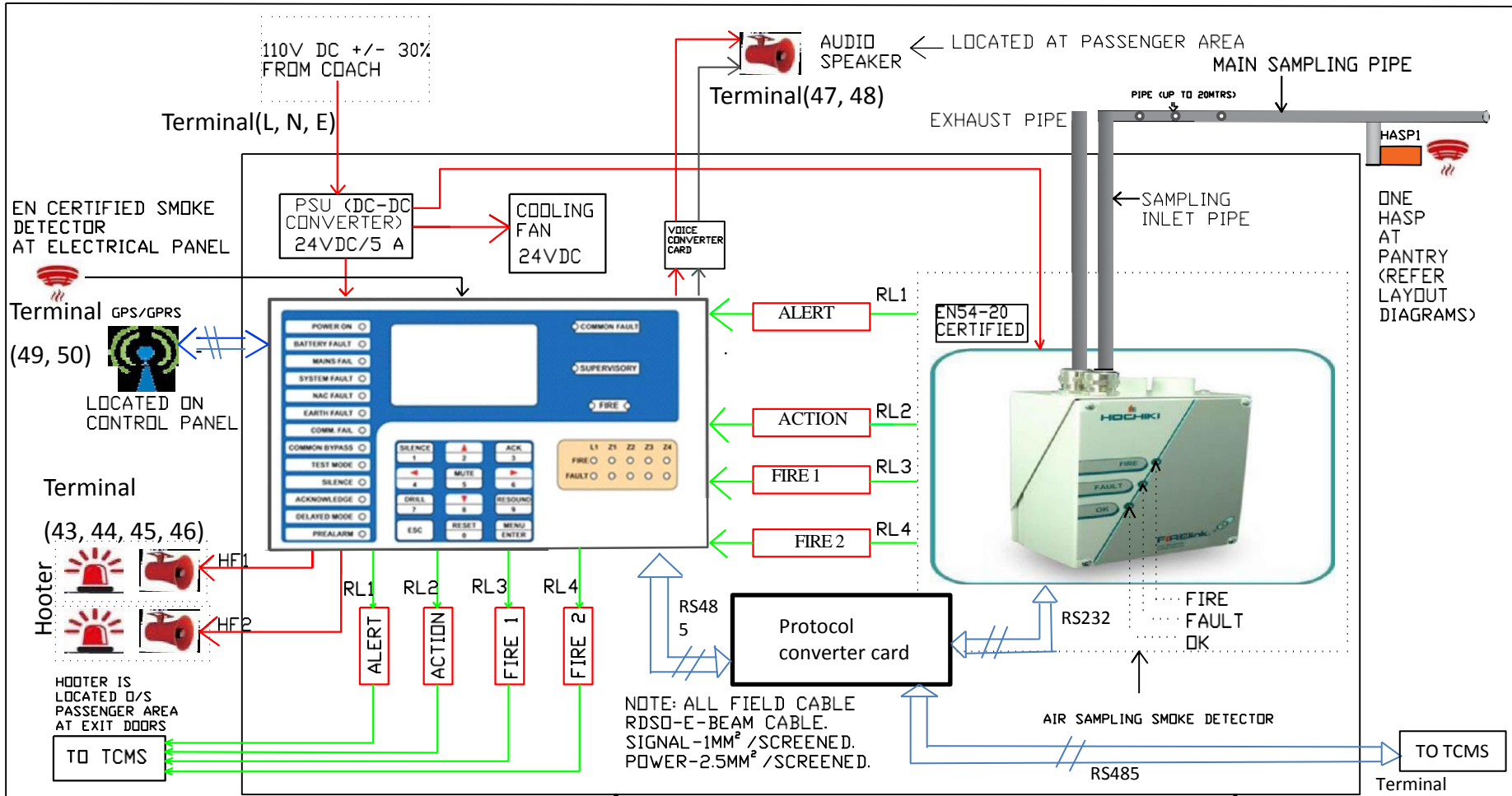


PART- B

**ASPIRATION TYPE AUTOMATIC SMOKE/
FIRE DETECTION WITH ALARM SYSTEM
FOR INDIAN RAILWAYS AC COACHES TO
RDSO SPECN No. RDSO/2008/CG-04,
Rev-05 (SYSTEM FOR STAND
ALONE/RAKE FORMATION COACH
CLAUSE-2.4 OF SECTION-A AND WITH
TCMS FOR TRAIN 18 APPLICATION
SYSTEM)**

**BLOCK DIAGRAM MAINTENANCE MANUAL FOR
TRAIN 18- FDS SYSTEM –DRAWINGS AND
BOMS**

**NSSPT PART NO. : NS1060.01 FIRELINK-25 RDSO
SPEC. NO. : RDSO/2008/CG-04(REV5)**



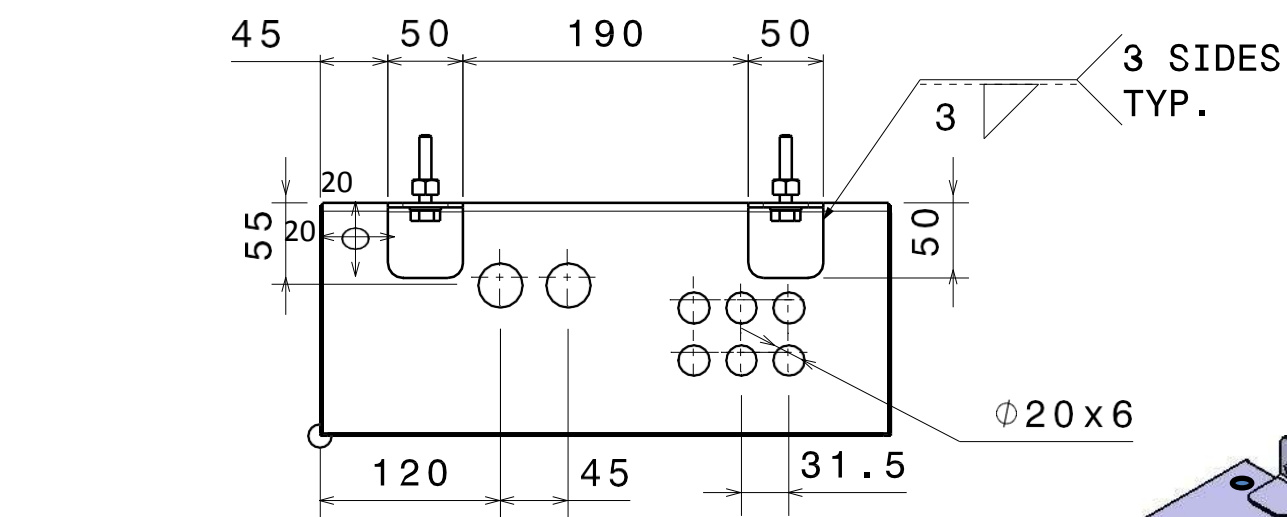
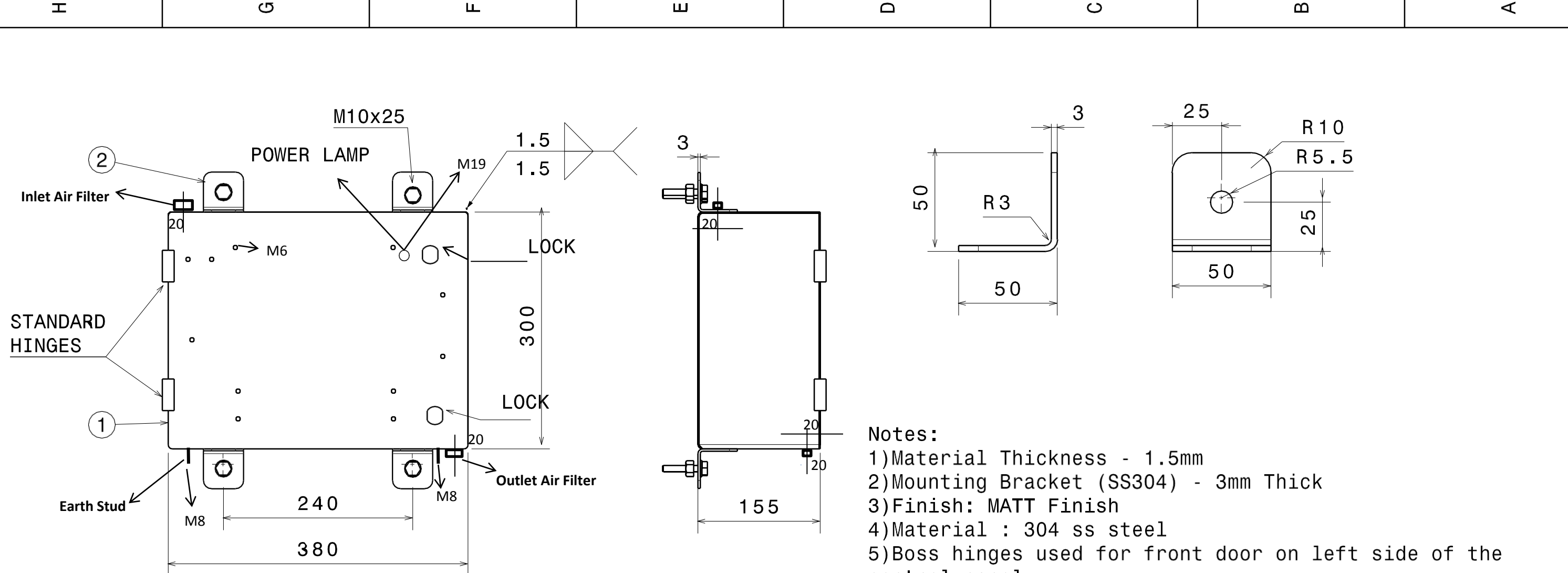
CABLES:
 1.FOR SENSORS SCREENED TWISTED PAIR INSTRUMENT CABLE:1MM SQ.
 2.FOR POWER SUPPLY SCREENED 2.5MM SQ FIRE RETARDENT CABLE.

LOCAL CONTROL UNIT (LCU)
 (LOCATED IN ECC)

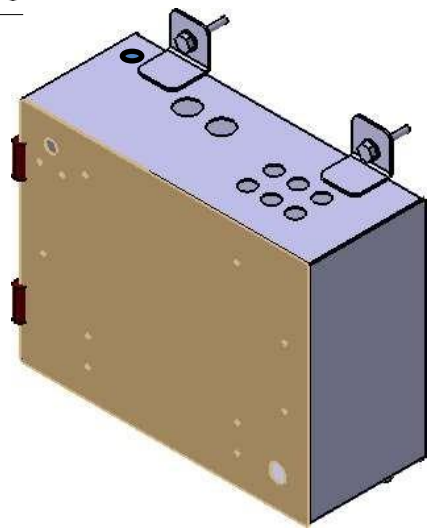
IEC60571 CERTIFIED

COMPANY NAME	CRITICAL DIMENSIONS		PREPARED BY	VERIFIED BY	APPROVED BY	PRODUCT DETAILS		
	DIMENSIONS	TOLERANCES				DIMENS IN MTS	SCALE NTS	ASPIRATING TYPE SMOKE/FIRE DETECTION SYSTEM AS PER RDSO/2008 CG-04(REV-5)W/D EBV
N&S SOLUTIONS PVT LTD			ASSISTANT MANAGER DELIVERY SYSTEMS ACAD ENGINEER SELVENDRI Y	PROJECTS& DOCUMENTATION ENGINEER YASHASVI	DIRECTOR DELIVERY SYSTEMS K.S SHAILESH KUMAR			
CUSTOMER APPROVAL	IN MTS	-	MATERIAL	THICKNESS	FINISH	QUANTITY	PRODUCT NO :	REV SIZE
TRAIN 18	-	-					NS/ASD/BLOCKDIAGRAM-002	05 A4
DATE : 26/12/2021	-	-					NS1060.012.FR	SHEET: 1 OF 1
			DRAWING NO: NS/ASD/BLOCK DIAGRAM-002 IEC60571 CERIFIED SYSTEM					

KEYS	
	HEAT ACTIVATED SAMPLING POINT
	HOOPER CUM FLASHER (HF1,2)
	GPS/GPRS
	SAMPLING PIPE



- Notes:**
- 1)Material Thickness - 1.5mm
 - 2)Mounting Bracket (SS304) - 3mm Thick
 - 3)Finish: MATT Finish
 - 4)Material : 304 ss steel
 - 5)Boss hinges used for front door on left side of the control panel
 - 6)PG 29 Stainless steel gland used for inlet and outlet of the sampling pipe (sampling pipe Ø27mm)
 - 7)Cam lock is used for locking front door
 - 8)Legend lables refer drawing number NSSPT/ASD/CONTROL PANEL/006-LABLES
 - 9)PG 13.5 STAINLESS STEEL GLANDS AS FOLLOWS
 - 1) 1x2.5sqmm and 8x1.5sqmm
 - 2) 1x2.5sqmm
 - 3) 2x0.75 SCR
 - 4) 2X1.5sqmm
 - 5) 2x1.5sqmm
 - 6) SPARE



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DRAWING TITLE		NS-HOCHIKI-CONTROL PANEL - TRAIN18		
DRAWN BY JAGADISH	DATE 23/11/2021	SIZE A3	DRAWING NUMBER NSSPT/ASD/CONTROL PANEL/006	REV 06
CHECKED BY SELVI	DATE 23/11/2021	SCALE 1:5	WEIGHT(kg) -	SHEET 1/4
APPROVED BY KSSK	DATE 23/11/2021			



N&S SOLUTIONS PVT LTD No:37-38 Reliable Residency ,HSR Layout,Harlur,Bangalore-560102

TITLE-ASPIRATING TYPE FIRE/SMOKE DETECTION WITH ALARM SYSTEM TO RDSO SPEC-RDSO/2008/CG-04/REV-05

DOC NO :NSSPT/PDE/ASD/Material composition

REV-04

INDEX

Sl.no	Description	Qty/PerCoach	Part No.	MAKE/OEM	COMPONENTS	MATERIAL COMPOSITION	Material being used as per Clause No:8.1.2
1	NS Make Aspiration smoke/fire Detectors with Alarm System for Indian Railways AC coaches along with accessories as per RDSO Spec no :RDSO/2008/CG-04 [REV 5] -NS PART NO NS1060.01 along with FIRELINK-25 ASD (% obscuration Better than 0.05%) With Multi Level Alarm setting & additional Relay Facilities.	01no.		FIRE LINK-25 , HOCHIKI ,UK / JAPAN (NS1060.01 FR-NS INTERNAL PART NUMBER)	1(a) Fire link external box 1(b)PCB 1(c)Sensor assembly. 1(d)Sub -D connector 1(e)Fasteners	1(a)Metal 1(b) FR 4 GRADE 1(c)Metal 1(d) Will confirm 1(e)Metal	a) FIRELINK 25 is EN54-20 certified to BRE Global Certificate No : 0832- CPR-F1279 b) Test Reports, Guarantee Certificate, WTC / Certificate of conformance from OEM c) Purchase Invoice / Delivery challan
2	Local Control Unit/ Fire Panel with LCD ,Programming ,configuration Keypad WithHindi , English display , GSM MODULE ,GPS MODULE , SMS FEATURE with data storage capacity of 10000 readings. (user settable upto 200 -20000 reading) .RS232-RS485 coms port.Battery Back up - 12v, 7Ah(Optional) Electronic voice message sounder (Optional)	01 no.		NS1060.01 ,NS MAKE , INDIA	3(a)Control Panel ,Metal Enclosure 3(b)PCB 3(c)Fan 3(d)Back Plate 3(e)Power Supply 3(f)Cable Tray 3(g)Name plates 3(h)PG Cable Gland	3(a)SS304 3(b) FR4 GRADE 3(c)Metal (Di cast Aluminium) 3(d)Metal 3(e)Metal enclosure 3(f) Polyimide material , Will confirm 3(e)Stainless Steel/Brass 3(h)Metal PG Cable Gland	a) Enclosed Control Panel Drawing . no: (1)NSSPT/ASD/CONTROL PANEL-006
3	AUDIO VISIUAL ALARAM	02 no.		EMX- 7T05SP , HOCHIKI, UK / JAPAN OR EQUIVALENT	4(a)External Enclosure 4(b)PCB	4(a) FR Polymer ABS 4(b) FR 4 Grade	a) Refer Enclosed certificate no:7324 b) Test Reports, Guarantee Certificate, WTC / Certificate of conformance from OEM c) Purchase Invoice / Delivery
4	Fire Retardant Main Sampling Pipe Specification Diameter : 3/4 inch nominal bore(27mm O/D) . Material: CPVC with capillary pipe, T reducer joints and fixtures as per coach requirement.	25 Mts		NSSPT/1060.01/CONPIPE, -(NS INTERNAL PART NUMBER) APPROVED MAKE	6(a)Sampling Pipe 6(b)Capillary Pipe 6(c)Sampling Nipple/Nozzle 6(d)T Reducer Joints	CPVC, UL certified Aluminium Powder coated RAL 1009005	a) Enclosed Supreme datasheet certified to UL listed (UL 1821). b) Invoice of a local Dealer
5	Female 9 pin SUB-D Connector for data download	02 no's		APPROVED LOCAL MAKE , INDIA	NA	NA	a) Metal Enclosure b) Invoice of a local Dealer
6	Clamps & Brackets for pipe Mounting : 3/4 size	LUMPSUM as required		NSSPT/1060.01/CLR-BRC,NS MAKE , INDIA(NSINTERNAL PART NUMBER)	Metal Parts	METAL PARTS Finish Powder coated to RAL 1009005	a)Metal Zinc or chromium Passivated. b) Invoice of a local Dealer
7	User manual - NSSPT/PDE/NS1060.01/USER-MANUAL	06 set		NA , NS MAKE LOCAL, INDIA	NA	NA	NOT Used in Coach
8	Smoke /Heat detector SIL-2 Certified	01Nos		Hochiki Make	SIL-2 Certified	Drawing No: SLR-E-(IS) & base YBN-R/4(IS)	SIL-2 Certified
9	Heat Activated Sampling point	01Nos		NS Make	SS304 Housing	Drawing No:NS/ASD/HASP-001	SS304 Hochiki

B-Scope of Services

1	Installation and commissioning per coach
2	Commissioning Spares/coach
3	Guaranteed spares for 3 years /coach

PREPARED BY : K S S K	CHECKED BY:	Date : 14-12-2021
		APPROVED BY : Director Delivery Systems K S S K



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Signature:



N&S SOLUTIONS PVT LTD No:37-38 Reliable Residency ,HSR Layout,Harlur,Bangalore-560102

TITLE-ASPIRATING TYPE FIRE/SMOKE DETECTION WITH ALARM SYSTEM TO RDSO SPEC-RDSO/2008/CG-04/REV-05

DOC NO :DOC NO:NSSPT/PDE/ASD-PIPE

REV-04

INDEX

MAIN BOM DOC NO:NSSPT/PDE/ASD- QAP, SL NO:05 SAMPLING PIPE DETAILS

Sl.no	Description	Qty/PerCoach	Part No.	MAKE/OEM	Material being used as per Clause No:8.1.2
5	Fire Retardant Main Sampling Pipe Specification Diameter : 3/4 inch nominal bore(27mm O/D),. Material: CPVC with capillary pipe, T reducer joints and fixtures as per coach requirement.	25 Mts	SUPREME SAP NO:PCPZSW3M002E (NSSPT/1060.01/ PIPE-MAIN -NS INTERNAL PART NUMBER) .		Enclosed Supreme datasheet certified to UL listed (UL 1821). a) Test Reports, Guarantee Certificate, WTC / Certificate of conformance from OEM. b) Purchase Invoice / Delivery challan
5(a)	Inline Trunk Adapter for capillary Aspirating CPVC pipes	As per number of sampling points	SUPREM PRODUCT CODE:4206-007 NSSPT/1060.01/ PIPE-TA (NS INTERNAL PART NUMBER) .		Enclosed Supreme datasheet certified to UL listed (UL 1821). a) Test Reports, Guarantee Certificate, WTC /Certificate of conformance from OEM. b) Purchase Invoice / Delivery challan
5(b)	CPVC Capillary sampling Tubes (8mm TO 11mm)- 1.5 mts Length	As per number of sampling points	NSSPT/1060.01/ PIPE-ST (NS INTERNAL PART NUMBER)		a) Test Reports, Guarantee Certificate, WTC /Certificate of conformance from OEM. b) Purchase Invoice / Delivery Challan
5(c)	AL Capillary sampling points Nozzels (Concealed)	As per number of sampling points	NSSPT/1060.01/ PIPE-SN (NS INTERNAL		NS Make a)To Suit Sampling Pipe OD diameter. b)Dimensions to Meet Drawing No: NSSPT/ASD/NS/008. c)Refer Layout Drawing no.: b)Refer Layout Drawing no.: NSSPT/ASD/SAMPLING/LAYOUT/TC .Rev.05 NSSPT/ASD/SAMPLING/LAYOUT/MC .Rev.05 NSSPT/ASD/SAMPLING/LAYOUT/DTC .Rev.05 for TC/DTC/MC
5(d)	Safety Mesh cover for capillary sampling points Nozzels	3 nos	NSSPT/1060.01/ PIPE-MC (NS INTERNAL PART NUMBER)		METAL PART Enclosed Drawing no: NSSPT/ASD/SN NETTED COVER/04 a) Invoice of a local Dealer b)Refer Layout Drawing no.: NSSPT/ASD/SAMPLING/LAYOUT/TC .Rev.05 NSSPT/ASD/SAMPLING/LAYOUT/MC .Rev.05 NSSPT/ASD/SAMPLING/LAYOUT/DTC .Rev.05 for TC/DTC/MC
5(e)	Solvent Cement - Size Pint (473.17ml)	One pint box.	SUPREM PRODUCT CODE:FS5-020 NSSPT/1060.01/ PIPE-SC (NS INTERNAL PART NUMBER)		CONSUMABLE a) Invoice of a local Dealer
5(f)	Clamps & Brackets for pipe Mounting : 3/4 size Coupler - Size 3/4" (20mm)	LUMPSUM as required 5 nos	NSSPT/1060.01/CLR- BRC,NS MAKE , INDIA(NSINTERNAL PART NUMBER) SUPREM PRODUCT CODE:4229-007 (NSSPT/1060.01/PIPE-C NS INTERNAL PART NUMBER)		Ms Zinc or chromium Passivated. b) NS Make Enclosed Supreme datasheet certified to UL listed (UL 1821). a) Test Reports, Guarantee Certificate, WTC /Certificate of conformance from OEM. b) Purchase Invoice / Delivery challan
5(g)	CPVC Elbow Joints - 45° Elbow - Size 3/4" (20mm)	4 nos	SUPREM PRODUCT CODE:4206-007 (NSSPT/1060.01/PIPE-EJ NS INTERNAL PAR- NUMBER)		Enclosed Supreme datasheet certified to UL listed (UL 1821). a) Test Reports, Guarantee Certificate, WTC /Certificate of conformance from OEM. b)Purchase Invoice / Delivery challan
5(h)	CPVC EndCap	1 nos	SUPREM PRODUCT CODE:4206-007 (NSSPT/1060.01/PIPE-EJ NS INTERNAL PAR- NUMBER)		Enclosed Supreme datasheet certified to UL listed (UL 1821). a) Test Reports, Guarantee Certificate, WTC /Certificate of conformance from OEM. b)Purchase Invoice / Delivery challan
5(i)	AL Capillary sampling points Nozzels (Visible)	3 no.	NSSPT/1060.01/ PIPE-SN (NS INTERNAL		NS Make a)To Suit Sampling Pipe OD diameter. b)Dimensions to Meet Drawing No: NSSPT/ASD/NS/008. c)Refer Layout Drawing no.:b)Refer Layout Drawing no.: NSSPT/ASD/SAMPLING/LAYOUT/TC .Rev.05 NSSPT/ASD/SAMPLING/LAYOUT/MC .Rev.05 NSSPT/ASD/SAMPLING/LAYOUT/DTC .Rev.05 for TC/DTC/MC



DOC NO :NSSPT/PDE/20-21/QAP

PREPARED BY : KSSK

CHECKED BY:

Date :14-12-2021

APPROVED BY : Director Delivery Systems K S S K

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SIGNATURE :

PLANING ACTIVITY WORKSHEET FOR ASD I & C For ICF/LHB Coaches

1	Tender Number /Date	Tender number: 06211506 Closing Date/Time: 28/10/2021 14:15
2	Consignee	M/S ICF/Chennai
3	Paying Authority	M/S ICF/Chennai
4	Latest M.A.No. & Date	Not Applicable

STAR T DATE	END DATE	SL NO	PROCESS ACTIVITY	DRAWING DOCUMENTS
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Required Documents for Reference

		1	General schematic diagram of sampling pipe layout for 3 coaches (DTC, TC and MC) with dimensions in reference to main sampling pipe line.	1) TC onboard equipment 2) DTC onboard equipment 3) MC onboard equipment
		2	Sampling Nozzle	NSSPT/ASD/SN/008
		3	Sampling Nozzle cover	NSSPT/ASD/SN NETTED COVER/004
		4	Heat activated sampling point.	NS/AASD/HASP-001 (IEC60571 CERTIFIED SYSTEMS)
		5	control pannel	NSSPT/ASD/CONTROL PANEL/006
		6	Bend pipe for main sampling point to avoid infringement	NSSPT/1060.01/CON-PIPE
		7	sample 3D pictures of sampling pipe layout and sampling nozzle capillary pipe	ENCLOSED 3D PICTURES
		8	Approved Bill of Material for sampling pipe layout.	BOM SL. NO. 6 (SAMPLING PIPE DETAIL)

ROUTING OF SAMPLING PIPE INSIDE ROOF OF COACH

		1	Required material for coach(Upvc pipe,elbow, T joint, approved cabels , clamps & Brackets, Buzzer, cappillary tube,Nipple, Sealeant, as per BOM).	Refer BOM NO 2
		2	The approved UPVC pipe to be laid through the false ceiling from ASD outlet to the termination on the other end for the coach as per the layout drawing .	Refer respectice 2D/3D layout drawing
		3	Main sampling pipe will be laid as per coach layout diagram, for specific coach and T-joint or capillary point offtake will be as per layout diagram.(enclosedd Sample 3D pictures)	Refer 3D pictures
		4	Capillary pipe 10mm dia of 2.5mts and 1.5mts (Or as per customer requirement) with additional slack of 0.5mts to be provided from each capillary point offtake.	Refer Diamentional layout drawing for respective coaches
		5	The terminal end of each capillary pipe will be tied with 1.0 mmsquare flexible steel wire of 2mts length.	Refer Diamentional layout drawing for respective coaches
		6	As the ceiling panel is mounted with pre drilled sampling holes of 16mm dia. The corresponding sampling capillary pipe steel guide wire is inserted into the ceiling sampling holes and gently pulled from below.	Refer Diamentional layout drawing for respective coaches

		7	As the ceiling panel is locked in the place the guide wires are fully pulled till the sampling capillary pipe protrudes out from the respective sampling hole.	Refer Diamentional layout drawing for respective coaches
		8	The steel guide wire is is removed from the capillary pipe the terminal end of the capillary pipe is dressed.	Refer Diamentional layout drawing for respective coaches
		9	Now the capillary pipe is inserted into the sampling nozzle after a coat of adhesive compound[Refer BOM SL. No. 6(e)] simaltaneously the sampling nozzle is press fitted on to the ceiling through the 16mm hole so as to lock both mechanically and adhesively .	Refer Diamentional layout drawing for respective coaches
		10	In reference to the sampling nozzle cover drawing is fitted concentric to the sampling nozzle by means of 2 self threading screws to protect the samplig nozzle.	Refer Sampling Nozzle cover drawing number.: NSSPT/ASD/SN NETTED COVER/004
		11	The above same process is repeated is repeated for all the sampling nozzle holes as per the the sampling layout diagram for the respective coach.	
		12	Control Cabinet as per drawing number NSSPT/ASD/CONTROL PANEL/006 is mounted at far end of 4no. M10 bolting system.	
		13	precaution to be taken care of mounting the control panel along with the anti vibrating rubber with the control panel kit.	
		14	After the control panel is fitted the inlet point on the control panel for the sampling pipe is connected to main main sampling pipe line to ensure an air tight fit through the control pannel provided on the inlet pipe mounted on control panel.	
		15	A half meter to 1meter sampling pipe is fit into the outlet exhaust pipe fitted on the control panel and left open to the same pressure area .	
		16	power supply cable 110volt DC is drawn from the coach control panel through the coach cable tray and terminate through 110volts PG 16 glands inside the control panel.	
		17	The TCMS data cable from the control panel is drawn through PG16 gland on the control panel to the TCMS termination points provided near the control panel installation.	
		18	The 4 relay output NC/NO contact cabling is drawn from the control panel PCB termianion (Refer wiring chart drawing number: NSSPT/PDE/WIRING -CHART/001) through the PG16 gland and provide to the TCMS systems.	
		19	please refer to the routine test procedure for the full system to RDSO clause no. 6.4 to test the system.	

		20	Refer test plane for sensors to RDSO Specification no. RDSO/2008/CG-04/REV-05	
		21	Refer to test plan result tabulation for recording the various parameters once commissioning of the system is done.	

ROUTING OF FIELD CABLES INSIDE COACH

		1	From Buzzer audio visual at mounted on ceiling outside both end A .C Coach door visible to passenger.	Refer to the fitment chart for the individual parts
		2	Drawing 110 v DC, A.C Coach or supply from electrical panel through false ceiling via cabel tray with 2.5 mm square fire retardent.	I & C User Manual
		3	Continuity checking end for each cable to ensure signal transmission.	I & C User Manual
		4	To connect data download cabel from Hochiki ASD box with sub -d cabels to TCMS point from control pannel.	I & C User Manual

Powering on and calibration

		1	Check continuty of every cabel.	
		2	Check power supply from electric panel 110v DC.	
		3	Power on fire panel.	
		4	verify fire panel an ASD Instalization.	
		5	Now follow N & S Solution document for user setup procedure.	

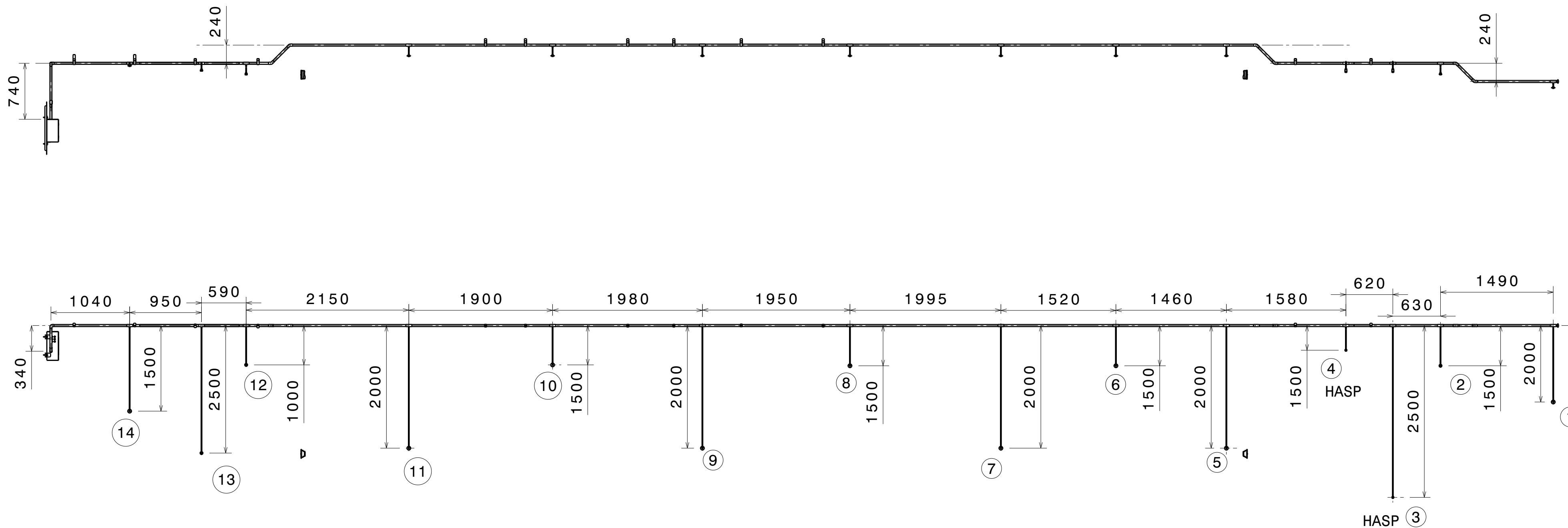
Precautions

1	Use always approved adhesive compound (as per BOM) for all pipe joints to ensure no leakage.
2	Ensure thin film of adhesive compound is applied specifically for capillary pipe inserted to sampling nozzles to avoid or prevent excessive adhesive compound accumulating in sampling nozzles.
3	as every lenth of pipe is being layed, ensure that there is no dust, greese, oil and foreign material in the pipes being laid.
4	All the sampline pipe line to be layed and harnessed as per the layout diagram for the specific coaches with mounting brackets as shown.

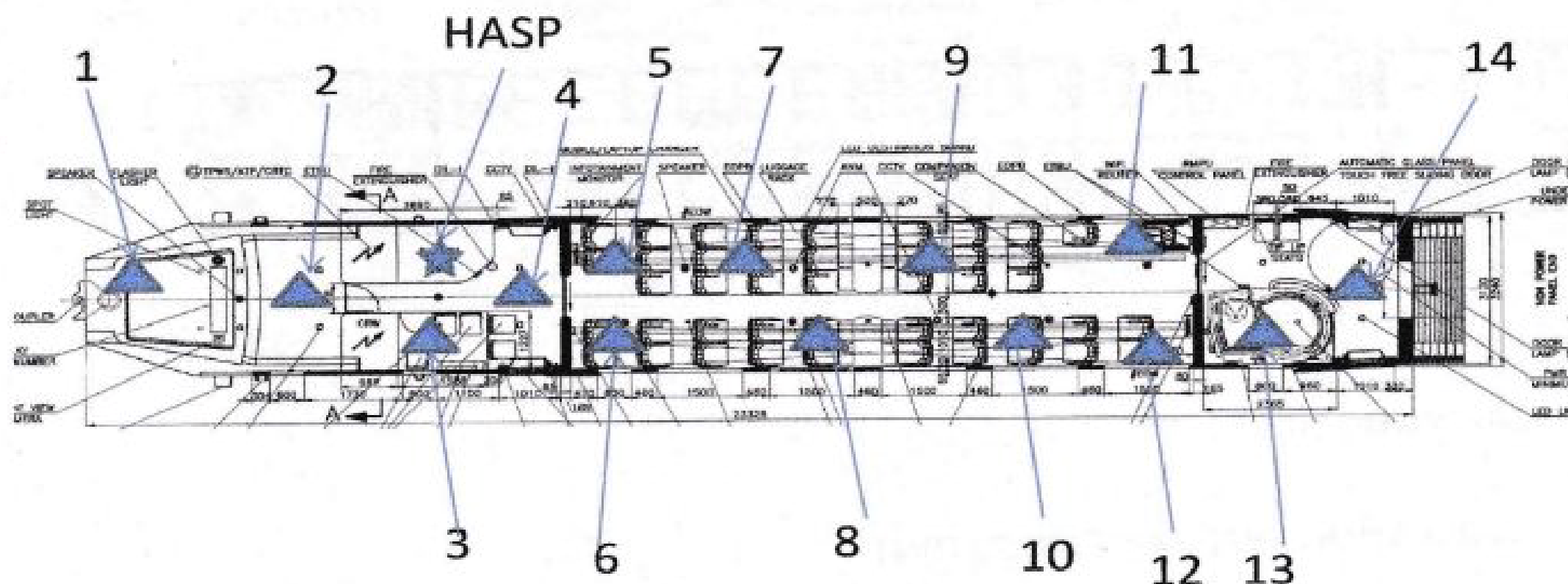
Note:1. For each coach 2 manpower is required, 1 person is electrical and another person is mechanical technicians and one Supervisor or manager.

Note: 2. Supervisor from Bangalore office should remain.

Prepared :Ramya (Customer Contract Management)	Checked : I & C Team	Approved: K. S. Shailesh Kumar (Director)
-----------------------------------------------------------	---------------------------------	-------------------------------------------------------



TS/DTC REQUIREMENTS :



SAMPLING POINTS AND TYPES :

- 1) IN PASSENGER AREA : 6 SAMPLING POINTS (CONSEALED) - FROM 6 TO 11
- 2) SAMPLING POINTS IN DOOR WAY : 3 CONSEALED - (1 ,5, 14)
- 3) 2 HASP IN PANTRY: (VISIBLE)
- 4) NO OF SAMPLING IN ELECTRICAL PANEL: 1(VISIBLE) - 2
- 5) 2 SAMPLING POINTS IN TOILETS (VISIBLE TO PASSENGER) - 12 AND 13

MEASUREMENT OF MAIN SAMPLING PIPE AND TEE JOINTS ARE AS MEASURED FROM THE PHYSICAL COACH.

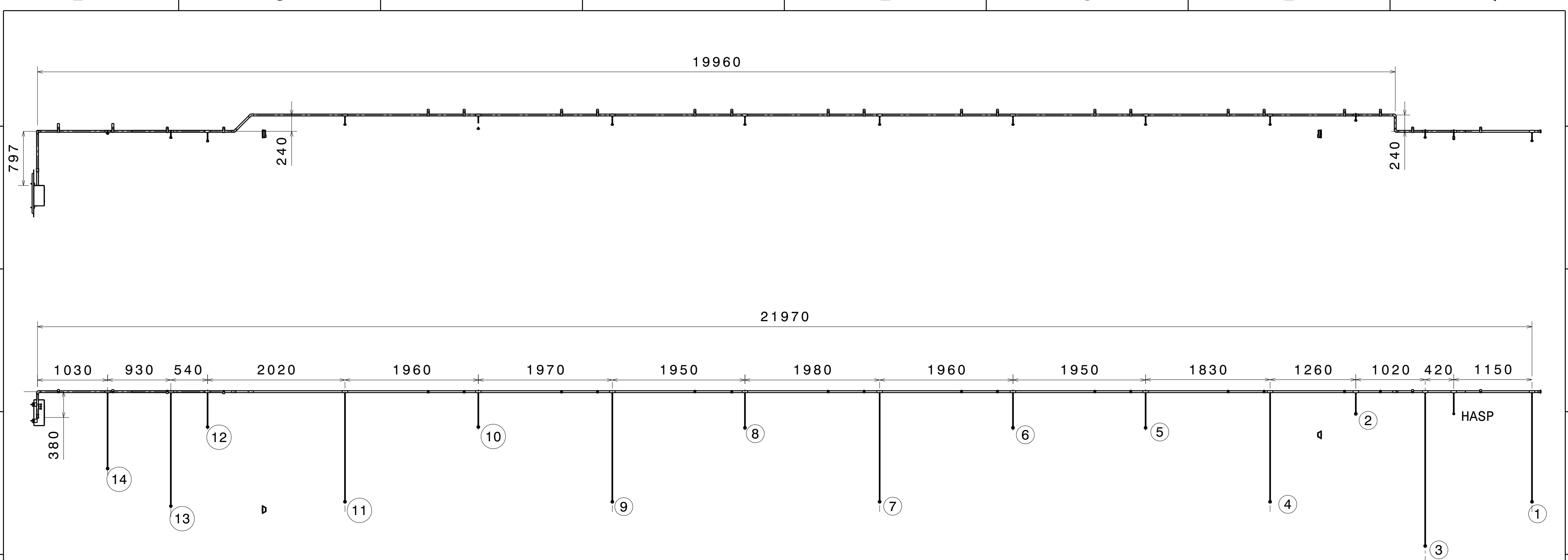
NOTE: REFER DRW NO NSSPT/ASD/SN/008 (REVISION 04) FOR CONSEALED SAMPLING POINT ASSEMBLY

NOTE: REFER DRW NO NSSPT/ASD/SN/008 (REVISION 03) FOR VISIBLE SAMPLING ASSY

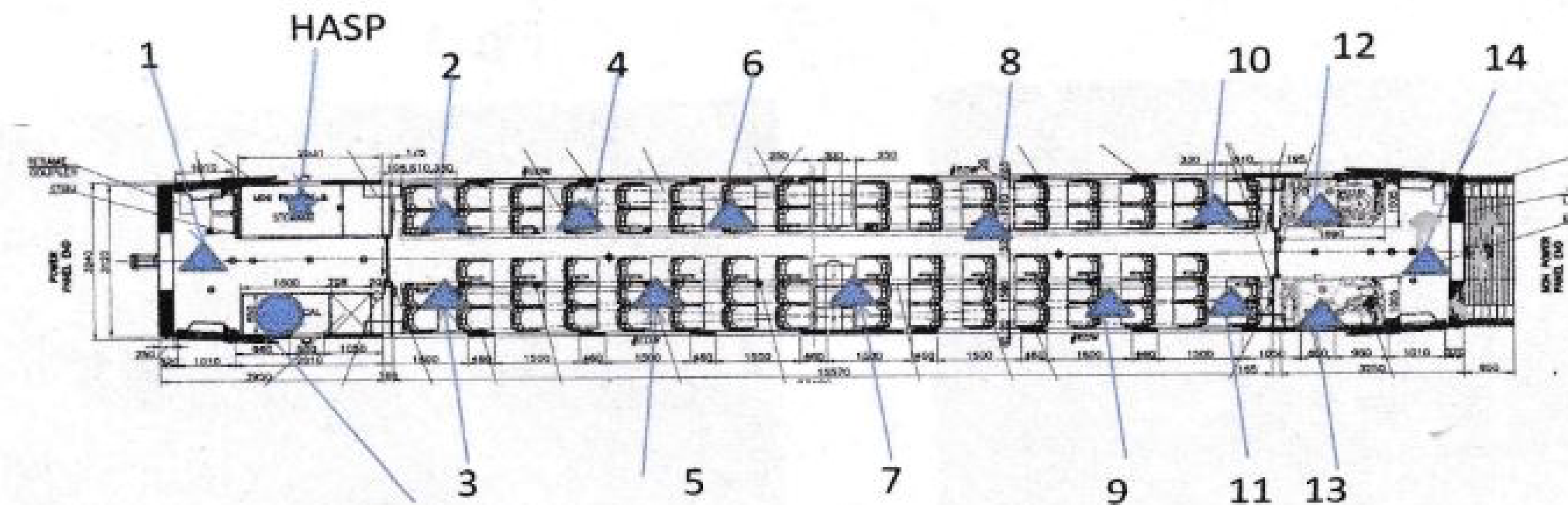
- ASPIRATION TYPE SAMPLING POINT
- HASP (HEAT ACTIVATED SAMPLING POINT)

NOTES:
 1.10MM DIA PIPE IS FLEXIBLE PIPE, KEEP +15CM TOLERANCE (EXTRA LENGTH) FOR ADJUSTMENTS
 2.REFER DETAILED BOM FOR SAMPLING PIPE SYSTEM.

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DRAWING TITLE		MAIN SAMPLING PIPELAYOUT ALONG WITH CAPILLARY PIPES - DTC		
DRAWN BY	DATE	SIZE	DRAWING NUMBER	REV
JAGADISH	22/02/2022	A2	NSSPT/ASD/SAMPLING/LAYOUT/DTC	06
CHECKED BY	DATE	SCALE	WEIGHT(kg)	SHEET
SHIV KUMAR	22/02/2022	1:40		1/1
APPROVED BY	DATE			
KSSK	22/02/2022			



TS/MC REQUIREMENTS :



SAMPLING POINTS AND TYPES :

- 1) IN PASSENGER AREA : 10 SAMPLING POINTS (CONSEALED) - FROM 2 TO 11
- 2) SAMPLING POINTS IN DOOR WAY : 2 CONSEALED - (1 AND 14)
- 3) 1 HASP IN PANTRY: (VISIBLE)
- 4) NO OF SAMPLING IN ELECTRICAL PANEL: 1(VISIBLE)
- 5) 2 SAMPLING POINTS IN TOILETS (VISIBLE TO PASSENGER) - 12 AND 13

MEASUREMENT OF MAIN SAMPLING PIPE AND TEE JOINTS ARE AS MEASURED FROM THE PHYSICAL COACH.

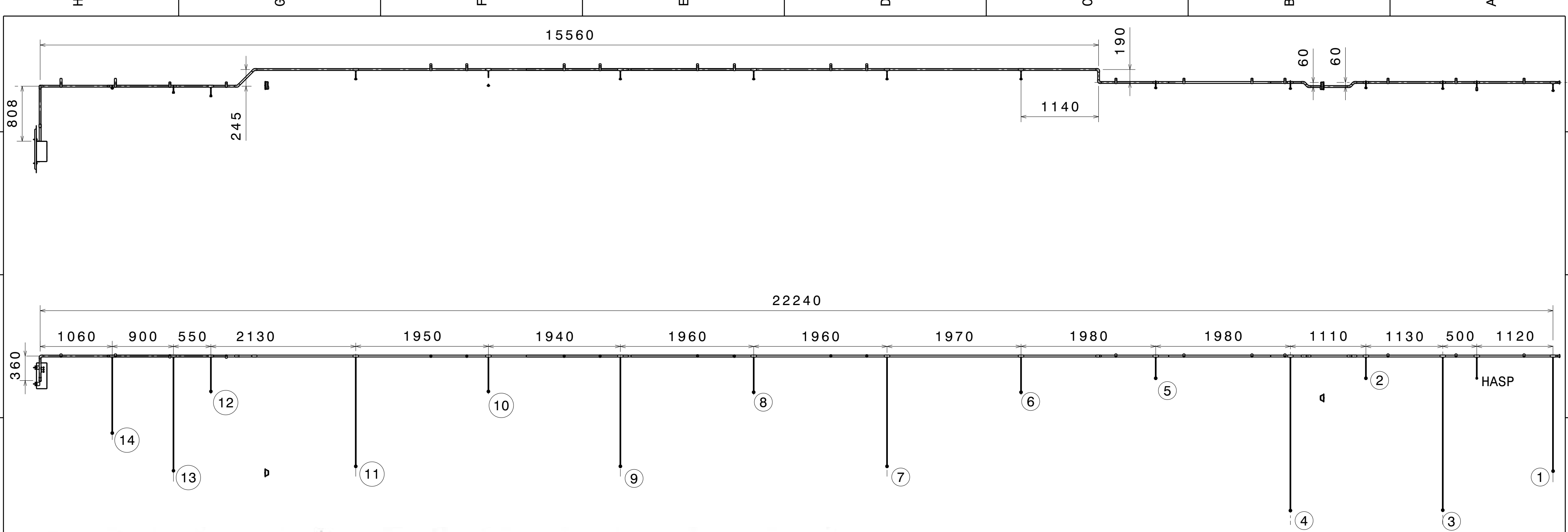
NOTE: REFER DRW NO NSSPT/ASD/SN/008 (REVISION 04) FOR CONSEALED SAMPLING POINT ASSEMBLY

NOTE: REFER DRW NO NSSPT/ASD/SN/008 (REVISION 03) FOR VISIBLE SAMPLING ASSY

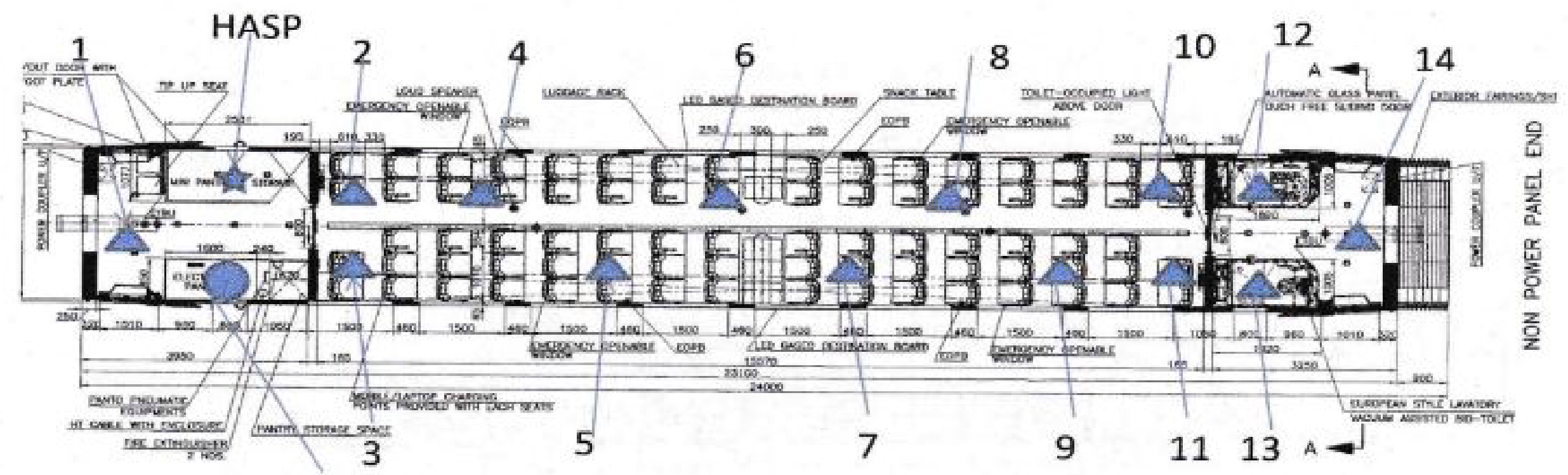
- NOTES:**
- 1.1.10MM DIA PIPE IS FLEXIBLE PIPE, KEEP +15CM TOLERANCE (EXTRA LENGTH) FOR ADJUSTMENTS
 - 2.REFER DETAILED BOM FOR SAMPLING PIPE SYSTEM.

- ASPIRATION TYPE SAMPLING POINT
- HASP (HEAT ACTIVATED SAMPLING POINT)
- SAMPLING HOLE

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DRAWN BY JAGADISH		DRAWING TITLE MAIN SAMPLING PIPELAYOUT ALONG WITH CAPILLARY PIPES - MC		
CHECKED BY SHIV KUMAR		DATE 25/12/2021	SIZE A2	DRAWING NUMBER NSSPT/ASD/SAMPLING/LAYOUT/MC
APPROVED BY KSSK		DATE 25/12/2021	SCALE 1:40	REV 05
WEIGHT(kg)			SHEET 1/1	



TS/TC REQUIREMENTS :



SAMPLING POINTS AND TYPES :

- 1) IN PASSENGER AREA : 10 SAMPLING POINTS (CONSEALED) - FROM 2 TO 11
- 2) SAMPLING POINTS IN DOOR WAY : 2 CONSEALED - (1 AND 14)
- 3) 1 HASP IS PANTRY: (VISIBLE)
- 4) NO OF SAMPLING IN ELECTRICAL PANEL: 1(VISIBLE)
- 5) 2 SAMPLING POINTS IN TOILETS (VISIBLE TO PASSENGER) - 12 AND 13

MEASUREMENT OF MAIN SAMPLING PIPE AND TEE JOINTS ARE AS MEASURED FROM THE PHYSICAL COACH.


NOTE: REFER DRAWING NO NSSPT/ASD/SN/008 (REVISION 04) FOR CONSEALED SAMPLING POINT ASSEMBLY

NOTE: REFER DRAWING NO NSSPT/ASD/SN/008 (REVISION 03) FOR VISIBLE SAMPLING ASSY

- ▲ ASPIRATION TYPE SAMPLING POINT
- ★ HASP (HEAT ACTIVATED SAMPLING POINT)
- SAMPLING HOLE

NOTES:
 1.10MM DIA PIPE IS FLEXIBLE PIPE, KEEP +15CM TOLERANCE (EXTRA LENGTH) FOR ADJUSTMENTS
 2.REFER DETAILED BOM FOR SAMPLING PIPE SYSTEM.

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DRAWN BY JAGADISH	DATE 25/12/2021	DRAWING TITLE MAIN SAMPLING PIPELAYOUT ALONG WITH CAPILLARY PIPES - TC	
CHECKED BY SHIV KUMAR	DATE 25/12/2021	SIZE A2	DRAWING NUMBER NSSPT/ASD/SAMPLING/LAYOUT/TC
APPROVED BY KSSK	DATE 25/12/2021	SCALE 1:40	REVISION 05
WEIGHT(kg)		SHEET 1/1	

		N&S SOLUTIONS PVT LTD No:37-38 Reliable Residency ,HSR Layout,Harlur,Banglore-560102				Document number: NSSPT/PDE/21-22/QAP/IO/002		Date: 18-12-2021	
		TITLE-ASPIRATING TYPE FIRE/SMOKE DETECTION WITH ALARM SYSTEM TO RDSO SPEC-RDSO/2008/CG-04/REV-05						Rev.03	
External Terminal Connection and Wiring Details Outside The Control Panel									
SL NO	ASD External Interface	Source				Destination			Wiring Details
		Terminal Connection/Components	Terminal /Pin No	Signal Name	Terminal Connection/Components	Number on terminals	Signal Name		
1	Control Panel To Flasher Hooter 1	Control Panel wago Terminal	21	FH1(+)(RED)	Direct Termination through lugs	43	FH1(+)(RED)	2C X 1.0 mm 2 Twisted Pair EBEAM Cable Length As Required	
			22	FH1(-)(BLACK)		44	FH1(-)(BLACK)	2C X 1.0 mm 2 Twisted Pair EBEAM Cable Length As Required	
2	Control Panel To Flasher Hooter2	Control Panel wago Terminal	21	FH2(+)(RED)	Direct Termination through lugs	45	FH2(+)(RED)	2C X 1.0 mm 2 Twisted Pair EBEAM Cable Length As Required	
			22	FH2(-)(BLACK)		46	FH2(-)(BLACK)	2C X 1.0 mm 2 Twisted Pair EBEAM Cable Length As Required	
3	Control Panel To Audio Announcement	Control Panel wago Terminal	3	SP(+)(Red)	Direct Termination through lugs	47	SP(+)(Red)	2C X 1.0 mm 2 Twisted Pair EBEAM Cable Length As Required	
			4	SP(-)(Yellow)		48	SP(-)(Yellow)	2C X 1.0 mm 2 Twisted Pair EBEAM Cable Length As Required	
4	Inlet power Supply from Coach	LNE OF COACH	LNE		LNE of Panel	L	L(RED)	2.5mm2 2C+1 Twisted Pair EBEAM Cable	
						N	N(BLACK)	2.5mm2 2C+1 Twisted Pair EBEAM Cable	
						E	E(GREEN)	2.5mm2 2C+1 Twisted Pair EBEAM Cable	
5	RS485 MODBUS	Control Panel wago Terminal	D+	RS1	TCMS				
			D-	RS2					
			GND	RS3					
6	Control Panel Relay to TCMS								
6A	RL1	Control Panel wago Terminal	35	ALT 1				2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
			36	ALT2				2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
6B	RL2	Control Panel wago Terminal	37	ACT1				2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
			38	ACT2				2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
6C	RL3	Control Panel wago Terminal	39	FR1				2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
			40	FR2				2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
6D	RL4	Control Panel wago Terminal	41	FR3				2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
			42	FR4				2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
7	Smoke Sensor	Control Panel wago Terminal	29	SS1	Direct Termination through lugs	49	SS1(RED)	2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
			30	SS2		50	SS2(BLACK)	2C X 1.0 mm2 Twisted Pair EBEAM Cable Length As Required	
PREPARED BY : Projects & Design Engineer-		CHECKED BY : K S S K							
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