

**TENDER SPECIFICATION FOR SET OF NON-METALLIC PIPE  
USED FOR WAG-9 (CO-CO) / WAP-7 ELECTRIC  
LOCOMOTIVES**

**TENDER SPECIFICATION No.  
CLW/ES/3/0254 ALT-E**

**ENCLOSURES:**

1. ANNEXURE-I
2. DRG. NO.
  - a) CLW/ES/3/SK-1/0254
  - b) CLW/ES/3/SK-2/0254
  - c) CLW/ES/3SK-3/0254

ISSUED BY:

DY. CHIEF ELECTRICAL ENGINEER/D-III.  
CHITTARANJAN LOCOMOTIVE WORKS  
P.O. CHITTARANJAN – 713331  
DISTRICT- BURDWAN (WEST), WEST BENGAL (INDIA)

CHECKED BY	REVIEWED BY	APPROVED BY
SSE/DRG	AEE/D/Conv.	DY. CEE/D-III

**ALTERATION RECORD SHEET**

SL. NO.	DATE OF AMENDMENT	ALTERATION NO.	REASON	AUTHORITY
1.	28/03/2003	A	The material of set of insulation should be fire retardant /self extinguishing properties as per IS:11731 (Part 1&2 ) or any other equivalent DIN,IEC standard.	-sd-
2.	21/10/2003	B	Length of Non Metallic pipe connected to FB panel from sidewall 609mm to 700mm as per letter No. DCME/ELA/43/3phase dated-26/07/2003.	-sd-
3.	03/10/2016	C	Material is changed from ABS to CPVC at sheet no-4&5 as per approval of CEE, noting no. ELDD/3758 dt-03.08.20216 Note: 100 L/s material will be procured with Alt-C for development of sources and normal procurement will be as per Alt-B.	-sd-
4.	As signed	D	Alteration-C is reverted back and item material CPVC has been deleted.	As signed
5.	As signed	E	1.) DIN-16891 deleted from clause no. 4.4.1,4.2 & 4.3 2.) Test added in clause no-5 (test clause)	As signed

**Specifications have been digitized and all alterations have been incorporated**

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**SPECIFICATION FOR SET OF NON METALLIC PIPE USED FOR  
WAG-9 (CO-CO) / WAP-7 ELECTRIC LOCOMOTIVE**

**INDEX**

1. **SCOPE**
2. **CLIMATIC AND ENVIRONMENTAL CONDITION**
3. **STANDARD**
4. **TECHNICAL DATA**
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6. **DRAWING**
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**SPECIFICATION FOR SET OF NON METALLIC PIPE USED FOR THREE PHASE,6000 H.P WAG-9**  
**/ WAP-7 A.C LOCOMOTIVE**

**1. SCOPE:**

This specification applies to smoke detector assembly pipe in various sizes.

Length 1260 mm

Length 1270 mm

Length 1345 mm

Length 1516 mm

Length 1990 mm

Length 2124 mm

Length 4060 mm

Length 4770 mm

Length 5000 mm

Length 700 mm Alt-B

Length 63 mm

Length 785.5 mm

**2. Climate and Environment Condition :**

\*Maximum Atmospheric temperature : Under Sun : 70 °C

: In Shade : 50 °C

\*Humidity : 100 % saturation during rainy season

\*Reference site conditions:

i ) Ambient Temp.max.47°C min. 0 °C

ii ) The contractor will indicate the expected temperature rise in the machine room under reference site condition.

iii) Humidity : 60%

iv) Altitude : 160m above mean sea level.

\*Rain Fall : Very heavy in certain areas. The locomotive will be designed to permit its running at 10 km/h in flood water level of 102 mm above rail level.

\*Atmosphere during hot weather : Extremely dusty and desert terrain in certain areas.

\*Coastal areas : Locomotive and equipment will be designed to work in coastal areas in humid and salt laden atmosphere.

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\*Vibration : The equipment , sub-system and their mounting arrangement will be designed to withstand vibrations and shocks encountered in service as specified in corresponding IEC publications unless otherwise prescribed.

3. **STANDARD:** - As per relevant IS & IEC Standard.

4. **TECHNICAL DATA :**

Smoke Detector Pipe:-

**Materials** :-As per Acrylonitrile Butadiene Styrene (ABS) d85 x 1.95

4.1 **Socket Fittings:-**

As per Acrylonitrile Butadiene Styrene (ABS) d25 x 1.95

Details description has given in the Annexure - 1 and Drawing No. CLW/ES/3/SK-1/0254 & CLW/ES/3/SK-2/0254

Quantity Per Loco :- 6 Nos.

4.2 **Quadrant Fitting d-25:**

As Per Acrylonitrile Butadiene Styrene (ABS) d25 x 1.95

Details description has given in the Annexure - 1 and Drawing No. CLW/ES/3/SK-1/0254 & CLW/ES/3/SK-2/0254.

Quantity per Loco :- 7 Nos.

4.3 **T-Fitting 90 DEG d-25:**

**Material** :- As per Acrylonitrile Butadiene Styrene (ABS) d25 x 1.95

Details description has given in the Annexure -1 and Drawing No. CLW/ES/3/SK-1/0254 & CLW/ES/3/SK-2/0254.

Quantity per Loco :- 1 No.

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**5. TEST :-**

- 1) Polymer Identification as per IS 7078 or equivalent.
- 2) Fire retardant/ Self-extinguishing properties as per IS 11731 or IS 6746 or equivalent.
- 3) Dimensional test as per drawing attached in specification.

**6. DRAWING:**

- a) Details description has given in the Annexure - 1 and Drawing No CLW/ES/3/SK-1/0254 of Smoke detector pipe.
- b ) Details description of socket fitting, Quadrant fittings and T-Fitting in the drawing No. CLW/ES/3/SK-2/0254 a,b,c respectively.
- C ) Description of smoke detector pipe in the drg.No. CLW/ES/3/SK-3/0254.

**7. REFERENCE:**

Smoke detector assembly pipe

Drg. item	ABB Identification No.	Length	Qty/Loco
12	3EHP 431625 P0012	5000 mm	03
13	3EHP 431625 P0013	785.5 mm	01
14	3EHP 431625 P0014	1270 mm	01
15	3EHP 431625 P0015	1990 mm	01
16	3EHP 431625 P0016	2124 mm	01
17	3EHP 431625 P0017	1260 mm	01
18	3EHP 431625 P0018	4770 mm	01
19	3EHP 431625 P0019	1345 mm	01
20	3EHP 431625 P0020	700 mm	01
21	3EHP 431625 P0021	4060 mm	01
22	3EHP 431625 P0022	1516 mm	01
23	3EHP 431625 P0023	63 mm	02

Supplier's Address:

ABB Daimler Benz/M/s. ADtranz  
P. O.Box No . 8384  
CH 8050 Zurich  
Switzerland  
Tel. 4113126159  
FAX: 4113126159

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### ANNEXURE - 1

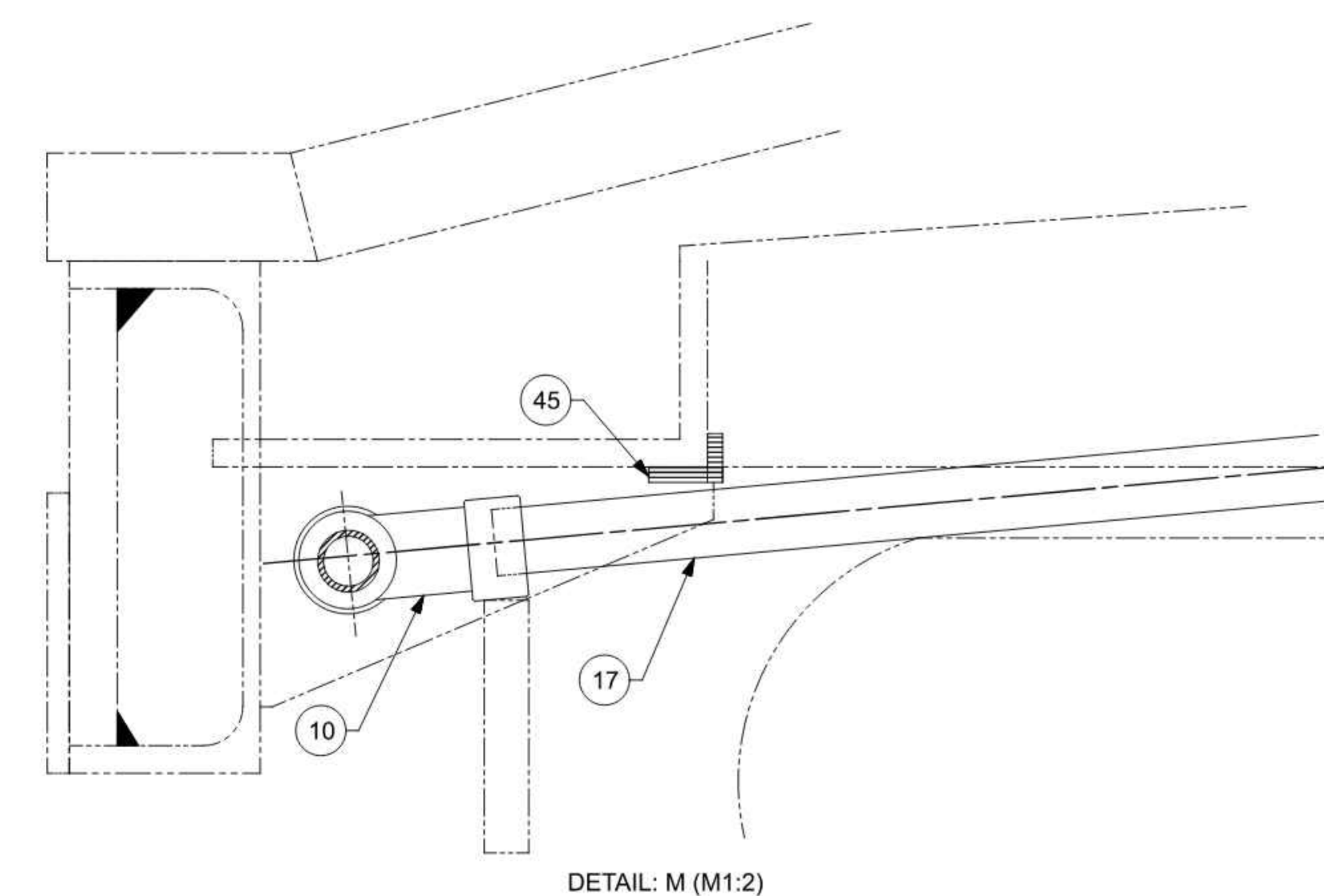
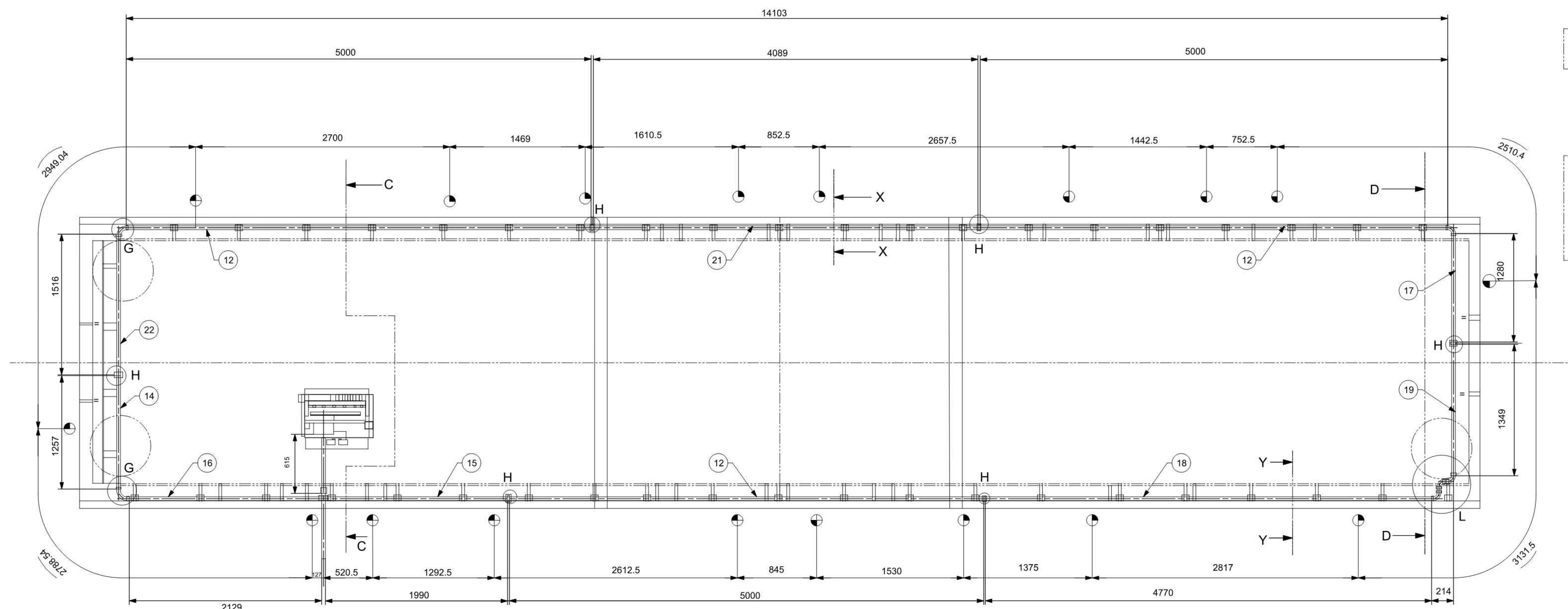
<u>Qty/Loco</u>	<u>Item No</u>	<u>Text</u>
6	9	SOCKET FITTING d=25
7	10	QUADRANT FITTING d=25
1	11	T-FITTING 90 DEG d=25
3	12	PIPE/L = 5000 mm
1	13	PIPE/L = 785.5 mm
1	14	PIPE/L = 1270 mm
1	15	PIPE/L = 1990 mm
1	16	PIPE/L = 2124 mm
1	17	PIPE/L = 1260 mm
1	18	PIPE/L = 4770 mm
1	19	PIPE/L = 1345 mm
1	20	PIPE/L = 700 mm Alt -B
1	21	PIPE/L = 4060 mm
1	22	PIPE/L = 1516 mm
2	23	PIPE/L = 63 mm

The material of set of insulation should be fire retardant/self extinguishing properties as per IS:11731 (part I & part II) or any other equivalent DIN, IEC standard.

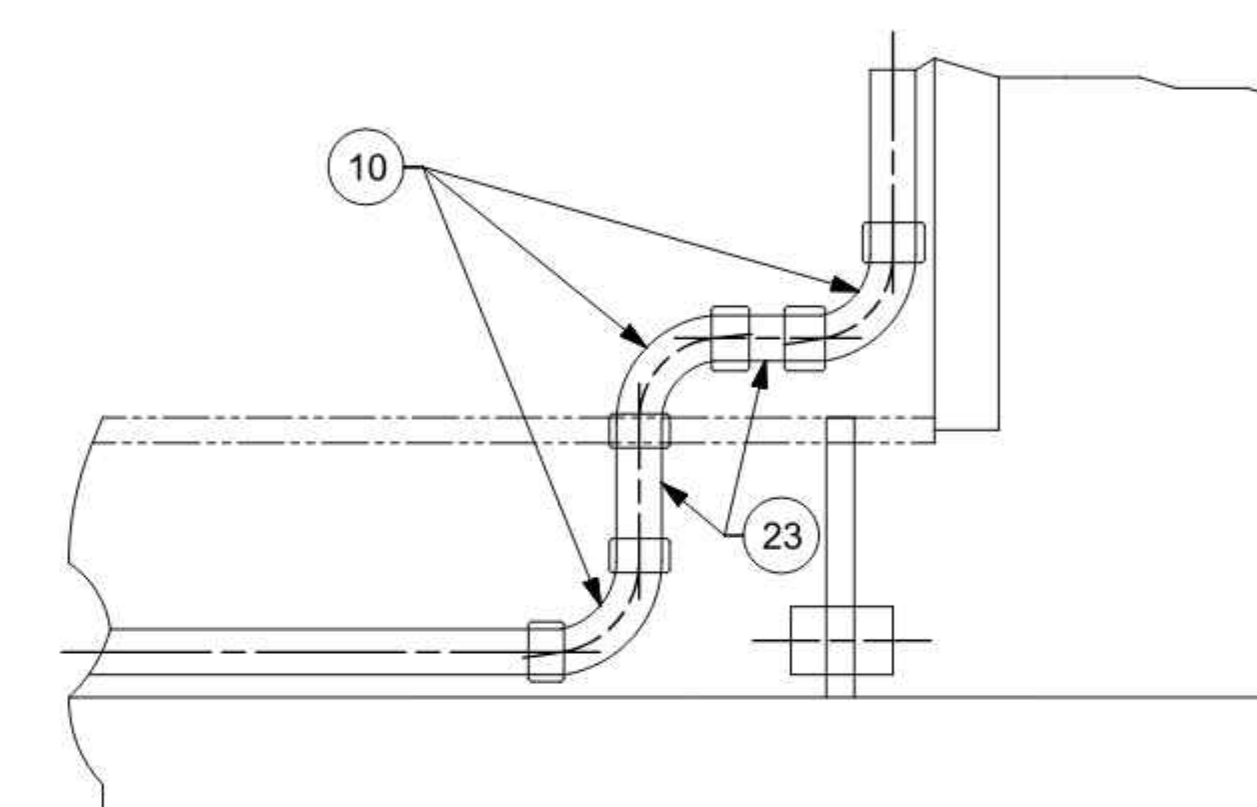
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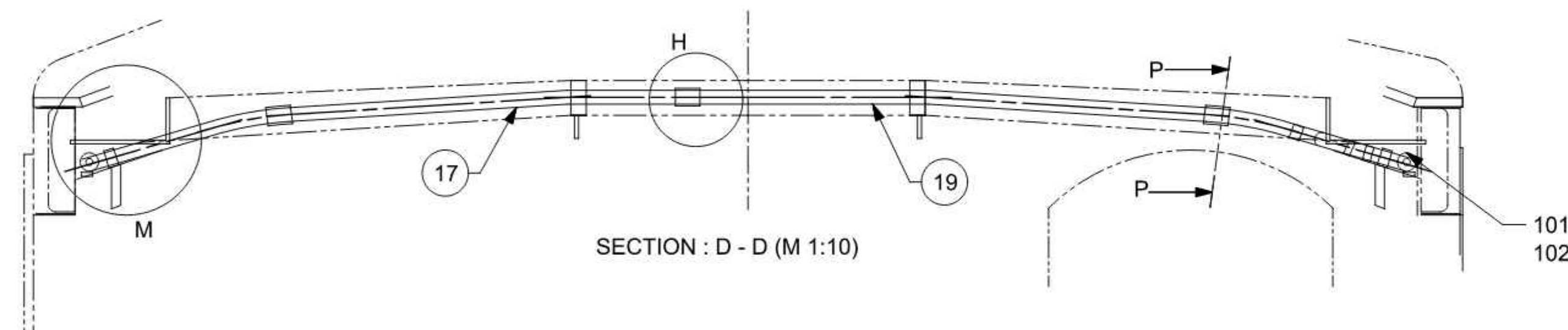
## VIEW CANT RAIL WITHOUT ANGLE



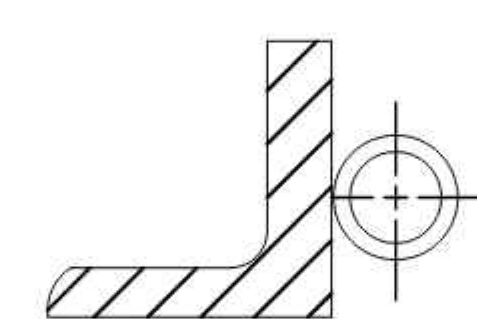
DETAIL: M (M1:2)



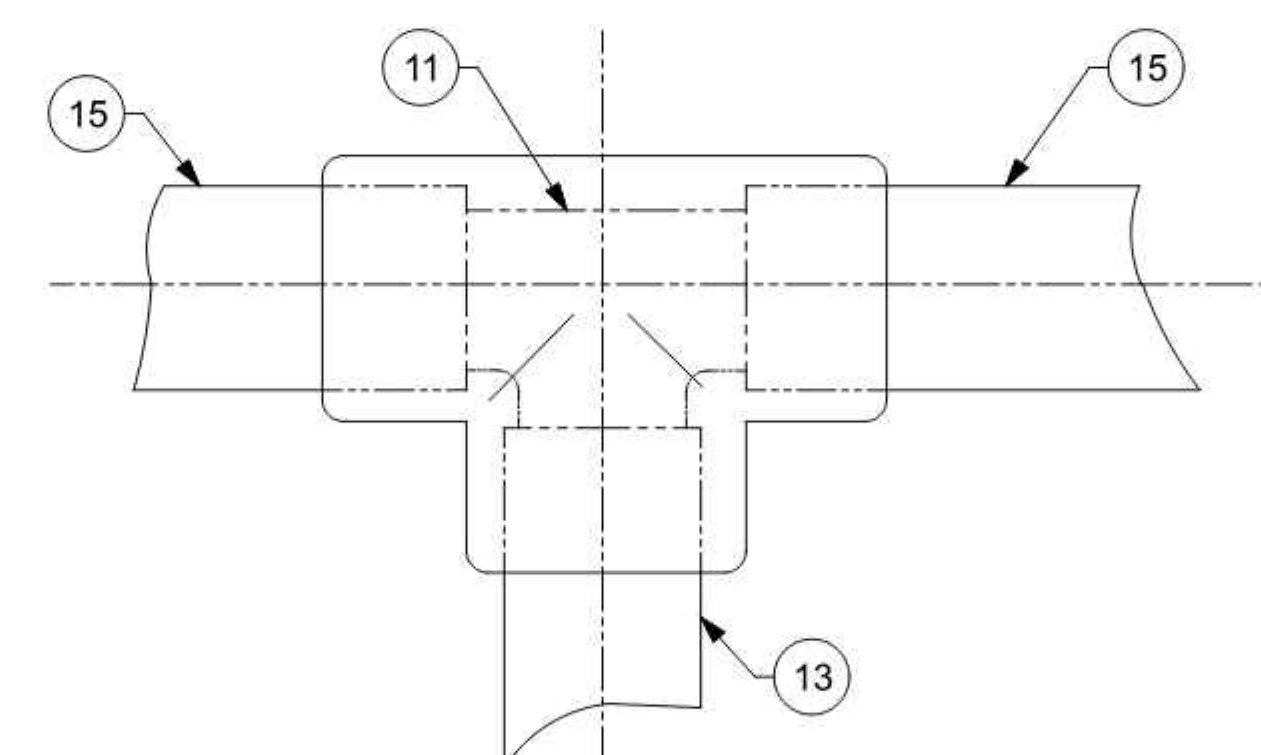
DETAIL: L (M1:5)



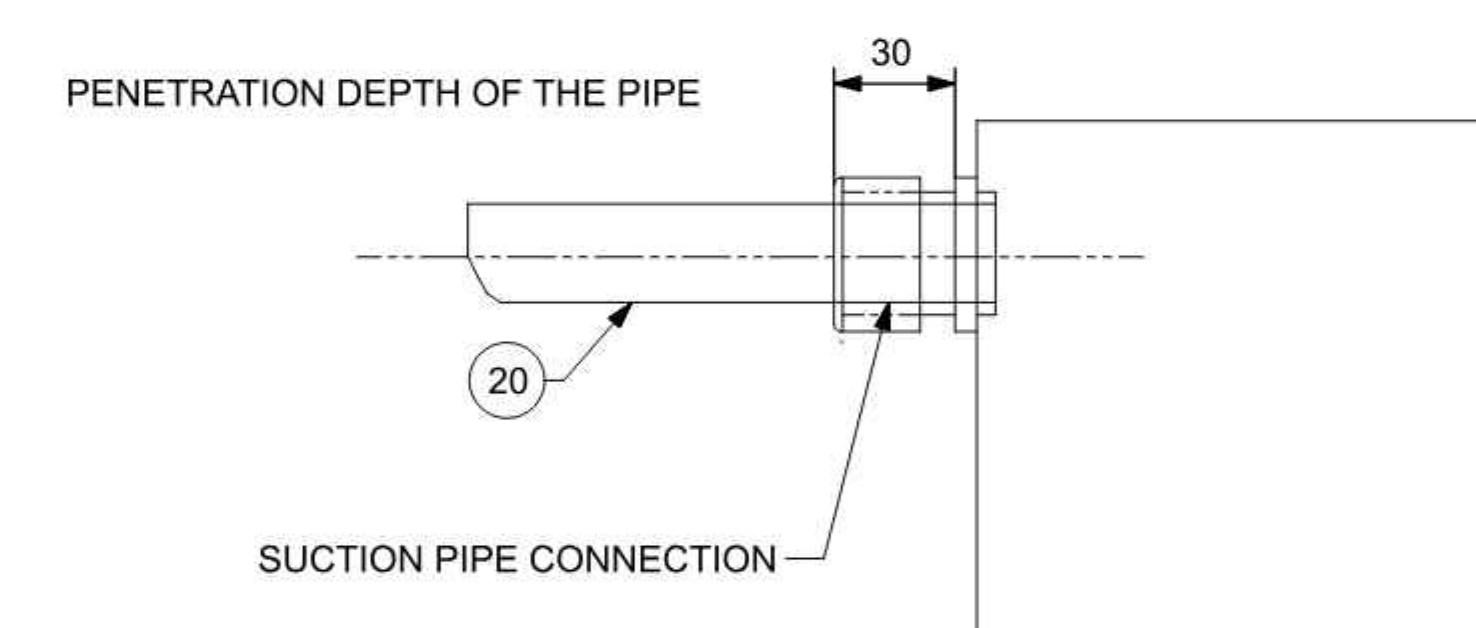
SECTION : D - D (M 1:10)



SECTION : P - P (M 1:2)



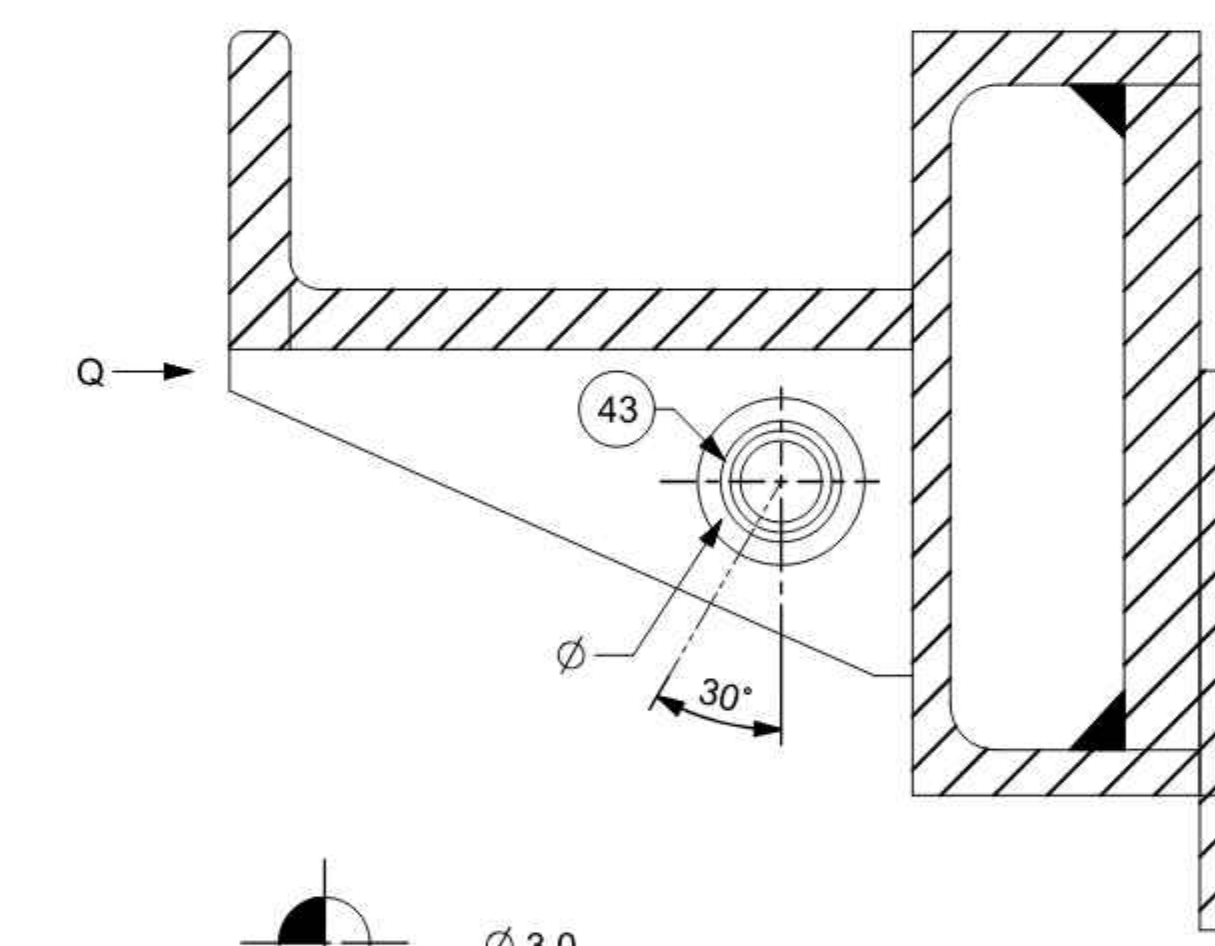
VIEW : F - F (M1:1)



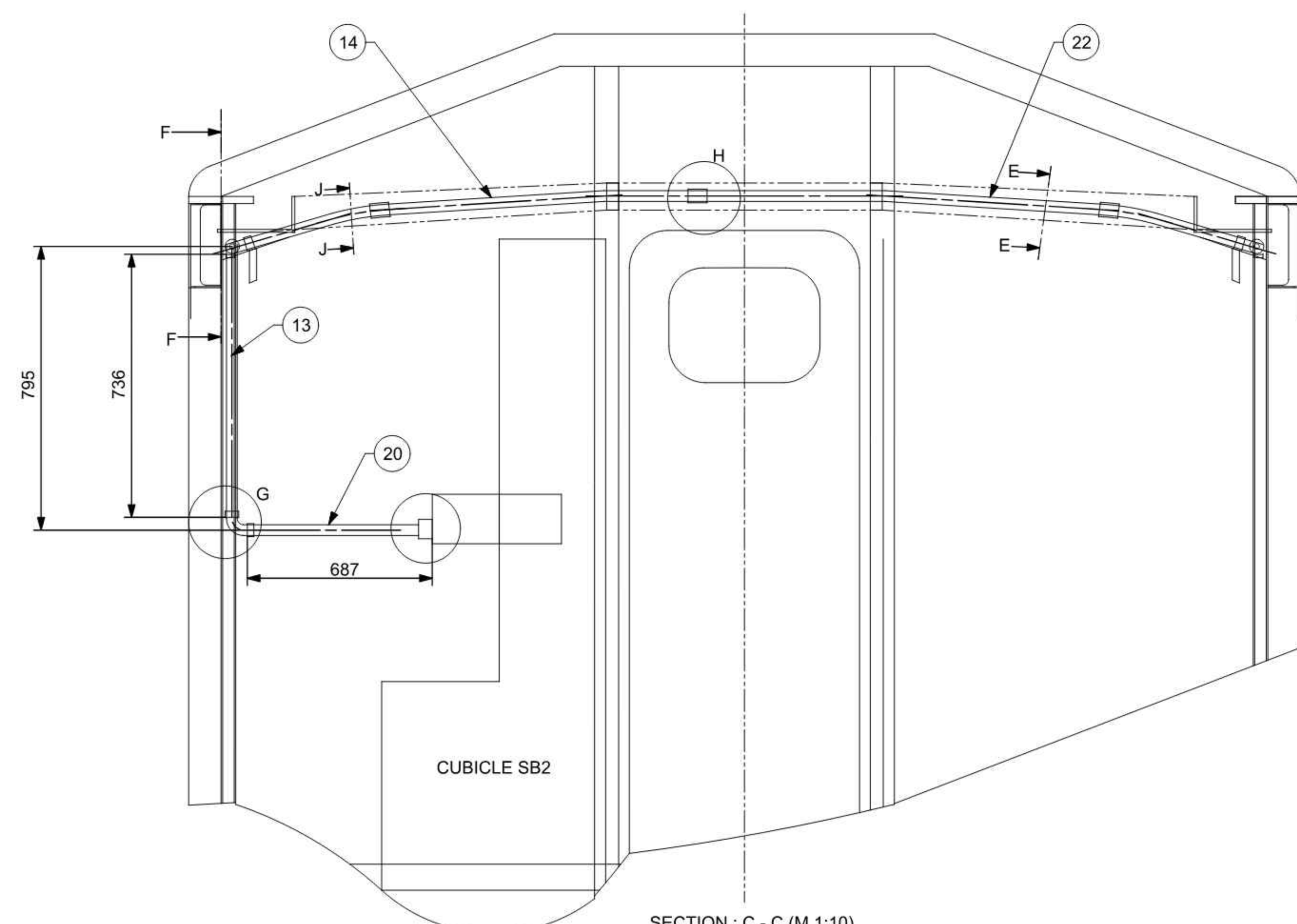
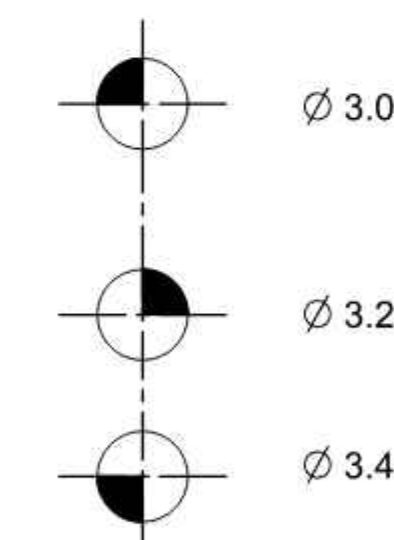
DETAIL : I (M1:2)

THE SECTION PIPE IS CONNECTED WITH THE ACTIVE  
DETECTOR BY MEANS OF PG UNION PIECE.

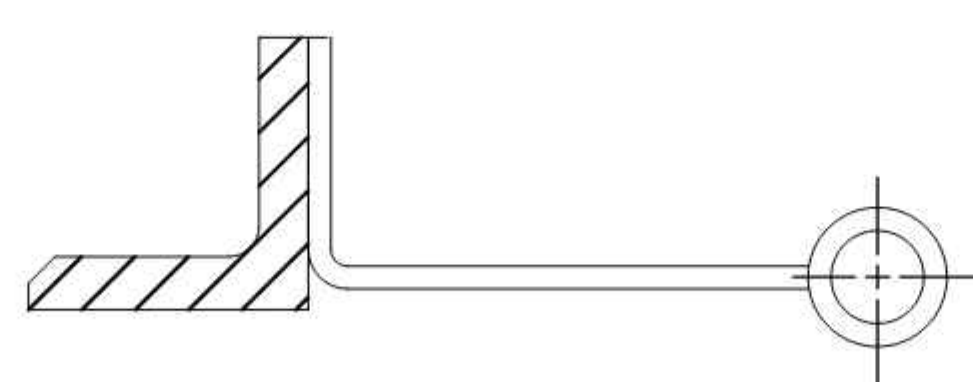
1. UNSCREW THE UNION NUT OF THE PIPE CONNECTION (PG UNION) AND SLIDE IT OVER THE SUCTION PIPE WHICH IS TO BE CONNECTED.
2. INSERT THE PIPE INTO THE UNION PIECE AS FAR AS THE STOP (APPROX 4 cm) AND TIGHTEN UP THE UNION NUT BY HAND.



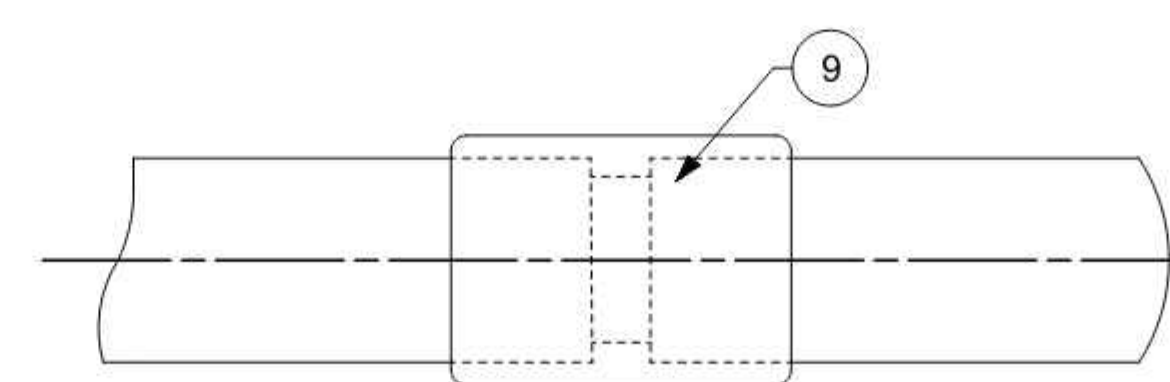
### INSTALLATION Y - Y (M1:2)



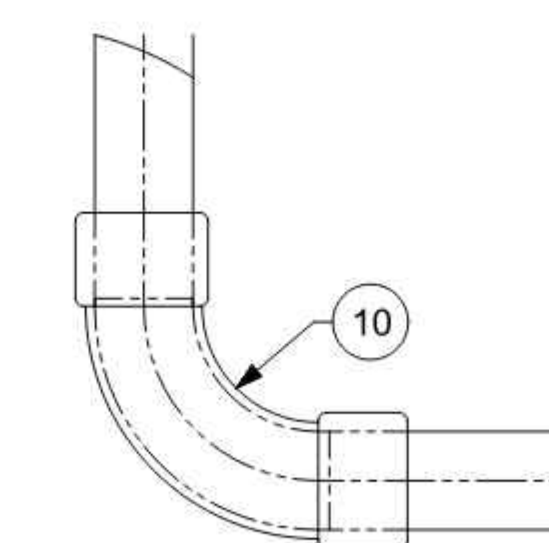
SECTION : C - C (M 1:10)



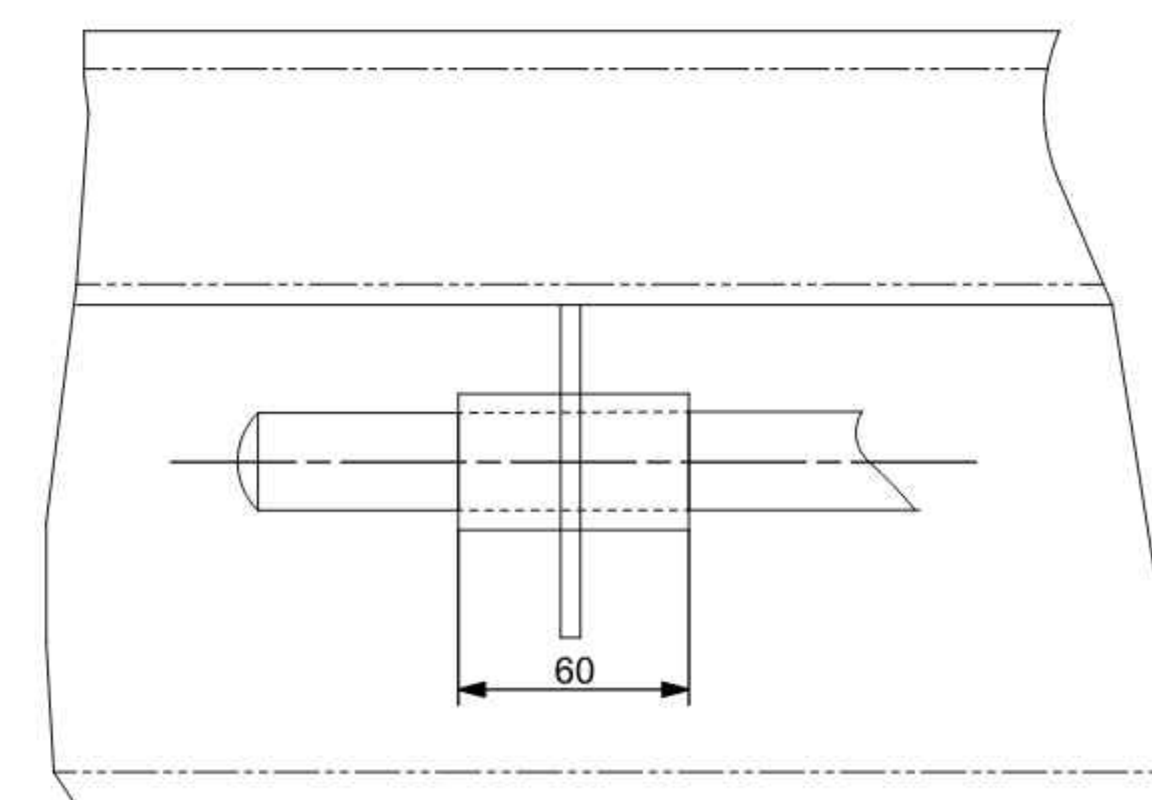
SECTION : J - J (M 1:2)



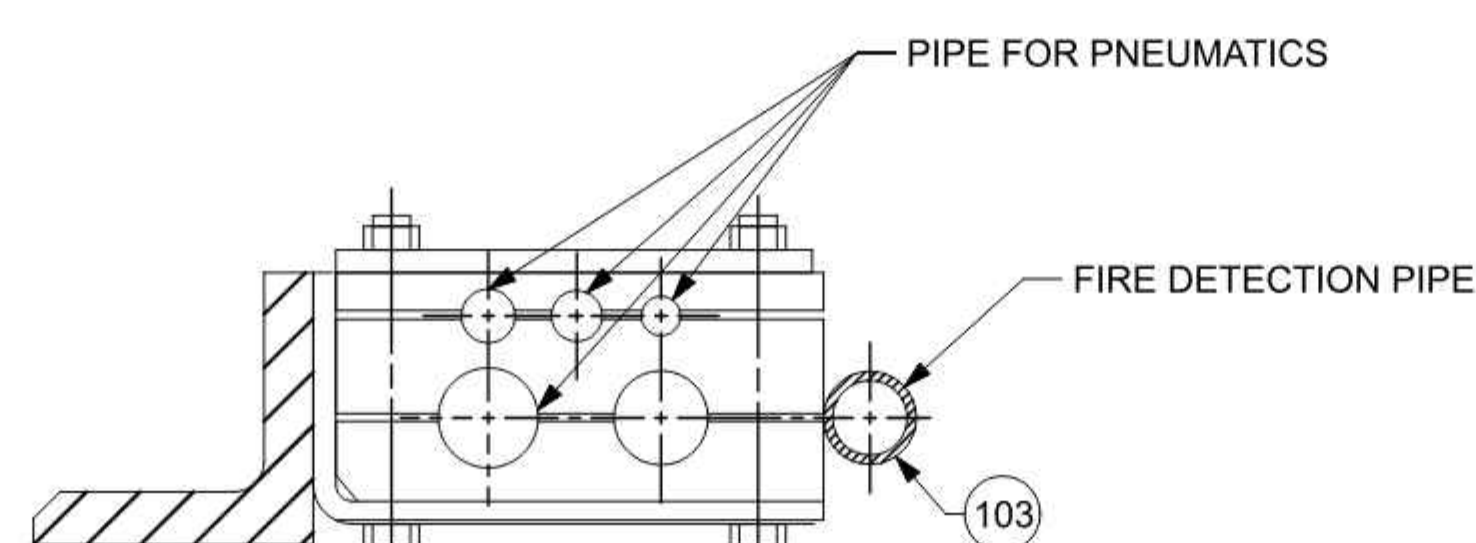
DETAIL : H (M1:2)



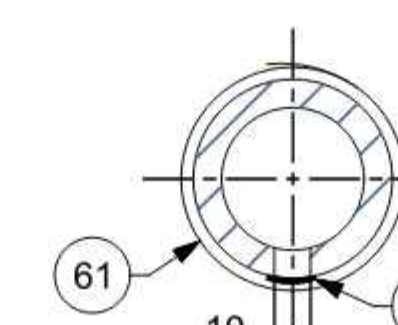
DETAIL : G (M1:2)



VIEW : Q (M1:2)



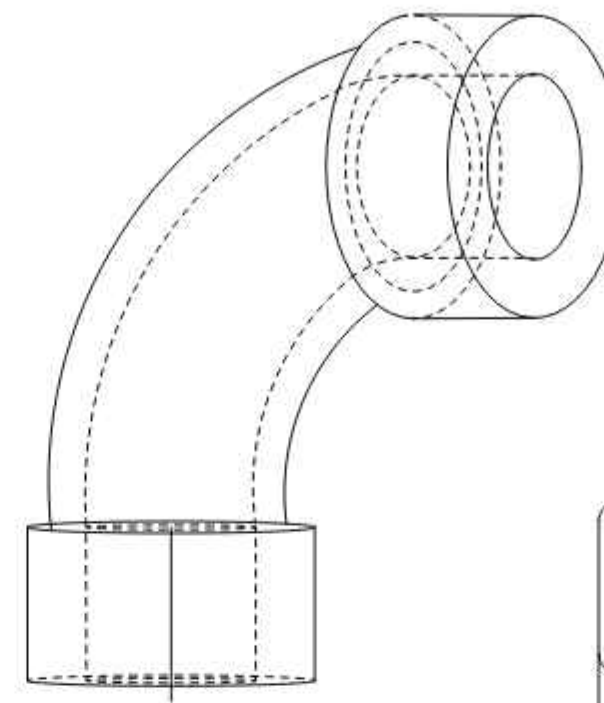
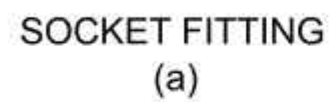
SECTION : E - E (M 1:2)



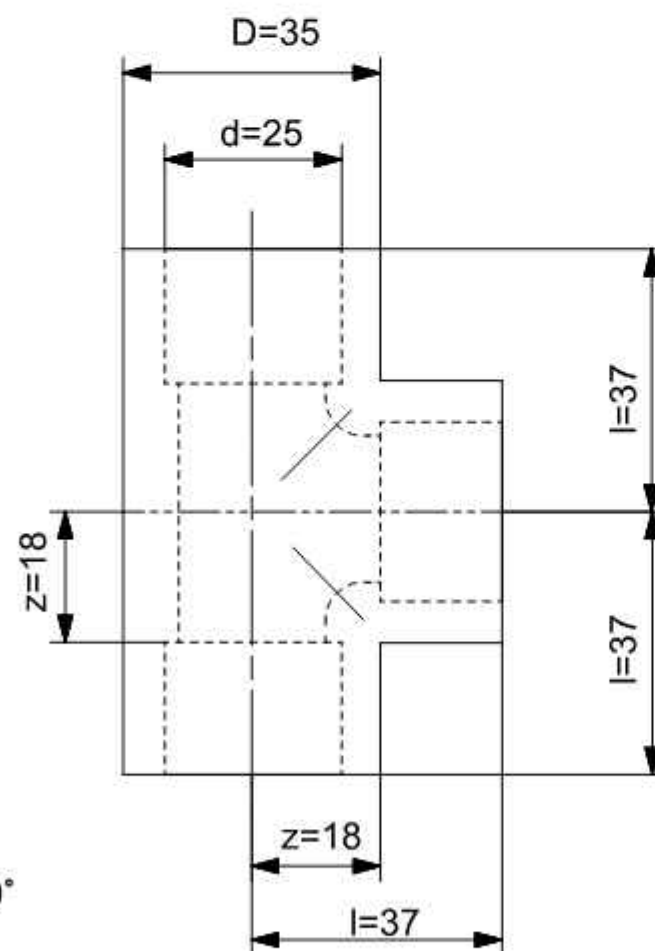
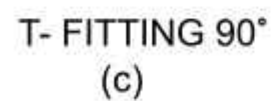
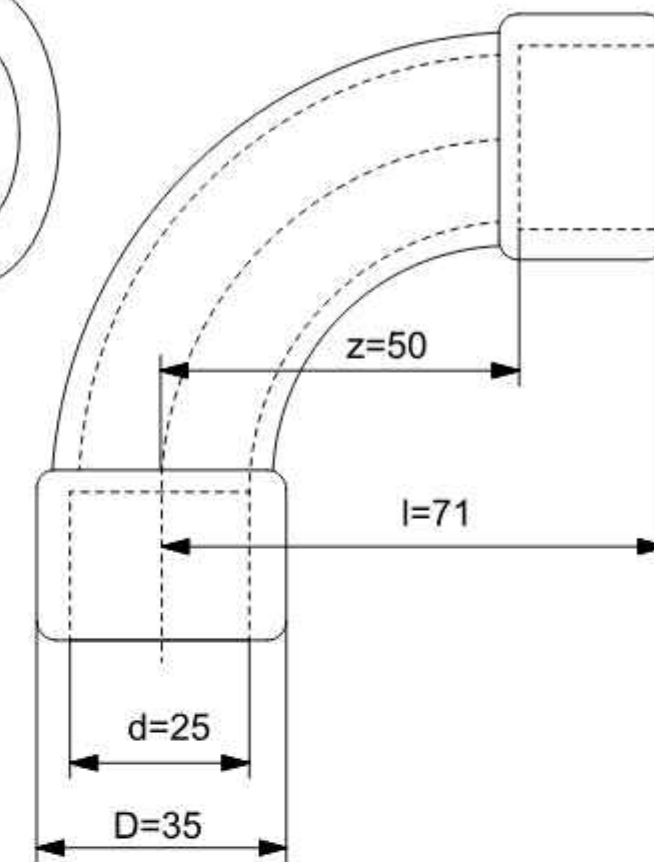
X - X (M1:1)

[illegible][illegible]




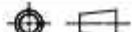


QUADRANT FITTING  
(b)



<div>धातु-वेल्डिंग चिन्ह</div> <div>भा. मा. : 813 / अ. मा. सं. : 2553</div> <div>WELDING SYMBOLS TO IS:813 / ISO:2553</div>	अनिर्दिष्ट संध - सीमा भा. मा. : 2102 / अ. मा. सं. : 2768												TOL. C.I.S.
	UNSPECIFIED TOLERANCE TO IS : 2102 / ISO : 2768												
	पदांक	सं1	सं2	सं3	सं4	सं5	सं6	सं7	सं8	सं9	सं10	सं11	सं12
	GRADE NO.	11	12	13	14	15	16	17	18	19	20	21	22
	Rz	0.8-1.3	0.5-0.7	0.9-1.1	1.5-2.0	2.5-3.0	5.0-6.3	9.0-12	16-25	36-48	50-63	75-90	90-250
Ra $\mu$ m	0.075	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50	
चिन्ह													
SYMBOL													

परिवर्तन संख्या ALT. NO.	प्राप्तिकार AUTHY	वर्णन DESCRIPTION	दिनांक DATED INITIAL
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अधिकृतित DGN			चित्तरंजन रेलइंजन कारखाना CHITTARANJAN LOCOMOTIVE WORKS, INDIA	
जॉबा द.अ.अ. CHD SSE			प्रचार MAIL	प्रति भार कि. घा. WT. EACH IN KG
समीक्षित स.वि.अ. / प्र.वि.अ. REVIEWED AEE / SEE			विशिष्ट SPECN	
अनुमोदित उ.प्र.वि.अ. APPROVED DYCEE		वर्णन DESCRIPTION	SPECIFICATION FOR SET OF NON METALLIC PIPE	
दिनांक DATE	25/06/98	आरेखण संख्या DRAWING NO.	CLW/ES/3/SK-2/0254	
रेखक अनुपात SCALE	NTS	परिवर्तन संख्या ALTERATION NO.	पृष्ठ SHEET	1 OF 1
संदर्भ / REF.	ALT-			A3

