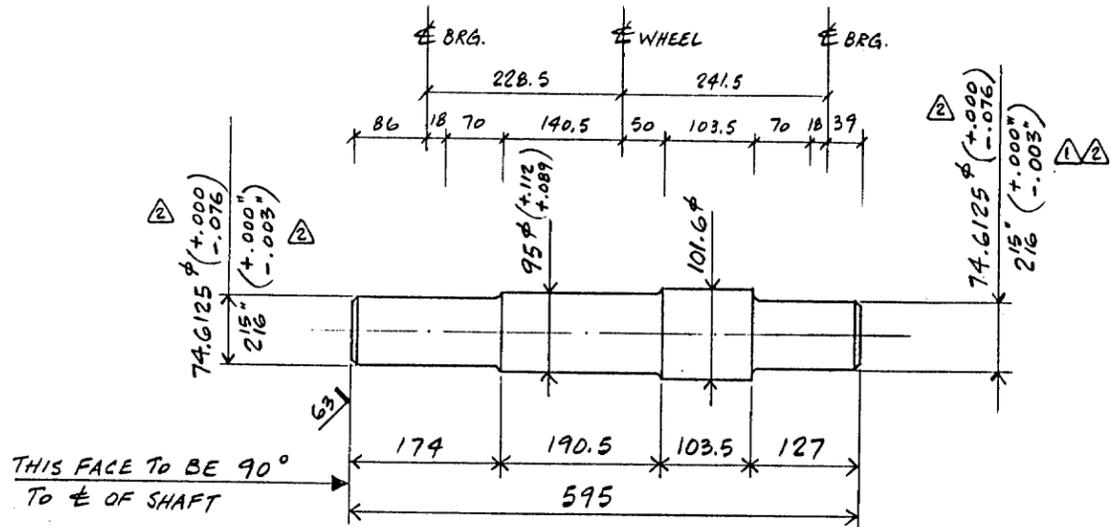


3 REQ'D. ~ DRIVE SHAFT ~ MK. A10



33 REQ'D. ~ IDLER SHAFT ~ MK. B10

NOTES:

- 1.) ALL MACHINING TO $\sqrt{63}$ FINISH.
- 2.) KEYWAYS TO ANSI B17.1 CLASS 2 FIT FOR 16 ϕ KEYS.
- 3.) FOR FINAL ASSEMBLY SEE DWG. 101 \pm 10V
- 4.) FOR SUB ASSEMBLY OF SHAFT, WHEEL AND BEARINGS SEE DWG. 10K.
- 5.) ONE COAT "RUST VETO" ON ALL MACHINED SURFACES.

3R/300834

2	GVA	OCT 25	HOLD NOTE REMOVED TOL. TO SUIT SKF APPROV.
1	GVA	21/1/83	TOL. CHANGED
No.	BY	DATE	REVISION

LINE	SHIP No. REQD.	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
4	33	B10		101.6 ϕ BAR	ATLAS SSP	595						
2	3	A10		101.6 ϕ BAR		1120						



MATERIAL	AS NOTED
SURF. PREP. & PAINT	SEE MEMO # NOTE # 5
OPEN HOLES	
DRAWN	G.V.A. JUNE/83
DATE	
CHECKED	
DATE	

DETAILS OF BOGIE WHEEL AXLE SHAFTS	
FOR 4.2M TELESCOPE DOME LA PALMA	
DRAWING No.	1420-10a

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

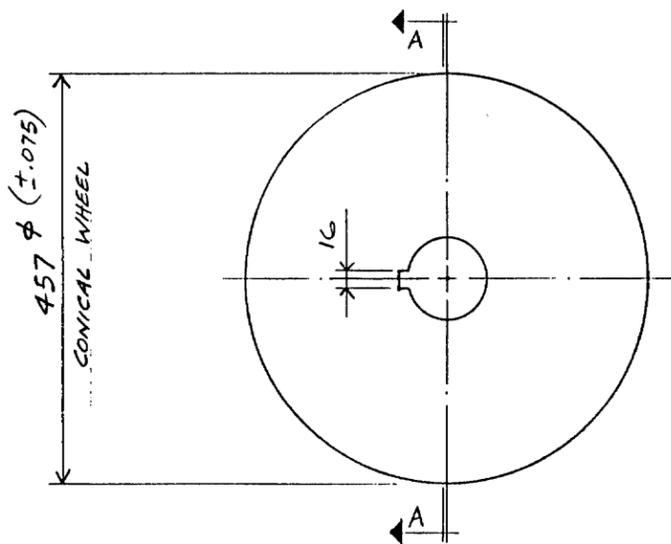
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m - a b c d f g h k m n p s t v w y

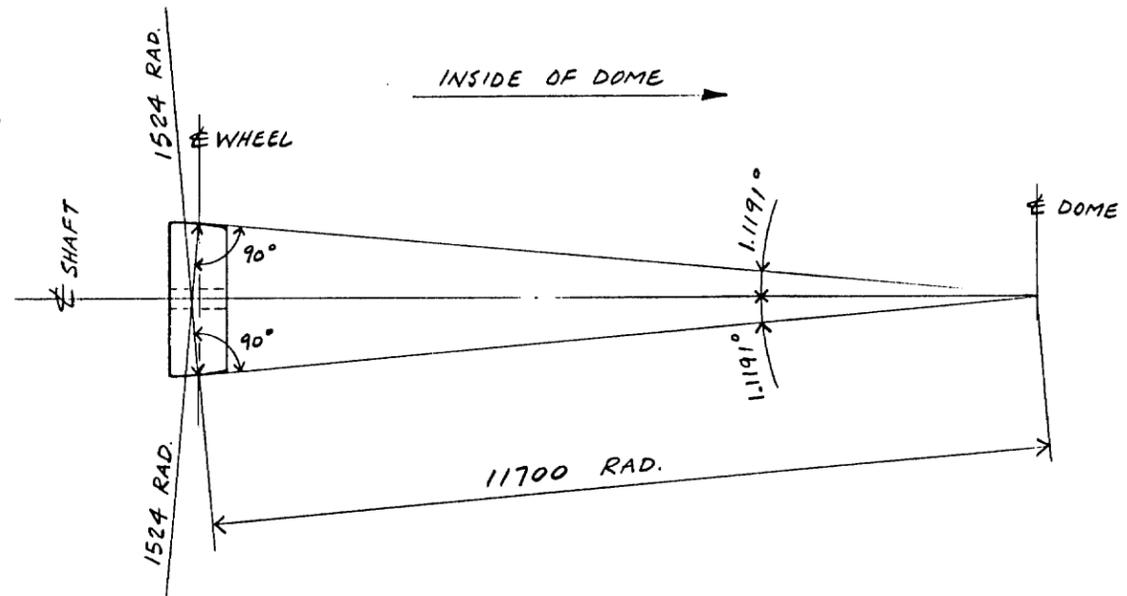
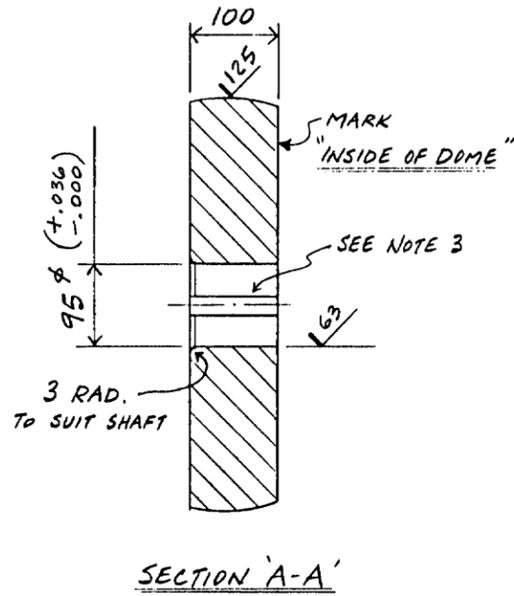
SHOP DEPARTMENT

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS

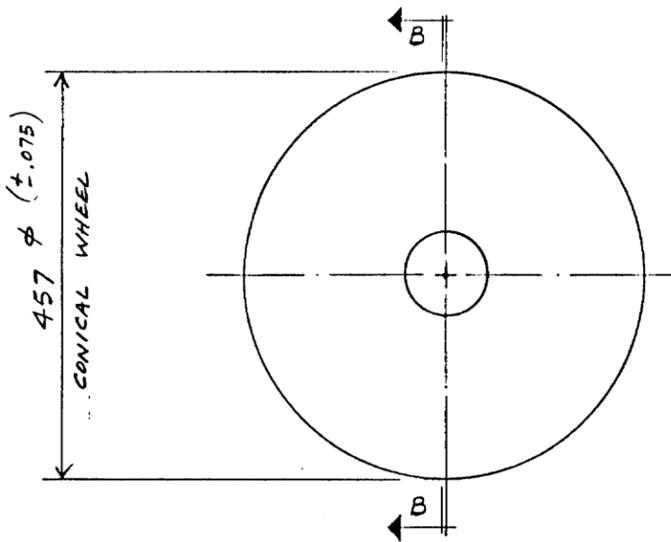


3 REQ'D. ~ DRIVE BOGIE WHEEL ~ MK. C10

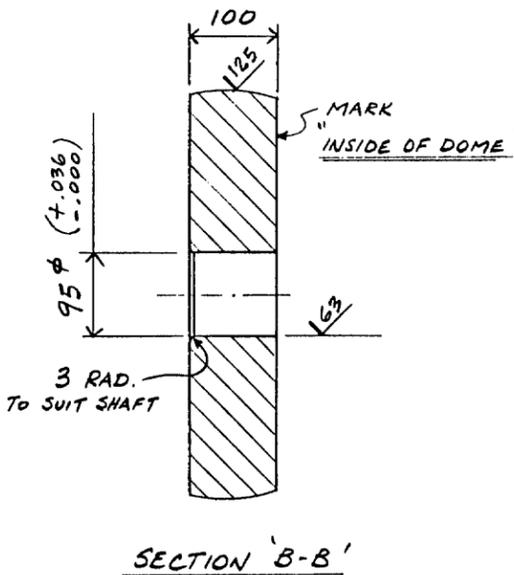


BOGIE WHEEL TREAD GEOMETRY

AT TIME OF MACHINING MARK "INSIDE OF DOME" ON INNER FACE OF WHEEL.



33 REQ'D. ~ IDLER BOGIE WHEEL ~ MK. D10



NOTES:

1. TREAD TO BE FLAME HARDENED TO 370 BHN
2. KEYWAY TO ANSI B17.1 CLASS 2 FIT FOR 16 # KEY
3. FOR FINAL ASSEMBLY SEE DWG. 107 ± 10V
4. NO PAINT OR "RUST VETO" ON TREAD.
5. FOR WHEEL TO SHAFT ASSEMBLY SEE DWG. 106

3R/300835

LINE	SHIP	FAB	MARK	DESCRIPTION	MAT'L	FT.	INS.	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
	No. REQ'D.					LENGTH					SPLICING	ALLOWED	
7													
6													
5													
4			33 D10	457 φ WHEEL X 100 THK.	AISI 9140 MATERIAL								
3			3 C10	457 φ WHEEL X 100 THK.									
2													
1													



MATERIAL	AS NOTED		
SURF. PREP.	SEE MEMO		
PAINT	NOTE #4		
OPEN HOLES			
DRAWN	DATE	CHECKED	DATE
G. V. A.	JUNE/83		

No.	BY	DATE	REVISION
DETAILS OF BOGIE WHEELS			
DRIVE & IDLER			
FOR 4.2 M TELESCOPE DOME			
LA PALMA			
DRAWING No.			
1420-106			

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

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

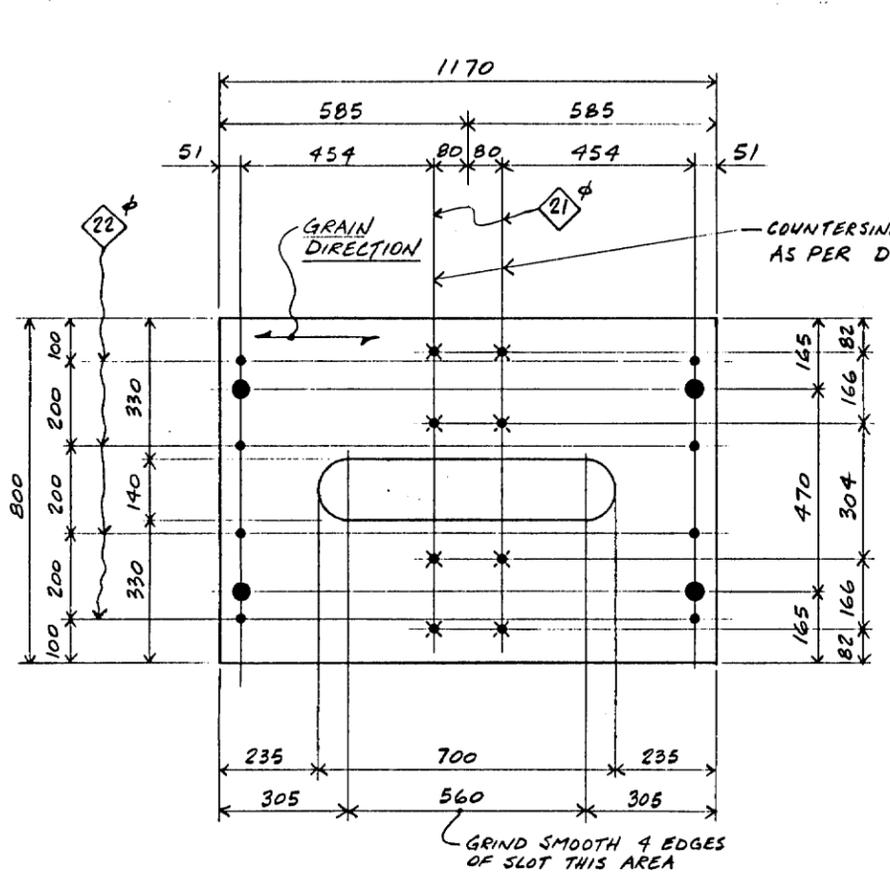
m - a b c d f g h k m n p s t v w y

SHOP DEPARTMENT / INS / F / S / O / M / T / P / SH / DP / AS / PA / ER / No. PRINTS

MATERIAL BILL
BRITAIN STEEL LTD.

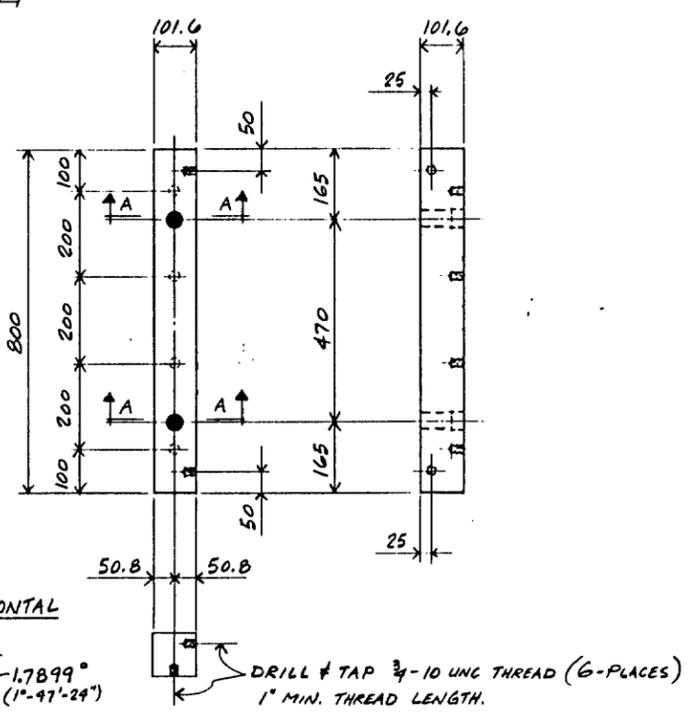
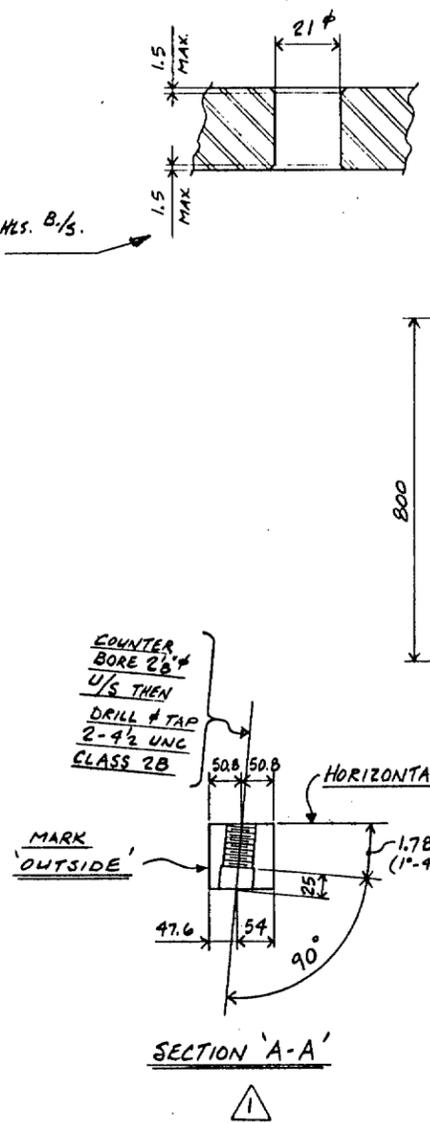
CONTRACT 1420

LINE NO.	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	UNIT	WEIGHT
1									
2				36 REQ'D. ~ MK. F10					
3									
4	34	12	800 x 25		1170		T-1	41	
5									
6									
7				72 REQ'D. ~ MK. G10					
8									
9	72	BAR	101.6	φ (4)	800		A36	19	
10									
11									
12									
13									
14									
15									
16									
17									
18				144 REQ'D. ~ MK. K10					
19									
20	144		38 x 3 (6)	216		FABREEKA PAD			
21									
22									
23				144 REQ'D. ~ MK. M10					
24									
25	144	100 x 10			250	BEND			
26									
27									
28									
29									
30	61	288	CAPSCREW	3/4" HEX HD. x 2"		W/ WASHER	A307		
31									
32	62	144	CAPSCREW	3/4" HEX HD. x 1 1/4"		W/ WASHER	A307		
33									
34	63	12	BOLT	3/4" HEX HD. x 9/4"		W/ HEX NUT & WASH.	A307		
35									
36	64	12	BOLT	3/4" HEX HD. x 8 3/4"		W/ HEX NUT & WASH.	A307		
37									
38									
39	69	132	BOLT	3/4" HEX HD. x 3 1/4"		W/ HEX NUT & WASH.	A307		
40									
41	610	132	BOLT	3/4" HEX HD. x 4"		W/ HEX NUT & WASH.	A307		
42									
43									
44									
45									
46									
47									
48									
49									
50									
51									
52									
53									
54									
55									

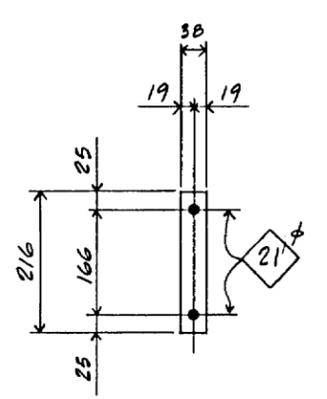


36 REQ'D. ~ SPRING P_E ~ MK. F10

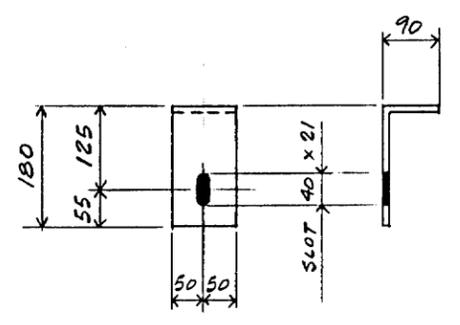
NOTE! ALL HOLES TO BE DRILLED WITH DRILLING TEMP. MK. DT 10



72 REQ'D. ~ SUPPORT BAR ~ MK. G10



144 REQ'D. ~ FABREEKA PAD ~ K10



144 REQ'D. ~ BENT P_E ~ M10

NOTES:

1. USE 1 1/2" DRILL FOR 21φ HOLES AND 7/8" DRILL FOR 22φ HOLES IF PREFERRED.
2. FOR FINAL ASSEMBLY SEE DWG. 101 & 10V
3. FOR DRILLING TEMPLATE MK. DT 10 SEE DWG. 10d

3R/300836

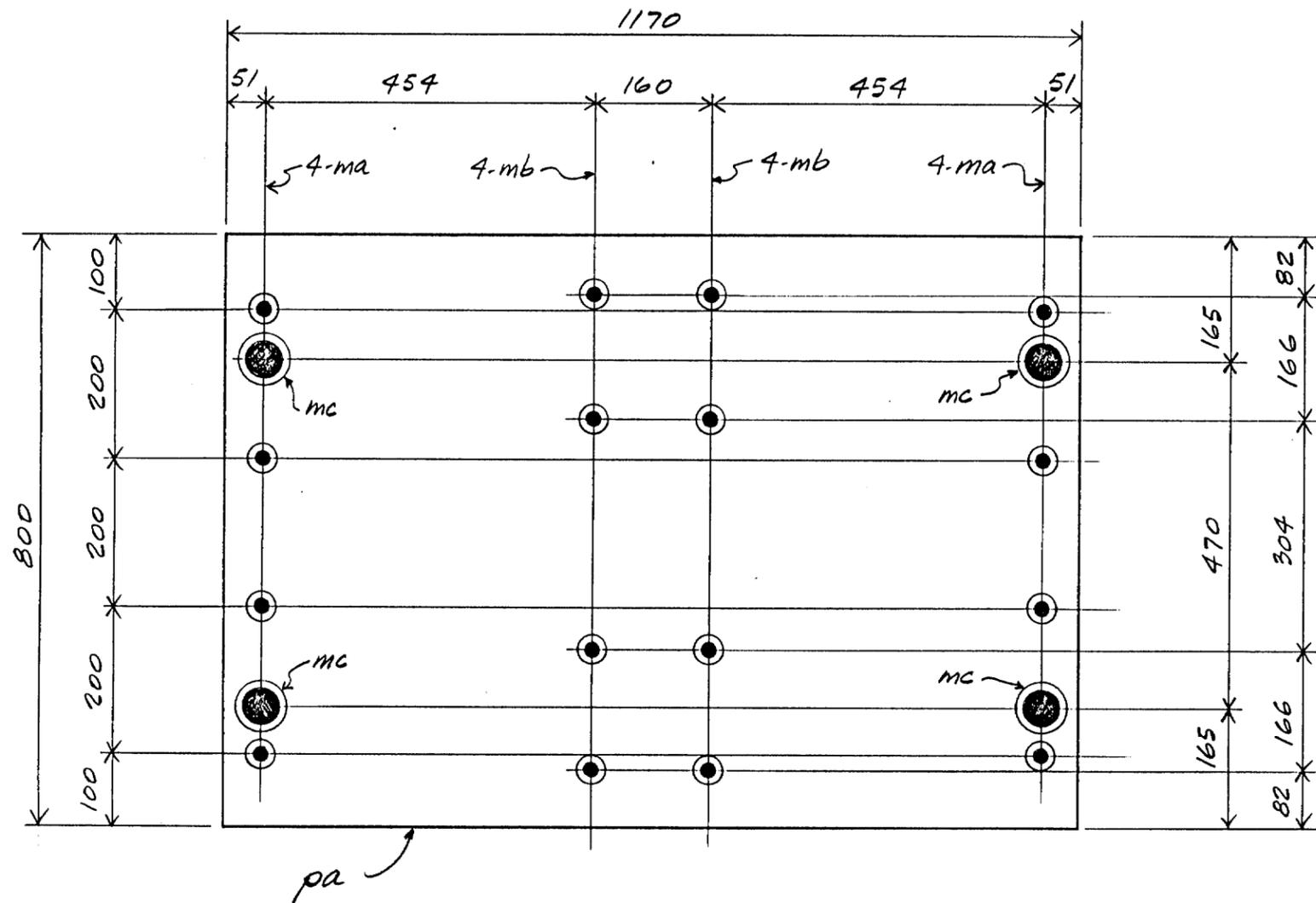
	MATERIAL	G4021 (44W) w/h	DETAILS	BOGIE SUB ASSEMBLY ITEMS
	SURF. PREP. & PAINT	BEE MEMO	FOR 3.2" TELESCOPE DOME LA PALMA	
	OPEN HOLES	AS NOTED	DRAWING No.	1420-10c
	DRAWN	DATE	CHECKED	DATE
G.V.A. JUNE/83				BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

n-abcdefghijklmnpstvw

m-abcdefghijklmnpstvw

s-abcdefghijklmnpstvw

SHOP DEPARTMENT INS / E / S / O / M / T / P / SH / DP / AS / PA / ER



ONE REQ'D. ~ DRILLING TEMPLATE AS SHOWN ~ MK. DT 10
TO BE USED FOR DRILLING SPRING R'S. MK. F 10 ON DWG 10C

NOTE! - HOLES IN R^e pa TO SUIT BUSHINGS.

3R/300837

No.	BY	DATE	REVISION

LINE	SHIP	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
	No. REQD.									SPLICING	ALLOWED	
7												
6												
5												
4				4 MC HARD DRILL BUSHINGS FOR 54 ϕ DR 2 1/2"								
3				8 MB HARD DRILL BUSHINGS FOR 21 ϕ DR 1 3/8"								
2				8 MA HARD DRILL BUSHINGS FOR 22 ϕ DR 1 3/8"								
1				ONE PA R ^e 800 x THICKNESS TO SUIT BUSH.	A36	1170						



MATERIAL	A36
SURF. PREP.	NONE
PAINT	
OPEN HOLES	
DRAWN	G.V.A.
DATE	JUNE/83
CHECKED	
DATE	

DETAILS OF	BOGIE SPRING R.
	DRILLING TEMPLATE
FOR	4.2 ^m TELESCOPE DOME
	LA PALMA
DRAWING No.	1420-10d

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

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

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

SHOP DEPARTMENT

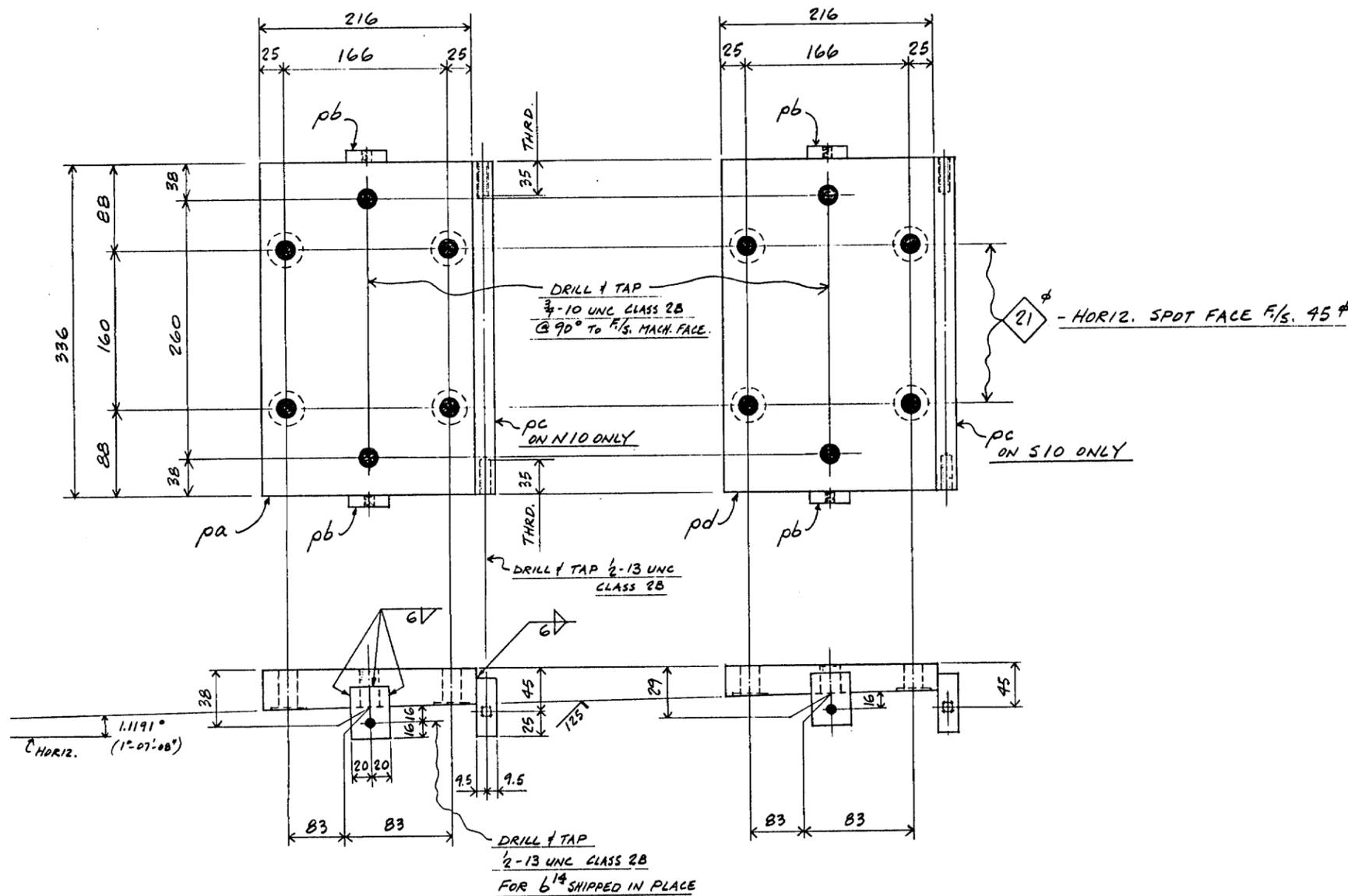
INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS

MATERIAL BILL
BRITAIN STEEL LTD.

CONTRACT 1420

LINE	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	W/BILL	LINE	WEIGHT
1										
2						3-REQ'D. ~ MK. N10				
3										
4	pa	3	R	216 x 40	336	MACHINE 45 THK. R	A36			
5	pb	6	R	40 x 12	55					
6	pc	3	R	60 x 19	336					
7	b14	6		1/2" SET SCREW	2 1/2"	CUP POINT, SR. HEAD				
8						33-REQ'D. ~ MK. P10				
9										
10										
11	pd	33								
12	pe	66								
13	b14	66								
14										
15										
16						3-REQ'D. ~ MK. S10				
17										
18										
19	pd	3	R	216 x 31	336	MACHINE 35 THK. R	A36			
20	pe	6								
21	pc	3								
22	b14	6								
23										
24						33-REQ'D. ~ MK. T10				
25										
26	pd	33								
27	pe	66								
28	b14	66								
29										
30										
31										
32	b5	144	BOLT	3/4" A307	2 1/2"	F/W WASHER				
33										
34										
35										
36										
37										
38										
39										
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51										
52										
53										
54										
55										



3 REQ'D. ~ BRG. SOLE R ~ MK. N10
33 REQ'D. ~ BRG. SOLE R ~ MK. P10

3 REQ'D. ~ BRG. SOLE R ~ MK. S10
33 REQ'D. ~ BRG. SOLE R ~ MK. T10

NOTES:

- 1) USE 1 3/16" DRILL FOR 21 φ IF PREFERRED.
- 2) FOR FINAL ASSEMBLY SEE DWG. 107 & 10V.

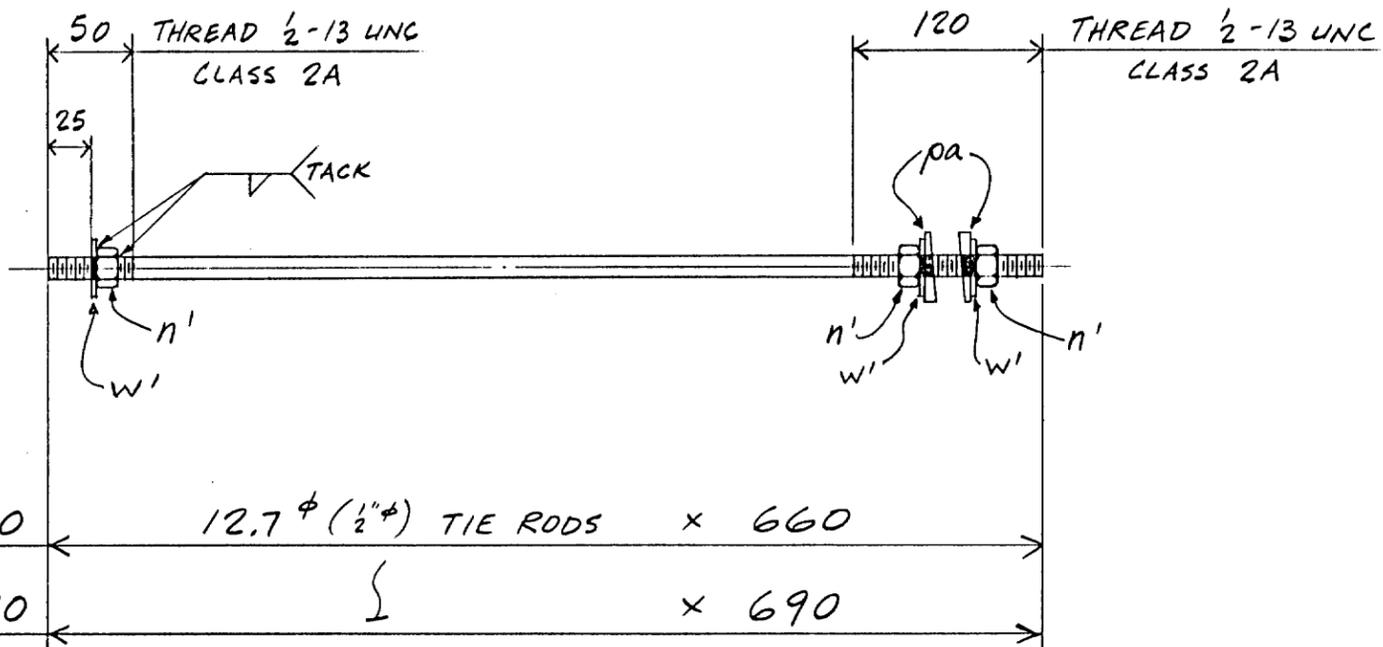
3R/300838

	MATERIAL	A36	DETAILS	BRG. SOLE R'S FOR DRIVE & IDLER ROLLERS
	SURF. PREP.	SEE MEMO	FOR	4.2" TELESCOPE ROLLERS
	PAINT	AS NOTED	FOR	LA PALMA
	OPEN HOLES	AS NOTED		
DRAWN	DATE	CHECKED	DATE	DRAWING No.
G.V.A.	JUNE/03			1420-10f
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.				
SHOP DEPARTMENT				NO. PRINTS

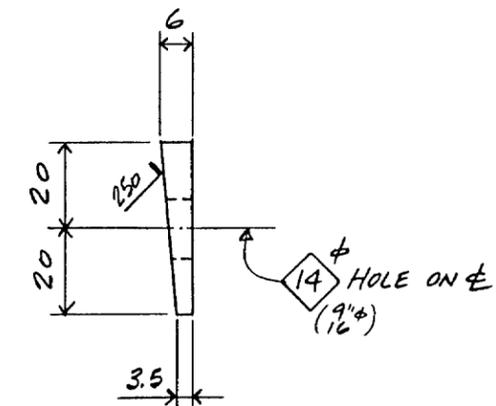
p-abcdefghijklmnpstvw y

m-abcdefghijklmnpstvw y

s-abcdefghijklmnpstvw y



6 REQ'D. ~ MK. V10 12.7 ϕ (1/2" ϕ) TIE RODS x 660
 6 REQ'D. ~ MK. W10 } x 690



DETAIL OF LOCK WASHER 'pa'

NOTES:-

1.) FOR FINAL ASSEMBLY SEE DWG. E2A

LINE	SHIP No. REQD.	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
11		18	W1									
10		18	n'									
9		12	pa									
8		6		12.7 ϕ (1/2" ϕ) ROD	A36	690			T. Z.E.			
7				6 REQ'D. ~ MK. W10								
6												
5		18	W1	1/2" LOCK WASHERS								
4		18	n'	1/2" A307 HEX NUT								
3		12	pa	1/2" 40 x 6	A36	40			MACHINE			
2		6		12.7 ϕ (1/2" ϕ) ROD	A36	660			T. Z.E.			
1				6 REQ'D. ~ MK. V10								

3R/300839

6.V.A. 21/9/83 NOTE 2 REMOVED
 No. BY DATE REVISION



MATERIAL A36
 SURF. PREP. & PAINT SEE MEMO
 OPEN HOLES

DETAILS OF TIE RODS @ DRIVE BOGIES
 FOR 4.2M TELESCOPE DOME LA PALMA

DRAWN G.V.A. DATE JUNE/83
 CHECKED DATE

DRAWING No. 1420-109 REV. 1

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

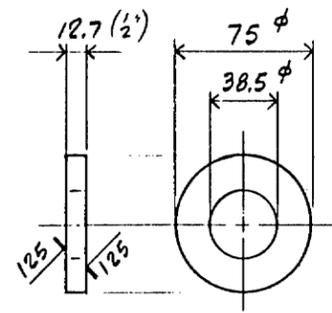
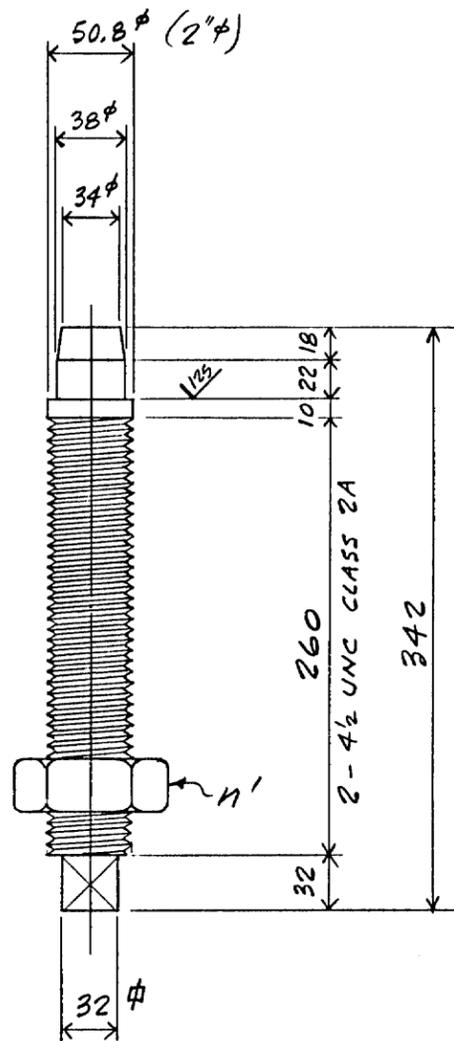
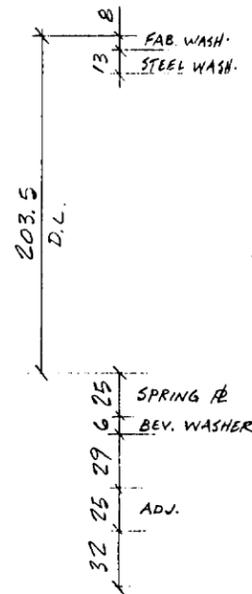
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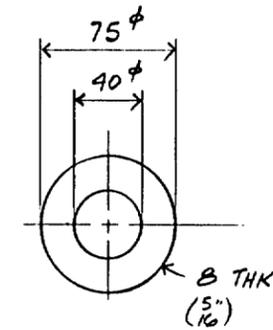
SHOP DEPARTMENT

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

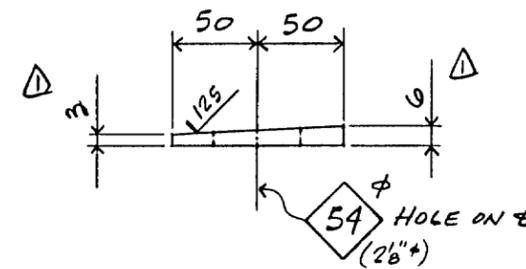
No. PRINTS



144 REQ'D. ~ STEEL WASHER ~
MK. AA 10



144 REQ'D. ~ FABREEKA WASHER ~
MK. AB 10



144 REQ'D. ~ BEV. WASHER ~ MK. AC 10

144 REQ'D. ~ VERT. ADJ. ROD ~ MK. Y 10

NOTES:-

- FOR FINAL ASSEMBLY SEE DWG. 107 & 10V
- FOR FIELD ASSEMBLY OF AA10 & AB10 SEE DWG. E2A
- ONE COAT "RUST VETO" ON ALL MACHINES SURFACES.

3R/300840

Δ G.V.A.	OCT. 16	HOLD REMOVED DIM'S ADDED
No.	BY	DATE
		REVISION

12	144		Ø 100 x 6	A36	100		MACHINE 6.35 (1/4") R				
11			144 REQ'D. ~ MK. AC 10								
10											
9	144		75 φ x 8 (5/16") FABREEKA WASHER								
8			144 REQ'D. ~ MK. AB 10								
7											
6	144		Ø 75 φ x 12.7 (1/2")	A36			MACHINE				
5			144 REQ'D. ~ MK. AA 10								
4											
3	144	n'	2" φ HEX JAMB NUT								
2	144		50.8 φ (2") ROD	A36	342		THRD. & MACHINE				
1			144 REQ'D. ~ MK. Y 10								
LINE	SHIP No. REQD.	FAB MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS SPlicing ALLOWED	WEIGHT	DIVISIONS



MATERIAL	AS NOTED
SURF. PREP. & PAINT	SEE MEMO & NOTE #3.
OPEN HOLES	
DRAWN	G.V.A.
DATE	JUNE/B3
CHECKED	
DATE	

DETAILS OF	VERT. ADJ. ROD & WASHERS.
FOR	4.2 M TELESCOPE DOME LA PALMA
DRAWING No.	1420-10h
REV.	Δ

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

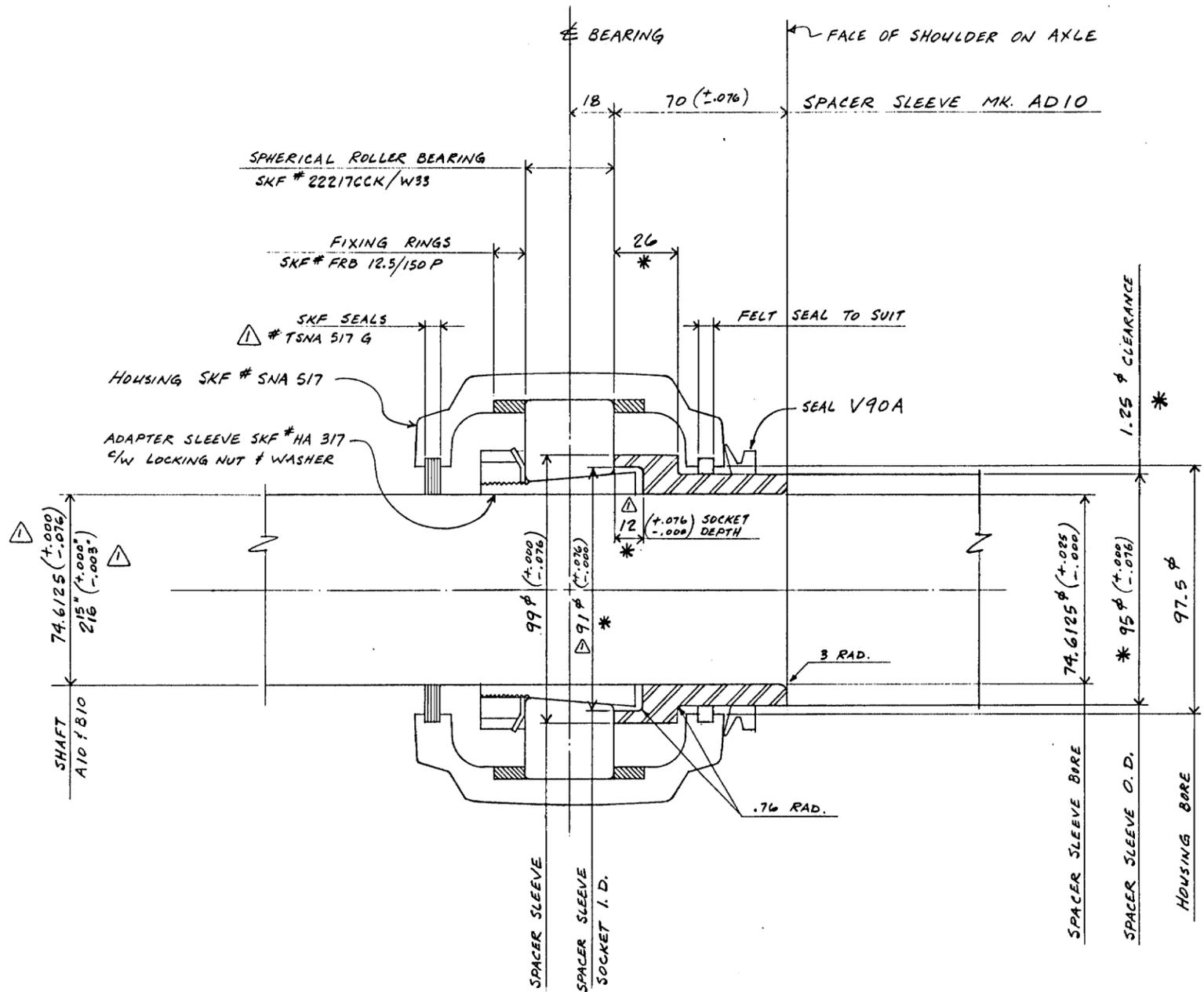
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m - a b c d f g h k m n p s t v w y

SHOP DEPARTMENT

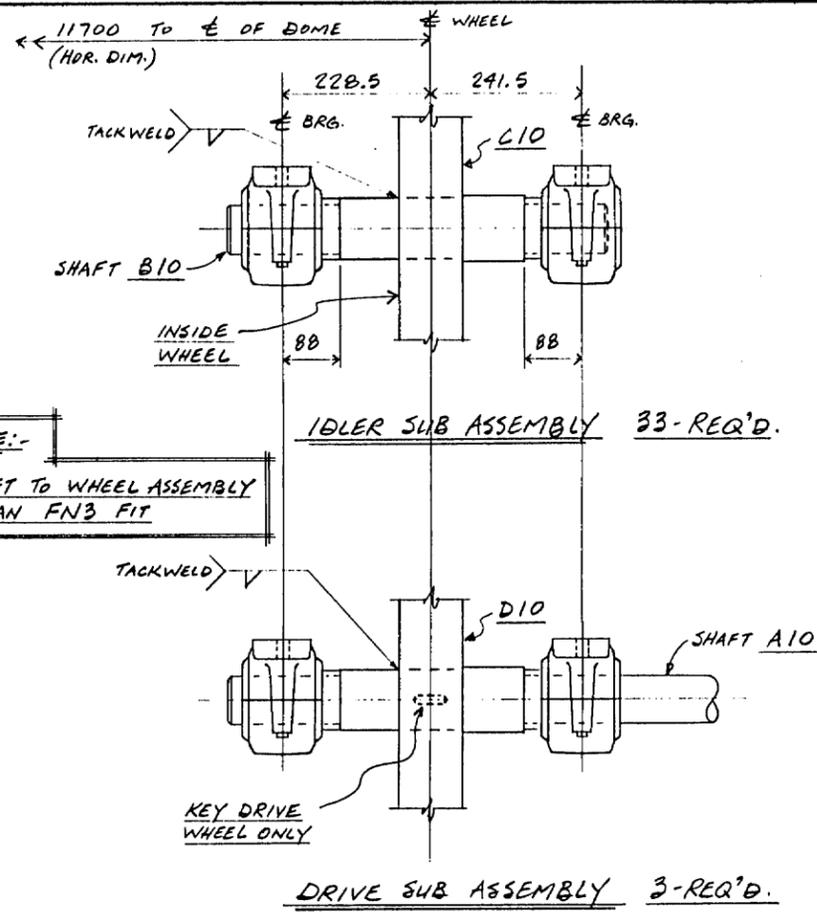
INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS



SECTION THROUGH SHAFT BEARING
SHOWING CUSTOM MADE SPACER SLEEVE

- NOTE:-
- DIMENSIONS INDICATED THUS * CONFIRMED BY SKF.
 - FOR DETAIL OF SPACER SLEEVE MK. AD10 SEE DWG. 10M.
 - ALL MACHINING TO $\sqrt{63}$



NOTE:-
SHAFT TO WHEEL ASSEMBLY IS AN FN3 FIT

- TOTAL SKF BEARING COMPONENTS REQ'D.
- 72 - PILLOW BLOCK HOUSINGS SNA 517
 - 72 - BEARINGS 22217CCK/W33
 - 72 - ADAPTER SLEEVES HA 317
 - 144 - FIXING RINGS FRB 12.5/150P
 - 72 - SPECIAL FELT SEAL TO SUIT SPACER.
 - 39 - SEALS TSNA 517 G
 - 33 - BLANKING DISKS ASNA 517.
 - 72 - SEALS V90A.
- NOTE:-
- BEARINGS TO SUIT 2 1/8" SHAFT.
 - ALL BEARINGS TO BE FIXED BOTH SIDES.
 - ALL BEARINGS TO BE INSTALLED TO SKF SPECIFICATIONS.

3R/300841

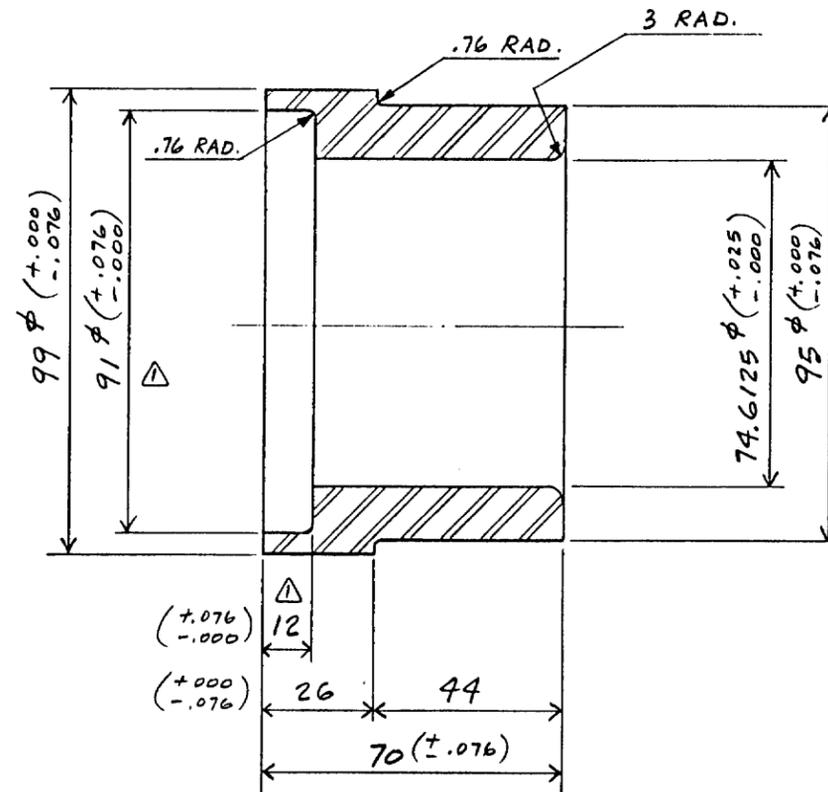
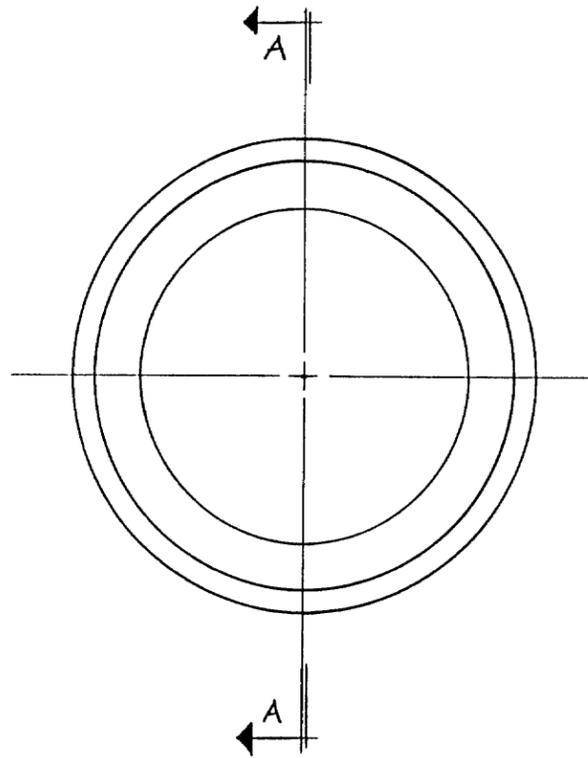
	MATERIAL		SURF. PREP. & PAINT		OPEN HOLES	
	G.V.A.		June/83		1420-10k	
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.			SHOP DEPARTMENT			

p-abcdefghijklmnpstvw

m-abcdefghijklmnpstvw

s-abcdefghijklmnpstvw

INS / F / S / G / M / T / P / SH / DP / AS / PA / ER



SECTION 'A-A'

72-REQ'D. ~ SPACER SLEEVE ~ AD 10

NOTES:

- 1) ALL MACHINING TO $\sqrt{63}$.
- 2) FOR ASSEMBLY TO BEARING AND AXLE SEE DWG. 10K.
- 3) FOR FINAL ASSEMBLY SEE DWG. 10T AND 10V.

3R/300842

LINE	SHIP No. REQD.	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
										SPLICING ALLOWED		
3				72 AD10 SPACER SLEEVE	A36	70			MACHINE			



MATERIAL	
SURF. PREP. & PAINT	NO PAINT
OPEN HOLES	
DRAWN	G.V.A.
DATE	JUNE/83
CHECKED	
DATE	

△ GA	OCT. 25	To SUIT SKF APPROVAL
No.	BY	DATE
REVISION		
DETAILS OF AXLE BEARING SPACER SLEEVES		
FOR 4.2" TELESCOPE DOME LA PALMA		
DRAWING No.	1420-10M	REV. △

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

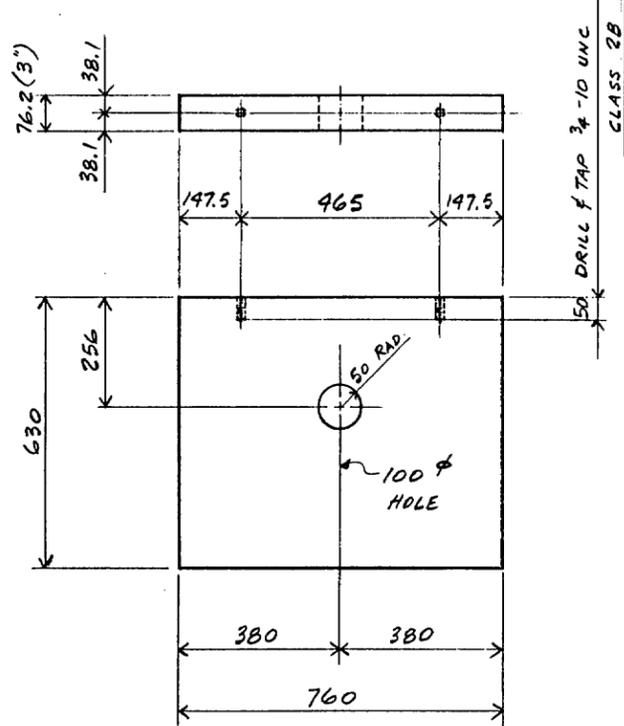
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m - a b c d f g h k m n p s t v w y

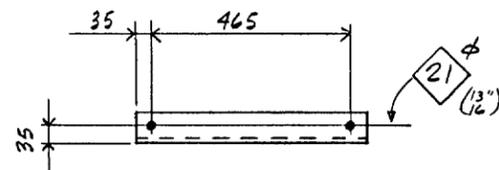
SHOP DEPARTMENT

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

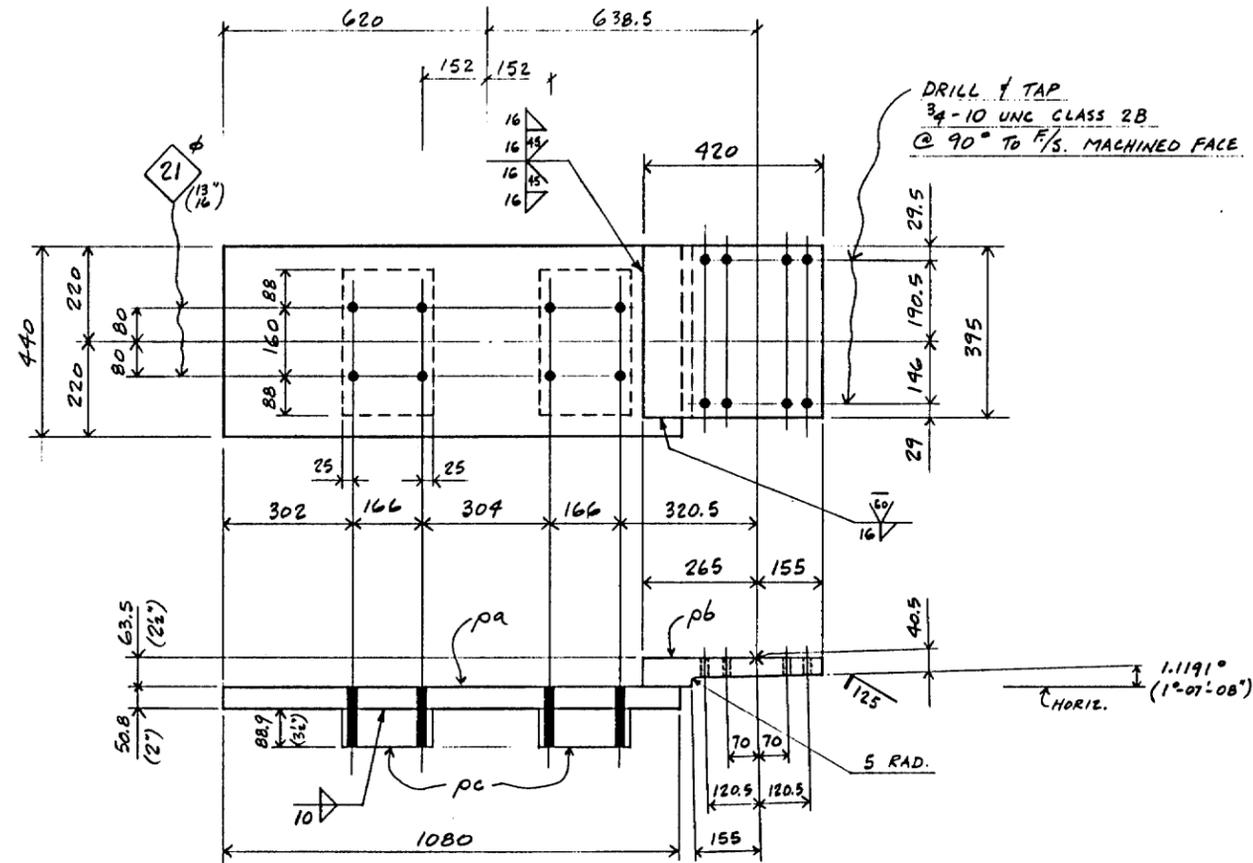
No. PRINTS



3 REQ'D. ~ COUNTERWEIGHT ~ MK. AF10
(282 kg./620 lbs.)



3 REQ'D. ~ L65x65x10x535 ~ MK. AG10



3 REQ'D. ~ DRIVE BASE ~ MK. AH10

NOTE: - WELD BEFORE MACHINING AND DRILLING.

NOTES:-

- 1) FOR FINAL ASSEMBLY SEE DWG. 10V
- 2) DRILL HOLES PER IMP SIZE AS NOTED IF PREFERRED.
- 3) ONE COAT "RUST VETO" ON MACHINED SURFACE.

MATERIAL BILL
BRITAIN STEEL LTD.

CONTRACT 1420

MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	W. LINE	WEIGHT
1								
2								
3								
4	3	R	630x762(3')	760		A36		
5								
6								
7								
8								
9								
10	3	L	65x65x10	535		44W		
11								
12								
13								
14								
15								
16	pa	3	R	440x508(2')	1080			A36
17	pb	3	R	395x635(2 1/2')	420	MACHINE		
18	pc	6	R	216x889(3 1/2')	336			
19								
20								
21								
22								
23	66	6	BOLT 3/4" A307	4	C/W STD. WASHER (NO NUT)			
24								
25	67	12	BOLT 3/4" A307	44	C/W LOCK WASHER (NO NUT)			
26								
27								
28	68	12	BOLT 3/4" A307	2 1/2	C/W STD. WASHER (NO NUT)			
29								
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3R/300843



MATERIAL	G40 21 (44W) with	DETAILS	DRIVE BOGIE
SURF. PREP.	SEE MEMO	BASE PL'S & COUNTERWEIGHT	
PAINT	SEE MEMO	FOR 4.2M TELESCOPE DOME	
OPEN HOLES	AS NOTED	LA PALMA	
DRAWN	G.V.A. June/83	DRAWING No.	1420-101
DATE			
CHECKED			
DATE			

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

SHOP DEPARTMENT INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

p-abcdefghijklmnpstvw y

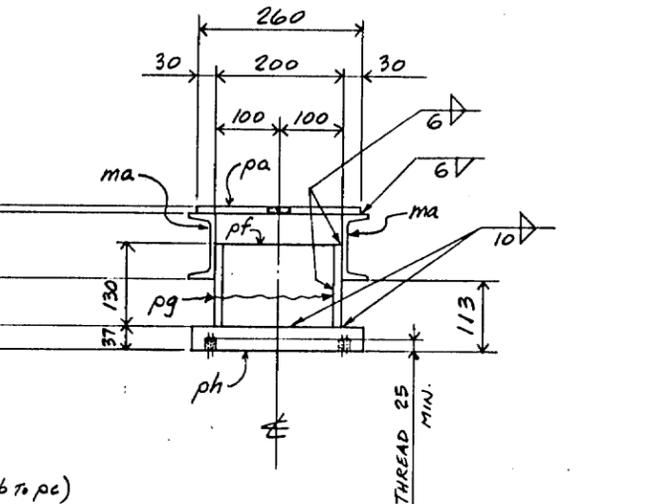
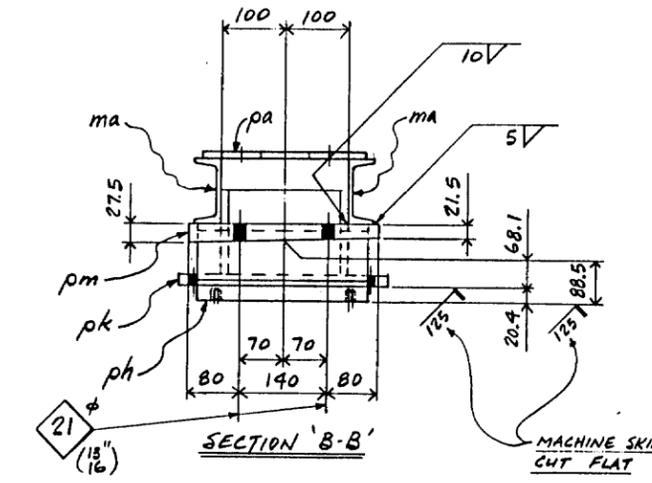
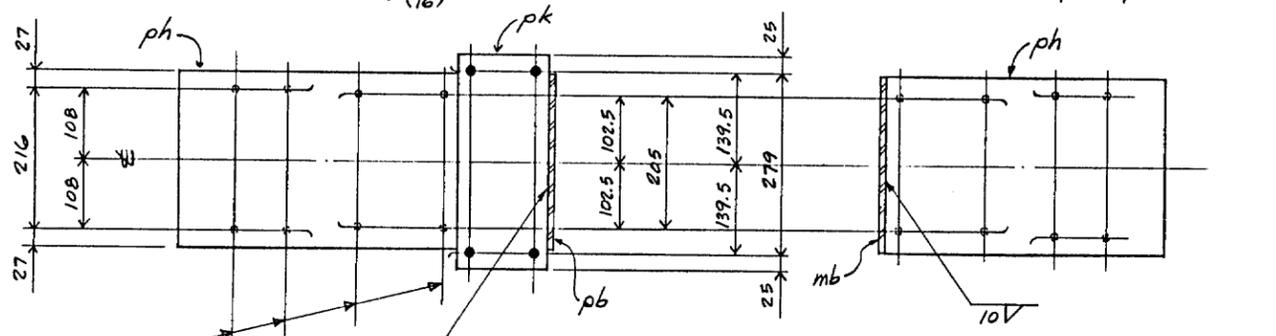
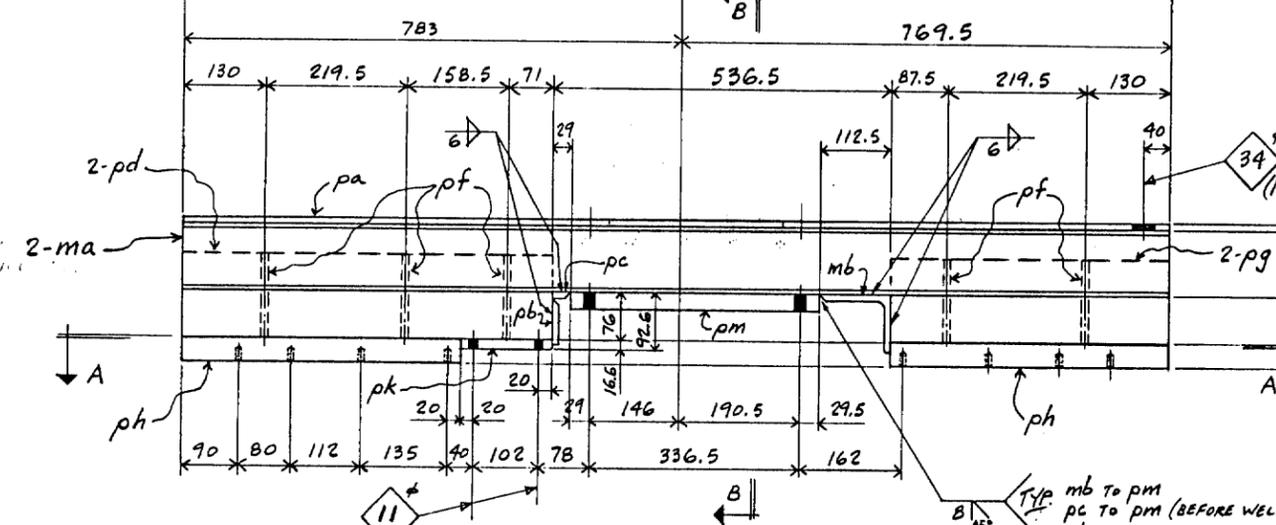
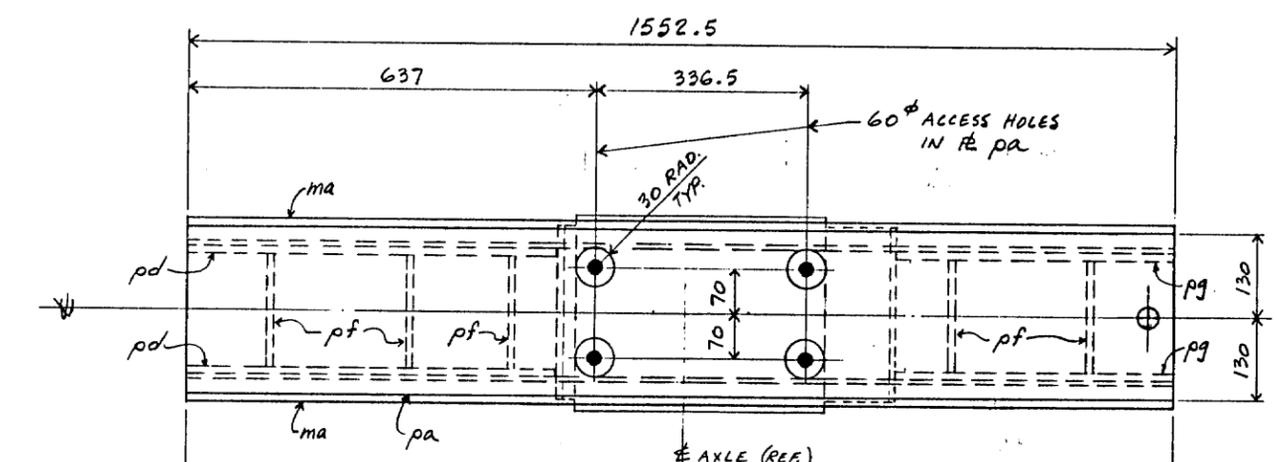
m-abcdefghijklmnpstvw y

s-abcdefghijklmnpstvw y

MATERIAL BILL
BRITAIN STEEL LTD.

CONTRACT 1420

W	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	PULL LINE	WEIGHT
1									
2									
3									
4	MA	6	C	100 x 11	1552.5				44W
5									
6	PA	3	R	260 x 9.5 (3)	1552.5				
7	PB	3	R	75 x 9.5	270				
8	PC	3	R	29 x 9.5	270				
9	PD	6	R	130 x 9.5	579				
10	PF	15	R	130 x 9.5	180				
11	PG	6	R	130 x 9.5	437				
12	PH	6	R	270 x 37	437	MACHINE 1/2" R	A36		
13	PK	3	R	142 x 16.6	329				
14	PM	3	R	300 x 27.5	395				
15									
16									
17	B12	48	BOLT	1/2" A307	1/2"	1/4" LOCK WASHER			
18									
19	B13	12	BOLT	3/8" A307	2"	1/4" HEX NUT & LOCK WASHER			
20									
21									
22									
23	MB	3	L	112.5 x 90 x 9.5	270	CUT L 127 x 90 x 9.5	44W		
24				4 1/2" x 3 1/2" x 3/8"		L 5" x 3 1/2" x 3/8"			
25									
26									
27									
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SHOP NOTE!

- WELDING SYM. ABT. \neq
- COMPLETE ALL WELDING BEFORE MACHINING AND DRILLING.

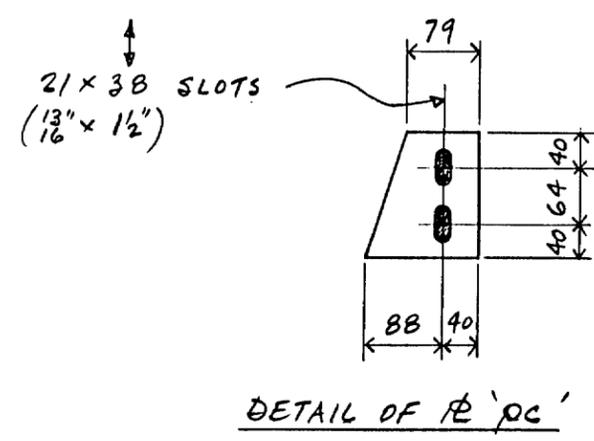
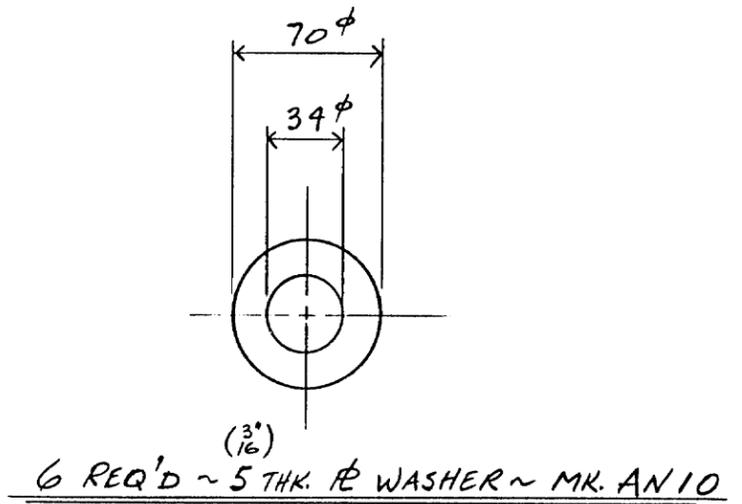
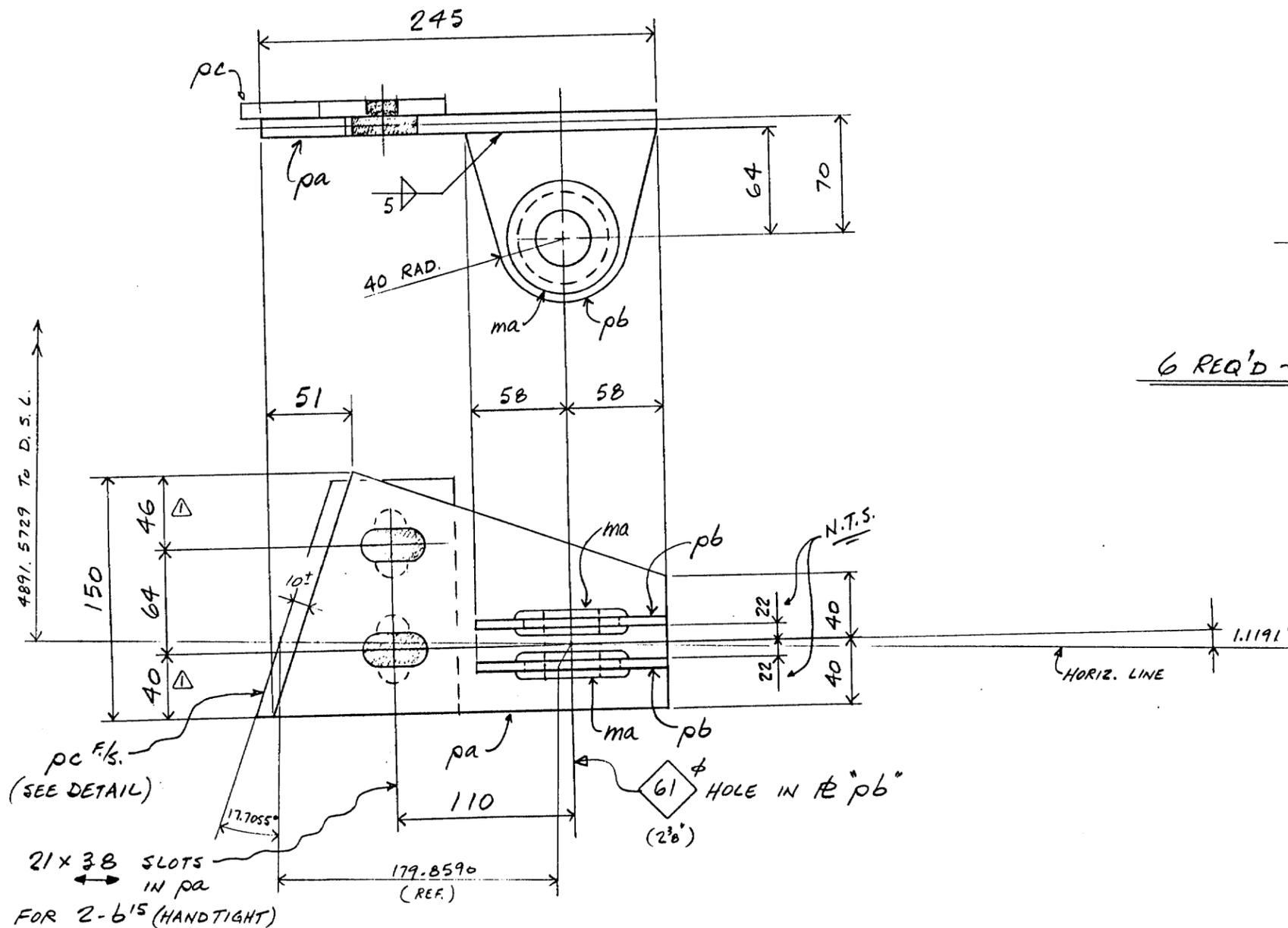
- NOTES:-**
- 1.) FOR FINAL ASSEMBLY SEE DWG. 10V.
 - 2.) DRILL HOLES PER IMP. SIZE AS NOTED IF PREFERRED.
 - 3.) ONE COAT "RHST VETO" ON ALL MACHINED SURFACES.

3 REQ'D. ~ DRIVE FRAME ~ AK10

3R/300844

	MATERIAL	G40 21 (44W) W/P	NO. BY DATE	REVISION
	SURF. PREP. & PAINT	SEE MEMO # NOTE # 3 AS NOTED	DETAILS - DRIVE BOGIE DRIVE FRAME	
	OPEN HOLES	AS NOTED	FOR 4.2 M TELESCOPE DOME LA PALMA	
DRAWN	DATE	CHECKED	DATE	DRAWING NO.
G.V.A.	JUNE/83			1420-10P
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.				
SHOP DEPARTMENT			INS/P/S/O/M/T/P/SH/DP/AS/PA/ER	

p-abcdefghijklmnpstvw y m-abcdefghijklmnpstvw y s-abcdefghijklmnpstvw y



NOTES:-

- 1) FOR FINAL ASSEMBLY SEE DWG. 10V
- 2) FOR FIELD WELDING SEE DWG. E2a

LINE	SHIP No. REQD.	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
11	3	b ⁸		1/4" A307 BOLT		5 1/2"			1/2" HEX NUT + JAM NUT			
10												
9	6			70" x 5 THK. A36								
8				6 REQ'D ~ MK. AN10								
7	6	b ¹⁵		3/4" A325 BOLT		2 1/2"			2 W 2 WASHERS			
6	3	ma		RUBBER GROMMET	SPAENAUER RB-262							
5	3	pc		128 x 12.7 (1/2")	44W	144						
4	6	pb		104 x 6.4 (1/4")		116						
3	3	pa		150 x 12.7 (1/2")	L	245						
2				3 REQ'D ~ MK. AM10								
1												

3R/300845



MATERIAL G40.21 (44W) 1/2"
 SURF. PREP. & PAINT SEE MEMO
 OPEN HOLES AS NOTED
 DRAWN G.V.A. DATE JUN/83 CHECKED DATE

△	GA	Nov/83	HOLD REMOVED DIM'S ADDED
No.	BY	DATE	REVISION
DETAILS OF SNUBBER @ DRIVE BDRGIE			
FOR 4.2 M TELESCOPE DOME LA PALMA			
DRAWING No. 1420-10S			REV. △

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

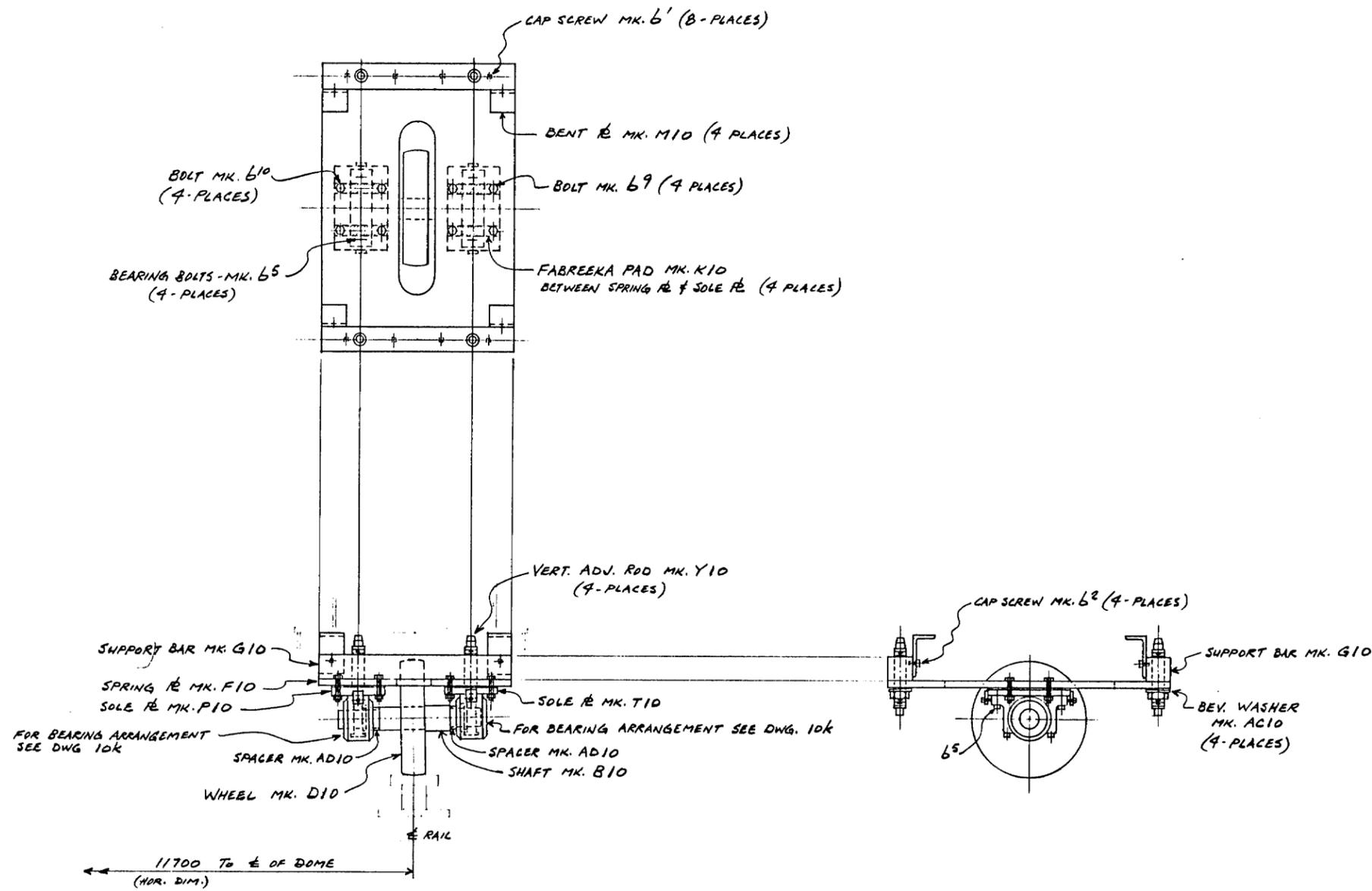
p - a b c d f g h k m n p s t v w

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

SHOP DEPARTMENT

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS



NOTES:-

- 1.) FOR DETAILS SEE DWG'S. 10a, 10b, 10c, 10d, 10f, 10h, 10k, 10m
- 2.) BEARINGS TO BE INSTALLED TO SKF INSTRUCTIONS.
- 3.) FOR FIELD ASSEMBLY SEE DWG E2A

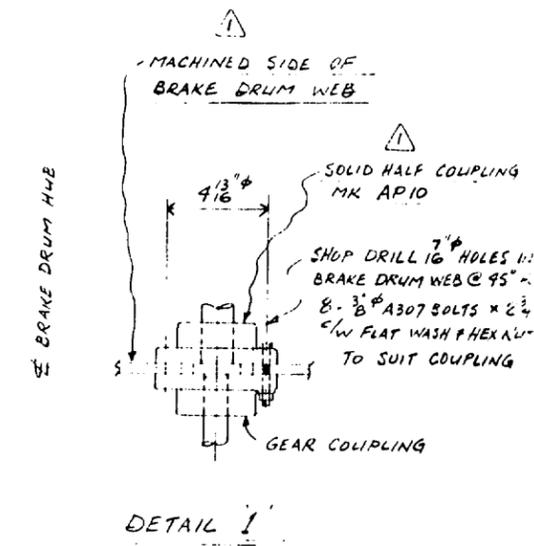
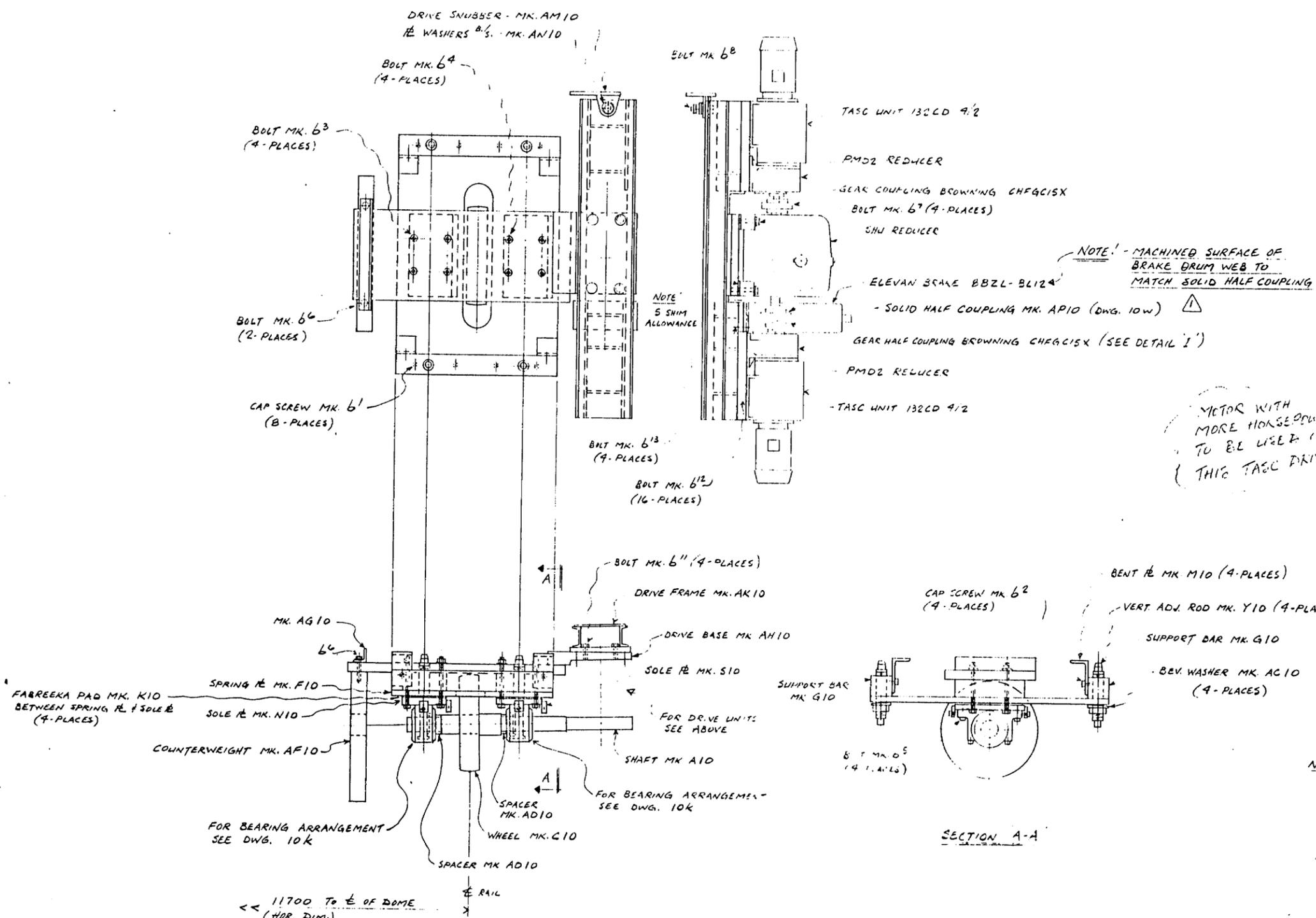
3R/300846

	MATERIAL		No		BY		DATE		REVISION	
	OPEN HOLES		DETAILS		IDLER BOGIE		ASSEMBLY		FOR 4.2M TELESCOPE DOME	
	DRAWN		DATE		CHECKED		DATE		DRAWING No.	
	G.V.A.		July/83						1420-78	
BRITAIN STEEL LTD. 401 BALTER AVENUE, NEW WESTMINSTER, B.C.										
SHOP DEPARTMENT			INS/F/S/O/M/T/P/SH/DP/AS/PA/ER			No PRINTS				

p-abcdefghijklmnpstvw y

m-abcdefghijklmnpstvw y

s-abcdefghijklmnpstvw y



- TOTAL DRIVE COMPONENTS REQ'D.**
- 6 - TASC DRIVE 132CD 4/2 - 2 1/2 HP @ 1250 RPM
 - 6 - PMD2 REDUCER TO 130 R.P.M. MAX.
 - 2 - 1265 P CONTROLLERS.
 - 3 - SHU CONE REDUCER 10 TO 1 RATIO TO SUIT 2 3/4" DRIVE SHAFT.
 - 3 - BBZL-BL12 SHOE BRAKE
 - 3 - SOLID HALF COUPLING MK AP10 TO SUIT 1 1/2" (+.000 / -.001) SHAFT - 3/8" KEYWAY
 - 3 - BROWNING HALF COUPLING CHEQCISX TO SUIT 1 1/2" (+.000 / -.001) SHAFT - 3/8" KEYWAY
 - 6 - BROWNING HALF COUPLING CHEQCISX TO SUIT 2B.009 (+.000 / -.013) SHAFT - 7.985 KEYWAY

MOTOR WITH MORE HORSEPOWER TO BE USED IN THIS TASC DRIVE

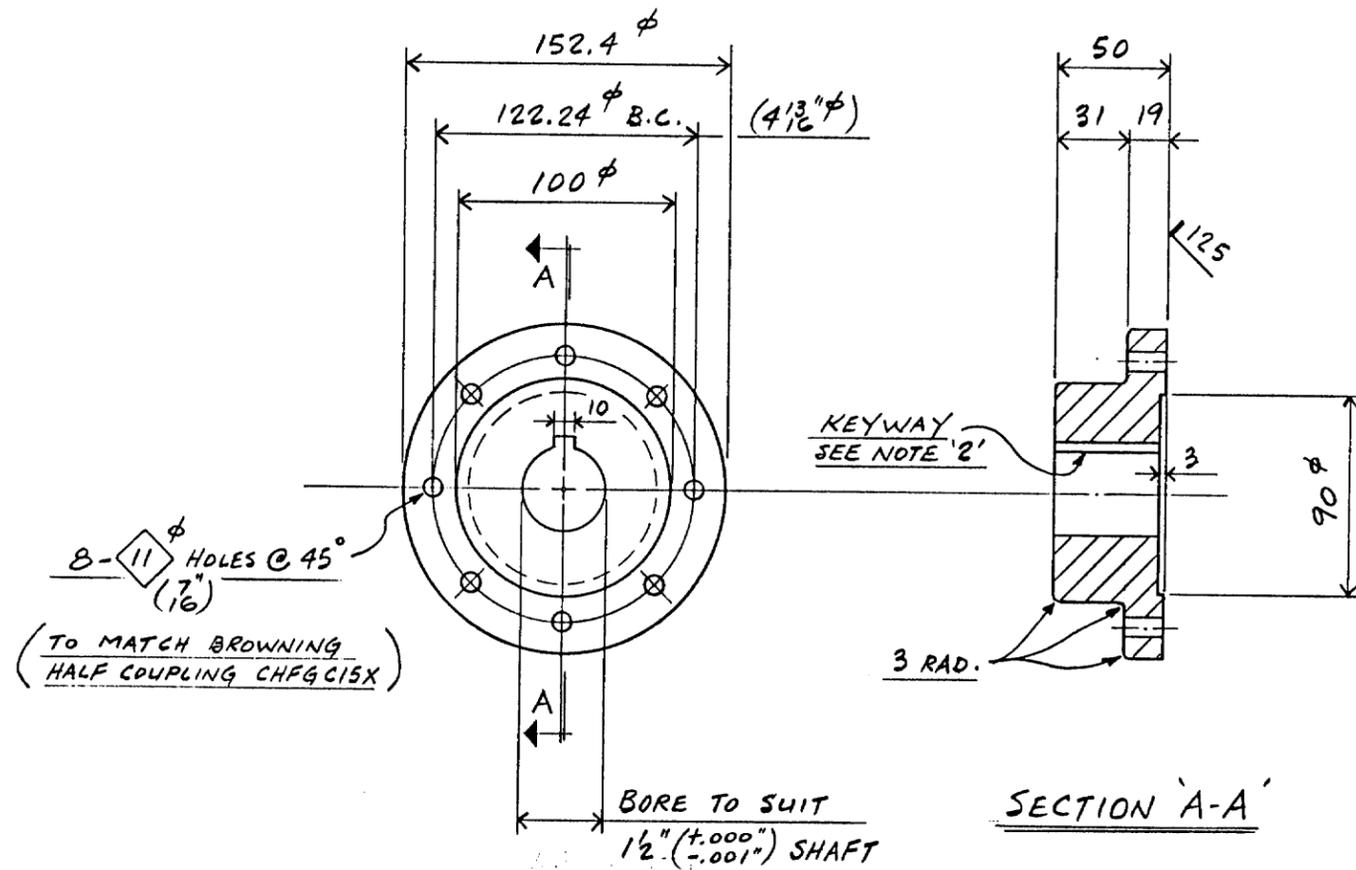
- NOTES:**
- 1) FOR DETAILS SEE DWGS 10a, 10b, 10c, 10f, 10h, 10k, 10m, 10n, 10p, 10s & 10v.
 - 2) BEARINGS TO BE INSTALLED TO SKF INSTRUCTIONS.
 - 3) FOR FIELD ASSEMBLY SEE DWG. E2a.

- PROCEDURE**
- 1) SHOP ASSEMBLE COMPLETE UNIT AS SHOWN AND MATCH MARKS.
 - 2) REMOVE DRIVE FRAME AND, ELEVAN BRAKE, PMD2 REDUCERS, GEAR COUPLINGS AND TASC UNITS FOR SHIPPING SEPARATELY.
 - 3) TASC UNITS TO BE MOUNTED TO SHAFT AND BOLTS TO BE

TACHOMETER SHD MOUNTED IN ONE DRIVE BOGIE

3R/300847

BRITAIN	MATERIAL	COUPLING AT BRAKE	
	OPEN HOLES	REVISED TO SUIT FORMAC	REVISION
DRAWN DATE CHECKED DATE		DETAILS DRIVE BOGIE ASSEMBLY	
G.V.A. July 83		FOR 4.2" TELESCOPE DRIVE LA PALMA	
DRAWING NO. 1420-10V		REV. 1	
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.			



3-REQ'D. ~ SOLID COUPLING ~ MK. API0

GENERAL NOTES:

- 1.) ALL SURFACES TO BE COATED WITH "RUST VETO"
- 2.) KEYWAY TO ANSI B17.1 CLASS 2 FIT FOR 10 (3/8) KEY.
- 3.) FOR FINAL ASSEMBLY SEE DWG. 10V.

3R/300848

LINE	SHIP No. REQD.	FAB MARK	DESCRIPTION	MAT'L	FT. LENGTH	INS. LENGTH	R.D.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
7												
6			3-REQ'D ~ MK. API0									
5												
4			3 COUPLING 152.4 x 50 THK.	4140					MACHINE FROM 6" C.R.S.			
3												
2												
1												

MATERIAL		4140 CRS		No. BY DATE		REVISION	
SURF. PREP. & PAINT		SEE NOTE 1		DETAILS OF SOLID HALF COUPLING AT ELEVAN BRAKE			
OPEN HOLES		AS NOTED		FOR 4.2 M TELESCOPE DOME LA PALMA			
DRAWN	DATE	CHECKED	DATE	DRAWING No.		REV.	
G.V.A.	OCT/83			1420-10W			
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.							

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

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

SHOP DEPARTMENT

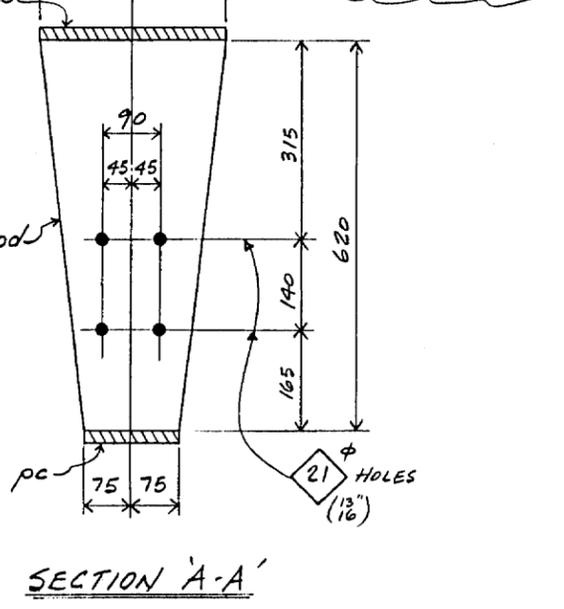
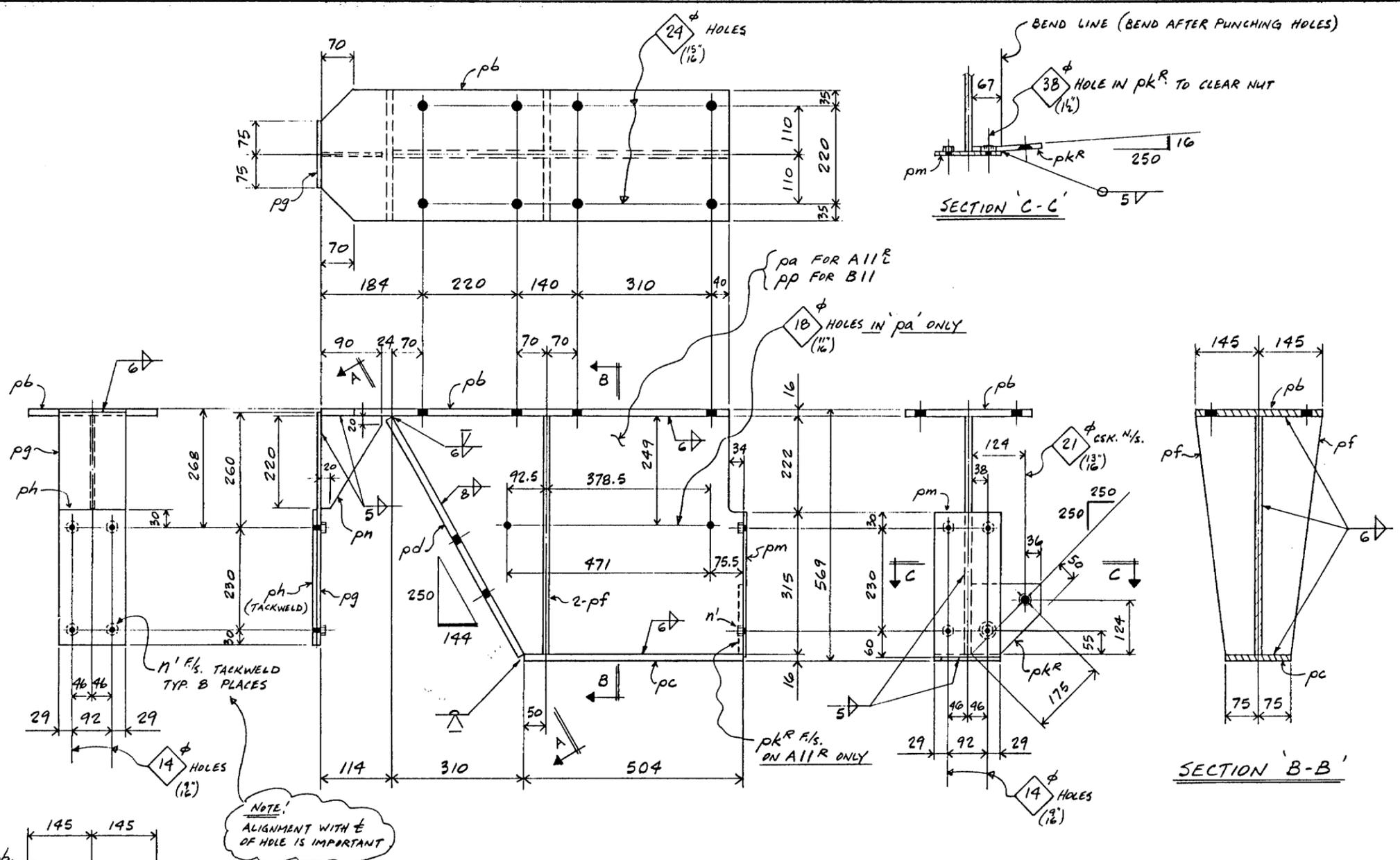
INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS

MATERIAL BILL
BRITAIN STEEL LTD.

CONTRACT 1420

LINE NO.	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	UNIT	WEIGHT
1									
2						3 REQ'D. ~ MK. A11R			
3						3 REQ'D. ~ MK. A11L			
4									
5	pa	6	PL	537 x 16 (3/8")	814		44W		
6	pb	6	PL	290 x 16	894				
7	pc	6	PL	150 x 16	504				
8	pd	6	PL	290 x 16	620				
9	pe	12	PL	137 x 16	537				
10	pf	6	PL	150 x 9.5 (3/8")	520				
11	pg	6	PL	150 x 9.5	290				
12	pkR	6	PL	160 x 9.5	160	BEND			
13	pm	6	PL	150 x 6.9 (1/2")	320				
14	pn	6	PL	90 x 6.9	220				
15	n'	48	NUT	1/2" A307	HYV. HEX				
16									
17									
18						42 REQ'D. ~ MK. B11			
19									
20	pp	42	PL	537 x 16 (3/8")	814				
21	pb	42							
22	pc	42							
23	pd	42							
24	pe	84							
25	pf	42							
26	pg	42							
27	ph	42							
28	pm	42							
29	pn	42							
30	n'	336							
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3 REQ'D. ~ GUIDE BRACKET ~ MK. A11R (RIGHT)
 3 REQ'D. ~ GUIDE BRACKET ~ MK. A11L (LEFT) } NOTE! ALIKE EXCEPT FOR PL PKR

42 REQ'D. ~ GUIDE BRACKET ~ MK. B11

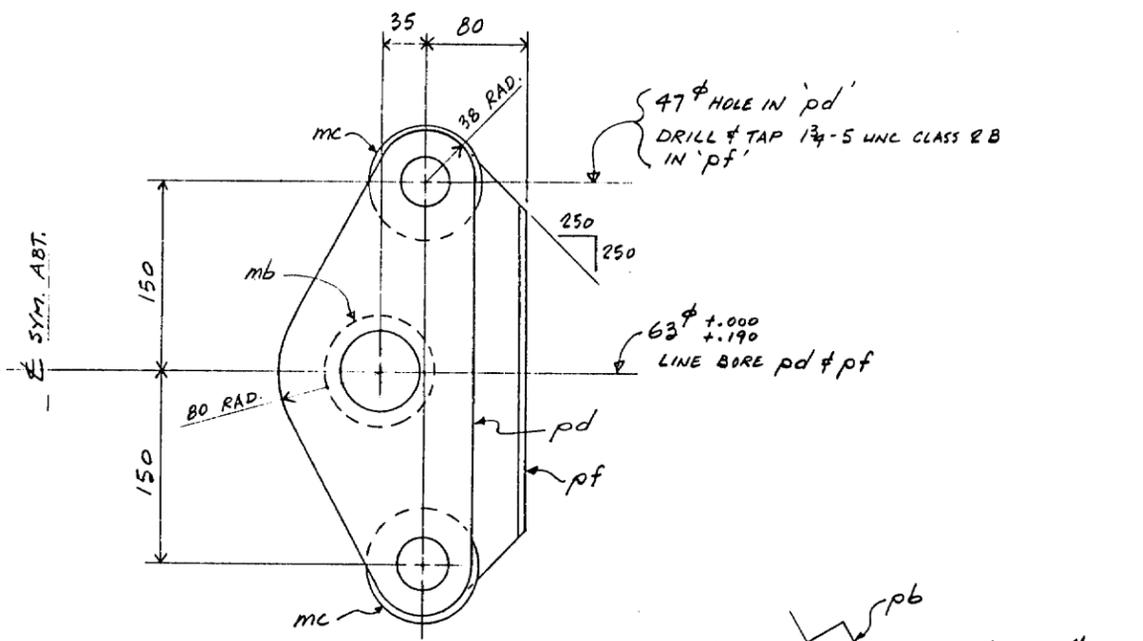
- NOTES:
- 1) DRILL HOLES PER IMPERIAL SIZE AS NOTED IF PREFERRED.
 - 2) FOR FINAL ASSEMBLY SEE DWG. E2a

3R/300849

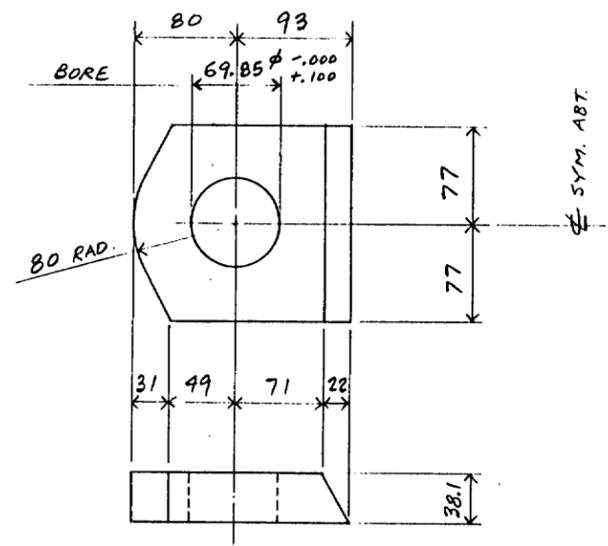
MATERIAL G40 21 (44W)		DETAILS	
SURF. PREP. PAINT		GUIDE BRACKETS	
OPEN HOLES AS NOTED		FOR 3.2" TELESCOPE DOME LA PALMA	
DRAWN G.V.A.	DATE JUNE/83	CHECKED	DATE
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.		DRAWING NO. 1420-11A	

SHOP DEPARTMENT

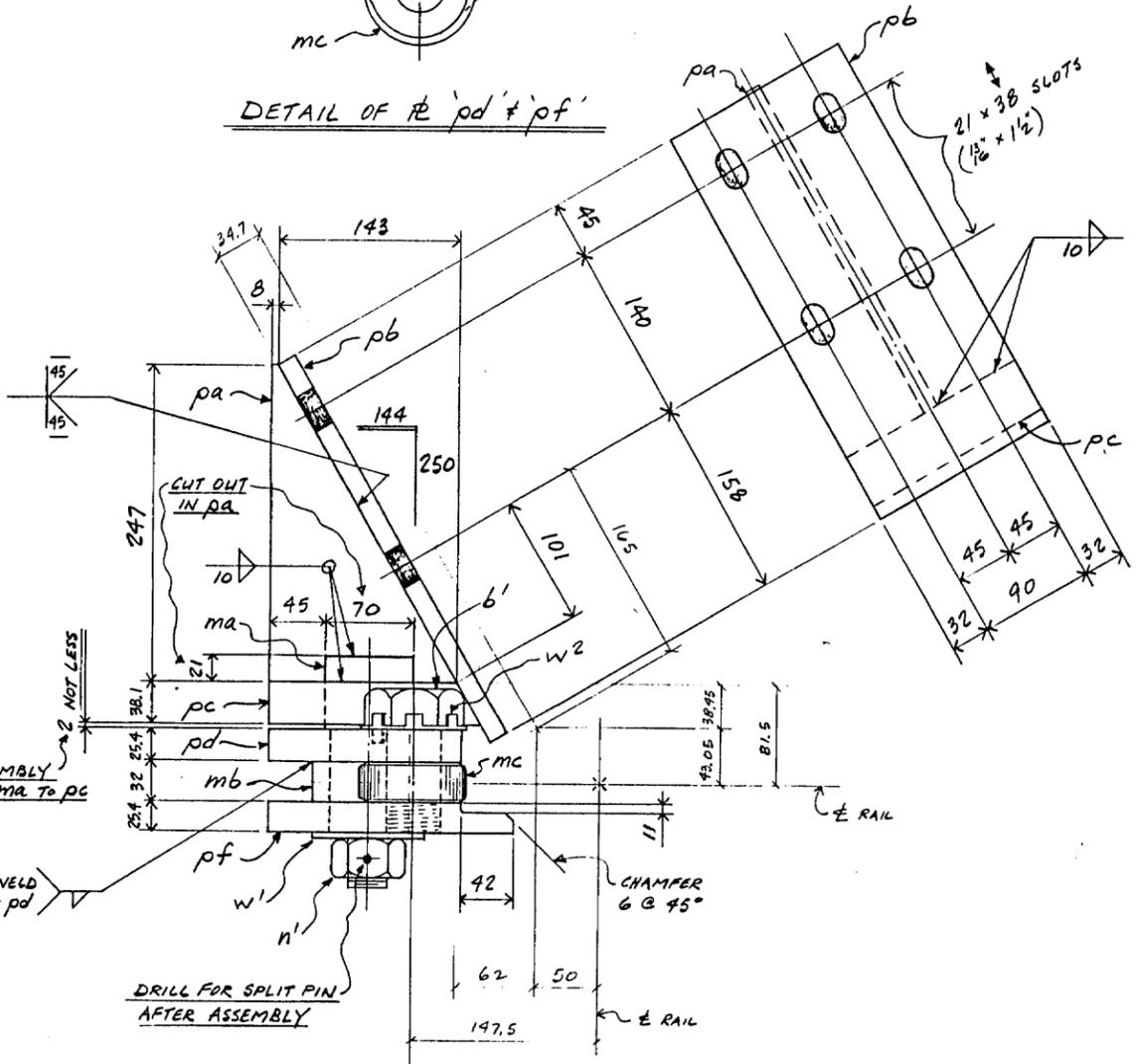
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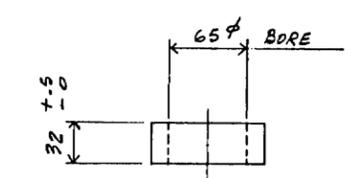
DETAIL OF ROLLER 'pd' & 'pf'



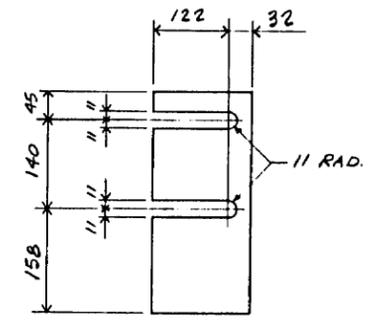
DETAIL OF ROLLER 'pc'



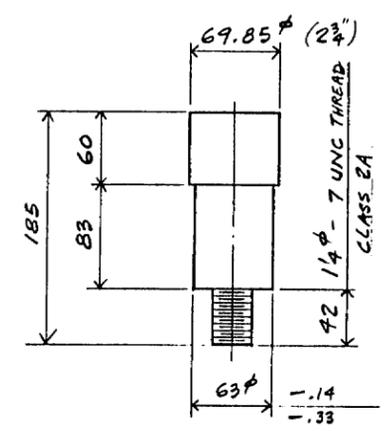
4B REQ'D. ~ HORIZONTAL GUIDE ROLLER ASSEMBLY ~ MK. C11



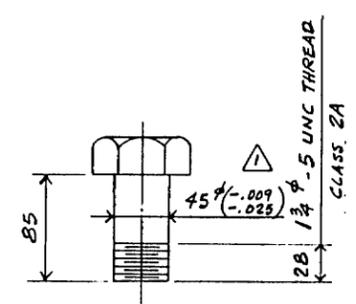
DETAIL OF SPACER 'mb'



4B REQ'D. ~ SHIMS ~ MK. D11
96 REQ'D. ~ SHIMS ~ MK. F11



DETAIL OF PIN 'ma'
(GREASE PIN ON ASSEMBLY WITH ROLLERS 'pd' & 'pf')



DETAIL OF BOLT 'b1'

MATERIAL BILL

BRITAIN STEEL LTD.

CONTRACT 1920

LINE NO.	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MAT'L TYPE	LINE	WEIGHT
1									
2						4B REQ'D. ~ MK. C11			
3									
4	pa	4B	R	151 x 127 (6")	247		99W		
5	pb	4B	R	154 x 127 (6")	343				
6	pc	4B	R	154 x 38.1 (6")	173				
7	pd	4B	R	153 x 25.4 (6")	376				
8	pf	4B	R	195 x 25.4 (6")	376				
9									
10	ma	4B	BAR	69.85φ (2 3/4")	185	MACHINE T. THRD. C1018			
11	mb	4B	PIPE	3"φ X XS	32				
12	mc	96	ROLLER SKF # NUTS	45					
13									
14	b1	96	BOLT	2"φ HEX. HD.	85	MACHINE T. THRD. GR. 5			
15									
16	n1	4B	NUT	1 1/4"φ HVY. HEX	A307				
17	w1	4B	WASHER	1 1/4"φ	A325				
18									
19	w2	96	LOCK WASHER	1 3/4"φ		EXTERNAL TOOTH			
20									
21									
22									
23									
24						9B REQ'D. ~ MK. D11			
25									
26						4B REQ'D. ~ SHIMS ~ MK. D11			
27									
28									
29									
30						96 REQ'D. ~ SHIMS ~ MK. F11			
31									
32									
33						96 REQ'D. ~ SHIMS ~ MK. F11			
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NOTE:
- FOR FINAL ASSEMBLY SEE DWG. E1C

3R/300850



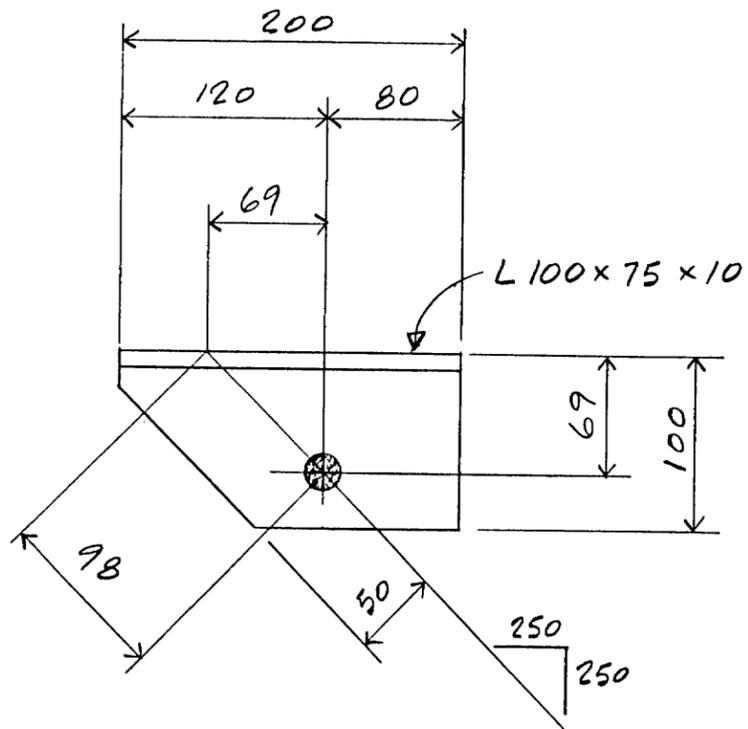
MATERIAL G40 21 (44W) Wn
SURF. PREP. & PAINT SEE MEMO
OPEN HOLES AS NOTED
DRAWN G.V.A. DATE JUNE/63
CHECKED DATE
DATE 1920-116
REVISION
DETAILS HORIZONTAL GUIDE ROLLER ASSEMBLY
FOR 4.2" TELESCOPE DRIVE LA PALMA
DRAWING No. 1920-116
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

p-abcdefghijklmnpstvw

m-abcdefghijklmnpstvw

s-abcdefghijklmnpstvw

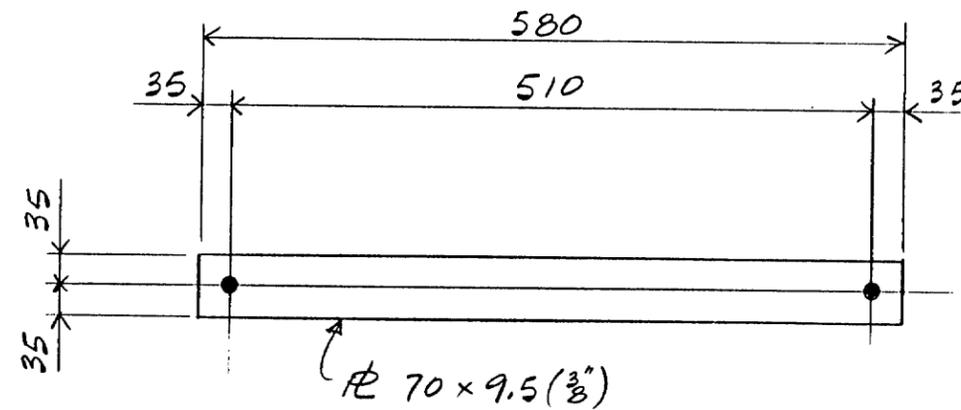
SHOP DEPARTMENT INS/F/S/O/M/T/P/SH/DP/AS/PA/ER No PRINTS



L 100 x 75 x 10

3 REQ'D. ~ BRACKET ~ MK. D11R (RIGHT)

3 REQ'D. ~ BRACKET ~ MK. D11L (LEFT)



6 REQ'D. ~ BRACE ~ MK. F11

NOTE:

- FOR FINAL ASSEMBLY SEE DWG. E2A

ERECTION FILLS NO PAINT

3R1300851

LINE	SHIP	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
	No. REQD.									SPLICING	ALLOWED	
10	4B		G11	∅ 175 x 6	A36	175			PLAIN MAT'L.			
9												
8												
7												
6	6			∅ 70 x 9.5 (3/8")	44W	580						
5				6 REQ'D. ~ MK. F11								
4												
3	6			L 100 x 75 x 10	44W	200						
2				3 REQ'D. ~ MK. D11L								
1				3 REQ'D. ~ MK. D11R								



MATERIAL	G40.21 (44W) 4/n	SEE MEMO	DETAILS OF <u>GUIDE BRACKET</u>
SURF. PREP. & PAINT			<u>BRACKET, BRACE & SHIMS</u>
OPEN HOLES	13/16" (21# mm)		FOR <u>4.2M TELESCOPE DOME</u>
			<u>LA PALMA</u>
DRAWN	DATE	CHECKED	DATE
G.V.A.	JUNE/83		
DRAWING No.			REV.
1420-11C			
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.			

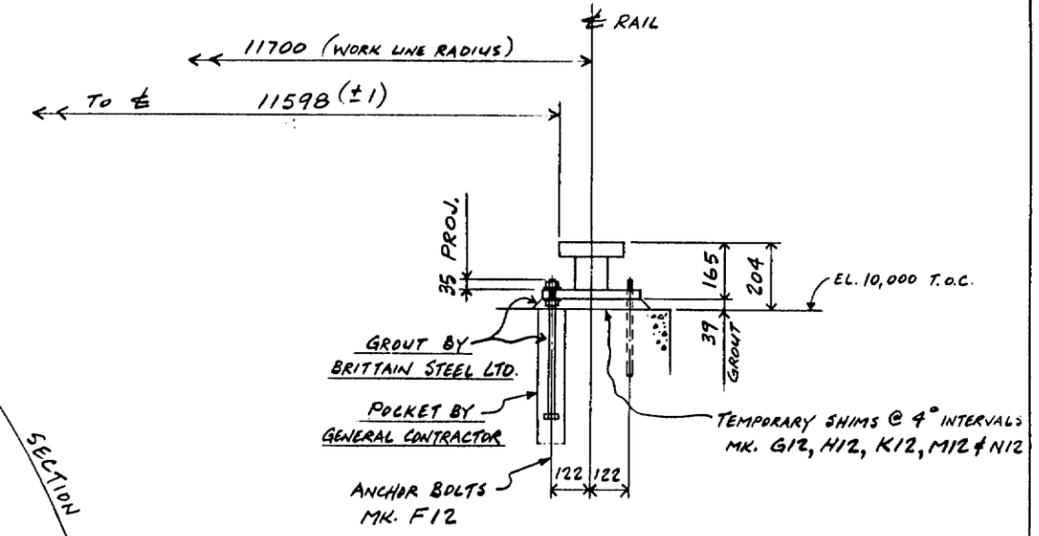
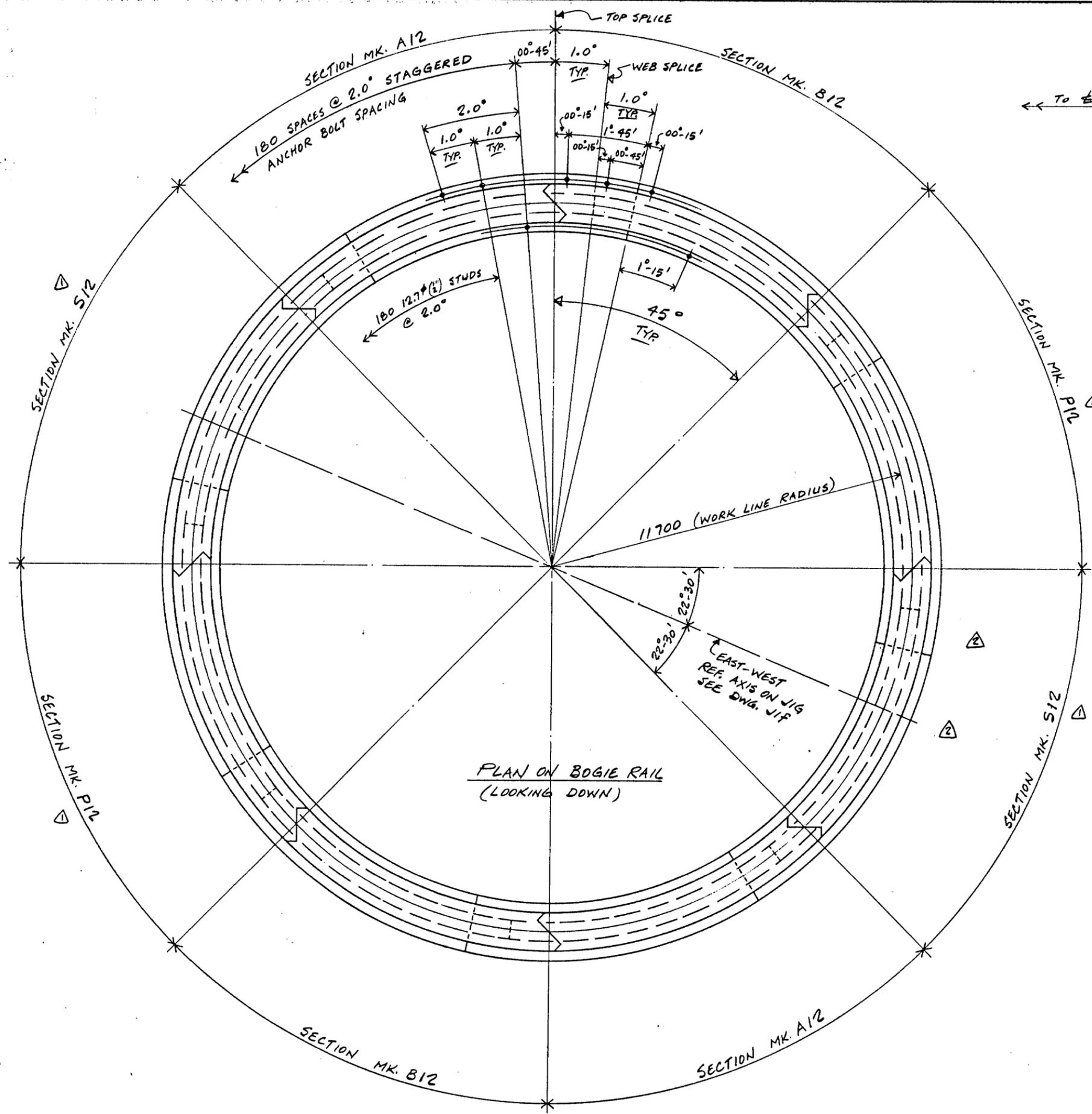
p - a b c d f g h k m n p s t v w y

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

SHOP DEPARTMENT

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS



SECTION THROUGH RAIL

NOTES:-

- 1. FOR DETAILS OF SECTIONS A12, B12, P12 & S12 SEE DWG. 126, 12C, 12P & 12S.
- 2. RAIL TO BE SHOP ASSEMBLED ON JIG SEE DWG. J1F
- 3. SPLICES TO BE MATCH MARKED FOR FIELD ASSEMBLY.
- 4. FOR SHOP AND FIELD PROCEDURE SEE DWG. 12h
- 5. FOR A. BOLTS & SHIMS SEE DWG. 12g

3R/300852



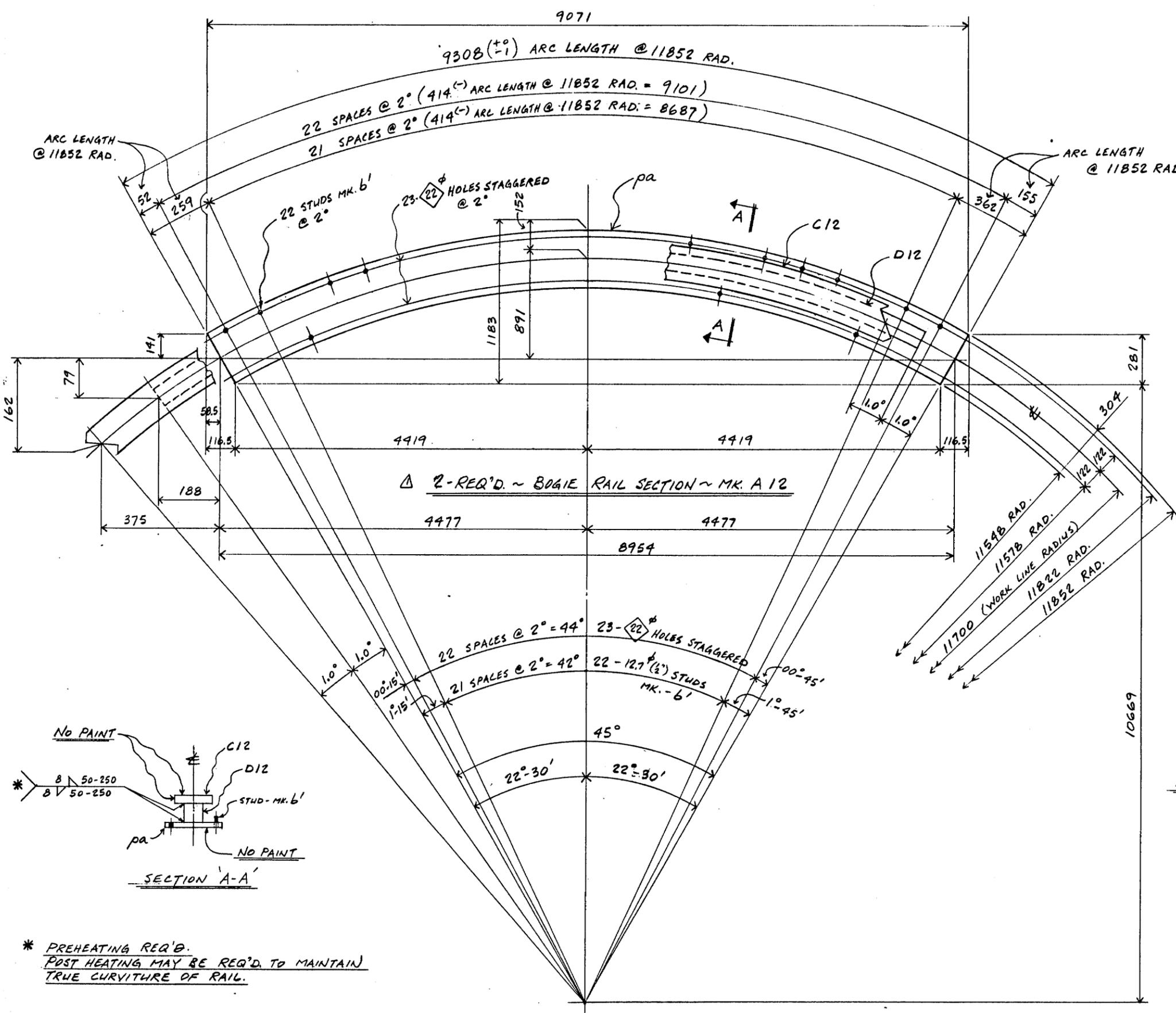
MATERIAL	SEE MEMO	DETAILS	BOGIE RAIL ASSEMBLY
SURF. PREP. & PAINT	SEE MEMO	FOR	9.2" TELESCOPE DOME LA PALMA
OPEN HOLES		DRAWING No.	1420-12a
DRAWN	G.V.A.	DATE	JUNE/03
CHECKED		DATE	
BRITAIN STEEL LTD. 401 BALLET AVENUE, NEW WESTMINSTER, B.C.			

NO.	BY	DATE	REVISION
1	G.V.A.	JUN 10	FIELD WELD DELETED
2	G.V.A.	DEC 03	MARKS & NOTE 1

p-abcdefghijklmnpstvw y

m-abcdefghijklmnpstvw y

s-abcdefghijklmnpstvw y



MATERIAL BILL										CONTRACT 1420	
BRITAIN STEEL LTD.											
NO	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	UNIT	WEIGHT		
1											
2											
3											
4											
5	pa	2	PL	1183 x 25.9 (1")	9071	CUT TO CONTOUR 61031			3.28		
6											
7	C12	2				ORDERED ON DWG 12d					
8	D12	2				ORDERED ON DWG 12f					
9											
10	6"	44	HEXAGON STUD	12.7° = 25 (1")		CFW (FULL THREAD)					
11											
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NOTES:-

1. FOR NESTING OF BTM. FLG. & 'pa' SEE DWG. 12k.
2. FOR DETAILS OF TOP FLG. & MK. C12 SEE DWG. 12d
3. FOR DETAILS OF WEB, BAR MK. D12 SEE DWG. 12f
4. FOR ASSEMBLY OF BOGIE RAIL SEE DWG. 12a
5. FOR FIELD AND SHOP PROCEDURE SEE DWG. 12h

3R/300853

* PREHEATING REQ'D.
POST HEATING MAY BE REQ'D. TO MAINTAIN TRUE CURVITURE OF RAIL.

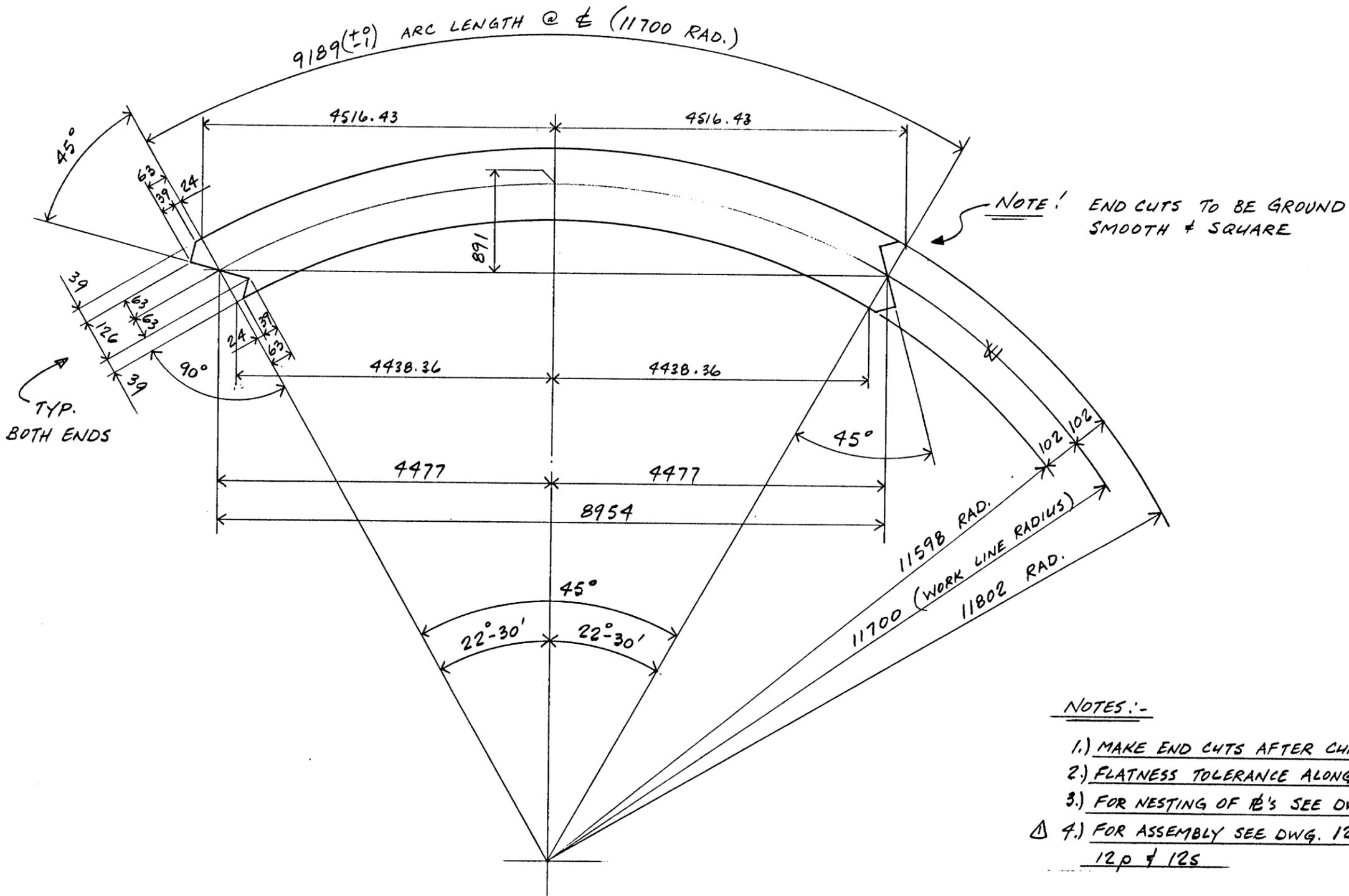
	MATERIAL	AS NOTED	DETAILS	BOGIE RAIL SECTION
	SURF. PREP. & PAINT	SEE MEMO	NOTED SECT. 'A-A'	FOR 4.2 M TELESCOPE DOME LA PALMA
	OPEN HOLES	22° (2")		
DRAWN	DATE	CHECKED	DATE	DRAWING No.
G. V. A.	JUNE/83			1420-126
BRITAIN STEEL LTD. 401 BALTR AVE. NEW WESTMINSTER, B.C.				
SHOP DEPARTMENT				

p-abcdefghijklmnpstvw

m-abcdefghijklmnpstvw

s-abcdefghijklmnpstvw

NO PRINTS



- NOTES:-
- 1.) MAKE END CUTS AFTER CURVE CUTS ARE COLD.
 - 2.) FLATNESS TOLERANCE ALONG LENGTH = 0.5
 - 3.) FOR NESTING OF R'S SEE DWG. 12M.
 - 4.) FOR ASSEMBLY SEE DWG. 12a, 12b, 12c, 12d & 12s

B REQ'D. ~ BOGIE RAIL TOP FLG. SECTION ~ MK. C 12

3R/300855

LINE	SHIP	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
	No. REQD.									SPLICING		
7												
6												
5												
4		B		R 38.1 (1 1/2")	T1			3 27	CUT TO CONTOUR NEST - SEE NOTE 3			
3												
2				B REQ'D. ~ MK. C 12								
1												



MATERIAL T1
SURF. PREP. & PAINT
OPEN HOLES
PAINT ON FINAL ASSEMBLY
DRAWN G.V.A. DATE JUNE/83
CHECKED DATE
DATE

GA	DEC 19	NOTE 4
No.	BY	DATE
REVISION		
DETAILS OF BOGIE RAIL TOP FLG.		
FOR 9.2M TELESCOPE DOME LA PALMA		
DRAWING No.	1420-12d	REV.

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

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

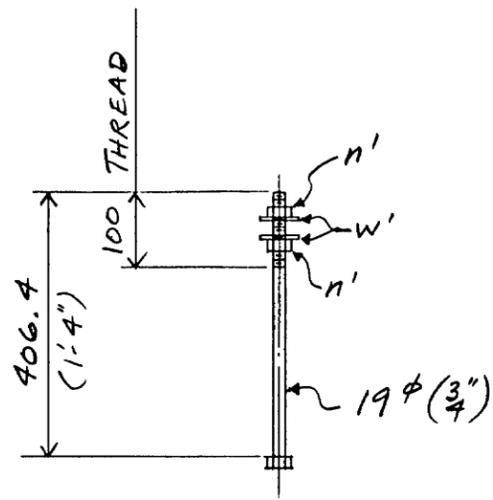
m - a b c d f g h k m n p s t v w y

SHOP DEPARTMENT

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS

BOGIE RAIL SHIMS (2-PACKS @ 4°)



180-REQ'D. ~	⊔ 50 x 25.4 (1") x 50 ~	G12
180-REQ'D. ~	{ x 9.53 (3/8") x	~ H12
180-REQ'D. ~	{ x 6.35 (1/4") x	~ K12
180-REQ'D. ~	{ x 3.18 (1/8") x	~ M12
180-REQ'D. ~	⊔ x 1.59 (1/16") x	~ N12

180-REQ'D. ~ A. BOLT ~ MK. F12

NOTE:

- FOR LOCATION SEE DWG. 12a

LINE	SHIP	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
	No. REQ'D.									SPLICING _____ ALLOWED		
11	180		N12	⊔ 50 x 1.59 (1/16")	A36	50						
10	180		M12	{ x 3.18 (1/8")					PLAIN MAT'L.			
9	180		K12	{ x 6.35 (1/4")								
8	180		H12	{ x 9.53 (3/8")								
7	180		G12	⊔ x 25.4 (1")								
4	360		W1	19φ (3/4") FLAT WASHER								
3	360		N1	19φ (3/4") HEX NUT A307								
2	180		F12	19φ (3/4") M. BOLT		406.4 (1'-4")			T.I.E.			

3R/300857

	MATERIAL	A36	DETAILS OF ANCHOR BOLTS AND BOGIE RAIL SHIMS	
	SURF. PREP. & PAINT	NONE	FOR 9.2M TELESCOPE DOME LA PALMA	
OPEN HOLES			DRAWING No.	1420-129
DRAWN	DATE	CHECKED	DATE	REV.
G.V.A.	Aug./83			
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.				
SHOP DEPARTMENT				No. PRINTS

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

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

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

FIELD PROCEDURE (BOGIE RAIL DWG. 12a)

- 1.) POSITION SHIMS AT 4° INTERVALS (BETWEEN POCKETS) AND LEVEL TO APPROXIMATELY -2^{mm} OF FINAL ELEVATION.
- 2.) FASTEN ANCHOR BOLTS TO RAIL (2 NUTS AND 2 WASHERS) 35 PROJECTION ABOVE BED PLATE.
- 3.) POSITION RAIL ON SHIMS WITH ANCHOR BOLTS IN POCKETS. JOINTS TO BE TIGHT NO GAP.
CHECK INSIDE RADIUS OF RAIL TOLERANCE ±1^{mm}
- 4.) GROUT ANCHOR BOLTS IN POCKETS.
- 5.) LEVEL RAIL USING LEVELLING NUTS ON ANCHOR BOLTS. RAIL TO BE FLAT TO WITHIN 1^{mm}.
- 6.) CHECK INSIDE RADIUS AND FIELD WELD SPLICES (NO GAP)
- 7.) REMOVE SHIMS AND GROUT UNDER RAIL.

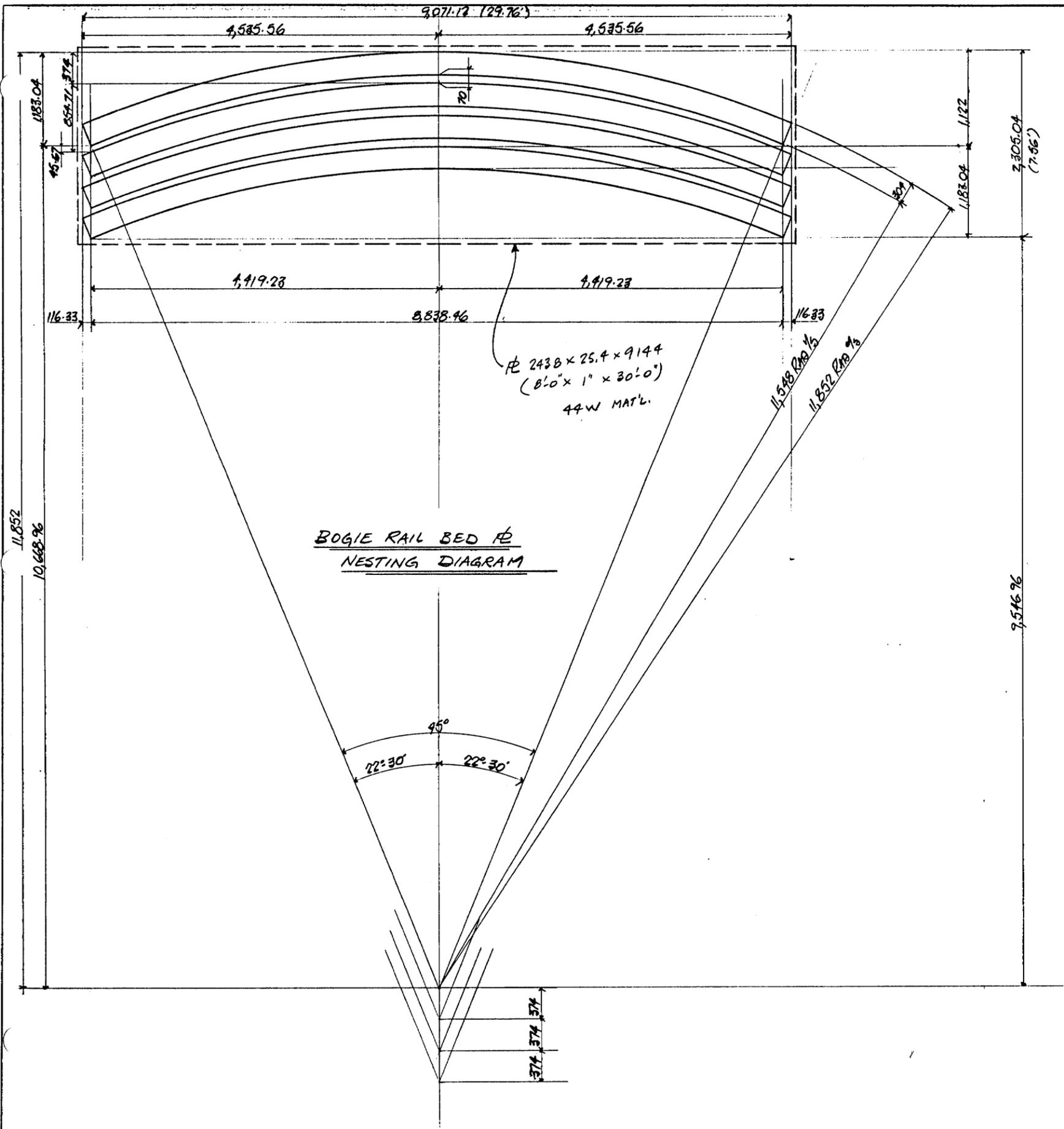
SHOP PROCEDURE (BOGIE RAIL DWG 12a)

- 1.) POSITION RAIL SECTIONS ON JIG AS SHOWN ON DWG J1f.
- 2.) LEVEL TOP OF RAIL TO A TOLERANCE OF 1^{mm}.
- 3.) CHECK INSIDE RADIUS OF RAIL TO A TOLERANCE OF ±1^{mm}
ALL JOINTS TO BUTT TIGHT NO GAP.
- 4.) WELD RAIL AS PER SECT. 'A-A' ON DWG. 12b, 12c, 12p & 12s.
NOTE! - DO NOT WELD SPLICES.
- 5.) MATCH MARK SPLICES.
- 6.) NOTE! - INSIDE SURFACE OF TOP FLG. MUST BE SMOOTH
BRITAIN STEEL ENG. DEPT. (JOE ORD OR BOB KOBARYNKA)
TO CHECK AND DETERMINE IF GRINDING IS REQ'D. BEFORE RAIL IS REMOVED FROM JIG.

— THE SHOP PROCEDURE ABOVE COMPLETES THE 1ST SET.
 — FOR THE 2ND SET REMOVE THE THREE MIDDLE SECTIONS AND REVERSE THE TWO END SECTIONS AS NOTED ON DWG. J1f. REPEAT THE ABOVE STEPS 1 TO 6 TO FABRICATE THREE MORE SECTIONS.

3R/300858

	No.	1	2	3	4	5	6	7	8	9	10	1 GA DEC.19 No. BY DATE REVISION NOTE 4	CONTRACT 1420	DWG. No. 12h	REV. 	
	DIV.															



BOGIE RAIL BED R
NESTING DIAGRAM

NOTE:

FOR ACTUAL WORKING DIMENSIONS SEE DWG. 126
12c, 12p & 12s.

3R/300859



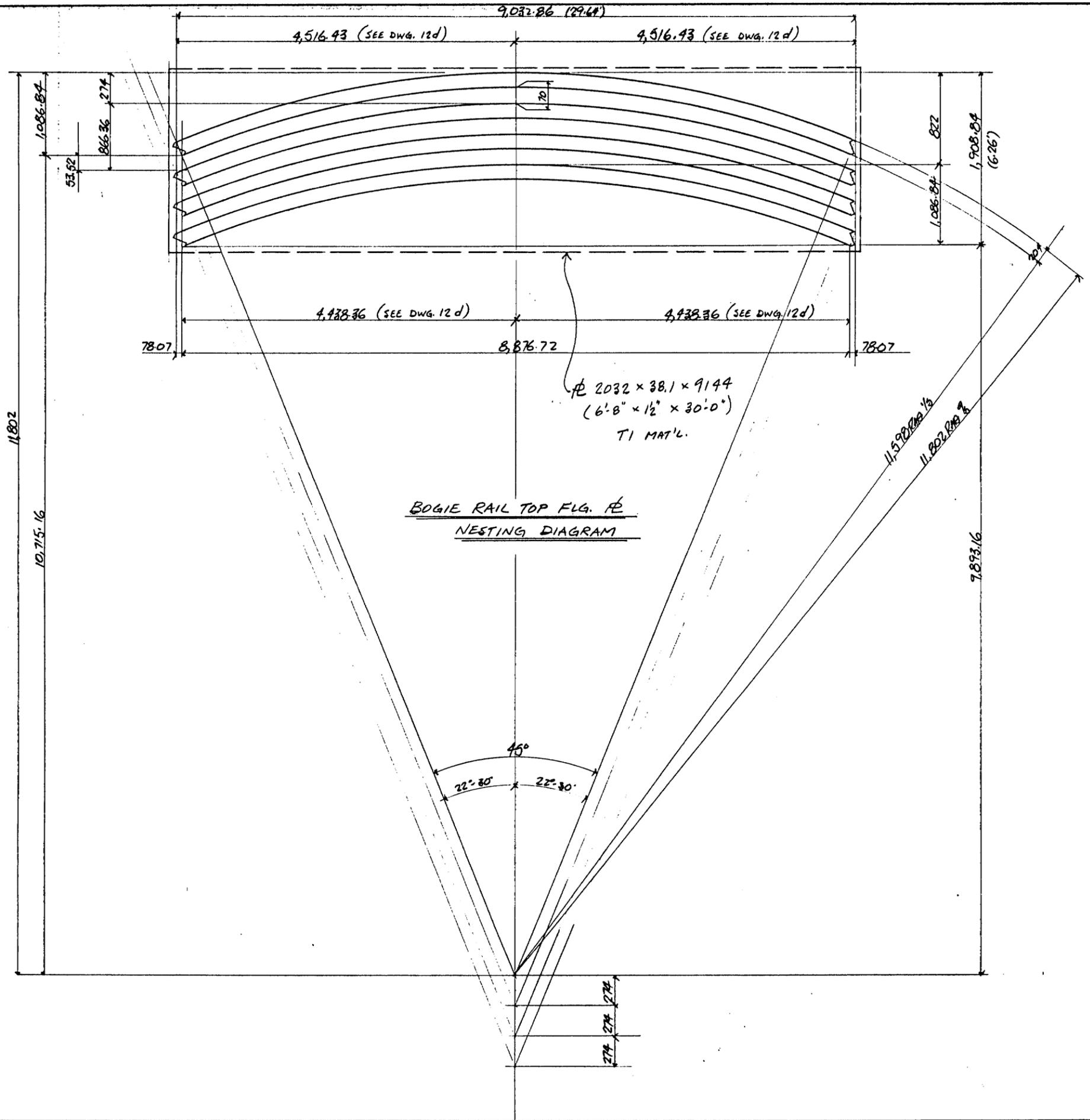
DRAWN		DATE		CHECKED		DATE		DRAWING No.		REV	
BR								1420-12k		1	
BRITAIN STEEL LTD. 401 BALTER AVENUE, NEW WESTMINSTER, B.C.											

p-abcdefghijklmnpstvw y

m-abcdefghijklmnpstvw y

s-abcdefghijklmnpstvw y

SHOP DEPARTMENT / ANG / F / S / O / M / T / P / SH / DP / AS / PA / ER / NO PRINTS



BOGIE RAIL TOP FLG. ϕ
NESTING DIAGRAM

ϕ 2032 x 38.1 x 9144
(6'-8" x 1 1/2" x 30'-0")
T1 MAT'L.

NOTE:

- FOR ACTUAL WORKING DIMENSIONS SEE DWG. 12d

3R/300860

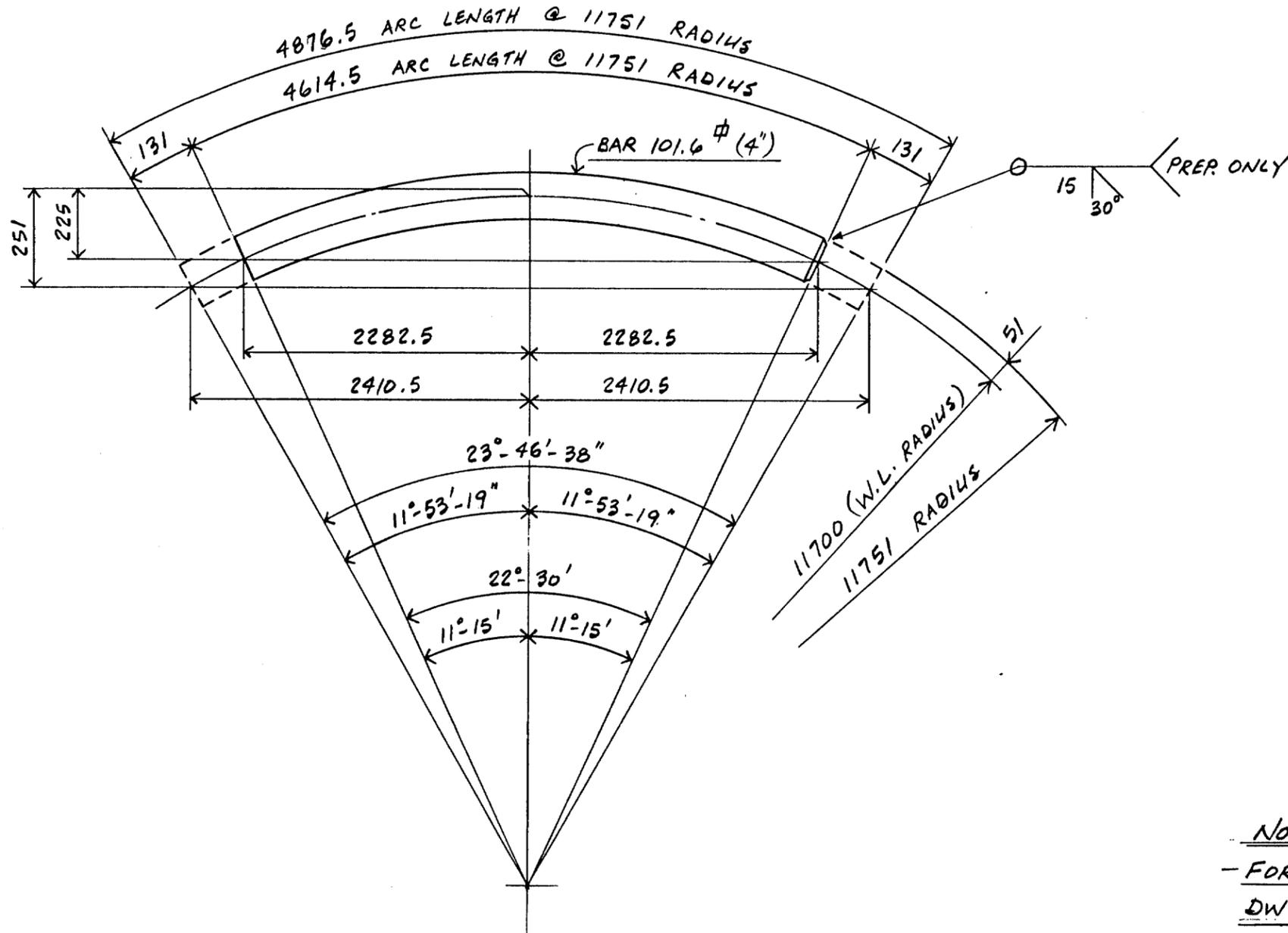
	MATERIAL		No. BY DATE REVISION	
	SURF. PREP. & PAINT		DETAILS BOGIE RAIL TOP FLG. NESTING DIAGRAM	
	OPEN HOLES		FOR 40' TELESCOPE JONG LA PALMA	
	DRAWN	DATE	CHECKED	DATE
BRITAIN STEEL LTD. 401 BALTER AVENUE, NEW WESTMINSTER, B.C.				
SHOP DEPARTMENT			INS. F. S. O. M. T. P. SH. DP. AS. PA. ER.	

p-abcdefghijklmnpstvw y

m-abcdefghijklmnpstvw y

s-abcdefghijklmnpstvw y

No. PRINTS



NOTE
 - FOR SHOP ASSEMBLY SEE
DWG. 12f

ROLLING DIAGRAM TO SUIT MATERIAL
STOCK LENGTH (16'-0") - 16 REQ'D.

3R/300861

LINE	SHIP	FAB	MARK	DESCRIPTION	MAT'L	FT.	INS.	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
	No. REQD.					LENGTH					SPLICING	ALLOWED	
7													
6													
5													
4													
3													
2													
1													



MATERIAL **C.R.S.**
 SURF. PREP. & PAINT
 OPEN HOLES
 PAINT ON FINAL ASSEMBLY
 DRAWN G.V.A. DATE SEPT/82
 CHECKED DATE

No. BY DATE REVISION
 DETAILS OF BOGIE RAIL WEB BAR
 ROLLING DIAGRAM
 FOR 4.2^m TELESCOPE DOME
 LA PALMA
 DRAWING No. 1420-12H

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

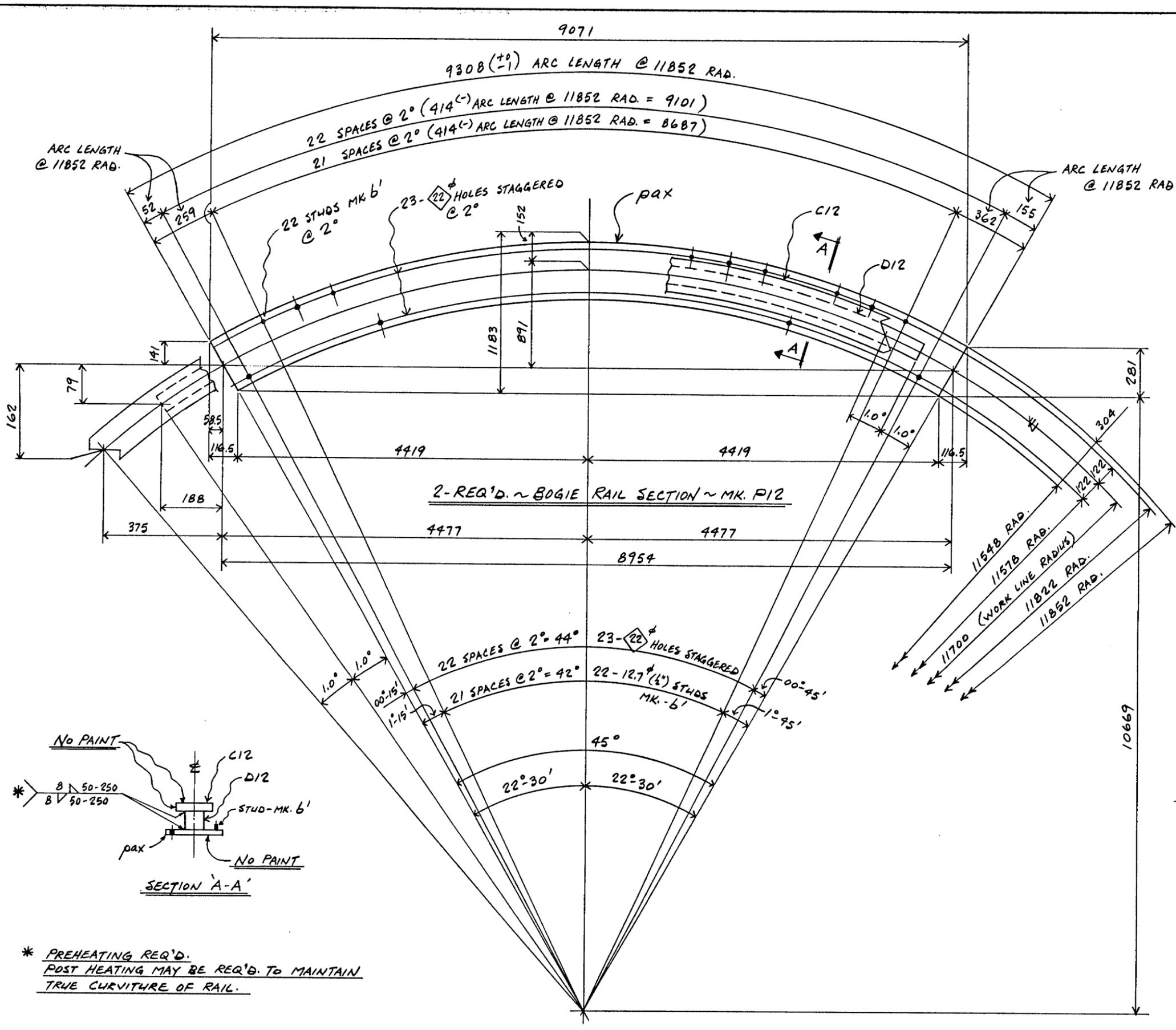
p - a b c d f g h k m n p s t v w y

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

SHOP DEPARTMENT

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS



MATERIAL BILL						BRITAIN STEEL LTD.		CONTRACT 1420	
MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	W	W	WEIGHT
1									
2									
3									
4									
5	PAX	2	1/2	1182 x 25.9 (1)	9071	CUT TO LENGTH G40.21			3.28
6						NEST SEE NOTE 1			
7	C12	2				ORDERED ON DWG.	12d		
8	D12	2				ORDERED ON DWG.	12f		
9									
10	b'	44				NELSON STUD 12.7 x 25	CFL (FULL		
11						(3)	(1)		
12							THREAD		
13									
14									
15									
16									
17									
18									
19									
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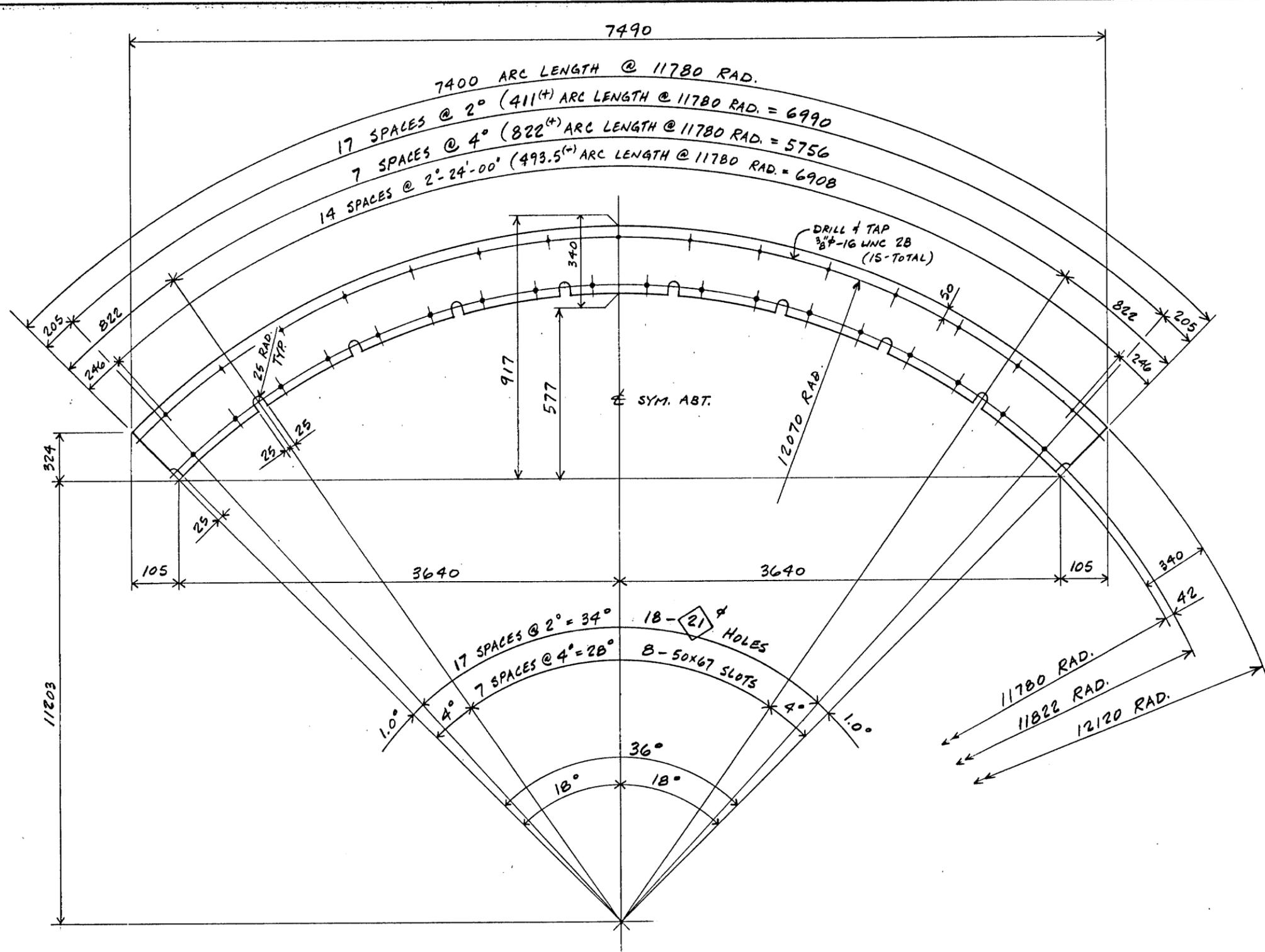
- GENERAL NOTES:**
- 1) FOR NESTING OF BTM. FLG. RE 'PAX' SEE DWG. 12k.
 - 2) FOR DETAILS OF TOP FLG. RE MK. C12 SEE DWG. 12d.
 - 3) FOR DETAILS OF WEB BAR MK. D12 SEE DWG 12f.
 - 4) FOR ASSEMBLY OF BOGIE RAIL SEE DWG. 12a
 - 5) FOR FIELD AND SHOP PROCEDURE SEE DWG. 12h

3R/300862

* PREHEATING REQ'D.
POST HEATING MAY BE REQ'D. TO MAINTAIN
TRUE CURVATURE OF RAIL.

	MATERIAL	AS NOTED	NO.	BY	DATE	REVISION
	SURF. PREP. & PAINT	SEE MEMO NOTED SECT. A-A	DETAILS BOGIE RAIL SECTION			
	OPEN HOLES	22 (1/2)	FOR 7.2M TELESCOPE DOME LA PALMA			
	DRAWN	DATE	CHECKED	DATE	DRAWING No.	
G.V.A.	DEC/87			1420-12P		
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, S.C.						
SHOP DEPARTMENT						

R-abcdefhkmnpstvwv m-abcdefhkmnpstvwv s-abcdefhkmnpstvwv



10 REQ'D. ~ SEAL P'S. ~ MK. A13

MATERIAL BILL
BRITAIN STEEL LTD.

CONTRACT 1420

LINE NO.	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	W/TH	WEIGHT
1									
2									
3									
4		10	PB	217 x 476 (3)	7490	CUT TO CONTOUR	A36	3	12
5						NEST SEE NOTE 2		3	15
6									
7									
8									
9									
10									
11									
12									
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NOTE

- 1.) FOR FINAL ASSEMBLY SEE DWG. E2a & E1c
- 2.) FOR NESTING OF SEAL P'S. SEE DWG. 13c
- 3.) FOR BRUSH SEE SEE DWG. 13b

3R/300864



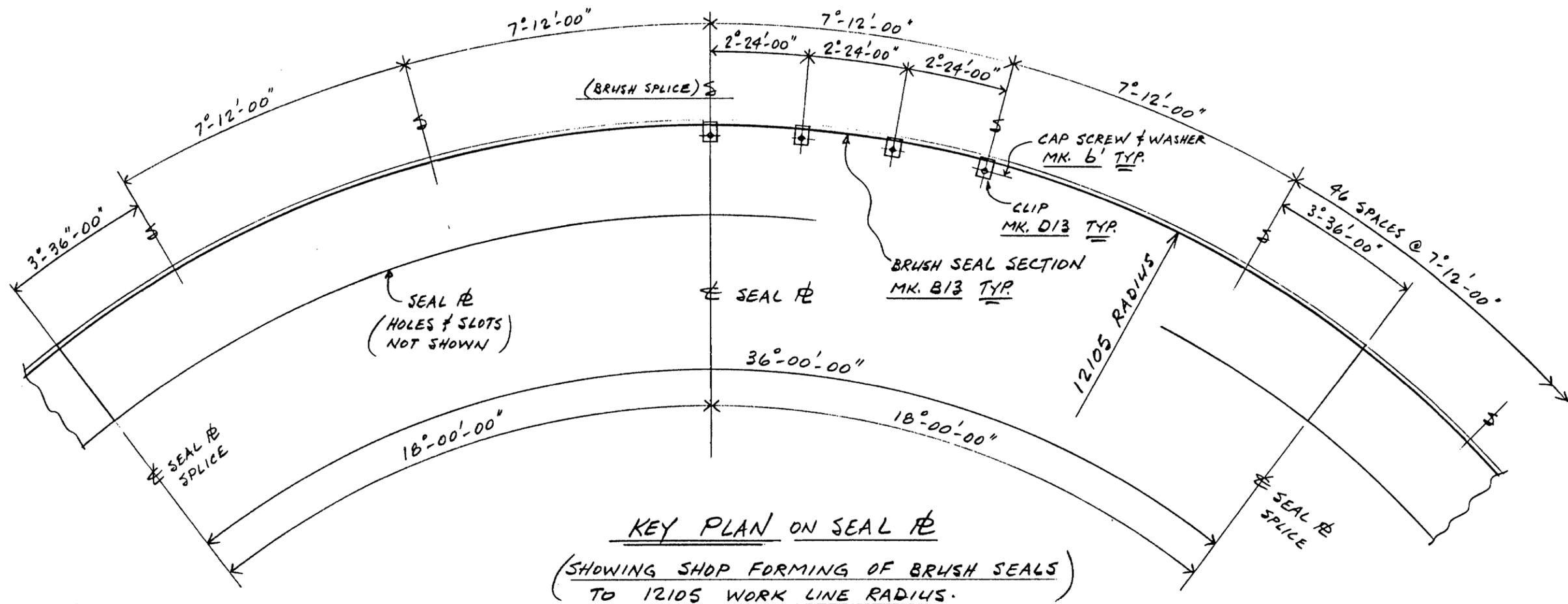
MATERIAL	A36	DETAILS	SEAL P'S.
SURF. PREP. & PAINT	SEE MEMO	FOR	9.2 M TELESCOPE DOME LA PALMA
OPEN HOLES	18-21 (21P)	DRAWING No.	1420-13a
DRAWN	G.V.A.	DATE	JUN 8/49
CHECKED		DATE	

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

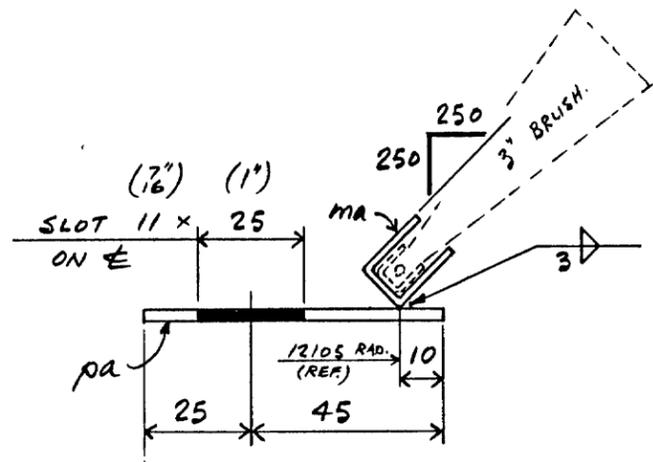
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m-abcdefghijklmnpstvw

s-abcdefghijklmnpstvw



KEY PLAN ON SEAL R
 (SHOWING SHOP FORMING OF BRUSH SEALS TO 12105 WORK LINE RADIUS.)



150 REQ'D. ~ CLIP ~ MK. D13

ONE REQ'D. ~ BRUSH SEAL SECTION ~ MK. C13 (SHOP FORM TO RADIUS CURVE)
 EXTRA BRUSH SUPPLIED FOR FIELD TRIM IF REQ'D.

GENERAL NOTES:

- 1.) FOR SEAL R'S. SEE DWG. 13a
- 2.) FOR FIELD ASSEMBLY SEE DWG. E1C

3R/300865

LINE	SHIP No. REQ'D.	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	P.B.	LINE	REMARKS	CUTTING INSTRUCTIONS	WEIGHT	DIVISIONS
7	150	B1		3/8" HEX HD. CAP SCREW		x 1/2"			SW FLAT WASHER			
6	150	MA		CHANNEL CLIP OSBORNE 1-C-S	CODE # 75103	P.O.#						
5	150	PA		R 50 x 12 GA.	A36	70						
4				150 REQ'D. ~ MK. D13								
3				CODE # 37163								
2	ONE	C13		OSBORNE # SA-16 KP5-30		1828			72" STOCK LENGTH FOR FIELD TRIM IF REQ'D.			
1	50	B13		3" MASTER STRIP BRUSH		1520			P.O.#			

BRITAIN

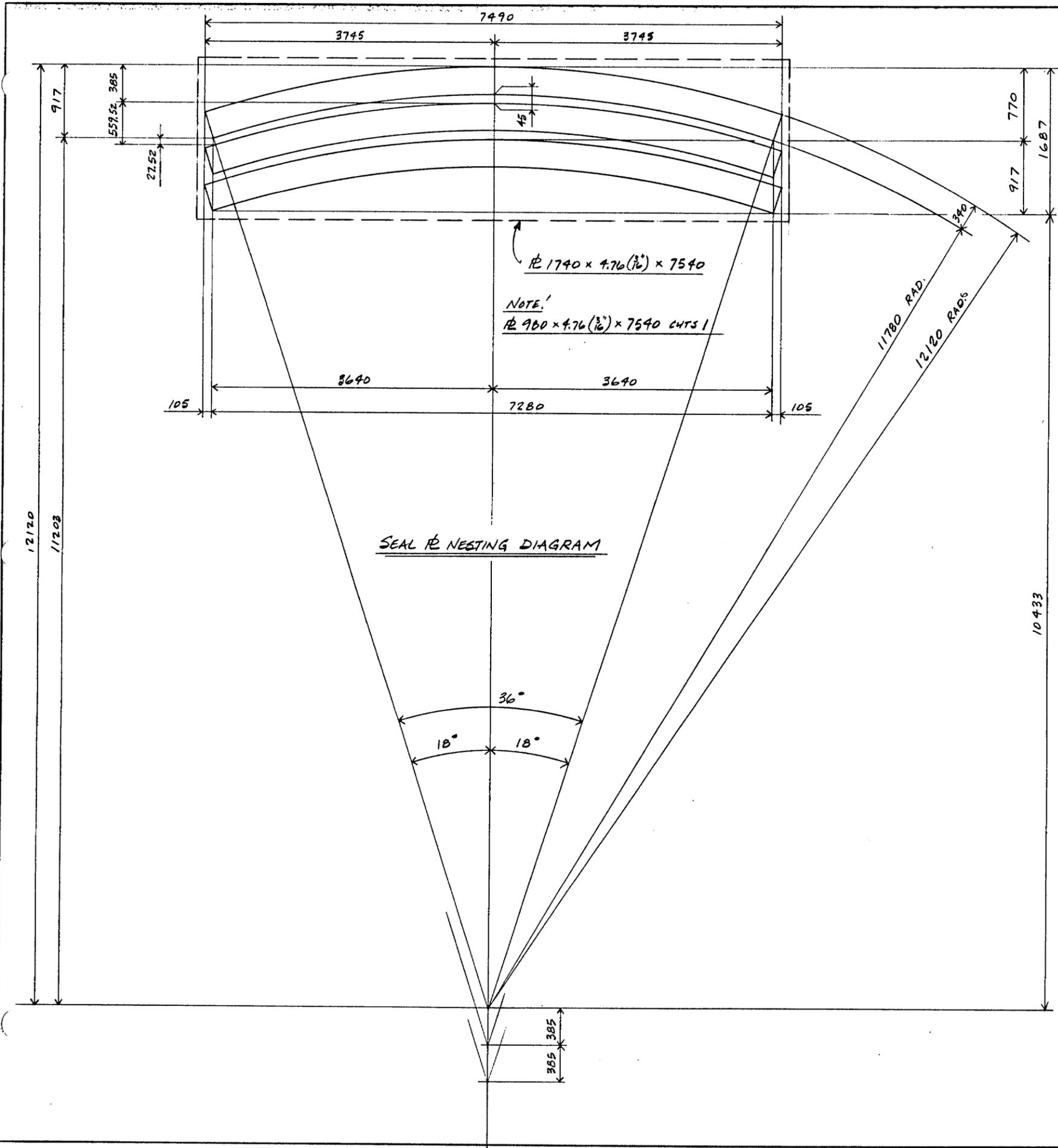
MATERIAL	AS NOTED	DETAILS OF	BRUSH SEAL
SURF. PREP. & PAINT	SEE MEMO	# INSTALLATION CLIPS	
OPEN HOLES	AS NOTED	FOR 4.2M TELESCOPE DOME LA PALMA	
DRAWN	DATE	CHECKED	DATE
G.V.A.	OCT/83		
DRAWING No.		1420-136	

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

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

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

SHOP DEPARTMENT INS / F / S / O / M / T / P / SH / DP / AS / PA / ER No. PRINTS



$R\ 1740 \times 4.76(\frac{3}{16}) \times 7540$
 NOTE:
 $R\ 900 \times 4.76(\frac{3}{16}) \times 7540$ CUTS 1

SEAL R NESTING DIAGRAM

NOTE:
 FOR ACTUAL WORKING DIMENSIONS SEE DWG. 13A

3R/300866

	MATERIAL		DETAILS	
	SURF. PREP. & PAINT		SEAL R NESTING DIAGRAM	
	OPEN HOLES		FOR 4.2" TELESCOPE DOME LA PALMA	
DRAWN	DATE	CHECKED	DATE	DRAWING No.
G.V.A.	AUG/71			1420-13C
BRITAIN STEEL LTD. , 401 SALTER AVENUE, NEW WESTMINSTER, B.C.				
SHOP DEPARTMENT		INS / F / S / O / M / T / P / SH / DP / AS / PA / ER		

p-abcdefghijklmnpstvw

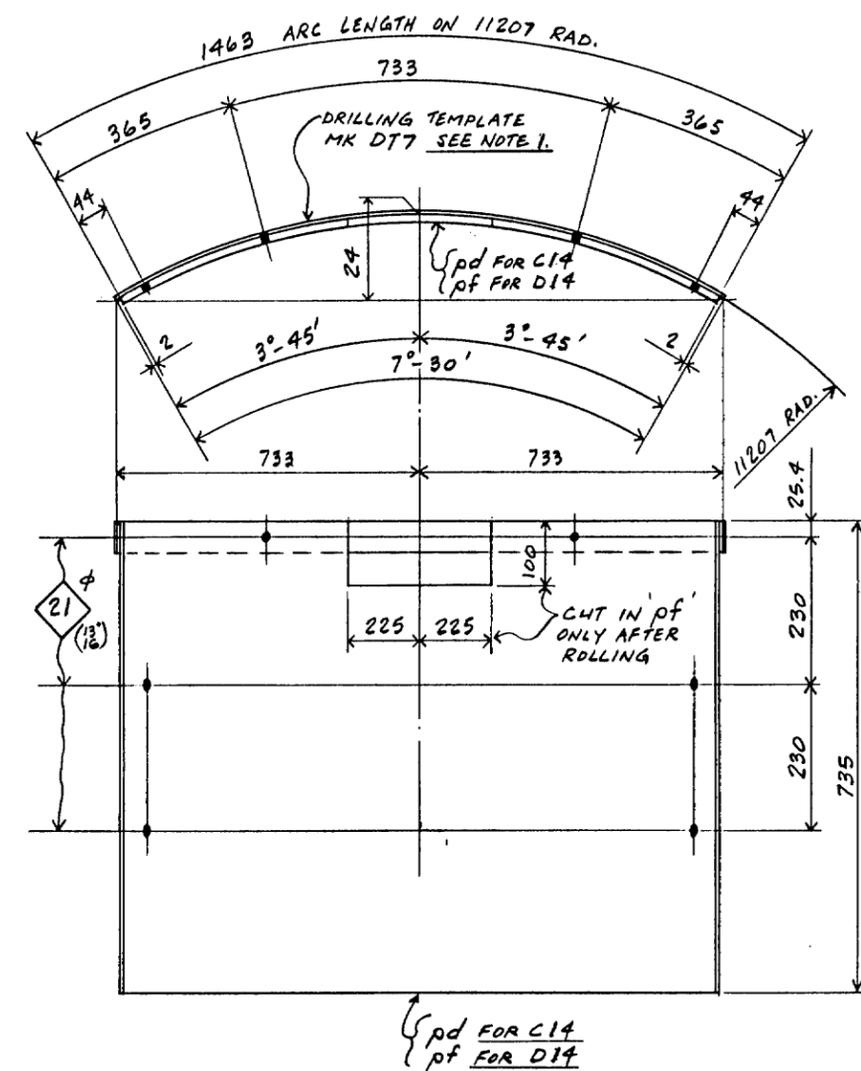
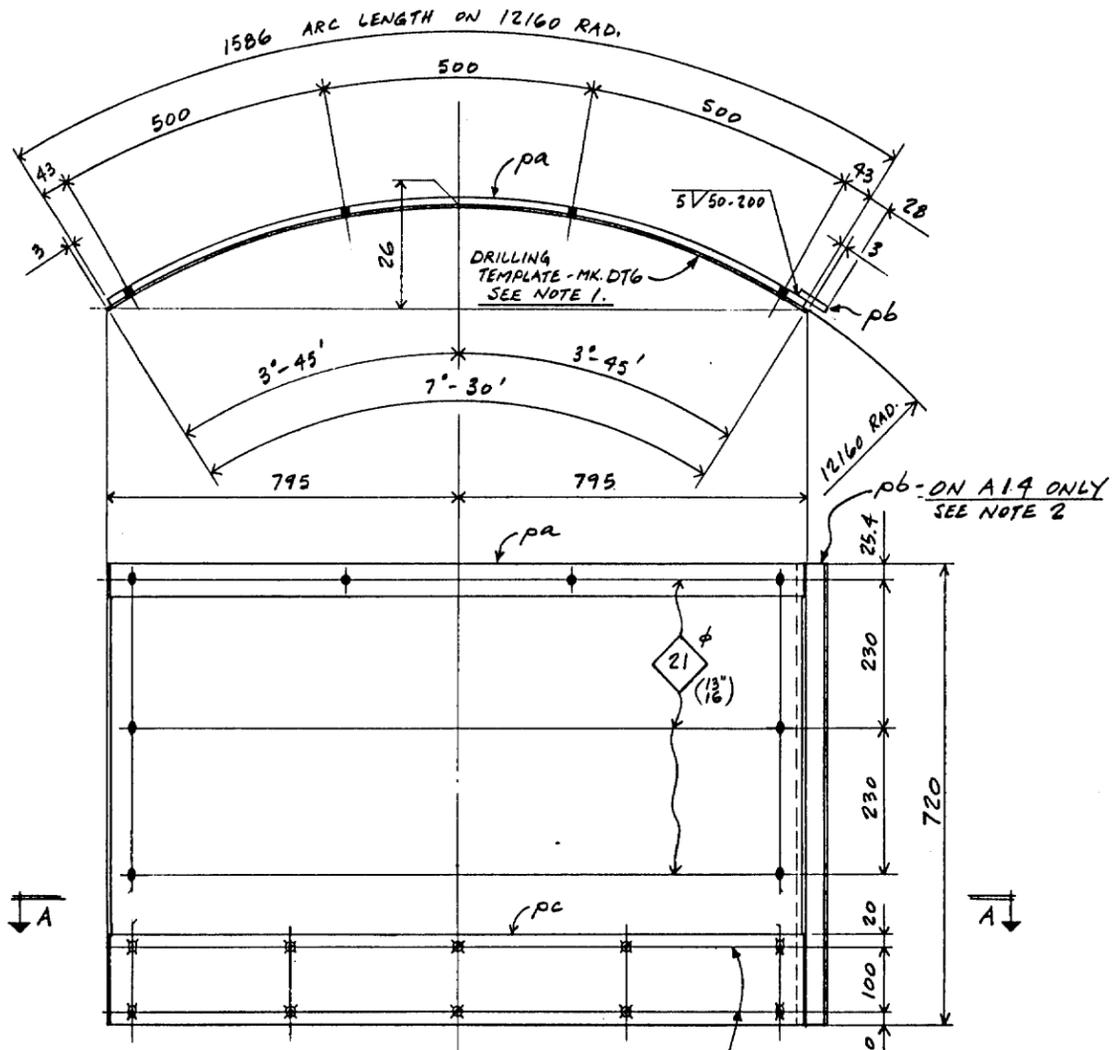
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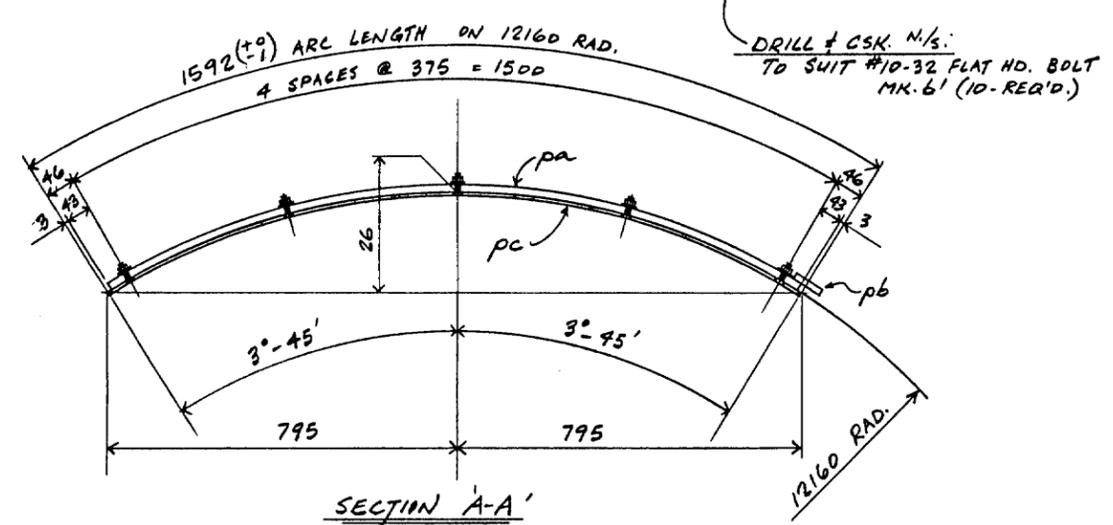
MATERIAL BILL
BRITAIN STEEL LTD.

CONTRACT 1420

NO.	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	W. T.	WEIGHT
1				42-REQ'D ~ MK. A14					
2				3-REQ'D ~ MK. B14					
3									
4	pa	45	R	720 x 6.35	1586	ROLLED	ALUM. 5083-H32		
5				(4")					
6	pb	42	BAR	5/8 x 6.35	720	FOR A14 ONLY	ALUM. 5083-H32		
7				(2" x 4")					
8	pc	45	R	140 x 3.18	1592	NOTE! -> DEADDRIN			
9				(8")					
10									
11	b	450	BOLT	#10-32 FLAT HD. x 3/4"		FW HEX NUT & WASHER S.S.			
12									
13									
14				45-REQ'D ~ MK. C14					
15				3-REQ'D ~ MK. D14					
16									
17	pd	45	R	735 x 6.35	1463	ROLLED FOR C14	ALUM. 5083-H32		
18				(4")					
19	pf	3	R	735 x 6.35	1463	ROLLED FOR D14	ALUM. 5083-H32		
20									
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45 REQ'D. ~ INNER SKIRT ~ MK. C14
3 REQ'D. ~ INNER SKIRT ~ MK. D14



42 REQ'D. ~ OUTER SKIRT ~ MK. A14
3 REQ'D. ~ OUTER SKIRT ~ MK. B14

- NOTES:-
- 1) CLAMP DRILLING TEMPLATE TO SKIRT R AND DRILL HOLES BEFORE ROLLING.
 - 2) ATTACH R & pb AFTER SKIRT R IS ROLLED.
 - 3) FOR FIELD ASSEMBLY SEE DWG. E2a & E1c.
 - 4) AFTER FABRICATION SHOP INSTALL INSULATION ON INNER SKIRTS. FOR DETAILS SEE DWG 19c
 - 5) DRILLING TEMPLATE DT6 & DT7 DETAILED ON DWG. 1w.

3R/300867

BRITAIN	MATERIAL	AS NOTED	DETAILS	SKIRT R15.			
	SURF. PREP. & PAINT	SEE MEMO	FOR	4.2" TELESCOPE DOME LA PALMA			
OPEN HOLES	AS NOTED	DRAWN	DATE	CHECKED	DATE	DRAWING NO.	REV.
		G.V.A.	July/83			1420-14a	
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.							

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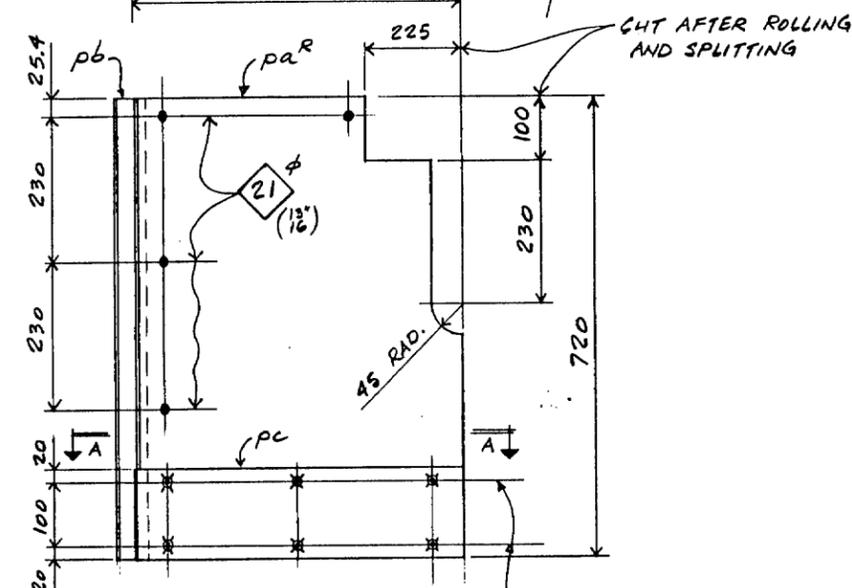
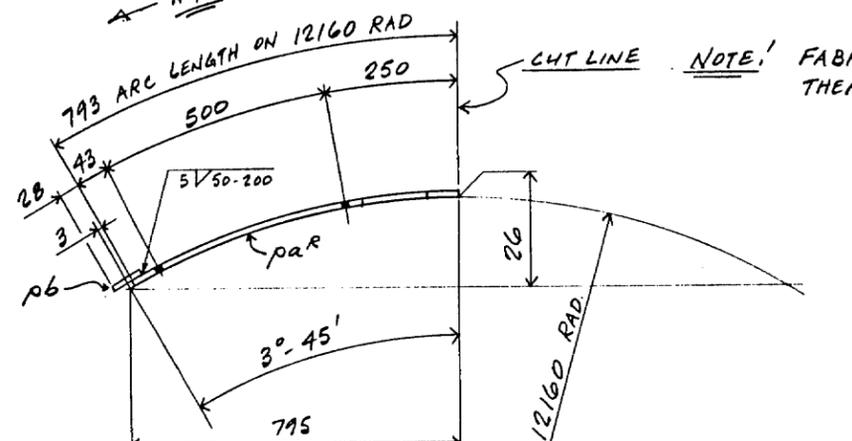
SHOP DEPARTMENT

MATERIAL BILL
BRITAIN STEEL LTD.

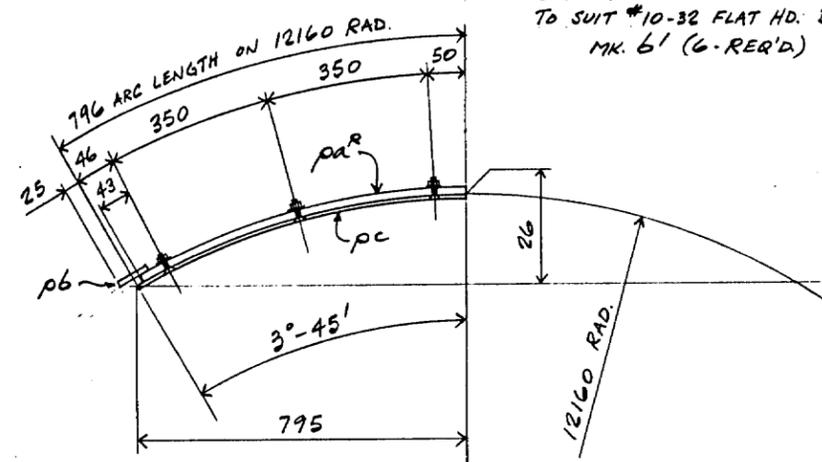
CONTRACT 1420

LINE NO.	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MAT'L TYPE	WEIGHT
1								
2						3 REQ'D. ~ MK. F14R		
3						3 REQ'D. ~ MK. F14L		
4								
5	pa	6	R	720 x 6.35	793	ROLLED	ALUM. 5083-H32	
6				(4')				
7	pb	6	BAR	51 x 6.35	720		ALUM. 5083-H32	
8				(2' x 4')				
9	pc	6	R	140 x 3.18	796	NOTE! -> DELDRIN		
10				(8')				
11								
12	b	36	BOLT	#10-32 FLAT HD. x 3/4"		FLW HEX NUT & WASHER S.S.		
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NOTE! FABRICATE AS ONE PIECE PER NOTE 1 & 2 ON DWG 140 THEN SPLIT INTO E14R & E14L.



DRILL & CSK. N/S. TO SUIT #10-32 FLAT HD. BOLT MK. 6' (6-REQ'D)



SECTION 'A-A'

3-REQ'D. ~ OUTER SKIRT ~ MK. F14R (RIGHT)
3-REQ'D. ~ OUTER SKIRT ~ MK. E14L (LEFT)

NOTES:

- FOR FIELD ASSEMBLY SEE DWG. E2a & E1c
- ALUMINUM MAT'L. SPEC. 5083-H32

3R/300868

	MATERIAL	AS NOTED	DETAILS	SKIRT R/S.			
	SURF. PREP.	SEE MEMO	FOR 4.2" TELESCOPE DOME LA PALMA				
	PAINT	AS NOTED					
	OPEN HOLES	AS NOTED					
DRAWN	G.V.A.	DATE	JULY/03	CHECKED	DATE	DRAWING No.	1420-146
BRITAIN STEEL LTD. 401 BALZER AVENUE, NEW WESTMINSTER, B.C.							
SHOP DEPARTMENT							

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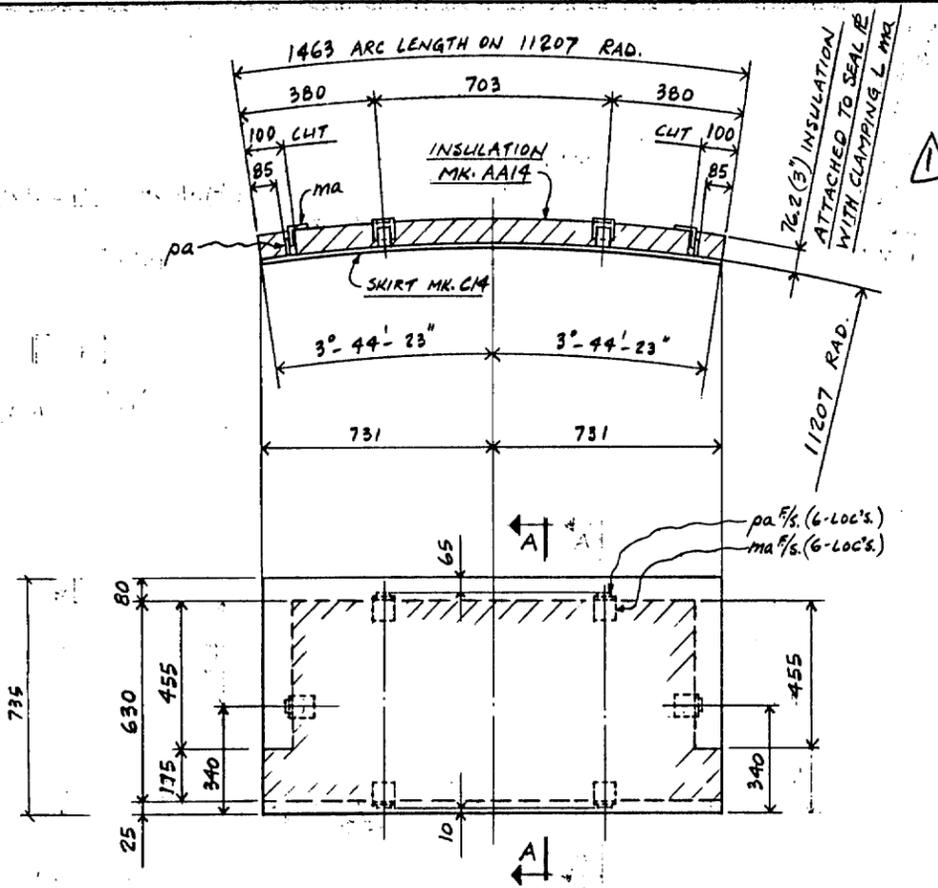
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INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

MATERIAL BILL
BRITAIN STEEL LTD.

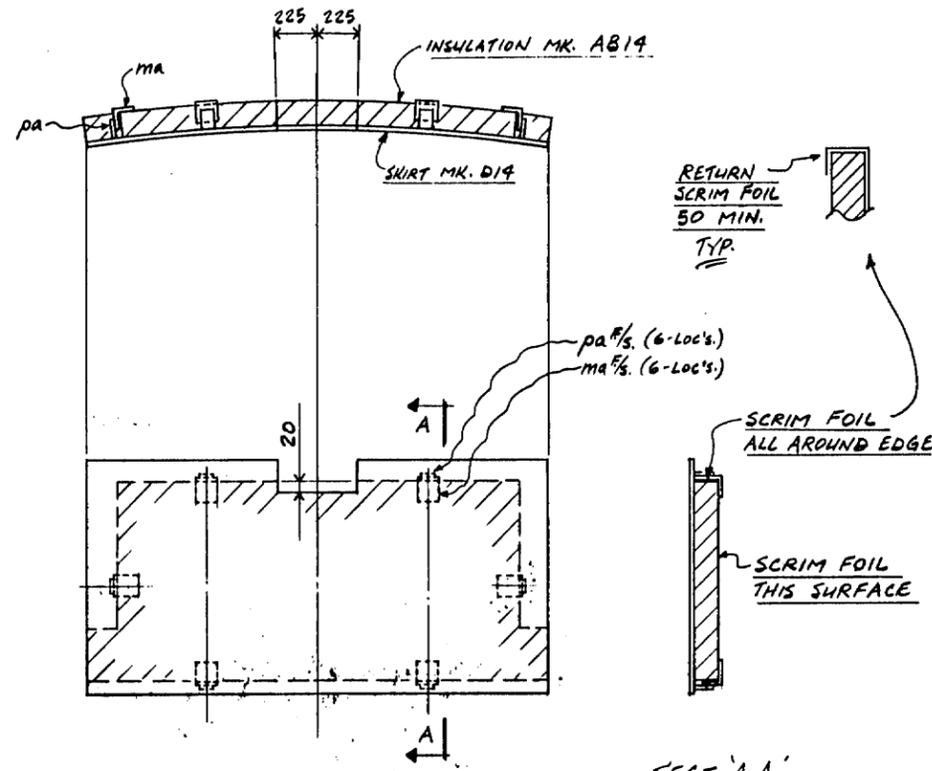
CONTRACT 1420

NO.	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	ROLL NO.	WEIGHT
1									
2									
3	AA14	45	INSUL.	620x76.2 (3")	1463		SEE SPEC'S.		
4	MA	270	L	62.5x62.5x4.76 (1 1/2"x1 1/2")	60	(2 1/2"x2 1/2") ALUM. 6061 T6			
5	PA	270	R	38x4.76 (1 1/2"x 1/2")	60	ALUM. 5083 H-32			
6									
7									
8									
9									
10	AB14	3	INSUL.	620x76.2 (3")	1463		SEE SPEC'S.		
11									
12	MA	18							
13	PA	18							
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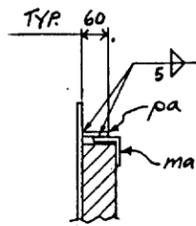
DETAIL 1

SHOWING 76.2 (3") THICK INSULATION MK. AA14 (45-REQ'D.)
SHOP ATTACHED TO INNER SKIRT MK. C14



DETAIL 2 (DIM'S. AS DET'L. 1 EXCEPT AS SHOWN)

SHOWING 76.2 (3") INSULATION MK. AB14 (3-REQ'D.)
SHOP ATTACHED TO INNER SKIRT MK. D14



TYPICAL CONNECTION DETAIL

SHOP NOTE!
WELD pa TO SKIRT R BEFORE ATTACHING INSULATION WITH CLAMPING L ma.

GENERAL NOTES:

- 1) SEE DWG. 14A FOR INNER SKIRTS C14 & D14.
- 2) SEE SPEC'S FOR INSULATION & SCRIM FOIL TYPE.
- 3) INSULATION & SCRIM FOIL INSTALLED BY B.S. LTD.
- FOR CUTTING & NESTING OF INSULATION SEE DWG. N1a
- FOR CUTTING OF SCRIM FOIL SEE DWG. SC1

3R/300869

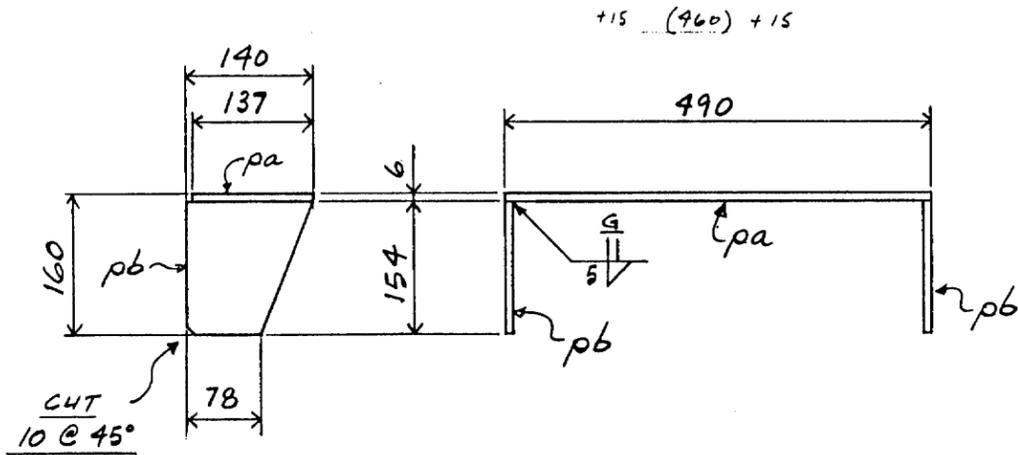
	NO. BY DATE		REVISION	
	DETAILS SHOP ATTACHED INSULATION @ INNER SKIRTS			
	FOR 4.2M TELESCOPE DOME LA PALMA			
	DRAWN	DATE	CHECKED	DATE
G.V.A.	SEPT/83			
DRAWING No. 1420-14C				
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.				

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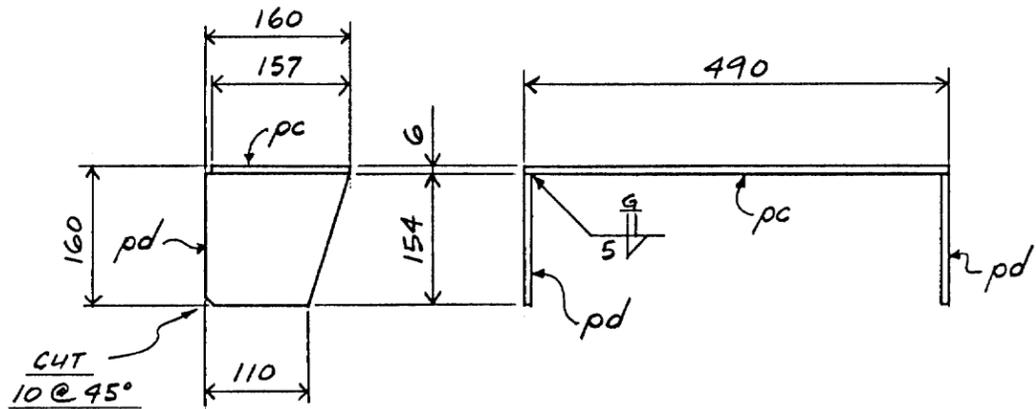
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SHOP DEPARTMENT INS F B O M T P SH DP AS PA FR / NO PRINTS



2-REQ'D. ~ DRIVE CLEARANCE CLOSURE ~ A15
(MAIN SHELL R)



ONE REQ'D. ~ DRIVE CLEARANCE CLOSURE ~ B15
(BACK SHELL R)

NOTE:
- FOR FIELD INSTALLATION SEE DWG. E26

3R/300870

LINE	SHIP No. REQD.	FAB	MARK	DESCRIPTION	MAT'L	LENGTH	R.B.	LINE	REMARKS	CUTTING INSTRUCTIONS SPlicing ALLOWED	WEIGHT	DIVISIONS
7	2	pd	R	154 x 6 (4")	44W	160						
8	1	pc	R	157 x 6 (4")	44W	490						
5	ONE		B15									
4												
3	4	pb	R	140 x 6 (4")	44W	154						
2	2	pa	R	137 x 6 (4")	44W	490						
1	2		A15									



MATERIAL G40.21 (44W) 1/2"n
SURF. PREP. & PAINT SEE MEMO
OPEN HOLES

DRAWN G.V.A. DATE SEPT/83 CHECKED DATE

BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.

No.	BY	DATE	REVISION
DETAILS OF DRIVE CLEARANCE CLOSURE			
FOR 4.2M TELESCOPE DOME LA PALMA			
DRAWING No.			1420-15

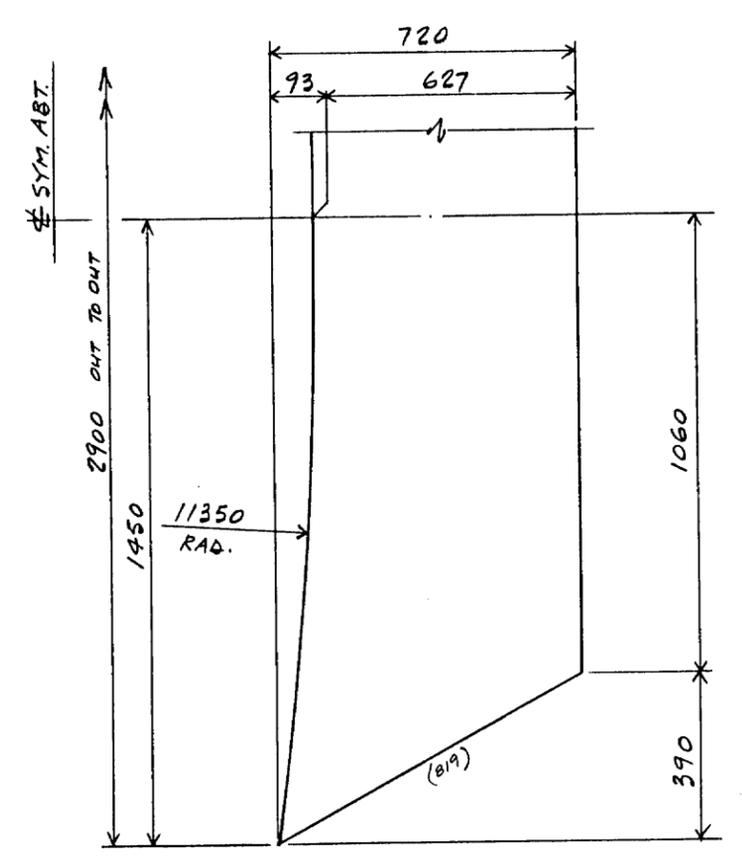
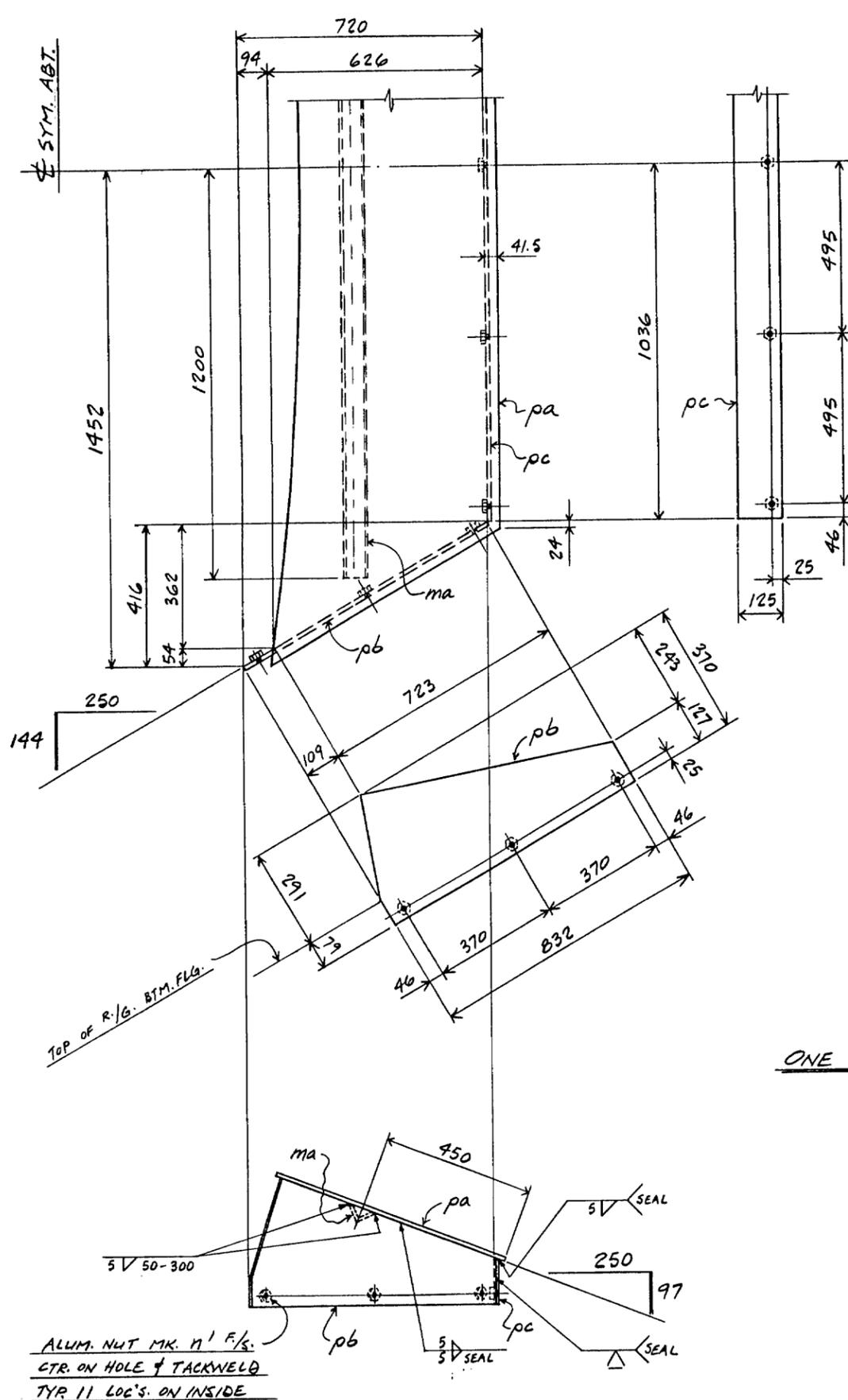
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m - a b c d f g h k m n p s t v w y

SHOP DEPARTMENT

INS / F / S / O / M / T / P / SH / DP / AS / PA / ER

No. PRINTS



— DETAIL OF 'pa' —

ONE REQ'D. ~ DRIVE BOGIE TOP COVER ~ MK. A16
(@ BACK SHELL)

MATERIAL BILL
BRITAIN STEEL LTD.

CONTRACT 1420

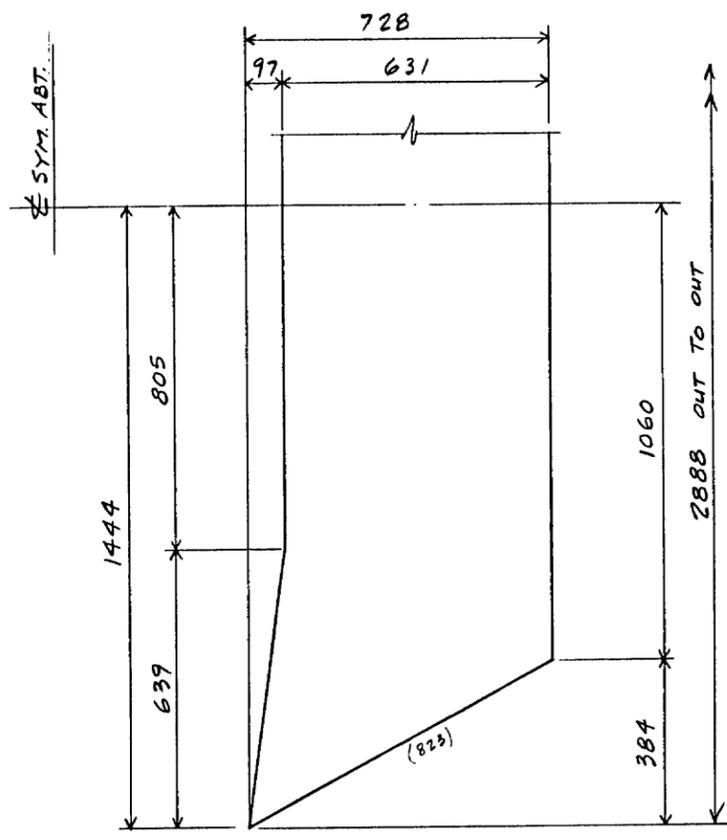
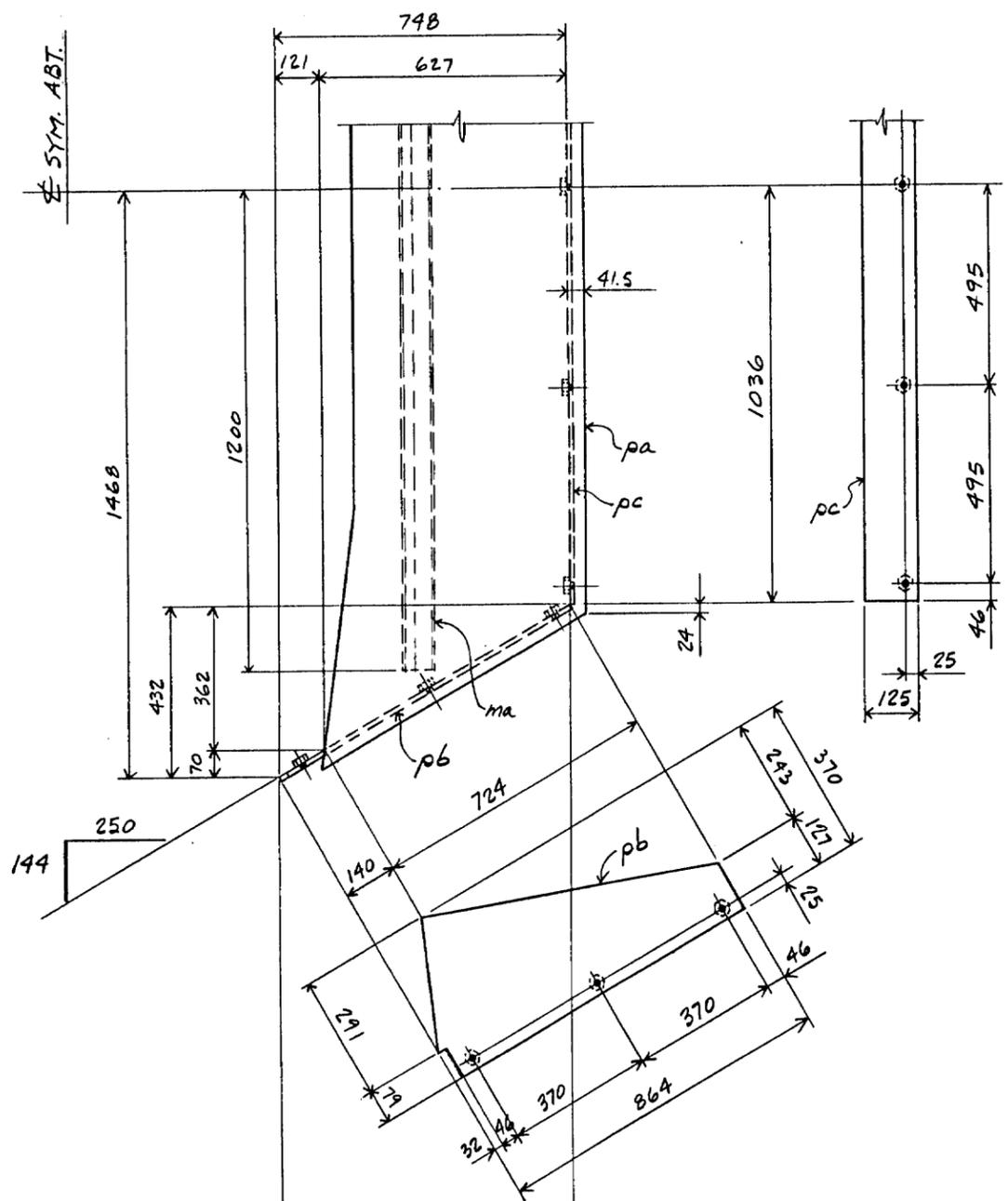
LINE NO.	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MAT'L. TYPE	UNIT	WEIGHT
1									
2						ONE REQ'D. ~ MK. A16			
3									
4	pa	1	P	720x6.35(1/4")	2900		ALUM. 5083		
5	pb	2	P	370x1	832		H32		
6	pc	1	P	125x1	2072				
7	ma	1	L	64x64x6	2900	(L22x22x4)			
8									
9	N'	11	NUT	1/2" HVX. HEX.		ALUMINUM			
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- GENERAL NOTES:
 1) FOR FIELD ASSEMBLY SEE DWG. E26.
 2) ALUMINUM MAT'L. SPEC. 5083-H32.

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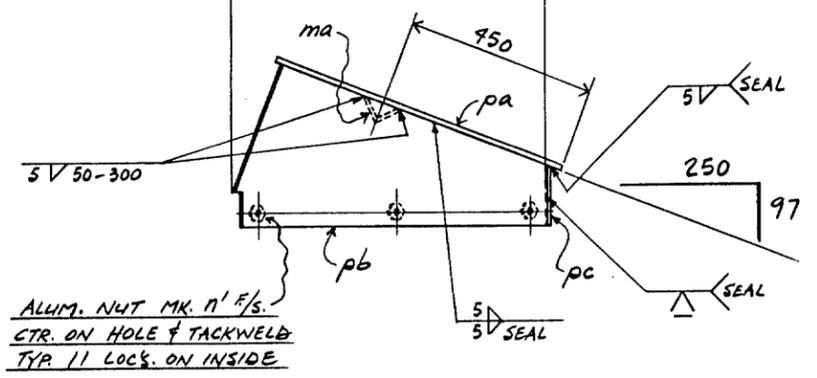
	MATERIAL	ALUMINUM	NO. BY DATE	REVISION
	SURF. PREP.	NO PAINT	DETAILS DRIVE BOGIE TOP COVER @ BACK SHELL	
	PAINT		FOR 4.2M TELESCOPE DOME LA PALMA	
	OPEN HOLES	14" (18")		
DRAWN	DATE	CHECKED	DATE	DRAWING NO.
G.V.A.	APR/84			1420-16a
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, S.C.				
SHOP DEPARTMENT		INS F S O M T P SH DP AS PA FR		

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— DETAIL OF \overline{pa} —

2-REQ'D. ~ DRIVE BOGIE TOP COVER ~ MK. B16
(@ MAIN SHELL)



ALUM. NUT MK. N' F/S.
CTR. ON HOLE & TACKWELD
TYP. 11 LOC'S. ON INSIDE

MATERIAL BILL					CONTRACT 1420				
BRITAIN STEEL LTD.									
LINE	MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MAT'L TYPE	UNIT	WEIGHT
1									
2						2-REQ'D. ~ MK. B16			
3									
4	pa	2	PL	728 x 6.35 (1/4)	2888		ALUM.		
5	pb	4	L	370 x 1	864		5083		
6	pc	2	L	125 x 1	2072		H32		
7	ma	2	L	64 x 64 x 6	2400 (L 2 1/2 x 2 1/2 x 1/2)				
8									
9	n'	22	NUT	5" PHV. HEX		ALUMINUM			
10									
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GENERAL NOTES:

- 1) FOR FIELD ASSEMBLY SEE DWG. E26.
- 2) ALUMINUM MAT'L SPEC. 5083-H32.

3R/300872

	MATERIAL		ALUMINUM		DETAILS DRIVE BOGIE TOP COVER @ MAIN SHELL	
	SURF. PREP.		NO PAINT		FOR 4.2 TELESCOPE DOME LA PALMIRA	
	OPEN HOLES		Ø 14 (1/2")		REV. 1	
	DRAWN	DATE	CHECKED	DATE	DRAWING NO.	REV.
G.V.A.	APR/82			1420-166		
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.						

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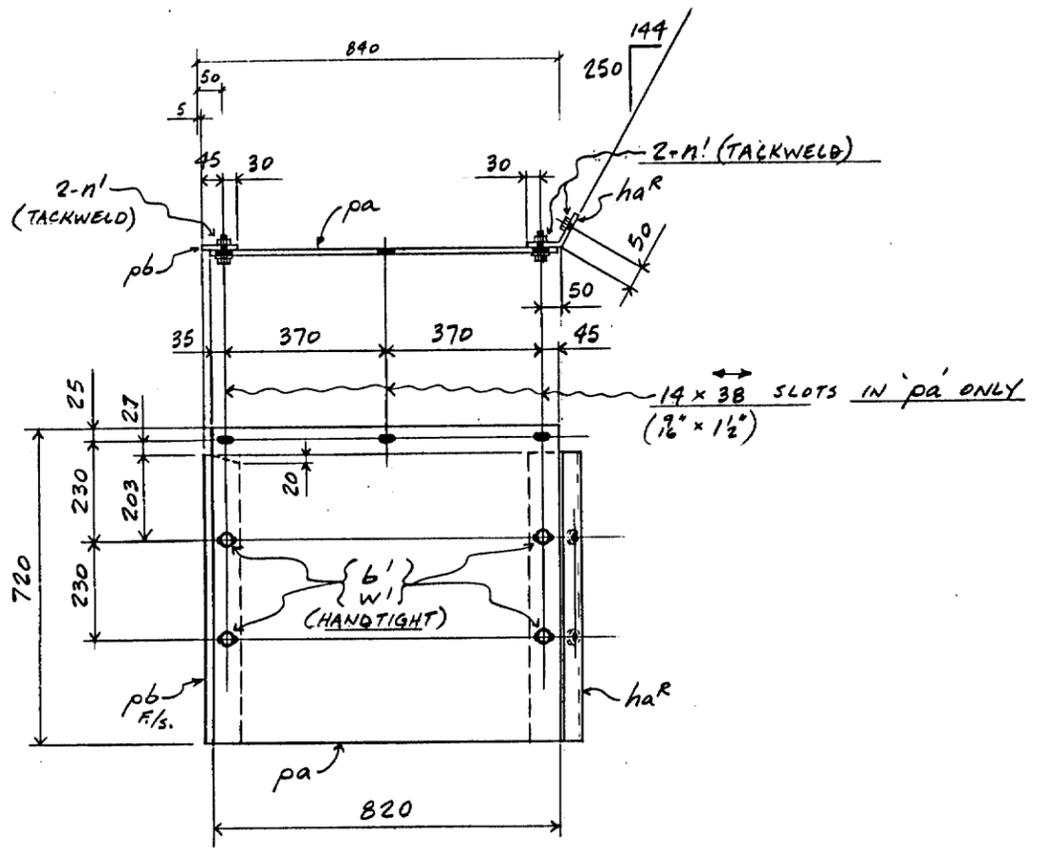
SHOP DEPARTMENT

MATERIAL BILL
BRITAIN STEEL LTD.

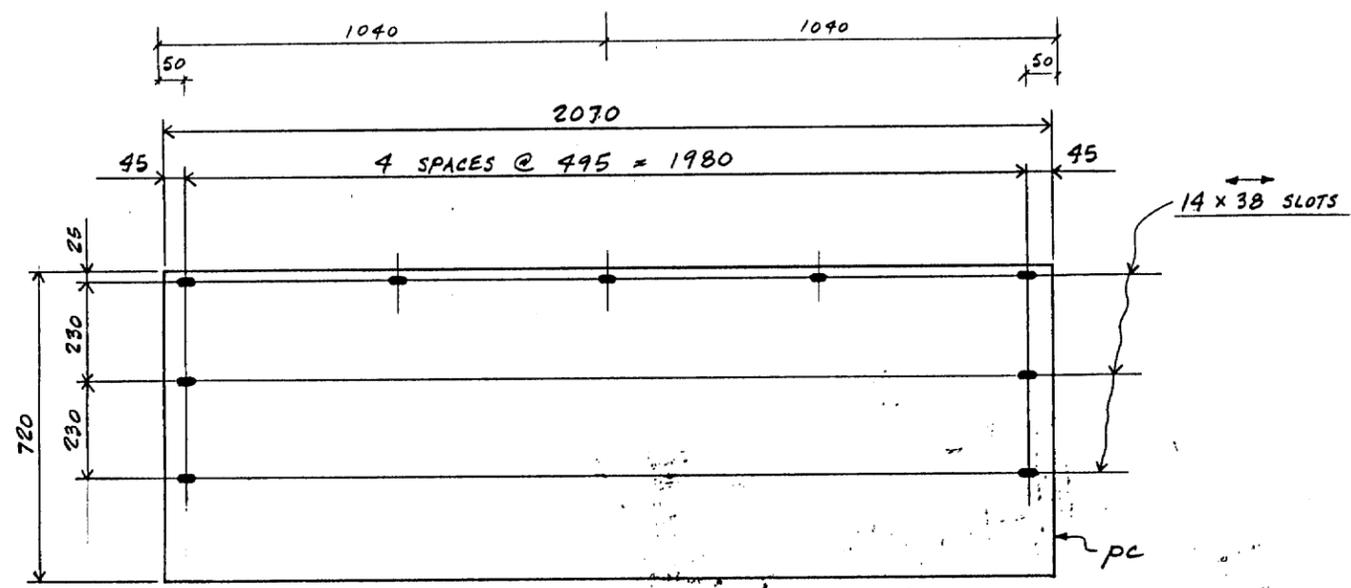
CONTRACT 1420

MARK	QTY.	SHAPE	SIZE	LENGTH	REMARKS	MATL. TYPE	WEIGHT
1							
2							
3							
4							
5	pa	6	R	720x6.35(1/4)	820	ALUM.	
6	pb	6	R	75x6.35(1/4)	668	ALUM.	
7							
8	ha	6	R	160x6.35(1/4)	668 BEND	ALUM.	
9							
10	b	24	BOLT	1/2"	1 1/2" HEX HD.	S.S.	
11	w	24	WASHER	1/2"	FLAT	S.S.	
12	n	36	NUT	1/2"	HEX. HEX.	ALUM.	
13							
14							
15							
16							
17							
18							
19	pc	3	R	720x6.35(1/4)	2070	ALUM.	
20							
21							
22							
23							
24	FIG 3	3	R	200x6.35(1/4)	3000 PLAIN STEEL MAT'L.	A36	
25							
26							
27							
28	316	6	R	200x6.35(1/4)	900	ALUM.	
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PAINT
(AS PER MEMO)



3-REQ'D. ~ DRIVE COVER SIDE RAIL ~ MK. C 16^R (RIGHT)
3-REQ'D. ~ DRIVE COVER SIDE RAIL ~ MK. C 16^L (LEFT)



3-REQ'D. ~ DRIVE COVER SIDE RAIL ~ D 16

GENERAL NOTES:

- 1.) ALUMINUM MAT'L. SPEC. 5083-H32
- 2.) FOR FIELD ASSEMBLY SEE DWG. E26

3R/300873

	MATERIAL	AS NOTED	DETAILS	DRIVE BOGIE COVER SIDE RAILS					
	SURF. PREP.	NO PAINT							
	PAINT	4/NOTED							
OPEN HOLES	14 (1/16) 4/N		FOR 4.2 M TELESCOPE DOME LA PALMA						
DRAWN	G.V.A.	DATE	July/83	CHECKED	DATE	DRAWING No.	1420-16C	REV.	
BRITAIN STEEL LTD. 401 SALTER AVENUE, NEW WESTMINSTER, B.C.									

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SHOP DEPARTMENT