TENDER SPECIFICATION FOR SET OF NON METALIC PIPE USED FOR WAP-5(BO-BO) ELECTRIC LOCOMOTIVES

TENDER SPECIFICATION No. CLW/ES/3/0413 ALT-B

ENCLOSURES:

1. ANNEXURE- I
2. DRG. NO.
   a) CLW/ES/3/SK-1/0413
   b) CLW/ES/3/SK-2/0413
   C) CLW/ES/3/SK-3/0413

ISSUED BY:

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

PREPARED BY	CHECKED BY	APPROVED BY
NIRANJAN KUMAR Digitally signed by NIRANJAN KUMAR Date: 2023.03.15 11:52:42 +05'30'	MANGLESHWAR GIRI Digitally signed by MANGLESHWAR GIRI Date: 2023.03.29 17:30:56 +05'30'	SYAMA PRASAD PATRA Digitally signed by SYAMA PRASAD PATRA Date: 2023.03.29 17:53:06 +05'30'
SSE/DRG&DGN (M)	SSE/DRG&DGN (M)	DY. CEE/D/CONV

ALTERATION RECORD SHEET

SL. NO.	DATE OF AMENDMENT	ALTERATION NO.	REASON	AUTHORITY
1.	19/4/2000	A	Qty./Loco for Quadrant fittings has been changed to 5 nos. Instead of 4 Nos. in the scope of supply at sheet no. 6 as per the actual requirement of the shop.	-sd-
2.	28/03/2003	B	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-
3	—	C	1) DIN-16891 deleted from clause no. 4,4.1 4.2 & 4.3 2) Test added in clause no. 5 (Test clause)	

Specifications have been digitized and all alterations have been incorporated

PREPARED BY	CHECKED BY	APPROVED BY
NIRANJAN KUMAR Digitally signed by NIRANJAN KUMAR Date: 2023.03.15 11:53:55 +05'30'	MANGLESHWAR GIRI Digitally signed by MANGLESHWAR GIRI Date: 2023.03.29 17:31:35 +05'30'	SYAMA PRASAD PATRA Digitally signed by SYAMA PRASAD PATRA Date: 2023.03.29 17:53:33 +05'30'
SSE/DRG&DGN (M)	SSE/DRG&DGN (M)	DY. CEE/D/CONV

1 24

SPECIFICATION FOR SET OF NON-METALLIC PIPE USED FOR WAP-5 (BO-BO) ELECTRIC LOCOMOTIVES

INDEX

PREPARED BY	CHECKED BY	APPROVED BY
NIRANJAN KUMAR Digitally signed by NIRANJAN KUMAR Date: 2023.03.15 11:54:46 +05'30'	MANGLESHWAR GIRI Digitally signed by MANGLESHWAR GIRI Date: 2023.03.29 17:31:57 +05'30'	SYAMA PRASAD PATRA Digitally signed by SYAMA PRASAD PATRA Date: 2023.03.29 17:53:53 +05'30'
SSE/DRG&DGN (M)	SSE/DRG&DGN (M)	DY. CEE/D/CONV

SPECIFICATION FOR SET OF NON METALLIC PIPE USED FOR THREE PHASE,5000 H .P WAP-5(BO-BO) A.C LOCOMOTIVE

1. **SCOPE:**
   This specification applies to smoke detector assembly pipe for 3-phse, 6000 H.P WAP-5 class locomotive for ,25KV AC 50HZ system.
2. **Climate and environmental conditions**:-
   * Maximum atmospheric temperature : Under Sun : 70^0C and in shade : 50^0C
   * Humidity : 100% saturation during rainy season

***Reference site conditions:**

i) Ambient Temp. Max. 47°. C min .0°. C
ii) The contactor 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/hr 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.

*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 DIN-16891 of~~ Aerylonitrile –Butadiese - Styrene (4BS) d25 x 1.95.
   Deleted

PREPARED BY	CHECKED BY	APPROVED BY
NIRANJAN KUMAR Digitally signed by NIRANJAN KUMAR Date: 2023.03.15 11:55:17 +05'30'	MANGLESHWAR GIRI Digitally signed by MANGLESHWAR GIRI Date: 2023.03.29 17:32:20 +05'30'	SYAMA PRASAD PATRA Digitally signed by SYAMA PRASAD PATRA Date: 2023.03.29 17:54:13 +05'30'
SSE/DRG&DGN (M)	SSE/DRG&DGN (M)	DY. CEE/D/CONV

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4.1 Socket Fittings:- Deleted

As per ~~DIN-16891 of~~ Aerylonitrile -Butediese - styrene (4BS) d25 x 1.95.
Details description has given in the Annexure - I and Drawing no. CLW/ES/3/SK-1/0413 & CLW/ES/3/SK-2/0413

Quantity per Loco :- 8 Nos.

4.2 Quadrant Fittings d-25 :-

As per ~~DIN-16891 of~~ Deleted Aerylonitrile -Butediese-styrene (4BS) d25 x 1.95.
Details description has given in the Annexure -1 and Drawing No. CLW/ES/3/SK-1/0413 & CLW/ES/3/SK-2/0413

Quantity per Loco :- 4 Nos.

4.3 T- Fitting 90 DEG d-25 : Deleted

Material :- As per ~~DIN-16891 of~~ Aerylonitrile - Butediese-styrene (4BS) d25 x 1.95.
Details description has given in the Annexure-1 and Drawing No. CLW/ES/3/SK-1/0413 & CLW/ES/3/SK-2/0413

Quantity per Loco :-1 Nos.

5. TEST:- ~~As per Relevant IS & IEC Standard.~~ Deleted

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-1/0413 of smoke detector pipe.

b) Details description of socket fittings , Quadrant fitting and T-Fittings in the drawing No. CLW/ES/3/SK-2/0413 , Fig. a, b, c respectively.

c) Description of smoke detector pipe in the drg. No. CLW/ES/3/SK-3/0413 .

PREPARED BY	CHECKED BY	APPROVED BY
NIRANJAN KUMAR Digitally signed by NIRANJAN KUMAR Date: 2023.03.15 11:56:04 +05'30'	MANGLESHWAR GIRI Digitally signed by MANGLESHWAR GIRI Date: 2023.03.29 17:32:47 +05'30'	SYAMA PRASAD PATRA Digitally signed by SYAMA PRASAD PATRA Date: 2023.03.29 17:54:33 +05'30'
SSE/DRG&DGN (M)	SSE/DRG&DGN (M)	DY. CEE/D/CONV

ANNEXURE-I

7. SCOPE OF SUPPLY:-

Description	ABB Identity No.	Ref.Drg. No.& Item no.	Qty/Loco
Socket Fitting d=25	- 3EHP 431362 P0002	SK-2, Fig-a	8
Quadrant Fitting d=25	- 3EHP 431362 P0010	SK-2, Fig-b	5
T-Fitting 90 DEG d=25	- 3EHP 431362 P0018	SK-2,Fig-c	1
Pipe/L = 5000	- 3EHP 431363 P0012	SK-1, P-12	4
Pipe/L = 1210	- 3EHP 431363 P0013	SK-1, P-13	1
Pipe/L = 580	- 3EHP 431363 P0014	SK-1, P-14	1
Pipe/L = 1610	- 3EHP 431363 P0015	SK-1, P-15	1
Pipe/L = 1140	- 3EHP 431363 P0016	SK-1, P-16	1
Pipe/L = 640	- 3EHP 431363 P0018	SK-1, P-18	1
Pipe/L = 240	- 3EHP 431363 P0019	SK-1, P-19	1
Pipe/L = 1480	- 3EHP 431363 P0020	SK-1, P-20	1
Pipe/L = 1260	- 3EHP 431363 P0021	SK-1, P-21	1
Pipe/L = 1000	- 3EHP 431363 P0024	SK-1, P-24	1
Pipe/L = 620	- 3EHP 431363 P0025	SK-1, P-25	1
Pipe/L = 730	- 3EHP 431363 P0017	SK-1, P-17	1

NOTE :- Smoke incoming hole of the smoke detector pipe as indicate as in the sk. no.CLW/ES/3/SK-1/0413.

General :- The tenderer should ensure smoke detector pipes are used as similar to WAP-5, 3-Phase electric locomotives manufactured by M/s. ABB for Indian Railways.

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.

PREPARED BY	CHECKED BY	APPROVED BY
NIRANJAN KUMAR Digitally signed by NIRANJAN KUMAR Date: 2023.03.15 11:56:33 +05'30'	MANGLESHWAR GIRI Digitally signed by MANGLESHWAR GIRI Date: 2023.03.29 17:33:11 +05'30'	SYAMA PRASAD PATRA Digitally signed by SYAMA PRASAD PATRA Date: 2023.03.29 17:54:55 +05'30'
SSE/DRG&DGN (M)	SSE/DRG&DGN (M)	DY. CEE/D/CONV

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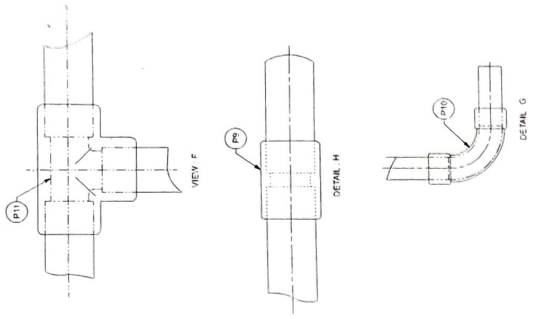
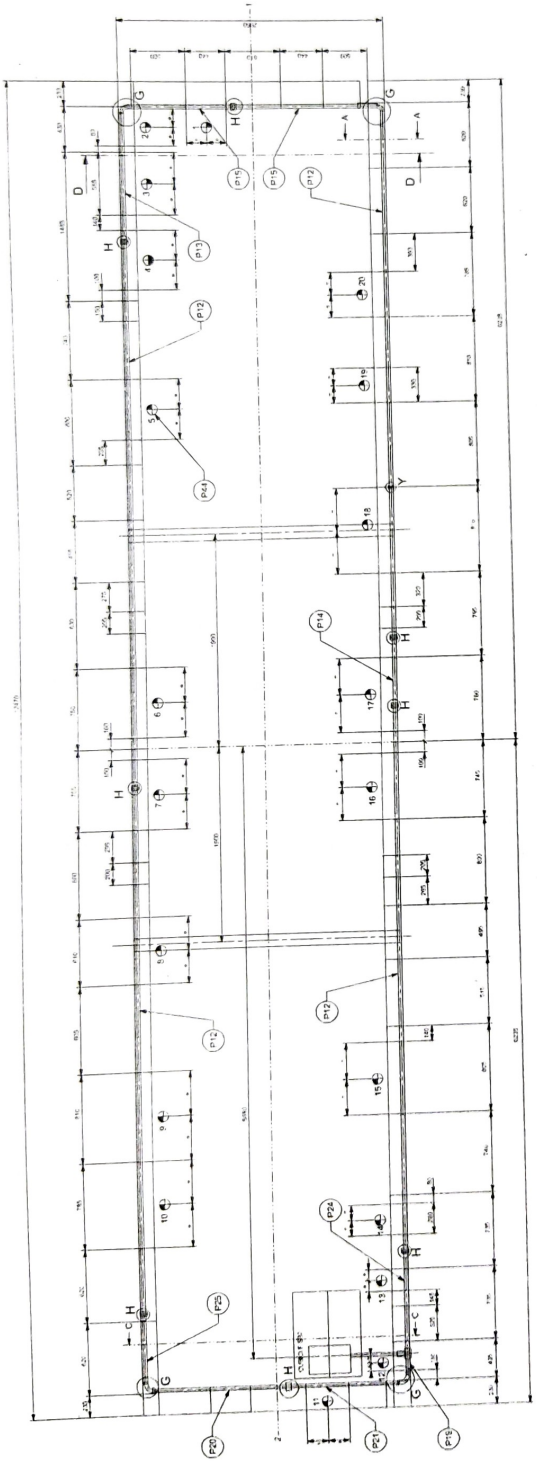
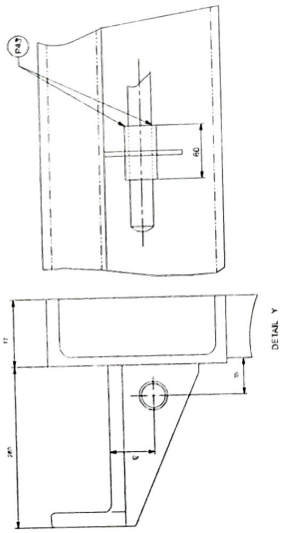
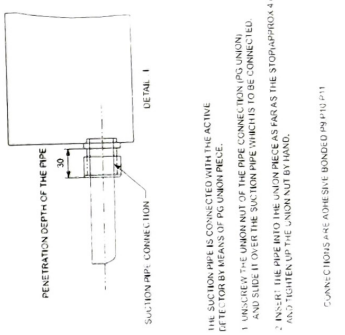
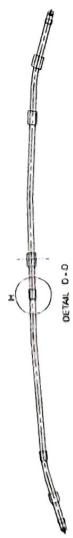
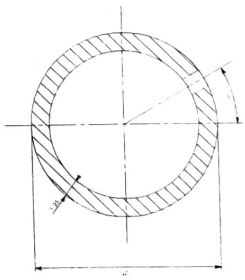


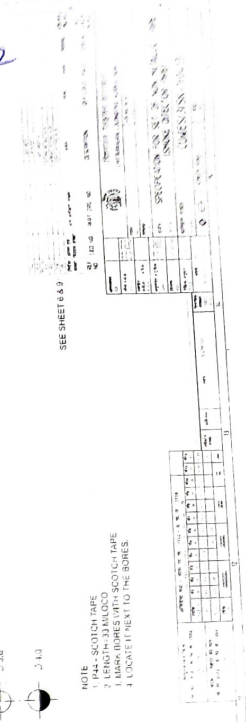


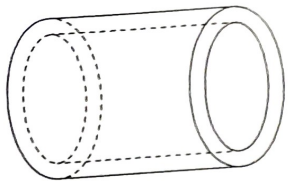




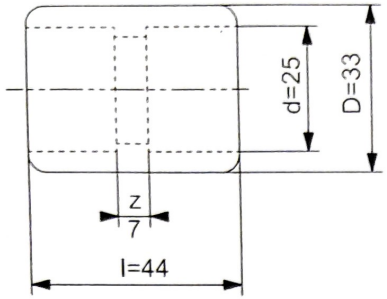


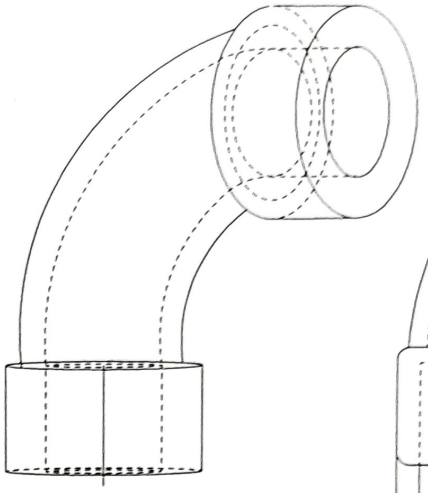


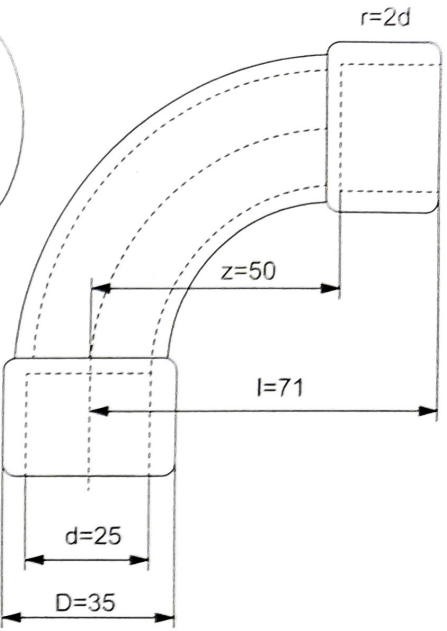




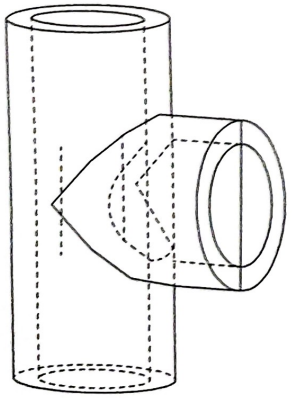
SOCKET FITTING
(FIG-a)

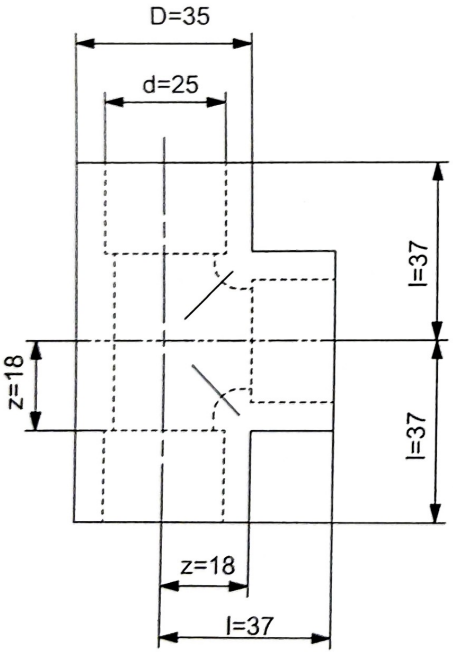






QUARDRANT FITTING
(FIG-b)





T- FITTING 90°
(FIG-c)

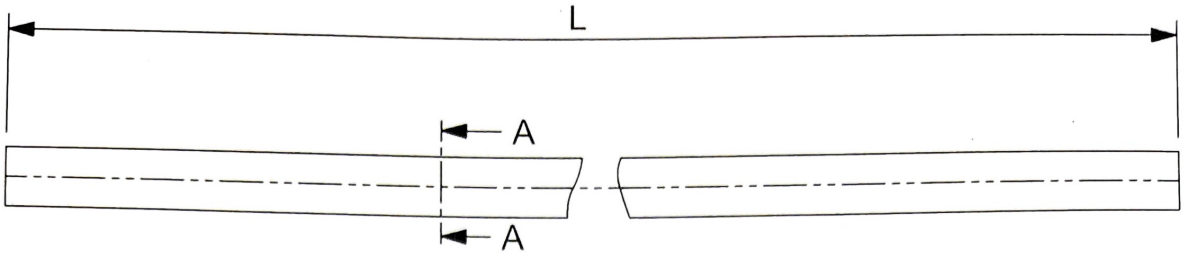
ध्यातु-देल्डन चिन्ह मा. : 813 / अ. मा. सं. :2553 WELDING SYMBOLS TO IS:813 / ISO:2553	अनिर्दिष्ट सद्य – सीमा मा. मा. : 2102 / अ. मा. सं. : 2768 UNSPECIFIED TOLERANCE TO IS 2102 / ISO 2768										TOL CLS	
सतह – रुक्षता का मान मा. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS 3073 / ISO 1302	पदांक GRADE NO	सं1 m1	सं2 m2	सं3 m3	सं4 m4	सं5 m5	सं6 m6	सं7 m7	सं8 m8	सं9 m9	सं10 m10	सं11 m11	सं12 m12
	Ra µm	0.16-0.3	0.5-0.1	0.9-1.1	1.5-2.6	2.5-3.8	5.0-6.3	9.0-12	16-25	32-40	50-63	75-100	100-250
	Ra µm	0.075	0.025	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50
	चिन्ह SYMBOL												

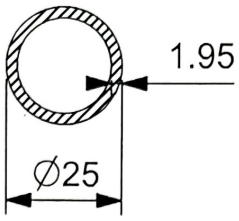
परिवर्तन संख्या ALT NO	प्राधिकार AUTHY	वर्णन DESCRIPTION	दिनांकित आद्याक्षर DATED INITIAL

अभिकल्पित DSN	
जाँचा व.अ.अ. CHD SSE	MANGLESHWAR GIRI
समीक्षित स.वि.अ. / व.वि.अ. REVIEWED AEE / SEE	
अनुमोदित उ.मु.वि.अ. APPROVED DYCEE	SYAMA PRASAD PATRA
दिनांक DATE	25/06/98
रैखिक अनुपात SCALE	NTS
संदर्भ / REF	ALT-

चित्तरंजन रेलइंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS, INDIA

पदार्थ MATL	प्रति भार कि. ग्रा. WT EACH IN KG
विशिष्टि SPEIN	
वर्णन DESCRIPTION	SPECIFICATION FOR SET OF NON METALLIC PIPE
आरेखण संख्या DRAWING NO	CLW/ES/3/SK-2/0413
परिवर्तन संख्या ALTERATION NO	पर्ण SHEET 1 OF 1





SECTION A-A

	P12	P13	P14	P15	P16	P18	P19	P20	P21	P24	P25	P17
L	5000	1210	580	1610	1140	640	240	1480	1260	1000	620	730

परिवर्तन संख्या ALT NO	प्राधिकार AUTHY	वर्णन DESCRIPTION	दिनांकित आद्यक्षर DATED INITIAL

सतह – रुक्षता का मान भा. मा. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS:3073 / ISO 1302

अनिर्दिष्ट सद्य – सीमा भा. मा. : 2102 / अ. मा. सं. : 2768 UNSPECIFIED TOLERANCE TO IS 2102 / ISO 2768

धातु–वेल्डन चिन्ह भा. मा. : 813 / अ. मा. सं. :2553 WELDING SYMBOLS TO IS:813 / ISO 2553

TOL CLS

पदांक GRADE NO	सं1 N1	सं2 N2	सं3 N3	सं4 N4	सं5 N5	सं6 N6	सं7 N7	सं8 N8	सं9 N9	सं10 N10	सं11 N11	सं12 N12
Rz	0.16-0.3	0.5-0.7	0.9-1.1	1.5-2.0	2.5-3.8	5.0-6.3	9.0-12	16-25	30-40	50-63	75-100	160-250
Ra µm	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50
चिन्ह SYMBOL												

अभिकल्पित DGN	
जाँचा व.अ.अ. CHD SSE	MANGL ESHWA R GIRI
समीक्षित स.वि.अ. / व.वि.अ. REVIEWED AEE / SEE	
अनुमोदित उ.मु.वि.अ. APPROVED DYCEE	SYAMA PRASAD PATRA
दिनांक DATE	25/06/98
रैखिक अनुपात SCALE	NTS
संदर्भ / REF	ALT -

चितरंजन रेलइंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS, INDIA

पदार्थ MAIL	प्रति भार कि. ग्रा. WT EACH IN KG
विशिष्टि SPECN	
वर्णन DESCRIPTION	SPECIFICATION FOR SET OF NON METALLIC PIPE
आरेखण संख्या DRAWING NO.	CLW/ES/3/SK-3/0413
परिवर्तन संख्या ALTERATION. NO.	पर्ण SHEET 1 OF 1

REDRAWN BY COE