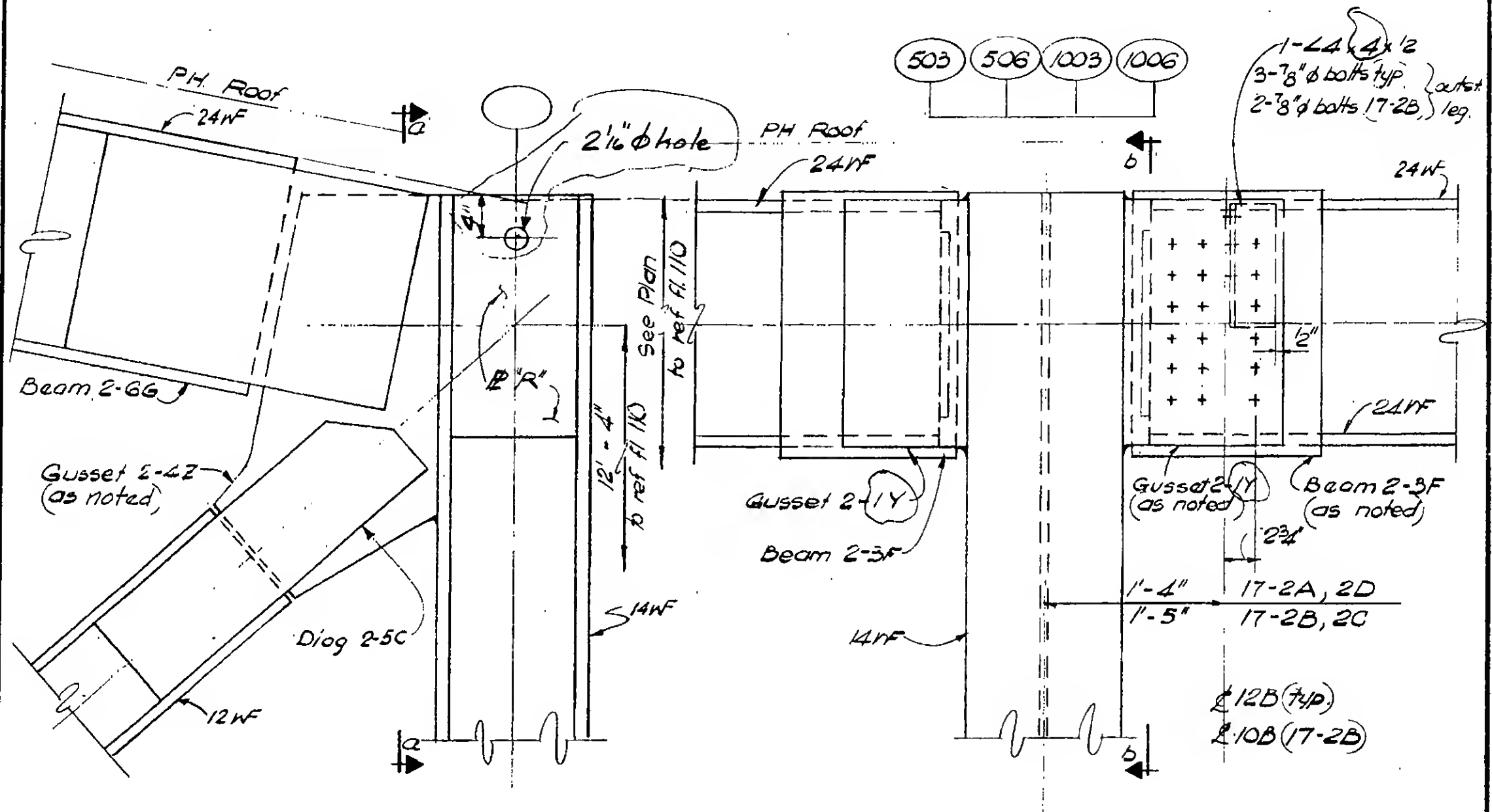
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS-PH ROOF

DATE 4-1-70

REVISIONS

6/18/70

Section b-bSection a-a

DETAIL 17-2A (Col 503 as shown)

DETAIL 17-2B Col 506

DETAIL 17-2C Col 1003

DETAIL 17-2D Col 1006

Similar to
as noted

DESIGNED

A. Patel

DRAWN

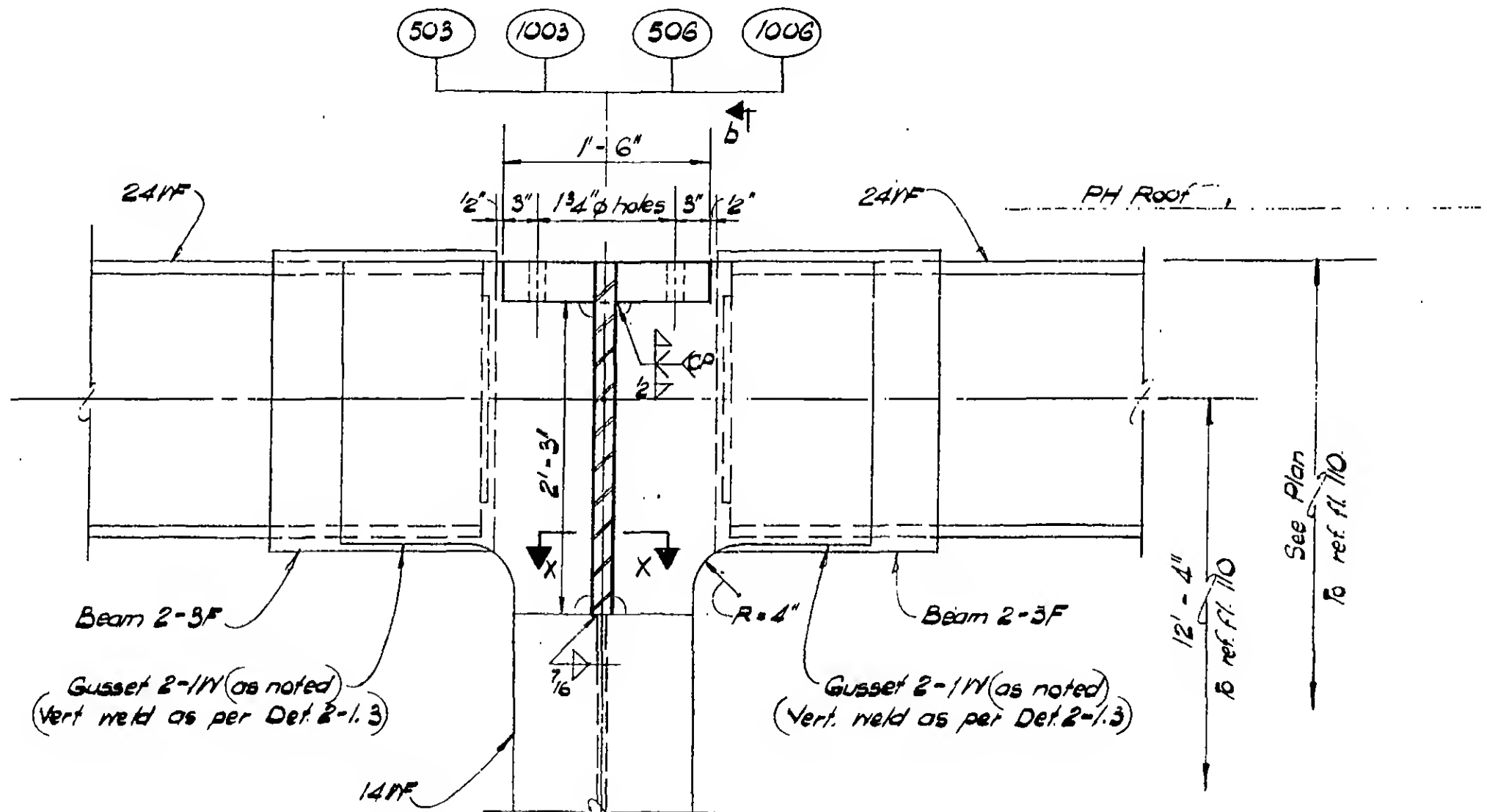
D. Huggins

REVIEWED

E. Dracos

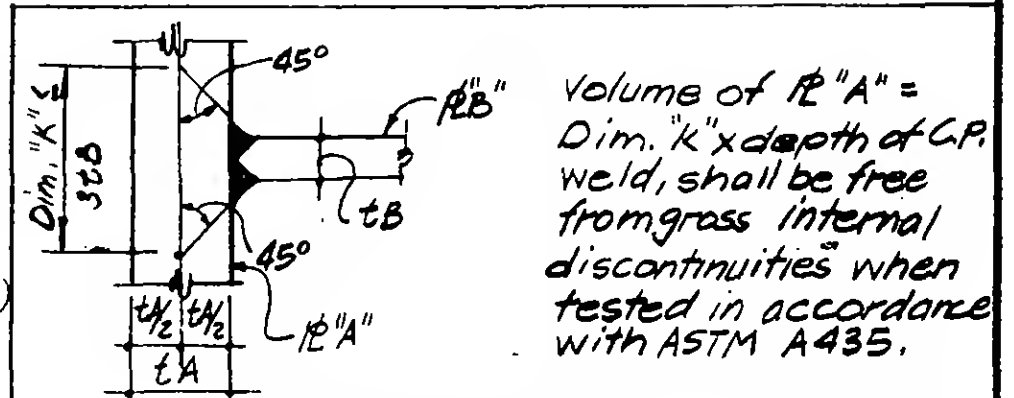
9-AB17-2.1

REVISIONS



Section a-a

DETAIL 17-2 E

(Col 503 as shown)
(Cols. 1003, 506, 1006 similar)

Section x-x

9-B/7-2.2

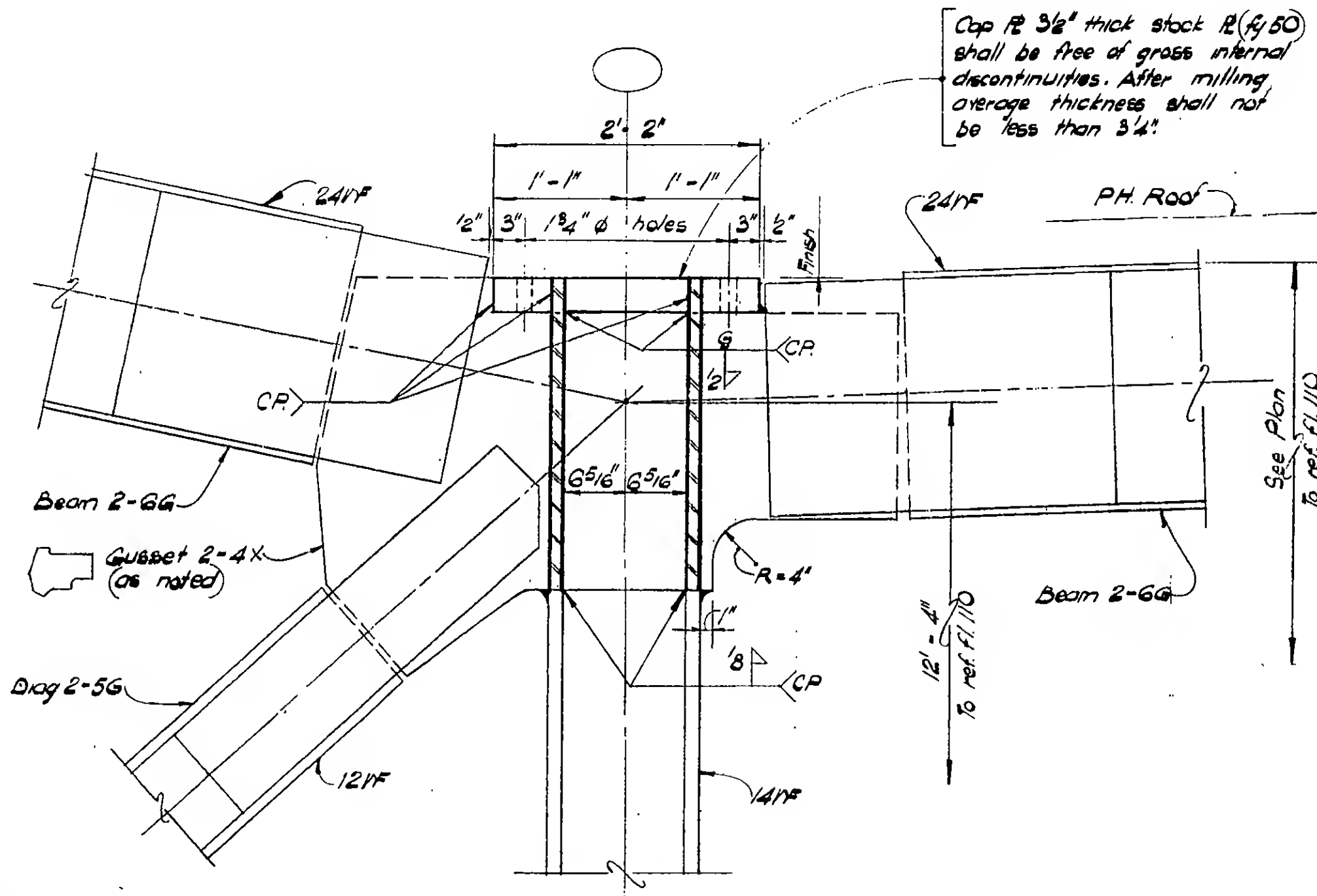


DESIGNED

DRAWN
W. Clarke

REVIEWED

REVISIONS



Section b - b



DESIGNED

DRAWN

W. Clarke

REVIEWED

9 - 8/7-2.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

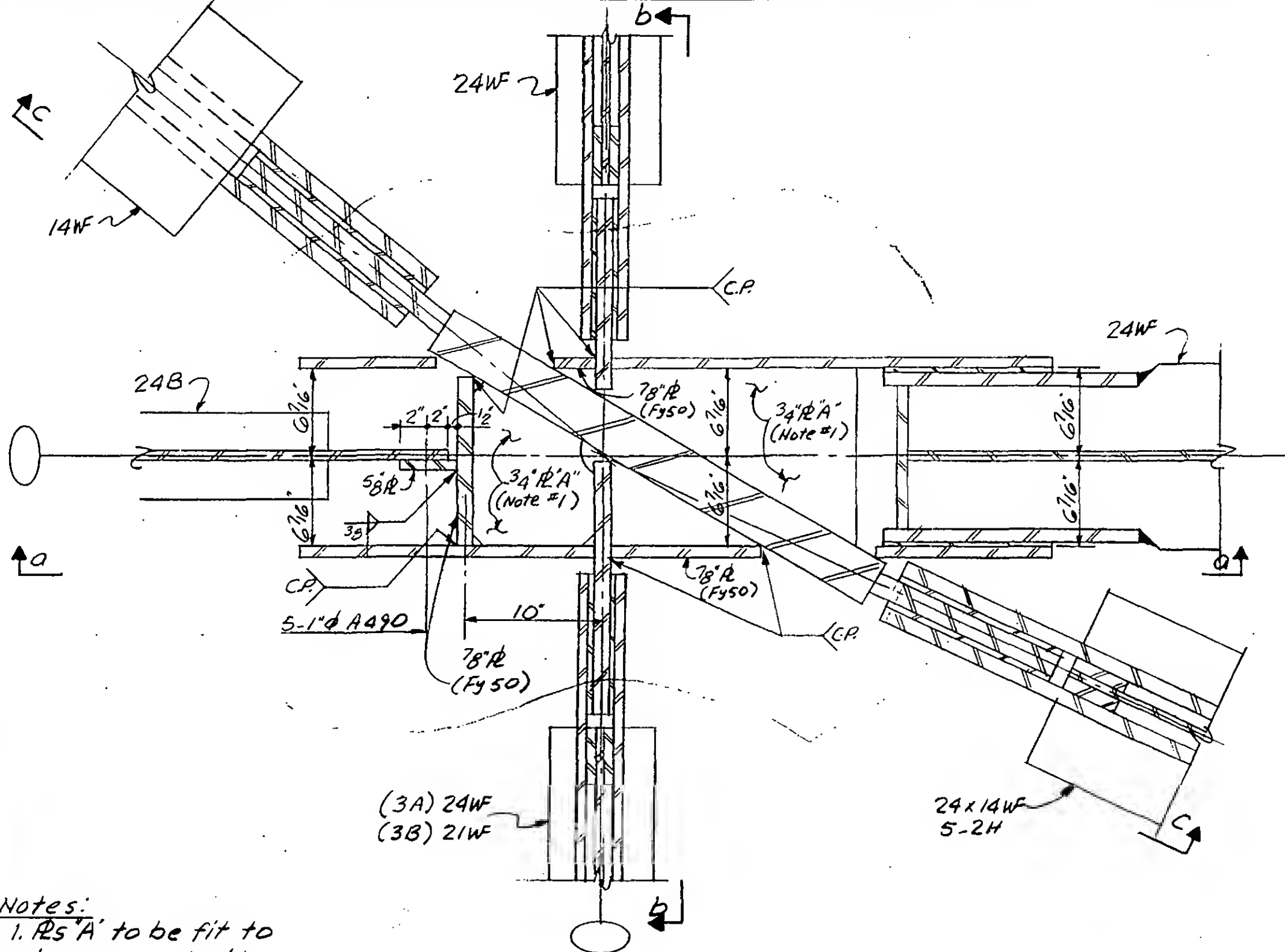
FL.107-PH CONNECTION DETAILS - PH ROOF

DATE

4-1-70

REVISIONS

7-10-70



PLAN

DETAIL 17-3A (Col 602 as shown. Cols 902 & 907 similar & as noted)
 DETAIL 17-3B (Col 607 similar & as noted)



DESIGNED

DRAWN

A. FRANQUI

REVIEWED

E. Drakos

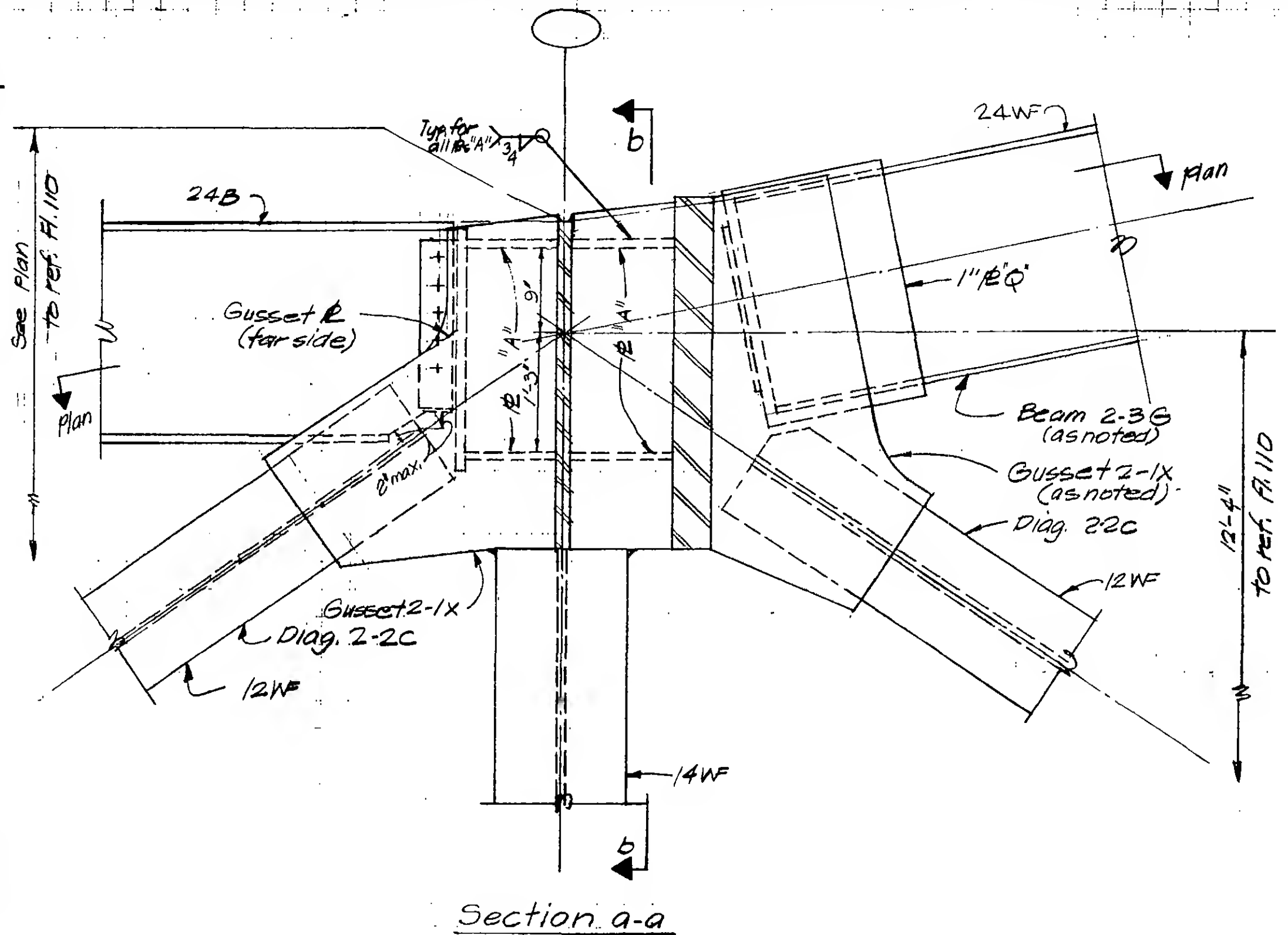
9-AB17-3.1

REVISIONS

7-10-70

~~VOID 9-25-78~~

7-10-70



DESIGNED

DRAWN

P. Ozeki,

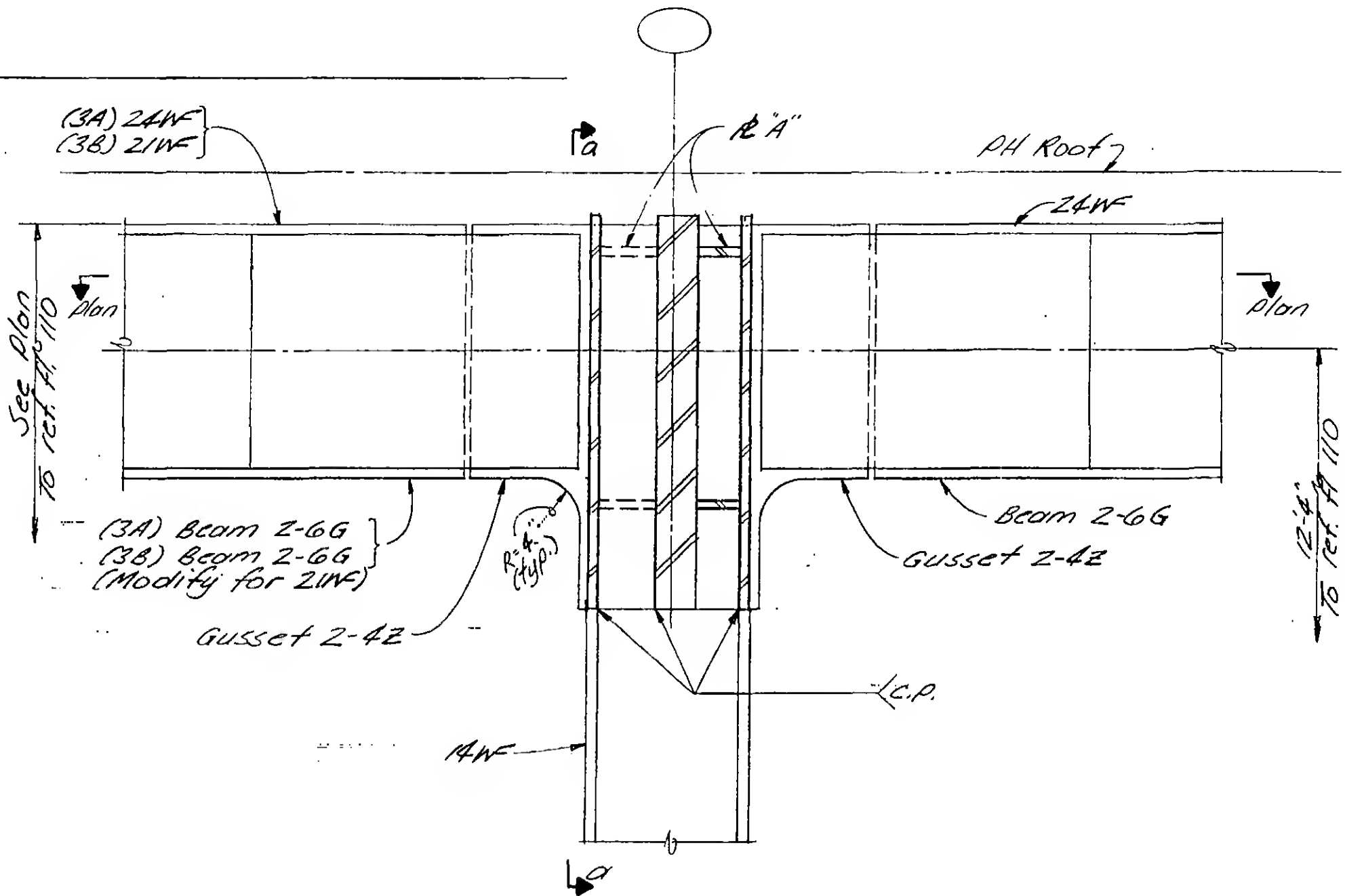
REVIEWED

E. Orakos

9-AB17-3.2

REVISIONS

7-10-70
VOID 9-25-70
7-10-70



DESIGNED

DRAWN

J. Adams

REVIEWED

E. Drakos

9-AB17-3.3

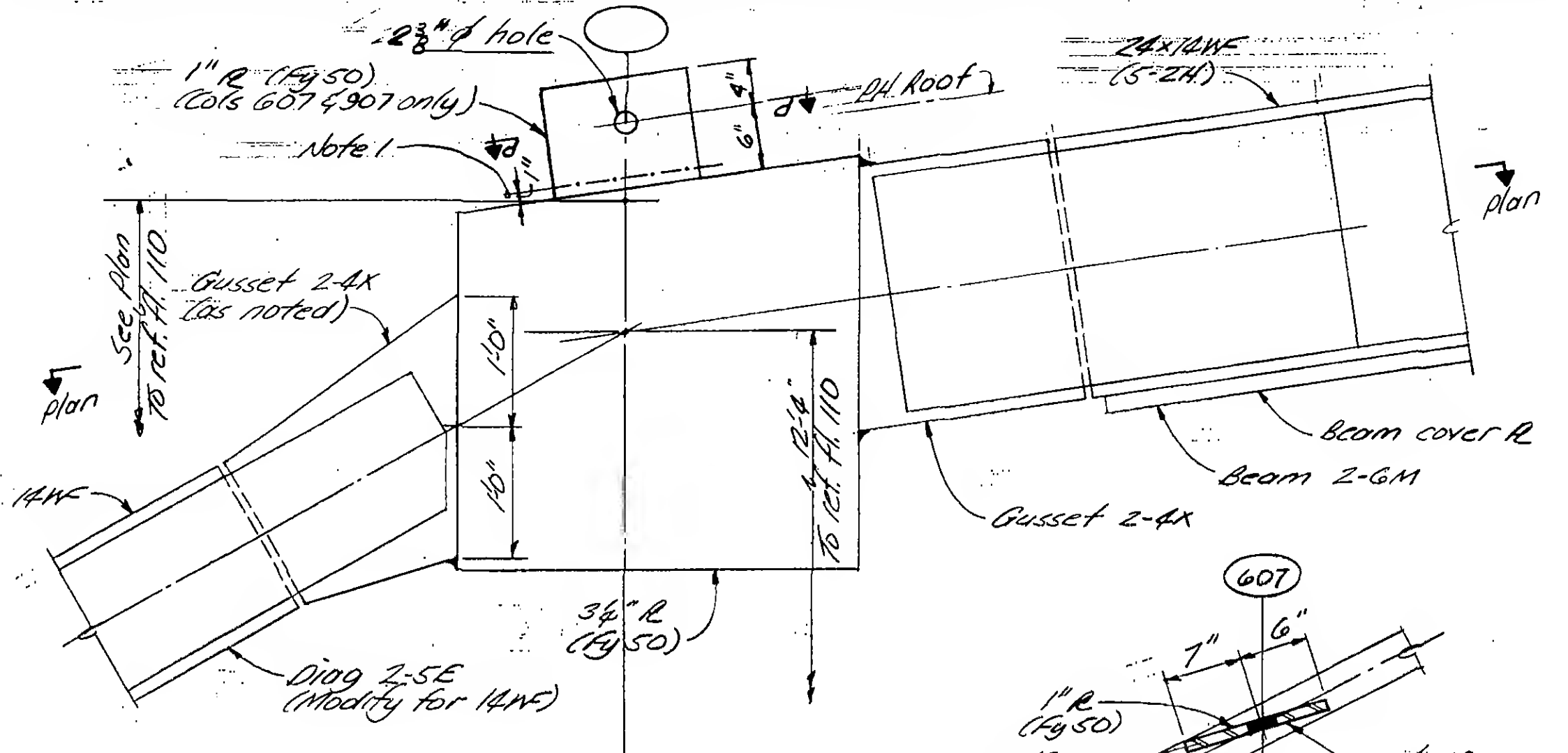
PROJECT THE WORLD TRADE CENTER

TITLE PL107-PH CONNECTION DETAILS - PH ROOF

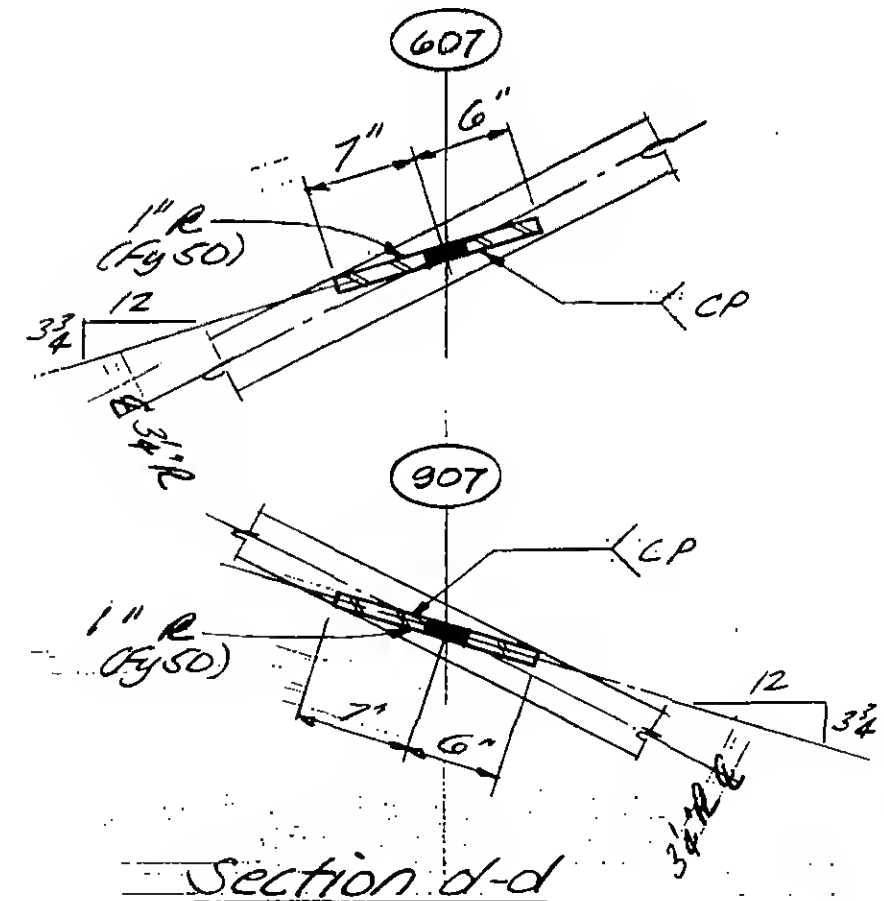
DATE 4-1-70

REVISIONS

7/10/70
VOID 9/29/70
7/10/70

Section C-C

Note 1: ——— indicates smooth, notch-free (ASA 250) plate cut following removal of derrick.



DESIGNED

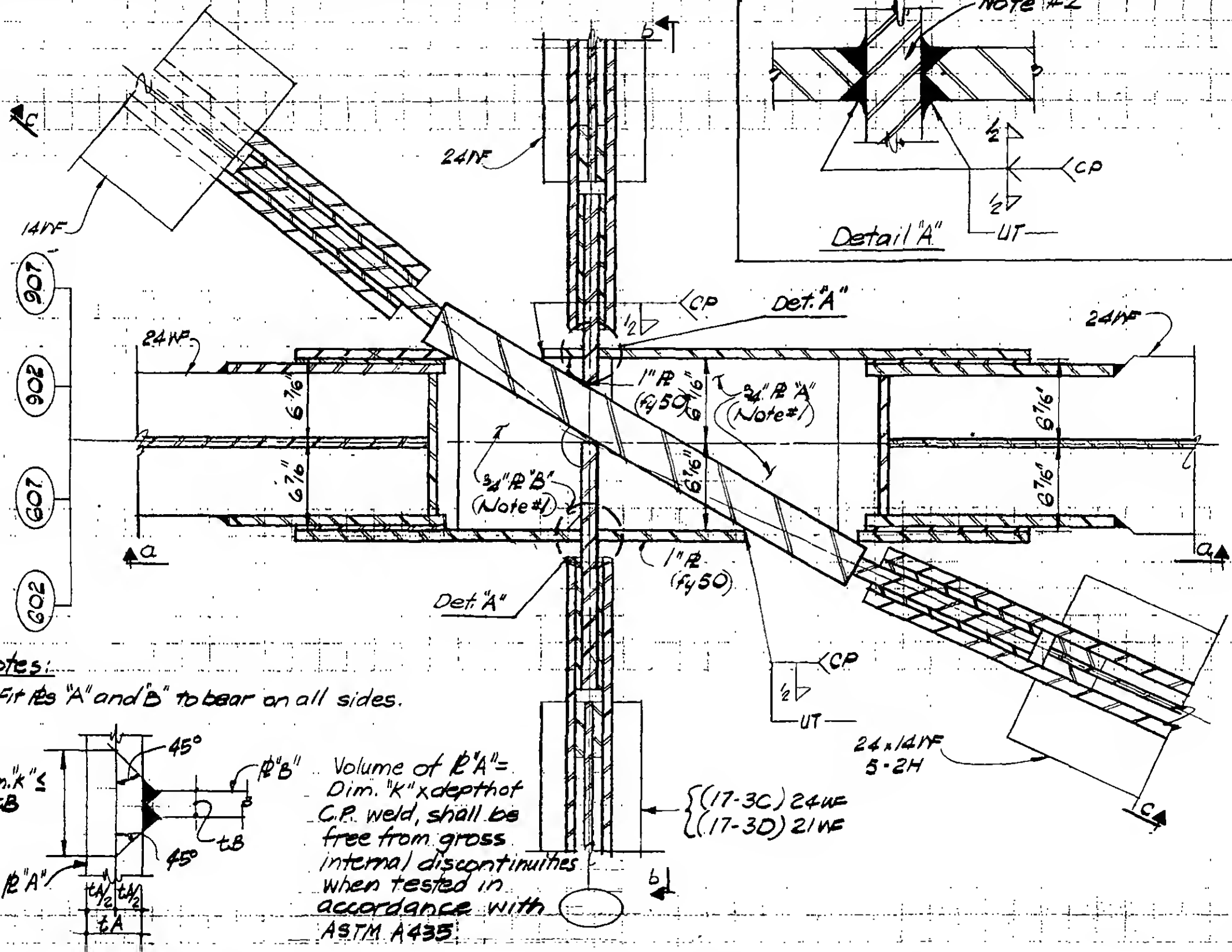
DRAWN
J. Adams

REVIEWED

E. Drakos

9-AB17-3A

REVISIONS



DESIGNED

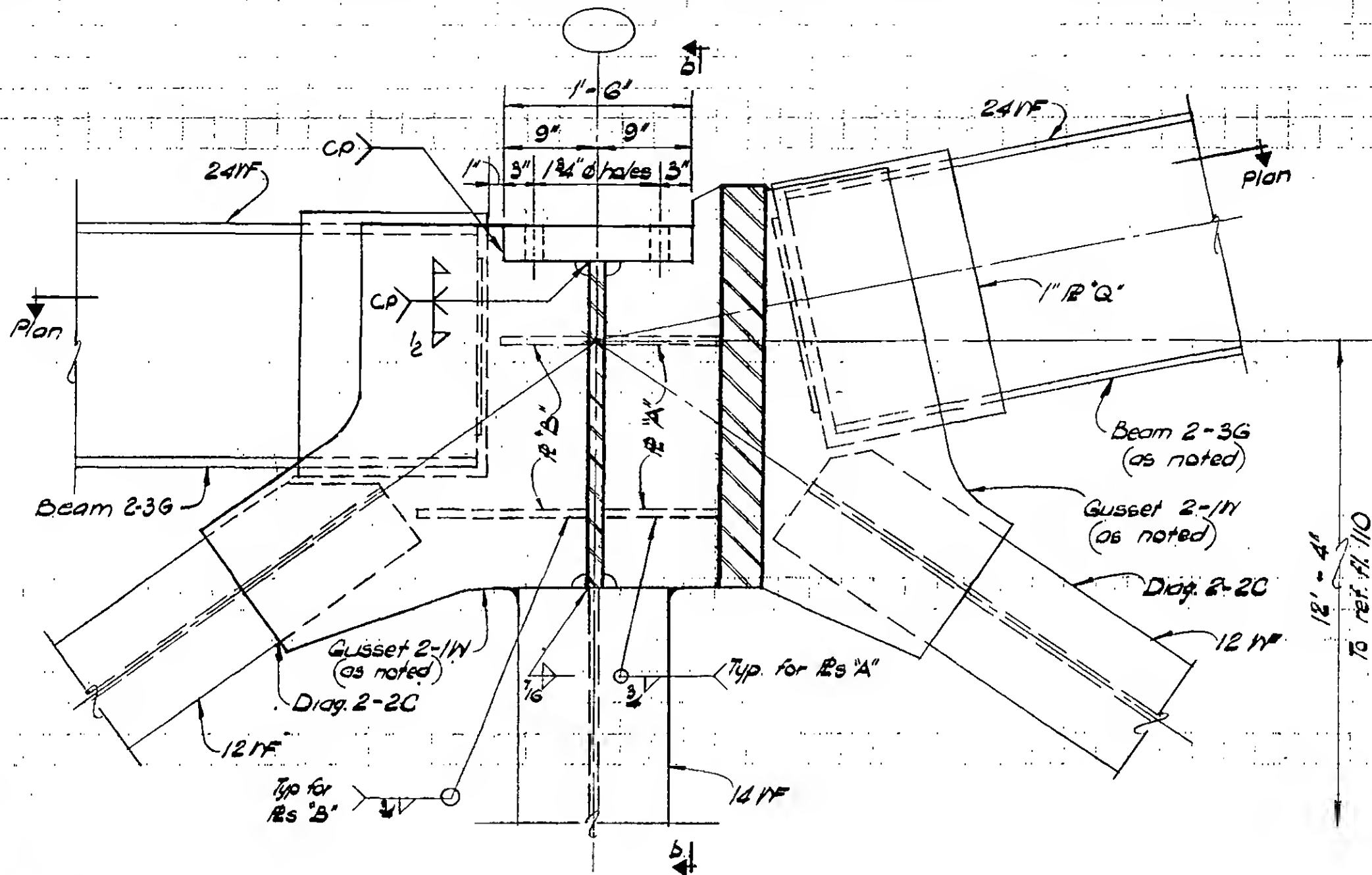
DRAWN

W. Clarke

REVIEWED

9-B/7-3.5

REVISIONS



Section a-a



DESIGNED

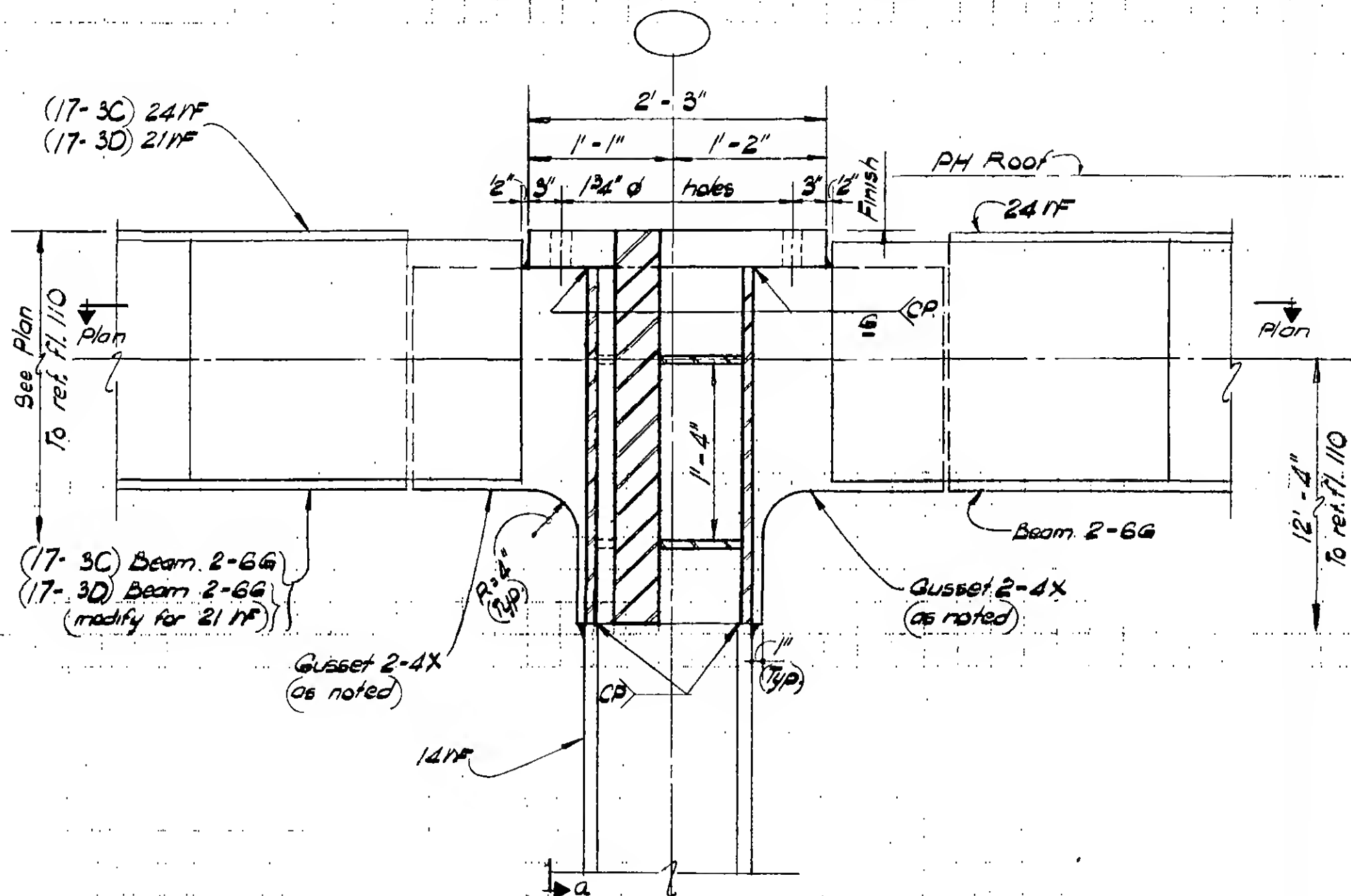
DRAWN

W. Clarke

REVIEWED

9-B/7-3.6

REVISIONS



~~Section b-b~~



DESIGNED

JRAWT

W. Clarke

REVIEWED

9-877-3-7

PROJECT

THE WORLD TRADE CENTER

TITLE

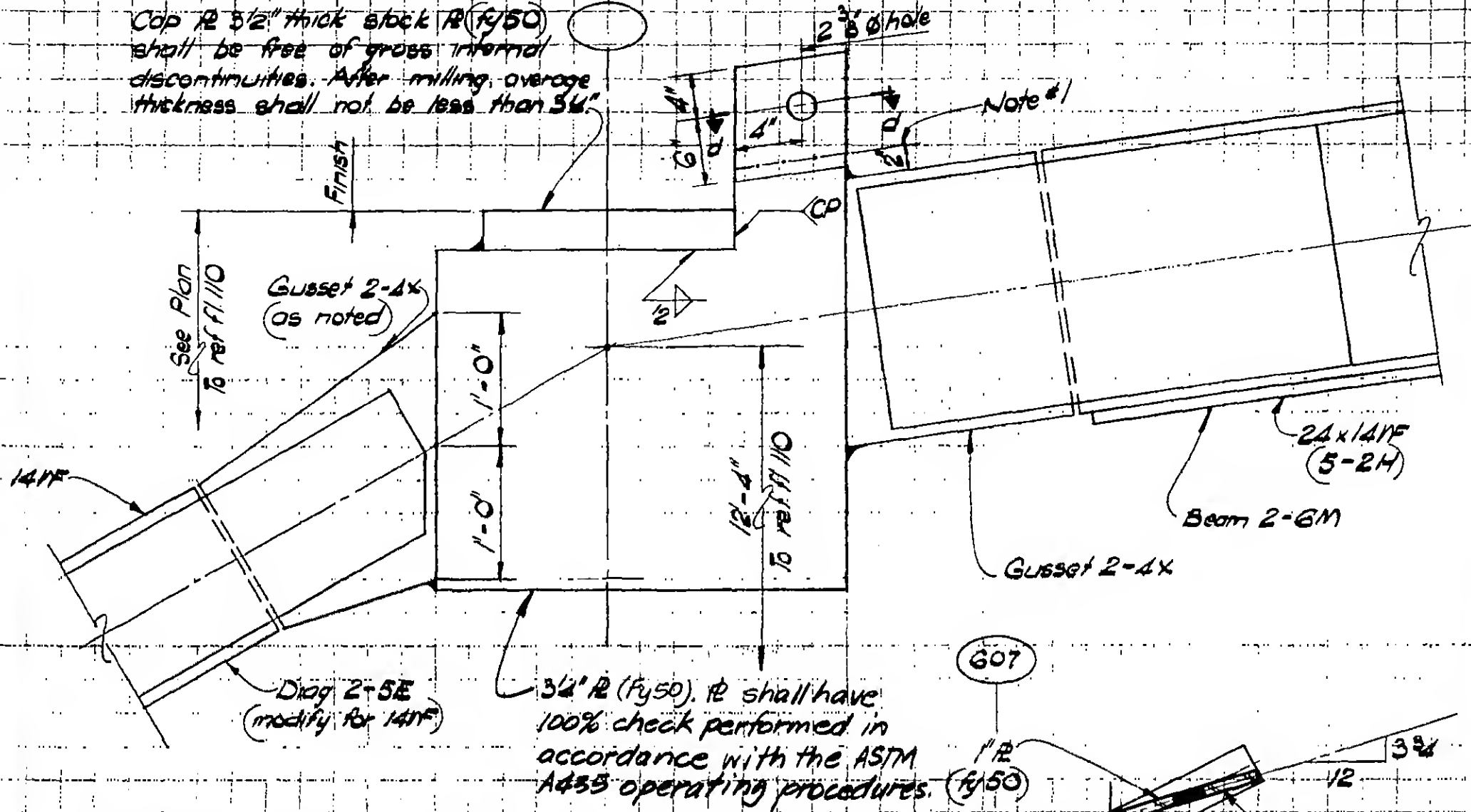
FL 107 - RM CONNECTION DETAILS - RM ROOF

DATE

12/14/10

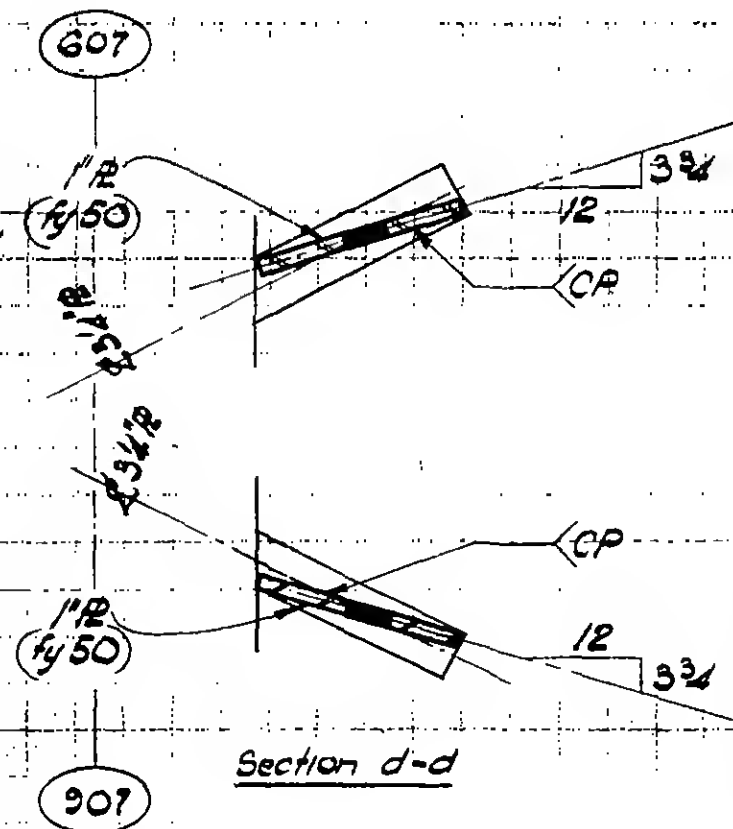
REVISIONS

Cap R $3\frac{1}{2}$ " thick stock R (Fy50) shall be free of gross internal discontinuities. After milling, average thickness shall not be less than $3\frac{1}{4}$ "



Section C-C

Note #1 ————— indicates smooth, notch - and -seamless-free cut.



Section d-d

9-8/7-3.8



DESIGNED

DRAWN

H. Clarke

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

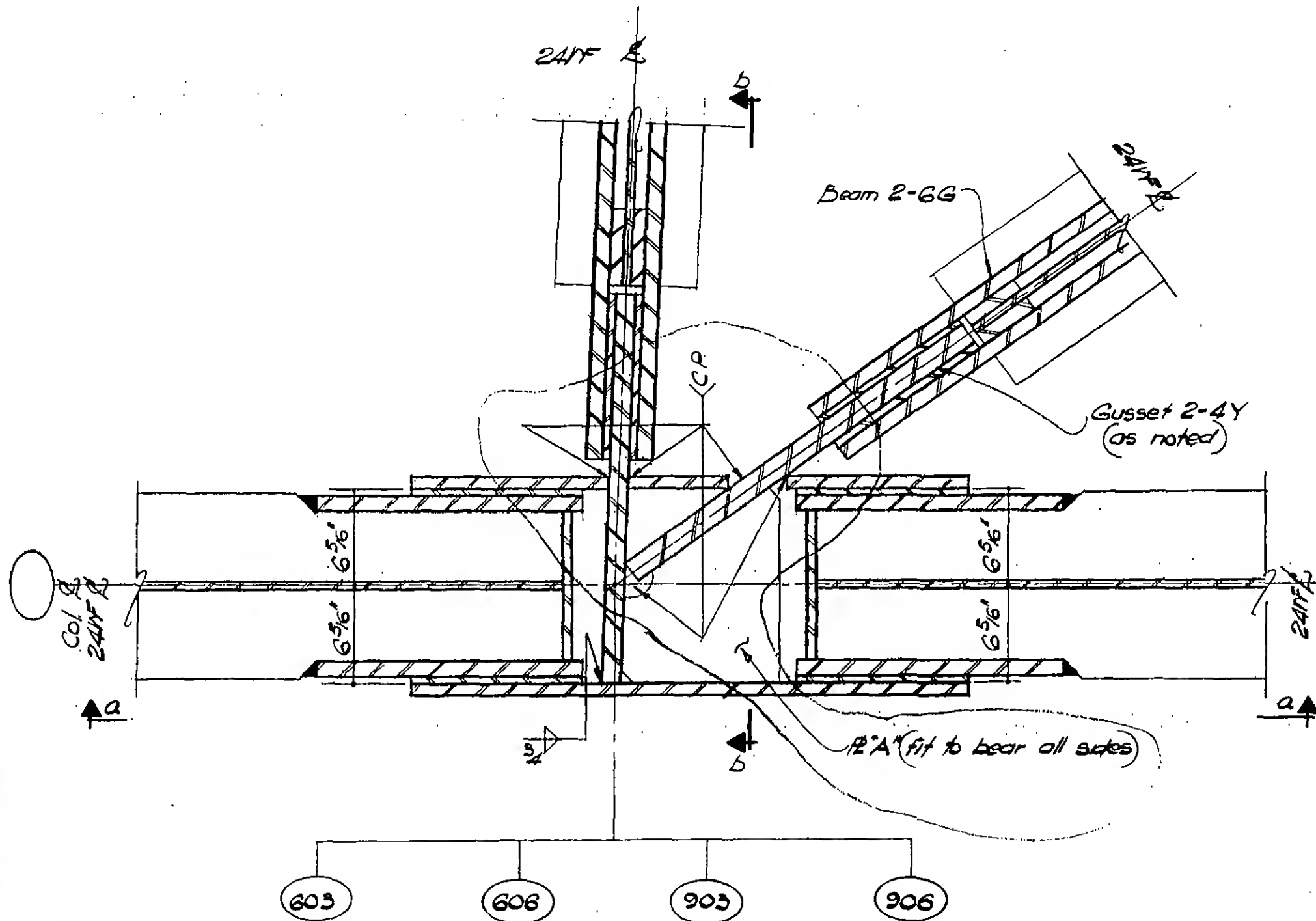
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE 4-1-70

REVISIONS

7/10/70



Plan

DETAIL 17-4

Col. 603 as shown
Col. 606, 903 & 906 similar



DESIGNED

DRAWN
M. Clarke

REVIEWED
E. Dravos

9-AB/7-4.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

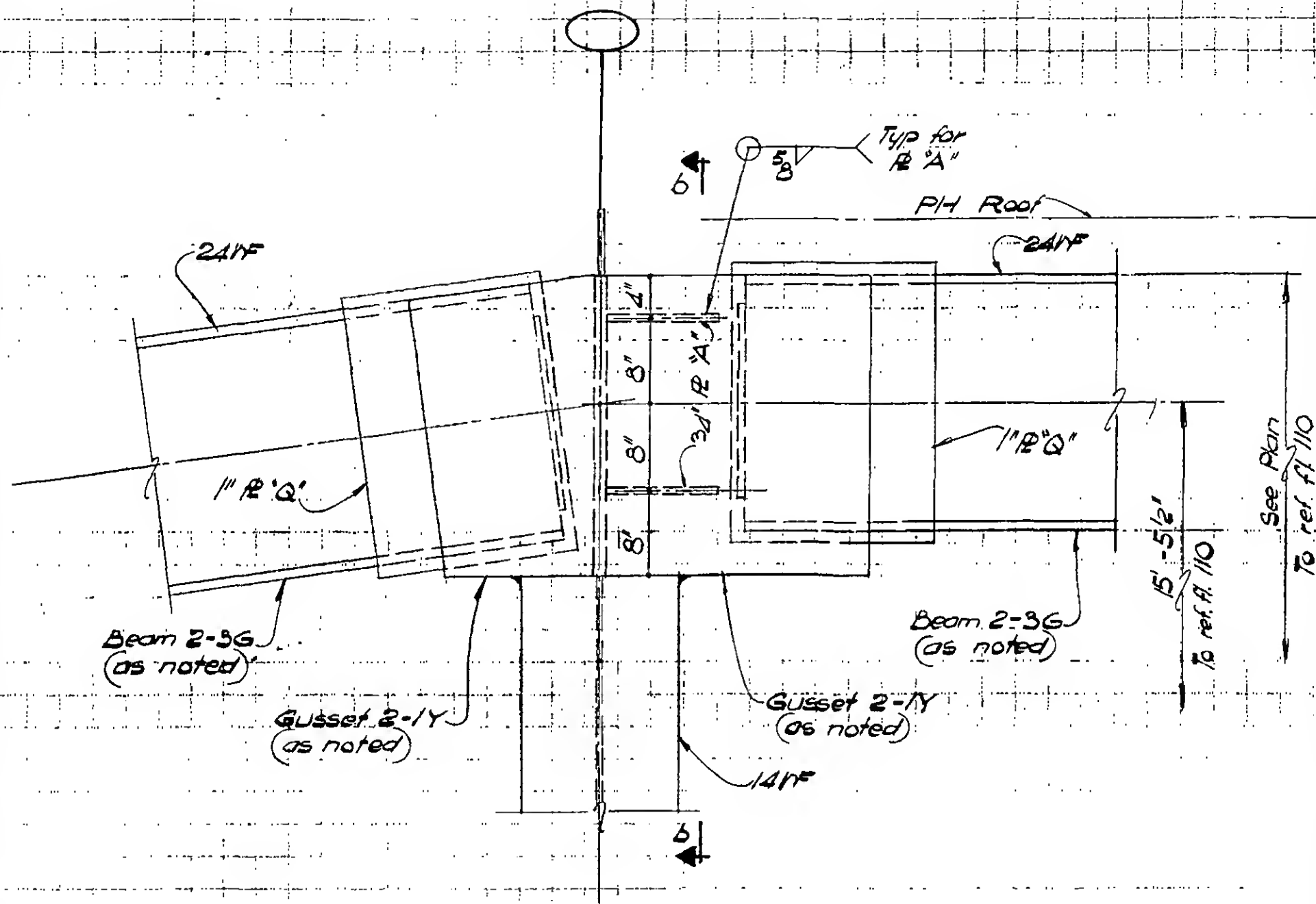
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE 4-1-70

REVISIONS

7/10/70
1010 9/25/70
7/10/70



Section a - a



DESIGNED

DRAWN M. Clarke

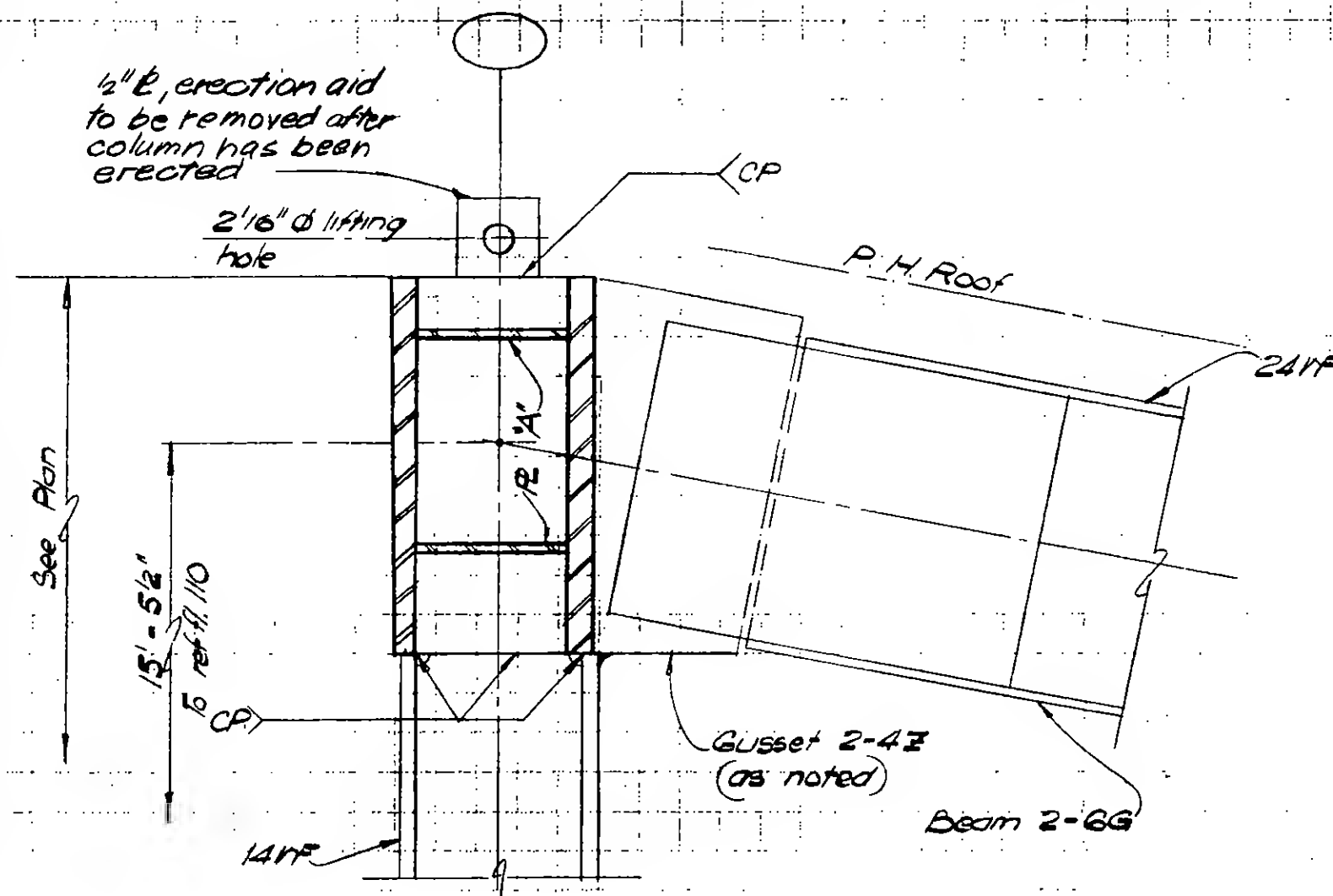
REVIEWED

E. Drakos

9-AB/7-4.2

REVISIONS

7/10/70
void 9/25/70
7/10/70



Section b-b



DESIGNED

DRAWN
M. Clarke

REVIEWED

E. Drakos

9-AB/7-4.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - PH ROOF

DATE 12/14/70

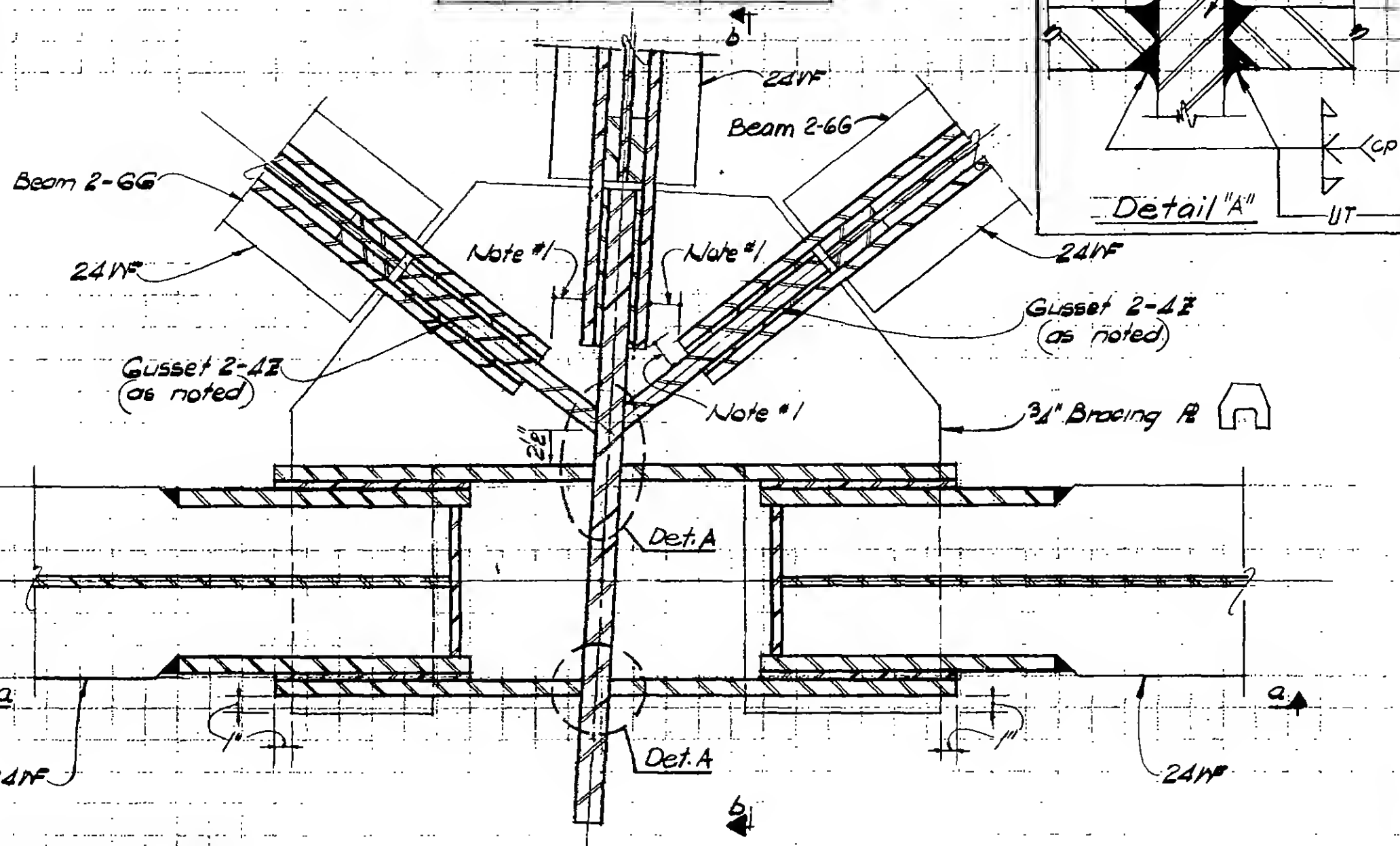
REVISIONS

603

903

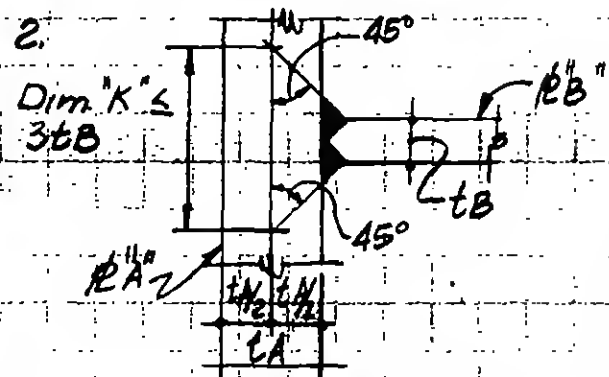
606

906



Notes:

1. keep indicated dimensions an absolute minimum.



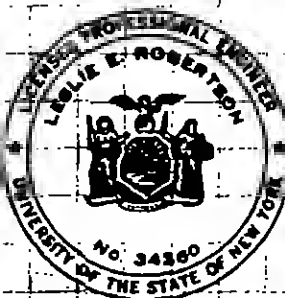
Volume of P^A =
Dim. $K' \times$ depth of C.P.
Weld shall be free
from gross internal
discontinuities when
tested in accordance
with ASTM A435.

PLAN

DETAIL 17-4B

(Col. 603 as shown)
(Col. 606, 903 & 906 similar)

9-B17-4.4



DESIGNED

DRAWN

N. Clarke

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

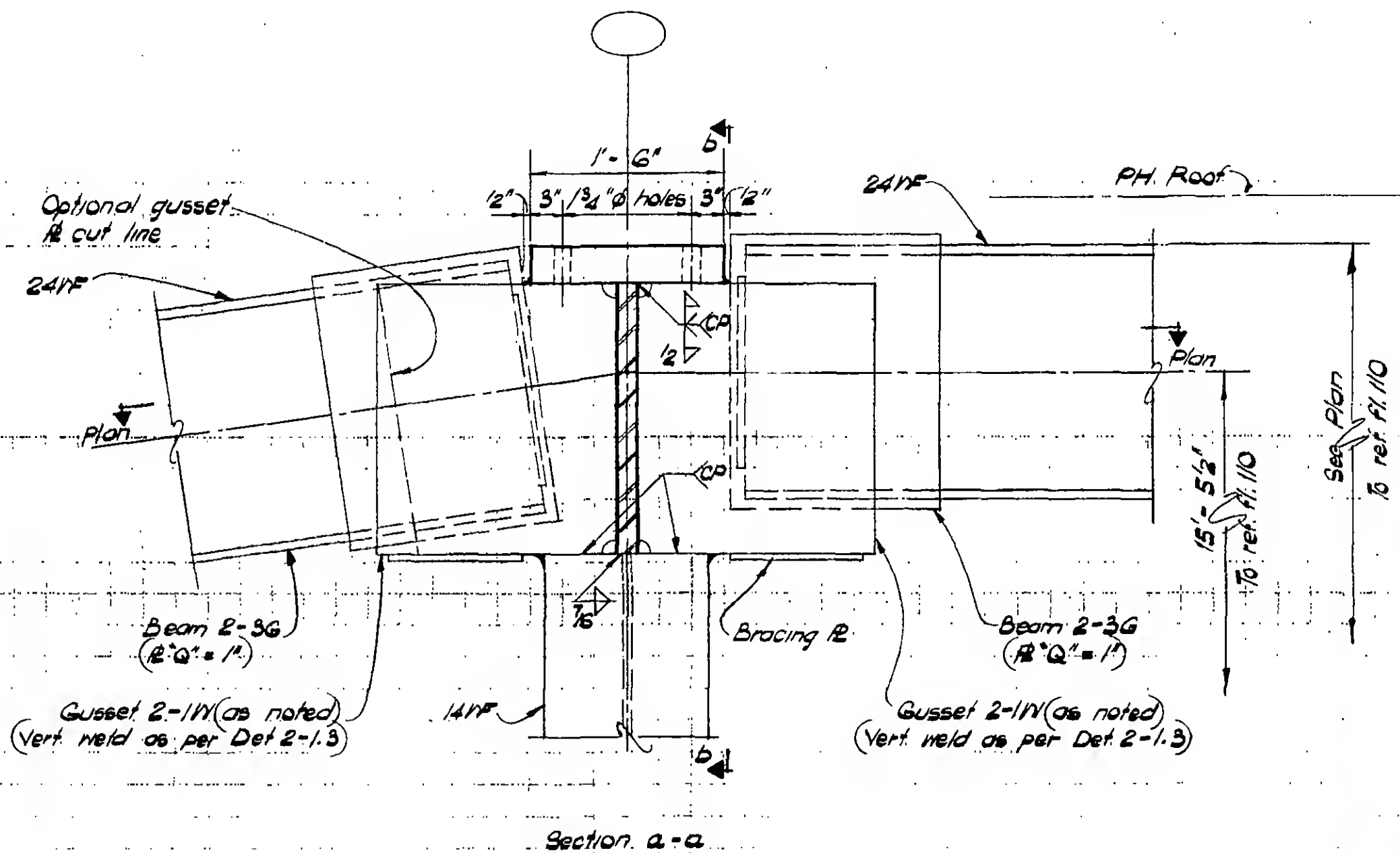
TITLE

FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE

12/14/70

REVISIONS



DESIGNED

DRAWN

H. Clarke

REVIEWED

9-B/7-4.5

PROJECT

THE WORLD TRADE CENTER

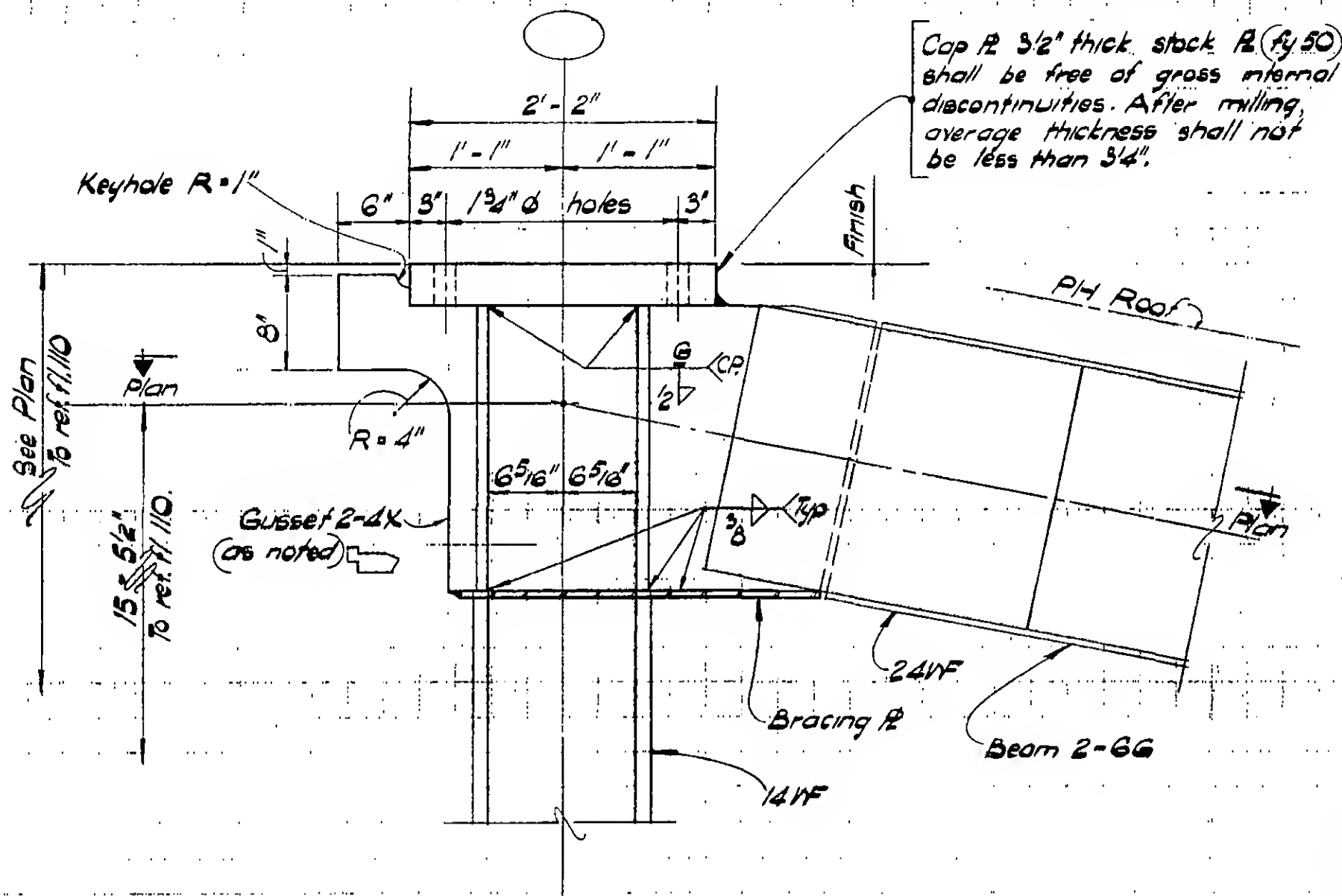
TITLE

FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE

12/14/70

REVISIONS



DESIGNED

DRAWN

W. Clarke

REVIEWED

9-B/7-4.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

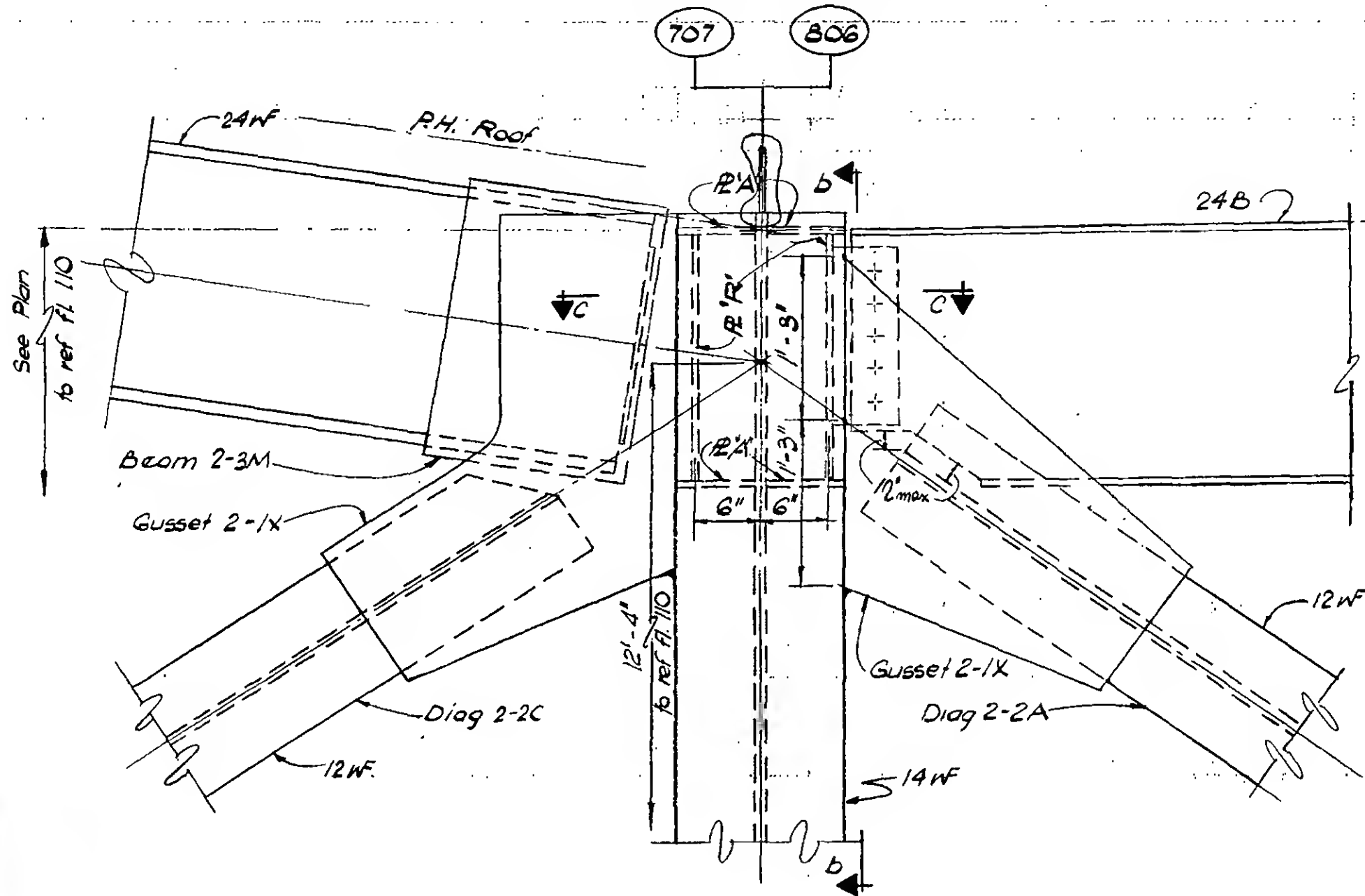
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER TITLE FL 107 - PH CONNECTION DETAILS - PH ROOF DATE 4-1-70

REVISIONS

6/18/70

7-13-70



Section a-a

DETAIL 17-5A (Col. 806)
 DETAIL 17-5C (Col. 707) as noted.



DESIGNED

...Potel

DRAWN

D. Huggins

REVIEWED

E. Drakos

9-AB17-5.1

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - PH CONNECTION DETAILS - P.H. ROOF

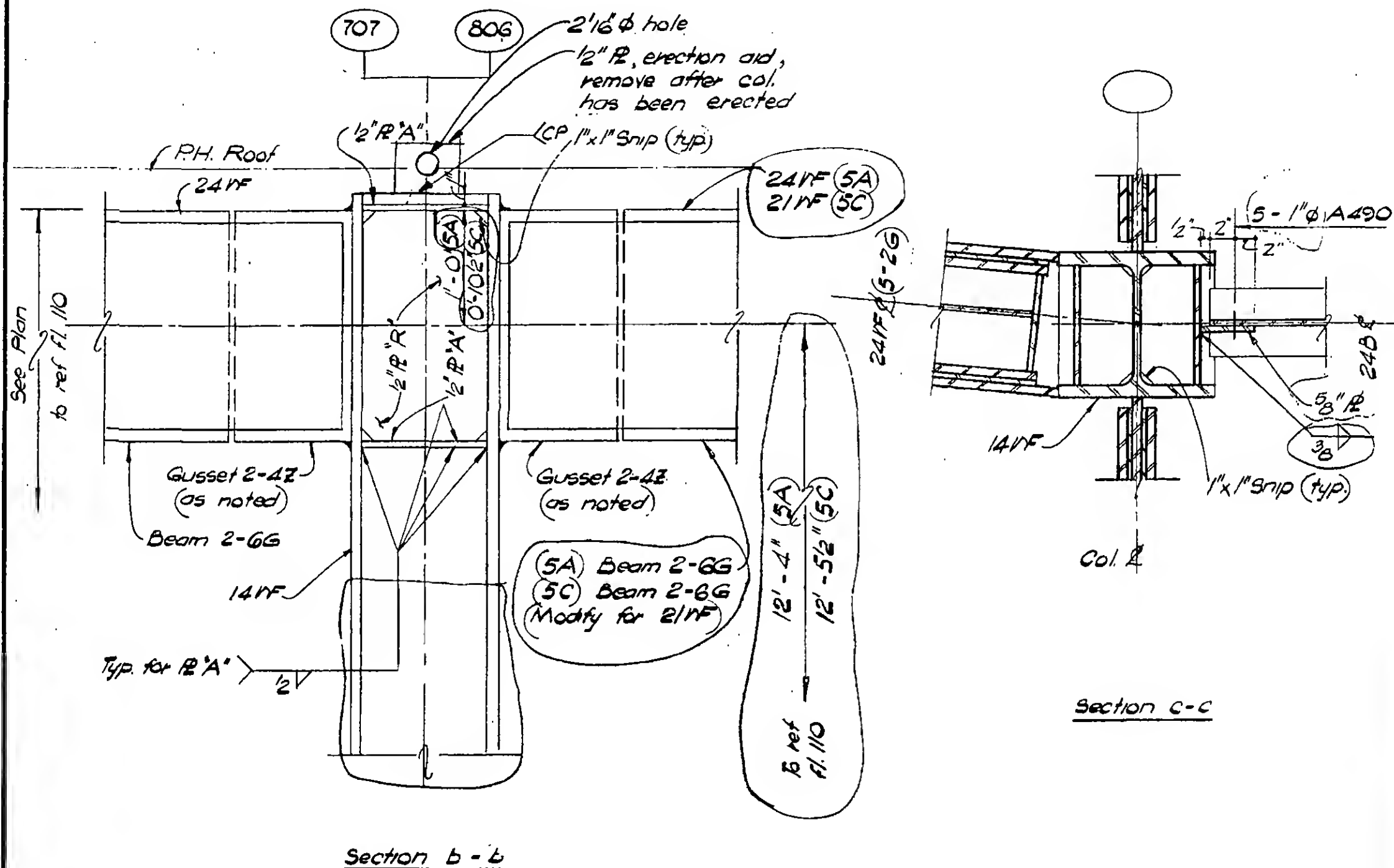
DATE

4-1-70

REVISIONS

6/18/70

7/13/70



DESIGNED

H. Hwang

DRAWN

N. Clarke

REVIEWED

E. Drakos

9-AB/7-5.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - PH ROOF

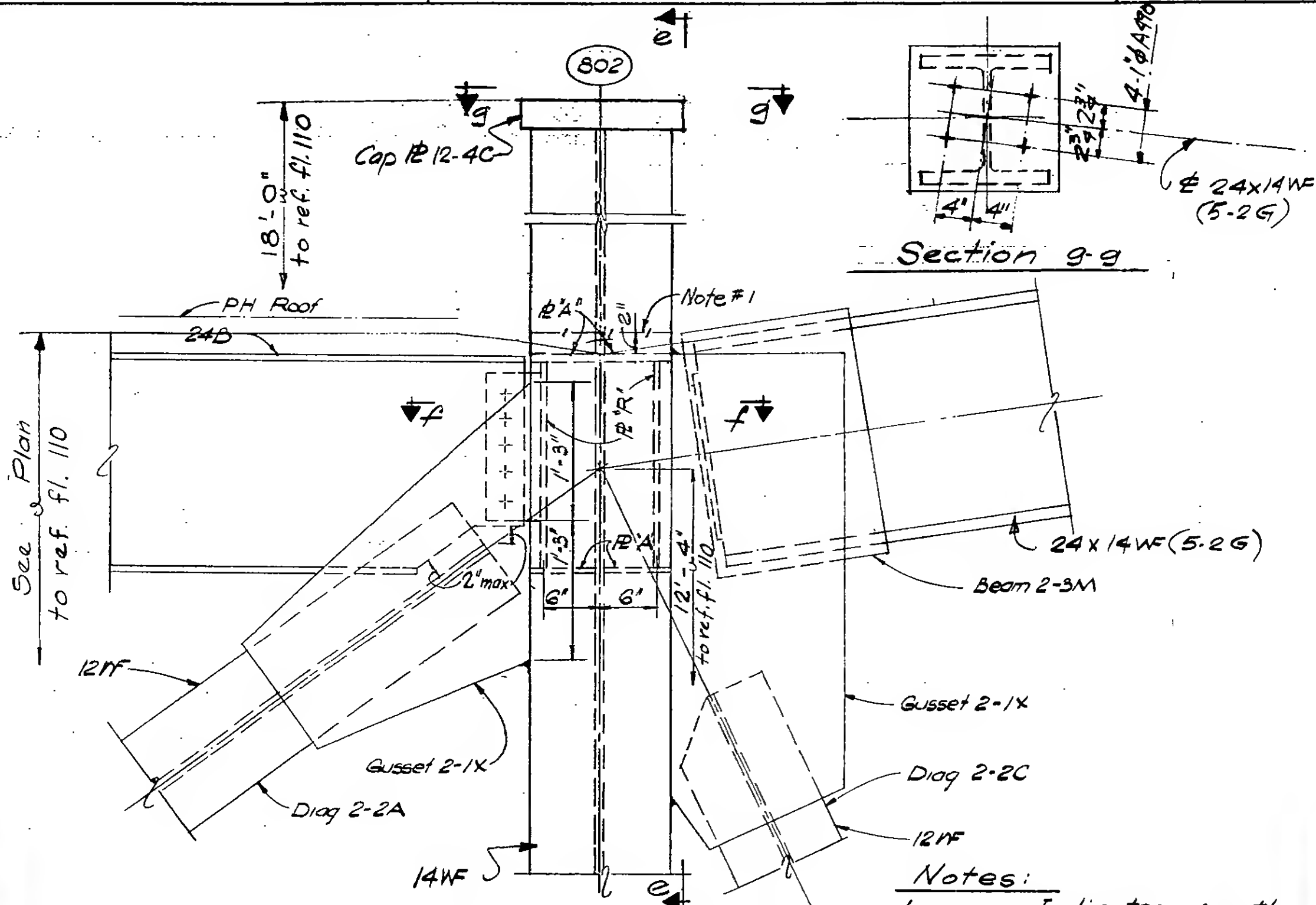
DATE 4-1-70

REVISIONS

6/18/70

VOID 9/25/70

6/18/70



DESIGNED

Hwang

DRAWN

W. Clarke

REVIEWED

E. Orakos

9-AB/7-5.3

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107-PH CONNECTION DETAIL - P.H. ROOF

DATE

4-1-70

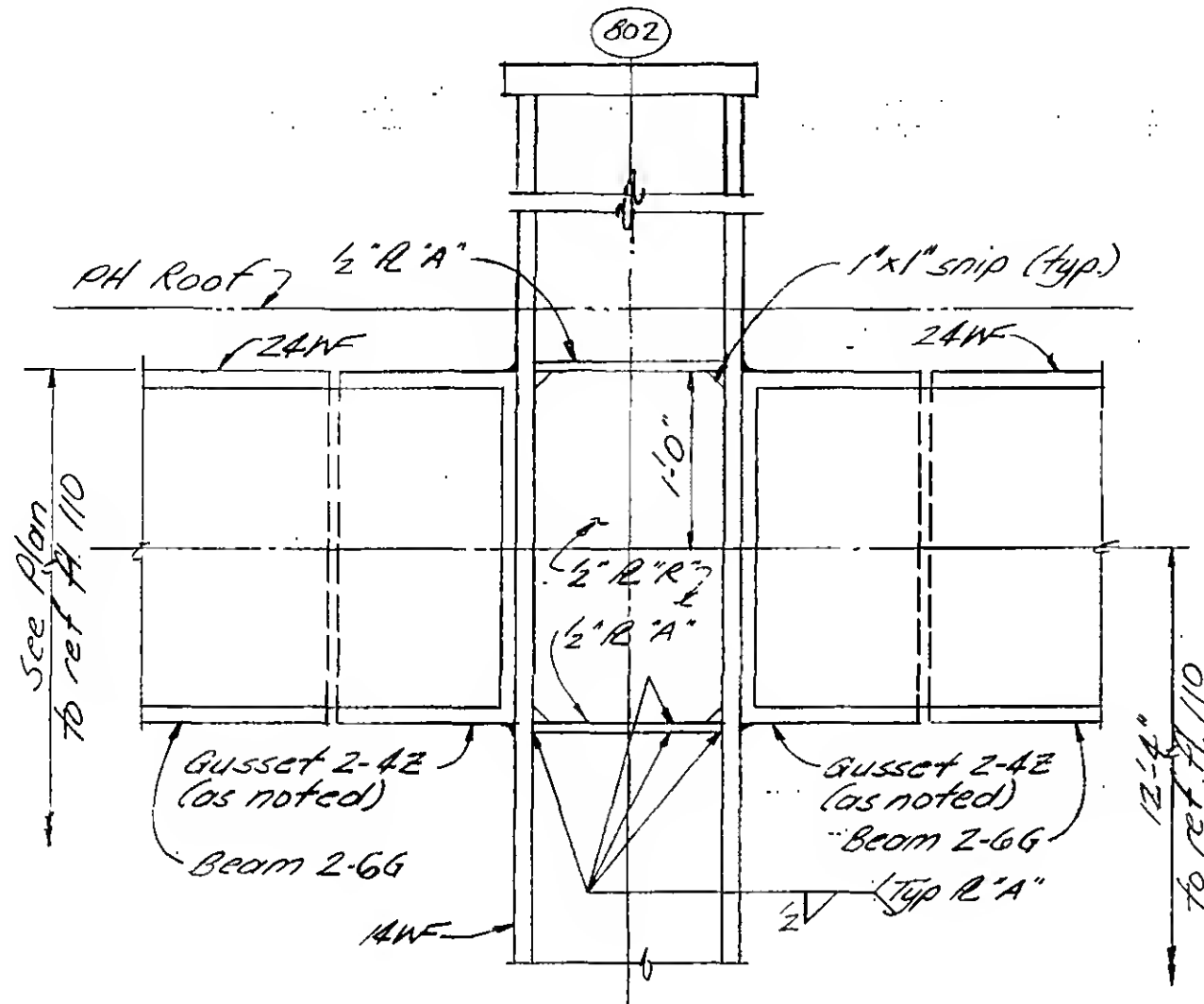
REVISIONS

6/18/70

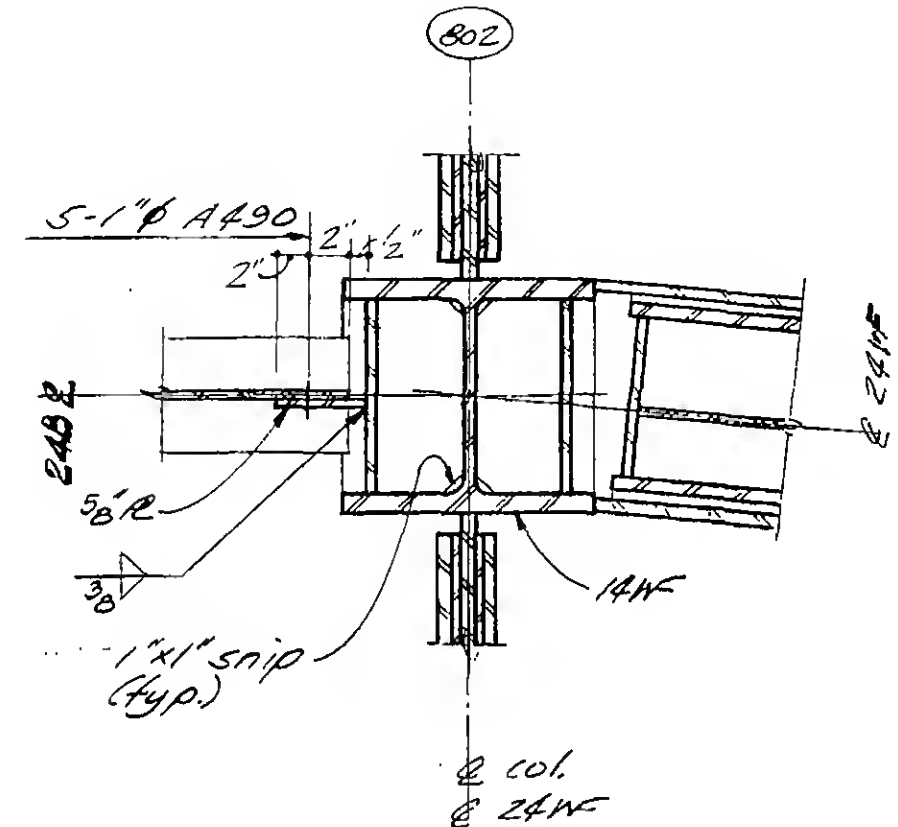
7/13/70

WID 9/25/70

7/13/70



Section e-e



Section f-f



DESIGNED

H. HWANG

DRAWN

J. H. Hwang

REVIEWED

E. Drakos

9-AB/7-5.4

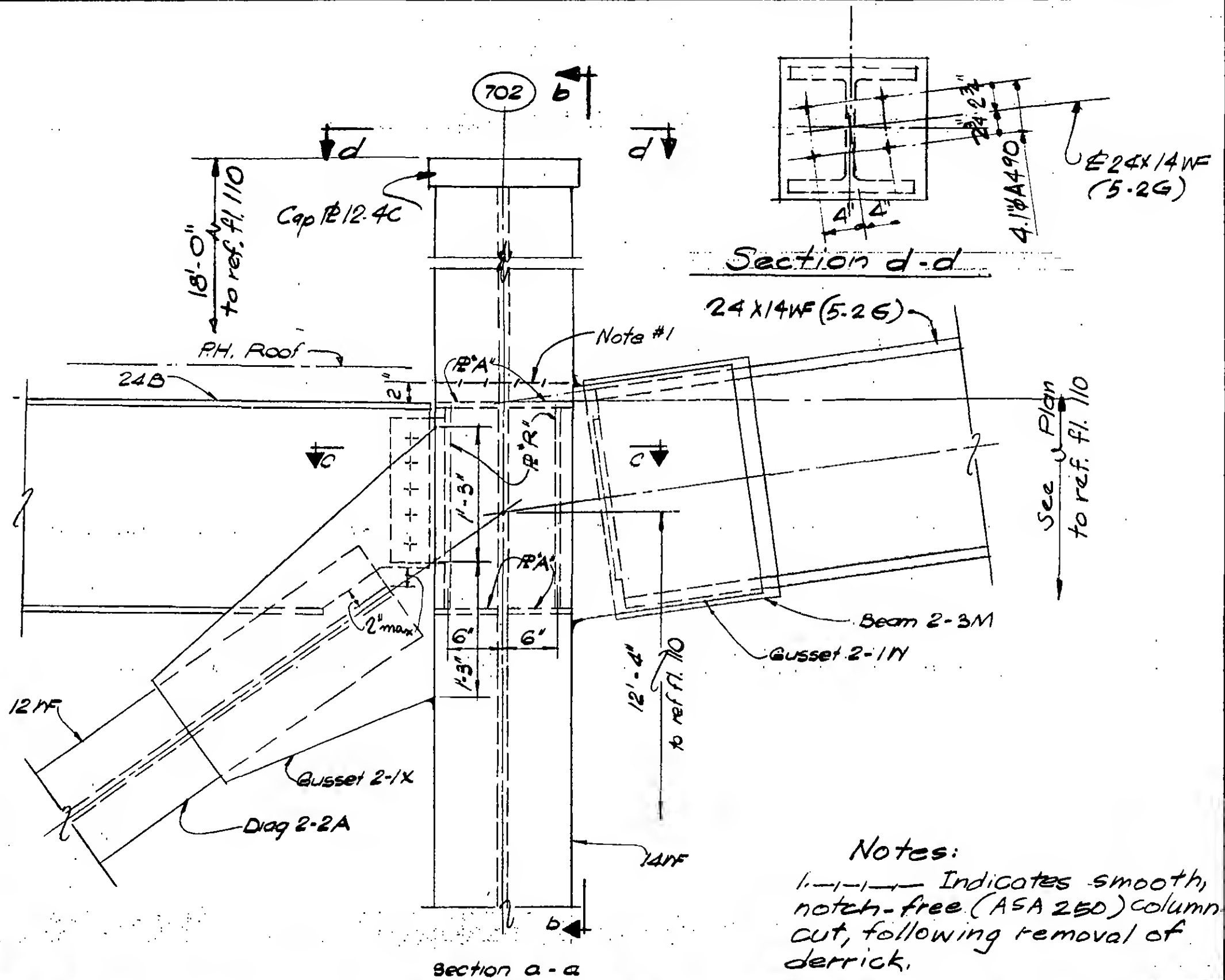
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - P.H. ROOF

DATE 4-1-70

REVISIONS

6/18/70
VOID 9/25/70
6/18/70



DETAIL 17-6

9-AB17-6.1



DESIGNED K. HNANG

DRAWN W. Clarke

REVIEWED E. Drakos

Structural & Civil Engineers

PROJECT *THE WORLD TRADE CENTER*

TITLE *FL 107 - PH CONNECTION DETAILS - P.H. ROOF*

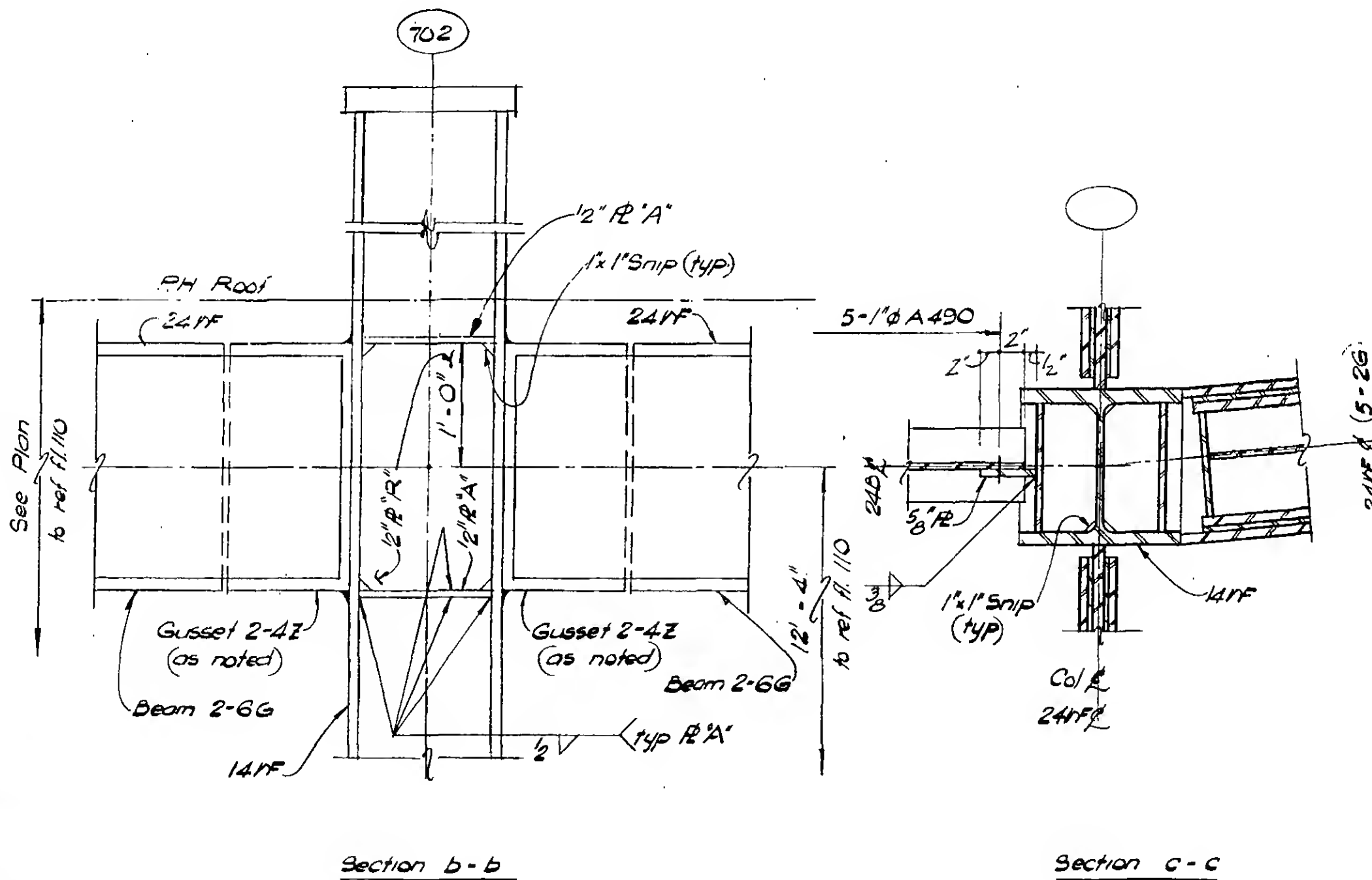
DATE 6-18-70

REVISIONS

7-13-70

~~XO10 9/25/70~~

7-13-70



DESIGNED
K. HWANG

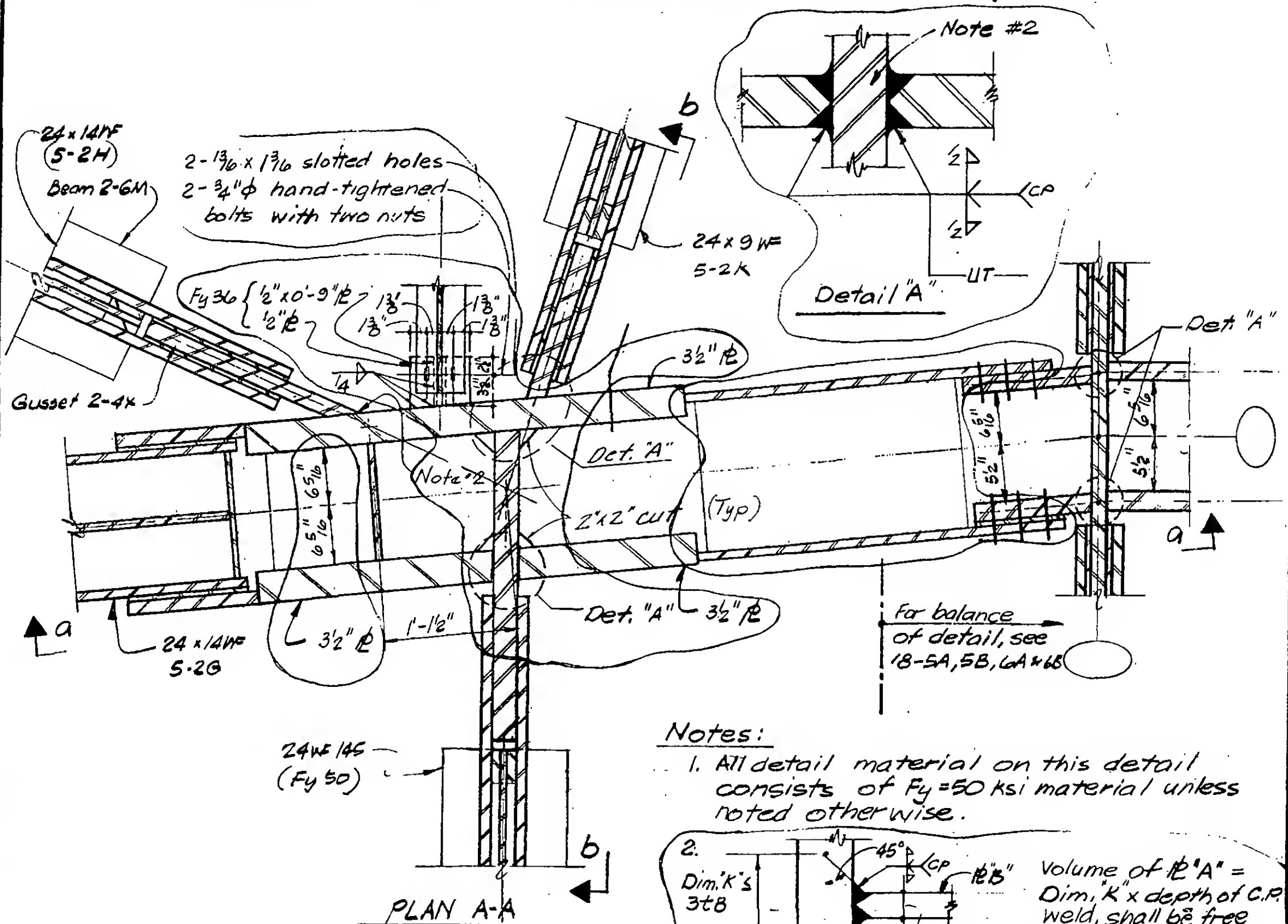
DRAWN
W. Clarke

REVIEWED
E. Drakos

9-AB/7-6.2

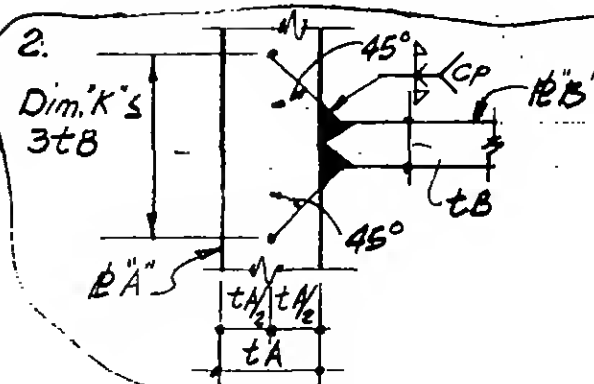
REVISIONS

7-10-70
10-12-70



Notes:

1. All detail material on this detail consists of $F_y = 50$ ksi material unless noted otherwise.



Volume of $1\frac{1}{2}'' A'' =$
Dim. $K'' \times$ depth of C.P.
Weld, shall be free
from gross internal
discontinuities when
tested in accordance
with ASTM A435.

9 - A 17-7.1



DESIGNED

DRAWN

N. Clarke

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE

4-1-70

REVISIONS

7-10-70
10-12-70

For continuation, see
Section C-C 17-7.6

For balance of detail
see 18-5A, 5B, 6A & 6B

Beam 2-3M

24x14WF
5-2G

plan A

1/4" gusset PL
(weld in
accordance
with 2-1)

14WF

For Detail 7A
this area, see
17-7.3

TY. Most leg &
24WF 145 &

Section a-a

Detail 17B, C & D as shown

Detail 17A as noted

54-1/8"
A490
total

plan A

UT
(weld in
accordance
with 2-1)

14WF

9/2 x 58 x 2'-0"
Splice PL (Fy 50)

1/2" Splice PLs
(Fy 50)

Section W-W

9-A 17-72



DESIGNED

DRAWN

W. Clarke

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

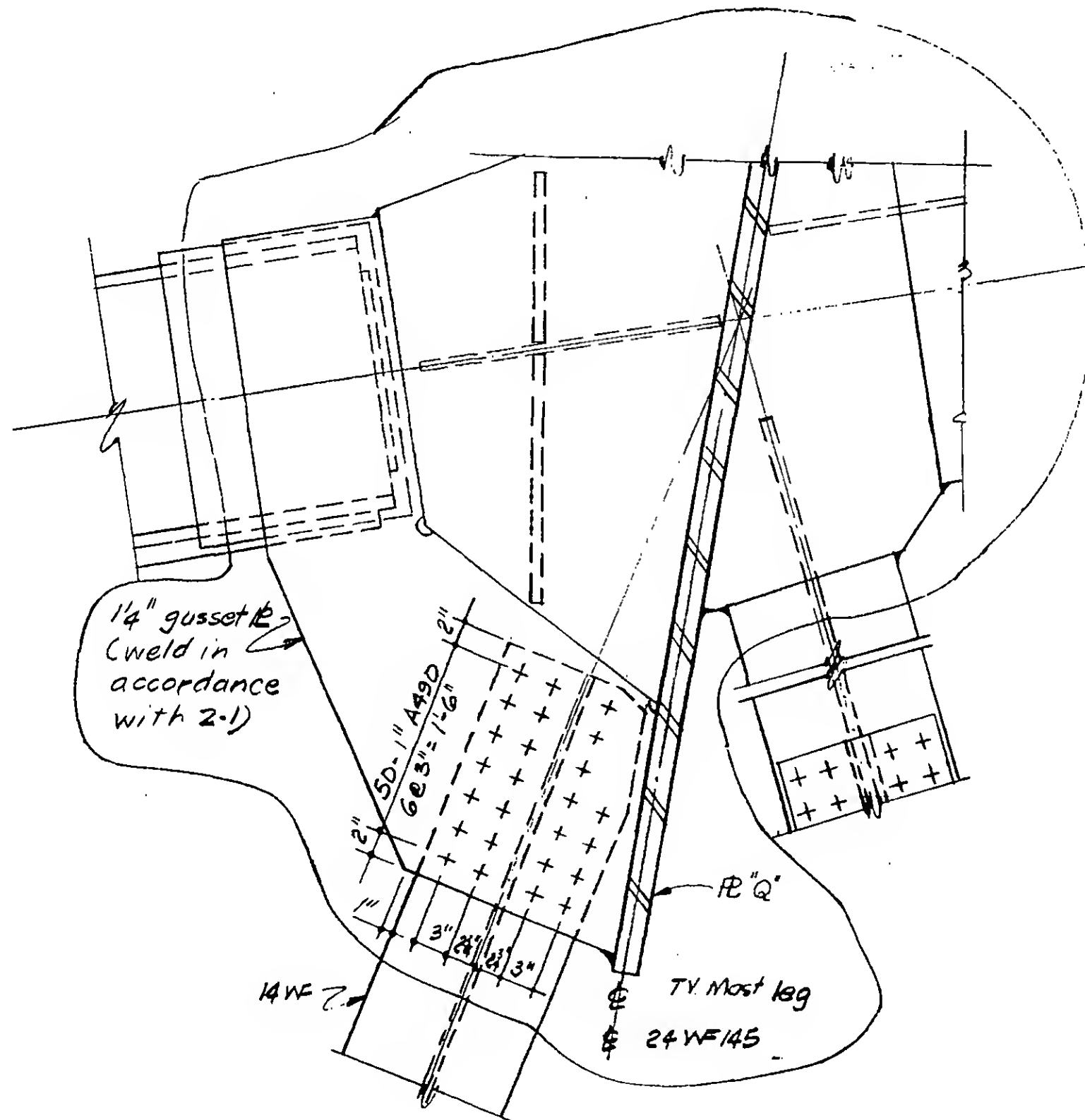
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - PH ROOF

DATE 4-1-70

REVISIONS

7-10-70
10-12-70



Section a-a
Detail 17-7A (For balance
of Section, see 17-7.2)



DESIGNED

DRAWN
Crebi

REVIEWED

9-A-17-7.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

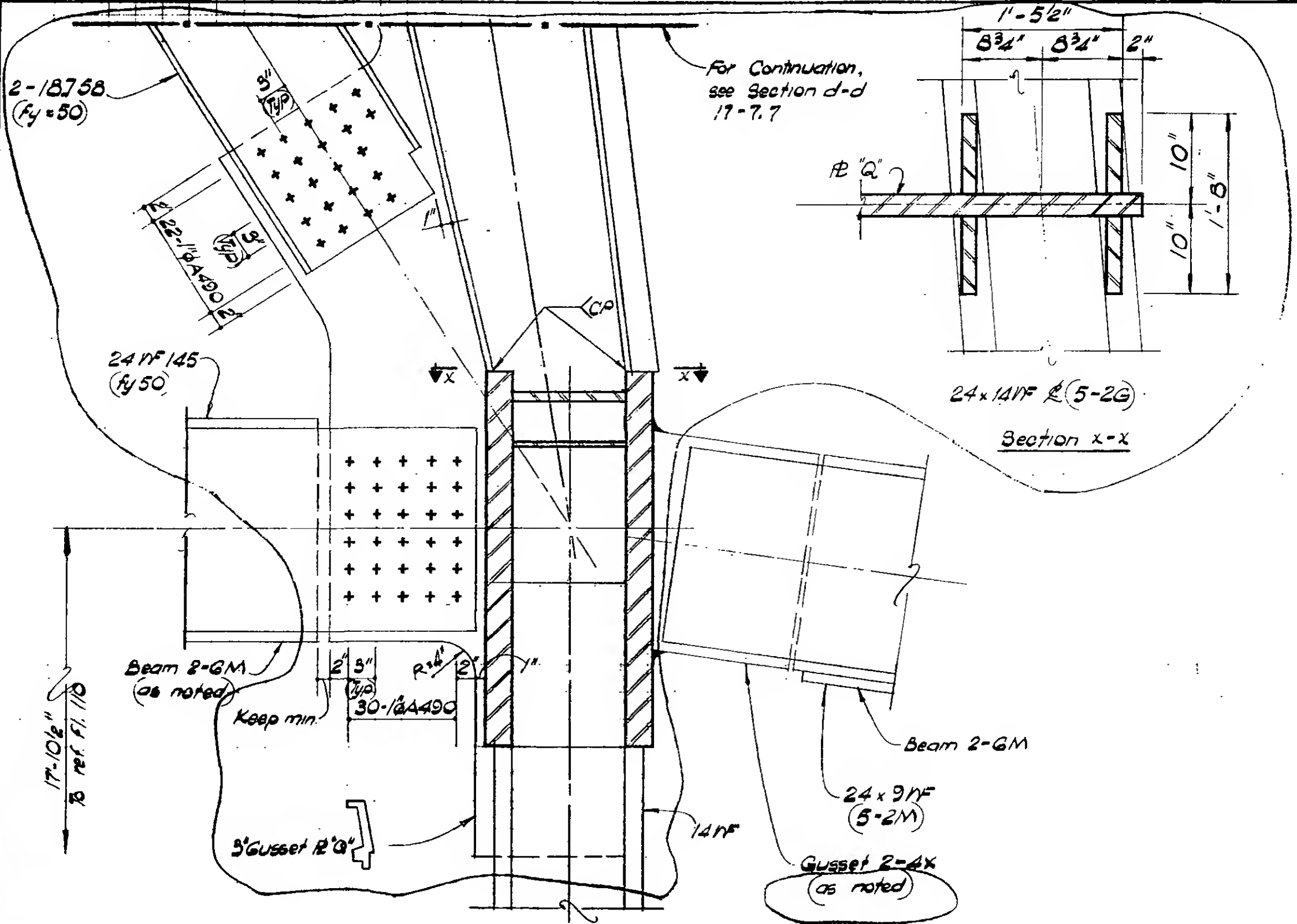
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE 4-1-70

REVISIONS

7-10-70
10-12-70



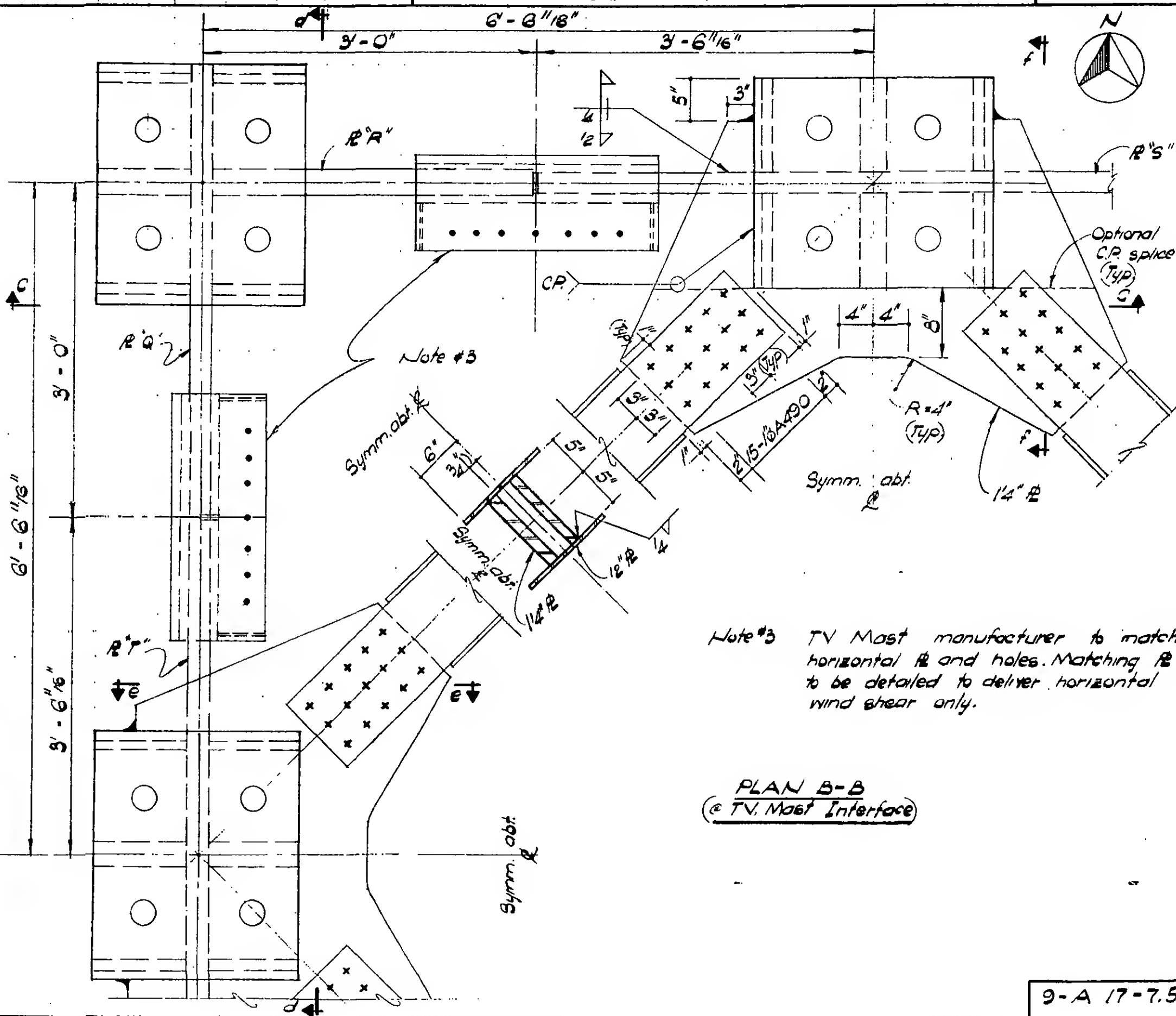
DESIGNED

DRAWN
W. Clarke

REVIEWED

9-A-17-7.4

REVISIONS



DESIGNED

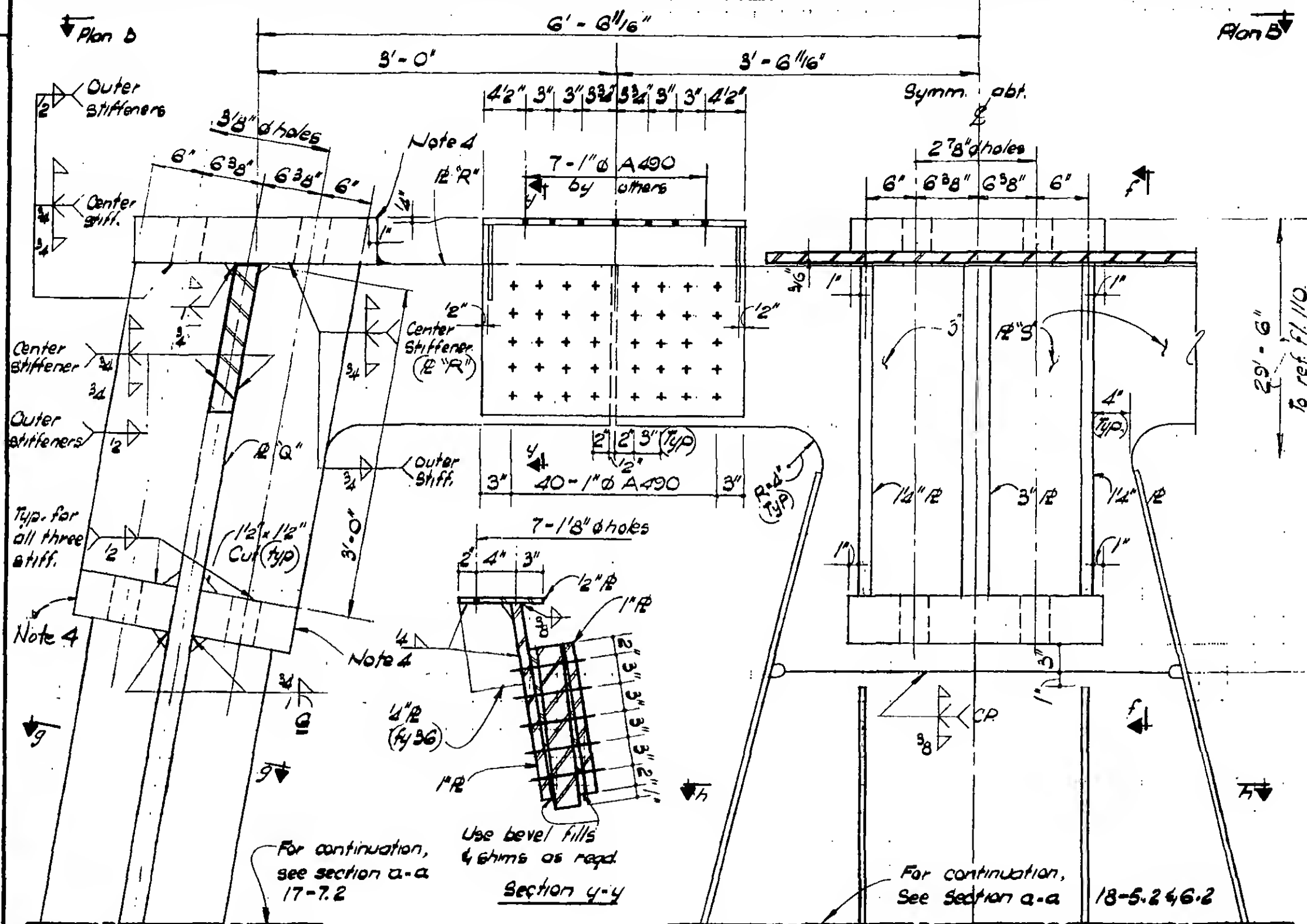
DRAWN

W. Clarke

REVIEWED

9-A 17-7.5

REVISIONS



Note 4:

5" Thick stock Φ ($f_y = 50 \text{ ksi}$) shall be free of gross internal discontinuities. After milling, average thickness shall not be less than $4\frac{1}{2}"$.

Section C-C

9 - A 17 - 7.6



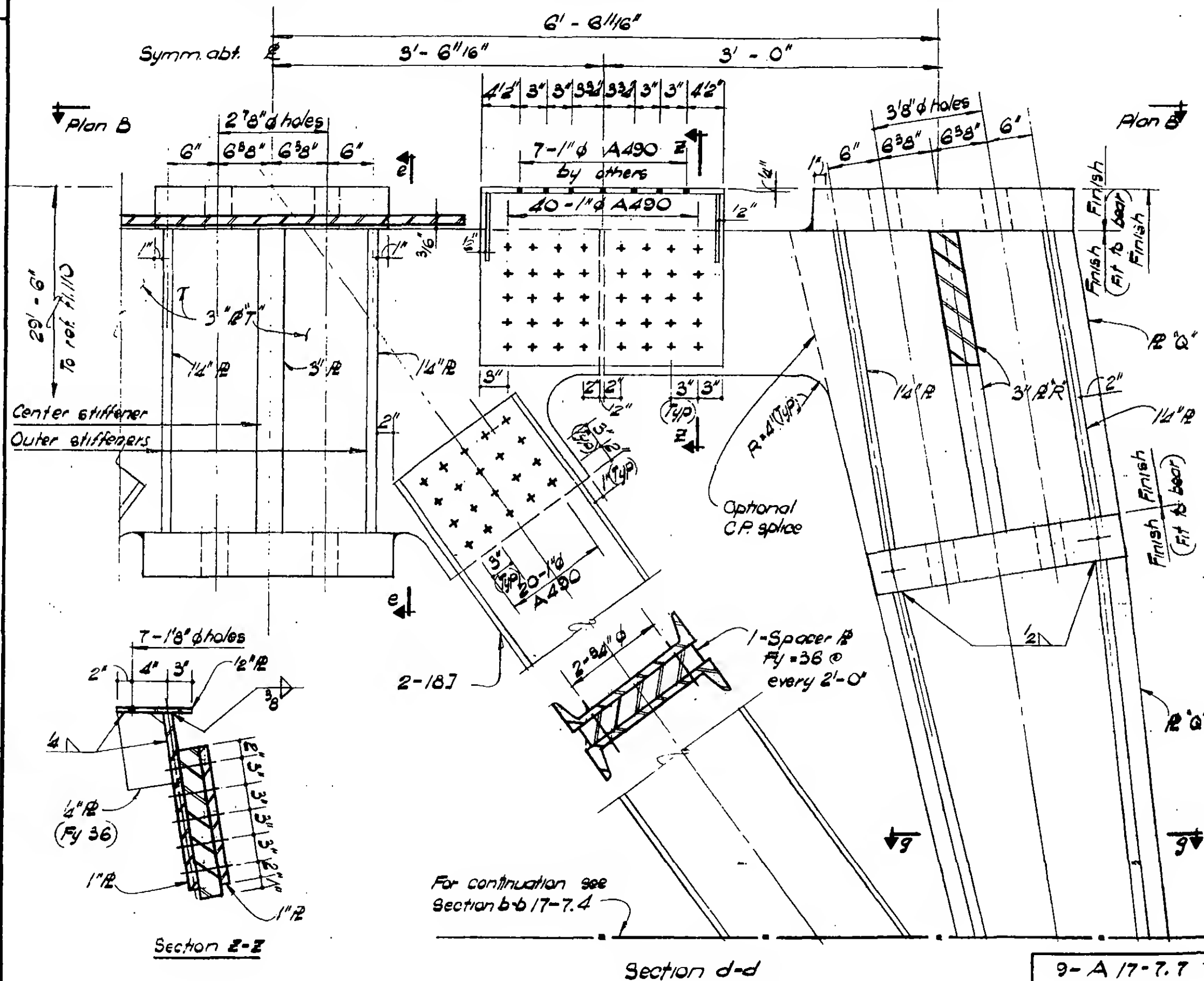
DESIGNED

DRAWN

W. Clarke

REVIEWED

REVISIONS



DESIGNED

DRAWN

W. Clarke

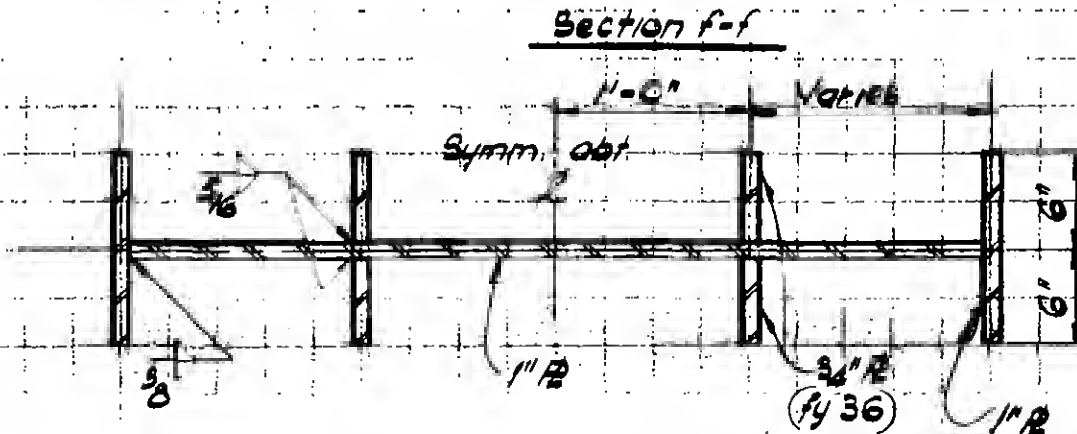
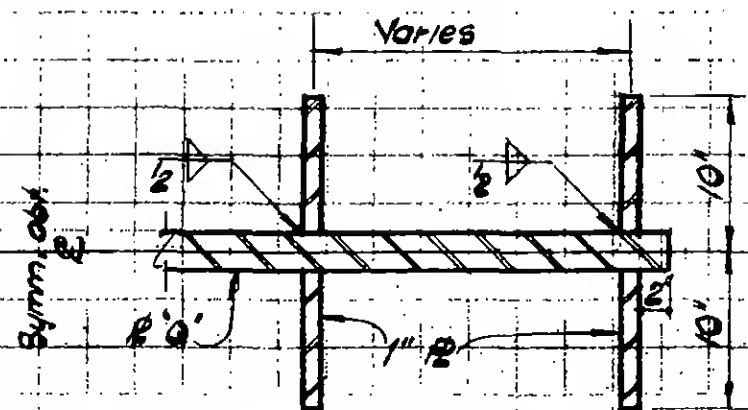
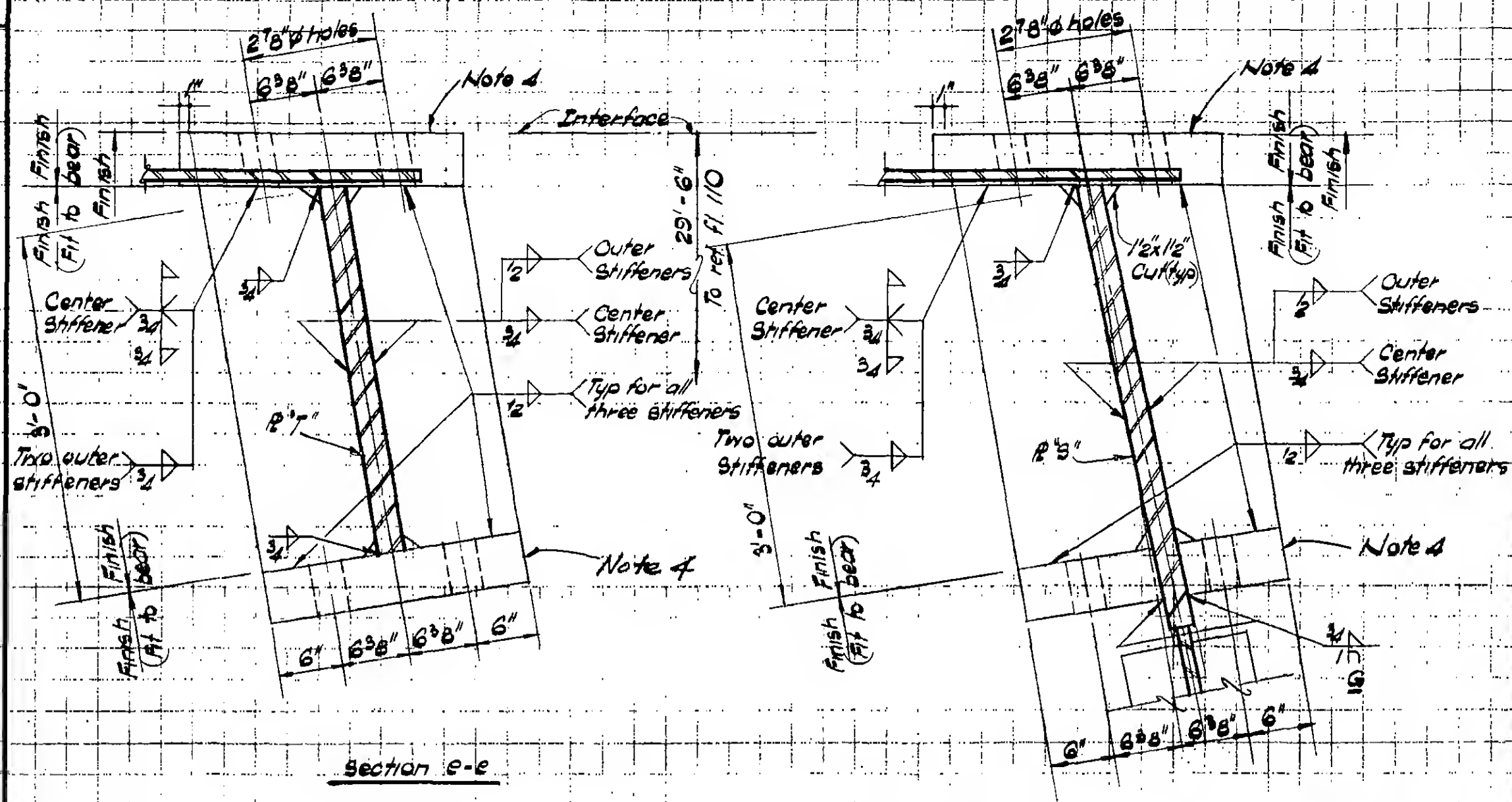
REVIEWED

PROJECT THE WORLD TRADE CENTER

TITLE PL 107 - PH CONNECTION DETAILS - PH ROOF

DATE 10-12-70

REVISIONS



Note 4:

Section g-g

5" Thick stock R (fy = 50ksi) shall be free of gross internal discontinuities. After milling, average thickness shall not be less than 4 1/2".

Section h-h

9-A 17-7.8

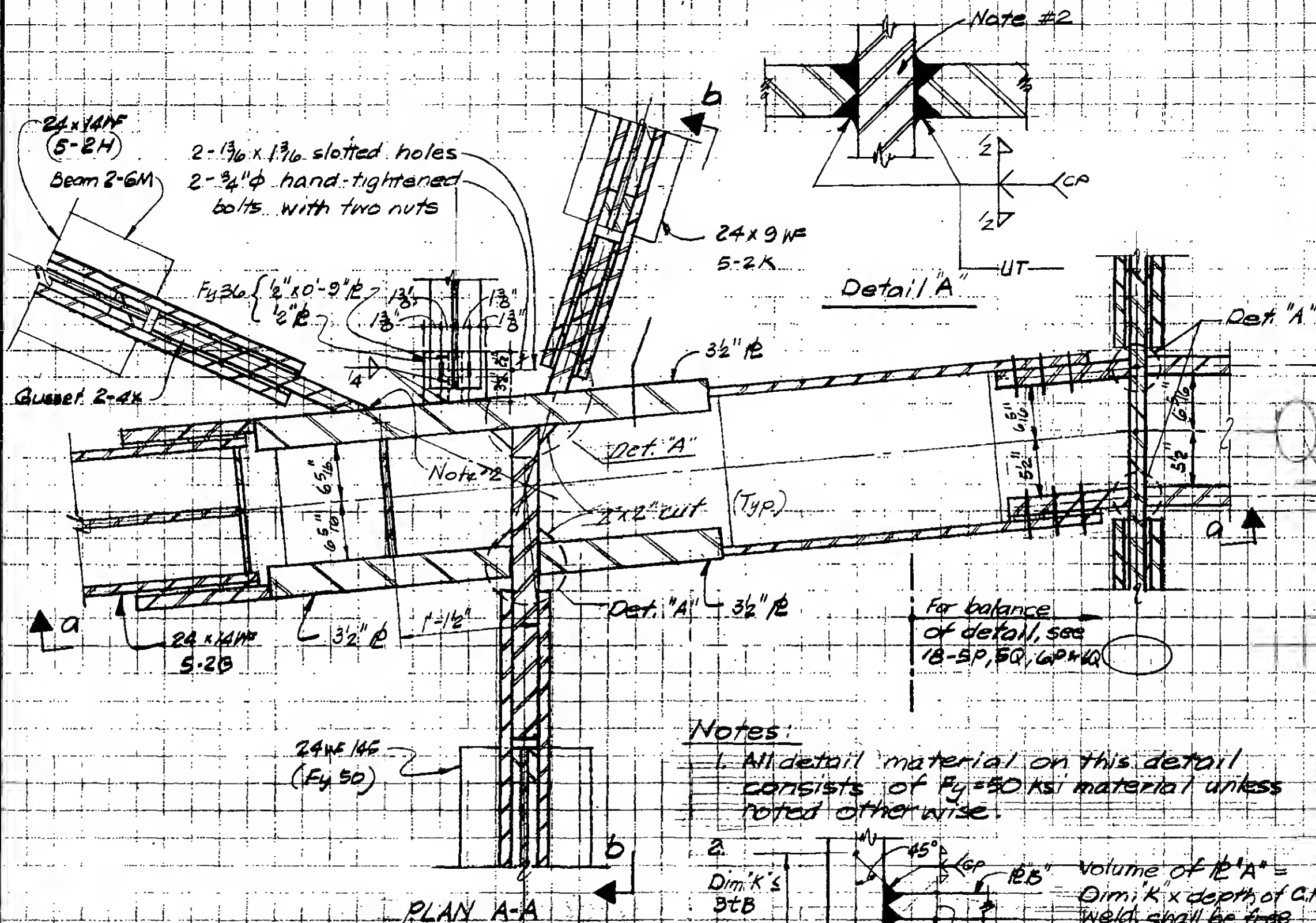


DESIGNED

DRAWN W. Clarke

REVIEWED

REVISIONS

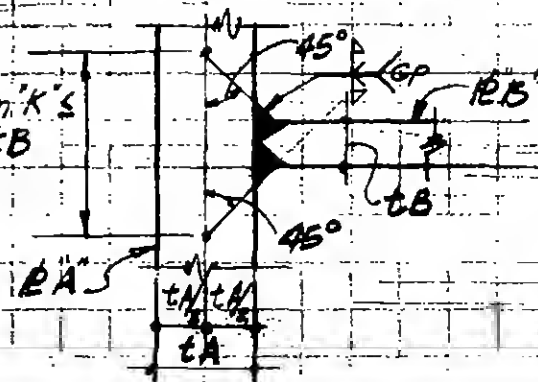


Notes:

1. All detail material on this detail consists of $F_y = 50$ ksi material unless noted otherwise.

2

Dim.
BtB



Volume of $K^*A^* =$
 Dim: $K^* \times$ depth of C.P.
 weld, shall be free
 from gross internal
 discontinuities when
 tested in accordance
 with ASTM A435.

9-B 17-79



DESIGNED

Draw

N. Clarke

REVISED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

FL 107 - RH CONNECTION DETAILS - RH ROOF

DATE

12/14/79

REVISIONS

For balance of detail
see 1B-5P, 5Q, 6P & 6Q

Beam 2-3M

24x14PF
5-2G

Plan A

1/4" gusset plate
(weld in
accordance
with 2-1)

14WF

Section A-A

plan A

(weld in
accordance
with 2-1)

Section W-W

9-B17-7.10



SIGNED

DR. Clark

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

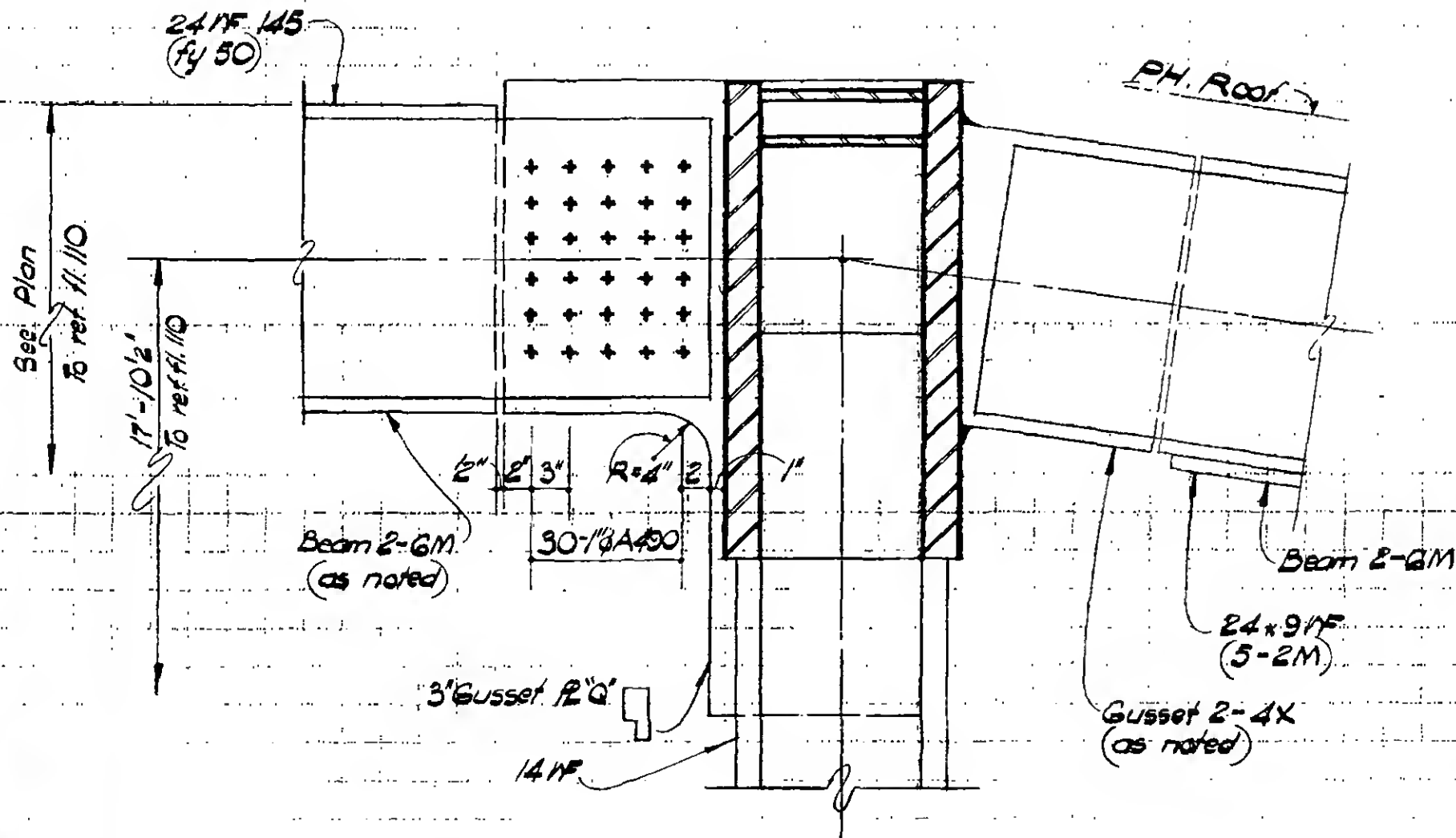
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - PH ROOF

DATE 12/14/70

REVISIONS



DESIGNED

DRAWN

W. Clarke

REVIEWED

9-B/7-7.11

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

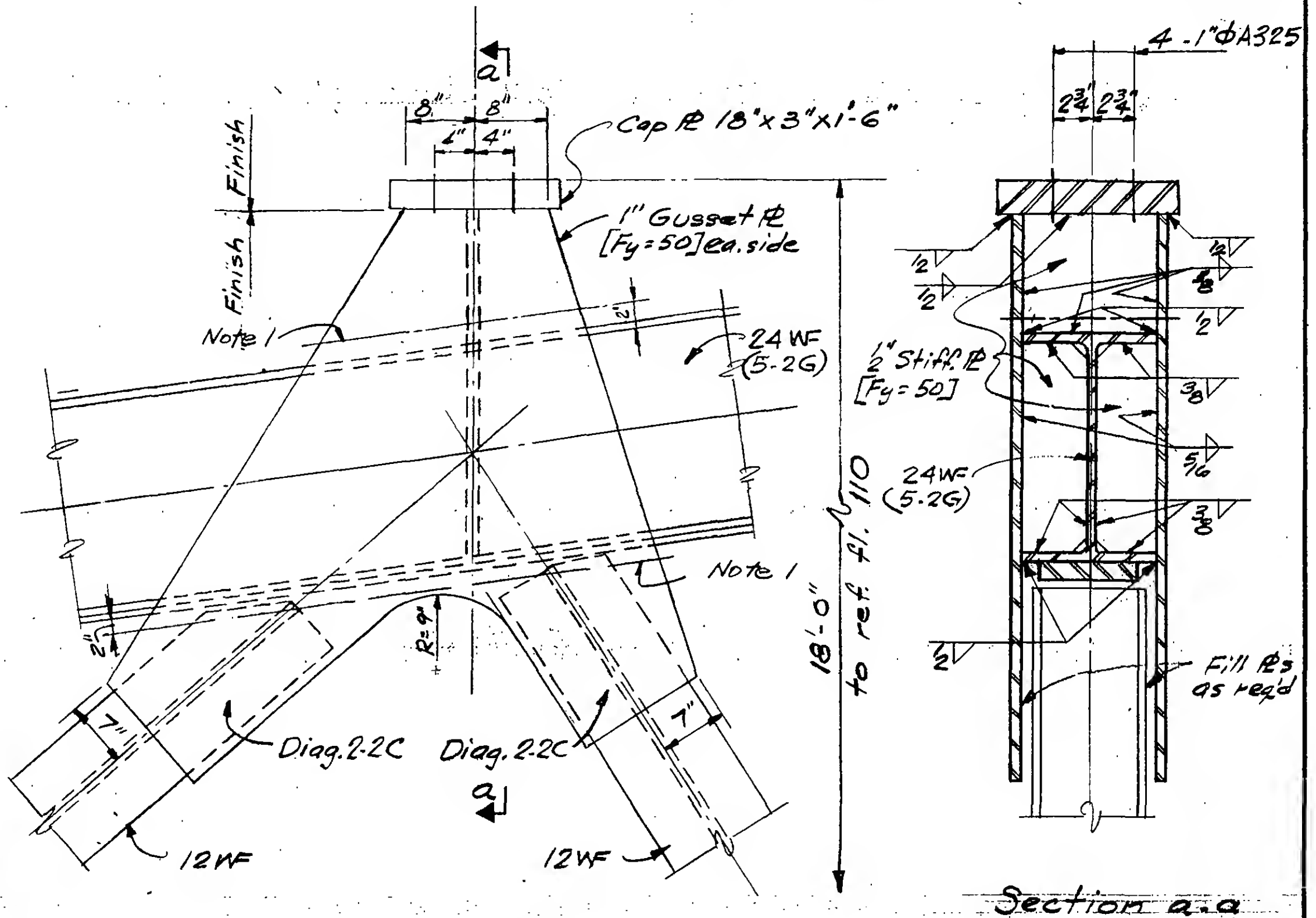
TITLE

FL 107 - PH CONNECTION DETAIL - PH ROOF

DATE

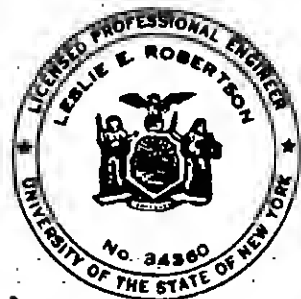
7-10-70

REVISIONS

VOID - 9/25/70
7/10/70

Detail 17-10A

9-AB17-10.1



DESIGNED

DRAWN

REVIEWED

PROJECT

THE WORLD TRADE CENTER

TITLE.

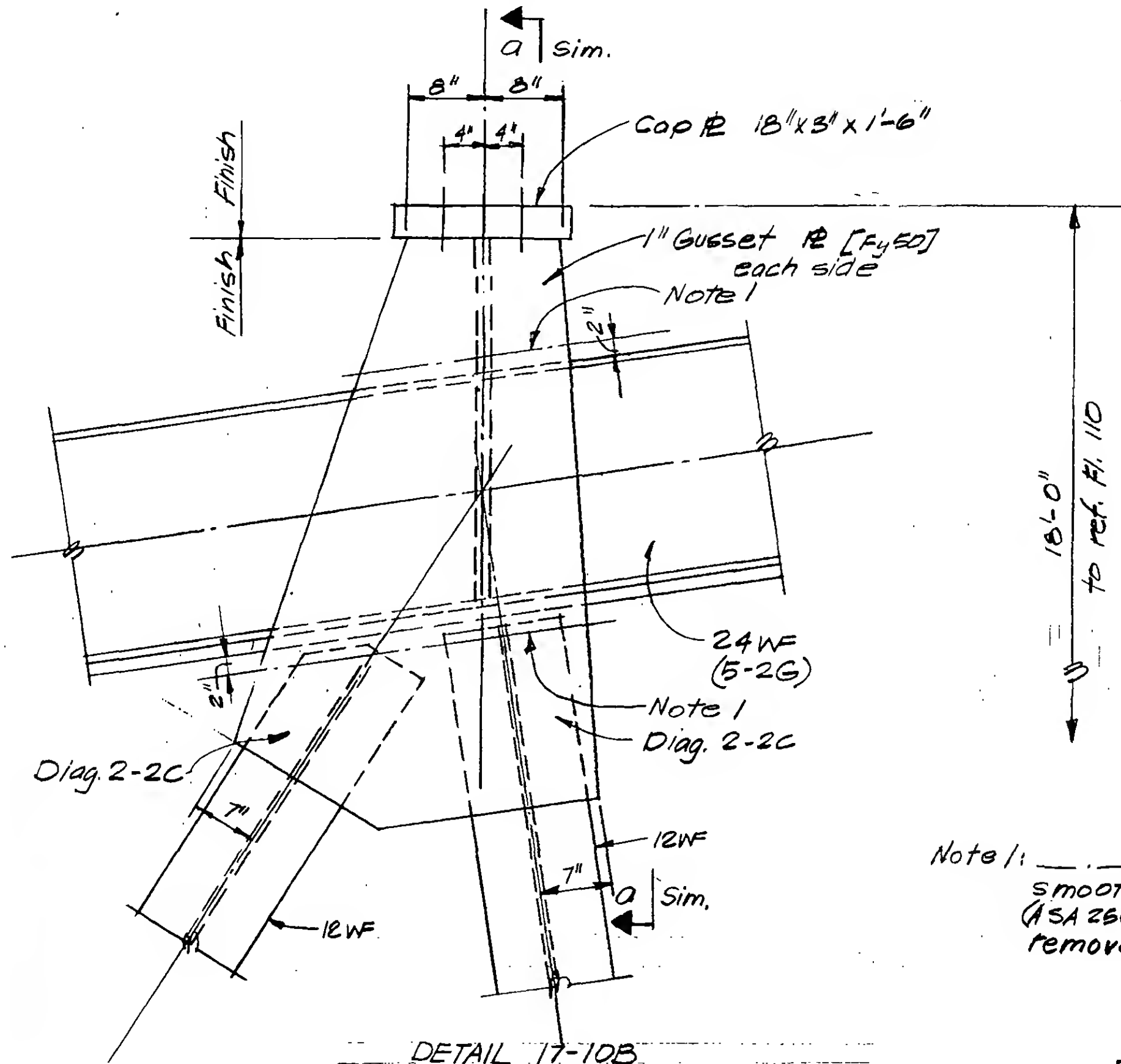
FL107-PH CONNECTION DETAIL - PH ROOF

DATE _____

7/10/70

REVISIONS

VOID 9/25/70
7/10/70



Note 1: Indicates
smooth notch-free
(ASA 250) cut following
removal of derrick.

DETAIL 17-10B

9-AB 17-102



DESIGNED

Brewer

DRAWN

P. Ozeki

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

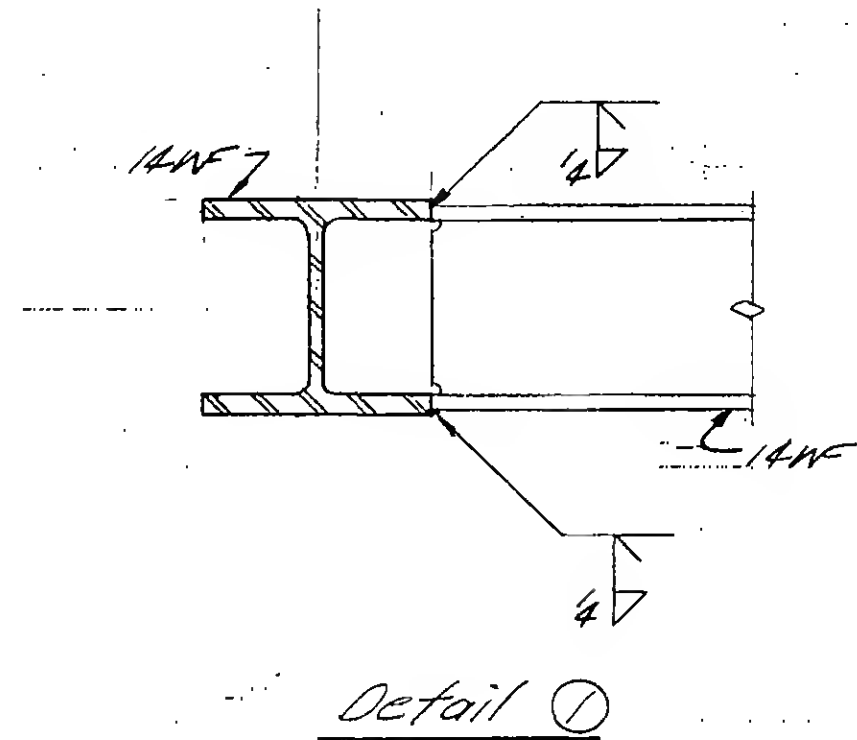
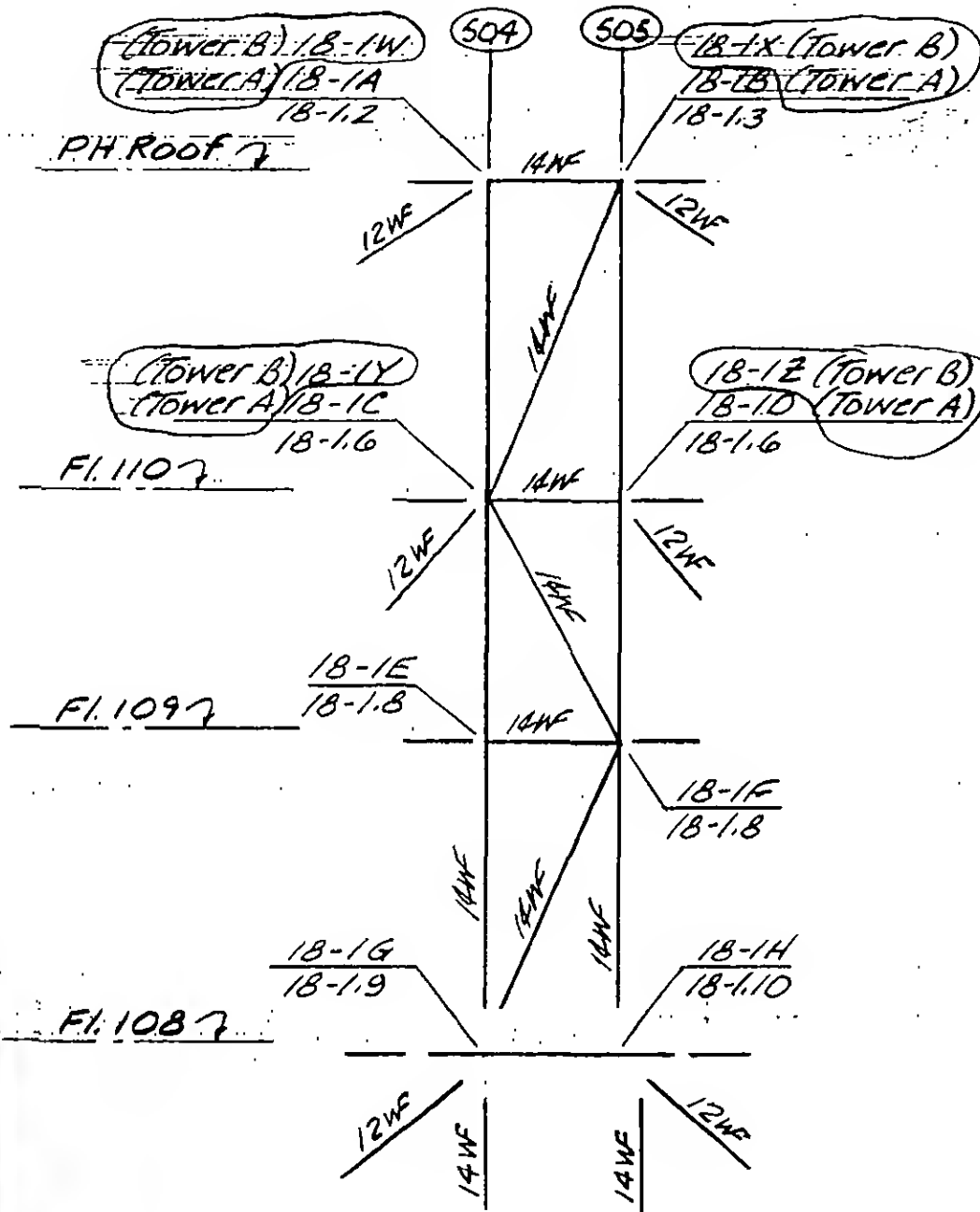
TITLE

FLOOR 107-PH CONNECTION DETAILS-LINES 004 & 005

DATE

1-1-70

REVISIONS

6-16-70
12/14/70

Detail 18-1

DESIGNED

J. Adams

DRAWN

E. Drakos

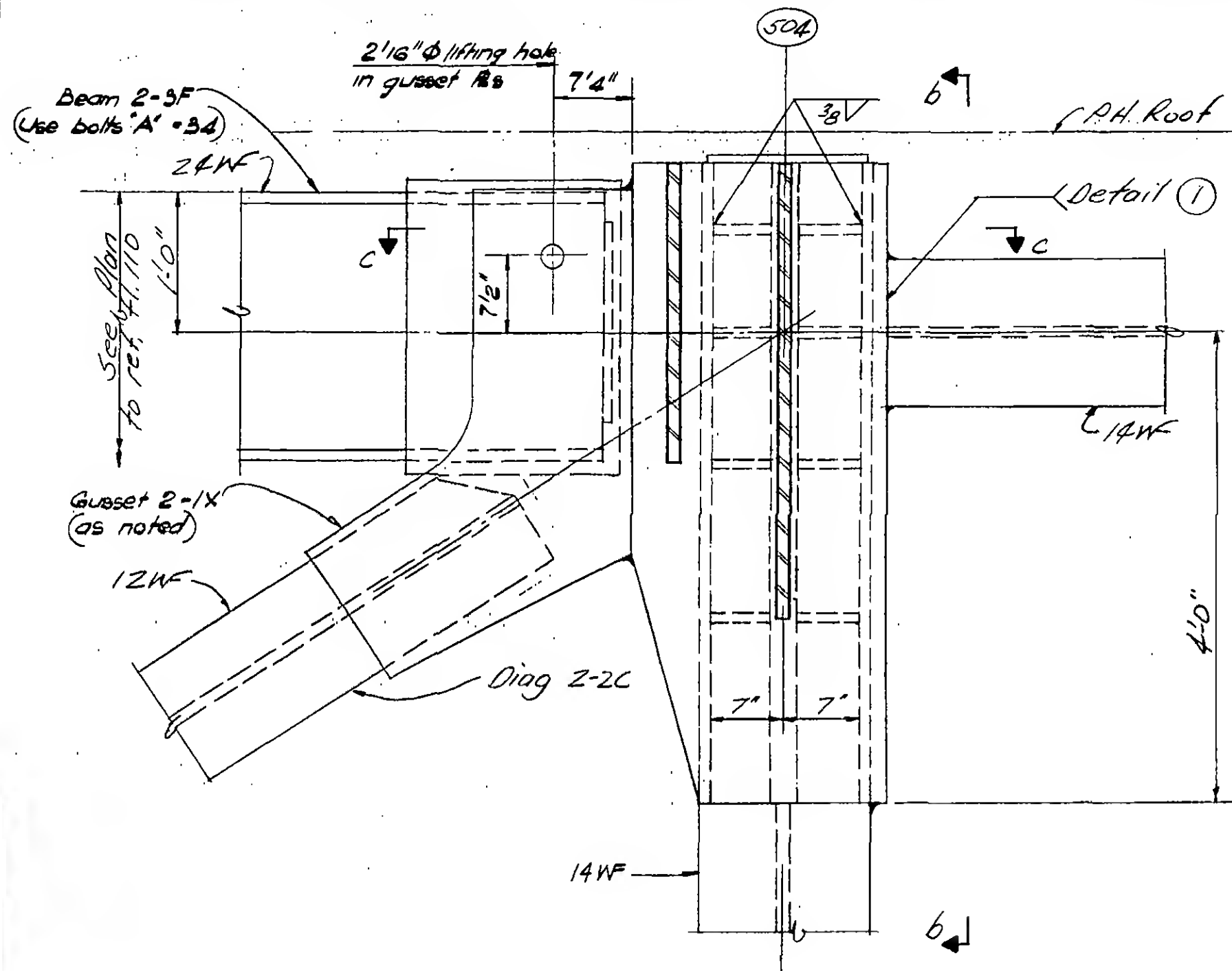
REVIEWED

E. Drakos

9-AB18-1.1

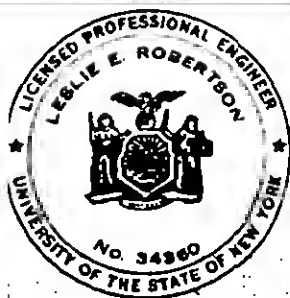
REVISIONS

6-16-70
7-15-70
12-14-70



section a-a

Detail: 18-1A & 18-1W



DESIGNED

H. Ross

DRAWN

Adams

REVIEWED

E. Drakos

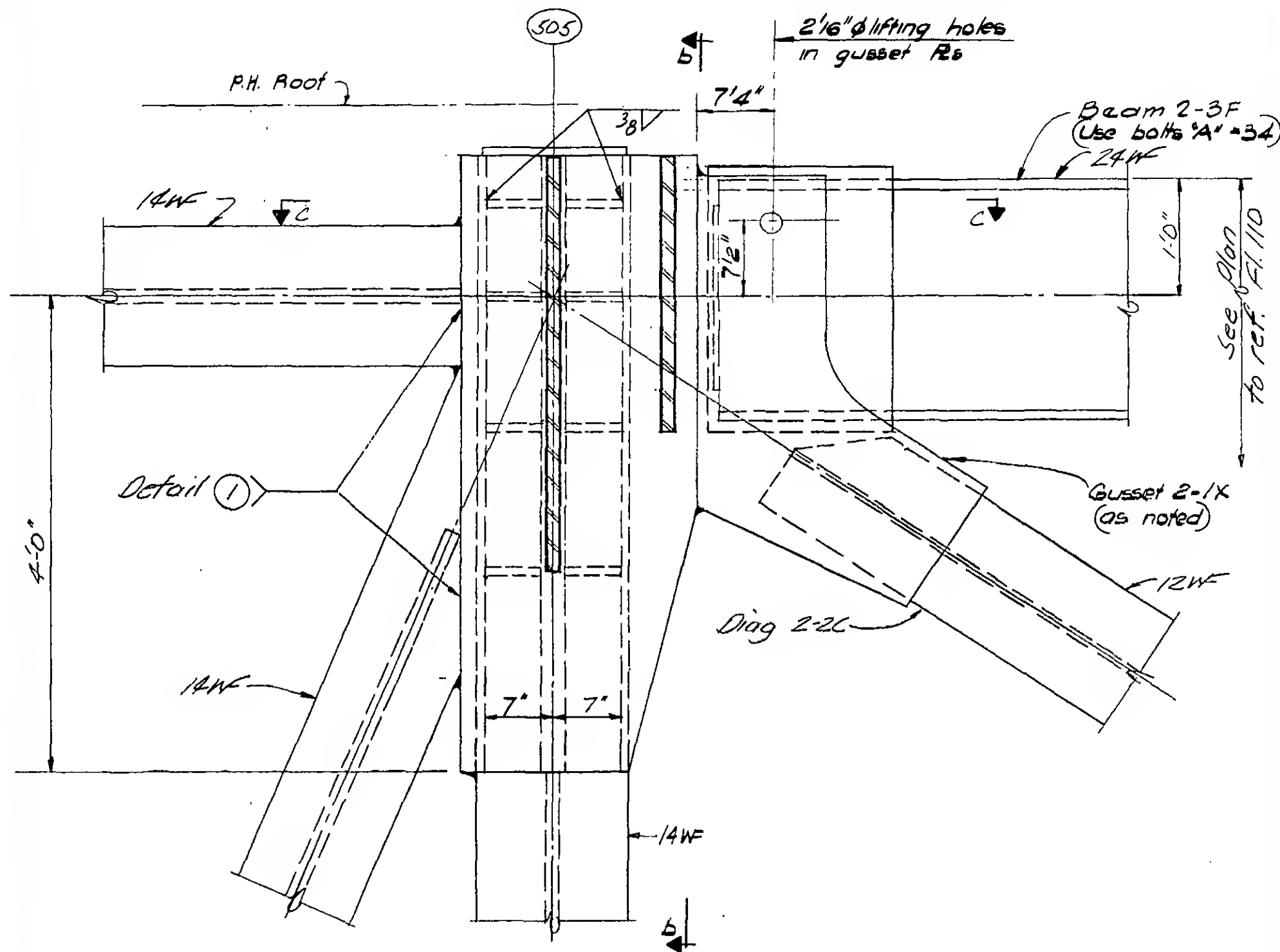
9-AB18-1.2

REVISIONS

C-16-70

7-13-70

12-14-70



Section a-a

Detail 18-1B & 18-1X



DESIGNED

A-6025

DRAWN

Adams

REVIEWED

E. Drakos

9-AB18-1,3

PROJECT

THE WORLD TRADE CENTER

TITLE

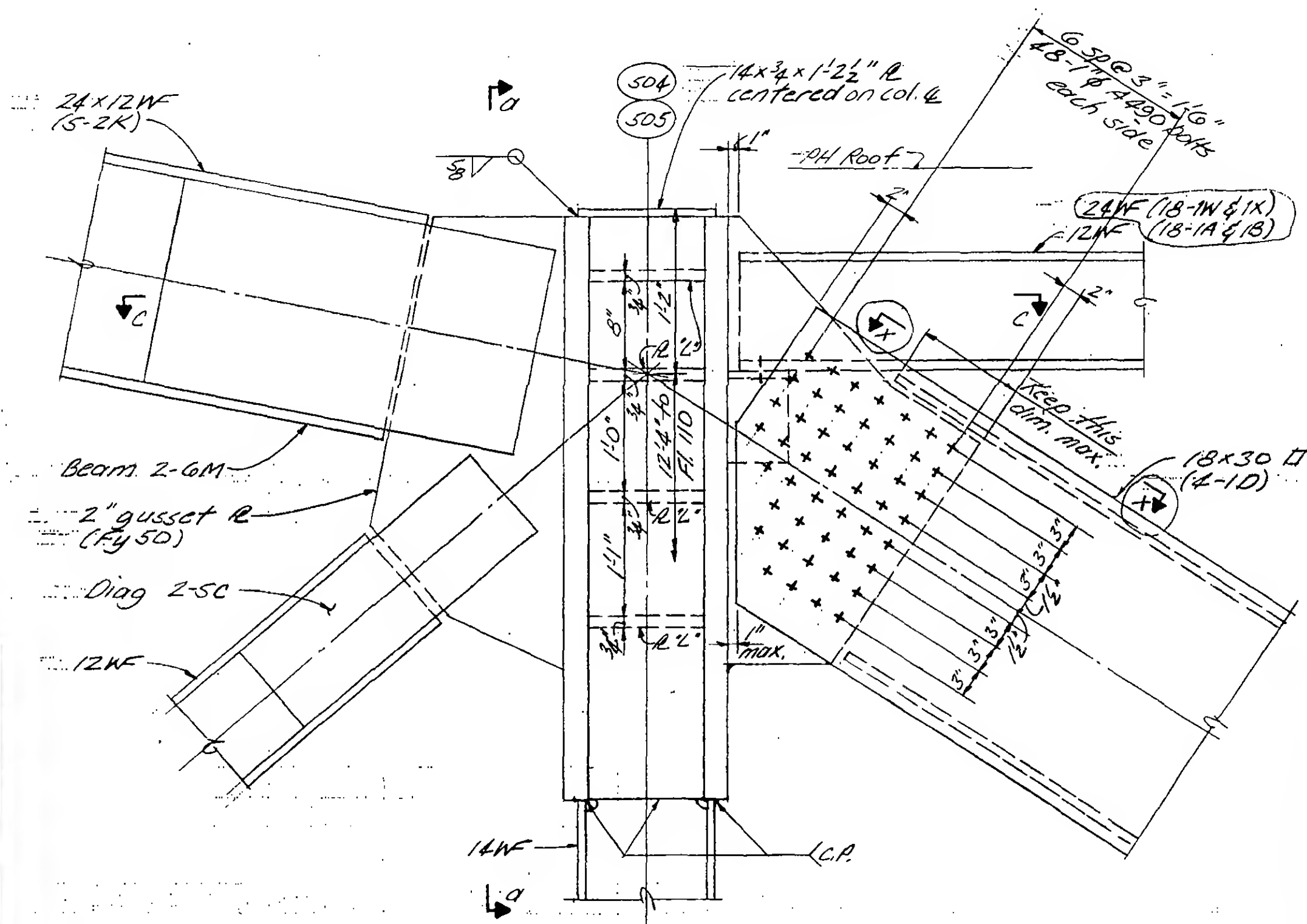
FLOOR 107-PH CONNECTION DETAILS-LINES 004 & 005

DATE

4-1-70

REVISIONS

6-16-70
12-14-70



DESIGNED

A. Bon

DRAWN

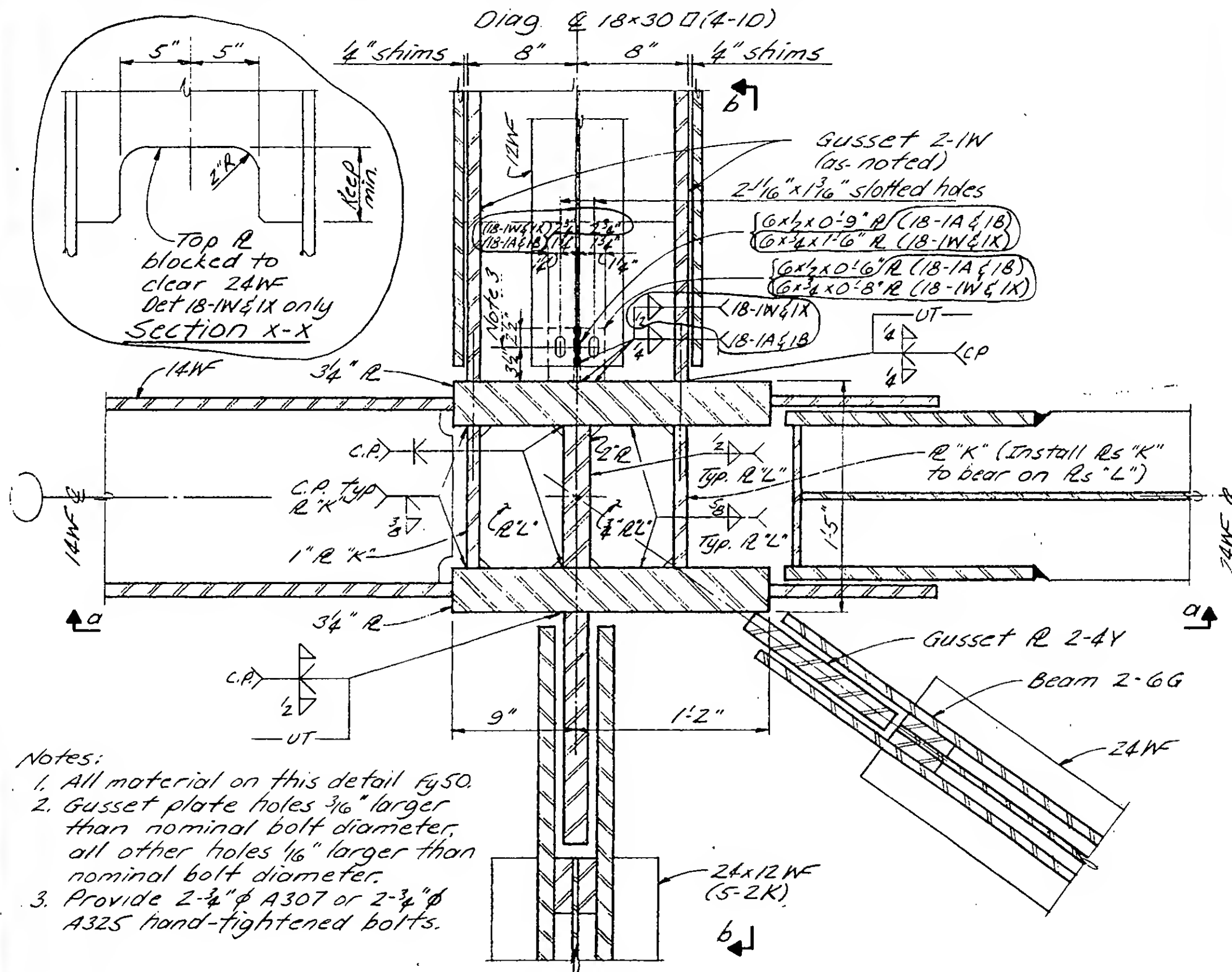
J. Adams

REVIEWED

E. Drakos

VISIONS

5-16-70
12/14/70



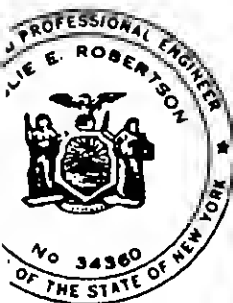
Notes:

1. All material on this detail Fy50.
2. Gusset plate holes $\frac{3}{16}$ " larger than nominal bolt diameter, all other holes $\frac{1}{16}$ " larger than nominal bolt diameter.
3. Provide 2- $\frac{3}{4}$ " ϕ A307 or 2- $\frac{3}{4}$ " ϕ A325 hand-tightened bolts.

Plan Section C-C

Col. 505 as shown
Col 504 opp. hand

9-AB18-1.5



OF *A. boss*
DRAWN
Dams
REVIEWED
Drakos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

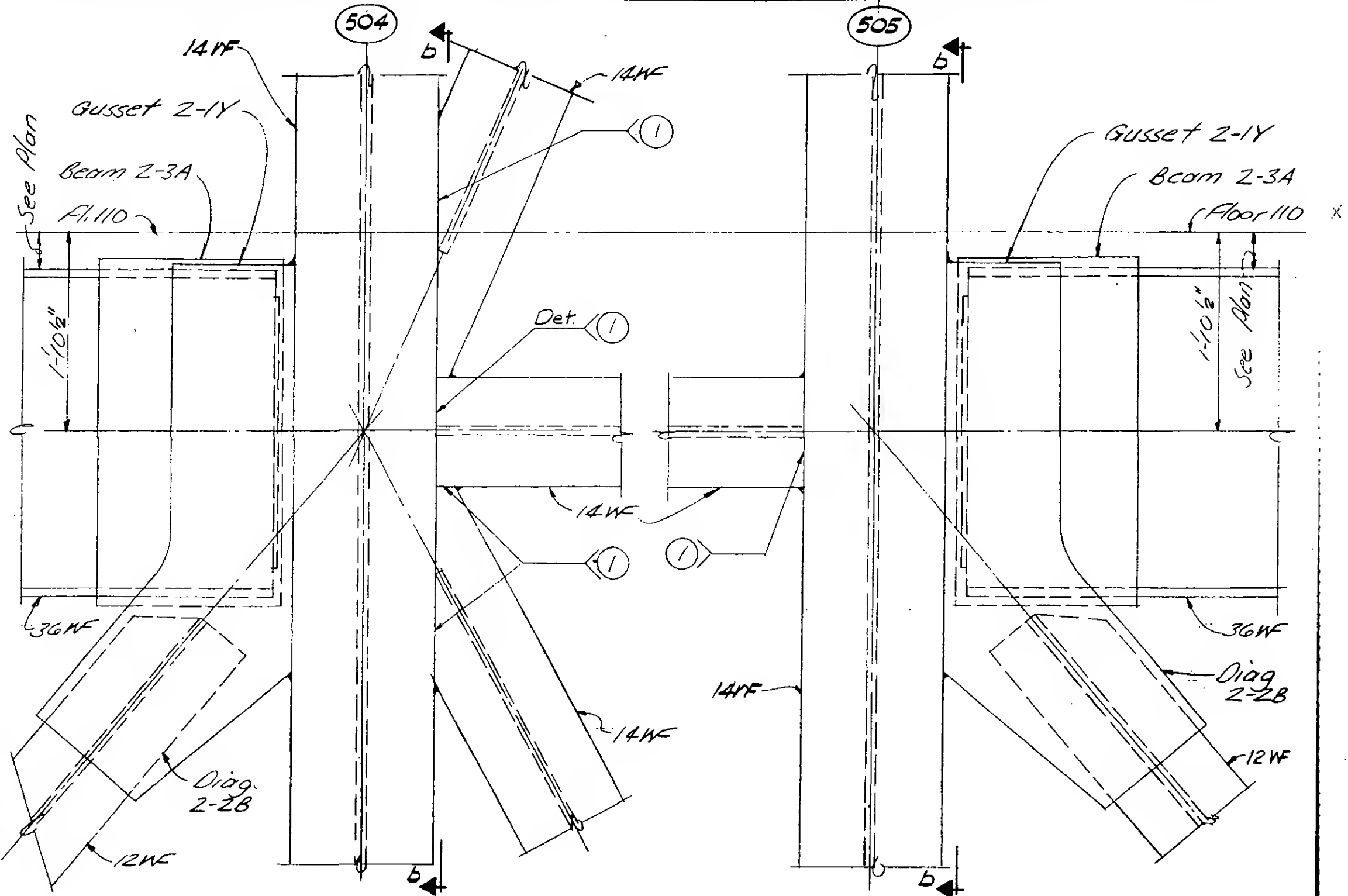
PROJECT THE WORLD TRADE CENTER

TITLE FLOOR 107-PH CONNECTION DETAILS-LINES 004 & 005

DATE 4-1-70

REVISIONS

6-16-70
12/14/70



Section a - a

DETAIL 18-10 & 18-1Y

Section a - a

DETAIL 18-1D & 18-1Z



DESIGNED

DRAWN

REVIEWED

E. Draxos

9-AB18-1.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

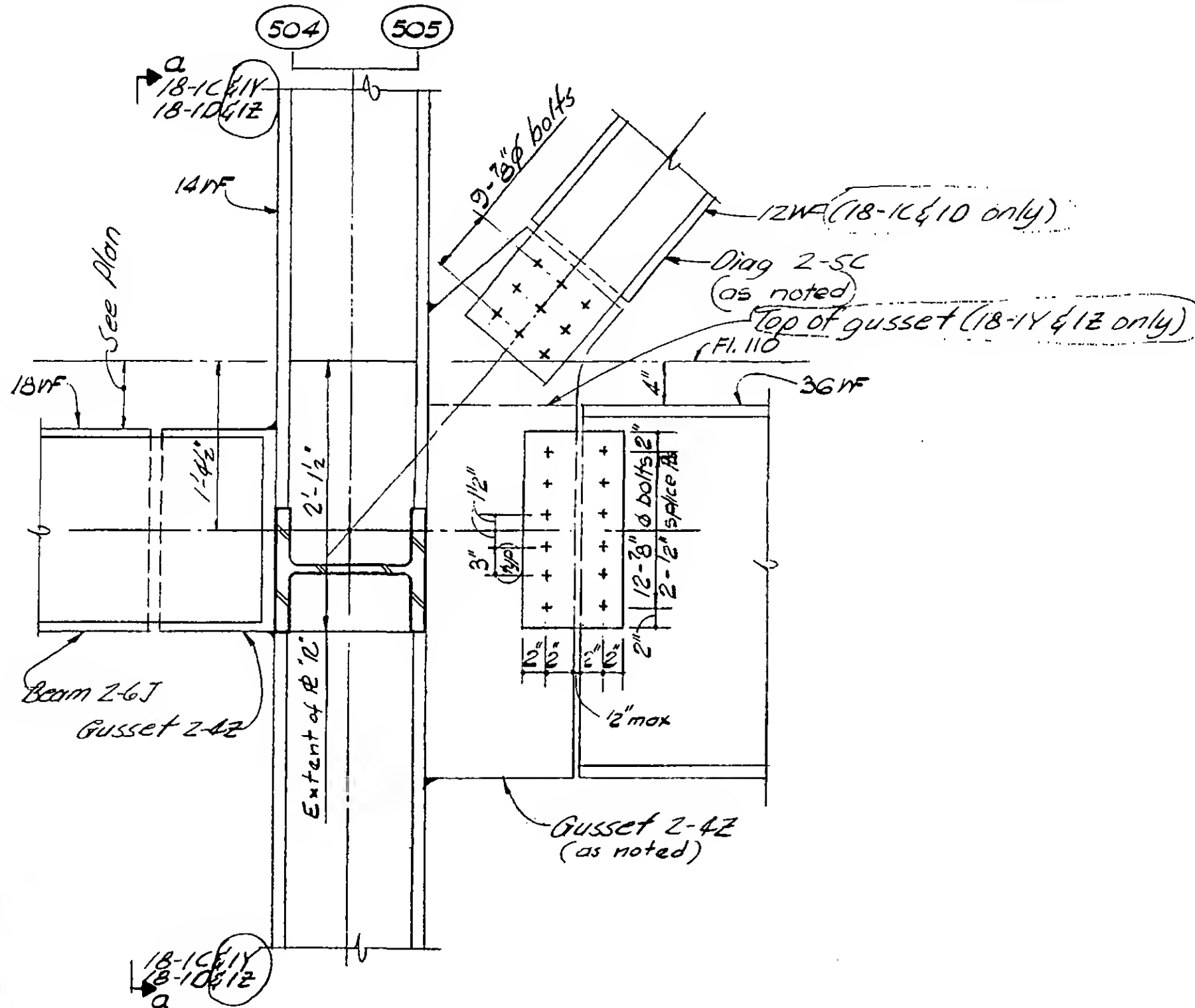
PROJECT THE WORLD TRADE CENTER

TITLE FLOOR 107 - PH CONNECTION DETAILS - LINES 004 & 005

DATE 4-1-70

REVISIONS

6-16-70
12/14/70



Section b-b



DESIGNED J. E. Robertson

DRAWN J. Adams

REVIEWED E. Drakos

9-AB18-1.7

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

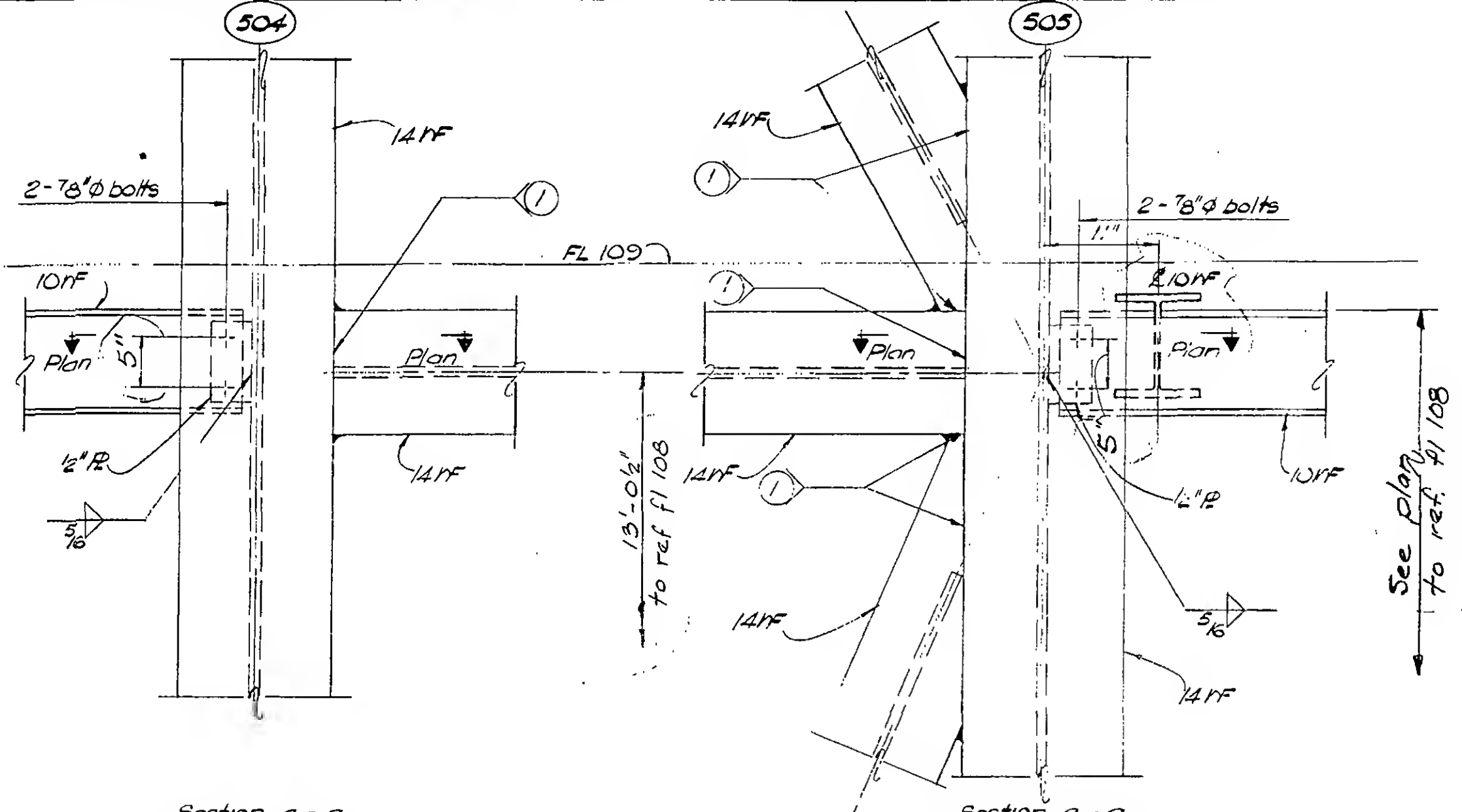
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH CONNECTION DETAILS - LINES 0044005

DATE 4-1-70

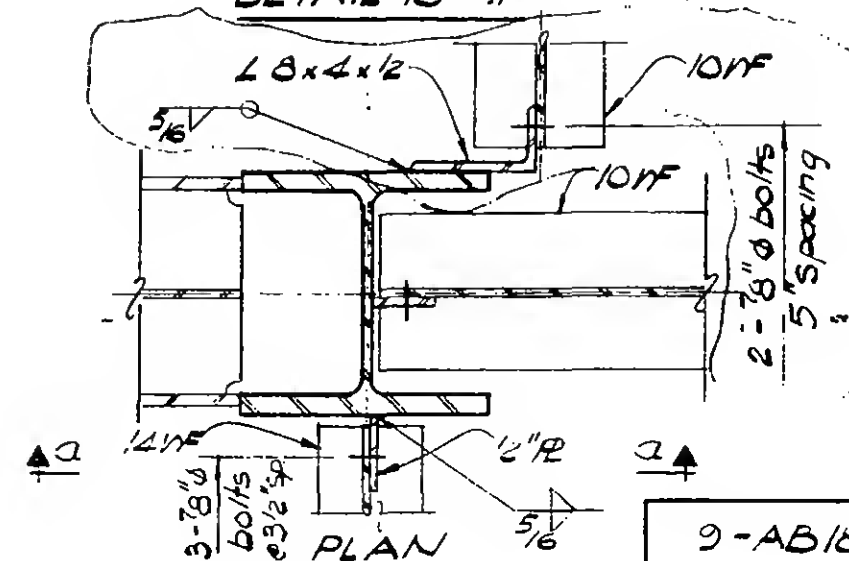
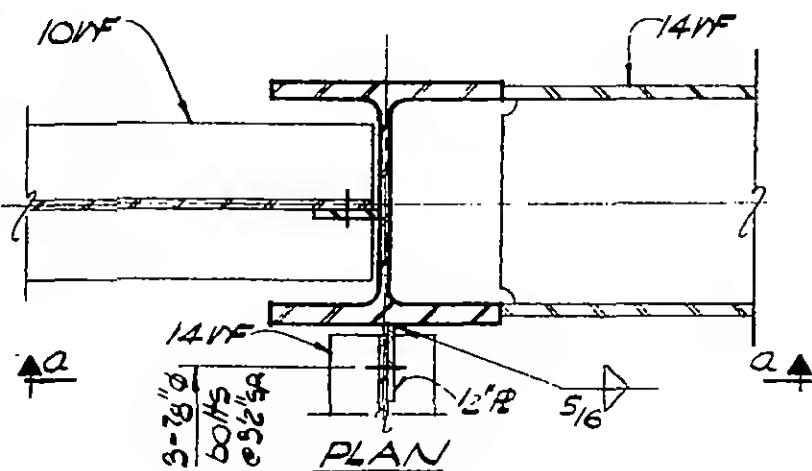
REVISIONS

6-16-70



Section a-a
DETAIL 18-1E

Section a-a
DETAIL 18-1F



9-AB/18-1.8



DESIGNED

W. Clarke

DRAWN

E. Oraxos

REVIEWED

E. Oraxos

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

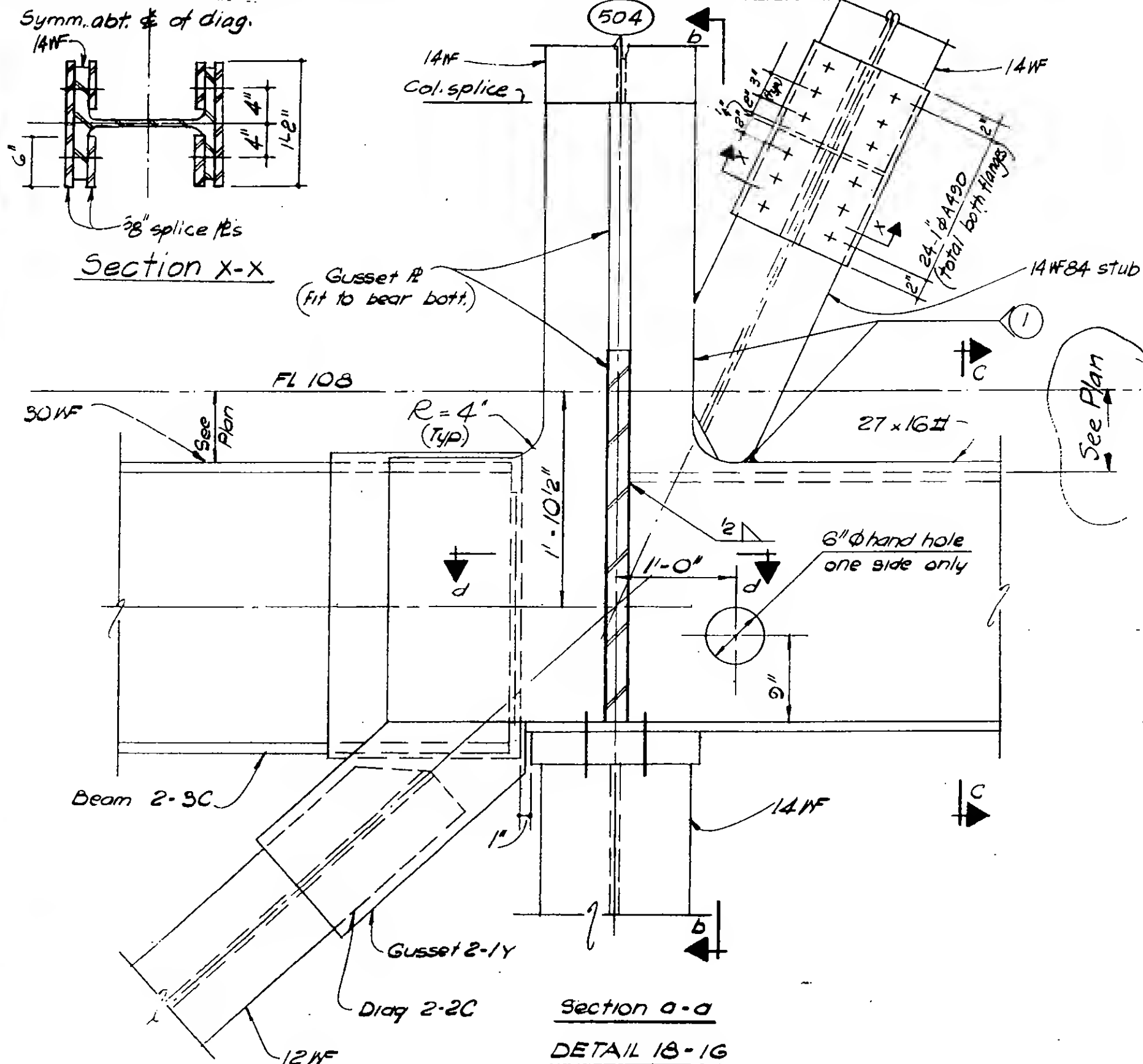
PROJECT THE WORLD TRADE CENTER

TITLE FL 107 - PH. CONNECTION DETAILS - LINES 04&05

DATE 4-1-70

REVISIONS

5/27/70
7/8/70

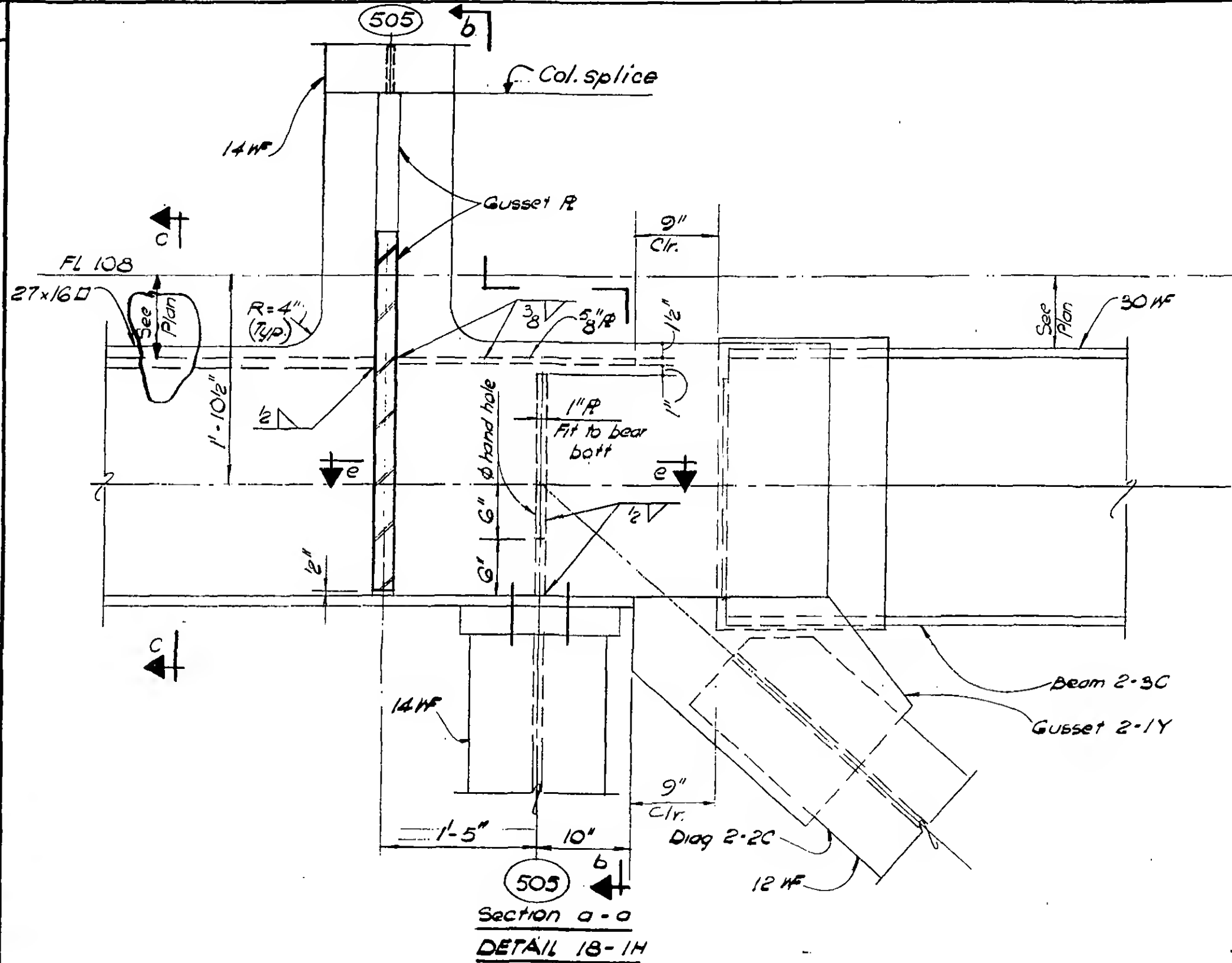


DESIGNED
A. Voss
DRAWN
W. Clarke
REVIEWED
E. Drakos

9-AB18-1.9

REVISIONS

5/27/70
7/8/70



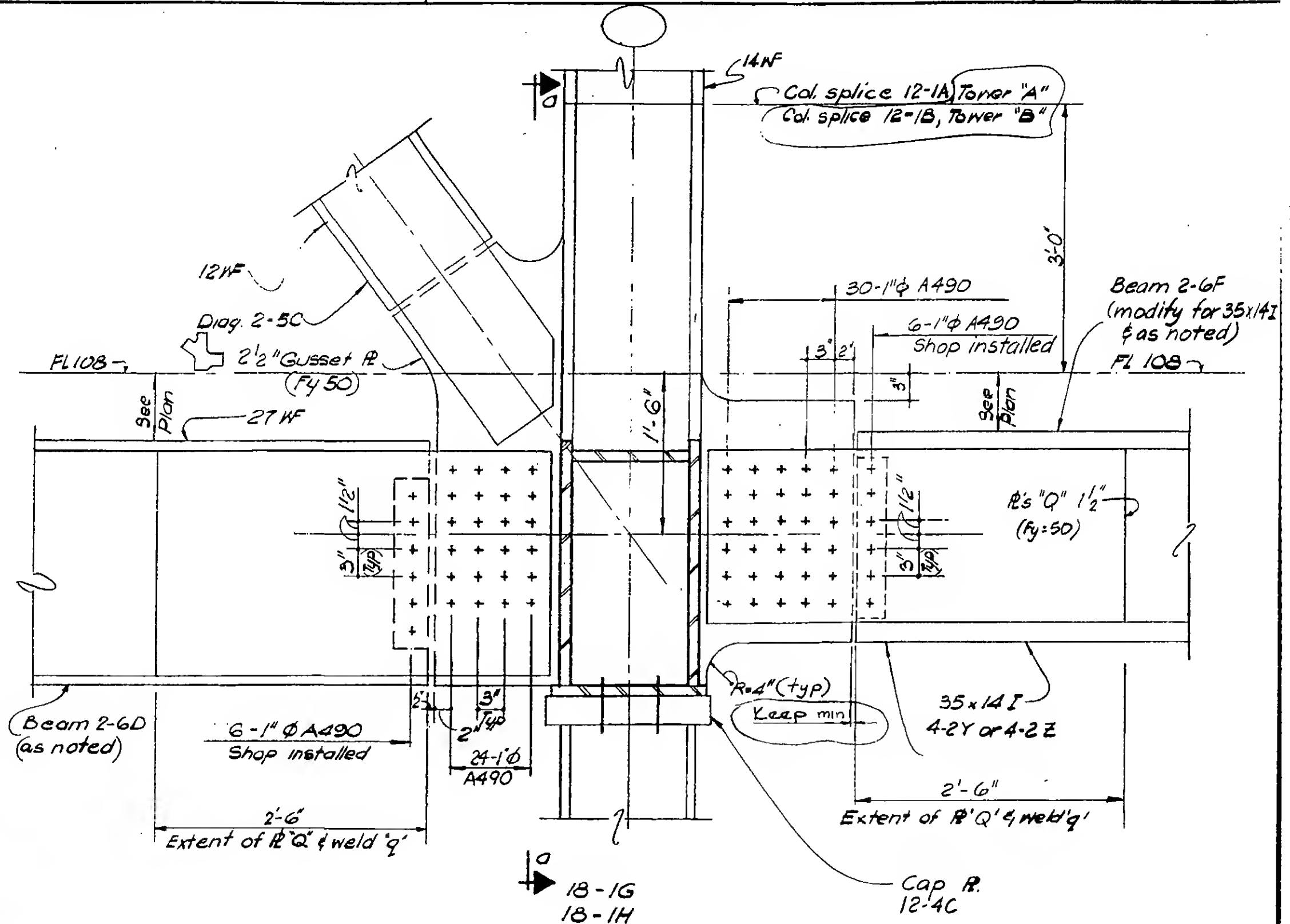
DESIGNED
J. Voss
DRAWN
W. Clarke
REVIEWED
E. Draxos

9-AB/8-1.10

REVISIONS

5/27/70

8/3/70



Section b-b



DESIGNED

DRAWN

W. Clarke

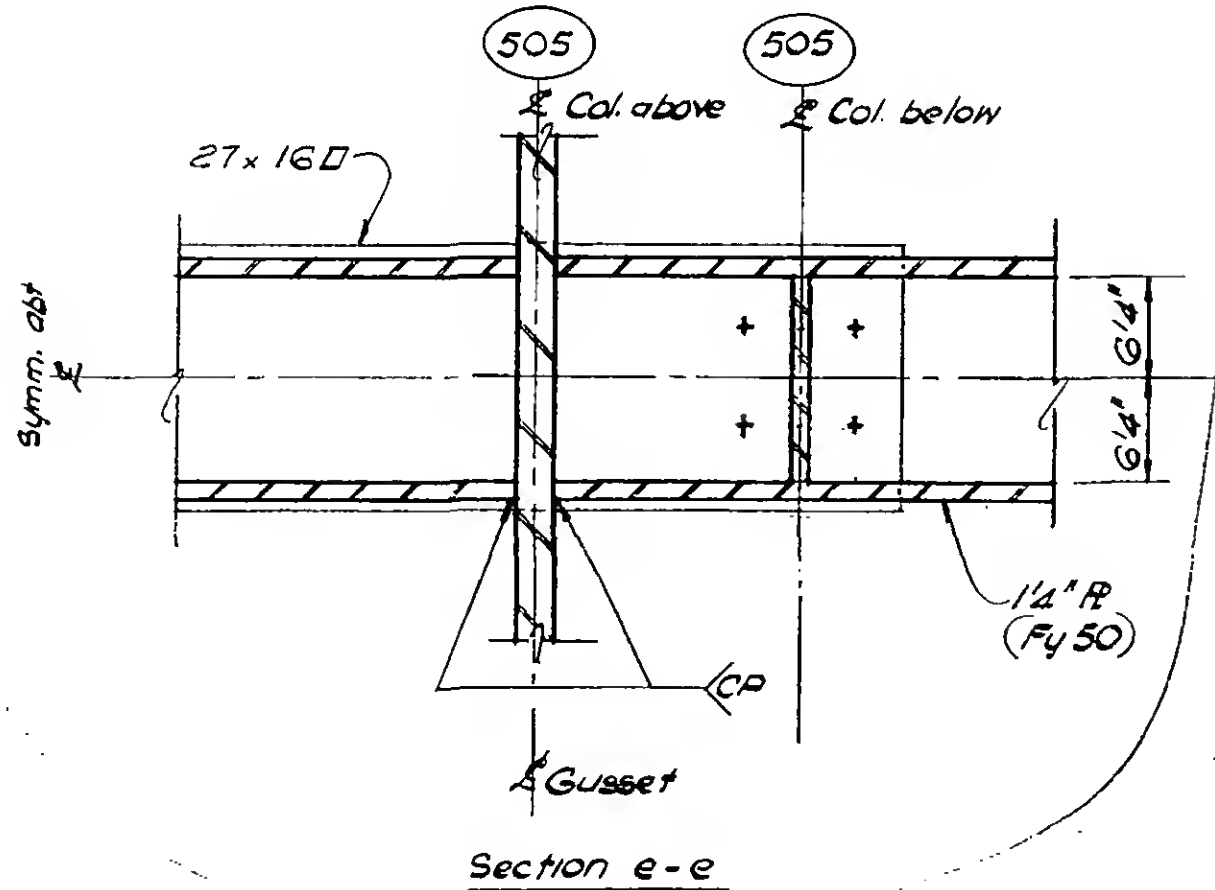
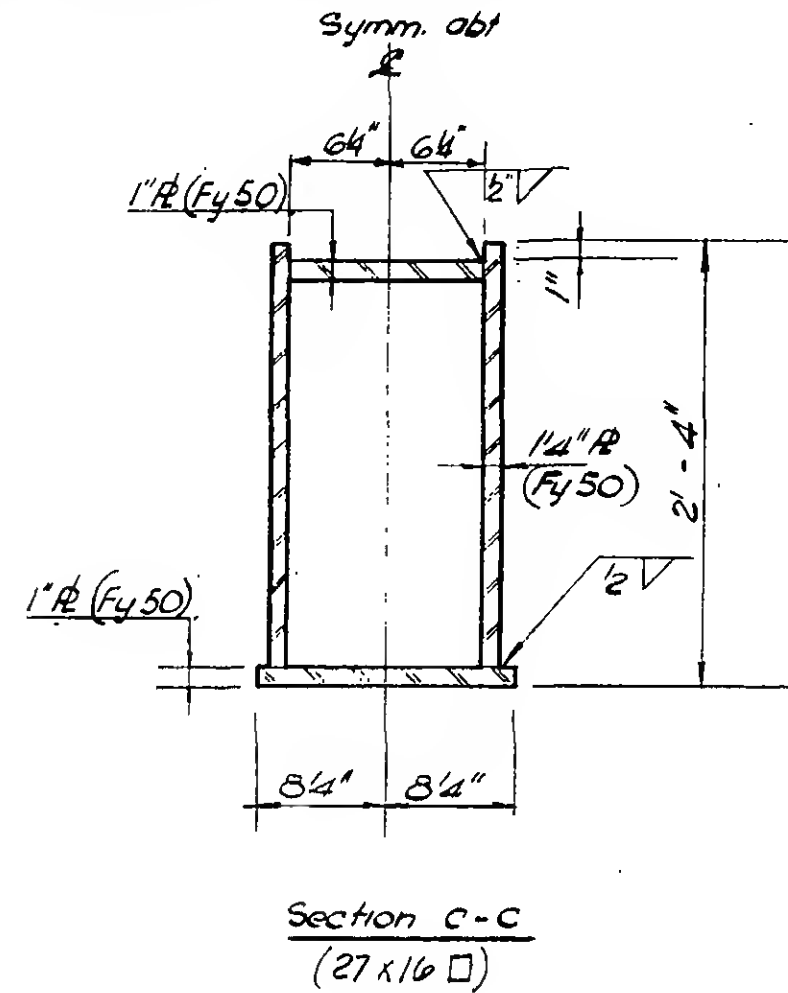
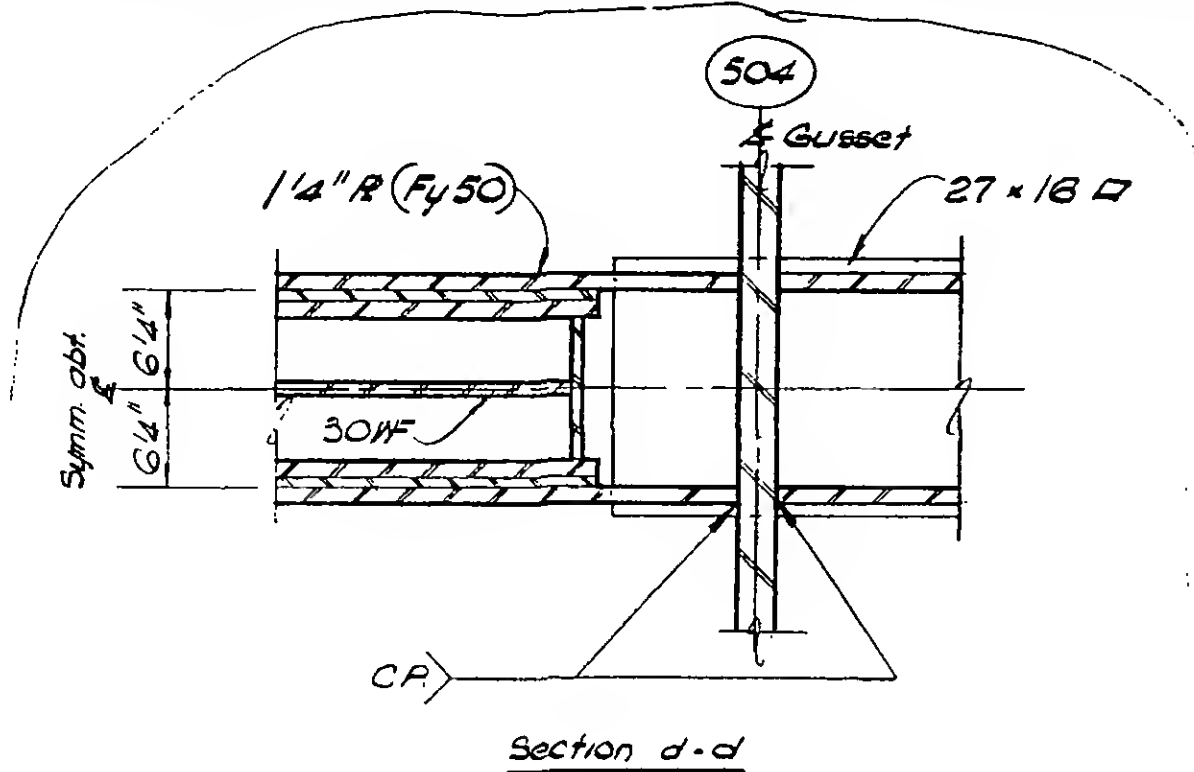
REVIEWED

REVIEWED
E. Drakos

9-AB/8-1.11

REVISIONS

5/27/70



DESIGNED

W. Clarke

DRAWN

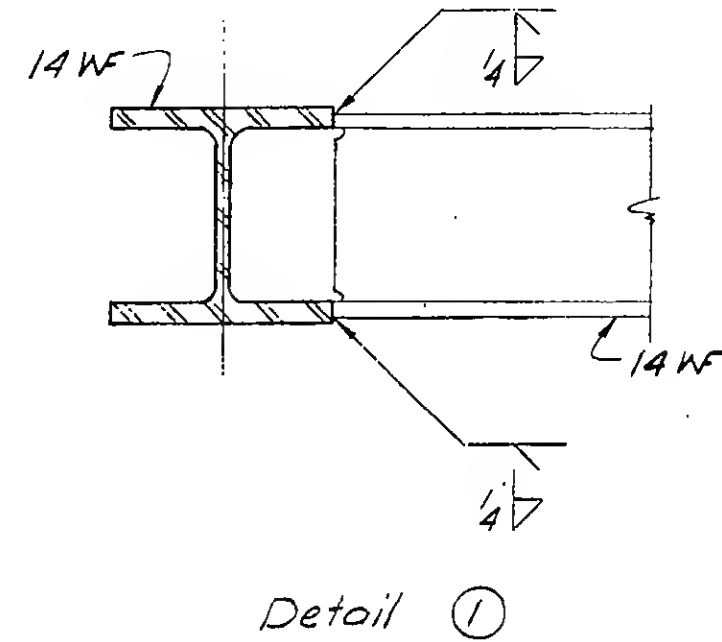
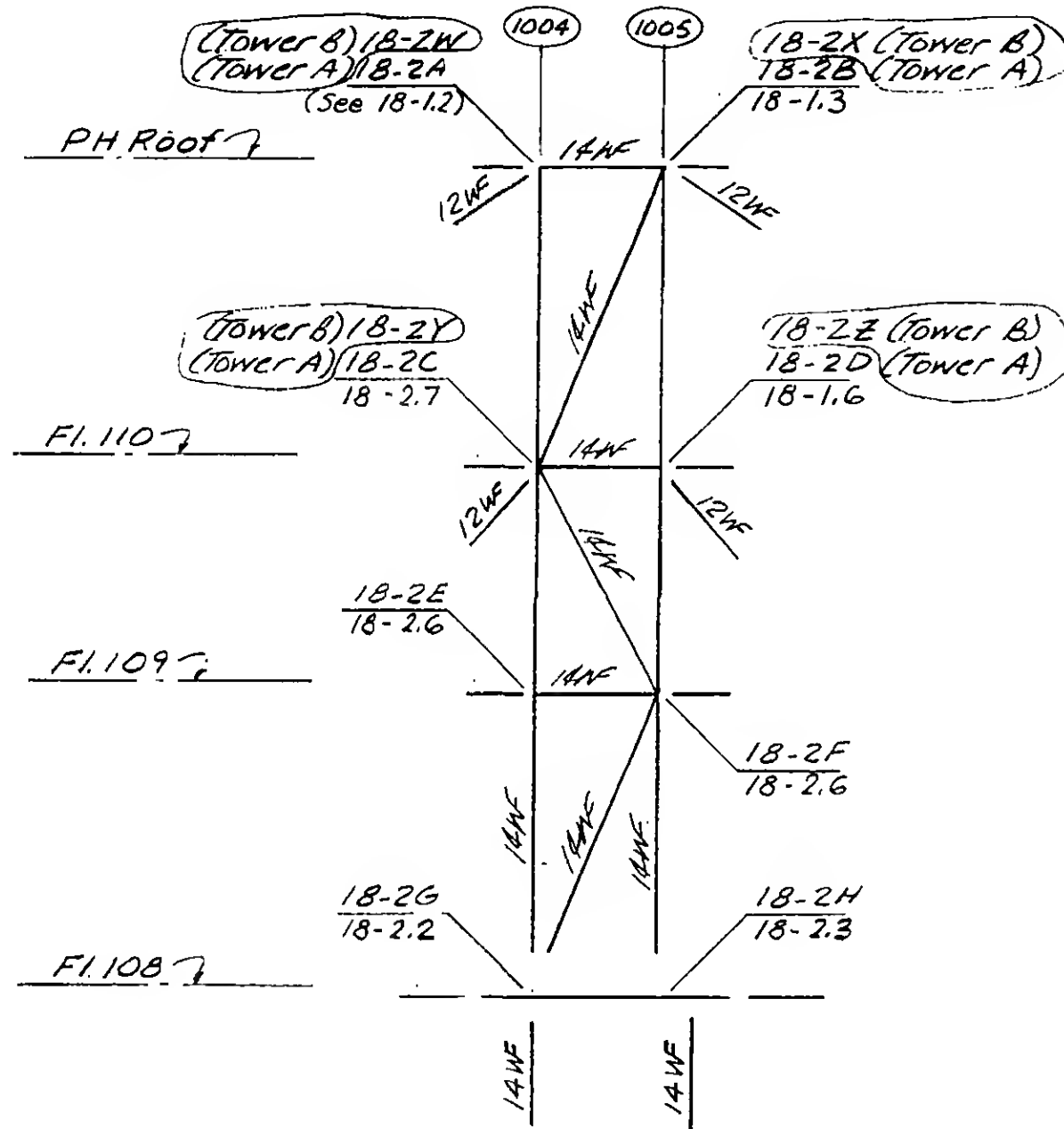
E. Draxos

REVIEWED

9-AB/8-1/12

PROJECT THE WORLD TRADE CENTERTITLE FLOOR 107-PH CONNECTION DETAILS LINES 004 & 005DATE 4-1-70

REVISIONS

6-16-70
12/14/70Detail 18-2

DESIGNED

H. Gory

DRAWN

J. Higgins

REVIEWED

E. Drakos

9-AB18-2.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

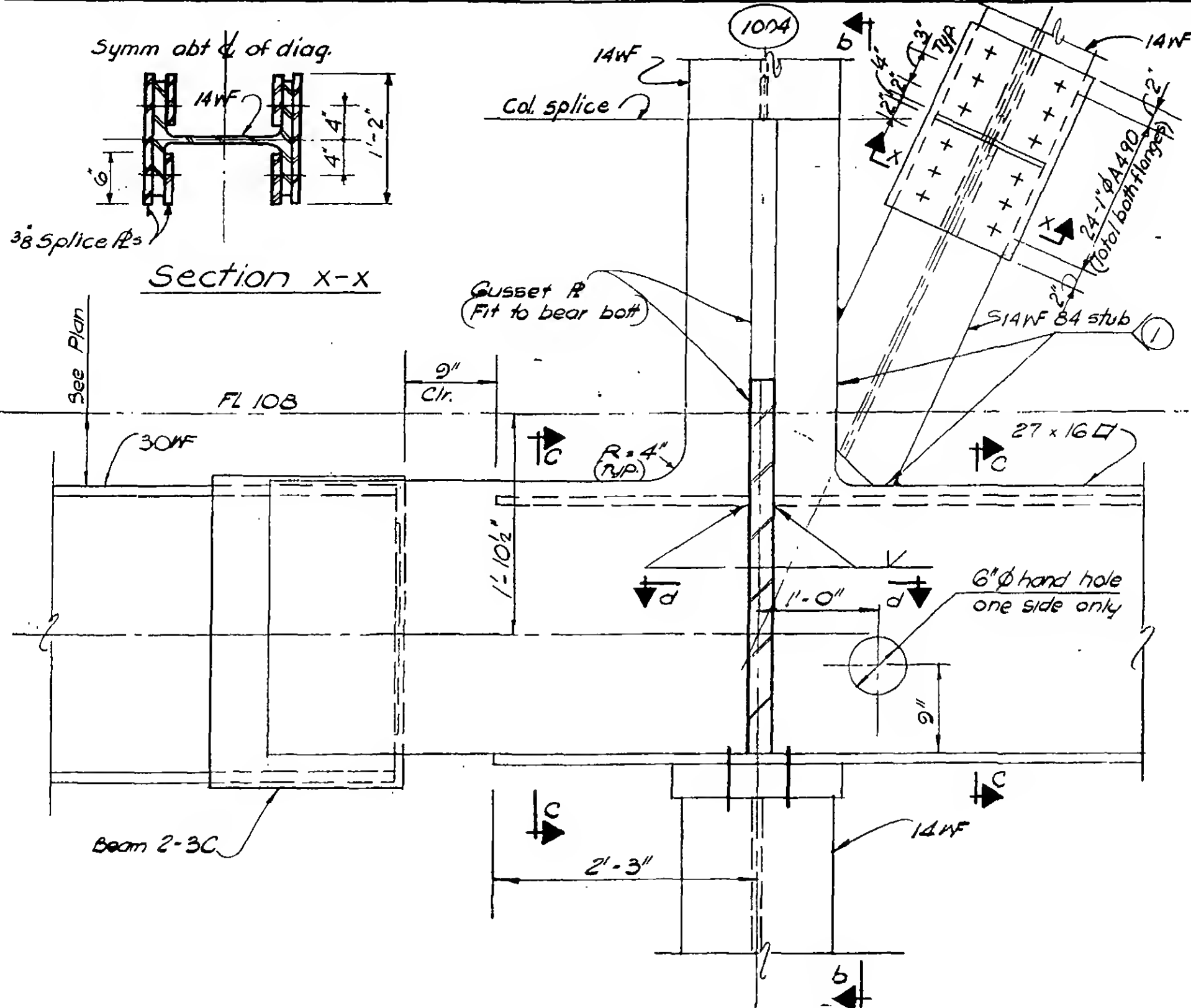
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS - LINES 04 & 05

DATE 5-27-70

REVISIONS

7/8/70



DESIGNED

W. Clarke

REVIEWED

E. Draxos

9-AB18-2.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

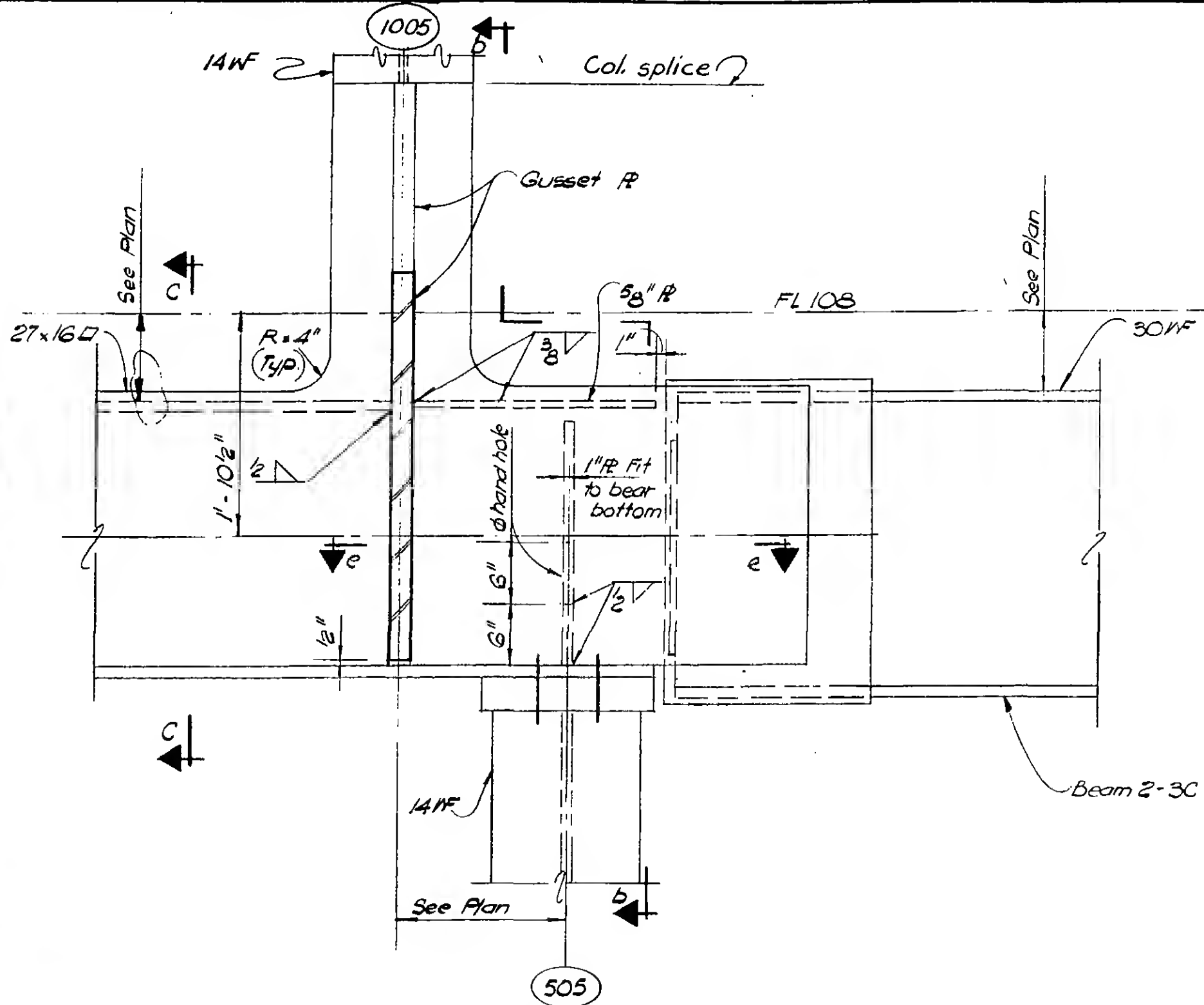
PROJECT THE WORLD TRADE CENTER

TITLE FL 107-PH CONNECTION DETAILS-LINES 04&05

DATE 5-27-70

REVISIONS

7/8/70



Section a-a

DETAIL 18-2H



DESIGNED

A. Van

DRAWN

W. Clarke

REVIEWED

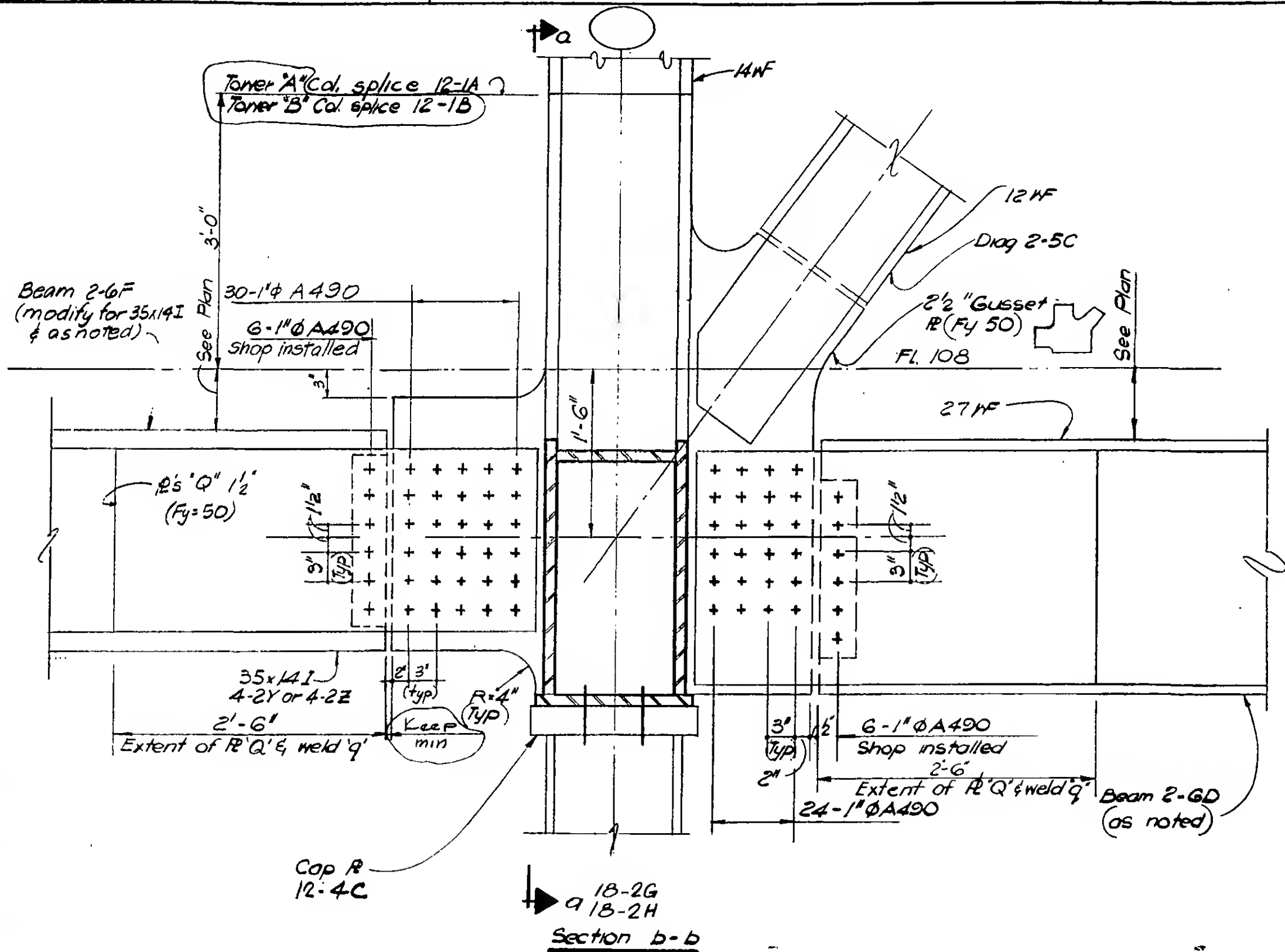
E. Drakos

9-AB18-2.3

REVISIONS

7/8/70

8/3/70



DESIGNED

10. VON

W. Clarke

REVIEWED

E. Drakos

9-AB/B-2.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

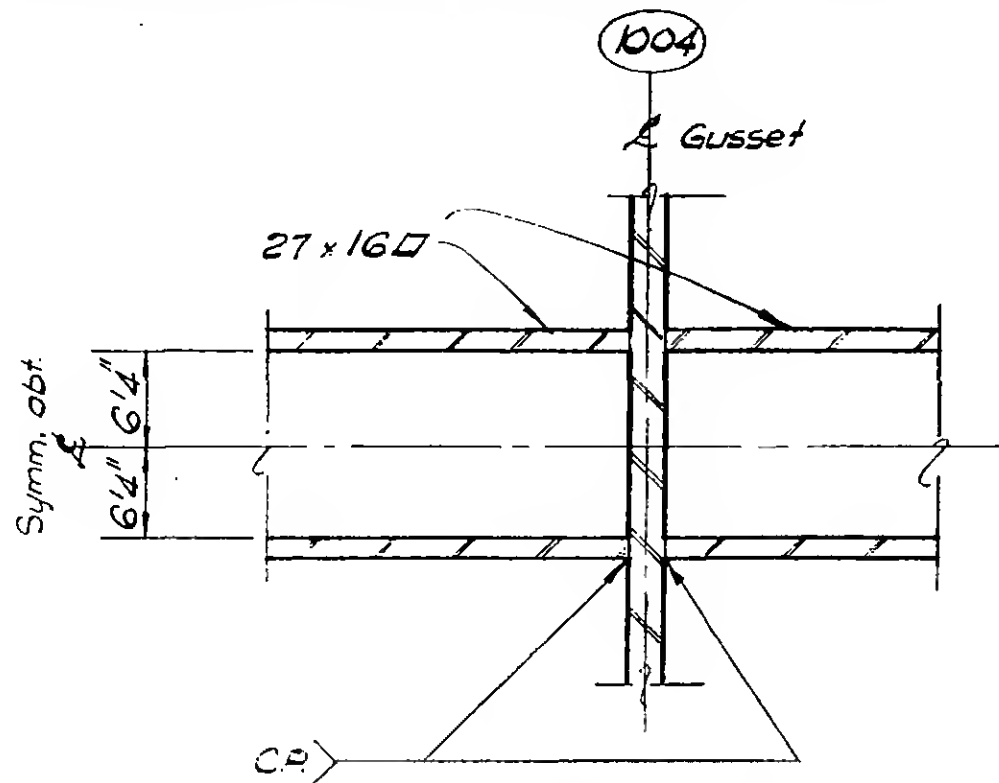
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

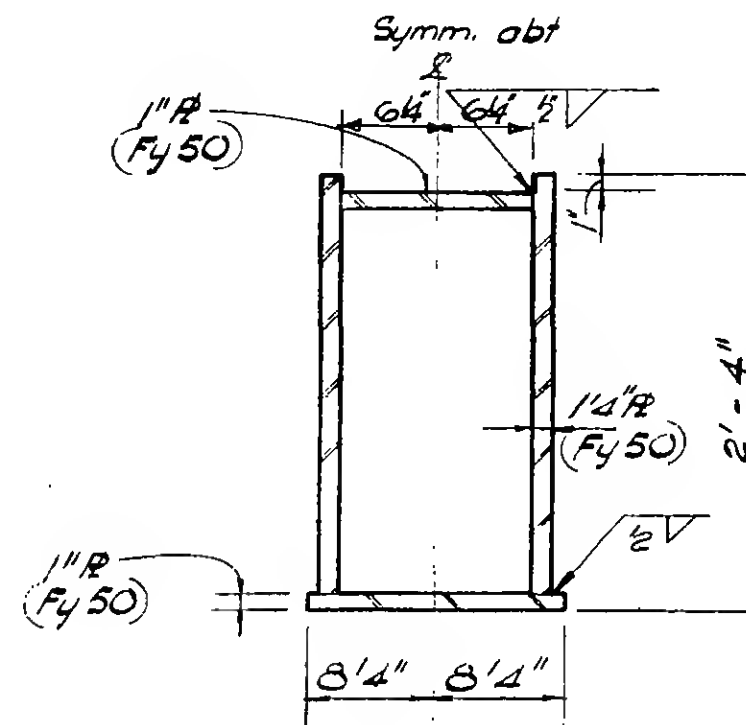
TITLE FL 107- PH CONNECTION DETAILS- LINES 04405

DATE 5-27-70

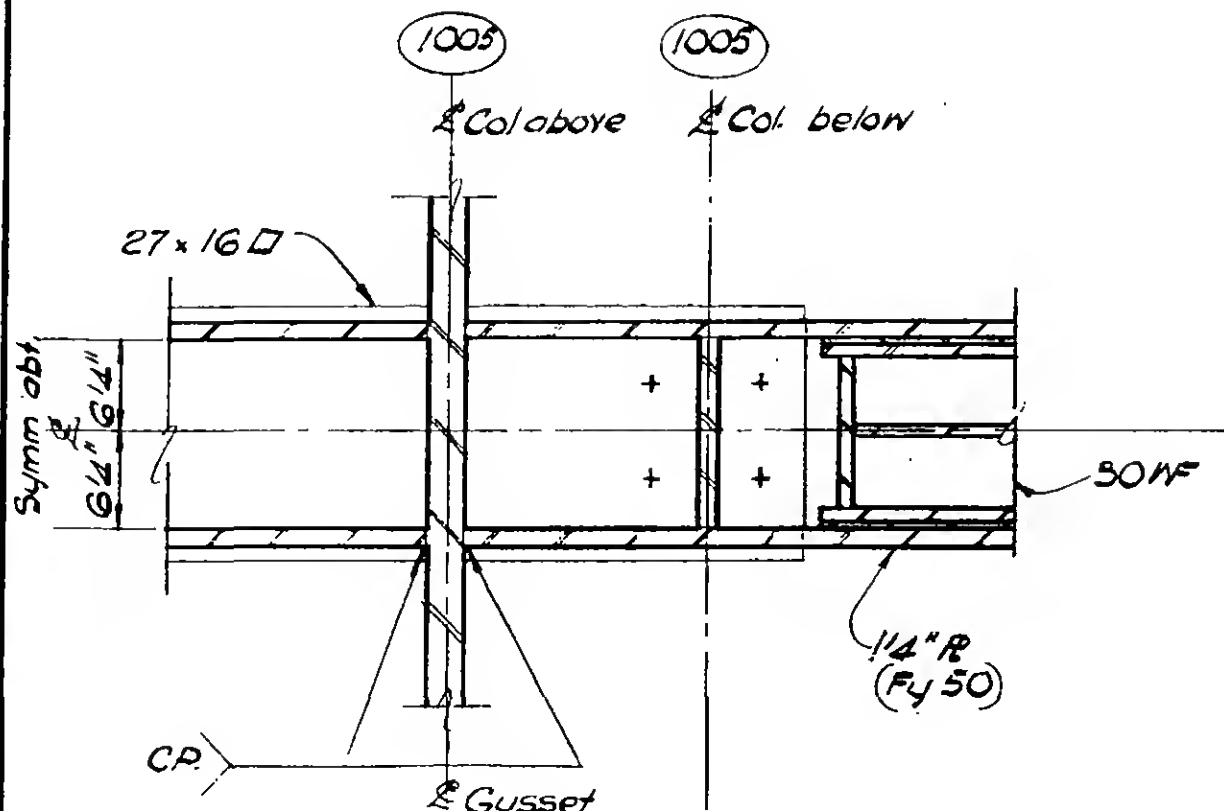
REVISIONS



Section d-d



Section c-c
(27x16 I)



Section e-e



DESIGNED
H. Von
DRAWN
W. Clarke
REVIEWED
E. Drakos

9-AB18-2.5

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

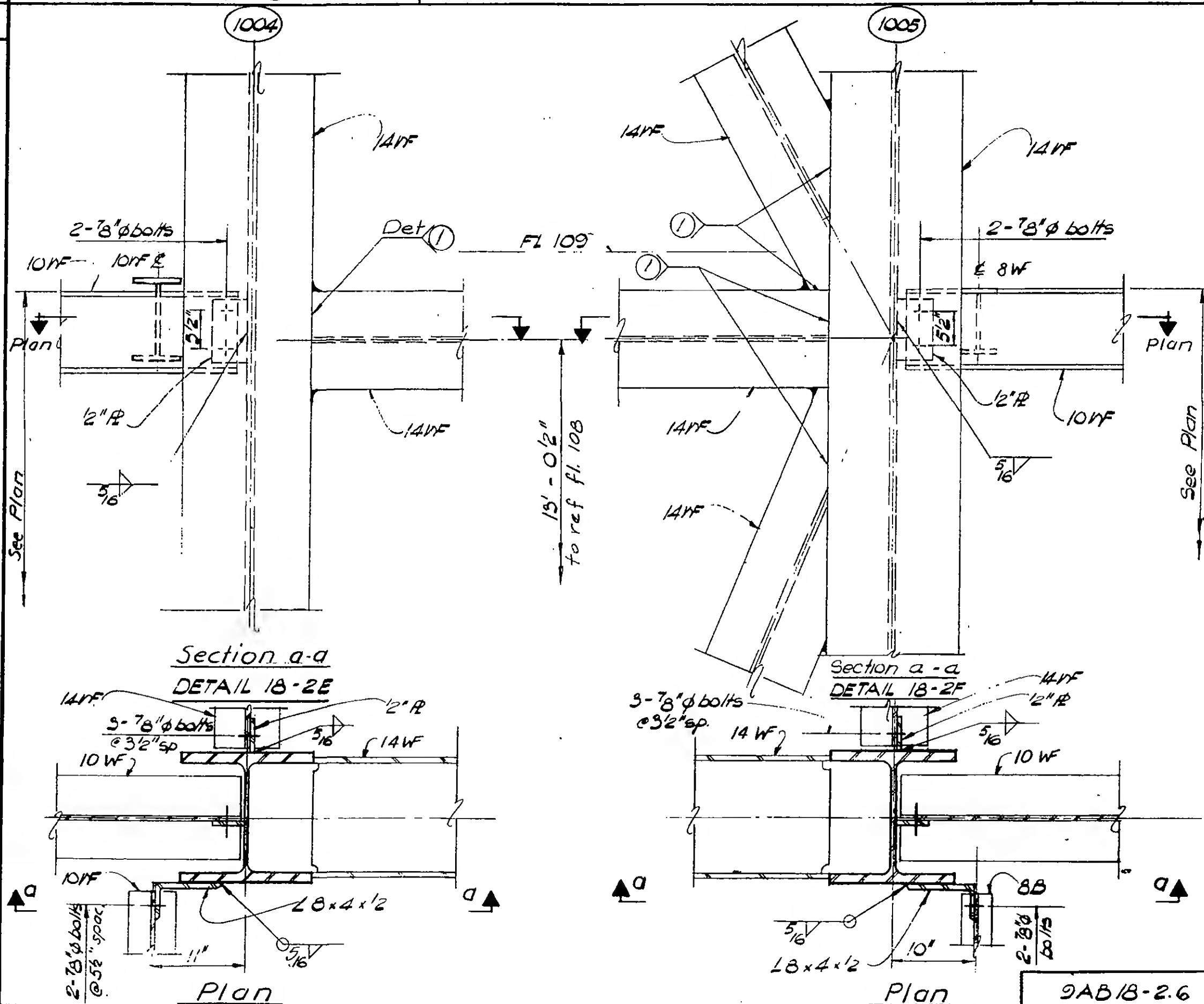
TITLE

FL 107 - PH CONNECTION DETAILS - LINES 004 & 005

DATE

6-16-70

REVISIONS



DESIGNED

A. boyi

DRAWN

W. Clarke

REVIEWED

E. Drakos

2AB/8-2.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

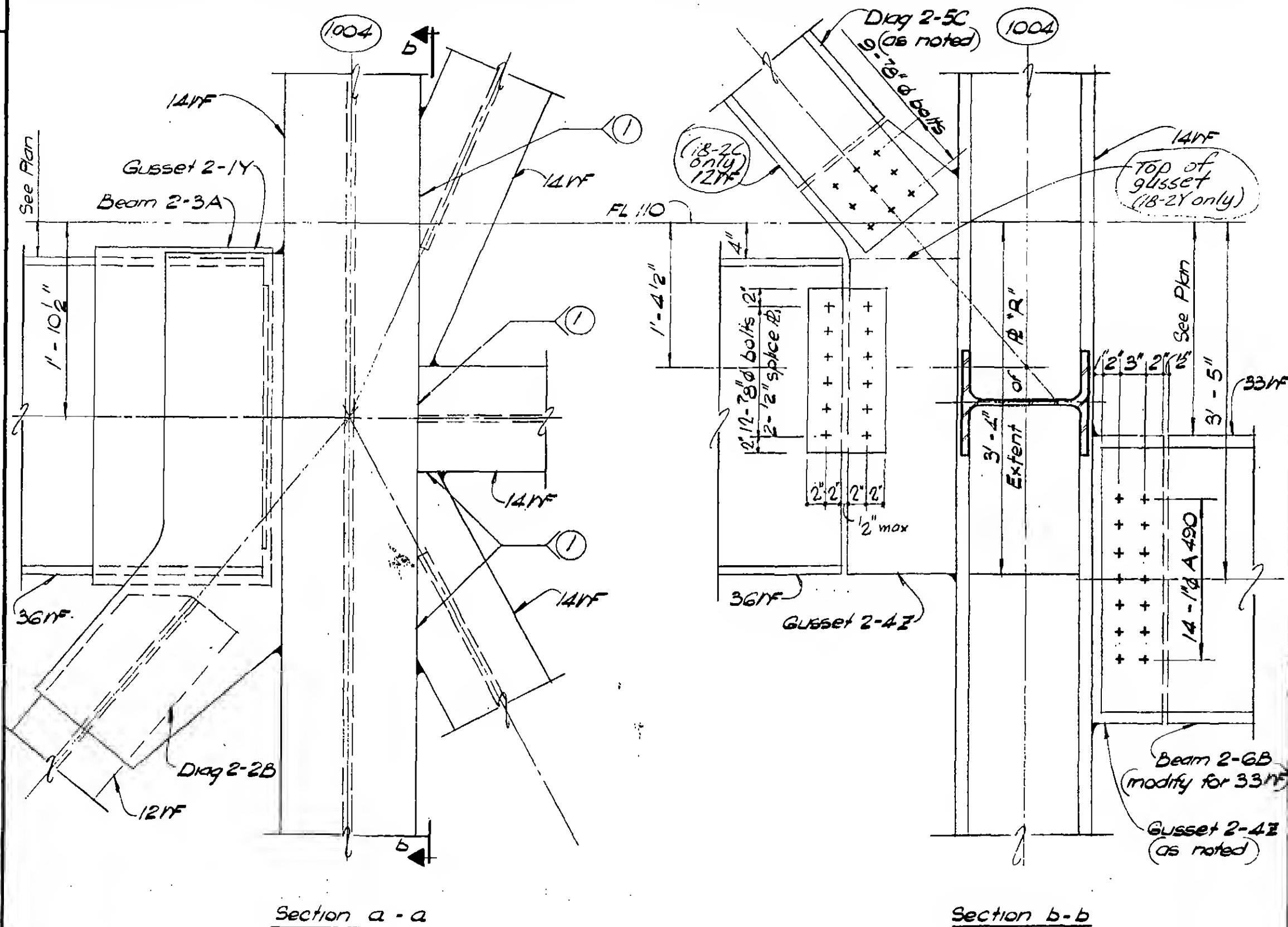
FL 107 - PH CONNECTION DETAILS-LINES 004 & 005

DATE

6-16-70

REVISIONS

12/14/70



DESIGNED

J. Guri

DRAWN

W. Clarke

REVIEWED

E. Oyakos

DETAIL 18-2C & 18-2Y

9-AB/8-2.7