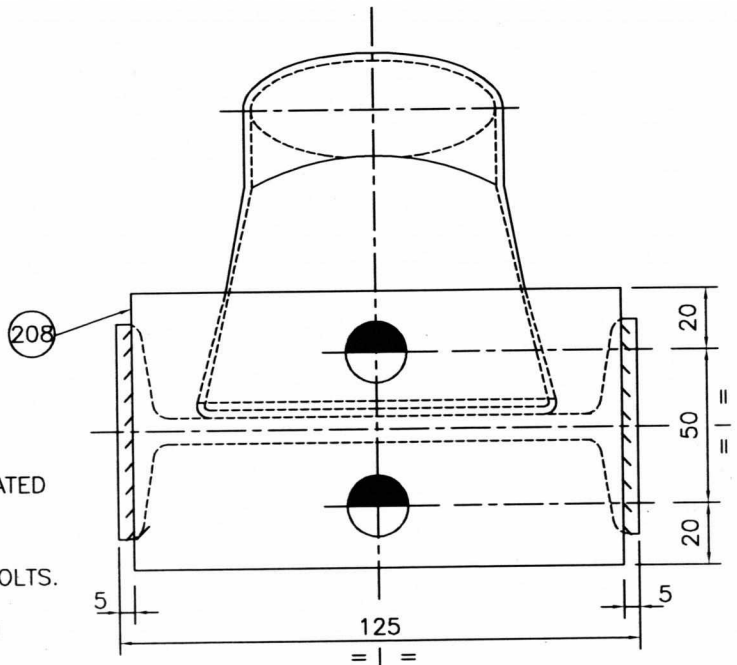
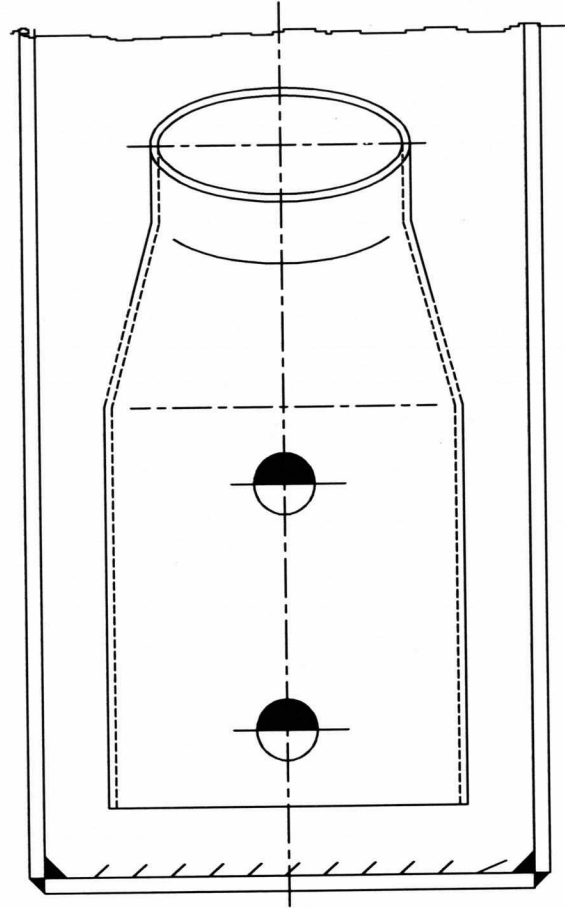
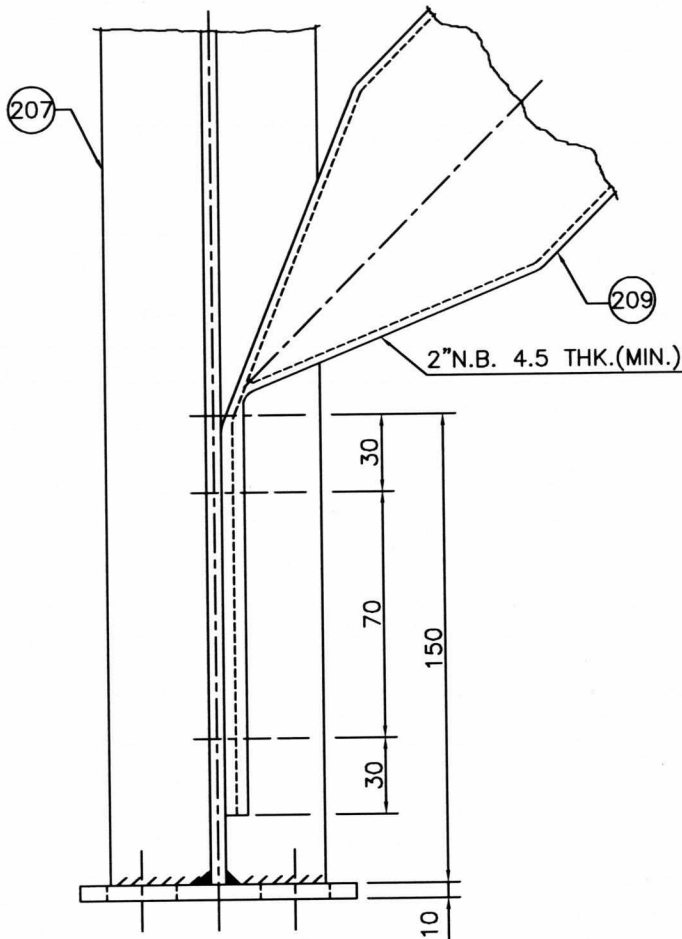


NOTE:-

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. THE PART NOS RELATE TO THOSE SHOWN IN TUBE BUNDLE FRAME DRAWING.

5	24.02.2023	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	TK	NK	SM
4	20.03.2018	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	SK/KJH	RKT	RN
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convener	Stds. Bureau Chairman
					Approved by	



MATL. OF CONST.- A 36 / IS 1239

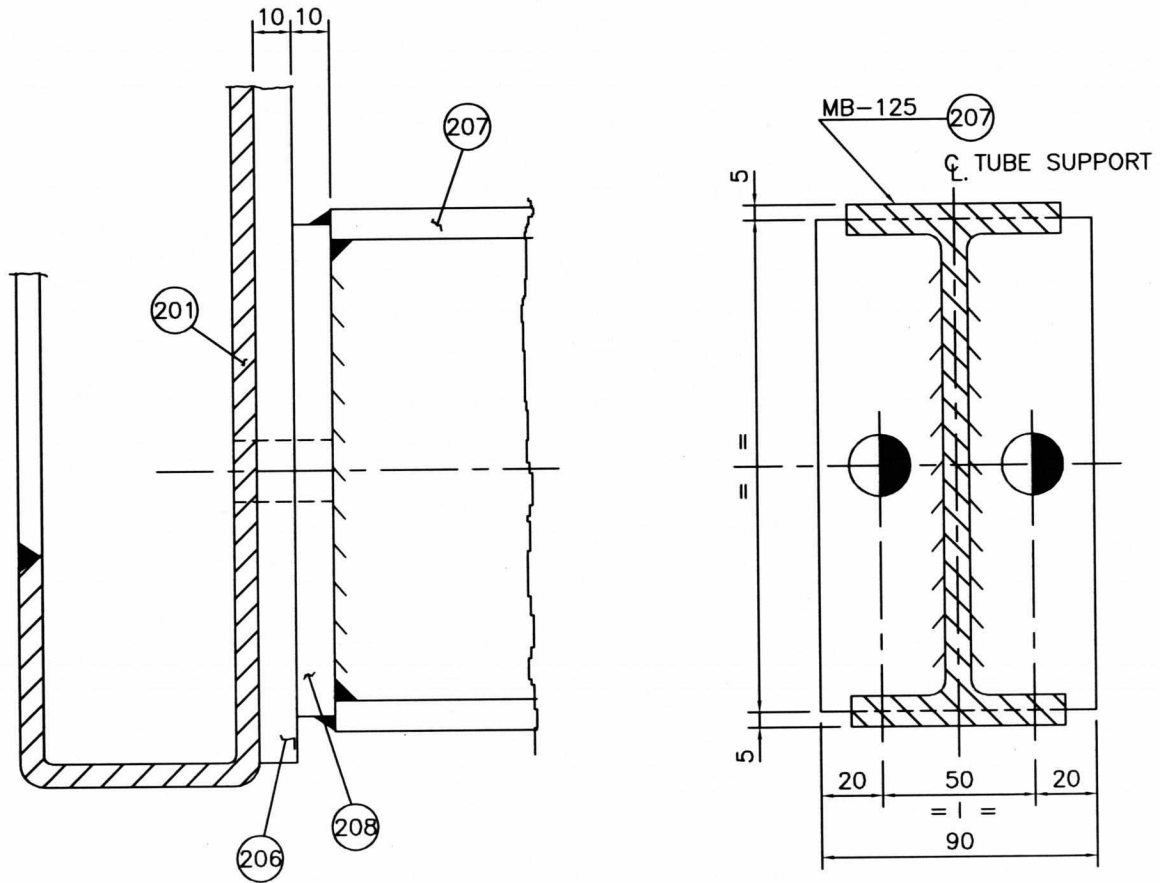
NOTE:-

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. INDICATES 18 ° HOLES FOR M-16 BOLTS.
3. THE PART NOS RELATE TO THOSE SHOWN IN TUBE BUNDLE FRAME DRAWING.

5	24.02.2023	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	TK	NK	SM
4	20.03.2018	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	SK/KJH	RKT	RN
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convener	Stds. Bureau Chairman
					Approved by	



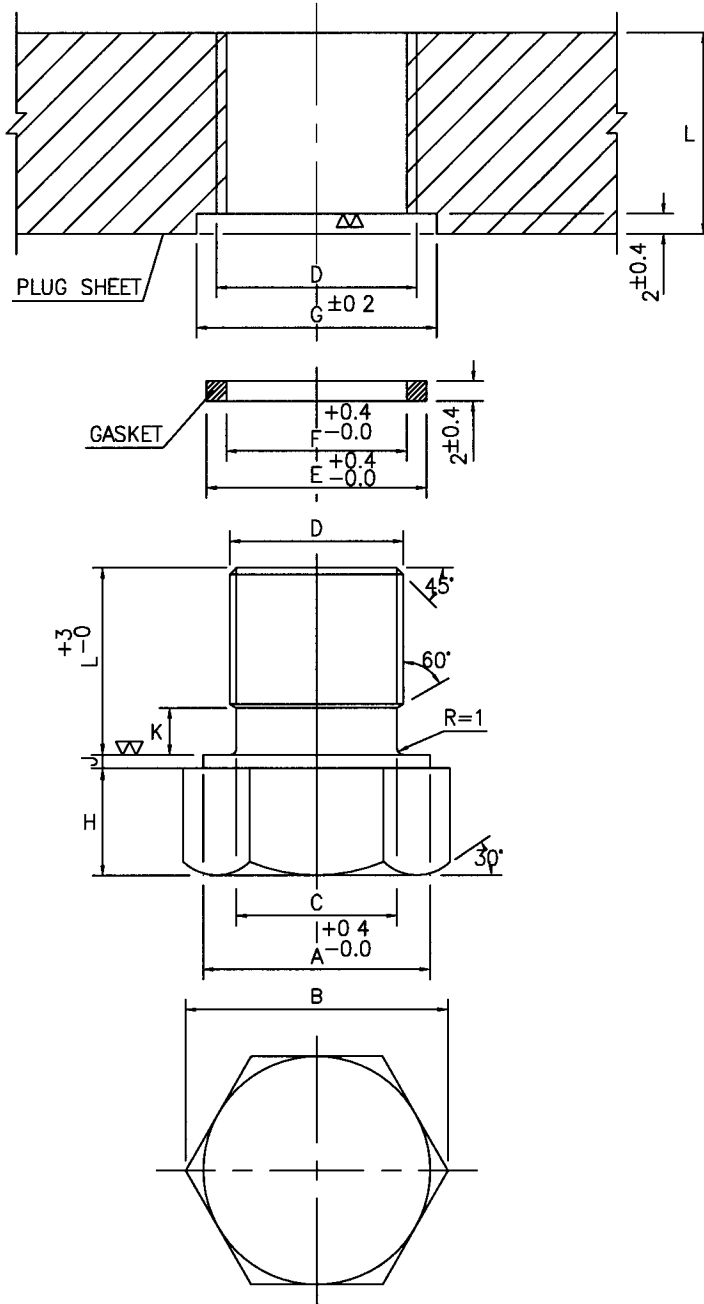
TUBE SUPPORT BOTTOM
BEAM DETAIL
(AIRCOOLED HEAT EXCHANGERS)



NOTE:-

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. INDICATES 18 ϕ HOLES FOR M-16 BOLTS.
3. THE PART NOS RELATE TO THOSE SHOWN IN TUBE BUNDLE FRAME DRAWING.

5	24.02.2023	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	TK	NK	SM
4	20.03.2018	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	SK/KJH	RKT	RN
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convener	Stds. Bureau Chairman
					Approved by	

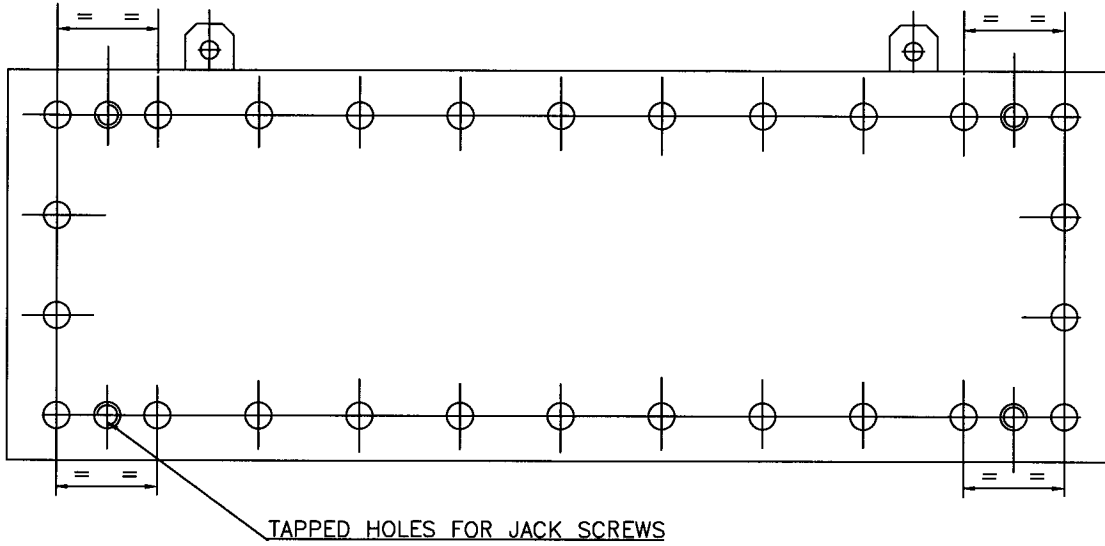


S.NO.	TUBE DIA.	A	B	C	D	E	F	G	H	J	K	L	
1	1"	25	35	41.6	26	1 1/8" -12 UNF	35	30	36	15	2	4	PLUG SHEET THICKNESS
2	1 1/4"	32	42	53.1	32	1 3/8" -12 UNF	42	37	43	19	2	5	
3	1 1/2"	38	48	57.7	38	1 5/8" -12 UNF	48	43	49	21	2	5	
4	1 7/8"	48	57	67	47	2" -12 UN	57	52	58	24	2	5	
5	2"	50	64	78	54	2 1/4" -12 UN	64	59	65	27	2	5	

NOTES:-

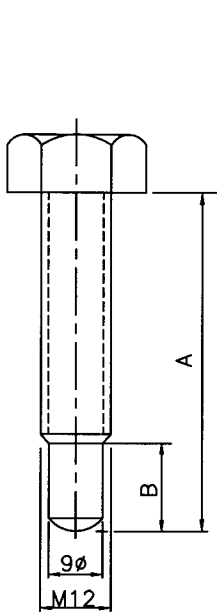
- ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
- THREAD STRAIGHT ACCORDING TO ASME B1.1 CLASS 2A/2B.

5	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
4	06.05.14	REVISED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
3	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
					Approved by	

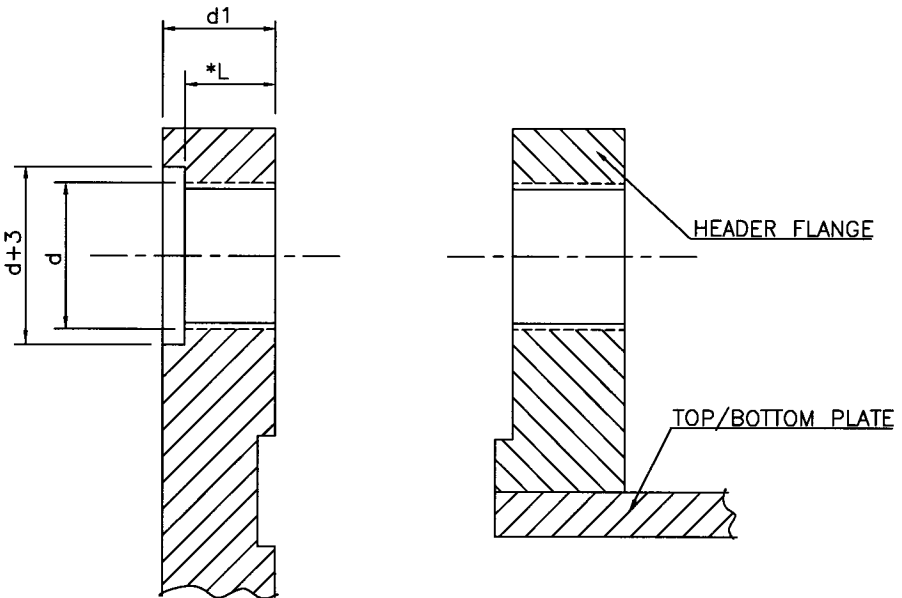


LOCATION OF JACK SCREWS IN COVER PLATE

*L = 2d OR d1 WHICHEVER IS SMALLER



JACK SCREW DETAIL

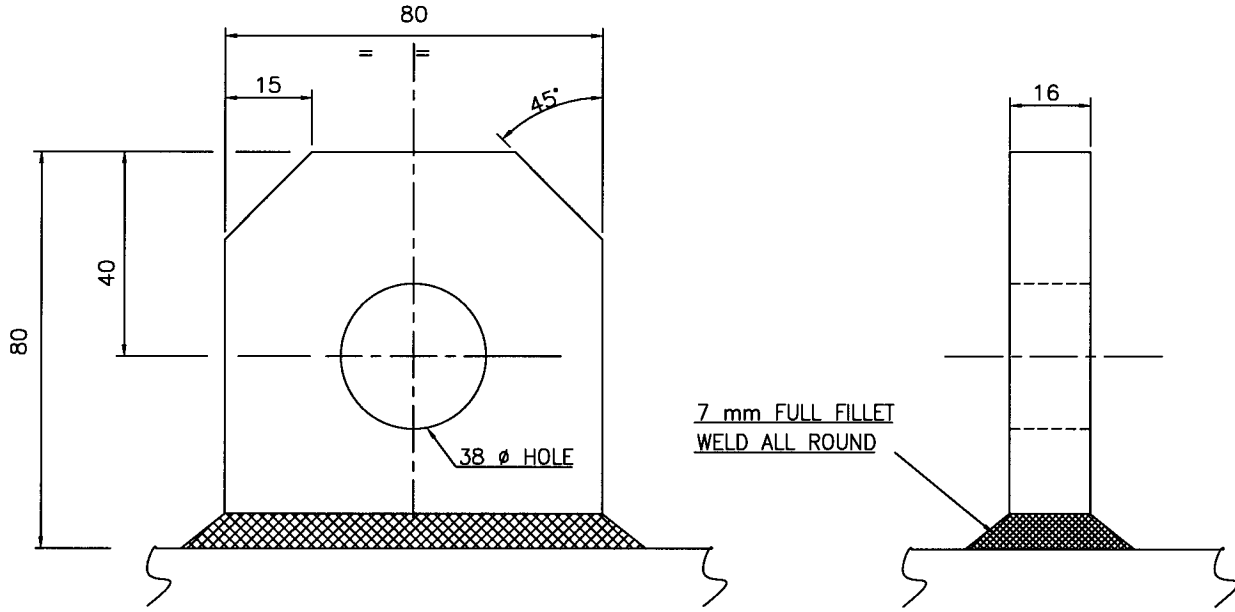


TAPPING DETAIL IN COVER PLATE

NOTES: -

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. DIMENSION 'A' = FLANGE OR COVER PLATE THK. +15.
3. MATERIAL OF JACK SCREW :- SS
4. JACK SCREWS - 4 NOS. FOR EACH COVER PLATE.

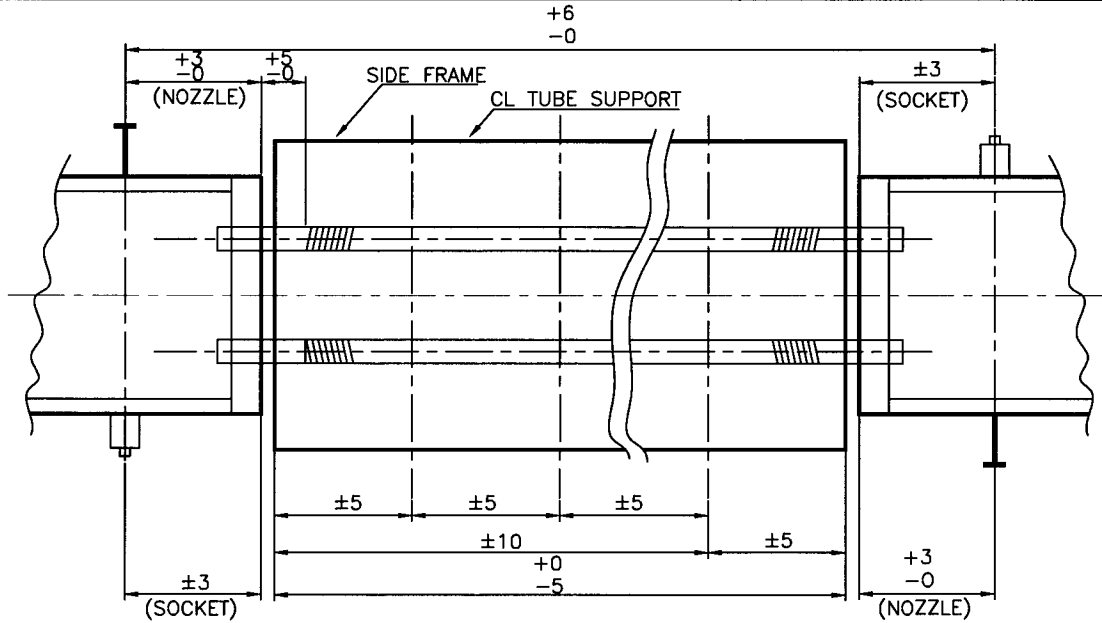
5	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
4	06.05.14	REVISED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
3	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convenor	Stds Bureau Chairman
						Approved by



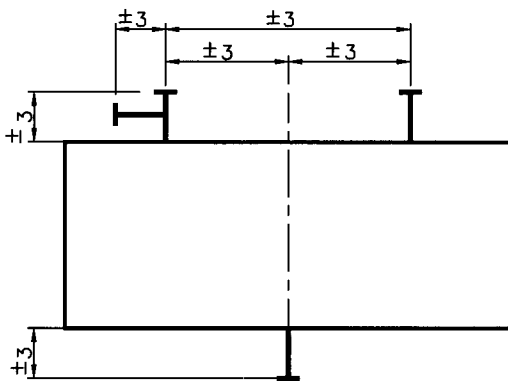
NOTES:-

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. MATERIAL SHALL BE COMPATIBLE WITH PART IT IS WELDED TO. (USE BOILER QUALITY FOR CARBON STEEL)
3. USE TWO LIFTING LUGS FOR EACH COVER PLATE
4. SAFE WORKING LOAD = 1100 kg

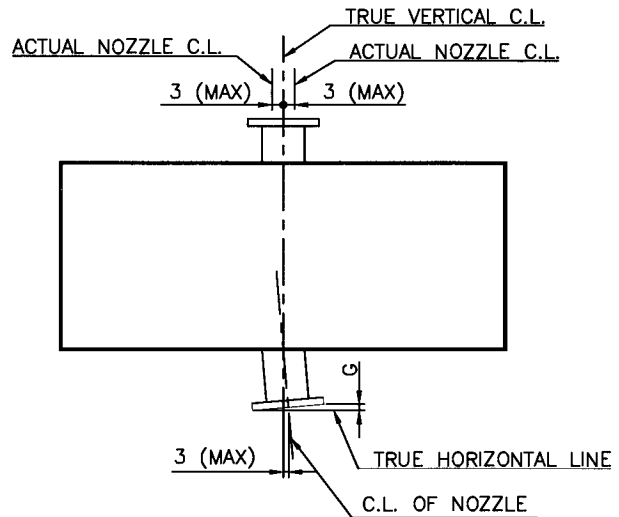
5	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
4	06.05.14	REAFFIRMED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
3	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
						Approved by



TUBE BUNDLE WITH SIDE FRAME

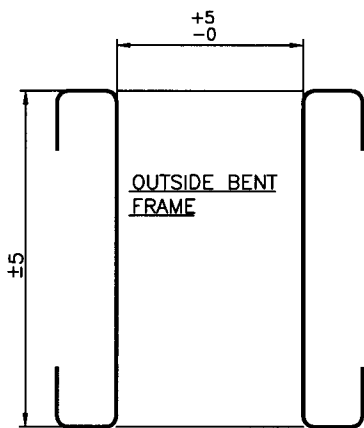


NOZZLES ON HEADER



NOMINAL NOZZLE SIZE	G (MAX)
2" - 4" INCL	1.0
6" - 10" INCL	2.0
OVER 10"	2.5

NOZZLE TILT AND OFF SETS



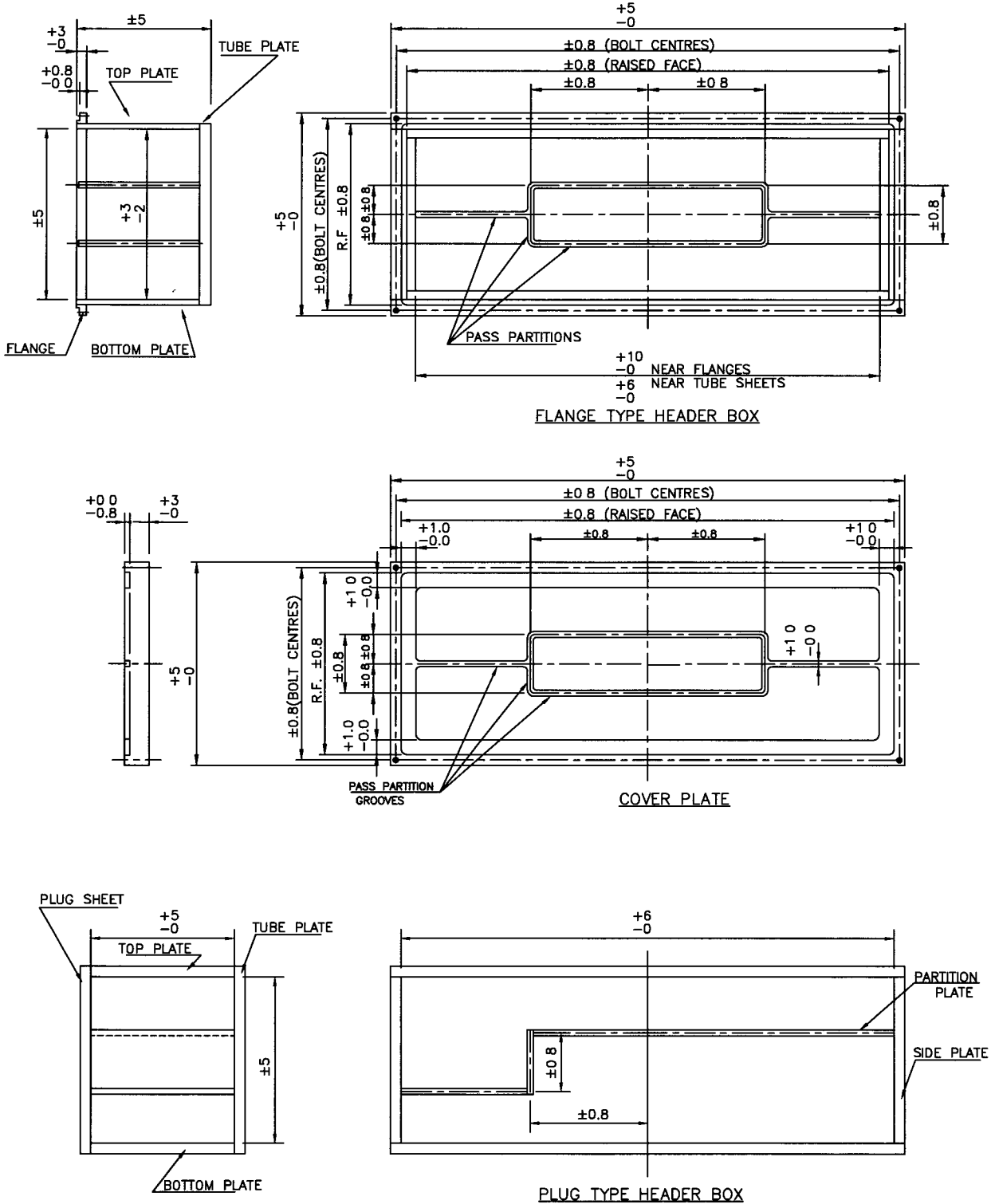
SIDE FRAME

NOTE:-

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE

Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
5	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
4	06.05.14	REAFFIRMED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
3	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC

Approved by

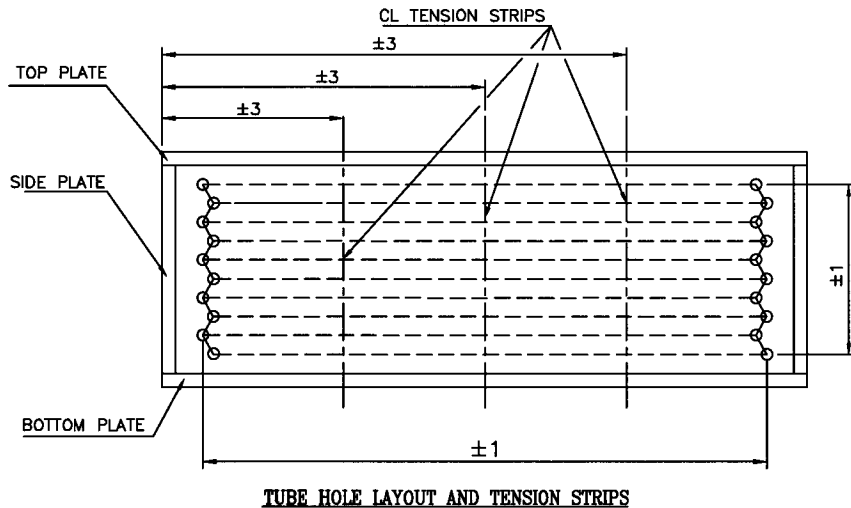
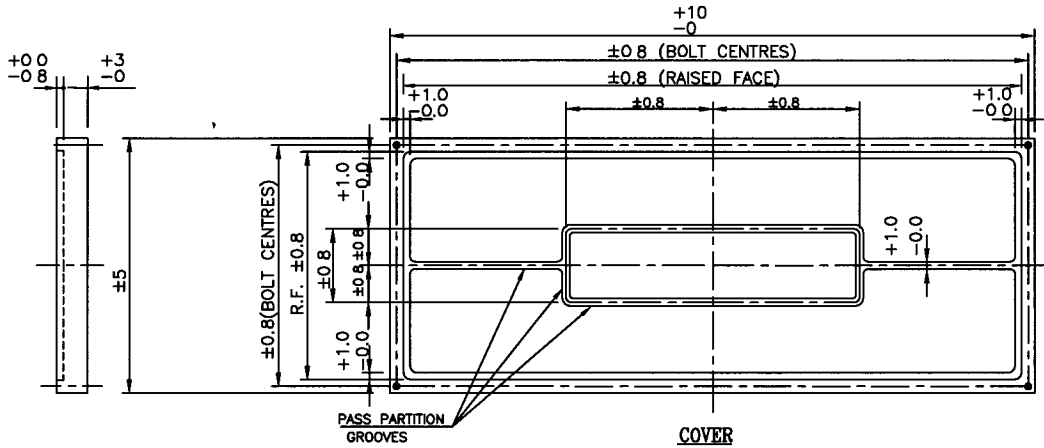
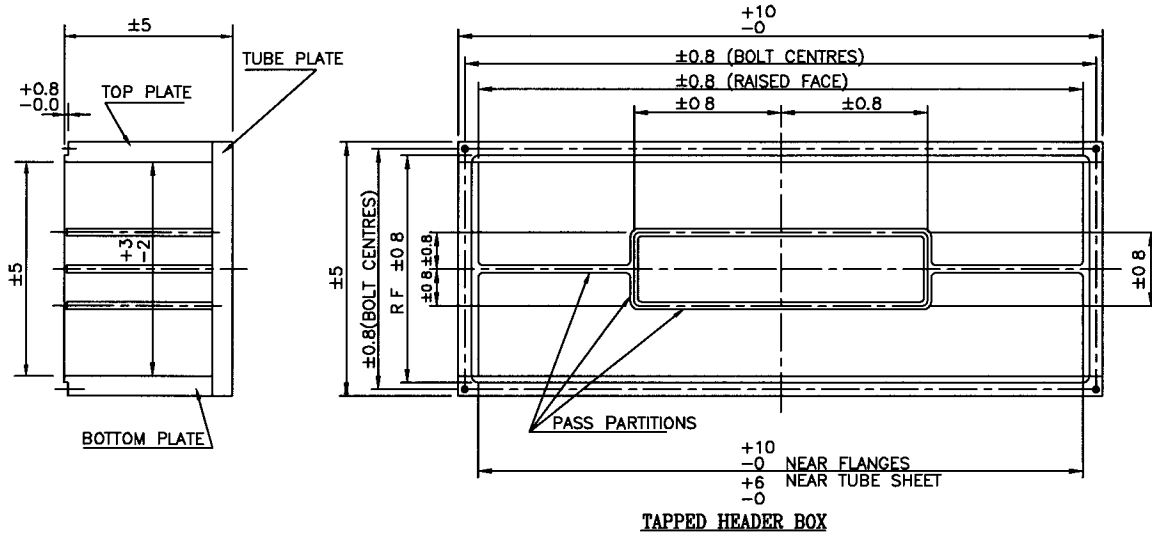


NOTES: -

- 1 ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE
- 2 TOLERANCES ON PITCH OF STUD HOLES ± 0.4
- 3 TOLERANCES ON ECCENTRICITY OF STUD HOLES WITH RESPECT TO CL OF HEADER ± 0.8

Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
5	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
4	06.05.14	REAFFIRMED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
3	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC

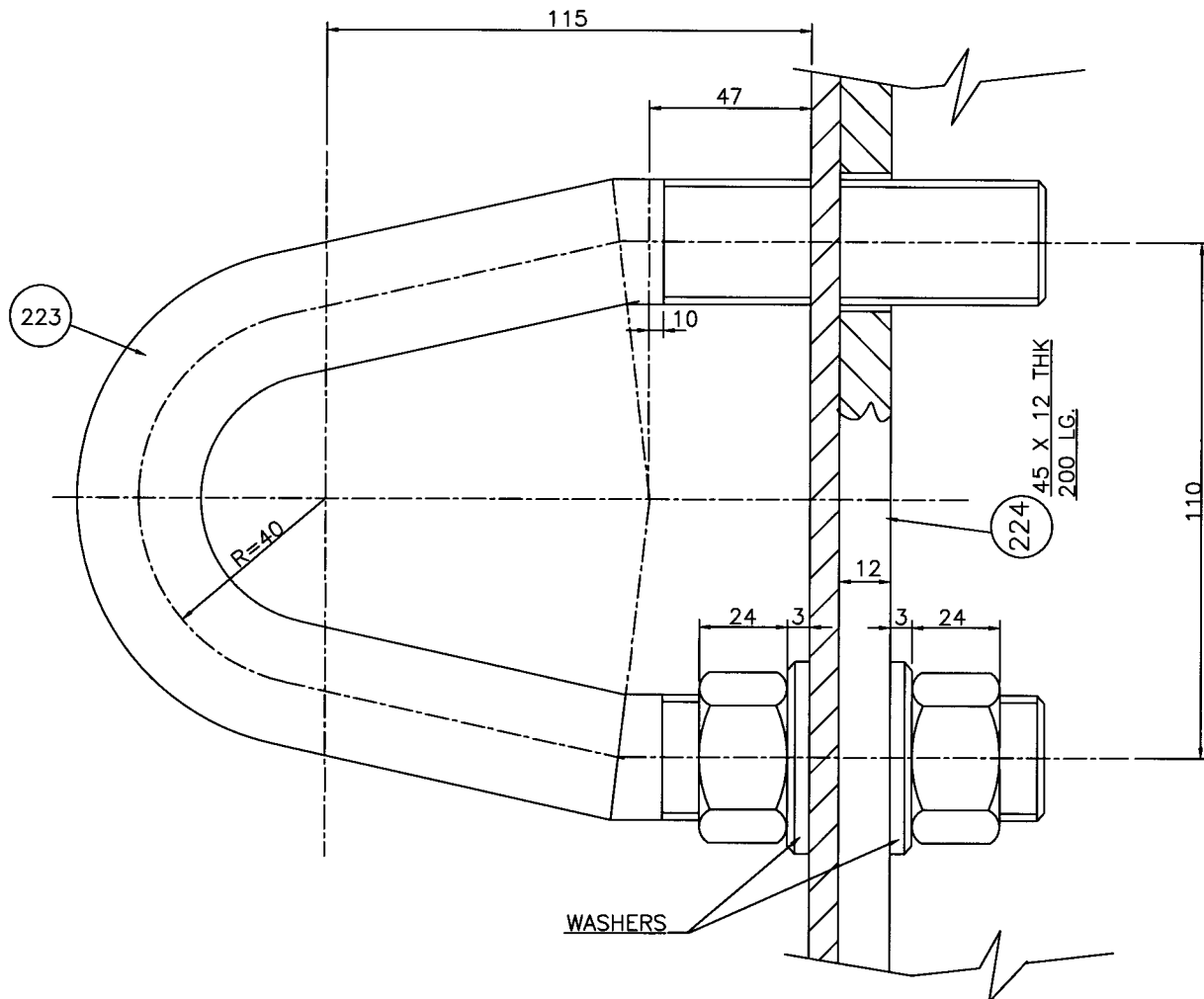
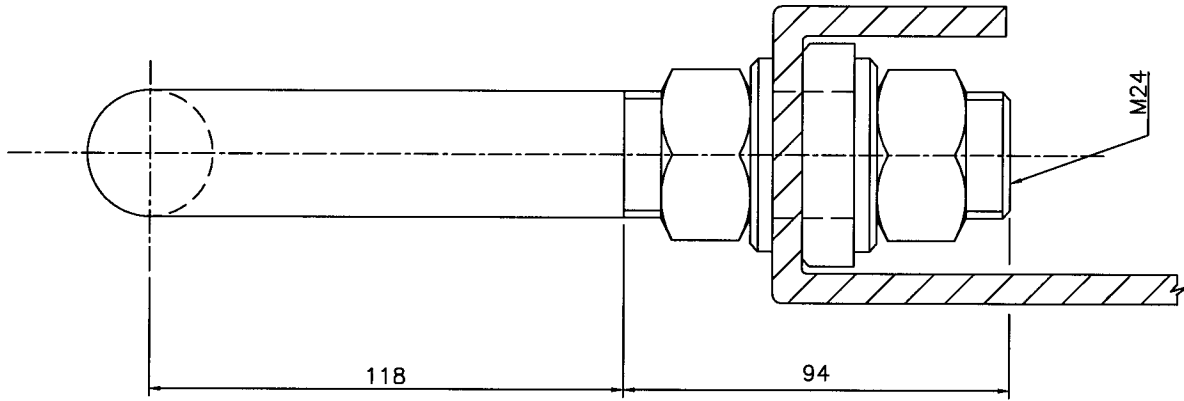
Approved by



NOTES: -

1. ALL DIMENSIONS ARE IN mm. UNLESS STATED OTHERWISE.
2. ECCENTRICITY OF TUBE ACCESS HOLES IN TENSION STRIPS WITH RESPECT TO CORRESPONDING TUBE HOLES IN TUBE PLATE ± 0.8

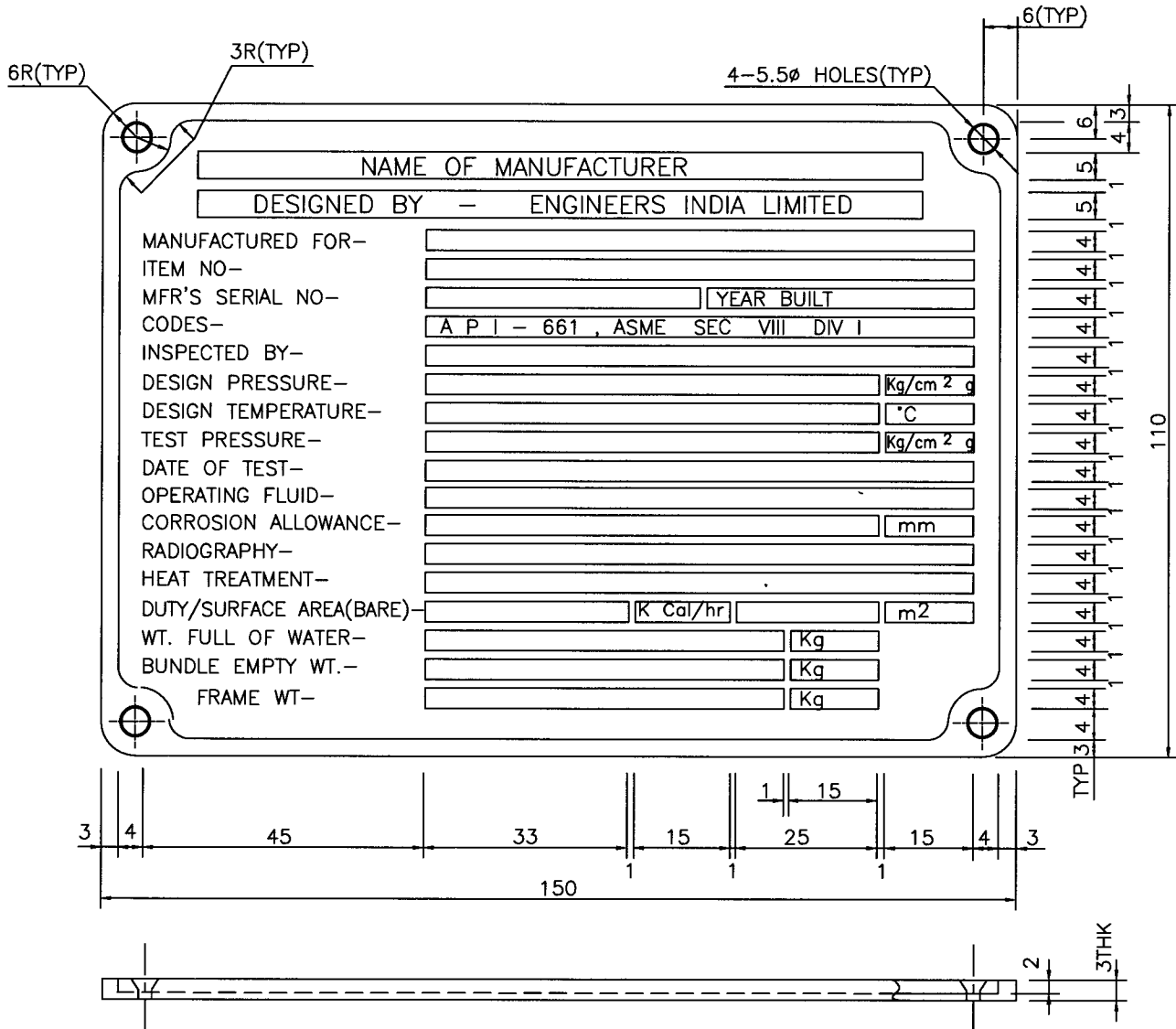
5	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
4	06.05.14	REAFFIRMED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
3	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convenor	Stds Bureau Chairman
						Approved by



4	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
3	06.05.14	REAFFIRMED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
2	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC

Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman

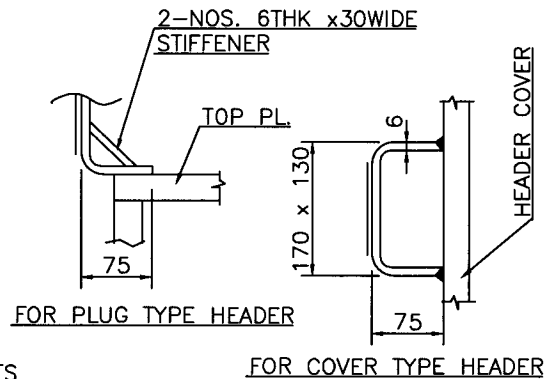
Approved by



MATERIAL :- STAINLESS STEEL 18:8

NOTES :-

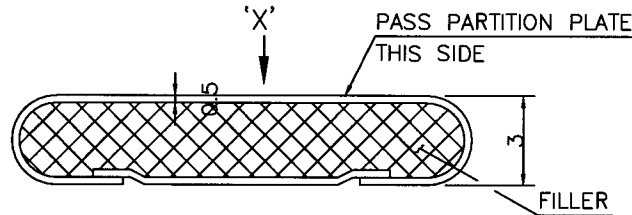
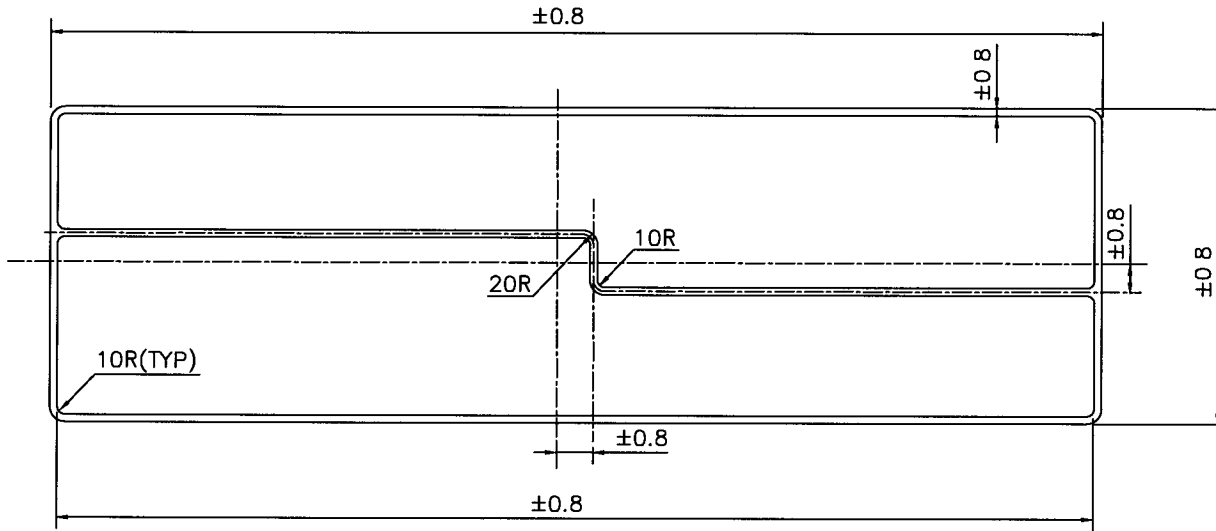
1. ALL LETTERS, BLOCKS & BORDERS SHALL BE RAISED POLISHED FACE.
2. BACK GROUND TO BE BLACK.
3. NAME PLATE SHALL BE SECURED THROUGH ALUMINIUM RIVETS & TACK WELDS ON FOUR SIDES



NAME PLATE BRACKET
(SAME MATERIAL AS FOR HEADER)

4	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
3	06.05.14	REAFFIRMED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
2	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
						Approved by

PERMISSIBLE TOLERANCES



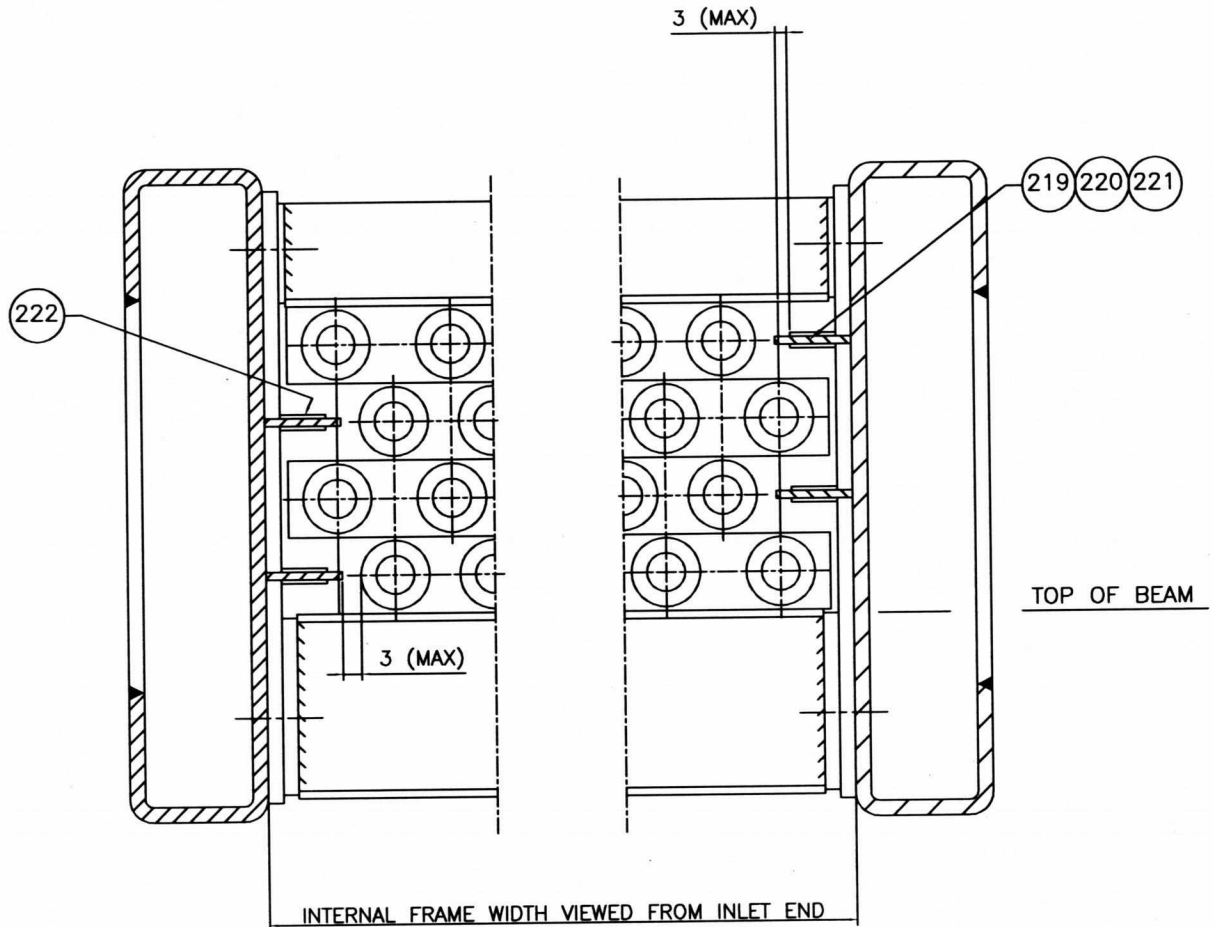
TYPICAL SECTION OF METAL JACKETED GASKETS

GENERAL NOTES: -

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. THE HARDNESS OF THE METAL FOR SOLID OR CLAD GASKETS SHALL BE MINIMUM 15 BHN LOWER THAN THAT OF THE MATERIAL OF THE FLANGE GASKET SEATING SURFACE AND IN ANY CASE NOT TO EXCEED THE FOLLOWING.

(a) LOW CARBON STEEL / LAS	-	110 BHN
(b) 5 Cr. 1/2 Mo.	-	130 BHN
(c) STAINLESS STEEL	-	160 BHN
(d) 11 - 13 Cr.	-	170 BHN
(e) MONEL	-	130 BHN
(f) SOFT IRON	-	90 BHN
(g) COPPER, BRASS	-	50 BHN
(h) ALUMINIUM	-	30 BHN
3. FILLER IN METAL JACKETED GASKETS SHALL NOT BE OF COMPRESSED TYPE.
4. ALL GASKETS SHALL BE MADE IN ONE CONTINUOUS PIECE ALL AROUND INCLUDING THE PASS PARTITION RIBS AND THEREFORE MUST BE CUT FROM ONE SHEET.
5. SOLID FLAT METAL GASKET SHALL BE 2 mm. THK
6. 'm' AND 'y' VALUES SHALL BE AS PER ASME SEC. VIII DIV. I.
7. GASKET PLAN IS VIEWED FROM DIRECTION 'X' .
8. FILLER SHALL BE ARAMIDE FIBRE UNLESS SPECIFIED OTHERWISE IN DRAWINGS & ASBESTOS NOT TO BE USED.

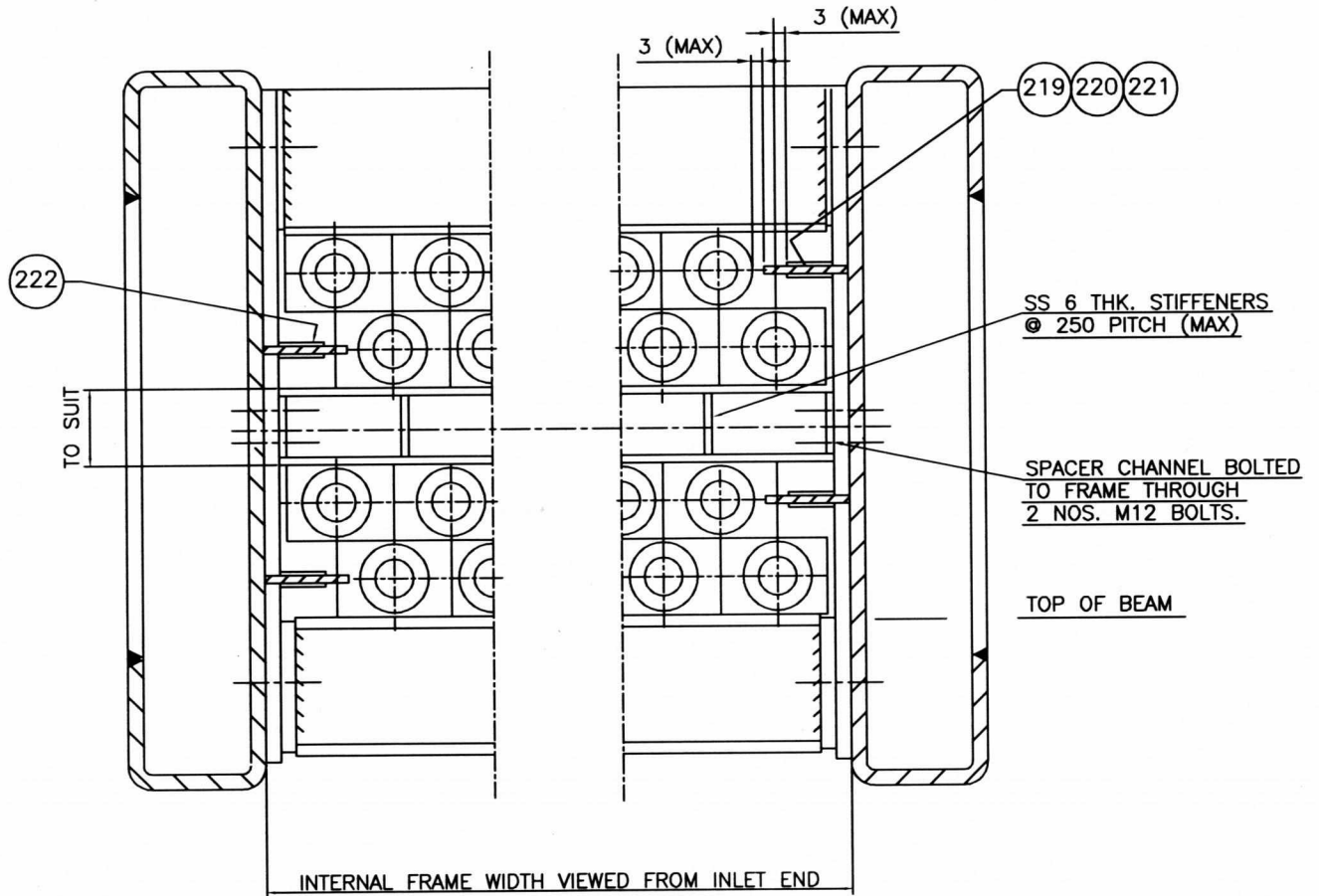
5	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
4	06.05 14	REAFFIRMED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
3	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convenor	Stds Bureau Chairman
						Approved by



NOTES:—

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. DETAIL GIVEN IN THIS STANDARD IS TYPICAL IT SHOWS 4 NOS. OF ROWS OF TUBES. EXTRAPOLATE FOR NO. OF ROWS IF OTHER THAN SHOWN ABOVE.
3. THE PART NOS RELATE TO THOSE SHOWN IN TUBE BUNDLE FRAME DRAWING.

5	24.02.2023	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	TK	NK	SM
4	20.03.2018	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	SK/KJH	RKT	RN
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convener	Stds. Bureau Chairman
					Approved by	



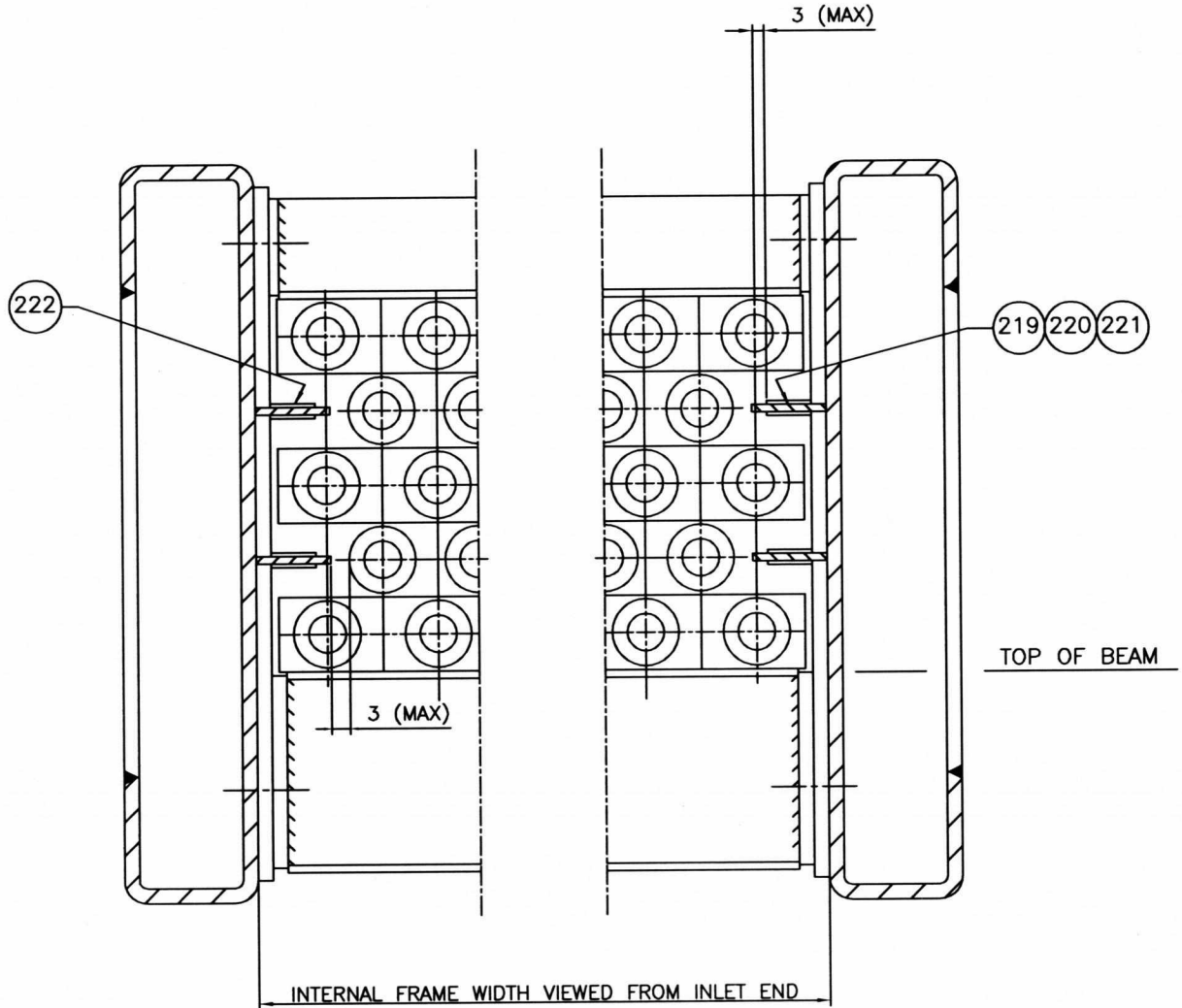
NOTES:-

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. SPACER CHANNEL SHALL BE FABRICATED FROM 5 THK. PLATE (SS).
3. DETAIL GIVEN IN THIS STANDARD IS TYPICAL IT SHOWS 4 NOS. OF ROWS OF TUBES. EXTRAPOLATE FOR NO. OF ROWS IF OTHER THAN SHOWN ABOVE.
4. THE PART NOS RELATE TO THOSE SHOWN IN TUBE BUNDLE FRAME DRAWING.

5	24.02.2023	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	TK	NK	SM
4	20.03.2018	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	SK/KJH	RKT	RN
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convener	Stds. Bureau Chairman
					Approved by	



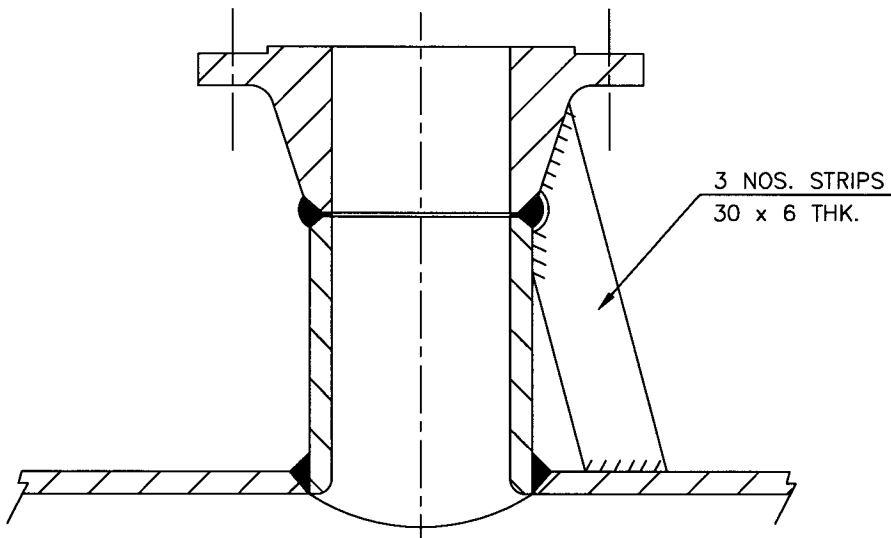
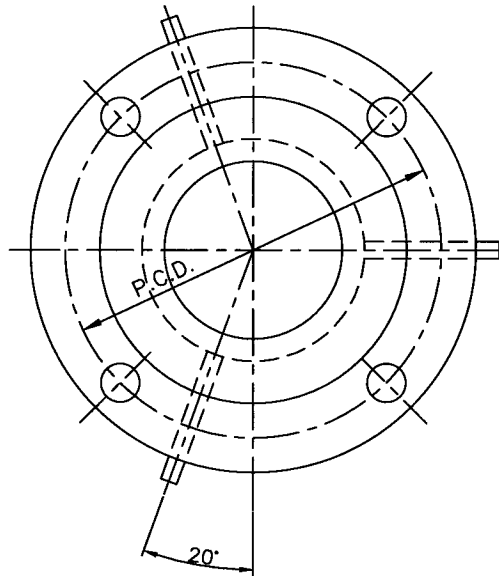
TUBE BUNDLE FRAME DETAIL
(UNEQUAL TUBES IN ROW)
(AIRCOOLED HEAT EXCHANGERS)



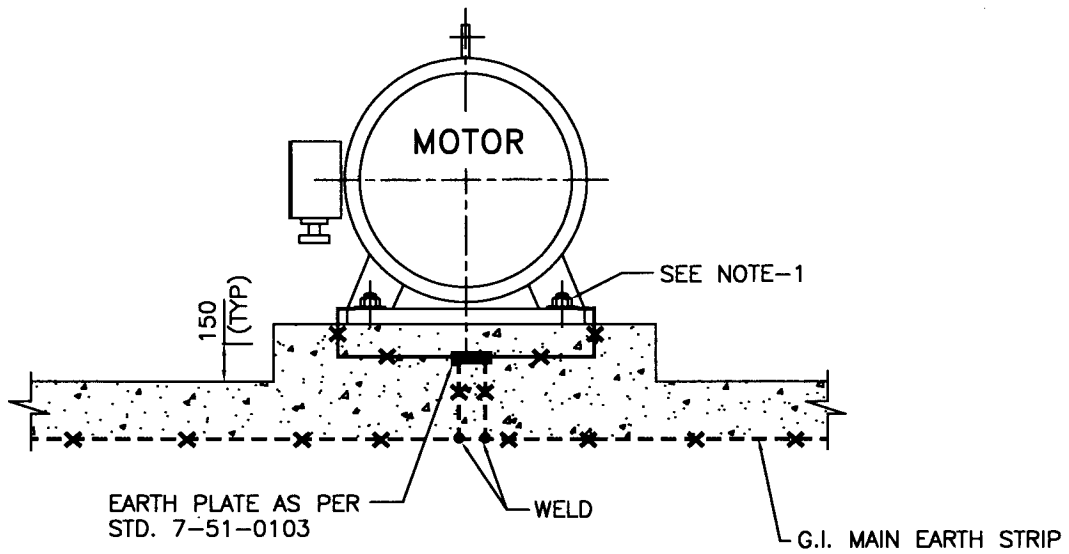
NOTES:-

1. ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE.
2. DETAIL GIVEN IN THIS STANDARD IS TYPICAL IT SHOWS 5 NOS. OF ROWS OF TUBES. EXTRAPOLATE FOR NO. OF ROWS IF OTHER THAN SHOWN ABOVE.
3. THE PART NOS RELATE TO THOSE SHOWN IN TUBE BUNDLE FRAME DRAWING.

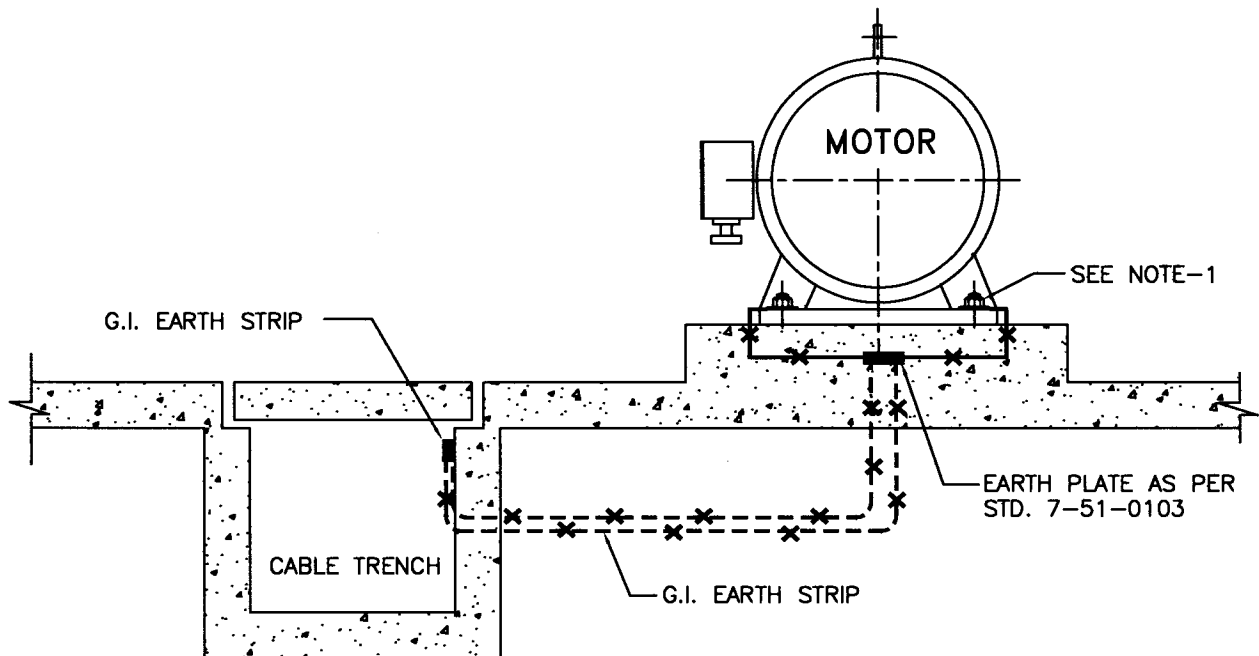
5	24.02.2023	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	TK	NK	SM
4	20.03.2018	REAFFIRMED AND REISSUED AS STANDARD	JIT SINGH	SK/KJH	RKT	RN
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convener	Stds. Bureau Chairman
					Approved by	



5	27.12.19	REAFFIRMED AND REISSUED AS STANDARD	DP	NSK	KJH	RKT
4	06.05.14	REAFFIRMED AND REISSUED AS STANDARD	GCP	KA	RKT	SC
3	27.01.09	REAFFIRMED AND REISSUED AS STANDARD	VPR	RKG	AKM	VC
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convenor	Stds Bureau Chairman
					Approved by	



DETAIL-1
CONNECTION WITH BURIED EARTH GRID

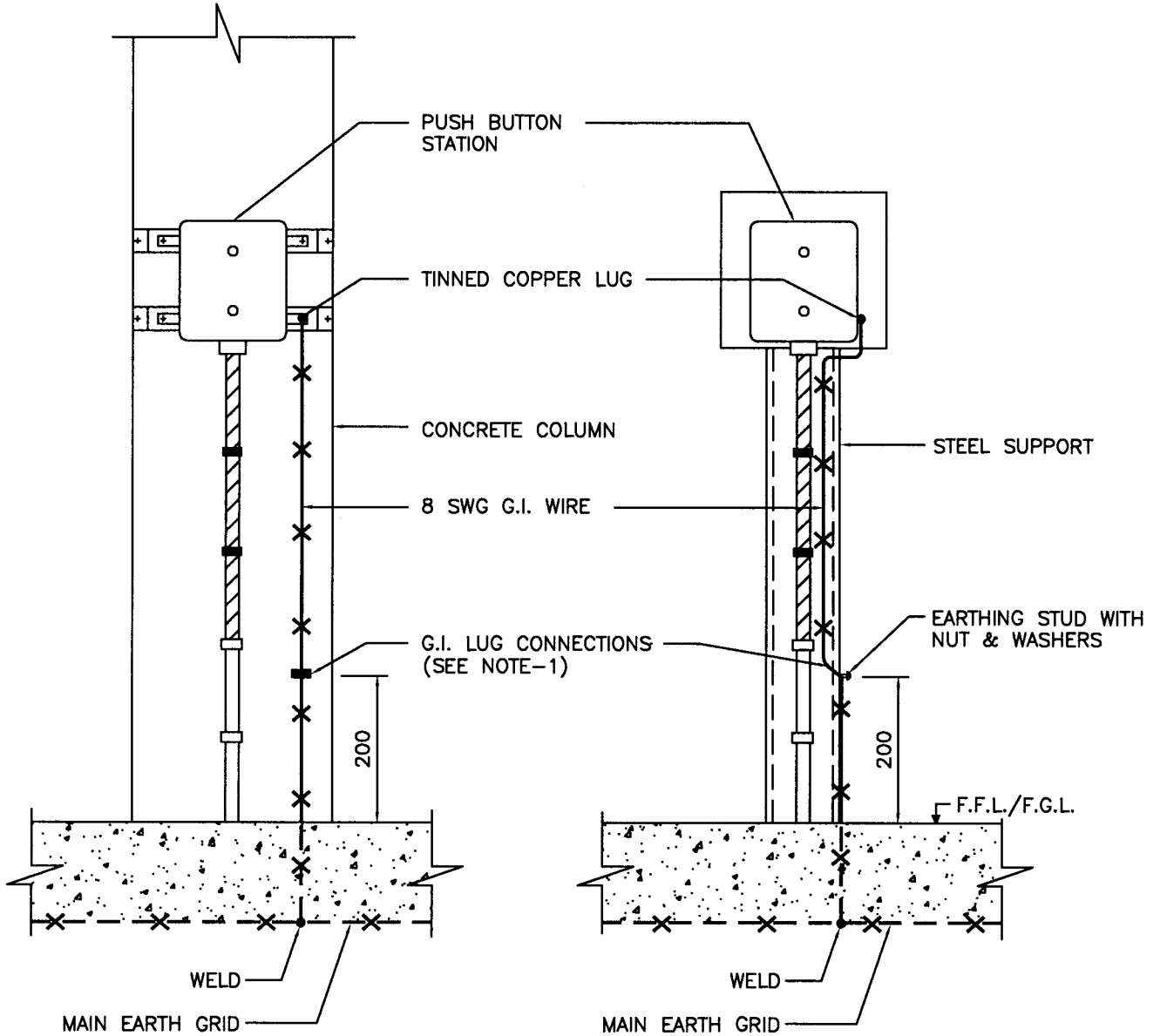


DETAIL-2
CONNECTION WITH EARTH GRID IN RCC TRENCH

NOTE:-

1. MOTOR FOUNDATION BOLT SHALL NOT BE USED FOR EARTHING.
2. EARTHING OF P.B. STN. INSTALLED NEAR MOTOR FOUNDATION SHALL BE DONE BY TAPPING 8 SWG G.I. WIRE FROM EARTH PLATE.

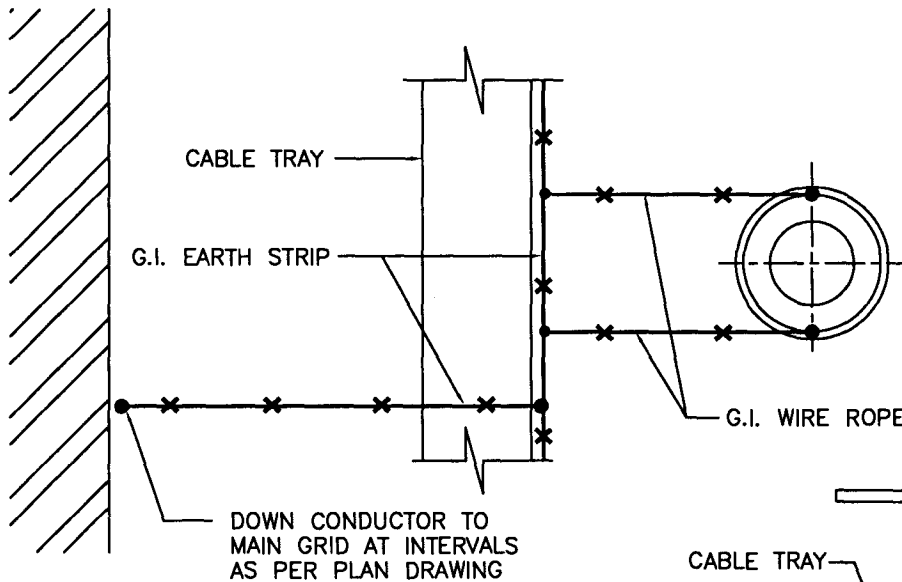
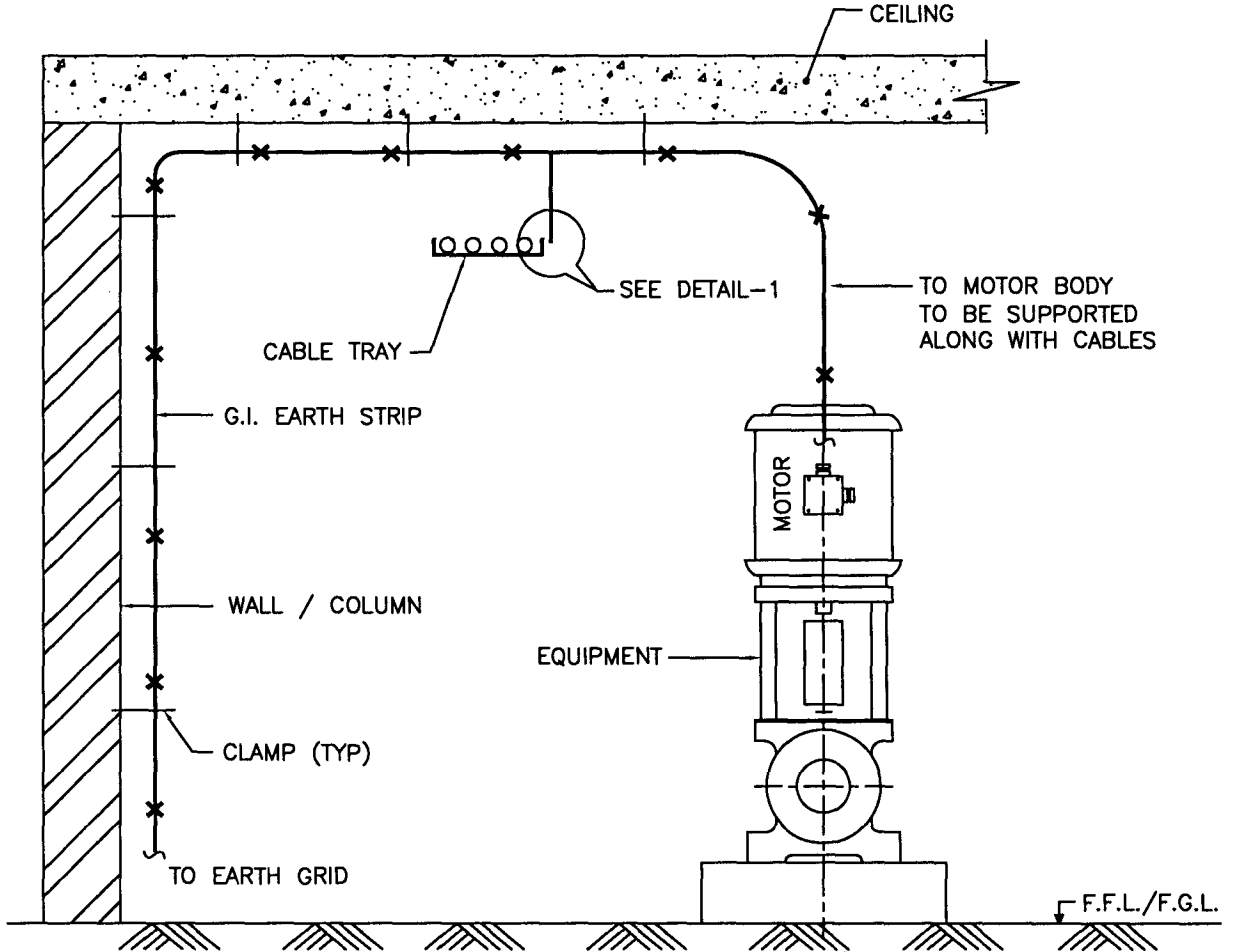
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convener	Stds. Bureau Chairman
6	01.11.21	REAFFIRMED & ISSUED AS STANDARD	JSK	VKS/HK	PG	SM
5	08.11.16	REAFFIRMED & ISSUED	BP	FA/HK	BRB	RN
4	27.06.11	REAFFIRMED & ISSUED	BP	RKS/RSC	UAP	DM
Approved by						



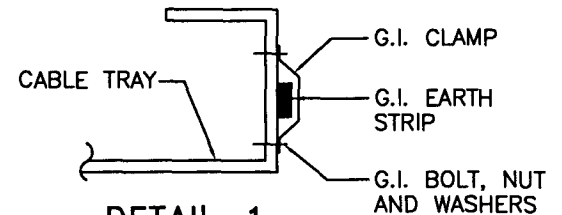
NOTES:—

1. ALTERNATIVELY, CONNECTION SHALL BE TAKEN FROM THE NEAREST AVAILABLE EARTH PLATE

6	29.11.21	REAFFIRMED & ISSUED AS STANDARD	JSK	VKS/HK	PG	SM
5	08.11.16	REAFFIRMED & ISSUED	BP	FA/HK	BRB	RN
4	27.06.11	REAFFIRMED & ISSUED	BP	RKS/RSC	UAP	DM
Rev. No.	Date	Purpose	Prepared by	Checked by	Std. Committee Convener	Std. Bureau Chairman
						Approved by



PLAN VIEW

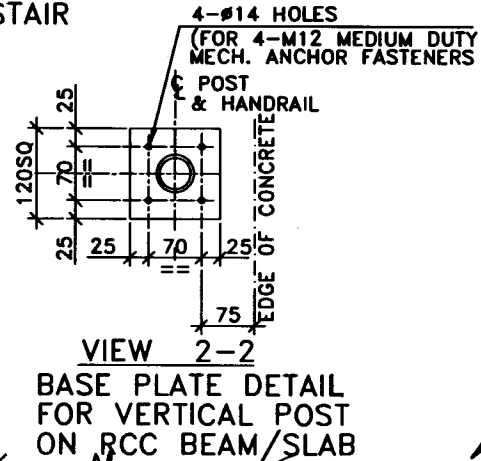
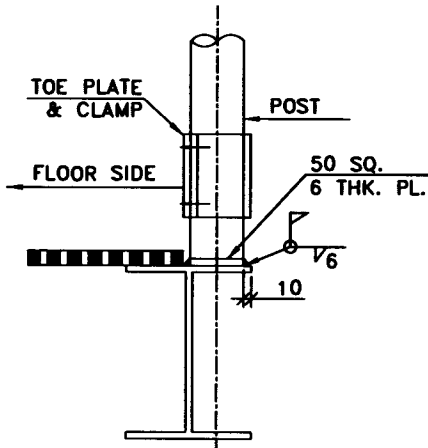
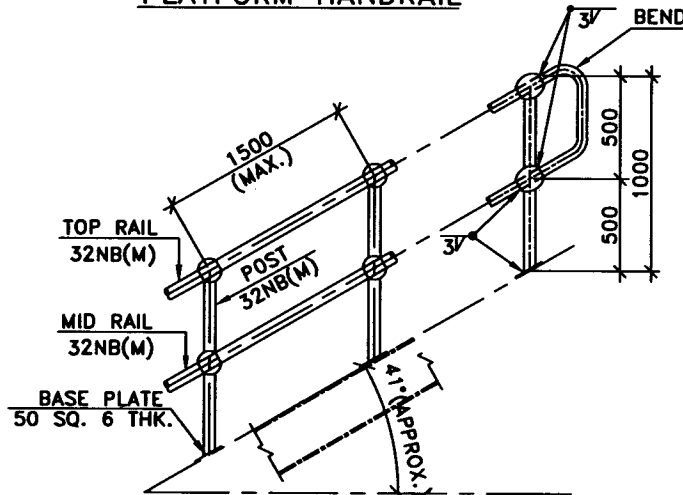
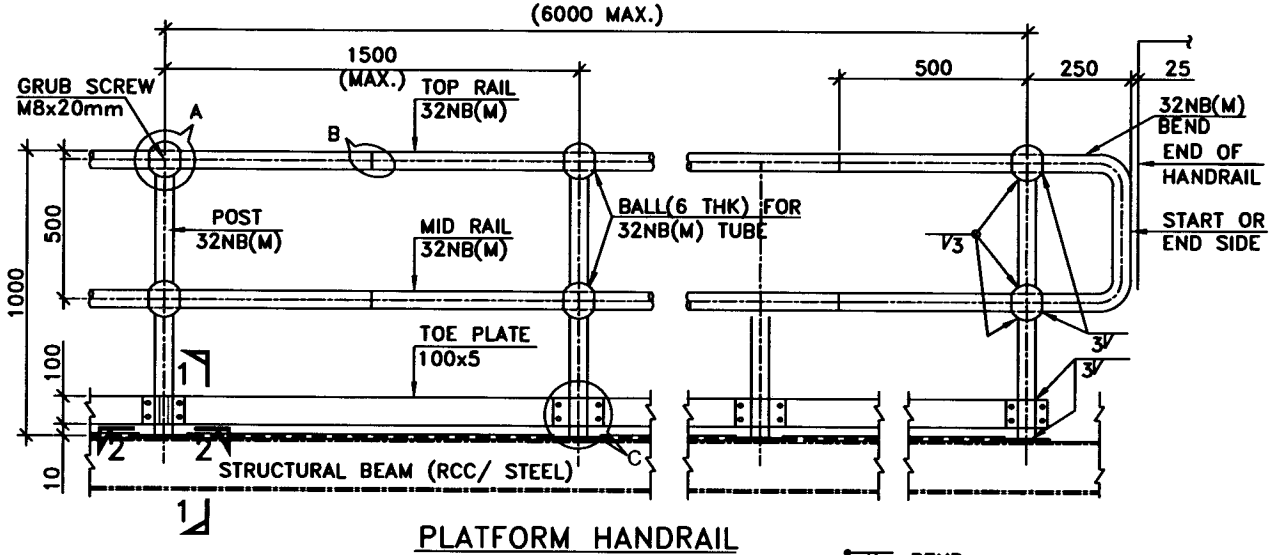


DETAIL-1

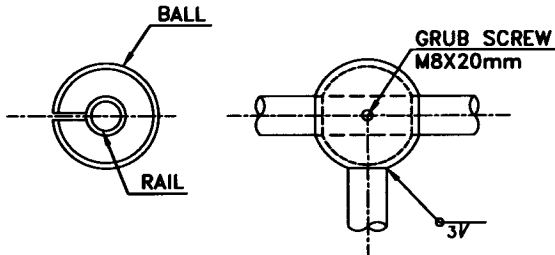
6	29.11.21	REAFFIRMED & ISSUED AS STANDARD	JSK	VKS/HK	PG	SM
5	08.11.16	REAFFIRMED & ISSUED	BP	FA/HK	BRB	RN
4	27.06.11	REAFFIRMED & ISSUED	BP	RKS/RSC	UAP	DM
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convenor	Stds. Bureau Chairman
						Approved by

NOTES :-

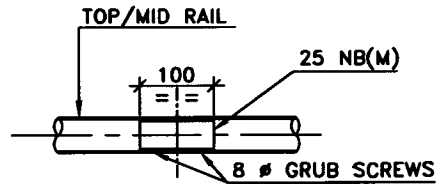
1. ALL DIMENSIONS ARE IN mm.
2. ALL M.S. TUBES SHALL CONFIRM TO IS : 1161/1239 & PLATE SHALL CONFIRM TO IS:2062.
3. PAINTING AND GALVANIZATION OF HANDRAIL SHALL BE AS PER JOB SPECIFICATION.



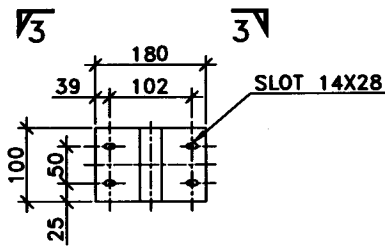
1	23.02.2021	REAFFIRMED & REISSUED AS STANDARD	AK	AS	S.MAZUMDAR	
0	15.10.2015	ISSUED AS STANDARD	KKS	SG/AS	RS	
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convenor	Stds. Bureau Chairman
					Approved by	



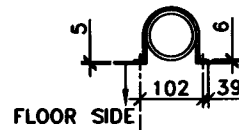
DETAIL - A



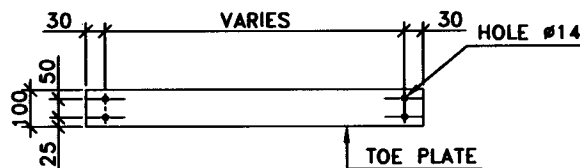
**DETAIL - B
 DETAIL OF SPLICE**



DETAIL - C

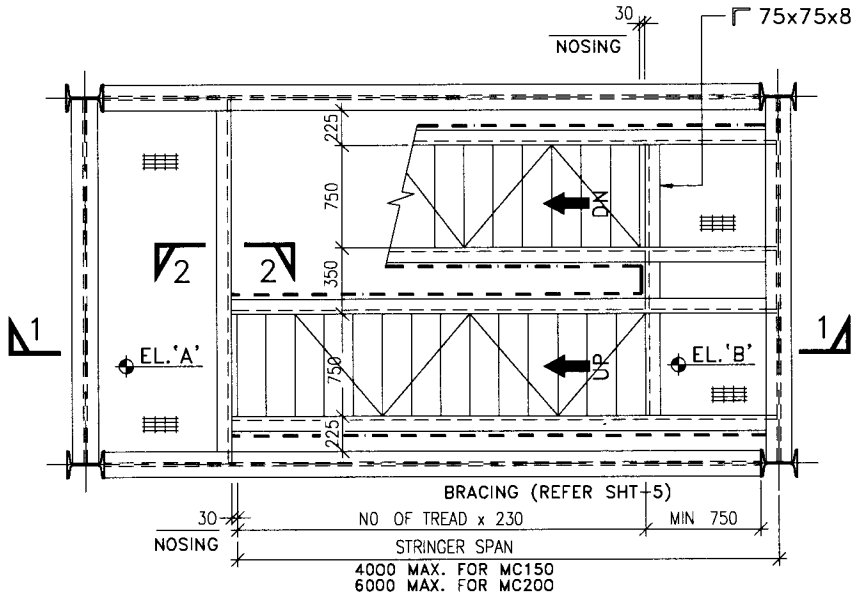


**VIEW 3-3
 TOE PLATE CLAMP**

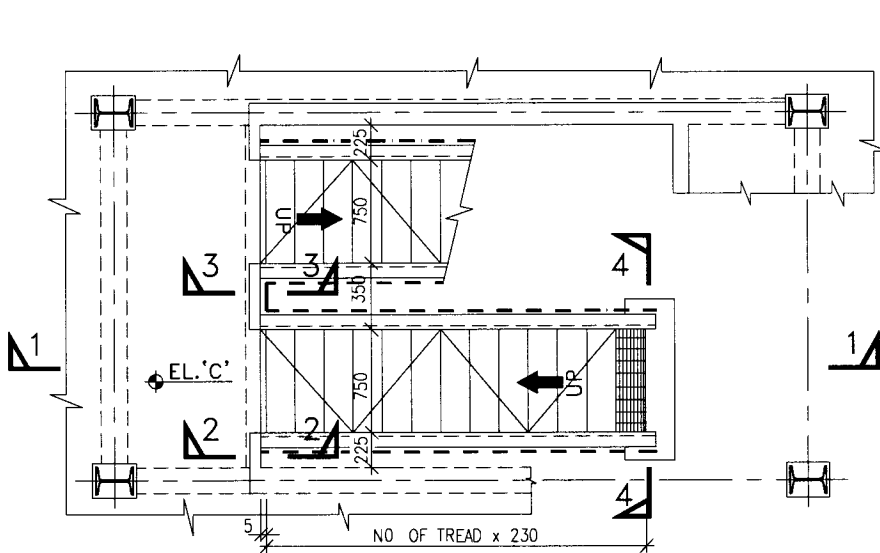


TOE PLATE DETAIL

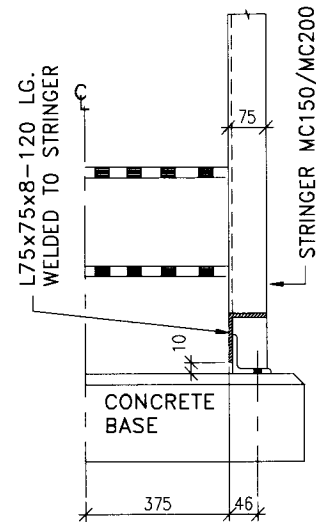
1	23.02.2021	REAFFIRMED & REISSUED AS STANDARD	AK	RBS	AS	S.MAZUMDAR
0	15.10.2015	ISSUED AS STANDARD	KKS	SG/AS	RS	SC
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convener	Stds. Bureau Chairman
						Approved by



PLAN AT EL. 'A'



PLAN AT EL. 'C'

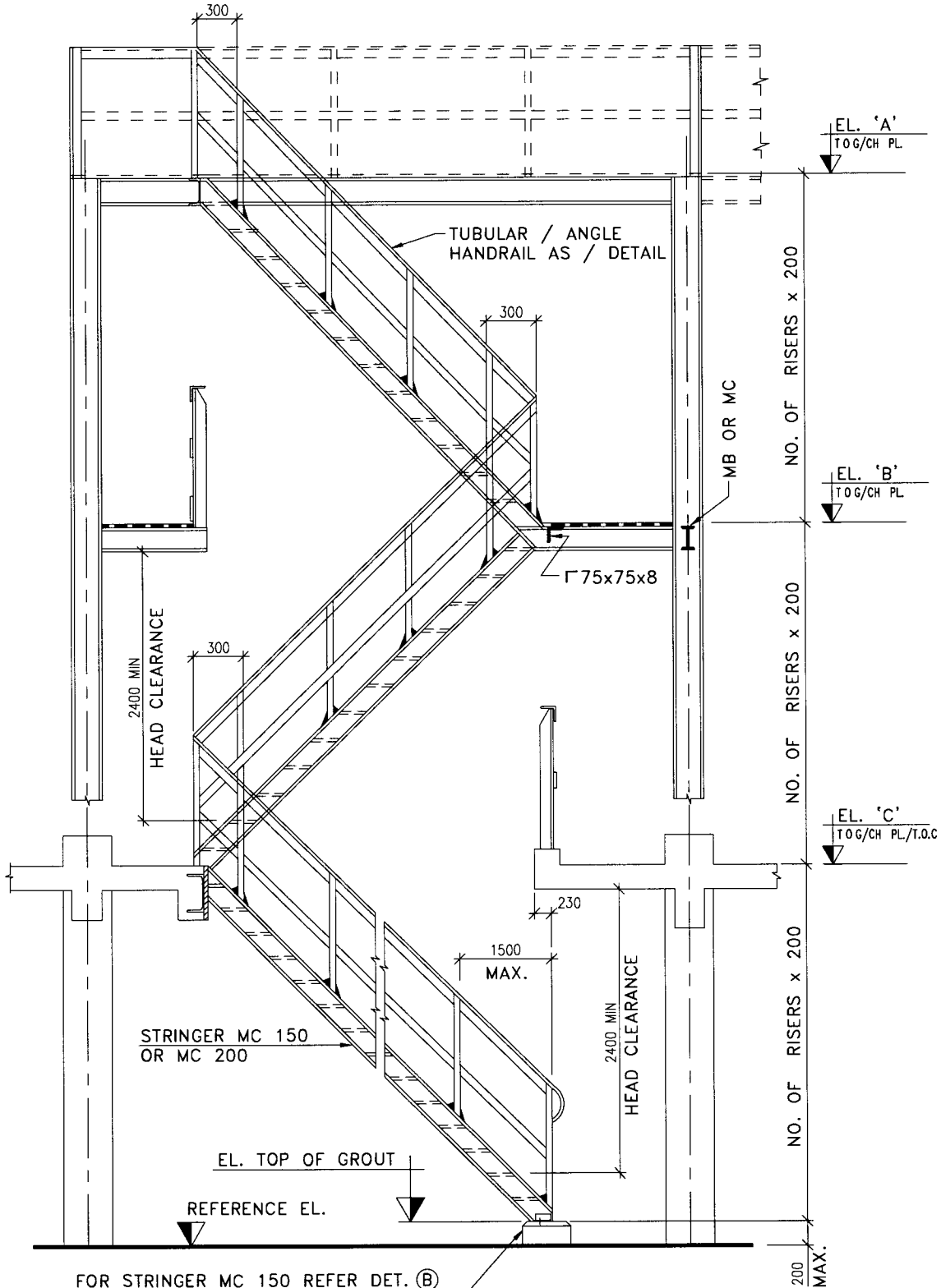


SECTION 4-4

NOTES :-

1. FOR STAIRWAY/TREAD USE ELECTROFORGED GRATING TYPE-II AS PER EIL STD NO 7-68-0697.
2. FOR CONNECTION DETAILS REFER SHEETS 3, 4, 5 AND 6.
3. STRINGER SHALL BE SUITABLY DESIGNED FOR OFFICE BUILDING, WARE HOUSES AND WORKSHOP.
4. FOR DETAIL OF INSERT PLATE 'R1a' REFER EIL STD. NO. 7-68-0056.

7	01 08 19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R K TRIVEDI
6	18 09 13	REVISED AND ISSUED AS STANDARD	vps	PJ SINGH	PK MITTAL	D MALHOTRA
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
					Approved by	

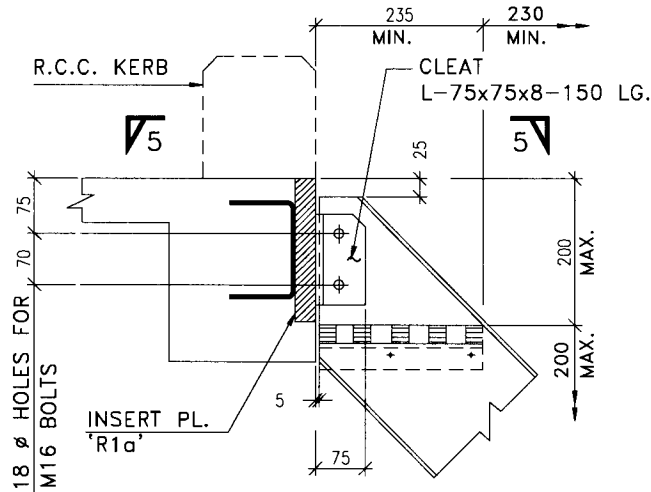


FOR STRINGER MC 150 REFER DET. (B)
FOR STRINGER MC 200 REFER DET. (C)
ON SHEET 6 OF 6

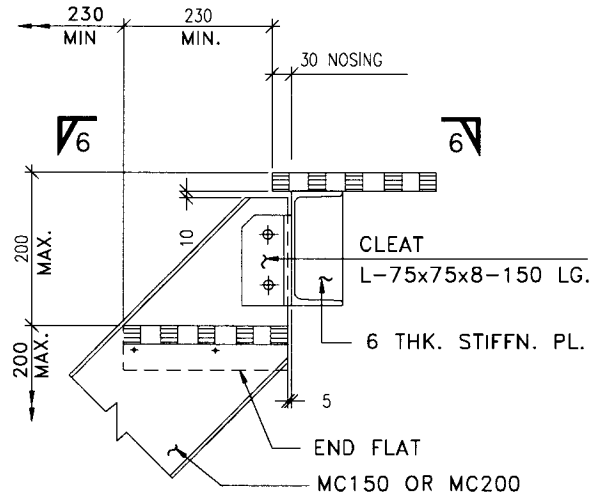
SECTION 1-1

MAXIMUM RISER IS 200 HOWEVER IT
MAY BE REDUCED AND ADJUSTED AS
REQUIRED.

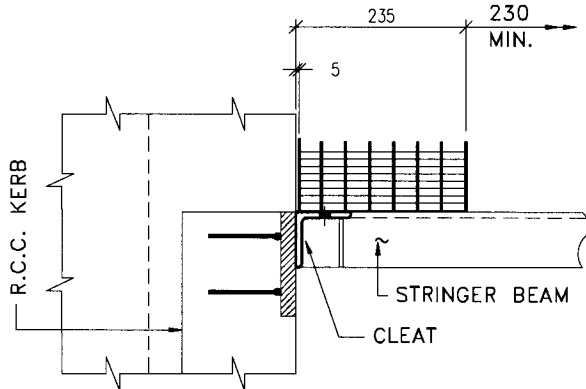
7	01 08 19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	RK TRIVEDI
6	18 09.13	REVISED AND ISSUED AS STANDARD	VPS	PJ SINGH	PK MITTAL	D MALHOTRA
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
						Approved by



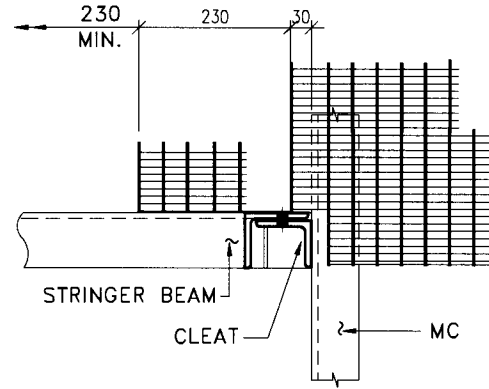
SECTION 2-2
(CONNECTION WITH CONCRETE BEAM)



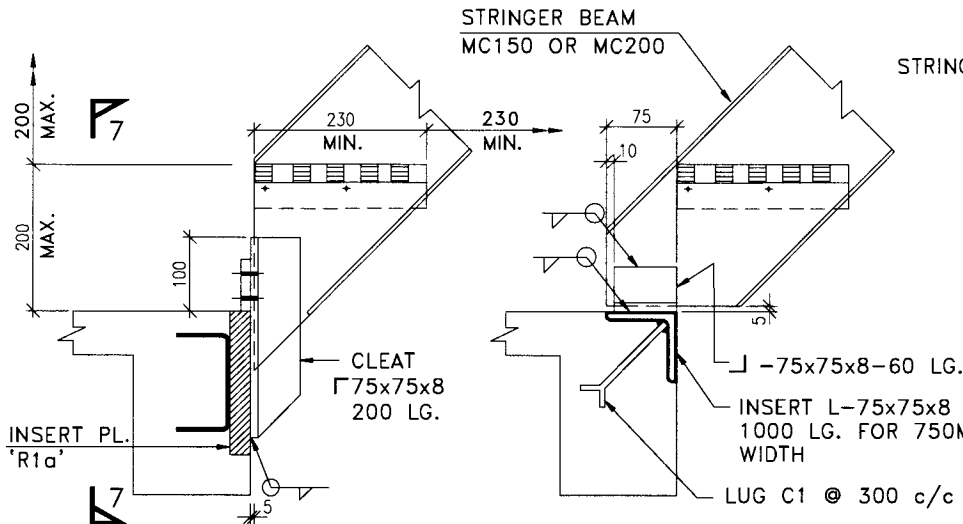
SECTION 2-2
(CONNECTION WITH STEEL BEAM MC)



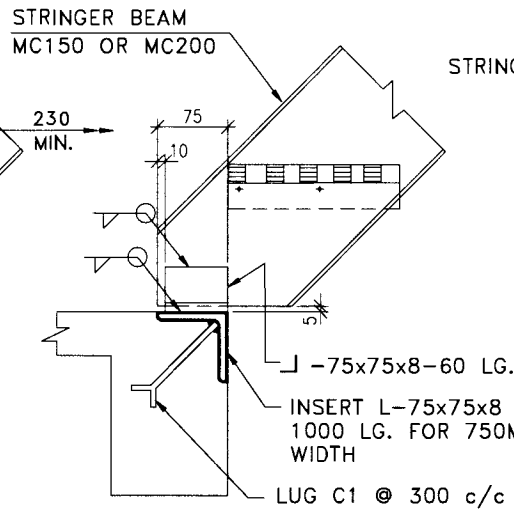
VIEW 5-5



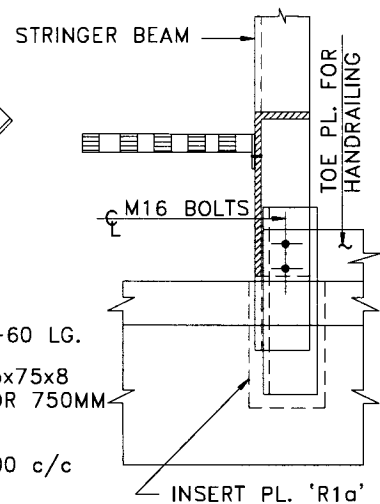
VIEW 6-6



SECTION 3-3
(CONNECTION WITH CONCRETE BEAM)
(R.C.C. KERB NOT SHOWN FOR CLARITY)

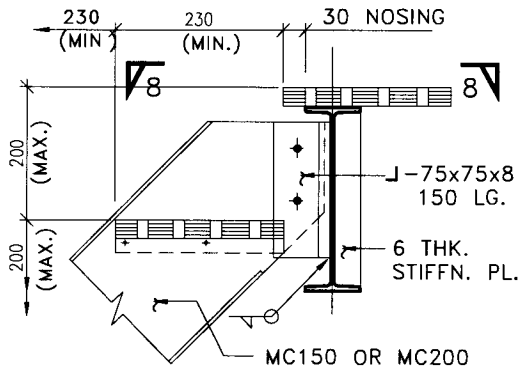


SECTION 3-3 (ALT.)
(CONNECTION WITH CONCRETE BEAM)
(R.C.C. KERB NOT SHOWN FOR CLARITY)

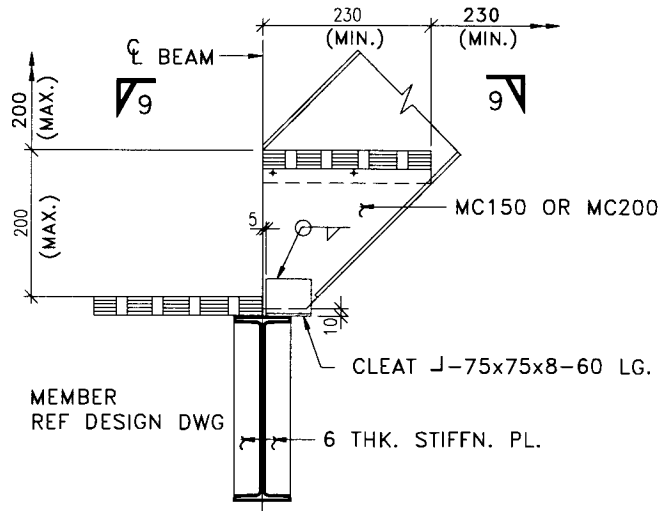


VIEW 7-7

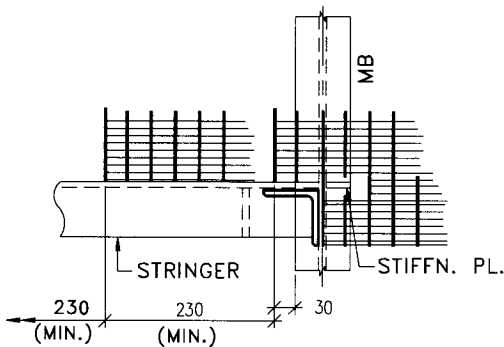
7	01 08 19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R K TRIVEDI
6	18 09 13	REVISED AND ISSUED AS STANDARD	VPS	PJ SINGH	PK MITTAL	D MALHOTRA
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
						Approved by



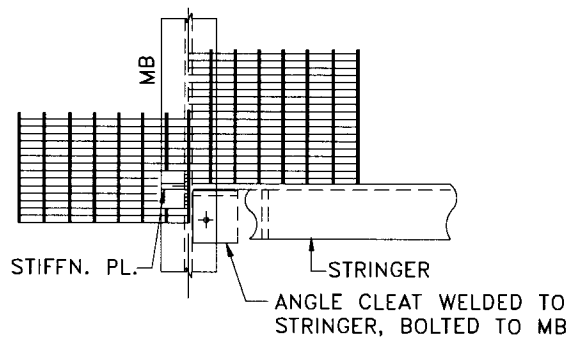
SECTION 2-2
(CONNECTION WITH STEEL BEAM ISMB)



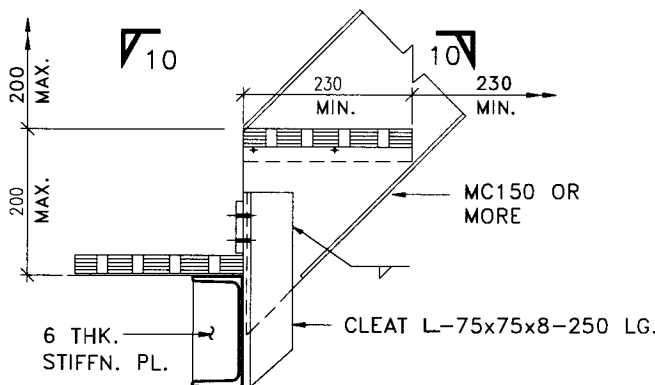
SECTION 3-3
(CONNECTION WITH STEEL BEAM ISMB)



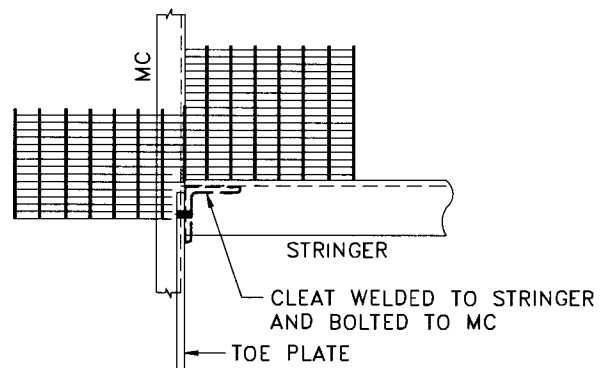
VIEW 8-8



VIEW 9-9

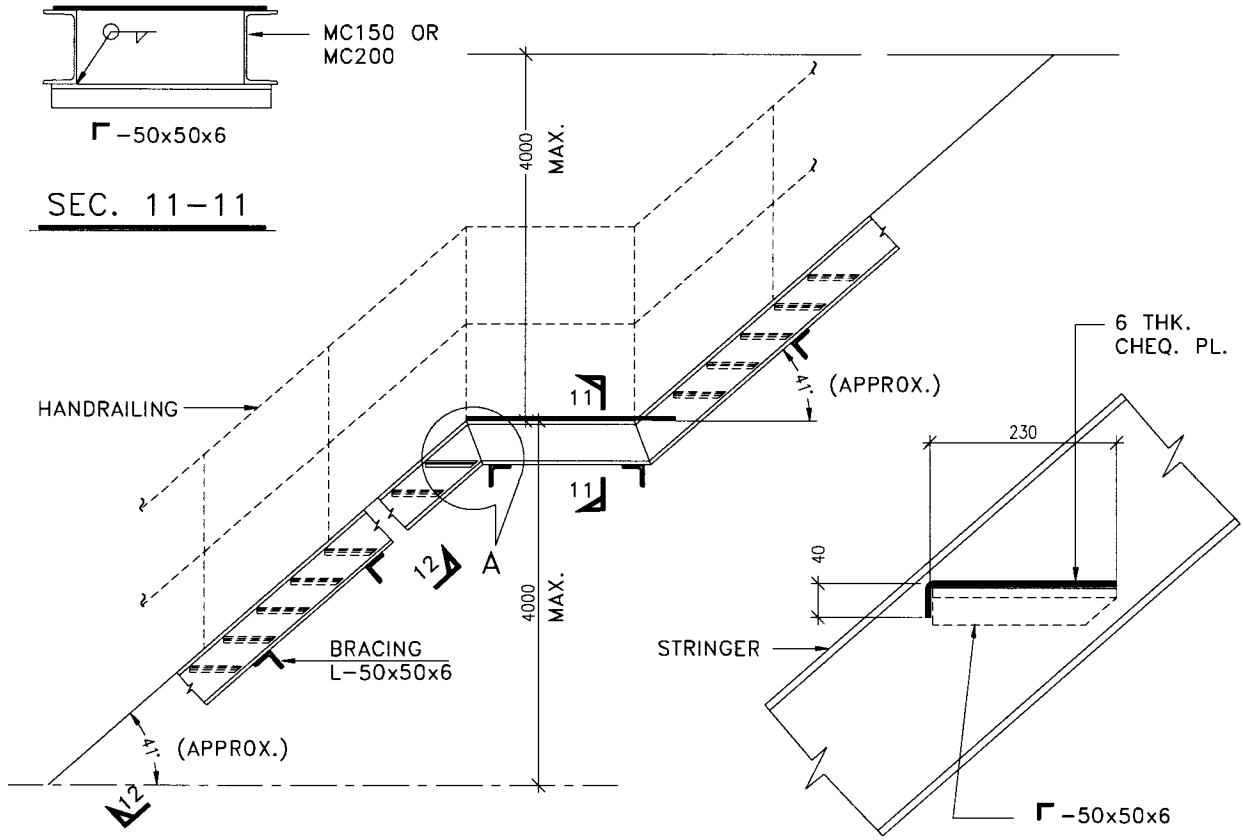


SECTION 3-3
(CONNECTION WITH STEEL BEAM ISMC)



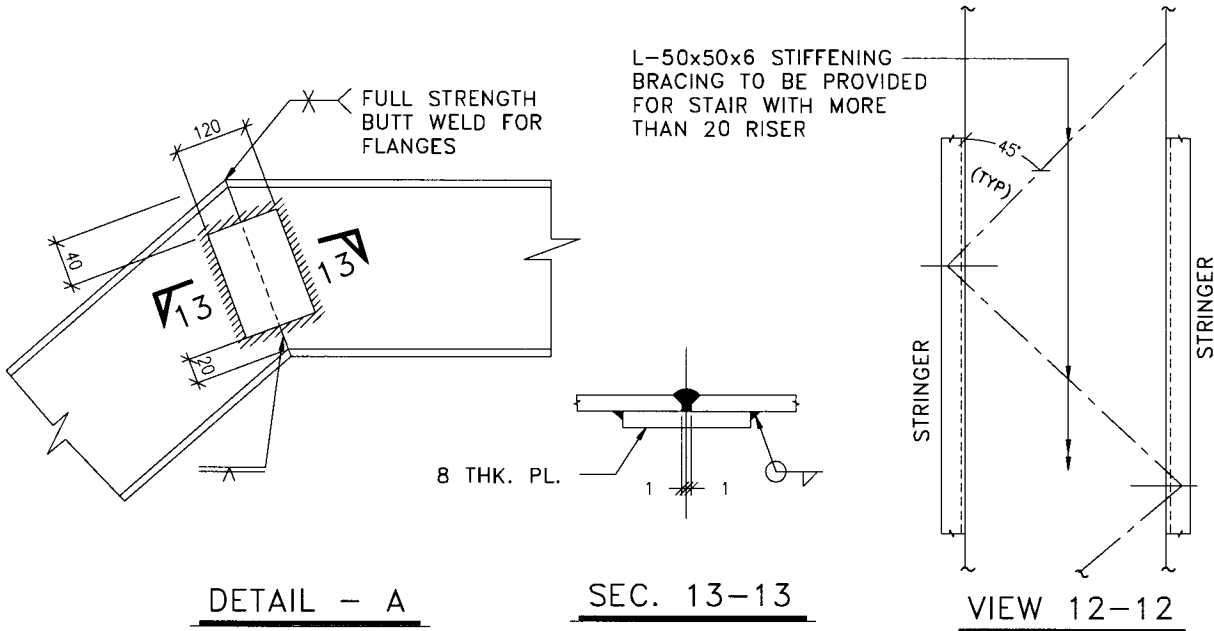
VIEW 10-10

7	01 08.19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R K TRIVEDI
6	18 09.13	REVISED AND ISSUED AS STANDARD	VPS	PJ SINGH	PK MITTAL	D MALHOTRA
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
Approved by						



ELEVATION SHOWING STRINGER BRACINGS

TYP. DET. OF CHEQ. PL. STEP



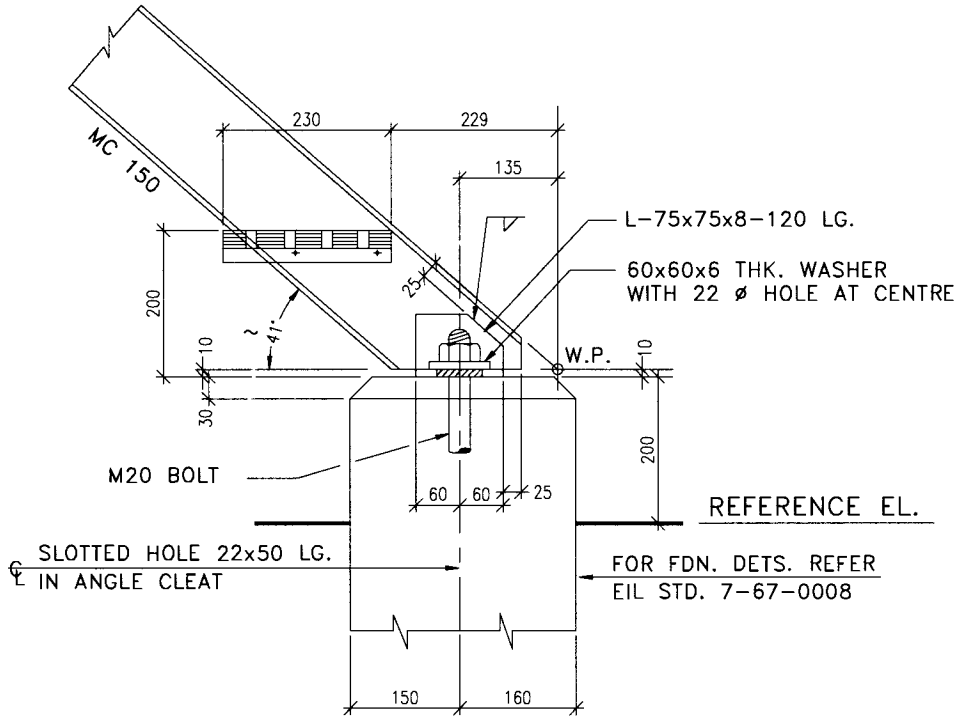
DETAIL - A

SEC. 13-13

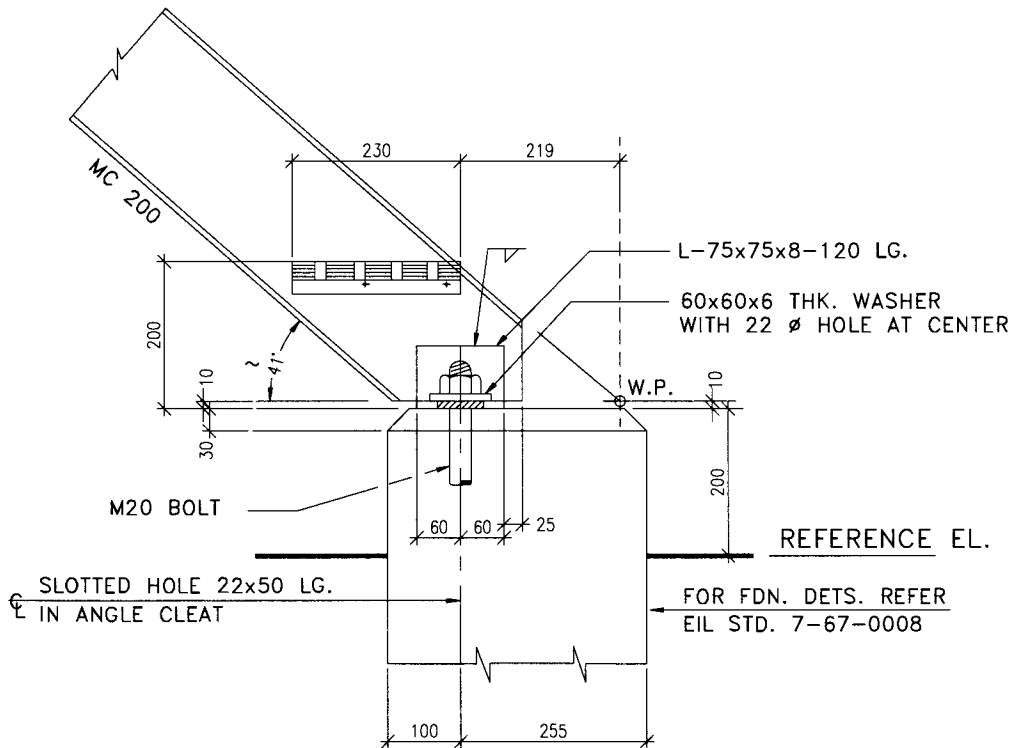
VIEW 12-12

STAIR DETS WITH CHEQUERED PLATE STEPS

7	01 08 19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R K TRIVEDI
6	18 09 13	REVISED AND ISSUED AS STANDARD	VPS	PJ SINGH	PK MITTAL	D MALHOTRA
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
						Approved by

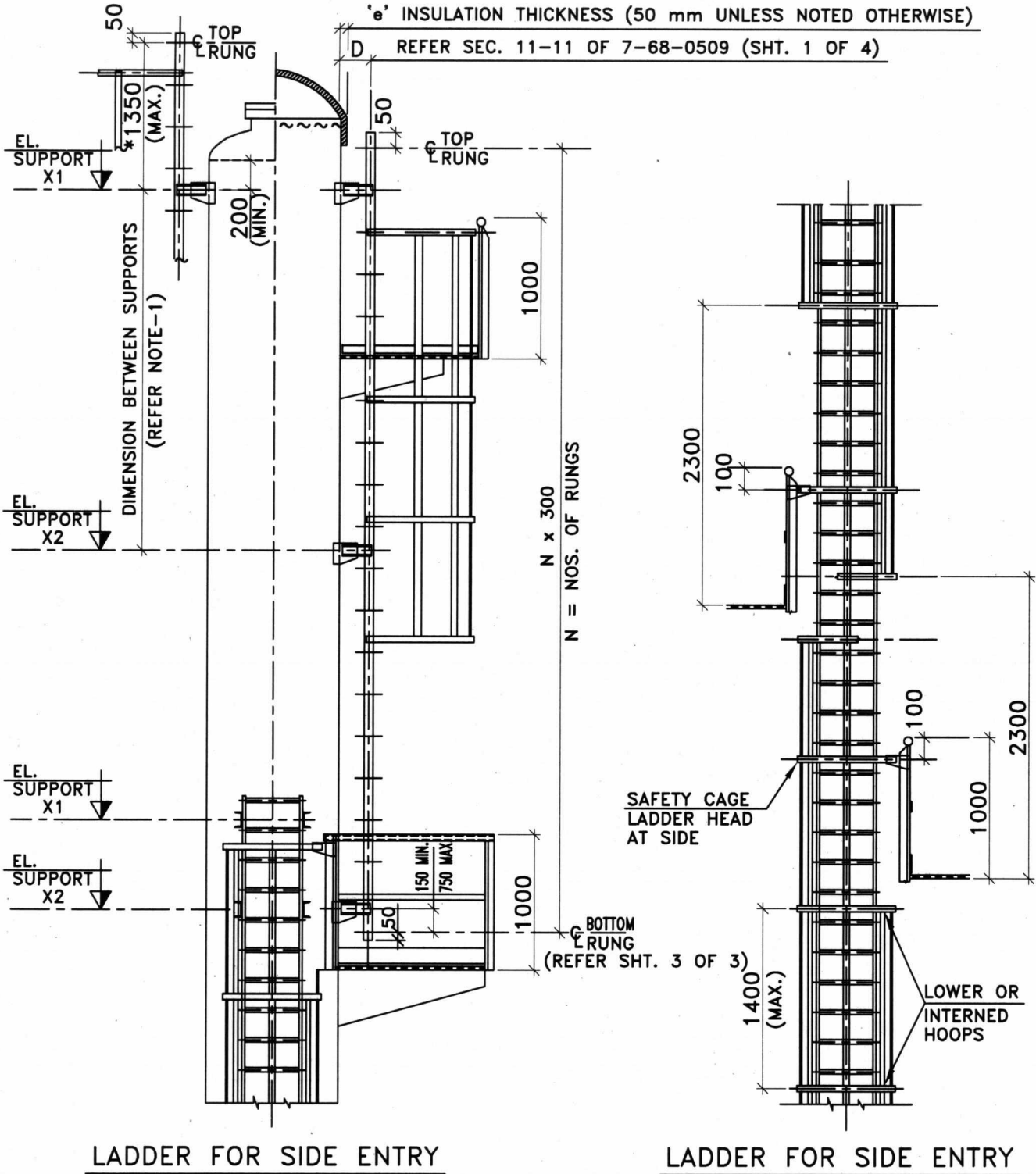


DETAIL - B



DETAIL - C

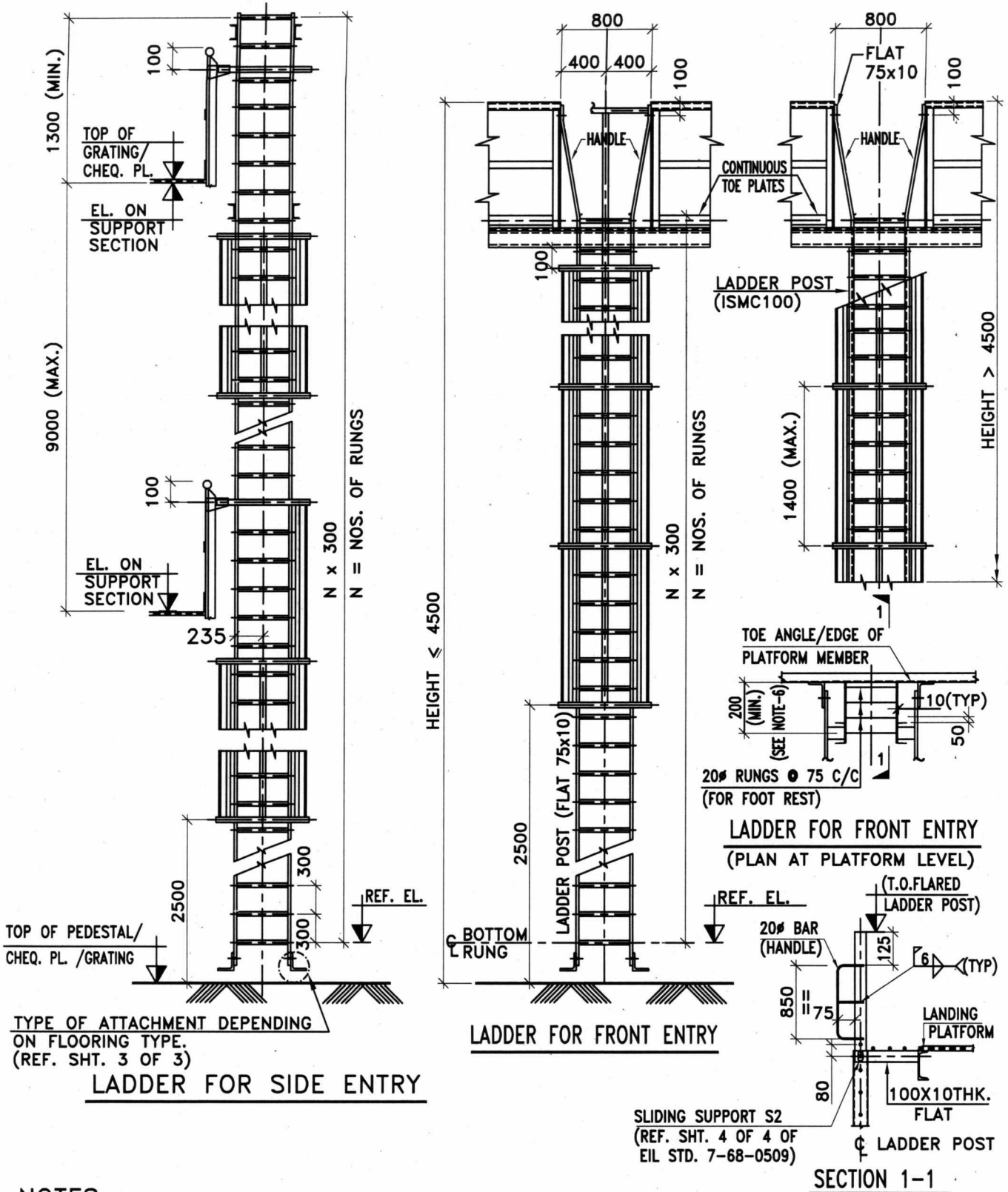
7	01 08 19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R.K TRIVEDI
6	18 09 13	REVISED AND ISSUED AS STANDARD	vps	PJ SINGH	PK MITTAL	D MALHOTRA
Rev No.	Date	Purpose	Prepared by	Checked by	Stds Committee Convenor	Stds Bureau Chairman
						Approved by



VESSEL DIA (mm)	DISTANCE 'D' (mm)
UPTO 800	200 + e
> 800 ≤ 3200	260 + e
> 3200 ≤ 8000	275 + e

* MC100 SHALL BE ADOPTED FOR DISTANCE MORE THAN 1350 UPTO 2000

9	14.12.23	REVISED AND ISSUED AS STANDARD	JITENDER GUPTA	AMARJEET	ANURAG SINHA	MAINAK NANDI
8	01.08.19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	S.CHANDA
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convenor	Stds. Bureau Chairman
						Approved by

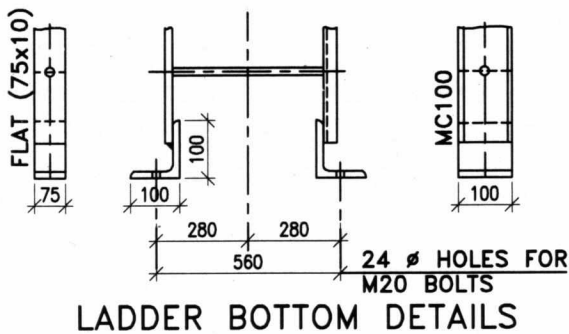
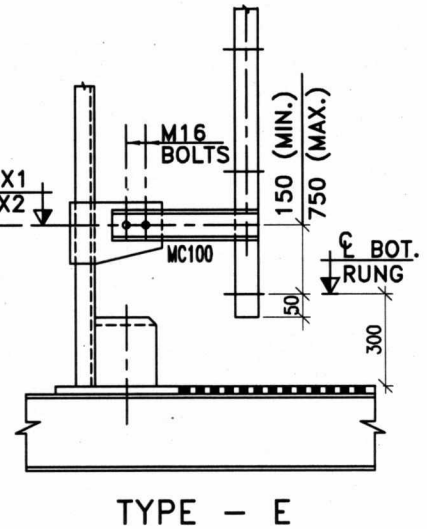
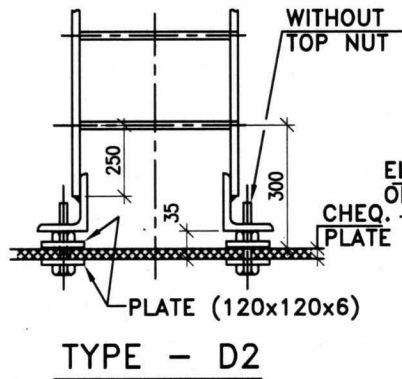
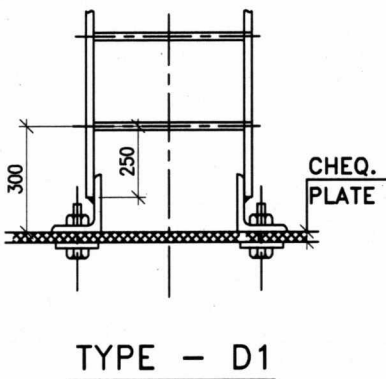
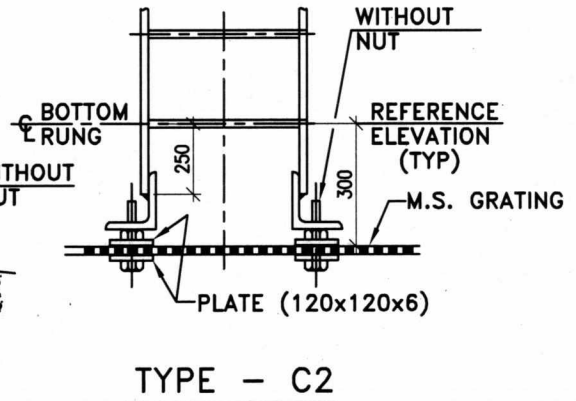
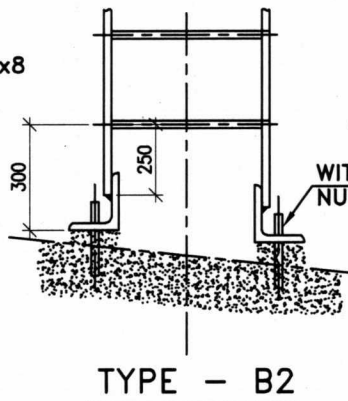
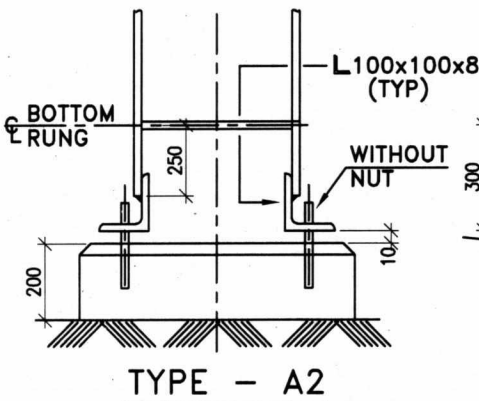
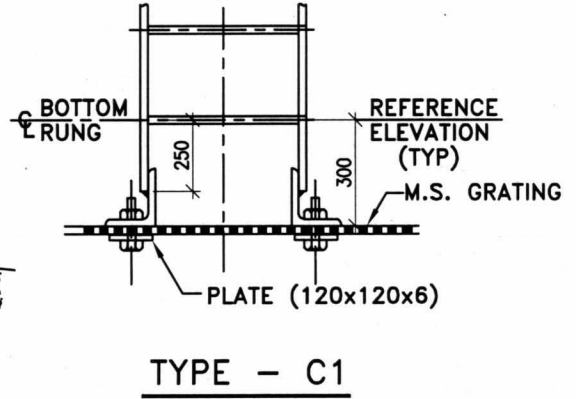
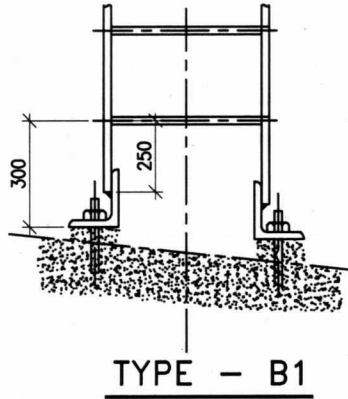
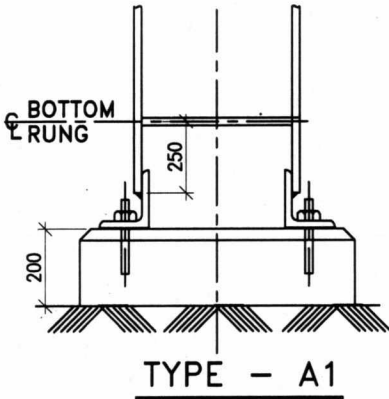


NOTES :-

1. LADDER POSTS SHALL BE OF FLAT (75x10) UPTO 3.60m (MAX.) BETWEEN SUPPORTS AND ISMC 100 UPTO 7.0m (MAX.) BETWEEN SUPPORTS.
2. RUNGS SHALL BE 20 Ø. FOR STEEL LADDER JOINT DETAILS, REFER EIL STD. 7-68-0509.
3. SUPPORT TYPE 'X1' CORRESPONDS TO FIXED SUPPORT AND 'S2/X2' CORRESPONDS TO SLIDING SUPPORT. FOR EACH LADDER, ONLY ONE FIXED SUPPORT SHALL BE PROVIDED. REMAINING SUPPORT(S) SHALL BE OF SLIDING TYPE.
4. SUPPORT ELEVATION X1, X2 CORRESPOND TO ϕ OF BOLT HOLES.
5. SUPPORTS 'X1' IS CAPABLE TO SUSTAIN A LOAD FOR 9000 mm LONG LADDER ONLY.
6. LADDER SHALL BE GIVEN SUITABLE SLOPE (MAX.6°),IF NECESSARY,TO AVOID FOULING WITH ANCHOR CHAIRS.

DETAILS OF STEEL LADDER

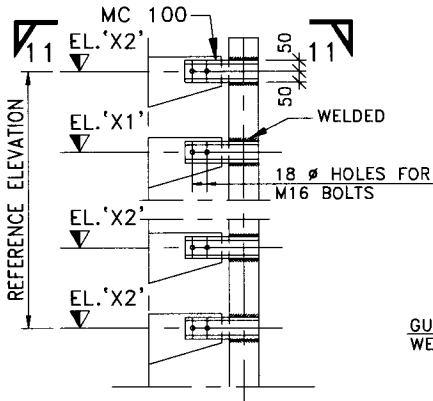
TYPE OF ATTACHMENT	NATURE OF SUPPORT SECTION	REMARKS
A1, A2	SITE WITHOUT PAVING	
B1, B2	CONCRETE FLOOR	A1, B1, C1, D1 : FIXED TYPE
C1, C2, D1, D2	CHEQUERED PLATE / GRATING FLOORING	A2, B2, C2, D2 : SLIDING TYPE



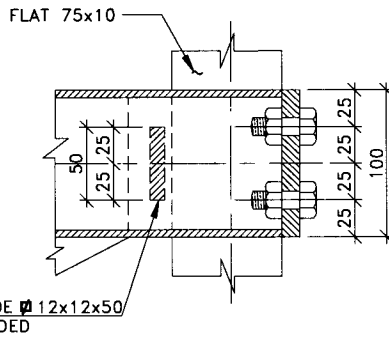
NOTE :-

IN CASE OF TOWERS BOTTOM RUNG SHALL BE 300 mm FROM FGL /HPP.

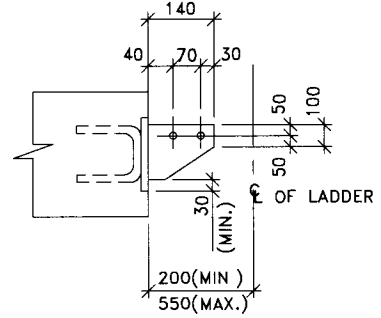
TYPE OF ATTACHMENT AT BASE



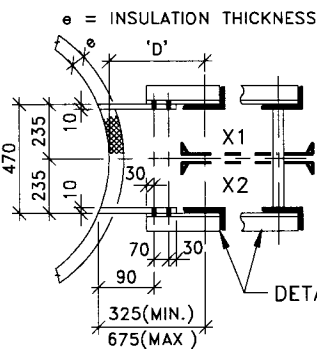
LADDER ATTACHMENT TO VESSELS



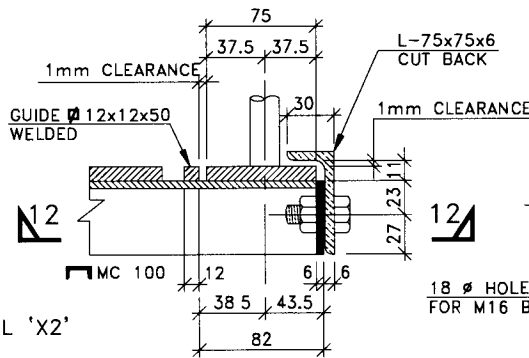
SECTION 12-12



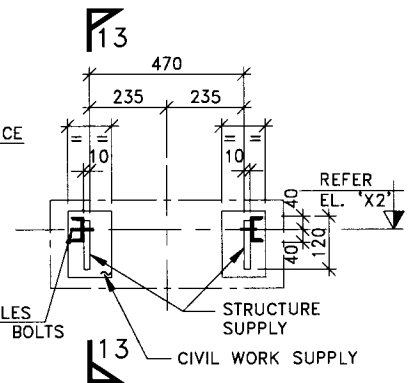
SECTION 13-13



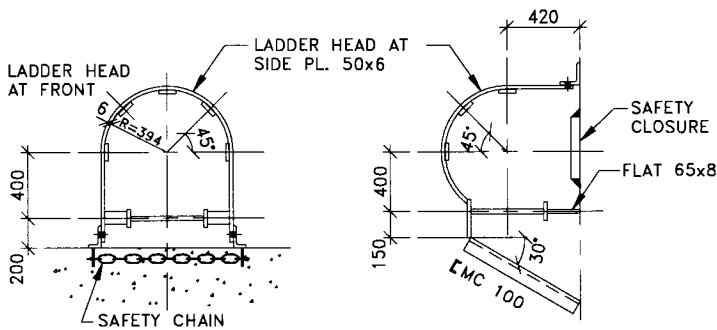
SECTION 11-11



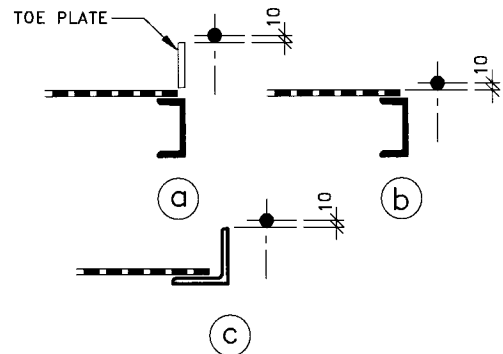
DETAIL 'X2' (FOR LADDER POST FLAT 75x10)



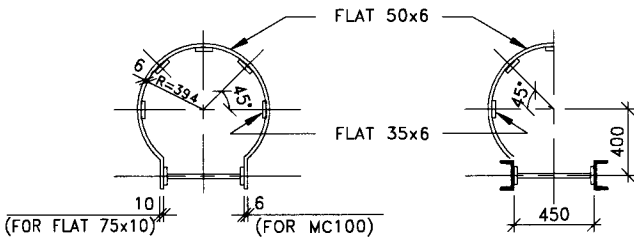
LADDER ATTACHMENT TO CONCRETE



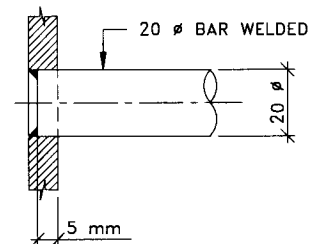
SAFETY CAGE HOOP DETAILS



LOCATION OF RUNG FOR LADDER

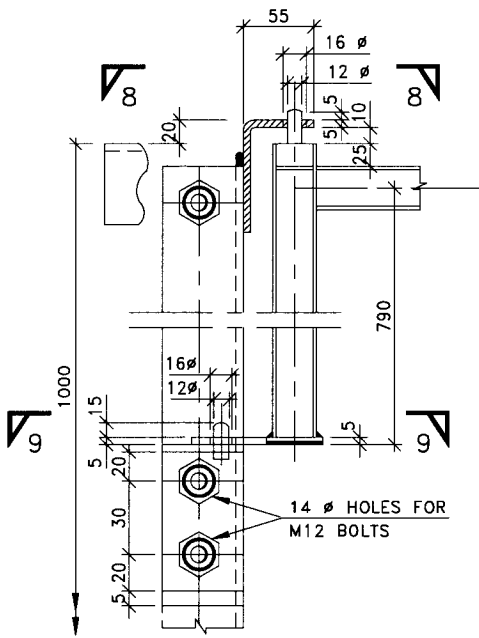


LOWER AND INTERMEDIATE CAGE

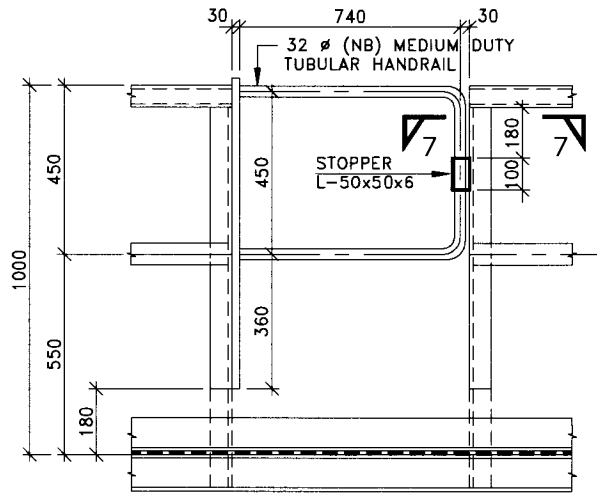


ATTACHMENT OF BAR

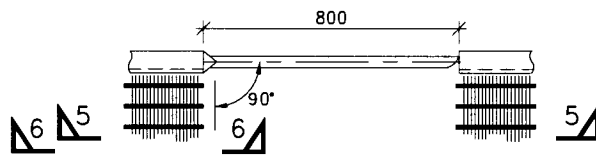
7	01 08 19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R K TRIVEDI
6	28 11 13	REVISED AND ISSUED AS STANDARD	VPS	AJS	P K MITTAL	S CHANDA
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convenor	Stds Bureau Chairman
						Approved by



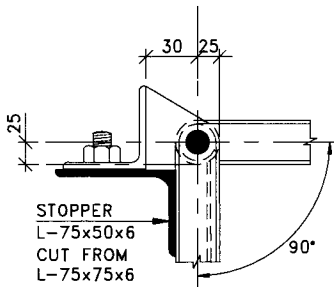
SECTION 6-6



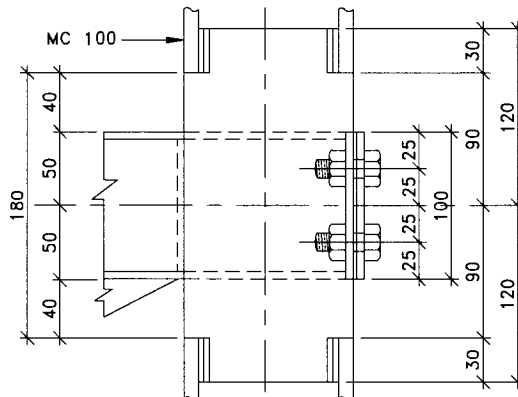
SECTION 5-5



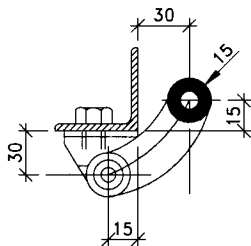
AUTOMATIC BARRIER



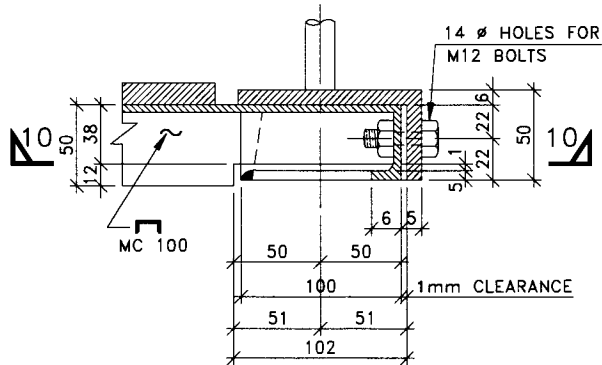
SECTION 8-8



SECTION 10-10



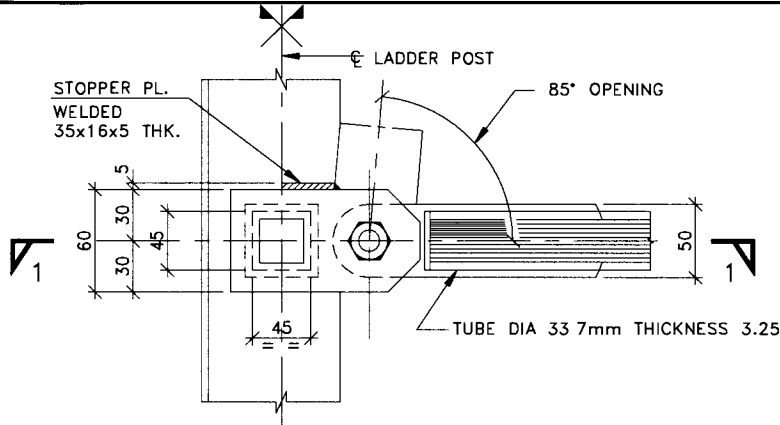
SECTION 9-9



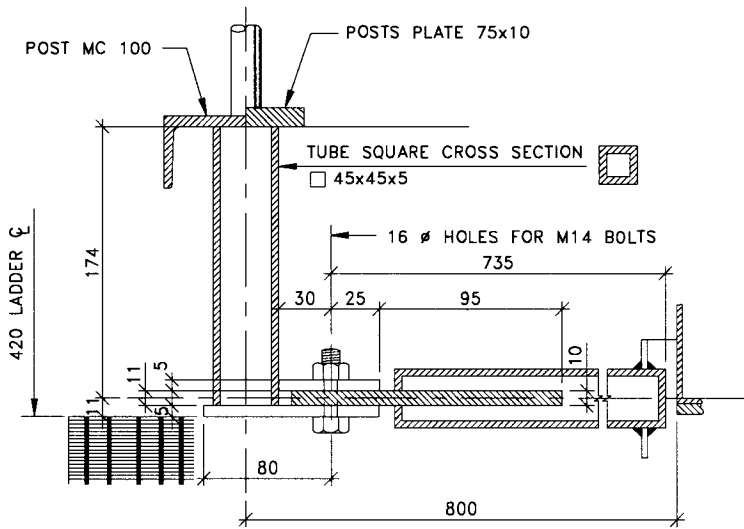
DETAIL 'X2'

(FOR LADDER POST MC 100)

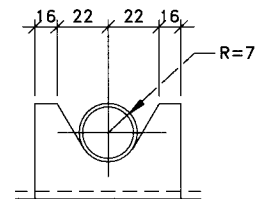
7	01 08 19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R K TRIVEDI
6	28 11 13	REVISED AND ISSUED AS STANDARD	VPS	AJS	P K MITTAL	S CHANDA
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convenor	Stds Bureau Chairman
						Approved by



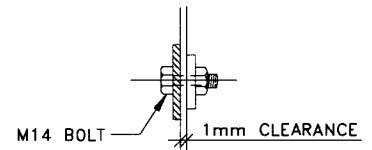
SAFETY BAR INSTALLATION ON LADDER POSTS



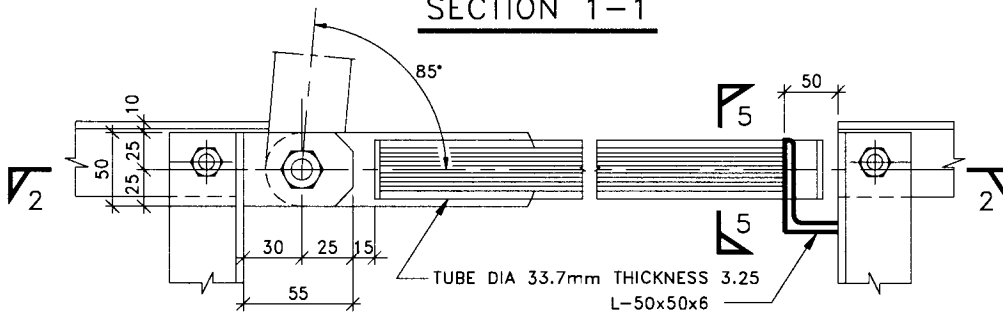
SECTION 1-1



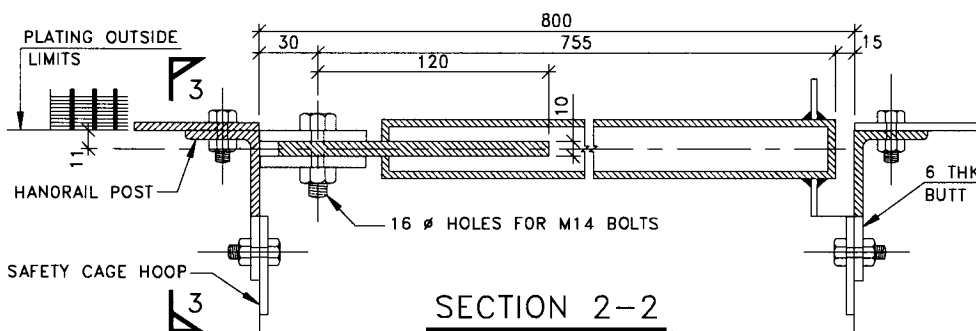
SECTION 5-5



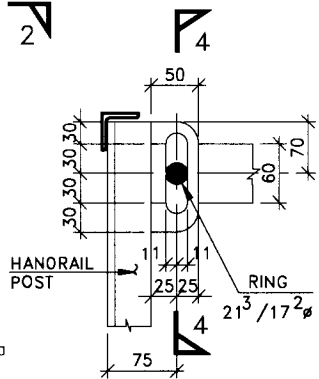
SECTION 4-4



SAFETY BAR INSTALLATION ON HANDRAIL POSTS



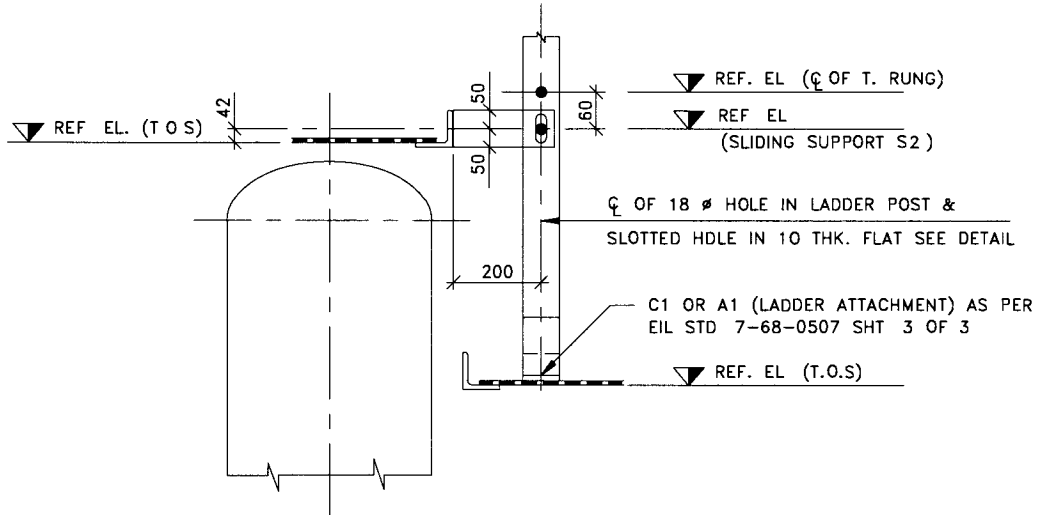
SECTION 2-2



SAFETY CAGE HOOP ATTACHMENT TO HANDRAIL POST

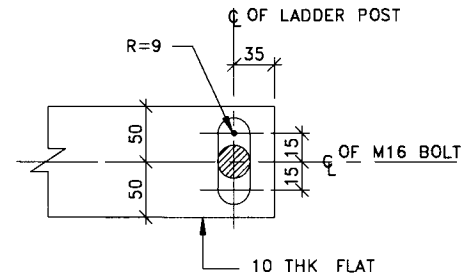
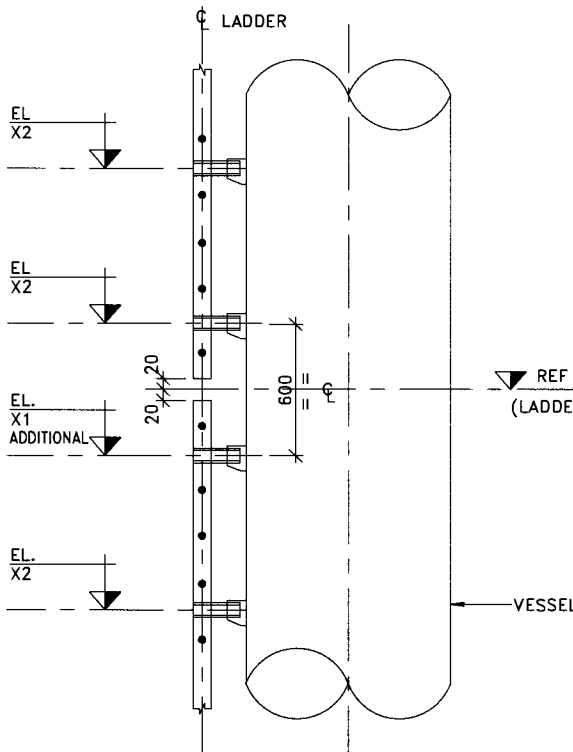
SECTION 3-3

7	01.08.19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R K TRIVEDI
6	28.11.13	REVISED AND ISSUED AS STANDARD	VPS	AJS	P K MITTAL	S CHANDA
Rev No	Date	Purpose	Prepared by	Checked by	Stds Committee Convener	Stds Bureau Chairman
						Approved by



SLIDING CONN. DET. OF LADDER

(WITH TOE ANGLE OF PLATFORM ON THE HEAD OF VESSEL)



DETAIL OF SLOTTED HOLE
 (FOR SLIDING SUPPORT S2)

DET. OF LADDER EXPANSION JOINT

(WHEN DISTANCE BETWEEN TOP AND BOT. MOST SUPPORT \geq 9000)

7	01 08 19	REAFFIRMED AND ISSUED AS STANDARD	JG	AVM	RAJANJI SRIVASTAVA	R K TRIVEDI
6	28 11 13	REVISED AND ISSUED AS STANDARD	VPS	AJS	P K MITTAL	S.CHANDA
Rev. No	Date	Purpose	Prepared by	Checked by	Stds Committee Convenor	Stds Bureau Chairman
						Approved by

NOTES :-

- ALL DIMENSIONS ARE IN mm.
- THE TYPE OF GRATING TO BE USED SHALL BE CALLED OUT ON THE DESIGN DRAWING.
- MATERIAL FOR THE GRATING SHALL CONFORM TO FOLLOWING STANDARDS:

	CARBON STEEL (CS) GRATING	STAINLESS STEEL (SS) GRATING
(a) MAIN MEMBER & END FLAT	IS 2062 (GRADE E250) SUB QUALITY-A/BR/BO	GRADE 409M CONFORMING TO ASTM 240/480 (UNS S40977)
(b) CROSS MEMBER (SQ.TWISTED ACROSS BAR)	IS 7887	GRADE 409M CONFORMING TO ASTM 240/480 (UNS S40977) OR DESIGNATION X12Cr13 CONFORMING TO IS 6527/6528
(c) FLAT FOR CLAMP	IS 513	GRADE 409M CONFORMING TO ASTM 240/480 (UNS S40977) OR DESIGNATION X12Cr12 CONFORMING TO IS 6603
(d) DISC	CS 1038 GRADE	GRADE 1.4404 CONFORMING TO DIN EN 1.4404 OR GRADE 316/316L CONFORMING TO ASTM 240/480
(e) STUD	CS 1038 GRADE	GRADE 1.4462 CONFORMING TO DIN EN 1.4462 OR GRADE F51 CONFORMING TO ASTM A182

- ALL GRATINGS SHALL BE MANUFACTURED BY ELECTRO-FORGING PROCESS.
- CARBON STEEL GRATINGS INCLUDING TOE PLATES & FLATS (AROUND OPENINGS) AND CLAMPS SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH IS 2629 AND TESTED AS PER IS 2633 & IS 6745. QUANTITY OF ZINC COATING SHALL BE MINIMUM 900 gm/sqm OF SURFACE AREA (0.12 mm MINIMUM AVERAGE THICKNESS). CLAMP BOLTS & NUTS SHALL HAVE MINIMUM AVERAGE ZINC COATING OF 375 gm/sqm (0.054 mm MINIMUM AVERAGE THICKNESS).
- THE PANEL WIDTH SHOWN ON SUBSEQUENT SHEETS IS INDICATIVE. IT MAY BE INCREASED OR DECREASED AS REQUIRED TO SUIT THE GEOMETRY OF PLATFORM & CONVENIENCE OF HANDLING.
- GRATINGS SHALL NOT BE USED FOR SUPPORTING THE PIPES DIRECTLY. ADDITIONAL MEMBERS (MINIMUM MC125) SHALL BE PROVIDED UNDER THE GRATING FOR SUPPORTING THE PIPE HAVING A MAXIMUM LOAD OF 500 Kg. THIS MEMBER SHALL SPAN IN SAME DIRECTION AS GRATING.
- GRATING PANEL SHALL BE ALIGNED AND TACK WELDED TO THE SUPPORTING MEMBERS. FIXING OF GRATING PANEL WITH SUPPORTING MEMBERS SHALL EITHER BE DONE BY CLAMPS/ DISC (WITHOUT REMOVING TACK WELD) OR ALTERNATIVELY BY INTERMITTENT/STITCH WELDING 50(50).
REMOVABLE GRATING PANEL AS SHOWN IN DRAWINGS SHALL BE FIXED BY CLAMPS/ DISC ONLY.
- FOR GRATING PANELS WITH CUTOUTS/ OPENINGS; STRENGTHENING SHALL BE CARRIED OUT AS PER THE DETAILS GIVEN ON SHEET 6. ADDITIONAL MEMBERS WHEREVER SHOWN SHALL BE PROVIDED IN THE STRUCTURE.
- THE FABRICATED GRATING SHALL FULFILL THE FOLLOWING MINIMUM REQUIREMENTS:
 - UNFUSED JOINTS ARE NOT IN EXCESS OF 5% OF TOTAL JOINTS AND ARE WELDED BY SMAW/GMAW PROCESS.
 - THE JOINTS ARE ABLE TO SUSTAIN A MINIMUM PULL OUT LOAD OF 1.2 TIMES THE SHEAR CAPACITY OF THE CROSS MEMBER.
- EVERY FIFTH MAIN MEMBER SHALL NECESSARILY BE WELDED TO THE END FLAT FROM ONE SIDE. HOWEVER, THE END MAIN MEMBER SHALL ALWAYS BE WELDED TO THE END FLATS.
- OPENINGS UP TO 200 mm DIA ARE NOT SHOWN ON THE DRAWING. THE SAME SHALL BE MADE AT SITE DURING ERECTION OF PIPING.
- FOR CARBON STEEL GRATING, REPAIR TO THE DAMAGED AREA OF GALVANIZED COATING DUE TO WELDING AFTER ERECTION SHALL BE CARRIED OUT AS PER RECOMMENDED PRACTICE OF IS 11759 USING COLD GALVANIZING SPRAY PROCESS. ORGANIC PAINT SYSTEM IS NOT ACCEPTABLE.
- MAXIMUM LENGTH OF SINGLE CONTINUOUSLY SUPPORTED GRATING SHALL BE FIXED ON THE BASIS OF HANDLING. HOWEVER PREFERABLY LENGTH OF GRATING SHALL BE RESTRICTED TO 6 M.
- GRATING FASTENER DISC AND THREADED STUDS SHALL BE CERTIFIED BY EOTA (EUROPEAN ORGANIZATION FOR TECHNICAL ASSESSMENT). FOR INSTALLATION, PILOT HOLE SHALL BE DRILLED WITHOUT SELF-TAPPING. THE STUD WITH PRE-MOUNTED NEOPRENE (FOR CS)/ CHLOROPRENE (FOR SS) WASHER SHALL BE FASTENED INTO THE PILOT HOLE WITH PREDEFINED TORQUE VALUE BASED ON THE MANUFACTURER'S GUIDELINES. THE GRATING DISC SHALL THEN BE FIXED WITH ALLEN-TYPE BIT. VENDOR SHALL PROVIDE THE ENTIRE ARRANGEMENT INCLUDING THE SPECIALIZED TOOLS WITH INSTALLATION INSTRUCTIONS. VENDOR SHALL CARRY OUT PULL OUT LOAD TEST (WITH A LOAD VALUE SPECIFIED FOR THE GRATING PANEL) ON A SAMPLE STUD. THE VENDOR SHALL ALSO PROVIDE INSTALLATION TRAINING TO THE SITE WORKERS. HOT WORK PERMIT (NON-OPEN FLAME TYPE) MAY BE REQUIRED FOR INSTALLATION OF GRATING WITH DISC MECHANISM BASED ON HEAT DISSIPATION REPORT PROVIDED BY THE VENDOR.
CARBON STEEL STUDS & DISC SHALL BE HOT DIP GALVANIZED (MIN. 900 gm/sqm FOR DISC & MIN. AVERAGE 375 gm/sqm FOR STUDS) OR SHALL HAVE A COATING THAT CAN WITHSTAND NEUTRAL SALT SPRAY TEST OF 2000H AS PER DIN EN ISO 9227.
- STAINLESS STEEL GRATINGS INCLUDING LOCALIZED WELDING AREAS SHALL BE CHEMICALLY TREATED AS PER ASTM A380/A380M.
- FOR STAINLESS STEEL GRATINGS, ELECTRODE OF GRADE E309L SHALL BE USED.

6	04.07.24	REVISED & ISSUED AS STANDARD	<i>Jitender</i> JITENDER	<i>Amrj</i> AMARJEET	<i>Anurag</i> ANURAG SINHA	<i>Mainak</i> MAINAK NANDI
5	29.12.22	REVISED & ISSUED AS STANDARD	JITENDER	AMARJEET	ANURAG SINHA	S.MAZUMDAR
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convenor	Stds. Bureau Chairman
						Approved by


TABLE-1

USE OF GRATING TYPE AT VARIOUS LOCATIONS &
NET SAFE WORKING LOADS FOR GRATING TYPE-I & II

TYPE	APPLICATION	l	500 TO 800	900	1000	1100	1250	1400
		EITHER OF w (UDL IN KN/SQM) OR P (LINEAR LOAD IN KN/M)						
I	1. EQUIPMENT PLATFORM 2. WALKWAY FOR CABLE TRAY IN PIPE RACK 3. OPERATING PLATFORM FROM GRADE/SUPER STRUCTURE 4. APPROACHES	w	19.60	14.80	10.80	8.10	5.30	3.40
		P	9.00	8.00	6.60	5.40	4.00	2.70
II	1. STAIRS 2. FLOOR GRATING FOR a) COMPRESSOR HOUSE b) TECHNOLOGICAL STRUCTURE c) PIPE RACK WITH VALVE / PIPE SUPPORTS d) MAINTENANCE PLATFORM	w	19.60		17.60	13.20	8.70	5.50
		P	14.60	13.00	10.70	8.80	6.30	4.40

NOTE:- THE NET SAFE WORKING LOADS GIVEN ON TABLE-1 ARE BASED ON LIMITING VERTICAL DEFLECTION OF SPAN/200 OR 6mm, WHICHEVER IS LESS.

SYMBOLS :-

- l = EFFECTIVE SPAN IN mm
 b = BEARING WIDTH IN mm
 w = UDL IN KN/SQM
 P = LINEAR LOAD IN KN/M AT MID SPAN ALONG PANEL WIDTH.
 = GRATING SPAN DIRECTION

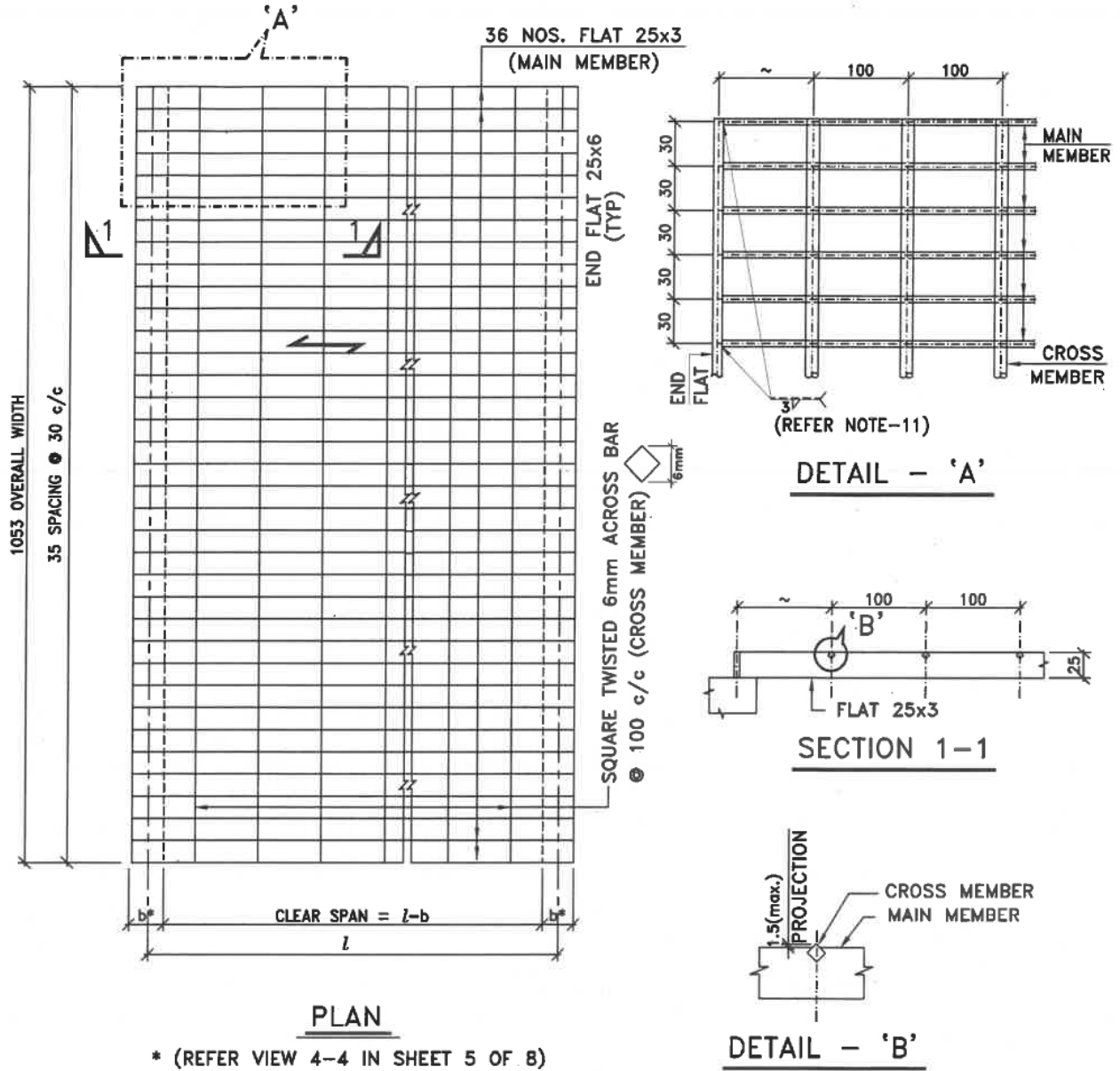


TABLE-2

WT. OF GRATING IN kg/m ² (INDICATIVE ONLY, NOT FOR PAYMENT)				PROPERTIES WIDTH = 1053mm			REMARKS
FLAT 25x6	FLAT 25x3	SQUARE TWISTED 6mm ACROSS BAR	TOTAL	I _{xx} cm ⁴	Z _{xx} cm ³	MR kgm	
2.35	19.89	1.80	24.04	14.84	11.87	195.94	WEIGHT OF WELD, CLAMPS/DISC, GALVANISATION, ETC. NOT CONSIDERED

GRATING TYPE - I

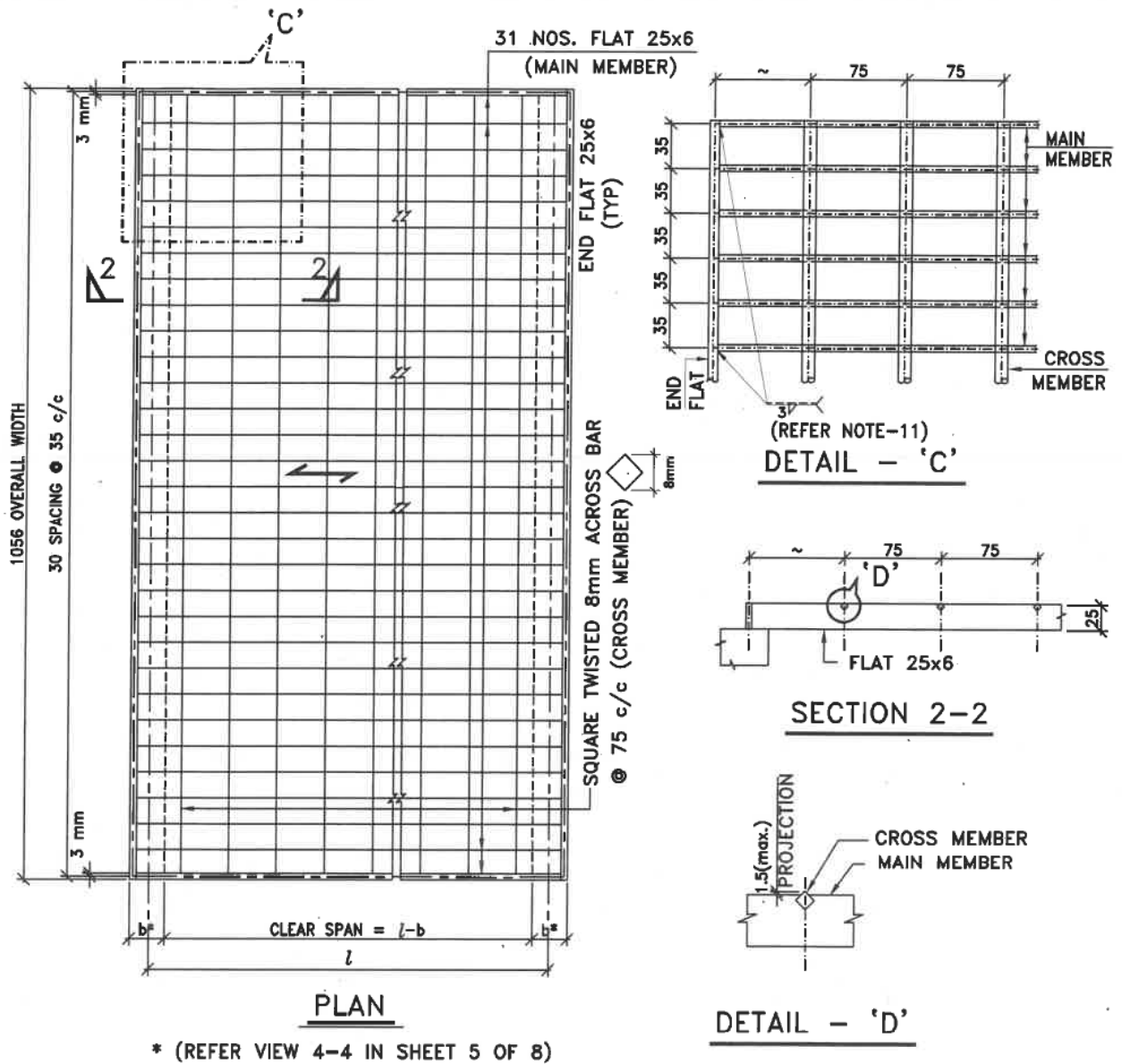
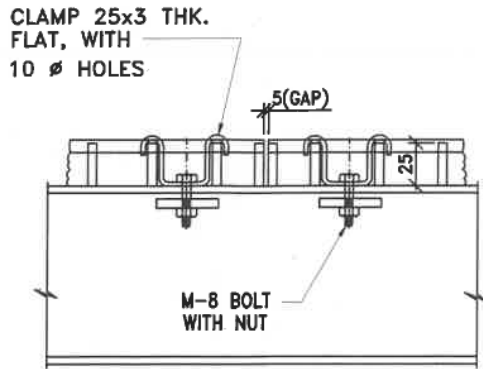


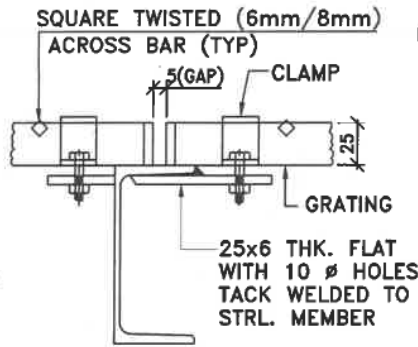
TABLE-3

WT. OF GRATING IN kg/sqm (INDICATIVE ONLY, NOT FOR PAYMENT)			PROPERTIES WIDTH = 1056mm			REMARKS
FLAT 25x6	SQUARE TWISTED 8mm ACROSS BAR	TOTAL	I_{xx} cm ⁴	Z_{xx} cm ³	MR kgm	
36.49	3.23	39.72	24.2	19.4	319.69	WEIGHT OF WELD, CLAMPS/DISC, GALVANISATION, ETC. NOT CONSIDERED

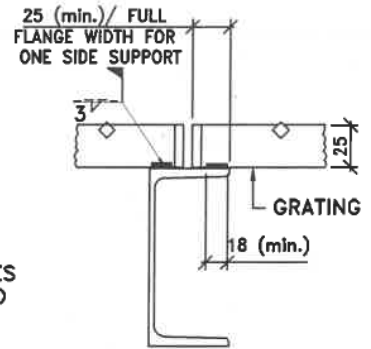
GRATING TYPE - II



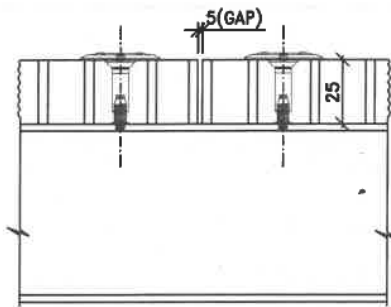
VIEW 3-3
GRATING FIXED WITH CLAMP



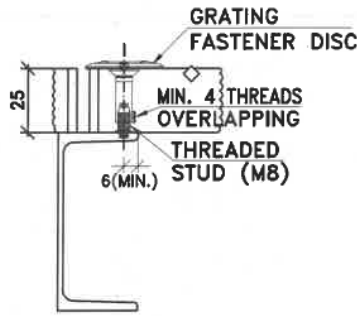
VIEW 4-4
GRATING FIXED WITH CLAMP
(REFER NOTE-8, 13 & 16)



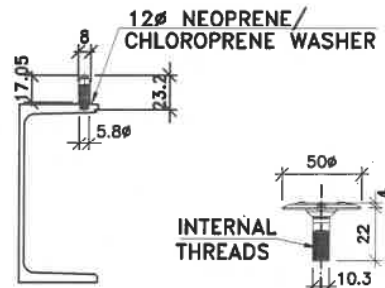
VIEW 4-4 / VIEW 4B-4B
GRATING FIXED WITH WELDING
(REFER NOTE-8, 13 & 16)



VIEW 4A-4A
GRATING FIXED WITH DISC

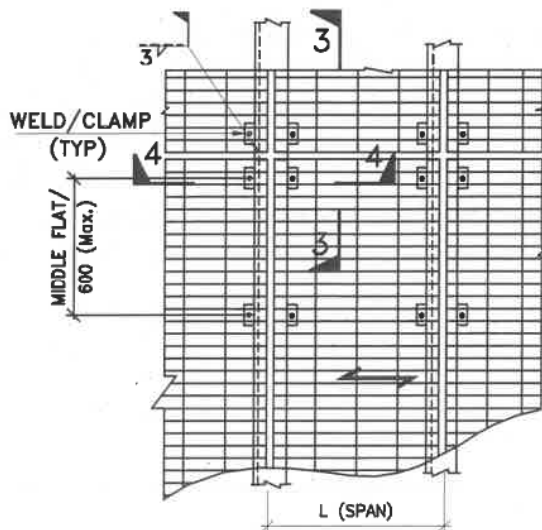


VIEW 4B-4B
GRATING FIXED WITH DISC
(REFER NOTE-8, 13, 15 & 16)

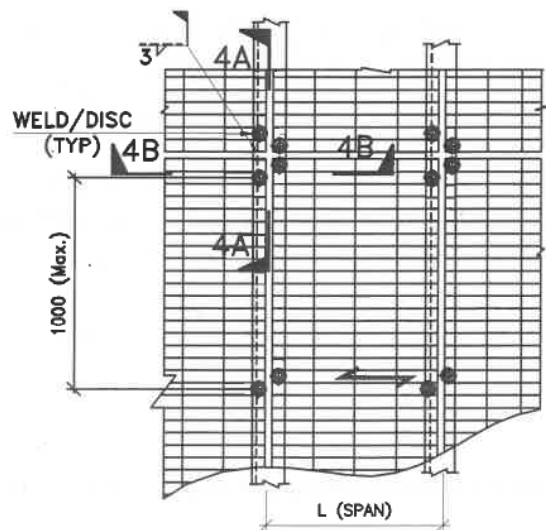


THREADED STUD
FIXING DETAILS
(REFER NOTE-15)

GRATING FASTENER
DISC DETAILS
(REFER NOTE-15)

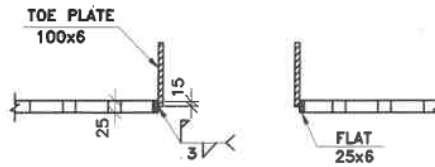


OPTION-1
(WITH CLAMP)



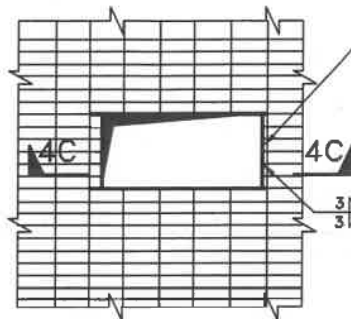
OPTION-2
(WITH DISC)

FIXING DETAIL OF GRATING PANELS



SEC. 4C-4C

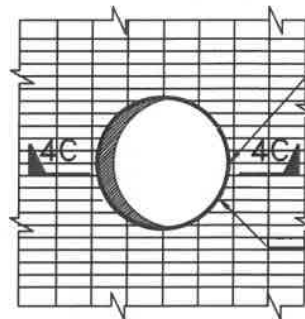
(REFER NOTE-5, 13 & 16)



FLAT 25x6 AROUND
WELDED TO GRATING
FLAT (TOE PLATE TO
BE WELDED AT SITE)

WELDING SHALL BE
DONE ON ALL THE
FLATS AND BARS

RECTANGULAR



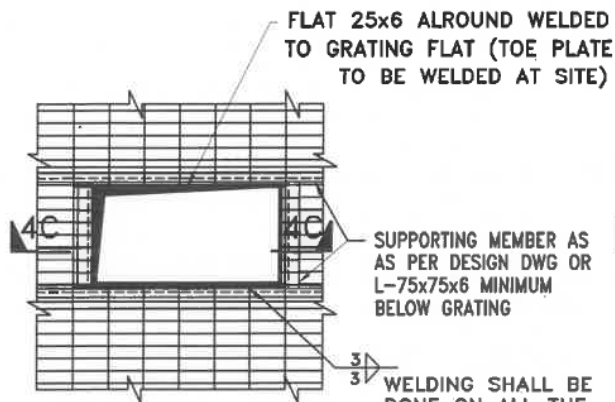
FLAT 25x6 AROUND
WELDED TO GRATING
FLAT (TOE PLATE TO
BE WELDED AT SITE)

WELDING SHALL BE
DONE ON ALL THE
FLATS AND BARS

CIRCULAR

(SIZE OF OPENING >200 & UP TO 400 mm)

(FOR OPENING UP TO 200 MM REFER NOTE-12)

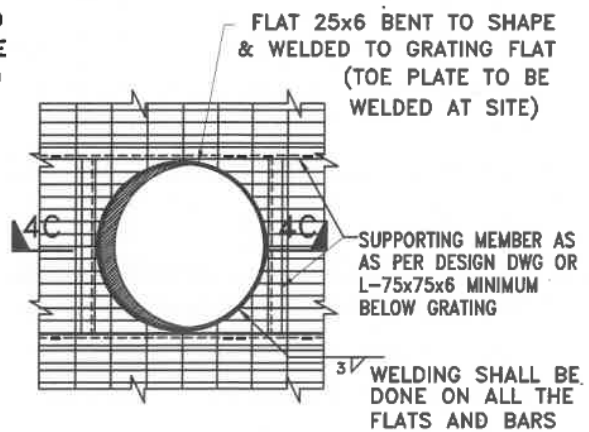


FLAT 25x6 AROUND WELDED
TO GRATING FLAT (TOE PLATE
TO BE WELDED AT SITE)

SUPPORTING MEMBER AS
AS PER DESIGN DWG OR
L-75x75x6 MINIMUM
BELOW GRATING

WELDING SHALL BE
DONE ON ALL THE
FLATS AND BARS

RECTANGULAR



FLAT 25x6 BENT TO SHAPE
& WELDED TO GRATING
(TOE PLATE TO BE
WELDED AT SITE)

SUPPORTING MEMBER AS
AS PER DESIGN DWG OR
L-75x75x6 MINIMUM
BELOW GRATING

WELDING SHALL BE
DONE ON ALL THE
FLATS AND BARS

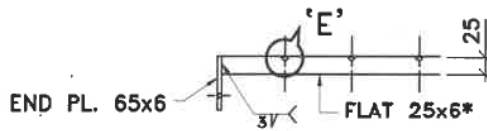
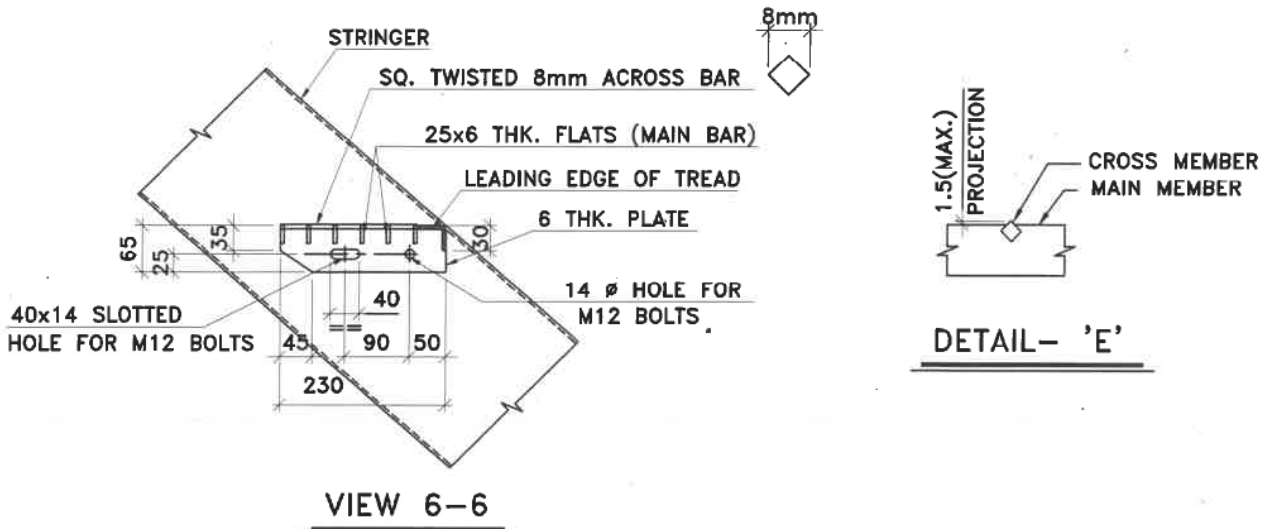
CIRCULAR

SIZE OF OPENING GREATER THAN 400 mm

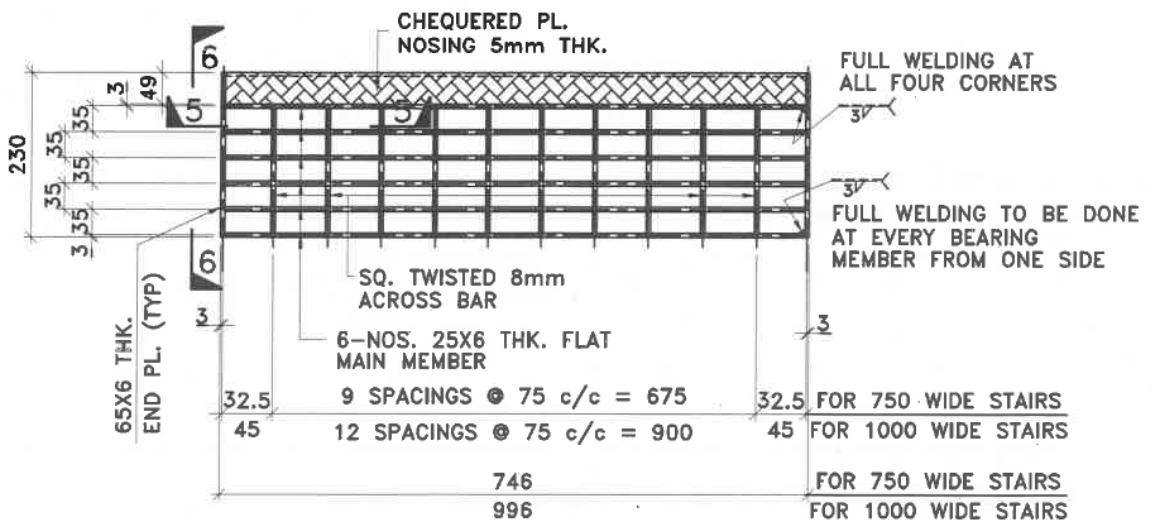
TYPICAL DETAIL OF GRATING STRENGTHENING AT OPENINGS

(REFER NOTE-9)

DET. OF 25 THK. GRATING STAIRCASE
TREAD FOR 750 & 1000 WIDE STAIR



*ALL THE FLATS TO BE WELDED TO THE END FLATS



(REFER NOTE-13 & 16)

TYP. DETAIL OF GRATING TO BE USED AS TREAD FOR 750/1000 WIDE STAIRS

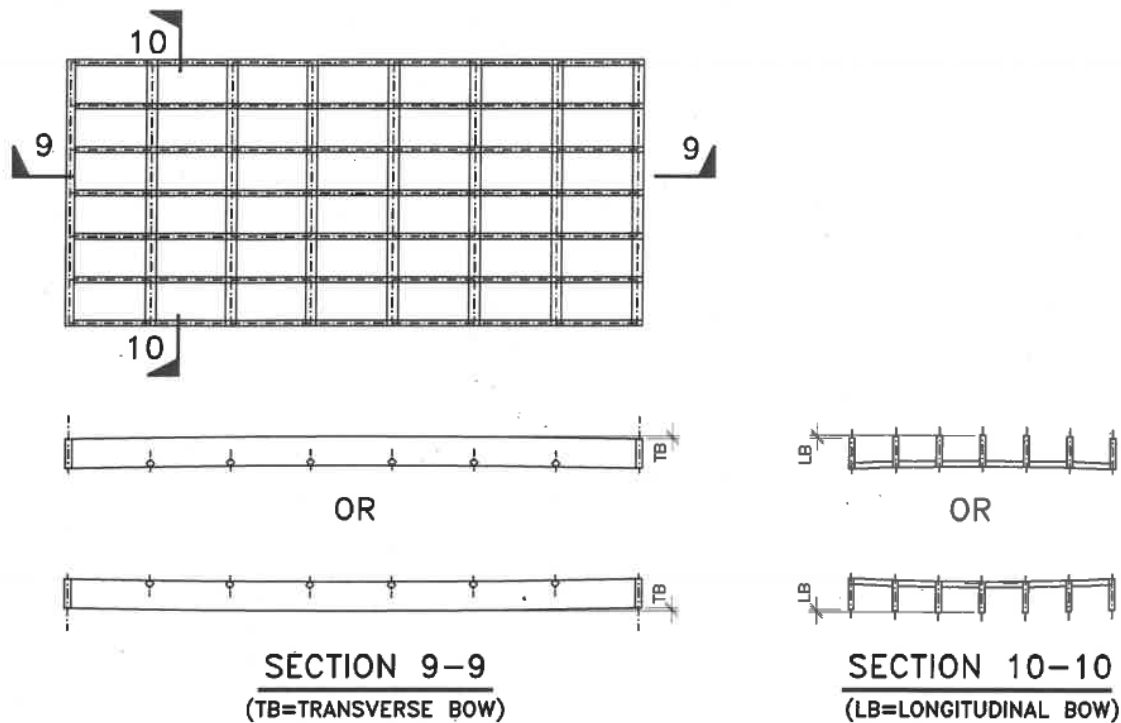


TABLE-4 (PERMISSIBLE AND MANUFACTURER TOLERANCES)

PERMISSIBLE TOLERANCES LOCATION	TOLERANCE (MM)
LENGTH OF GRATING PANEL OR INDIVIDUAL BEARING BAR	+0 / -5
WIDTH OF GRATING	+0 / -5
DEPTH OF BEARING BAR: FOR 25MM	+1 / -0.5
THICKNESS OF BEARING BAR:	±0.4
BINDING: TOP OF CROSS BAR ABOVE MAIN BAR	+0.5 / -0.5
MANUFACTURING TOLERANCES	
LOCATION	TOLERANCE (MM)
DIFFERENCE BETWEEN THE LENGTH OF DIAGONALS	±5 (OUT OF SQUARENESS OF GRATING PANEL)
CROSS BARS IN EITHER DIRECTION FROM PERPENDICULAR ALIGNMENT WITH MAIN BARS	1:100
CROSS BAR SPACING	±5 PER 1500 LENGTH OF BEARING BARS
BEARING BAR LEAN	1:10
TRANSVERSE BOW (TB) OF PANEL BEFORE FASTENING TO SUPPORTS	1:100
LONGITUDINAL BOW (LB) OF PANEL BEFORE FASTENING TO SUPPORTS	1:200

Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 15CB		Description : SIGNAL CABLES		
Approved Suppliers				
1	4135	PAGODA CABLES PRIVATE LIMITED	INDIA	
2	R203	LKB ENGINEERING PRIVATE LIMITED	INDIA	
3	3669	KEI INDUSTRIES LIMITED	INDIA	
4	K082	KEI INDUSTRIES LIMITED	INDIA	
5	L612	LEONI KERPEN GMBH	GERMANY	
6	D012	DELTON CABLES LIMITED	INDIA	
7	C145	CORDS CABLE INDUSTRIES LTD	INDIA	
8	T243	T C COMMUNICATION PVT. LTD.	INDIA	
9	A034	ASSOCIATED CABLES PVT LTD	INDIA	
10	K190B	KEC INETRATIONAL - MYSORE	INDIA	
11	S304	SUYOG ELECTRICALS LTD	INDIA	
12	T212	THERMO CABLES LTD (FORM. T-150)	INDIA	
13	E063	ELKAY TELELINKS LTD.-	INDIA	
14	H060	HAVELLS INDIA LTD	INDIA	
15	3663	LAPP INDIA PVT LTD	INDIA	
16	3722	POLYCAB INDIA LIMITED	INDIA	
17	3724	CORDS CABLE INDUSTRIESLTD.	INDIA	
18	3773	TEMPESENS INSTRUMENTS (I) PVT. LTD.	INDIA	
19	3782	POLYCAB INDIA LIMITED	INDIA	
20	3765	THERMO CABLES LTD.	INDIA	
21	3796	PARAMOUNT COMMUNICATIONS LTD	INDIA	
22	A132	ASSOCIATED FLEXIBLES & WIRES [P] LTD	INDIA	
23	U015	UDEY PYROCABLES PVT. LTD.	INDIA	
24	3662	LEONI CABLE SOLUTIONS(INDIA) PVT LTD.	INDIA	
On Holiday				
1	C019	CMI LIMITED	INDIA	Ground-XIII (Negative networth or Financial constraints)

Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13MA		Description : JUNCTION BOXES (FLAME PROOF)		
Approved Suppliers				
1	F024	FLEXPRO ELECTRICALS PVT LTD	INDIA	
2	K173	KAYSONS TECHNO EQUIPMENTS PVT. LTD.	INDIA	
3	F165	FCG FLAMPROOF CONTROL GEARS P. LTD(C-157	INDIA	
4	R175	R STAHL PVT LTD	INDIA	
5	3706	PHOENIX MECANO INDIA PVT. LTD.	INDIA	
6	F036	FLAMEPROOF EQUIPMENTS PVT.LTD	INDIA	
7	S158	SUDHIR SWITCHGEARS PVT LTD	INDIA	
8	G159	PEPPERL & FUCHS MANUFACTURING (INDIA) PRIVATE LIMITED	INDIA	
9	3681	FCG POWER INDUSTRIES PVT LTD	INDIA	
On Holiday				
1	B024	BALIGA LIGHTING EQUIPMENTS (P) LIMITED	INDIA	Ground-X (Bid withdrawal after price opening/refusal to accept order)

057052056052

Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 14CA		Description : CABLE GLANDS (HAZARDOUS AREA)		
Approved Suppliers				
1	27421	CMP PRODUCTS LIMITED	UNITED KINGDOM	
2	C205	COMET INDUSTRIES	INDIA	
3	3704	METAL CRAFT INDUSTRIES	INDIA	
4	S375	STANDARD METAL INDUSTRIES	INDIA	
5	3890	AKSHAR BRASS INDUSTRIES	INDIA	
6	S158	SUDHIR SWITCHGEARS PVT LTD	INDIA	
7	3681	FCG POWER INDUSTRIES PVT LTD	INDIA	
8	C195	COMET BRASS PRODUCTS	INDIA	
9	F024	FLEXPRO ELECTRICALS PVT LTD	INDIA	
10	F036	FLAMEPROOF EQUIPMENTS PVT.LTD	INDIA	
11	F165	FCG FLAMPROOF CONTROL GEARS P. LTD(C-157	INDIA	
12	K173	KAYSONS TECHNO EQUIPMENTS PVT. LTD.	INDIA	
On Holiday				
1	B024	BALIGA LIGHTING EQUIPMENTS (P) LIMITED	INDIA	Ground-X (Bid withdrawal after price opening/refusal to accept order)

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 14CJ		Description : CABLE TRAYS-FRP		
Approved Suppliers				
1	3934	MANISHA COMPOSITEK PRIVATE LIMITED	INDIA	
2	3932	TRIBENI TECHNOCOM LIMITED	INDIA	
3	3868	ERCON COMPOSITES	INDIA	
4	S112	SUMIP COMPOSITES PRIVATE LIMITED	INDIA	
5	4066	EPP COMPOSITES PVT LTD	INDIA	
6	S099	SATYAM COMPOSITES PVT. LTD.	INDIA	
7	S113	SINTEX INDUSTRIES LTD	INDIA	
8	G193	GENERAL COMPOSITES PRIVATE LIMITED	INDIA	



057052056052

VENDOR LIST (ELECTRICAL) AIR HEATER

PROJECT : AAH
CLIENT : M/s KLL
CONSULTANT : ENGINEERS INDIA LIMITED

B	11.07.2024	REVISED & ISSUED WITH MR	CS	RKS	ANPS
A	28.05.2024	ISSUED WITH MR	CS	RKS	ANPS
Rev. No	Date	Purpose	Prepared by	Checked by	Approved by

Notes: -

- a) EIL approved vendor list for Electrical items is enclosed in this section. VENDOR shall necessarily procure all the material/equipment forming permanent part of the unit/plant from EIL approved vendor only. This shall include sub ordered items/components also. The "Approved Vendors" shall be item specific.
- b) VENDOR may procure material from any of EIL approved vendors. However current validity of vendor approval & their approved product range and the conditions imposed while according vendor approval as per EIL enlistment letter shall be verified by the VENDOR before placement of order.
- VENDOR shall also verify the work load, stability and solvency status of the vendor prior to placement of order.
 - Vendors on EIL holiday list shall not be considered for ordering, which need to be verified by the VENDOR prior to placement of order. VENDOR shall comply with this requirement without any time or cost implication to Owner.
 - In case any vendor is registered with EIL as an approved vendor subsequent to release of this vendor list, the same may also be considered by the VENDOR with prior intimation to OWNER/EIL and obtain their concurrence prior to placement of order.
 - Wherever job specification calls for requisite proven track record, the same shall be complied and necessary documents to be submitted for EIL/Client/Licensor approval prior to ordering.
- c) Compliance to procurement of material from approved vendors is mandatory and shall be fully complied. No deviation to approved vendor list shall generally be acceptable.
- d) For items not covered in the below list, the vendor list shall be approved by OWNER/EIL prior to placement of order by VENDOR. VENDOR shall list down the proposed suppliers/vendors for such items and submit the same for OWNER/EIL's review/approval along with necessary documents/credentials. Non-acceptance of a particular proposed vendor due to any reasons whatsoever shall not be a cause of schedule and cost implication.
- e) VENDOR shall have an independent assessment of capability of all the vendors for timely deliveries of material/equipment. Any delays in deliveries by vendor(s) shall not be a cause of schedule and cost implication.
- f) At any stage of the project, if it comes to the notice of OWNER/EIL that VENDOR has procured material/equipment, intentionally or unintentionally whatsoever, from an unapproved vendor and/or items not falling in approved product range of vendor(s), then the same shall be rejected forthwith and VENDOR shall be liable to replace such material/plant/machinery within the contract price and without any time/schedule implication.
- g) Make of equipment/component of foreign origin other than listed shall be subject to EIL/OWNER review during detail engineering based on PTR to be submitted by vendor.

Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13GA		Description : CONTROL STATIONS- WEATHERPROOF		
Approved Suppliers				
1	F165	FCG FLAMPROOF CONTROL GEARS P. LTD(C-157	INDIA	
2	S158	SUDHIR SWITCHGEARS PVT LTD	INDIA	
3	3706	PHOENIX MECANO INDIA PVT. LTD.	INDIA	
4	F024	FLEXPRO ELECTRICALS PVT LTD	INDIA	
5	E024	EX-PROTECTA	INDIA	
6	G159	PEPPERL & FUCHS MANUFACTURING (INDIA) PRIVATE LIMITED	INDIA	
7	3681	FCG POWER INDUSTRIES PVT LTD	INDIA	
8	F036	FLAMEPROOF EQUIPMENTS PVT.LTD	INDIA	
9	T166	TEKNIC ELECTRIC (I) PVT. LTD.	INDIA	
10	B002	BCH ELECTRIC LTD	INDIA	
11	4012	TEKMEC SWITCHGEAR & CONTROLS	INDIA	
12	E111	ELECTRICAL EQUIPMENT CORPORATION	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13JD		Description : MOTOR INDUCTION-MV (INDUSTRIAL TYPE SAFE AREA)		
Approved Suppliers				
1	S003	SIEMENS LIMITED	INDIA	
2	3668	CG POWER & INDUSTRIAL SOLUTIONS LTD.	INDIA	
3	4157	ROTOMOTIVE POWERDRIVES INDIA LIMITED	INDIA	
4	L065	LAXMI HYDRAULICS PVT LTD	INDIA	
5	A310	ABB INDIA LTD-FARIDABAD	INDIA	
6	A200	ABB INDIA LTD (BANGALORE)	INDIA	
7	B048	BHARAT BIJLEE LIMITED	INDIA	
8	M282	MARATHON ELECTRIC MOTORS (INDIA) LTD.	INDIA	
9	3986	HAVELLS INDIA LTD	INDIA	
10	3940	HEM INDUSTRIES	INDIA	
11	4199	MARATHON ELECTRIC MOTORS (INDIA) LTD.	INDIA	



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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 13MA		Description : JUNCTION BOXES (FLAME PROOF)		
Approved Suppliers				
1	F024	FLEXPRO ELECTRICALS PVT LTD	INDIA	
2	G159	PEPPERL & FUCHS MANUFACTURING (INDIA) PRIVATE LIMITED	INDIA	
3	F165	FCG FLAMPROOF CONTROL GEARS P. LTD(C-157	INDIA	
4	K173	KAYSONS TECHNO EQUIPMENTS PVT. LTD.	INDIA	
5	3706	PHOENIX MECANO INDIA PVT. LTD.	INDIA	
6	F036	FLAMEPROOF EQUIPMENTS PVT.LTD	INDIA	
7	3681	FCG POWER INDUSTRIES PVT LTD	INDIA	
8	R175	R STAHL PVT LTD	INDIA	
9	S158	SUDHIR SWITCHGEARS PVT LTD	INDIA	



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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 14CA		Description : CABLE GLANDS (HAZARDOUS AREA)		
Approved Suppliers				
1	3681	FCG POWER INDUSTRIES PVT LTD	INDIA	
2	F165	FCG FLAMPROOF CONTROL GEARS P. LTD(C-157	INDIA	
3	C205	COMET INDUSTRIES	INDIA	
4	3890	AKSHAR BRASS INDUSTRIES	INDIA	
5	4187	SIGMA INDUSTRIES	INDIA	
6	3704	METAL CRAFT INDUSTRIES	INDIA	
7	27421	CMP PRODUCTS LIMITED	UNITED KINGDOM	
8	S375	STANDARD METAL INDUSTRIES	INDIA	
9	S158	SUDHIR SWITCHGEARS PVT LTD	INDIA	
10	K173	KAYSONS TECHNO EQUIPMENTS PVT. LTD.	INDIA	
11	F036	FLAMEPROOF EQUIPMENTS PVT.LTD	INDIA	
12	C195	COMET BRASS PRODUCTS	INDIA	
13	F024	FLEXPRO ELECTRICALS PVT LTD	INDIA	

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Sr No	Supplier Code	Supplier Name	Country	Holiday Description
Item Code : 14PB		Description : PUSH BUTTON AND INDICATING LAMPS		
Approved Suppliers				
1	4002	P.P. INDUSTRIES	INDIA	
2	E173	ESSEN DEINKI	INDIA	
3	4012	TEKMEC SWITCHGEAR & CONTROLS	INDIA	
4	H142	HOTLINE SWITCHGEAR & CONTROLS	INDIA	
5	S003	SIEMENS LIMITED	INDIA	
6	P291	PRECIFINE PRODUCTS PVT. LTD.	INDIA	
7	B002	BCH ELECTRIC LTD	INDIA	
8	S450A	SCHNEIDER ELECTRIC INDIA P LTD-HYDERABAD	INDIA	
9	T166	TEKNIC ELECTRIC (I) PVT. LTD.	INDIA	
10	S365	SHRI TULSI SWITCHGEARS PVT LTD	INDIA	



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