E- 3915674
04-06-25

Rail Coach Factory, Kapurthala

Office of the
Principal Chief Electrical Engineer

RCF/HSQ/ED/LHB/2008 **Dated: 04.06.2025**

PCMEs :

1. Central Railway, CST, Mumbai-400 001
2. Eastern Railway, Fairly Place , Kolkata-700 001
3. East Central Railway, Dighi, Disst- Vaishali, Hajipur-844 101
4. East Coast Railway, Chandra Shekharpur, Bhubneshwer-751 016
5. Northern Railway, Baroda House, New Delhi-110 001
6. North Central Railway, Hastings Road, Prayagraj – 211 001
7. North Eastern Railway, Gorakhpur-273 001
8. North East Frontier Railway, Maligaon, Guwahati-781 001
9. Northern Western Railway Jaipur-302 006
10. Southern Railway, Park Town, Chennai-800 003
11. Southern central Railway Rail Nilayam Secundrabad-500 371
12. South Coast Railway, Visakhapatnam-530004.
13. South Eastern Railway., Gardern Reach, Kolkata-700 043
14. South East Central Railway Bilaspur-495 004
15. South Western Rly., 4th Floor, DRM Office, Sh. Laxmi Narayan Complex, Station Road Hubli-580 020
16. Western Railway , Church gate, Mumbai-400 020
17. West Central Railway., Jabalpur-482 001

Sub: Retro-fitment of 110V, 120Ah Battery in existing LVPH Coaches.

Ref: (i) Railway Board letter no. 2022/Elect (G)/181/12 part1 dated 10.12.2024.
(ii) Railway Board letter no. 2006/Elect (G)/180/11 pt1(EON-3325965) dated: 11.12.2024.

In reference to Railway Board letters referred above regarding retro-fitment of **110V, 120Ah Battery in existing LVPH Coaches**, Coach alteration instruction sheet to document no. **ED/CAI/043 Dated 02.06.2025** has been prepared and is being issued.

This is for your information and necessary action.

DA: **Copy of CAI No. ED/CAI/043 DATED 02.06.2025.**

4/6/25
(Kulwinder Singh)
DYCEE/D&D
for Principal Chief Electrical Engineer

Copy to:

PCME/RCF
PCME/ICF : for kind information please
PCME/MCF

RAIL COACH FACTORY, KAPURTHALA

CAI NO.: ED/CAI/043 dated: 02.06.2025

COACH ALTERATION INSTRUCTION FOR RETRO-FITMENT OF 120AH, 110VDC VRLA BATTERY BANK IN PLACE OF EXISTING 70AH, 110VDC VRLA BATTERY BANK IN LVPH COACHES

17

1. **Foreword:**

This Coach Alteration Instruction (CAI) is prepared for retro-fitment of 120AH, 110VDC VRLA Battery Bank in place of existing 70AH, 110VDC VRLA Battery Bank in LVPH coaches.

2. **Reference:**

i. **Railway Board letter no. 2022/Elect (G)/181/12 part1 dated 10.12.2024.**

ii. **Railway Board letter no. 2006/Elect(G)/180/11pt1 (EON-3325965) dated 11.12.2024.**

3. **Reason for modification:**

Replacement of 70AH, 110VDC VRLA Battery Bank with 120AH, 110VDC VRLA battery bank in LVPH coaches (as and when required).

4. **Details of Modification:**

Modification involves two sub-heads:

- Shell assembly modification.
- Modifications from Electrical side.

These modifications are covered in clause no. 7 in detail.

5. **Coaches concerned:**

LVPH coaches.

6. **Implementation by:**

Replacement during POH by workshop or during Refurbishment by Coach Rehabilitation workshop (as and when required). Work to be done by trained staff only.

7. **Implementation Stage:**

This clause covers various activities involved in retro-fitment of 120AH, 110VDC VRLA battery bank in place of existing 70AH, 110VDC VRLA battery bank in LVPH coaches.

Step-1: Removal/Dismantle of 70AH battery box & securing of cables in under frame (Ref. Drg. No. VP90103, alt 'nil'):

This step covers various activities involved in dismantle/stripping of 70AH Battery box (Drg. No. 1.10113.0.76.700.005, alt 'CR') and Battery Set in LVPH Coach, as follows:

- Removal of +VE & -VE fuse from respective Battery Fuse Boxes.
- Disconnection of mains +VE & -VE cables (10 sqmm) from battery monoblocks. (Ref. Harness Route no. 35 & 39, RCF Drg. No. VP70019, alt 'b')

- Disconnection of inter-cell connections of 70AH battery set.
- Removal of cables from battery box & securing of cables for safety against damage.
- Removal of battery clamping arrangement (Drg. No. 2.10113.0.76.700.011) provided above 70AH battery set inside battery box. Precaution shall be taken to avoid any short circuit of +VE & -VE battery terminals during removal of clamping bracket.
- Removal of 70AH battery set from battery box.
- Removal of 70AH battery box from under-frame after removing the hardwares with the help of fork lifter 3T or lifting platform, as per availability.

  After completion of this step, modification work in Shell shall be carried out.

Step-2: Modification work in Shell Assembly:

Post removal of 70AH battery box from under-frame, modification work in Shell assembly (based on feedback from Mechanical design shell division), required for fitment of 120AH battery box shall be as under:

- Modification in mounting holes shall be done for provision of 120AH battery box as per "Under frame complete for LHB high capacity parcel van coaches" to RCF Drg. No. VP11119, Alt 'g'. Holes shall be jig drilled by making use of template (as per above mentioned drawing) for battery box mounting holes. Holes by welding process are not permitted.

Step-3: Painting/Marking work in Modification Areas:

Painting in areas wherever modification work in shell assembly has been carried out as per scheme being followed for LVPH coaches during POH work.

Step-4: Modifications from Electrical side:

This step includes loading of 120AH battery box, 120AH 110VDC VRLA battery set & connection & associated activities in LVPH coaches:

Activities are listed as under:

A. Provision/Mounting of 120AH battery box shall be done as per "Mounting of Electrical equipment below under-frame for LHB VP coaches" to RCF Drg. No. VP90103, alt 'a', using hardware mentioned in Drawing.

B. Replacement of crimping socket on battery box side battery mains lead, crimping socket size: 10sqmm, hole dia: 8mm (According to battery module connection terminal).

C. Loading of fully charged 120AH, 110VDC VRLA battery set alongwith tray arrangement.
D. Interconnection cell connections & provision of Battery terminal caps (As per Recommendations of Battery OEM).
E. Connection work of battery bank (refer RCF Drg. No. VP70019, alt 'b'). Precaution shall be taken to avoid any short circuit of +VE & -VE battery terminals.
F. Re-insertion of battery fuse inside Battery fuse boxes.

Step-5: Testing of LVPH coach:

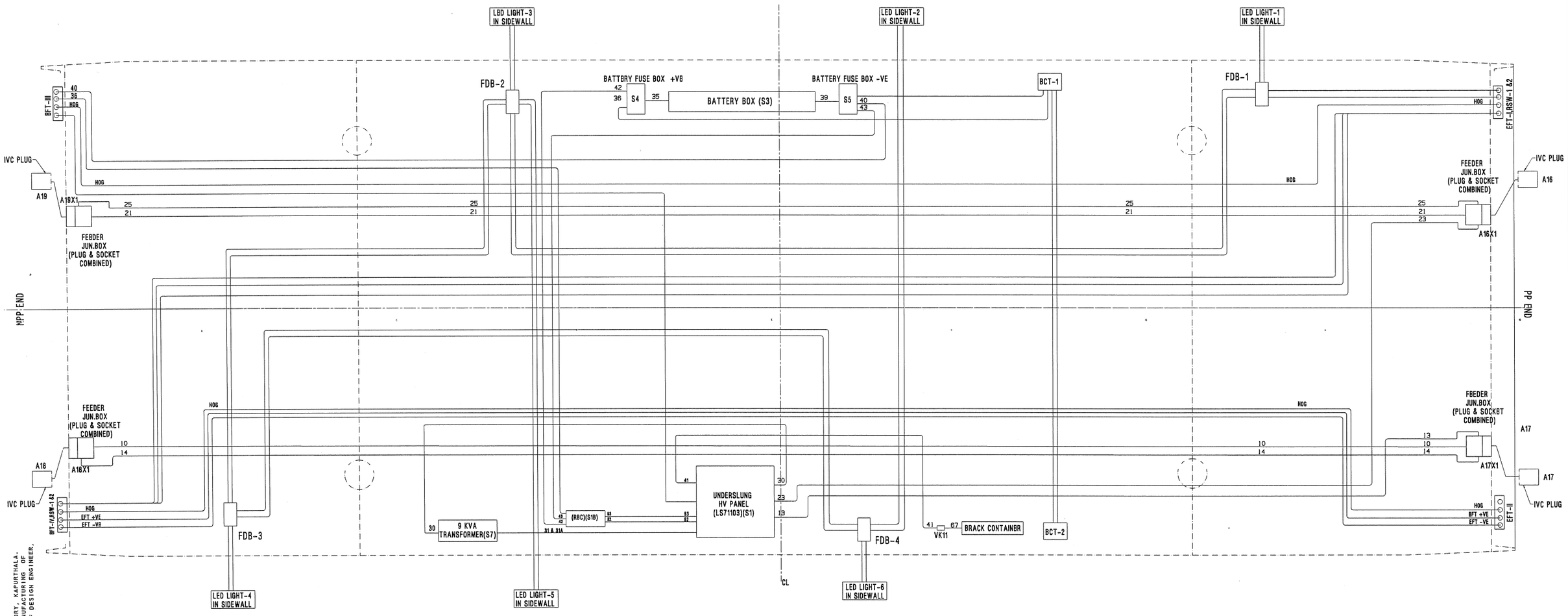
Final Testing of LVPH coach after completion of retro-fitment work shall be done as per CAMTECH maintenance manual / workshop guidelines for LHB NAC coaches.

Enclosures:

RCF Drawings:

1. VP70019, alt 'b' : Block & Wiring & Harness chart for LVPH coaches.
2. VP11119, alt 'g' : Under frame complete for High Capacity Parcel Van.
3. VP90103, alt 'a' : Mounting of Electrical equipments below under frame for LHB VP coaches.
4. CC91205, alt 'a' : Battery Box for LHB Non AC coaches (120AH VRLA Batteries)
5. Railway Board letters as referred above.

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY



BLOCK AND WIRING DIAGRAM FOR UNDER FRAME

WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M	GROUP	ELECTRICAL	SUPERSEDES: VP70019 ALT'a'			
WEIGHT	FILE	\\IBMX3800\ELEC\VP70019b.prt(2D)				
NIL KG		BLOCK AND WIRING DIAGRAM & HARNESS CHART FOR UNDERFRAME (FOR LHB EOG VPH COACHES)	SCALE	SSE/ED		
S.AREA				CHD	V.PANDEY	
NIL M²				DRN	A.RATRA	
~~LENGTH/DIA~~						
NIL M		RAIL COACH FACTORY, KAPURTHALA	REF.DRG.No. NIL			
~~WIDTH/THICK.~~		रेलकोच फैक्टरी कपूरथला IRS	PL NO.	NIL		
NIL M			DRG.NO.	VP70019		
HEIGHT		SEE/D&D DY.CEE/D&D	ALT.	b	SIZE A1	SHEET 1/3
NIL M						

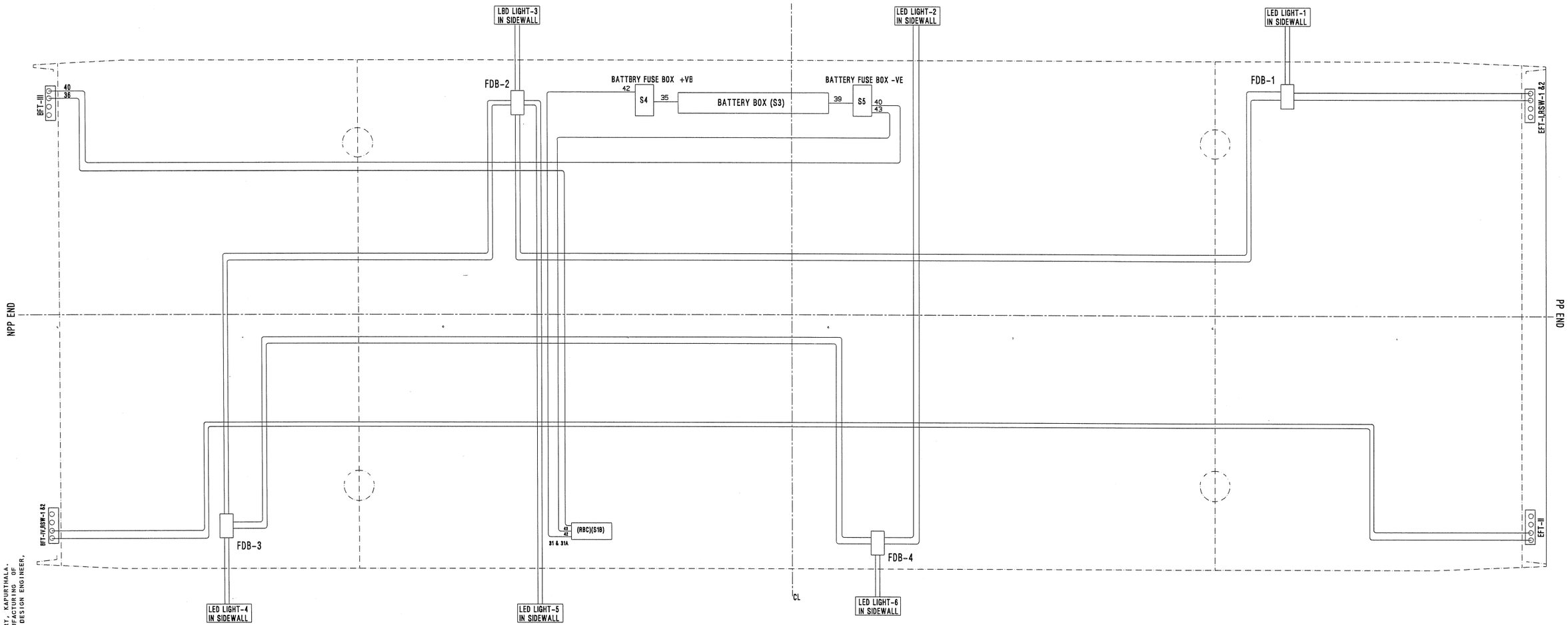
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

FOR UNTOLERANCED DIMENSIONS REFER MDG0008

DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.

DATE OF FIRST ISSUE 10/12/2019

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY



BLOCK AND WIRING DIAGRAM FOR UNDER FRAME
(FDB UNDER FRAME LIGHT WIRING ARRGT.)

WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M	GROUP	ELECTRICAL	SUPERSEDES: VP70019 ALT 'a'			
WEIGHT	FILE	\\1BMX3800\ELEC\VP70019b.prt(2D)				
NIL KG	BLOCK AND WIRING DIAGRAM & HARNESS CHART FOR UNDERFRAME (FOR LHB EOG VPH COACHES)		SCALE	SSE/ED		
S.AREA				CHD	V.PANDIT	
NIL M^2				DRN	A.RATRA	
~~LENGTH/DIA~~	RAIL COACH FACTORY, KAPURTHALA		REF.DRG.No.	NIL		
NIL M						
~~WIDTH/THICK.~~	रेल कोच फैक्टरी कपूरथला	IRS	PL NO.	NIL		
NIL M			DRG.NO.	VP70019		
HEIGHT	SEE/D&D	DY.CEE/D&D	ALT.	b	SIZE A1	SHEET 2/3
NIL M						

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

FOR UNTOLERANCED DIMENSIONS REFER MDG0008

DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.

DATE OF FIRST ISSUE 10/12/2019

HARNESS CHART

FROM	TO	ROUTE NO.	CABLE SIZE	VOLTAGE GRADE	CABLE SPEC	NO.OF CABLE	LENGTH (IN MM)	COLOUR OF CABLE	FERRULE NOS.	REMARKS
FEEDER JUNCTION BOX(A16X1)	UNDERSLUNG HV PANEL.(S1)	23	25 SQ.MM	1.8/3.0KV	ELRS/SPEC/ELC/0019, REV-4	04	16000	R,Y,B,BLK	12 01 15 01,12 01 18 01 12 01 21 01,12 01 24 01	FEEDER JUNCTION BOX (A16X1) TO UNDERSLUNG HV PANEL.(S1)
FEEDER JUNCTION BOX(A17X1)		13	25 SQ.MM			04	15000	R,Y,B,BLK	12 01 01 01,12 01 04 01 12 01 07 01,12 01 10 01	FEEDER JUNCTION BOX (A17X1) TO UNDERSLUNG HV PANEL.(S1)
FBEDBR JUNCTION BOX(A16X1)	FEEDER JUNCTION BOX(A19X1)	25	2.5 SQ.MM	750V	ELRS/SPEC/ELC/0019, REV-4	02	25000	CH,CH	46 01 03, 46 01 04	FBEDER JUNCTION BOX (A16X1) TO FBEDBR JUNCTION BOX (A19X1),CONTROL CABLES
		21	95 SQ.MM	1.8/3.0KV	BLRS/SPEC/ELC/0019, REV-4	01	24500	BLK	12 01 24 02	FEEDER JUNCTION BOX (A16X1) TO FEEDER JUNCTION BOX (A19X1)
			150 SQ.MM			03	24500	R,Y,B	12 01 15 02,12 01 18 02, 12 01 21 02	
FBEDBR JUNCTION BOX(A17X1)	FEEDER JUNCTION BOX(A18X1)	14	2.5 SQ.MM	750V	ELRS/SPEC/ELC/0019, REV-4	02	25500	CH,CH	46 01 01, 46 01 02	FEEDER JUNCTION BOX (A17X1) TO FEEDER JUNCTION BOX(A18X1),CONTROL CABLES
		10	95 SQ.MM	1.8/3.0KV	BLRS/SPEC/ELC/0019, REV-4	01	24500	BLK	12 01 10 02	FEEDER JUNCTION BOX (A17X1) TO FBEDBR JUNCTION BOX (A18X1)
			150 SQ.MM			03	24500	R,Y,B	12 01 01 02, 12 01 04 02,12 01 07 02	
UNDERSLUNG HV PANEL.(S1)	TRANSFORMER (S7)	30	16 SQ.MM	1.8/3.0KV	ELRS/SPEC/ELC/0019, REV-4	04	9000	R,Y,B,BLK	12 01 12.02,12 01 13.02 12 01 14.02,12 01 11.02	UNDERSLUNG HV PANBL.(S1) TO S7,(750V SIDE) INPUT CABLBS
		31	16 SQ.MM	750V	BLRS/SPEC/ELC/0019, REV-4	04	8000	R,Y,B,BLK	12 02 08.01,12 02 07.01 12 02 08.01,12 02 09.01	UNDERSLUNG HV PANEL.(S1) TO S7,(415V SIDE) OUTPUT CABLES
		31A	6 SQ.MM			04	8000	R,Y,B,BLK	12 02 16.01,12 02 17.01 12 02 18.01,12 02 19.01	UNDERSLUNG HV PANEL.(S1)TO S7,(190V SIDE) OUTPUT CABLES
BATTERY,(S3)	BATTERY FUSE BOX(+VE),(S4)	35	10 SQ.MM	750V	BLRS/SPEC/ELC/0019, REV-4	01	2500	CH	35	BATTERY BOX,(S3) TO BATTERY FUSE BOX(+VE),(S4)
BATTERY,(S3)	BATTERY FUSE BOX(-VE),(S5)	39	10 SQ.MM			01	2500	W	39	BATTERY BOX,(S3) TO BATTERY FUSE BOX(-VE),(S5)
RBC(S1B)	EFT-1	36	10 SQ.MM	750V	BLRS/SPEC/ELC/0019, REV-4	01	15000	CH	36	RBC, (S1B) TO UNDER-FRAME FDB-1
BATTERY FUSE BOX(-VE),(S5)	UNDER-FRAMB FDB-1	40	10 SQ.MM	750V	ELRS/SPEC/ELC/0019, REV-4	01	16500	W	40	BATTERY FUSE BOX(-VE),(S5) TO UNDER-FRAME FDB-1
BATTERY FUSE BOX(+VE),(S4)	RBC(S1B)	42	10 SQ.MM			01	5000	CH	42	BATTERY FUSE BOX(+VE),(S4) TO REGULATED BATTERY CHARGER(RBC),(S1B)
BATTERY FUSE BOX(-VE),(S5)	RBC(S1B)	43	10 SQ.MM	750V	ELRS/SPEC/ELC/0019, REV-4	01	10000	W	43	BATTERY FUSE BOX(-VE),(S5) TO REGULATED BATTERY CHARGER(RBC),(S1B)
UNDERSLUNG HV PANEL.(S1)	RBC(S1B)	52	2.5 SQ.MM	750V	ELRS/SPEC/ELC/0019, REV-4	02	6000	CH,W	52	UNDERSLUNG HV PANEL.(S1) TO REGULATED BATTERY CHARGER(RBC),(S1B)
UNDERSLUNG HV PANEL.(S1)	RBC(S1B)	53	6 SQ.MM	750V	ELRS/SPEC/ELC/0019, REV-4	05	7000	W,Y,B.BLK,GNYE	53	UNDERSLUNG HV PANEL.(S1) TO REGULATED BATTERY CHARGER(RBC),(S1B)
VK1	UNDERSLUNG HV PANEL.(S1)	76	3X1.0 SQ MM +SHIELD MULTI-CORE CABLE	600/1000V	EDTS-132,REV.'C', AM-3,(DS-4)	01	18000	W,BR,BLK	23 03 01.02,23 03 02.02, 23 03 03.02	VK1 TO HV PANEL.(S1),SPEED SENSOR CABLES
VK2		75	3X1.0 SQ MM +SHIELD MULTI-CORE CABLE			01	15000	W,BR,BLK	23 03 04.02,23 03 05.02, 23 03 06.02	VK2 TO HV PANEL.(S1),SPEED SENSOR CABLES
VK3		82	3X1.0 SQ MM +SHIELD MULTI-CORE CABLE			01	9000	W,BR,BLK	23 03 07.02,23 03 08.02, 23 03 09.02	VK3 TO HV PANEL.(S1),SPEED SENSOR CABLES
VK4		81	3X1.0 SQ MM +SHIELD MULTI-CORE CABLE			01	12000	W,BR,BLK	23 03 10.02,23 03 11.02, 23 03 12.02	VK4 TO HV PANEL.(S1),SPBED SENSOR CABLES
VK7	UNDERSLUNG HV PANEL.(S1)	87	3X1.0 SQ MM +SHIELD MULTI-CORE CABLE	600/1000V	EDTS-132,REV.'C', AM-3,(DS-4)	01	10000	W,BR,BLK	23 02 14.01,23 02 15.01, 23 02 05.10	VK7,(BVS4/EVR4)TO HV PANEL
			3X1.0 SQ MM +SHIELD MULTI-CORE CABLE			01	10000	W,BR,BLK	23 02 10.01,23 02 11.01, 23 02 05.08	VK7,(EVS3/EVR3)TO HV PANBL
VK5	UNDERSLUNG HV PANEL.(S1)	86	3X1.0 SQ MM +SHIELD MULTI-CORE CABLB	600/1000V		01	12000	W,BR,BLK	23 02 06.01,23 02 07.01, 23 02 05.06	VK5,(EVS2/EVR2)TO HV PANEL
			3X1.0 SQ MM +SHIELD MULTI-CORE CABLB			01	12000	W,BR,BLK	23 02 01.01,23 02 02.01, 23 02 05.04	VK5,(EVS1/BVR1)TO HV PANEL
VK11	UNDERSLUNG HV PANEL.(S1)	41	1.5 SQ.MM	750V	ELRS/SPEC/BLC/0019, RBV-4	02	10000	W,CH	-	VK11 TO HV PANEL, (S1),AIR BRAKE CABLE
BCT-1	BCT-2	-	10 SQ.MM	-	ELRS/SPEC/ELC/0019, REV-4	02	3500	RED & BLK	-	BCT-1 TO BCT-2 CABLB (IN SEPARATE CONDUIT)
BCT-1	BATTERY FUSE BOX(+VE),(S4)	-	10 SQ.MM	-	BLRS/SPEC/ELC/0019, REV-4	01	9000	RED	-	BCT-1 TO BATTERY FUSB BOX(+VE),(S4) CABLE
BCT-1	BATTERY FUSE BOX(-VE),(S5)	-	10 SQ.MM	-	BLRS/SPEC/ELC/0019, REV-4	01	8000	BLK	-	BCT-1 TO BATTERY FUSE BOX(-VE),(S5) CABLE
RSW.NET-1&2 EFT PLATE-IV	RSW.NET-1/NET-2 EFT PLATB-I	-	3X1.0 SQ MM +SHIELD MULTI-CORE CABLE	-	EDTS-132,REV.'C', AM-3,(DS-4)	02	30000	W,BR,BLK	-	RSW NBT-1 / NET-2 TO RSW NET-1 /NET-2 EFT PLATE-IV TO EFT PLATE-I CABLE LOOP
RSW.NET-1&2 EFT PLATE-IV	RSW.NET-1/NET-2 EFT PLATB-I	-	1.5 SQ.MM	-	BLRS/SPEC/ELC/0019, REV-4	02	30000	W,CH	-	LIGHT +VE SUPPLY CONTROL LOOP (IN SAME CONDUIT WITH 3 CORB CABLE MENTIONED ABOVE)
UNDERSLUNG HV PANEL.(S1)	RSW.NET-1/NET-2	-	3X1.0 SQ MM +SHIBLD MULTI-CORE CABLE	-	EDTS-132,REV.'C', AM-3,(DS-4)	02	15000	W,BR,BLK	-	HV PANEL, (S1), TO RSW NBT-1 /NET-2
HOG SOCKET	HOG SOCKET	-	16X1.0/1.5 SQ MM+ SHIBLD MULTI-CORE CABLB	-	-	02	29000	-	-	THROUGH HOG CONTROL CABLB (SHOWN IN END WALL)

*

CODE	DESCRIPTION
S1	SWITCH BOARD CABINBT
S3	BATTERY BOX
S4	BATT.FUSB BOX +VB
S5	BATT.FUSB BOX -VB
S7	9 KVA TRANSFORMBR
A16X1	FBBDBR JUNCTION BOX
A17X1	
A18X1	
A19X1	
A16	IVC PLUG
A17	IVC SOCKBT
A18	IVC PLUG
A19	IVC SOCKBT
VK1	CABLB CONNECTION BOX (FOR SPBBD SBNSOR)
VK2	
VK3	
VK4	
VK6	THROUGH BOX (FOR SPBBD SBNSOR)
VK5	CABLB CONNECTION BOX (FOR DUMP VALVB)
VK7	
VK8	CABLB CONNECTION BOX (FOR PUMP BOX)
VKG1	SPBBD SBNSOR
VKG2	
VKG3	
VKG4	
BVS1	DUMP VALVB (DISK BRAKB SYSTBM)
BVS2	
BVR1	
BVR2	
BVS3	
BVS4	
BVR3	
BVR4	

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY
6	23/06/2020	ALL	CABLE LENGTHS REVISED AS PER SHOP FLOOR REQUIREMENTS AND DRAWING REDRAWN ACCORDINGLY	ED/CR/2020-0006

35	COPPER CRIMPING SOCKET FOR 25 SQ.MM CABLE,COVD.EDTS-406,R-NIL	4	NIL	EDTS-200,REV-0, AM-1&2,CORR-1&2	ITEM-14
34	COPPER CRIMPING SOCKET FOR 25 SQ.MM CABLE,COVD.EDTS-406,R-NIL	8	NIL	EDTS-200,REV-0, AM-1&2,CORR-1&2	SUITABLE FOR M16 TERMINATION
33	COPPER CRIMPING SOCKET FOR 50 SQ.MM CABLE	5	NIL	EDTS-200,REV-0, AM-1&2,CORR-1&2	ITEM-11
32	COPPER CRIMPING SOCKET FOR 70 SQ.MM CABLE,COVD.EDTS-406,R-NIL	20	NIL	EDTS-200,REV-0, AM-1&2,CORR-1&2	ITEM-7
31	CABLE MARKING SYSTEM	1	NIL	EDML-60,COL-VI	NIL
30	1.5 SQ.MM CHOC. THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	40	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
29	1.5 SQ.MM WHITE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	40	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
28	2.5 SQ.MM GNYE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	2	NIL	ELRS/SPEC/ELC -0019,REV-4	FOR EARTHING PURPOSE
27	2.5 SQ.MM CHOCOLATE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V1IN MTRS(CDVD.EDTS-406,R-NIL	107	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
26	2.5 SQ.MM WHITE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	6	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
25	10 SQ.MM WHITE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	29	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
24	10 SQ.MM CHOCOLATE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	23	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
23	16 SQ.MM GNYE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	4	NIL	ELRS/SPEC/ELC -0019,REV-4	FOR EARTHING PURPOSE
22	16 SQ.MM BLACK THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	8	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
21	16 SQ.MM BLUE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	8	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
20	16 SQ.MM YELLOW THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	8	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
19	16 SQ.MM RED THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	8	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
18	6 SQ.MM GNYE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	7	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
17	6 SQ.MM BLACK THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	15	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
16	6 SQ.MM BLUE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	15	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
15	6 SQ.MM YELLOW THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	15	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
14	6 SQ.MM RED THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	15	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
13	16 SQ.MM BLACK THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	9	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
12	16 SQ.MM BLUE THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	9	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
11	16 SQ.MM YELLOW THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	9	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
10	16 SQ.MM RED THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	9	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
9	2S SQ.MM BLACK THIN WALLED FLEX.ELAS.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	31	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
8	2S SQ.MM BLUE THIN WALLED FLEX.ELAS.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	31	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
7	2S SQ.MM YELLOW THIN WALLED FLEX.ELAS.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	31	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
6	2S SQ.MM RED THIN WALLED FLEX.ELAS.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	31	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
5	70 SQ.MM GNYE THIN WALLED FLEX.ELAS.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	3	NIL	ELRS/SPEC/ELC -0019,REV-4	FOR EARTHING PURPOSE
4	95 SQ.MM BLACK THIN WALLED FLEX.ELAS.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	49	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
3	150 SQ.MM BLUE THIN WALLED FLEX.ELAS.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	49	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
2	150 SQ.MM YELLOW THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	49	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL
1	150 SQ.MM RED THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.750 TO 1.8/3KV1IN MTRS(CDVD.EDTS-406,R-NIL	49	NIL	ELRS/SPEC/ELC -0019,REV-4	NIL

45	10 SQ.MM BLACK THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	12	NIL	ELRS/SPEC/ELC -0019,REV-4	FOR BCT
44	10 SQ.MM RED THIN WALLED FLEX.ELAST.CABLE WITH CU.COND.UP TO 750V 1IN MTRS(CDVD.EDTS-406,R-NIL	13	NIL	ELRS/SPEC/ELC -0019,REV-4	FOR BCT
43	3X1.0SQ.MM.MULTICORE CABLE 600/1000V COLOUR WH,BR,BLK	90	NIL	EDTS-132,REV-C, AM-3,COR-1,DS-4	NIL
42	COPPER CRIMPING SOCKET FOR 2.5 SQ.MM CABLE,COVD.EDTS-406,R-NIL	8	NIL	EDTS-201,REV-0, AM-1,2&3,CORR-1	NIL
41	COPPER CRIMPING SOCKET FOR 6 SQ.MM CABLE,COVD.EDTS-406,R-NIL	10	NIL	EDTS-201,REV-0, AM-1,2&3,CORR-1	NIL
40	COPPER CRIMPING SOCKET FOR 6 SQ.MM CABLE,COVD.EDTS-406,R-NIL	8	NIL	EDTS-201,REV-A, AM-1,2&3,CORR-1	ITEM-6
39	COPPER CRIMPING SOCKET FOR 10 SQ.MM CABLE,COVD.EDTS-406,R-NIL	28	NIL	EDTS-201,REV-A, AM-1,2&3,CORR-1	ITEM-2
38	COPPER CRIMPING SOCKET FOR 16 SQ.MM CABLE,COVD.EDTS-406,R-NIL	2	NIL	EDTS-200,REV-0, AM-1&2,CORR-1&2	ITEM-17
37	COPPER CRIMPING SOCKET FOR 16 SQ.MM CABLE,COVD.EDTS-406,R-NIL	1	NIL	EDTS-200,REV-0, AM-1&2,CORR-1&2	ITEM-16
36	COPPER CRIMPING SOCKET FOR 16 SQ.MM CABLE,COVD.EDTS-406,R-NIL	27	NIL	EDTS-200,REV-0, AM-1&2,CORR-1&2	ITEM-15

NOTE:-

*3. 3X1.0 SQ.MM SHIELD MULTI-CORE CABLES OF SPEED SENSOR HAVE BEEN DELETED FROM BOM AS THESE ARE BEING SUPPLIED BY WSP SYSTEM SUPPLIERS.
2. FOR EARTHING PURPOSE 70 SQ.MM CABLE TO BE USED.
1. CABLE LENGTHS GIVEN AGAINST EACH HARNESS ARE ONLY APPROXIMATE AND CORRECT LENGTH SHALL BE ADVISED BY SHOPS TO DESIGN OFFICE, IN CASE OF ANY CHANGE.

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

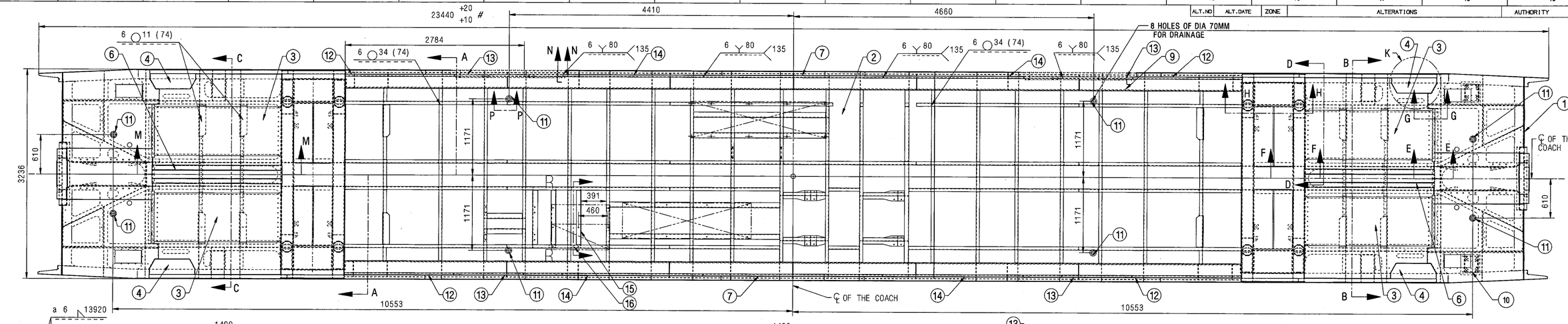
DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.

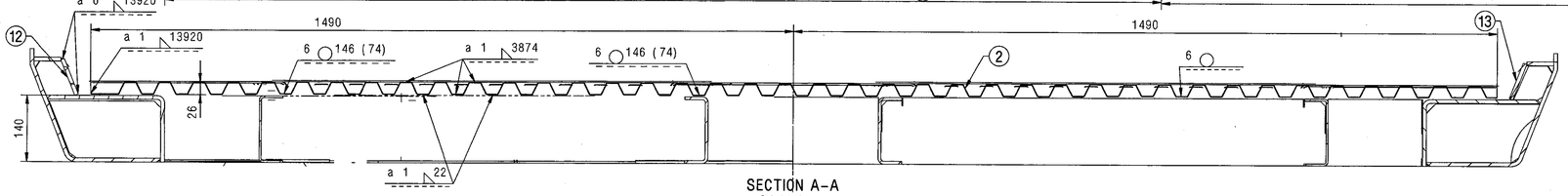
FOR UNTOLERANCED DIMENSIONS REFER MDG0008

DATE OF FIRST ISSUE 10/12/2019

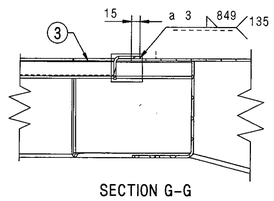
WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M	GROUP	ELECTRICAL	SUPERSEDES: VP70019 ALT a			
WEIGHT	FILE	\\IBMX3800\ELEC\VP70019b.prt(2D)				
NIL KG		BLOCK AND WIRING DIAGRAM & HARNESS CHART FOR UNDERFRAME (FOR LHB EOG VPH COACHES)	SCALE	SSE/ED		
S.AREA				CHD		
NIL M²				DRN		
~~LENGTH/DIA~~						
NIL M		RAIL COACH FACTORY, KAPURTHALA	REF.DRG.No. NIL			
~~WIDTH/THICK.~~		रेलकोच फैक्टरी कपूरथला IRS	PL NO.	NIL		
NIL M			DRG.NO.	VP70019		
HEIGHT		SEE/D&D DY.CEE/D&D	ALT.	b	SIZE A1	SHEET 3/3
NIL M						

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY

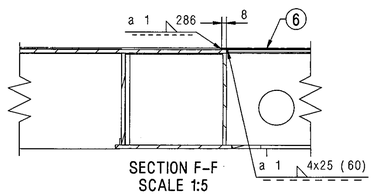




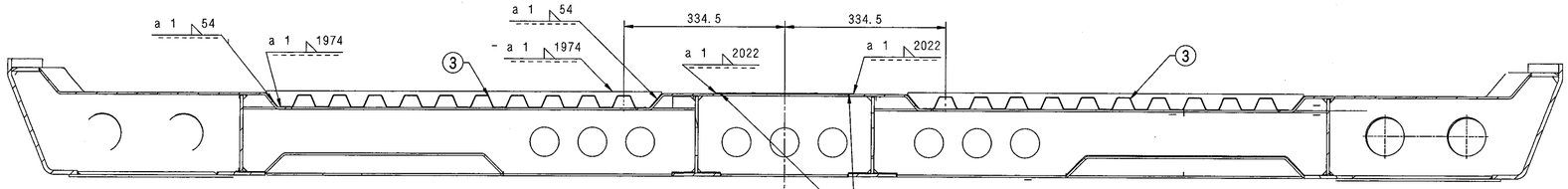
SECTION A-A
SCALE 1:6



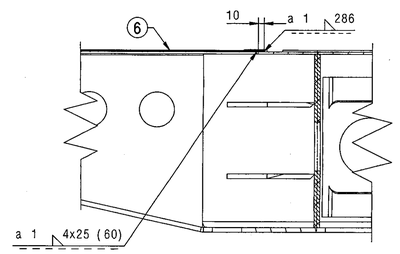
SECTION G-G
SCALE 1:5



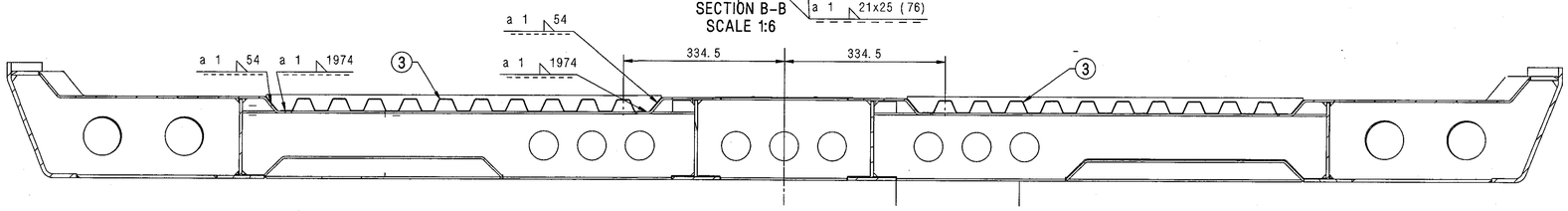
SECTION F-F
SCALE 1:5



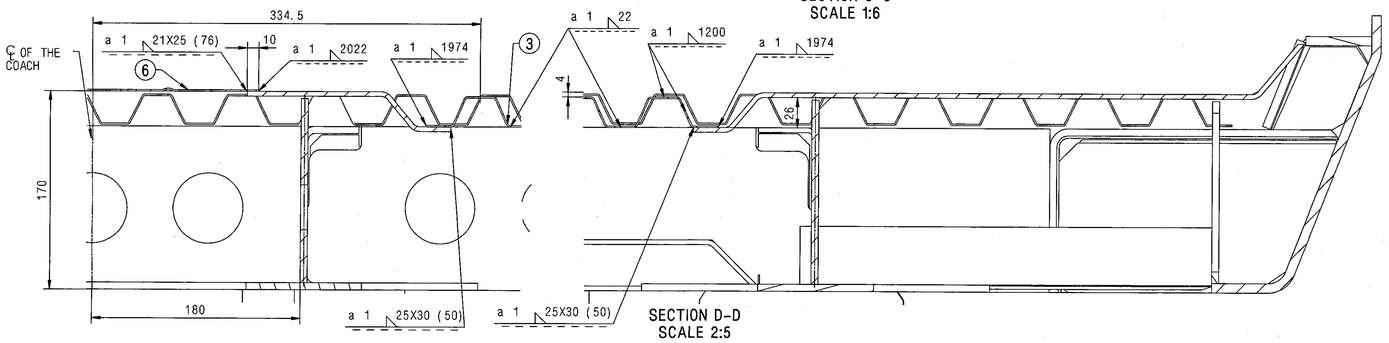
SECTION B-B
SCALE 1:6



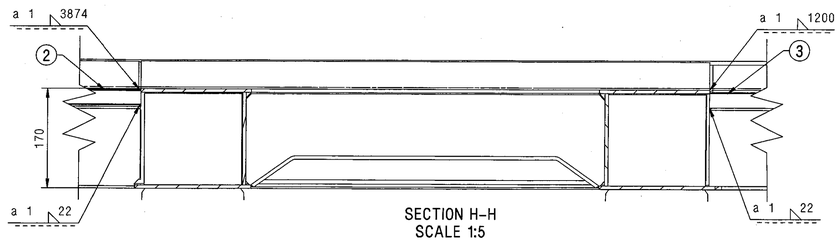
SECTION E-E
SCALE 1:5



SECTION C-C
SCALE 1:6



SECTION D-D
SCALE 2:5



SECTION H-H
SCALE 1:5

WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M	GROUP	UNDERFRAME	SUPERSEDES: VP11119 ALT f			
WEIGHT	FILE	VP11119g.prt (3D)				
7606.0 KG	UNDERFRAME COMPLETE FOR HIGH CAPACITY PARCEL VAN WITH COLLAPSIBLE DOORS & AIR SPRING SUSPENSION (LAYOUT NO. CSC-1840 ALT.-1)			SCALE	SSE/REC	
S.AREA				1: 30	CHD	JOGI
NIL M²					DRN	YPSH
LENGTH/~~DIA~~	RAIL COACH FACTORY, KAPURTHALA			REF.DRG.No. LR11425		
23.440 M						
WIDTH/~~THICK.~~	रेलकोच फैक्टरी कपूरथला	IRS		PL NO.	NIL	
3.236 M				DRG.NO.	VP11119	
HEIGHT	ADE/SME		CDE	ALT.	g	SIZE A1 SHEET 1/2
NIL M						

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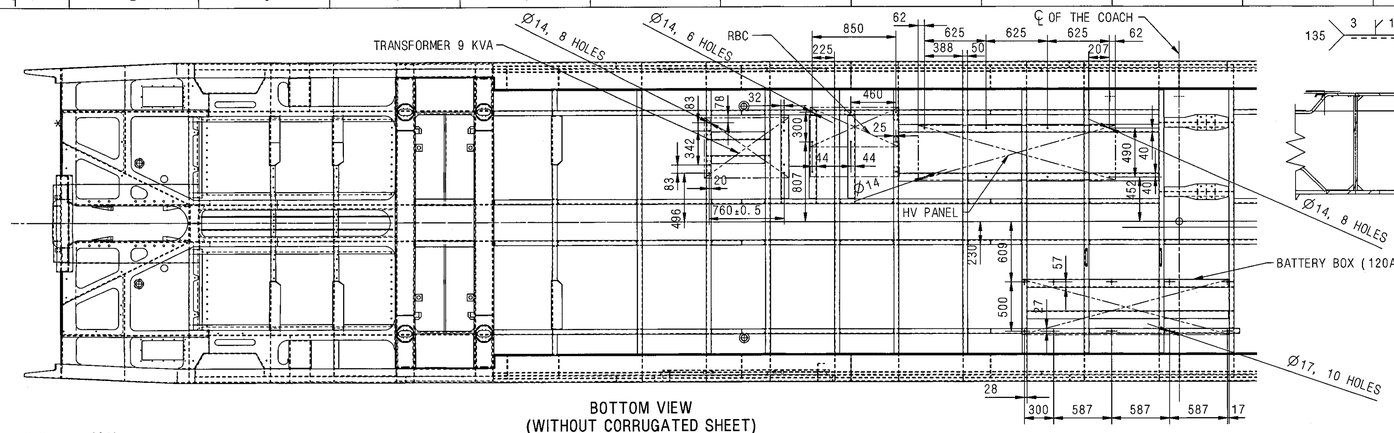
FOR UNTOLERANCED DIMENSIONS REFER MDG0008

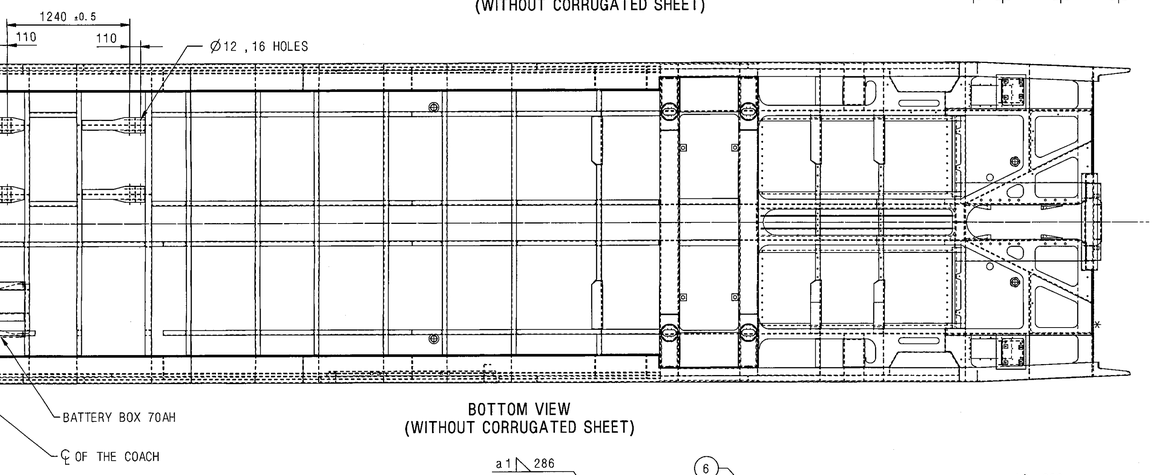
DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.

DATE OF FIRST ISSUE 07/12/2010 CGM BY

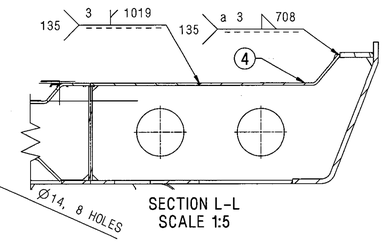
आकड़िया में ENTERED INTO डाकिदिया DATA BASE
2 5 MAR 2025



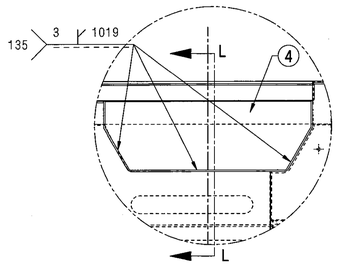
BOTTOM VIEW
(WITHOUT CORRUGATED SHEET)



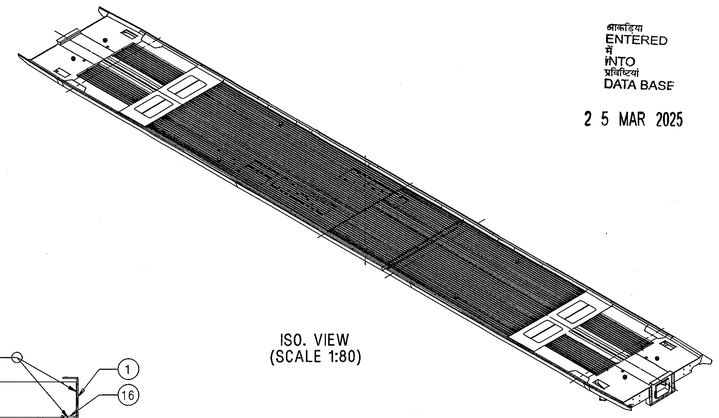
BOTTOM VIEW
(WITHOUT CORRUGATED SHEET)



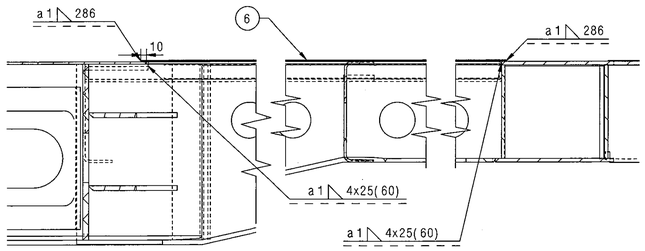
SECTION L-L
SCALE 1:5



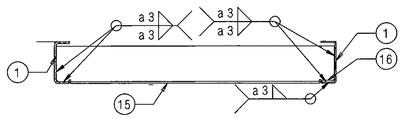
DETAIL K
SCALE 1:10



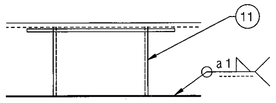
ISO. VIEW
(SCALE 1:80)



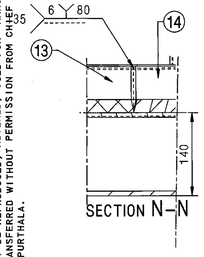
SECTION M-M



SECTION R-R



SECTION P-P



SECTION N-N

(SCALE 1:2)

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY
f	21/07/2021	ALL	1. ITEM NO. 15 , 16 & VIEW R-R ADDED .	DIC NO. MD210042
		ALL	2. MOUNTINGS OF RBC MODIFIED AND DRG UPDATED.	
g	11/03/2025	ALL	1. LOCATION OF HOLES OF BATTERY BOX MODIFIED (BATTERY BOX CHANGED)	DIC NO, MD 250017

आंकड़िया
ENTERED
में
INTO
प्रविष्टिया
DATA BASE

2 5 MAR 2025

1. MANDATORY MANUFACTURING ALLOWANCES.
2. EACH CORRUGATION OF TROUGH FLOOR AND SHEET TO BE WELDED WITH ALL ADJOINING LONGITUDINAL AND TRANSVERSE MEMBERS.
3. WELDING GENERAL INSTRUCTION SHALL BE AS PER PLANNING INSTRUCTION NO. PLW0102 DATED 02.12.2022.
% 4. UNLESS OTHERWISE SPECIFIED WELDING FOR S.S ITEMS WILL BE MIG(131) & FOR MILD STEEL/CORTEN STEEL MAG(135)
5. FOR UNDERFRAME ASSEMBLY REFER MDTS 21320 REV.-03 OR LATEST
6. ASSEMBLY SHALL BE FREE FROM ANY WELDING DEFECTS OR POST WELD DEFECTS.(NO ANY BLACK SPOT OR SPATTER ON UNDERFRAME ASSEMBLY.
7. TEMPLATE FOR JIG HOLE MUST BE AVAILABLE TO AVOID ANY MISMATCH UNDERSLUNG ITEM OR ONBOARD EQUIPMENTSS
8. SUPPLIER SHALL ARRANGE JIG TEMPLATE AND FIXTURE FOR INSPECTION OF UNDERSLUNG EQUIPMENTS.
9. UNDERFRAME ASSEMBLY COMPLETE SHALL BE PAINTED WITH APP(ADHESION PROMOTING PRIMER) TO RCF SPECIFICATION NO. MDTS48279 REV-4 OR LATEST .
10. CBC HOUSING INSIDE AREA SHALL BE GRIT/GARNET BLASTED AND TO BE PAINTED WITH EPOXY METAL PRIMER OF DFT 60 MICRON AND HIGH BUILD PAINT ELASTIFIED WITH DFT 140 MICRON AS PER SPEC NO. MDTS 094 OF 140-200 MICRONS. (REFERENCE WM /MP/RM LETTER NO MP-40 LHB/RM/PAINT DATED 28.03.2008 , PARA 4.0)
11. UNDERFRAME FRAME WORK ASSEMBLY SHALL BE ASSEMBLED BY USING SUITABLE WELDING FIXTURE.
12. NECESSARY CARE IS TO BE TAKEN THAT THE TWIST ON THE UNDERFRAME AND VARIATION ON DIAGONALS ARE TO BE WITHIN 2MM . AND LEVEL OR UNEVENESS ON TOP LEVEL OF UNDEERFRAME SHOULD BE CHECKED WITH DUMPY LEVEL GAUGE OR ANY EQUIVALENT .
13. SHRINKAGE DUE TO WELDING SHALL BE CONSIDERED SUCH THAT OVERALL AND CRITICAL DIMENSIONS ARE STRICTLY ADHERED TO WITHIN THE TOLERANCE MENTIONED.
14. IF ANY ASSEMBLY\SUB ASSEMBLY i.e FRAME WORK, BODY BOLSTER etc HAS MENTIONED ANY OTHER PAINT INSTRUCTION SHALL BE CONSIDER AS PER NOTE NO. 9 & 10 .
* 15. INSCRIBE "DOUBLE FERRULE" IN GREEN COLOUR ON BUFFER PLATE.

	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
16		REINFORCEMENT PLATE	1	VP11189	NIL	NIL
15		ANGLE FOR RBC MOUNTING	1	VP11182	NIL	NIL
14		CONNECTION SHEET	4	VP11207	NIL	NIL
13		CONNECTION SHEET	4	VP11206	NIL	NIL
12		CONNECTION SHEET	4	VP11205	NIL	NIL
11		HOUSING	8	VP11202	NIL	NIL
10		ADDITIONAL DUMMY SOCKET FOR LVPH	1	VP11197	NIL	NIL
9		SUPPORTING MEMBER ON TROUGH FLOOR	1	VP10133	NIL	NIL
8		WELDING PARTS ON UNDERFRAME	1	VP11164	NIL	NIL
7		CONNECTION SHEET	2	LR11488	NIL	NIL
6		COVERING SHEET	2	3 10113. 0. 03. 000. 102	NIL	NIL
~~5~~		~~COVERING SHEET~~	~~2~~	4 10113. 0. 03. 000. 103	~~NIL~~	~~NIL~~
4		COVERING SHEET	4	2 11012. 0. 03. 000. 111	NIL	NIL
3		CORRUGATED SHEET FLOOR COMPLETE	4	2 10113. 0. 03. 210. 002	NIL	NIL
2		CORRUGATED SHEET FLOOR COMPLETE	1	LS13100	NIL	NIL
1		UNDERFRAME FRAMEWORK COMPLETE	1	VP11120	NIL	NIL

WELD LENGTH	NIL M	GROUP	UNDERFRAME
WEIGHT	7606.0 KG	FILE	VP11119g.prt (3D)
S.AREA	NIL M²	SUPERSEDES:	VP11119 ALT f
LENGTH/~~DIA~~	23.440 M		
WIDTH/~~THICK~~.	3.236 M		
HEIGHT	NIL M		

UNDERFRAME COMPLETE
FOR HIGH CAPACITY PARCEL VAN WITH
COLLAPSIBLE DOORS & AIR SPRING SUSPENSION (LAYOUT NO. CSC-1840 ALT.-1)

RAIL COACH FACTORY, KAPURTHALA

SCALE	1: 30	SSE/REC	25/03/25
CHD	JOGI		
DRN	YPSH		
REF.DRG.No.	LR11425		

रेलकोच फैक्टरी कपूरथला | IRS

ADE/SME | DME/SME | CDE

PL NO. NIL
DRG.NO. VP11119
ALT. g | SIZE A1 | SHEET 2/2

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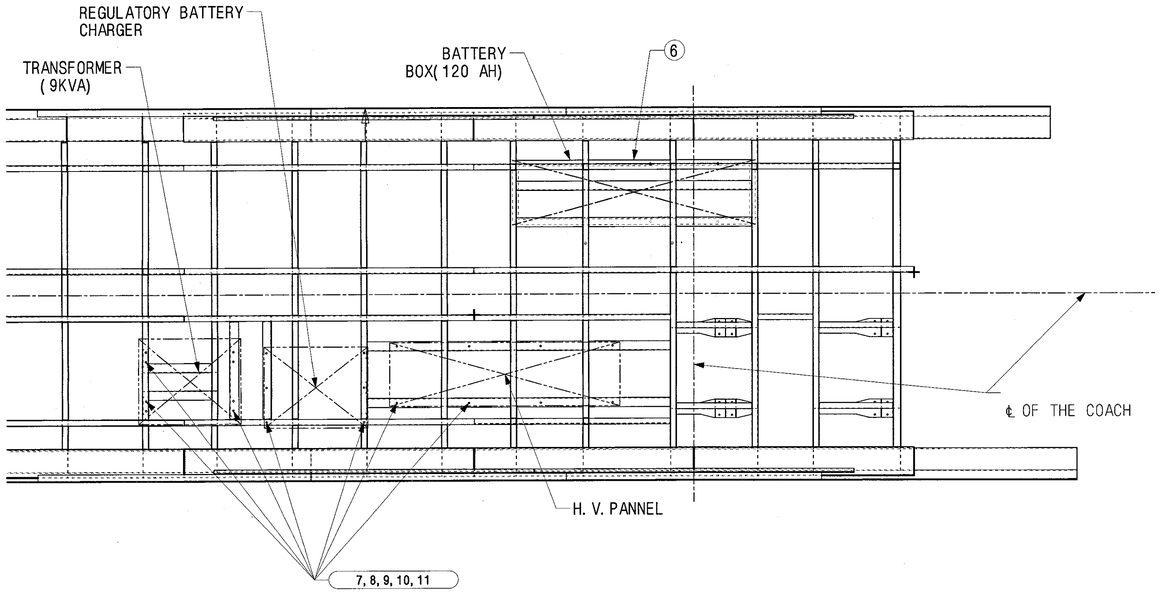
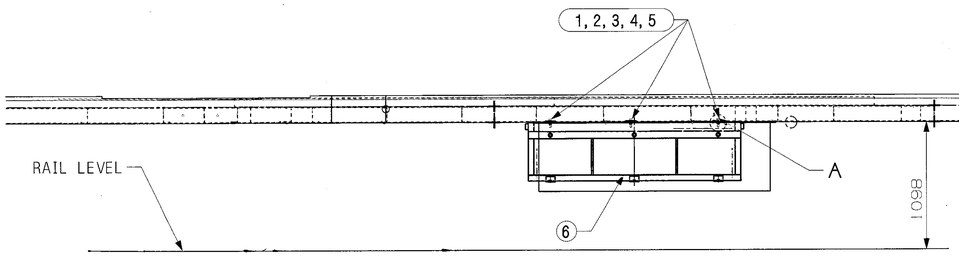
FOR UNTOLERANCED DIMENSIONS REFER MDG0008

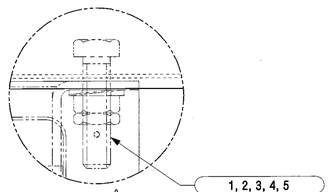
DATE OF FIRST ISSUE 07/12/2010 CGM BY

ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY
a	19/03/2025	ALL	1- DRG NO. REVISED OF ITEM NO. 6	DIC NO. MD250017





FOR LHB VP COACH



DETAIL A
SCALE 3: 5

11	LOCK NUT M12	22	NIL	IS: 1364-(PT 4) -92-8	GALVD. *
10	SPLIT PIN 3.2X26	22	NIL	IS: 549-74	GALVD. *
9	HEX NUT M12	22	NIL	IS: 1364 (PT3) -92-8	GALVD. *
8	SPRING WASHER B12	22	NIL	IS: 3063-72 TAB-1,TY-8	GALVD. *
7	HEX HEAD SCREW M12X40	22	NIL	IS: 1364 PT.2-92 5.6,SH	GALVD. *
6	BATTERY BOX FOR AC EOG COACHES(120AH)	1	CC91205	NIL	NIL
5	LOCK NUT M16	6	NIL	IS: 1364-(PT-4) -92-8	GALVD. *
4	SPLIT PIN 3.2X30	6	NIL	IS: 549-74	GALVD.
3	HEX NUT M16	6	NIL	IS: 1364 (PT 3) -92-8	GALVD. *
2	SPRING WASHER B16	6	NIL	IS: 3063-72 TAB-1,TY-8	GALVD.
1	HEX HEAD SCREW M16X65	6	NIL	IS: 1364 PT.2-92 B,8.8,SH	GALVD. *

WELD LENGTH	ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
NIL M	GROUP	UNDERFRAME	SUPERSEDES: VP90103 ALT NIL			
WEIGHT	FILE	\\10.12.17.155\SHELL\ROHI\VP90103a.prt(3D)				
110.00 KG	MOUNTING OF ELECTRICAL EQUIPMENT BELOW UNDERFRAME FOR LHB VP COACHES (LAYOUT NO. CSC-1840 ALT.-1)			SCALE	SSE/REC	
S.AREA				1:2	CHD	JOG1
NIL M²					DRN	ROHI
~~LENGTH/DIA~~						
NIL M	RAIL COACH FACTORY, KAPURTHALA			REF.DRG.No. NIL		
~~WIDTH/THICK.~~						
NIL M	रेलकोच फैक्टरीकपूरथला	IRS		PL NO.	NIL	
HEIGHT				DRG.NO.	VP90103	
NIL M	ADE/SME	DY.CME	CDE	ALT.	a	SIZE A1 SHEET 1/1

NOTE: –

1. FOR LOCATION OF HOLE FOR SPLIT PIN REFER TO IS : 9549-1980 TABLE-1.
2. IF REQUIRED ADDITIONAL WASHER OF REQUIRED SIZE MAY BE PROVIDED BETWEEN LOCK NUT & SPLIT PIN TO CHECK ANTI-ROTATON OF LOCK NUT
*3. REPUTED MAKE ONLY.

सकदिया
ENTERED
में
INTO
पर्विष्टियाँ
DATA BASE
4 APR 2025

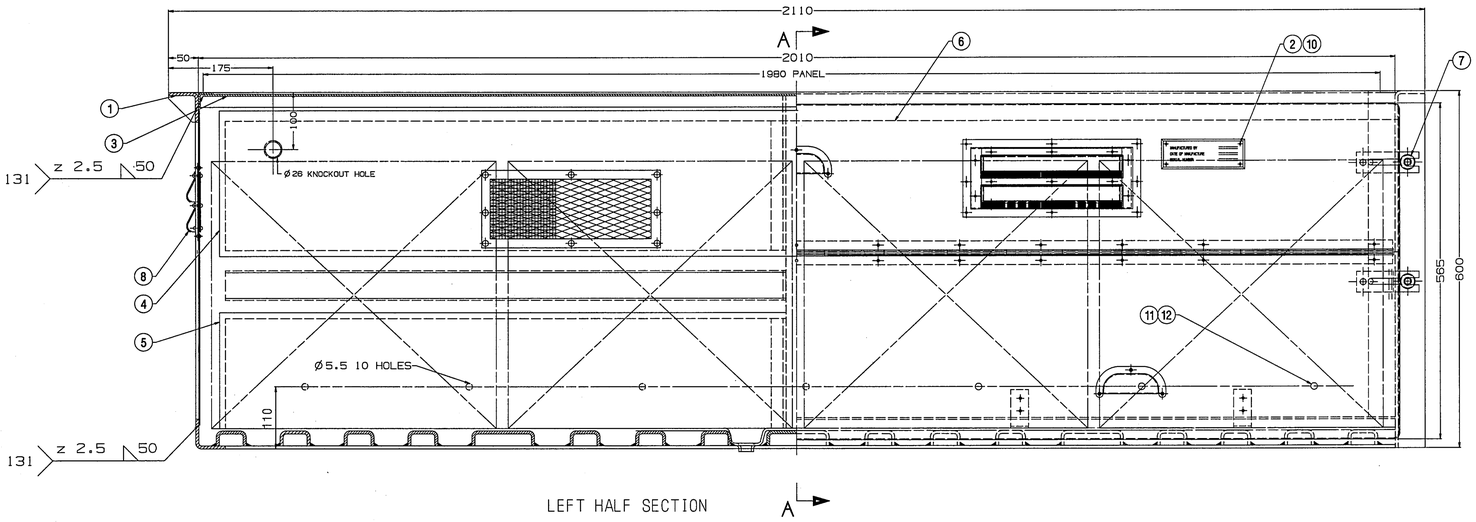
ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

FOR UNTOLERANCED DIMENSIONS REFER MDG0008

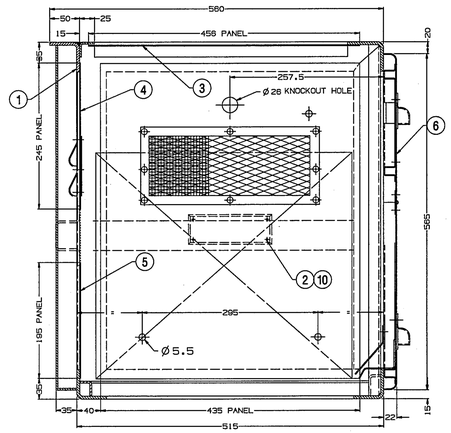
DETAIL DRGS STARTING WITH "LI" ARE INTERNAL REFERENCE LISTS ONLY AND ARE NOT FOR ISSUE.

DATE OF FIRST ISSUE 20/09/2018 CGM BY

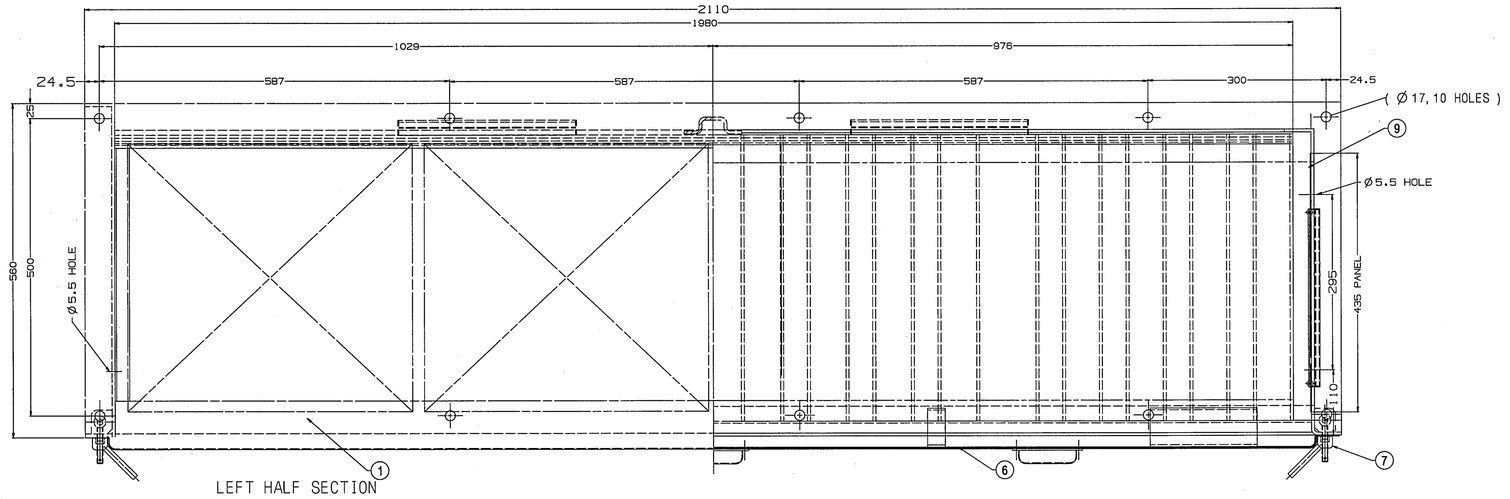
ALT.NO	ALT.DATE	ZONE	ALTERATIONS	AUTHORITY
a	16/05/2014	K-6-13	1.NOTE NO.7(C)MODIFIED.	DY.CME/D3



LEFT HALF SECTION



SECTION - AA



LEFT HALF SECTION

12	SNAP.HD.RIVET Ø 5.5	8	IS: 2998-82 TAB-1,FIG-1	IS: 1148-82	NIL
11	SNAP HD.RIVET Ø 5X20	10	IS: 2988-82 TAB-1,FIG-1	IS: 1148-82	NIL
10	SNAP HD.RIVET Ø 3X10	8	IS: 2998-82 TAB-1,FIG-1	IS: 1148-82	NIL
9	SIDE PANEL(R.H.S.)	1	CC91218	NIL	NIL
8	SIDE PANEL(L.H.S.)	1	CC91217	NIL	NIL
7	BATTERY BOX CLOSING ARRGT.	4	CC91215	NIL	NIL
6	COVER COMPLETE	1	CC91206	NIL	NIL
5	REAR BOTTOM PANEL	1	CC91210	NIL	ITEM-10
4	REAR TOP PANNEL	1	CC91219	NIL	NIL
3	TOP PANEL	1	CC91210	NIL	ITEM-9
2	NAME PLATE	2	CC91216	NIL	NIL
1	FRAME COMPLETE	1	CC91204	NIL	NIL

ITEM	DESCRIPTION & DIMENSIONS	QPASSLY	DETAIL DRG	MATL. & SPEC.	REMARKS
GROUP	UNDERFRAME	SUPERSEDES: CC91205 ALT NIL			
FILE	Z:\CC91205a.prt(2D)				

WELD LENGTH	NIL M
WEIGHT	NIL KG
S.AREA	NIL M^2
~~LENGTH/DIA~~	
~~WIDTH/THICK.~~	NIL M
	NIL M
HEIGHT	NIL M

BATTERY BOX FOR LHB NON AC COACHES(120Ah VRLA BATTERIES)

RAIL COACH FACTORY, KAPURTHALA

रेलकोच फैक्टरी कपूरथला | IRS

SCALE	SSE/REC
CHD	JPSN
DRN	BHAG
REF.DRG.No.	CC71030 alt-c
PL NO.	NIL
DRG.NO.	CC91205
ALT.	a
SIZE	A1
SHEET	1/1

ADE/SME | DY.CME | CDE

02 JUN 2014

5. SHEETS TO BE PROCURED FROM AUTHORISED OUTLETS OF MFRS.LIKE SAIL,VSL OR ANY OTHER REPUTED MANUFACTURERS.
4. MOUNTING HOLES TO BE JIG DRILLED.
3. THE MOUNTING SURFACE OF THE BATTERY BOX SHALL BE UNIFORM AND SHALL BE IN THE SAME PLANE.
2. SUITABLE BATTEN PACKING TO BE PROCURED & PROVIDED BY RCF BETWEEN TRAY AND BATTERY BOX.
1. ALL DIMENSIONS IN MM.

NOTE:

7. THE PAINTING PROCEDURE SHALL BE AS FOLLOWS:-
a. RUST CLEANING:-THE METAL SURFACE SHALL BE CLEANED MANUALLY BY WIRE BRUSH SO AS TO GET A SURFACE EQUAL TO ST2 OF IS:9954.
b. CLEAN THE METAL SURFACE WITH PETROLEUM HYDRO-CARBON SOLVENT TO IS:1745 TO MAKE IT FREE FROM OIL & GREASE.
c. PAINTED WITH EPOXY METAL PRIMER OF DFT 60 MICRON AND HIGH BUILD PAINT ELASTIFIED WITH DFT 140 MICRON AS PER SPEC. MDTS 094.
6. WELDING TO BE DONE AS PER INDEX NO.-131 (TIG WELDING) TO IS:813-86,APPENDIX-B CLAUSE-7.3.1 WITH RDSO APPROVED ELECTRODES.

ANY MANUAL ALTERATION SHALL AUTOMATICALLY RENDER THIS DRAWING INVALID.

FOR UNTOLERANCED DIMENSIONS REFER MDG0008

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DATE OF FIRST ISSUE 23/01/2012 CGM BY

GOVERNMENT OF INDIA / भारत सरकार
MINISTRY OF RAILWAYS / रेल मंत्रालय
(RAILWAY BOARD / रेलवे बोर्ड)

No.2022/Elect (G)/181/12 part1

New Delhi, Dated 10.12.2024

General Manager,
Rail Coach Factory,
Kapurthala.

Sub: Electrical maintenance of LVPH coaches.

Apropos above, to streamline the electrical maintenance of LVPH and to enhance the reliability and operational requirements of LVPH, the following TDCs for the development of prototype Axle driven generator, fitment of 120 Ah battery and issuance of relevant CAIs have been decided:

Item description	TDC
Development of prototype Axle driven Generator	25.12.2024
Fitment on a LVPH of NR	15.01.2025
Trial after fitment	Minimum 3 months
Issuance of CAI	After successful trial
Fitment of 120 AH Battery	15.01.2025
Issuing of CAI for retro fitment of 120 AH battery	31.01.2025

RCF is advised to expedite the work as per the TDC given and to ensure the compliance. Weekly progress to be submitted to Railway Board on every Friday.

Diwaker 10/12/24

(दिवाकर कुमार)
संयुक्त निदेशक, विद्युत इंजीनियरिंग (जी)
दूरभाष – 011-47845423, ई-मेल:diwaker.kumar@gov.in
कमरा न: 376D, रेल भवन, रेलवे बोर्ड,
रायसीना मार्ग, नई दिल्ली – 110001

Copy to: PCEE/RCF & CESE/NR- for kind information and necessary action please.

GOVERNMENT OF INDIA / भारत सरकार
MINISTRY OF RAILWAYS / रेल मंत्रालय
(RAILWAY BOARD / रेलवे बोर्ड)

No.2006/Elect (G)/180/11pt1 (EON-3325965) New Delhi, Dated 11.12.2024

General Manager
RCF, Kapurthala

PCMEs,
All Zonal Railways

Sub: Electrical maintenance of LVPH coaches.
Ref: Discussion during unusual meeting on 20.11.2024 in Railway Board.

Apropos above, to streamline the electrical maintenance of LVPH and to enhance the reliability and operational requirements of LVPH, the following should be followed:

1. Base depot should be allotted to ensure timely maintenance of schedules of LVPH coaches
2. To ensure timely liquidation of maintenance schedules of LVPH coaches, they should ideally be returned to the base depots after every trip, but no later than 1-month, so that the intermediate schedules (D2, D3) can be done on time and maintenance reliability improves.
3. Nominated base depot should keep sufficient number of spares of batteries, ZS coupler, light fittings and other equipment's for proper maintenance of LVPH coaches.
4. Charging of battery of LVPH coaches before each loading, en-route and after each unloading should be ensured.
5. Maintenance of all electrical equipment's should be as per CAMTECH maintenance manual.
6. As of now 70AH capacity VRLA battery has been provided in LVPH, which may be increased to 120AH for taking care of deep discharge of batteries.
7. RCF is advised to provide 120AH battery in LVPH and issue a scheme for retro-fitment of existing LVPH coaches as well and to provide it in new LVPH coaches.
8. RCF is also advised to fit axle driven generator of sufficient capacity in the LVPH for charging of batteries in a LVPH as POC.
9. Bangalore division of SWR has been nominated to develop Solar power system for LVPH for charging of batteries under innovation. Same needs to be completed by December 2024.

All Zonal Railways are advised to take necessary action for the reliability improvement of LVPH coaches.

This has the approval of Board (MTRS).

(दिवाकर कुमार)
संयुक्त निदेशक, विद्युत इंजीनियरिंग (जी)
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कमरा न: 376D, रेल भवन, रेलवे बोर्ड,
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Copy to: PED/PS&EMU/RDSO- for kind information please.