



MIAMI-DADE COUNTY
BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

www.miamidade.gov

NOTICE OF ACCEPTANCE (NOA)

Canam Steel Corporation, Hambro Division
450 East Hillsboro Boulevard
Deerfield Beach, FL 33441

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: "Hambro D500 Floor & Roof System"

APPROVAL DOCUMENT: Dwg. No. H-1LL-1, titled "Serie-H Fabrication Detail", one sheet, Dwg. No. ED-1 titled "Typical Erection Procedures", one sheet, Dwg. No. ED-2 titled "Typical Details", one sheet, all prepared by Canam Steel Corporation, Hambro Division, all signed & sealed by Craig W. Storch, P.E. on January 14, 2005, all bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: None

LABELING: Each steel joist shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **renews** NOA # **02-0318.09** & consists of this page 1, evidence submitted pages E-1 & E-2 as well as approval document mentioned above.

The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**



Helmy A. Makar
 03/29/2007

NOA No 06-0420.02
Expiration Date: 04/30/2011
Approval Date: 03/29/2007
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 98-0310.06

A. DRAWINGS

1. Drawings No. H-1LL-1 titled "Serie-H Fabrication Detail", Drawing No. ED-1 titled "Typical Erection Procedures", Drawing No. ED-2 titled "Typical Details", dated July 1, 1991, last revised May 11, 1995, signed and sealed by Charles F. Couch, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. Calculations titled "Hambro D-500 Composite Floor and Roof System, Design Brief", prepared, signed and sealed by Charles F. Couch, P.E., on October 1, 1994.

D. MATERIAL CERTIFICATIONS

1. None.

E. STATEMENTS

1. Letter stating that there has been no change to their product and that Mr. Charles F. Couch, P.E., is still their engineer and in the engineering business, prepared by Hambro Structural Systems, a division of Canam Steel Corporation, dated March 6, 1998, and signed by michael a. Romano.

F. OTHER

1. This approval renews NOA No. 94-1007.04, issued on July 6, 1995.

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 00-1227.02

A. DRAWINGS

1. Drawings No. H-1LL-1 titled "Serie-H Fabrication Detail", Drawing No. ED-1 titled "Typical Erection Procedures", Drawing No. ED-2 titled "Typical Details", dated July 1, 1991, last revised May 11, 1995, signed and sealed by Charles F. Couch, P.E. These drawings are submitted because the file drawings are hard to read.

B. TESTS

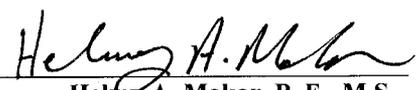
1. None.

C. CALCULATIONS

1. None.

D. MATERIAL CERTIFICATIONS

1. None.



Helmy A. Makar, P. E., M.S.
Product Control Examiner
NOA No 06-0420.02
Expiration Date: 04/30/2011
Approval Date: 03/29/2007

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

3. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 02-0318.09

A. DRAWINGS

1. *Dwg. No. H-1LL-1, titled "Serie-H Fabrication Detail", one sheet, Dwg. No. ED-1 titled "Typical Erection Procedures", one sheet, Dwg. No. ED-2 titled "Typical Details", one sheet, all prepared by Canam Steel Corporation, Hambro Division, all signed & sealed by Craig W. Storch, P.E. on January 14, 2005*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *None.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Building Code Compliance Office.*

E. MATERIAL CERTIFICATIONS

1. *None.*

4. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *None.*

B. TESTS

2. *None.*

C. CALCULATIONS

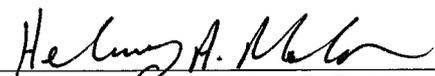
1. *None.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Building Code Compliance Office.*

E. MATERIAL CERTIFICATIONS

1. *None.*



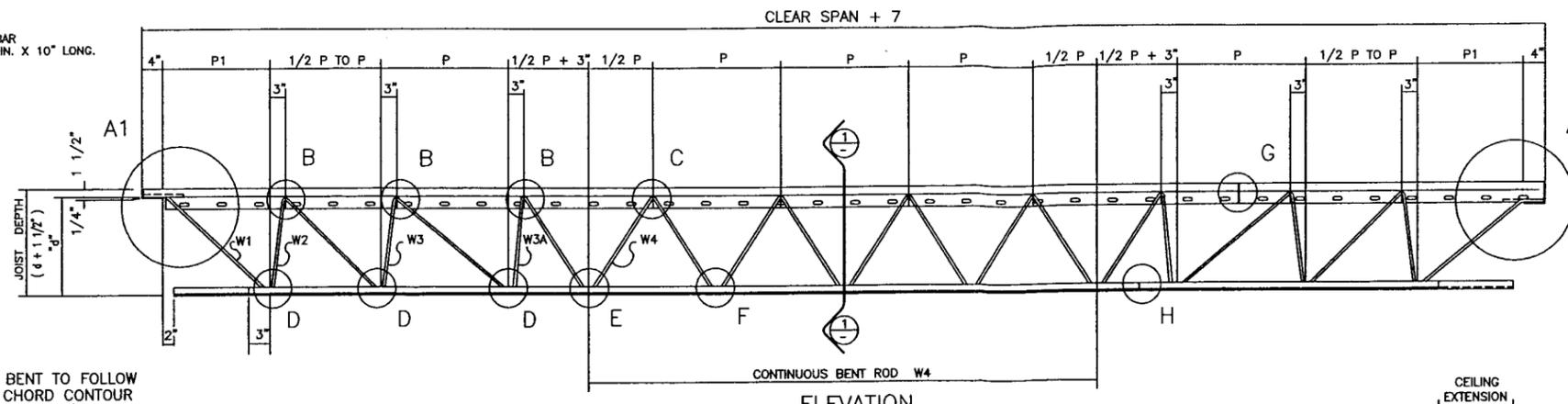
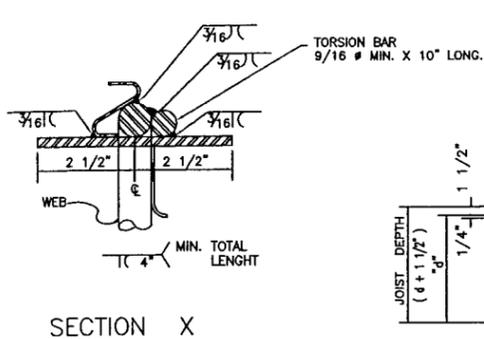
Helmy A. Makar, P. E., M.S.

Product Control Examiner

NOA No 06-0420.02

Expiration Date: 04/30/2011

Approval Date: 03/29/2007



DIM. A	PLATE(S)	W (lbs)
2 1/4	1/2	2.8
2 1/2	1/2 + 1/4	4.2
2 3/4	1/2 + 1/2	5.6

* FOR WEB BAR > 13/16"

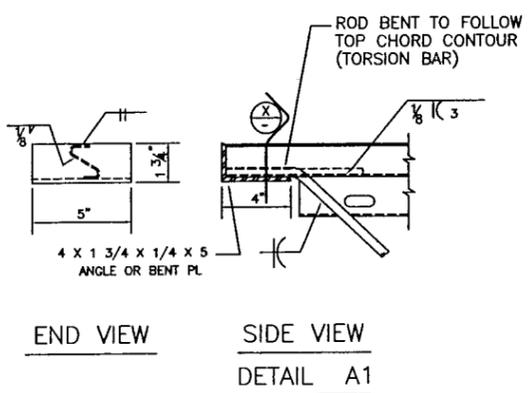
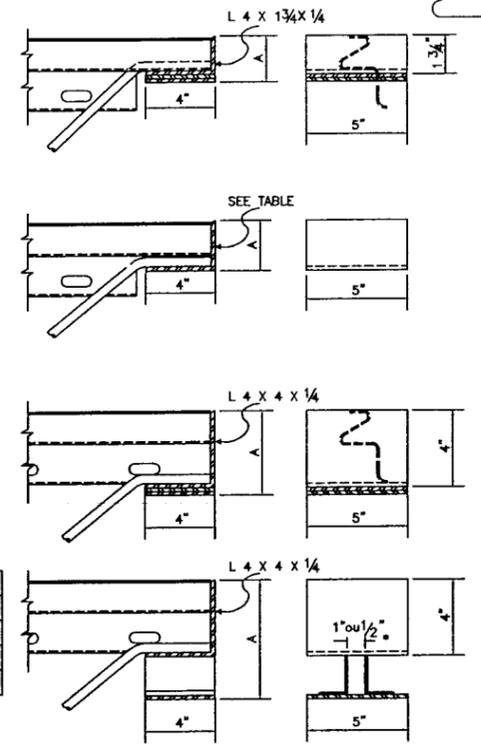
DIM. A	SEAT ANGLE	W (lbs)
2 3/4	4 X 3 X 1/4 X 0-5	
3	DO	
3 1/4	4 X 3 1/4 X 1/4 X 0-5	
3 1/2	DO	
3 3/4	4 X 4 X 1/4 X 0-5	
4	DO	

* FOR WEB BAR < 3/4"

DIM. A	PLATE(S)	W (lbs)
4 1/4	1/4	1.4
4 1/2	1/2	2.8
4 3/4	1/2 + 1/4	4.2
5	1/2 + 1/2	5.6
5 1/4	1/2 + 3/4	7.0

DIM. A	ANGLE	PLATE	W (lbs)
5 1/2	1 1/4 x 1 1/4 x 3/16	1/4	2.4
5 3/4	2 x 1 1/2 x 3/16	1/4	2.6
6	2 x 1 1/2 x 3/16	1/2	4.0
6 1/4	2 x 1 1/2 x 3/16	1/4	2.7

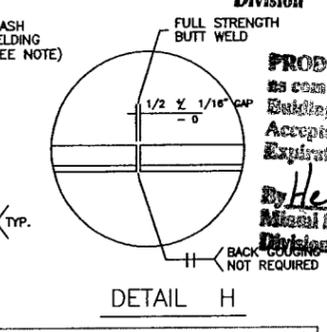
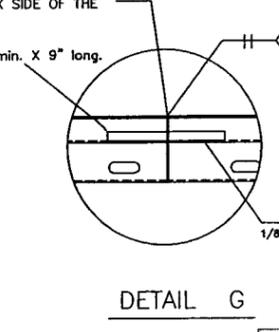
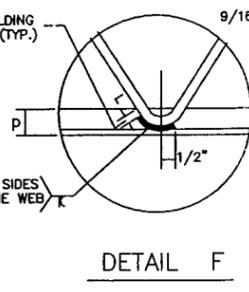
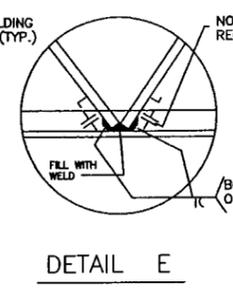
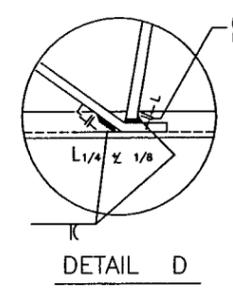
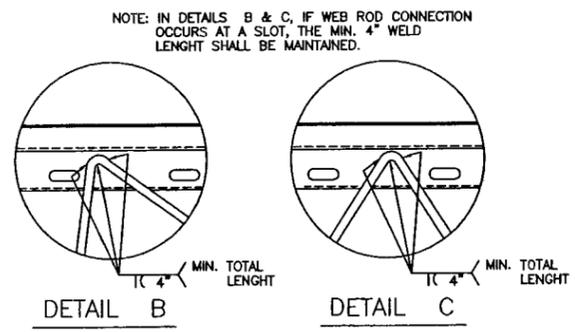
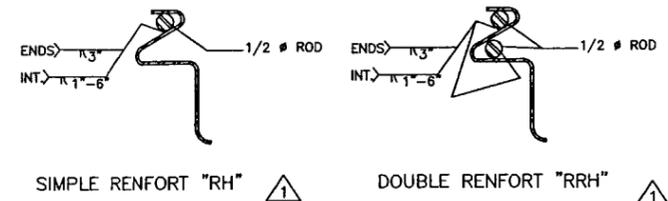
* USE 1/2" FOR 5 3/4" & 6"



GEOMETRY		
NOM. DEPTH d (IN.)	P1 (IN.)	P (IN.)
6	7.5	15.0
8	10.0	17.0
10	12.5	18.0
12	15.0	19.0
14	17.5	21.0
16 AND OVER	20.0	24.0

P	L
<2	1/2
>2	1

FOR DETAILS D, E & F



PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 02-0318.09
Expiration Date 04/30/2006
By Helmut A. Mahr
Miami Dade Product Control Division

PRODUCT RENEWED
as complying with the Florida Building Code
Acceptance No 06-0429.07
Expiration Date 04/30/2011
By Helmut A. Mahr
Miami Dade Product Control Division

NOTES

1) MATERIALS:
T.C. (TOP CHORD) - HAMBRO ROLL FORMED SECTION MIN. t = 0.09" FOR Fy = 50 000 psi MIN. OR EQUIVALENT IF Fy IS LOWER.
B.C. (BOTTOM CHORD) - HOT OR COLD ROLLED ANGLES Fy = 50 000 psi MIN.
WEB - BENT HOT ROLLED ROD (MAX. 1" DIAMETER AT 44 000 psi YIELD STRENGTH MIN.).

2) JOINTS:
TOP AND BOTTOM CHORD SPLICES BY BUTT WELDING AT ANY POINT.
WEB MEMBER SPLICES TO OCCUR AT BOTTOM CHORDS ONLY (NEVER AT TOP CHORD).

3) WELDING:
TO BE IN ACCORDANCE WITH HAMBRO SHOP STANDARDS WHICH HAVE BEEN VERIFIED BY FULL SCALE TESTING. MATERIAL SURFACES SHOULD BE DRY AND CLEAN FREE FROM LOOSE SCALE, PAINT OR GREASE THAT IS DETRIMENTAL TO WELDING. BUTT WELDS FOR T.C. ARE MADE WITH THE FLASH WELDING PROCESS, SMAW PROCESS OR GMAW PROCESS SQUARE GROOVE WELDS FOR B.C. ARE MADE WITH THE SMAW PROCESS, FOR THICKNESS UP TO 3/16 GMAW COULD BE USED. FILLETS AND FLARE BEVEL GROOVE WELDS ARE USUALLY MADE WITH THE GMAW PROCESS OR BY THE SMAW PROCESS. ALL WELDING SHALL BE MADE IN FLAT OR HORIZONTAL POSITIONS EXCEPT WELDING OF THE WEB TO THE BOTTOM CHORD WHICH IS MADE IN THE VERTICAL POSITION.

4) WELDING CONSUMABLES: SMAW : E - 70XX
GMAW : E - 70SX

5) CAMBER:
CAMBER IS OPTIONAL, BUT WHEN PROVIDED APPROXIMATE CAMBER WILL BE AS FOLLOWS:
BASED UPON TOP CHORD t = 0.09"
15'-0 TO 20'-0 SPAN 1/2" TO 3/4"
20'-0 TO 25'-0 SPAN 3/4" TO 7/8"
25'-0 TO 30'-0 SPAN 7/8" TO 1 1/16"
30'-0 TO 40'-0 SPAN 1 1/16" TO 1 1/2"

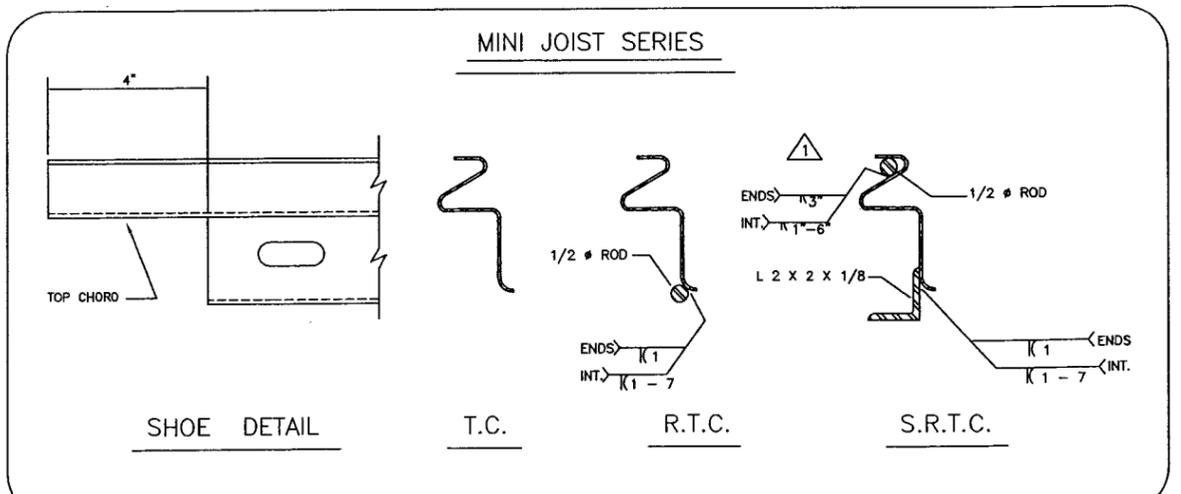
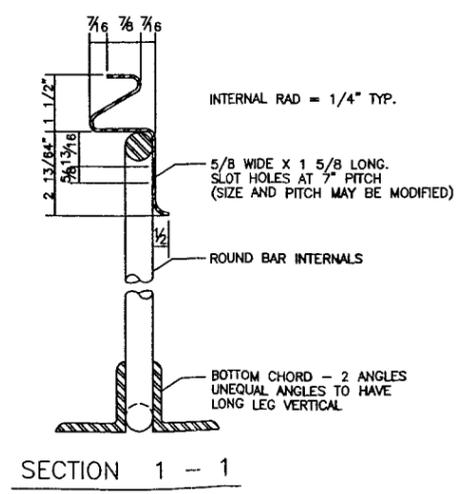
IN NO CASE WILL JOISTS BE MANUFACTURED WITH NEGATIVE CAMBER.

6) SWEEP: MAXIMUM 1" IN 20'-0

7) PAINTING:
JOISTS SHALL BE SHOP PAINTED BY ONE COAT OF STANDARD SHOP PRIMER.

METRO DADE
a) THE COMPOSITE SYSTEM USED IN ROOFS SHALL ADEQUATELY RESIST UPLIFT LOADS.
b) ENGINEER OF RECORD SHALL SPECIFY ANCHORS NECESSARY TO RESIST UPLIFT AND LATERAL LOADS.

HAMBRO STANDARD BOTTOM CHORDS *				
DOUBLE ANGLE BOTTOM CHORD Fy = 50 000 psi MIN.				
CHORD TYPE	MEMBER (mm)	AREA IN ²	WT./FT. lb.	
1	25 X 25 X 2.28	0.340	1.170	
2	30 X 30 X 2.28	0.410	1.400	
3	25 X 25 X 3	0.440	1.480	
4	30 X 30 X 3	0.530	1.800	
5	35 X 35 X 3	0.620	2.120	
6	40 X 35 X 3	0.670	2.270	
7	40 X 40 X 3	0.720	2.430	
8	35 X 35 X 4	0.820	2.770	
9	40 X 35 X 4	0.880	2.980	
10	40 X 40 X 4	0.940	3.190	
11	40 X 35 X 5	1.090	3.690	
12	45 X 35 X 5	1.160	3.960	
13	50 X 35 X 5	1.240	4.220	
14	55 X 35 X 5	1.320	4.480	
15	50 X 45 X 5	1.400	4.750	
16	50 X 50 X 5	1.470	5.010	
17	50 X 45 X 6	1.650	5.620	
18	50 X 50 X 6	1.750	5.940	
19	60 X 50 X 6	1.930	6.570	
20	65 X 60 X 6	2.210	7.520	



DRAWN BY: J-P H		REVISIONS		
NO.	DATE	BY	S.L.	R.D.
1	94-07-11			
2	95-05-11			

Hambro Structural Systems
A Division of
canam steel corp.
721 NE 44th Street • Ft. Lauderdale, FL 33334
954-938-5820 • 954-938-5829 (FAX) • 800-546-9008

SERIE-H FABRICATION DETAIL

HAMBRO D-500 COMPOSITE FLOOR SYSTEM

GENERAL NOTES:

- 1-Deviation in whole or in part from erection drawings and these general notes shall relieve liability or claim attributable to such deviation. Should any deviations from the approved layout be required because of field conditions, these changes shall be approved by
- 2-Liability for damage, loss or injury involving products will only be considered if the alleged cause is attributable to written technical communications from verbal technical communications will not be considered.
- 3-The manufacturer's or product performance and strength shall apply unless specified otherwise on this drawing. Any information contained herein is not to be divulged to third parties without written authorization from
- 4-When called for, the Hambro D-500 Composite Floor System shall consist of the following unless otherwise noted:
 - (a) 2" concrete slab, f'c = 3000 P.S.I. at 28 days, 3" slump
 - (b) The slab reinforcing 6x6x³/₈ welded wire mesh (f_y = 60,000 P.S.I.) unless noted, is draped over the top chord to form a catenary, the top chord functions as a reinforcing "high chair" - 3/4" concrete cover is maintained over the mesh. Bottom chairs are not required.
- 5-Hambro D-500 Composite joists have been sized for the applied loads required for this project considering joist capacities as listed in the current Hambro D-500 Composite Floor System load tables.
- 7-Nominal spacing of Hambro D-500 Composite joists to be 4'-1 1/2" w/h. Refer to erection drawings.
- 8-Top of bearing surfaces for the Hambro D-500 Composite joists to be 2 3/4" below the top of the slab w/h.

ERECTION PROCEDURES

- (a) The Hambro D-500 Composite System shall be installed in accordance with the typical erection procedures and erection drawings.
- (b) Plywood forms shall be 3/4" thick min. Douglas Fir G1S exterior grade for wet service conditions shall conform to CSA standard O86 adhesive requirements.
- (c) "Roll bar" supports to the plywood shall be placed not more than 2'-4" c/c, where used with plywood. Also roll bars shall be located a max. of 10" from end of plywood.
- (d) No construction loads shall be placed on the Hambro floor system within a bay until all forms and roll bars are in position. A bay is defined as an area of floor bounded by bearing walls and/or structural beams. Plywood forms for use in the floor must be stock piled on walls or beams. Normal care must be taken when placing concrete to assure that the Hambro floor system components are not overloaded.
- (e) The joists are designed to support wet concrete slab, forms and self weight plus an additional construction live load of 20 P.S.F. Slab forms, roll bars, etc. are designed to support wet concrete and self weight plus an additional construction live load of 40 P.S.F. Note: after concreting, pallets of block or brick must not be placed on the joist so that the load carrying capacity of the floor system is exceeded.
- (f) Every joist shall be braced laterally by roll bars engaging the top chord from at least one side of the joist. See typical details. For span less than 30'-0" the restraint supplied by the plywood firmly bolted against wall or beam together with the roll bars, provides sufficient restraint against lateral movement. Lateral bracing for spans greater than 30'-0" and special conditions, are covered in erection drawings for the project.
- (g) Formwork and roll bars may be stripped away when concrete slab is self supporting and has reached f'c = 1000 P.S.I. under normal conditions - 24 hours after pouring concrete.

JOIST IDENTIFICATION

- 10-On the plan, the circled letter or number identifies the specific joist for that location the letter J1 can be found on an embossed metal tag wrapped around a web member at one end of the joist. Also on the plan is noted the quantity and type of joists used, e.g., 14-H207
 - 14-Denotes quantity
 - H-Refers to series, does not involve erector
 - 12-Denotes depth of joist from under side of slab
 - 07-Denotes chord size and does not involve erector

JOIST STORAGE AT SITE

- 11-Ground must be free of all debris and level. Wood spacers between bundles of joists must be sufficient to prevent any excessive overhang at ends or bending at any location.

SLINGING OF JOIST

- 12-Chains must be hooked around chords at 2 locations. Joists must never be hoisted by chains around web members.

IMPORTANT NOTE

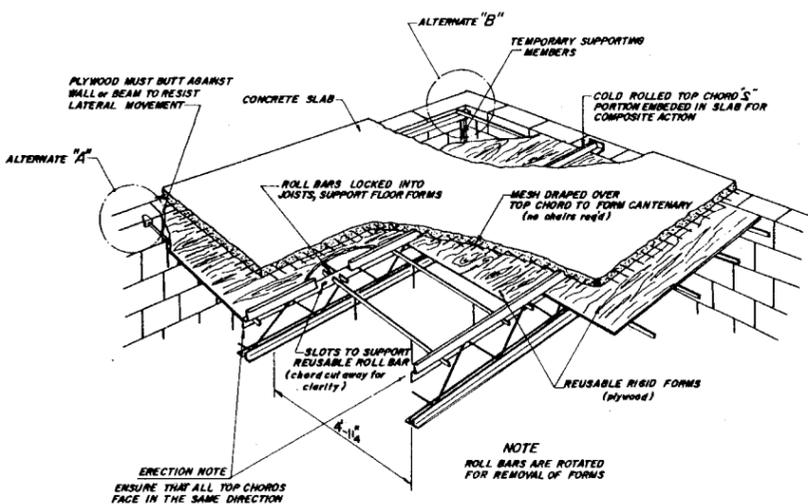
- 13-All joists leaving fabricator's premises are inspected as to their quality and alignment. Any damage, errors or omissions discovered at site must be reported immediately before erection. Joists are to be aligned in a true vertical and lateral plane if joists are damaged, no work is to be done to correct damage or errors unless authorized by;

MESH LAPPING

- 14-See detail "A"

NOTE
TO CONTACT THE CONTRACTS dept telephone:

HAMBRO	
D-500 COMPOSITE FLOOR SYSTEM	
DEALER	Hambro Structural Systems A Division of Canam Steel Corporation 721 N.E. 44th Street Fort Lauderdale, FL 33334
DESCRIPTION	ED-1
TYPICAL ERECTION PROCEDURES	

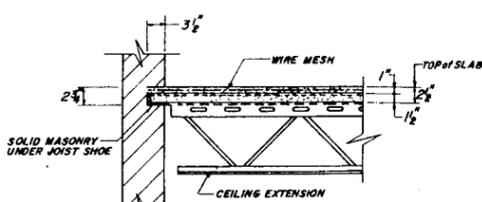


ERECTION NOTE
ENSURE THAT ALL TOP CHORDS FACE IN THE SAME DIRECTION

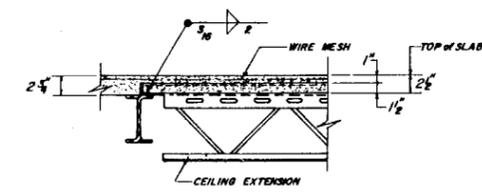
NOTE
ROLL BARS ARE ROTATED FOR REMOVAL OF FORMS

HAMBRO D-500 COMPOSITE FLOOR SYSTEM

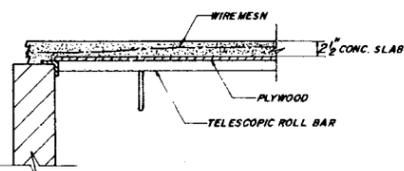
SHOWN ON MASONRY WALLS, MAY BE USED WITH POURED or PRECAST CONCRETE AS WELL AS STRUCTURAL STEEL.



TYPICAL WALL BEARING DETAIL

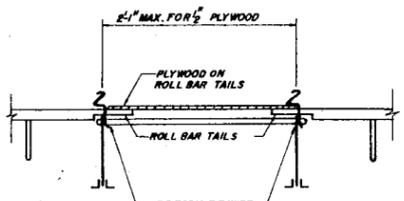


TYPICAL JOIST BEARING DETAIL at STEEL BEAM

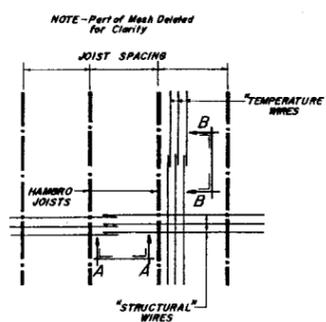


HAMBRO SIDE FORMING DETAIL ALTERNATE 'A' - TELESCOPIC ROLL BAR

(FOR ALL DETAILS NOT SHOWN SEE BELOW)



DOUBLE JOIST DETAIL

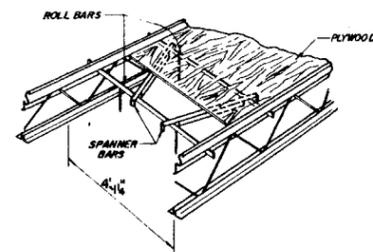


NOTE-Part of Mesh Deleted for Clarity

FOR END LAPS (SECT. A-A) TIE SHEETS TOGETHER WITH TIE WIRE AT 3 LOCATIONS, MIDDLE AND SIDE EDGE OF EACH SHEET. FOR SIDE LAPS (SECT. B-B) USE TIE WIRE AT EVERY JOIST.

THE TIE WIRE WILL ASSIST IN KEEPING THE MESH OFF THE FORMS (SECT. A-A) AND PREVENTING THE MESH EDGES FROM 'CURLING UP' THROUGH THE SLAB OVER THE JOIST (SECT. B-B).

HAMBRO MESH LAPPING DETAIL "A"



TYPICAL SPANNER BARS DETAIL

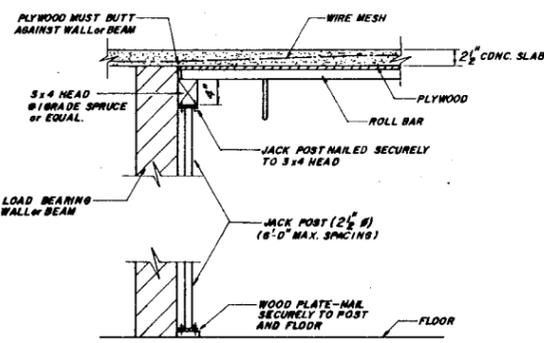
DURING THE CONSTRUCTION SLAB POUR THE HAMBRO JOIST IS CAPABLE OF SUPPORTING A TOTAL LOAD OF 50 P.S.F. WHICH INCLUDES THE WEIGHT OF THE 2\"/>

THE HAMBRO JOIST IS DESIGNED TO SUPPORT WET CONCRETE, SLAB FORMS AND SELF WEIGHT PLUS ADDITIONAL CONSTRUCTION LOAD OF 50 P.S.F. FOR SPANS UP TO 25 FEET FOR SPANS ABOVE 25'-0" SEE TABLE BELOW.

ABOVE 25'-0" SPAN TABLE

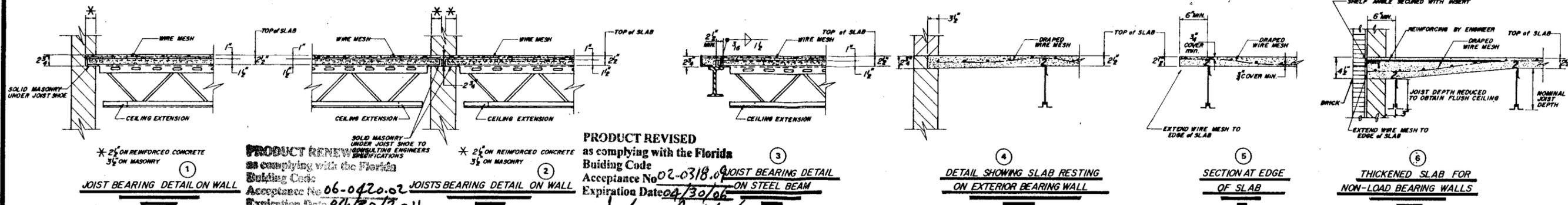
	CONST. L.L.	TOTAL
25'-0" to 27'-6"	19 p.p.f.	55 p.p.f.
27'-6" to 30'-0"	18 p.p.f.	54 p.p.f.
30'-0" to 32'-6"	17 p.p.f.	53 p.p.f.
32'-6" to 35'-0"	16 p.p.f.	52 p.p.f.
35'-0" to 37'-6"	15 p.p.f.	51 p.p.f.
37'-6" to 40'-0"	14 p.p.f.	50 p.p.f.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 02-0318.09
Expiration Date 04/30/2006
By *Helmut A. Mehnert*
Miami Dade Product Control Division



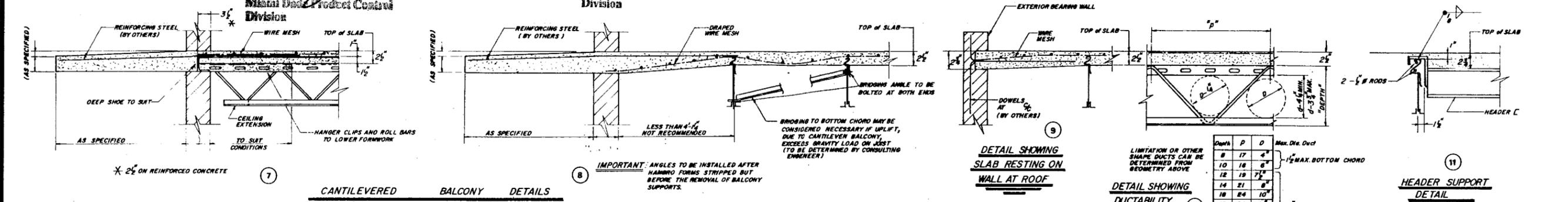
HAMBRO SIDE FORMING DETAIL ALTERNATE 'B' - POST AND HEADERS

CLW
4/14/05



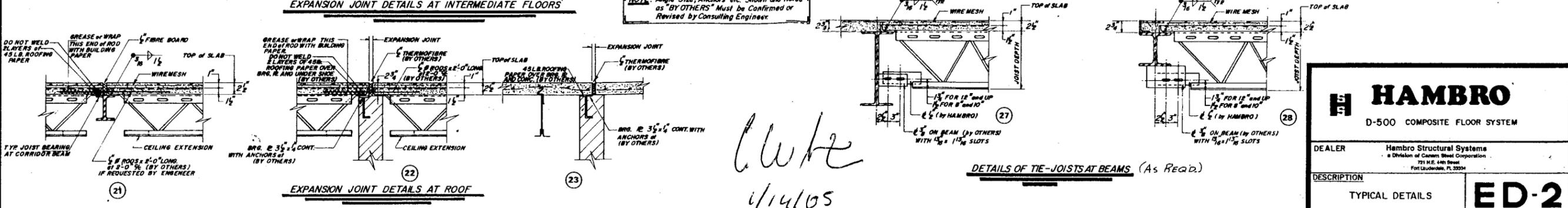
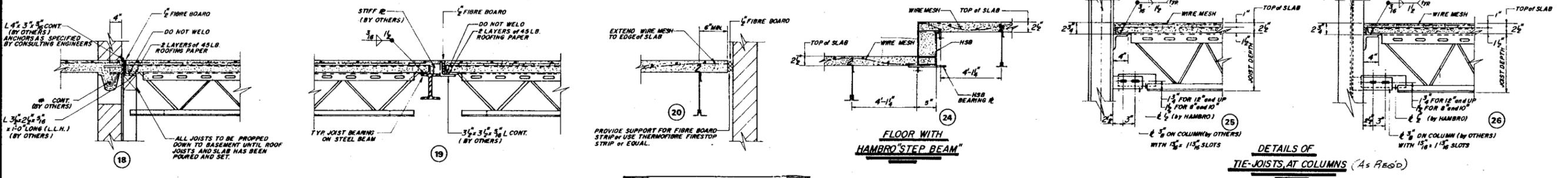
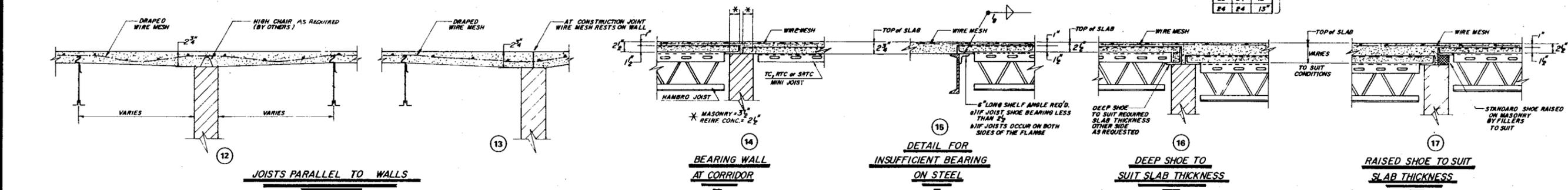
PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No. 06-0420.02
 Expiration Date 04/30/2011
 By Helmut A. Mahr
 Miami Dade Product Control Division

PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No. 02-0318.0
 Expiration Date 04/30/06
 By Helmut A. Mahr
 Miami Dade Product Control Division



LIMITATION ON OTHER SHAPE DUCTS CAN BE DETERMINED FROM GEOMETRY ABOVE

Depth	P	D	Max. Dia. Duct
8	17	4"	1 1/2" MAX. BOTTOM CHORD
10	18	6"	
12	19	7"	
14	21	8"	
16	24	10"	2" MAX. BOTTOM CHORD
18	24	11"	
20	24	12"	
22	24	12"	
24	24	13"	



NOTE: Angle Size, Anchors etc. Shown and Noted as "BY OTHERS" Must be Confirmed or Revised by Consulting Engineer.

CWtz
 1/14/05

HAMBRO
 D-500 COMPOSITE FLOOR SYSTEM

DEALER: Hambro Structural Systems
 a Division of Camco Steel Corporation
 721 N.E. 44th Street
 Fort Lauderdale, FL 33304

DESCRIPTION: TYPICAL DETAILS

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