



SPECIFICATIONS FOR ULTRA DELUXE BUS BODIES - 2018

1.0 GENERAL DESIGN:

The general design shall be a streamlined body with passenger service door on LH side at front of front wheel with pneumatically operated in swing/JK door and passenger seats facing forward in 2x2 pattern.

2.0 REGULATION :

The general appearance, structure, seat layout etc., shall be in accordance with respective drawings. The bus body design should comply with the provisions of latest Central Motor Vehicle Rules, Andhra Pradesh Motor Vehicle Rules, AIS:052 and any other statutory requirement that may come in to force during execution of fabrication work order. The coach interior shall meet the standard of IS : 15061-2002.

2.1 The firms must possess Bus Body Accreditation Certificate issued by CIRT / ARAI/or any other Agency approved by GOI.

3.0 MAIN DIMENSIONS: (ALL DIMENSIONS ARE IN MILLIMETERS)

S. No	Chassis model- Description	AL 222"WB	Tata 218"WB	Eicher 230"WB
1	Wheel base	5639	5545	5840
2	Rear overhang	3383(60%)	3327(60%)	3387(58%)
3	Overall length	10934	10647	11012
4	Overall width	2590	2590	2590
5	Pillar centers(std)	1130	1130	1130
6	Window sill(waist rail) height from top of the cross bearer	660	660	660
7	Waist rail height from skirt level	1390	1390	1390
8	Cant rail height from waist level	1122	1122	1122
9	Interior saloon clear height(minimum) after finishing	1900	1900	1900
10	Clear aperture of passenger service door(min. When measured from the edge of door flap)	650	650	650
11	Clear aperture of Driver door	650	650	650
12	Seating capacity	40+1 Driver	40+1 Driver	40+1 Driver

4.0 DRAWINGS: The list of drawings to be followed are shown at ANNEXURE- I

5.0 MATERIAL: The fabrication of bus bodies shall be as per the specifications and recommended sources / brands of material mentioned in ANNEXURE-II.

6.0 CHASSIS POSITIONING:

6.1 All chassis received by the firm for fabrication of bus bodies should be kept safely in a covered area. The chassis should not be kept open to atmosphere with out any protection to avoid damage to chassis and its units due to rain, dust and heat.

6.2 Before commencement of bus body fabrication all important units of chassis viz. Alternator, self-starter, radiator, tyres, batteries, air cleaner, air cleaner indicator, power steering reservoir, fuse boxes, electrical relays, brake pipe lines, filters, clutch reservoir and meter cluster should be protected by providing suitable covering to prevent from damages that may

occur due to welding, drilling, cutting, hammering, riveting, falling of metal scrap or dust during the course of fabrication. Driver seats, steering wheel, hand brake valves etc., shall also be protected from any damage or paint spray.

- 6.3** Chassis number on long members and identification plates provided by the chassis manufacturer shall be properly covered and protected before commencing the fabrication work.
- 6.4** The Ashok Leyland, TATA and Eicher chassis are supplied with following items as OE fitment.
1. Cabin floor
 2. Bulk head structure
 3. Front grill (AL)
 4. Out riggers (AL/EICHER)
 5. Anti-sag channel (TATA)
 6. Bonnet and Front bumper
 7. Knitted Driver seat
 8. Head lights E2
 9. Front indicators E2
 10. Tail Lamps E2
 11. Battery cut off switch
 12. Wiper motor with twin blades/linkages
 13. Reflective warning triangles with stands
 14. Wheel stoppers
 15. Spare wheel carrier cage type
 16. First aid kit
 17. Tools as per CMVR
 18. Rear view mirrors with brackets(E2 plus 1 small mirror)
 19. Electrical horn
 20. ELR safety belt.

7.0 PROTECTIVE TREATMENT:

- 7.1** All Mild Steel components used for fabrication shall be carefully de-greased, de-rusted with three in one solution by dipping and wiped with dry cloth to remove all dirt/oil etc., Then the material shall be applied immediately (without any time lag) with Zinc Phosphate epoxy primer "Rust-O-Cap" (part no.24570608320) of M/s. Asian Paints or '60 BT PRIME GREY' of M/s. Akzo Nobel, before assembly.

8.0 BODY STRUCTURE:

8.1 GI & Mild Steel structural members:

Galvanised steel sheets should be as per grade 175 of IS: 277- 1985. Rolled sections should be as per IS - 2062 of 2006. The structural joints shall be by MIG welding only. In case of Stainless steel, TIG welding is to be done invariably. The welding should be full length of joint. After welding, the weld joint is to be ground to smooth finish and epoxy primer is to be painted without loss of time.

- 8.2** All bolts used shall be of sizes reckoned in Metric system. The bolts shall be of high tensile hexagonal head bolts of fine thread, conforming to property clause 8.8 of IS: 1367 of 1979. The nuts of approved anti-vibrate type such as Nyloc conforming to IS: 1364 of 1983 shall be used. All bolts nuts and washers should be galvanized. Each bolt and nut shall be provided with a flat washer. A spring washer should accompany every tapped bolt. The approved brands of bolts are TVS / STL / HINDUSTAN FASTENERS / KFL/ UNBRAKO/ IMPERIAL FASTENERS brands only.
- 8.3** Specifications of Aluminum extruded sections as per Chart no. CB18CTG132 and Drg.no. CB18AEG112 (sheet 1&2) shall be followed.

9.0 PARTICULARS OF IMPORTANT STRUCTURAL MEMBERS:

Sl.no.	Description	Material
1	Cross bearers	Rolled steel channel ISMC 100x50x6 mm
2	Anti sag bar	Rolled steel channel ISMC 75x40x6 mm
3	Floor longitudes	G.I 'U' section 25x75x25x3 mm thick (5 rows)
4	Pillars and Horizontal supports	GI Rectangle tube 60x40x3 mm
5	Roof sticks	GI square tube 40x40x2 mm
6	Roof longitudes	GI square tube 40x40x2 mm (5 rows)
7	Crib rail	GI 40X40X3mm
7	Cant rail	GI Rectangle tube 60x40x3 mm
8	Waist rail	GI square tube 40x40x2 mm
10	Panel stiffener	Formed Z 20x40x20x0.91 mm
11	Skirt rail	GI rectangular tube 40x20x2 mm
12	Water channel a) On cant rail	a) Indal 6250 section
13	Step edge beading	As per drawing
14	Flat beading	Indal 5505 section
15	Decorative beading for interior roof	As per Drawing.
16	Window sections a. Window guide b. Split section 1. c. Split section 2 d. Sweep rubber section e. Finger pull	a. Hindalco 6482 section b. 'T' section c. 'F' section d. Hindalco 2691 section e. Indal 1752 section
17	Wire casing	Indal 2735 section
18	Rub rail on body side	Indal 6551 section
20	Roof grab rail brackets	Indal 9638 section of 30 mm wide
21	Flitch plate	MS 6 mm sheet of 150 mm x 75 mm
22	JK door frame	GI 30X30X2 mm tubes, GI formed section in 1.6 mm GI sheet
23	Parcel rack tubes	Hindalco TU-1274, 1 st and 2 nd stainless steel tube 16 mm dia x 1.6mm thick

10.0 PRECAUTIONS:

10.1 Pillars shall be of single piece and joints will not be allowed.

10.2 Single Joint is allowed for cant rail and it should be within wheel base and not on pillars.

“NEGATIVE TOLERANCES” are not allowed. However, tolerances within the limits of BIS standards may be allowed subject to prior approval of Chief Mechanical Engineer (Chassis and Bodies) and cost recovery.

All welding shall be done with **MIG welding process** only. Under any circumstances, arc welding shall not be allowed. Welding of Stainless steel components shall be done with **TIG welding process** only with same grade SS filler rod.

The following workmanship must be carefully followed during the fabrication.

- I. All castings must be truly formed and free from blow holes.
- II. All bolts and rivets should be well fastened
- III. Rigid water test shall be carried before fixing the interior ceiling using pressurized water spray system. The fabricator shall equip water leak test facility confirming to IS:11865-1982 at the firm for conducting leak test in two stages i.e., before fixing the interior ceiling and before dispatch of vehicle.
- IV. All welded joints must be well ground to get a smooth surface and applied with Epoxy primer without any delay.
- V. Sharp corners shall be grounded and made smooth
- VI. Wherever pitch for rivets / bolts is not specified, it shall be 100 mm.
- VII. Bolt ends shall protrude at least 2 to 3 threads length above the nuts.
- VIII. All tapping bolts such as grab rail, handles and assist rail bolts etc., shall be tightened using thread lock adhesive of approved makes.
- IX. All fixed glasses shall be provided with ceramic coating of suitable width on periphery.
- X. There should not be any air pockets while laying vinyl mat.
- XI. All the FRP profiles shall be of FR grade and to comply with the provisions of IS:15061.

The layout of FRP profiles shall be as detailed below:

- a. Two coats of ISO UV FR grade Gel coat and surface mat 30
- b. CSM 420 mat layer with ISO FR grade resin
- c. WR 610 mat layer with ISO FR grade resin
- d. CSM 420 mat layer with ISO FR grade resin
- e. WR 610 mat layer with ISO FR grade resin
- f. Permitted pigments and additives
- g. Grey primer coat
- h. Suitable reinforcements at all points of fastening
- i. Front bumper reinforcement

11.0 CAB UNDERFRAME STRUCTURE:

11.1 The cab under frame of Ashok Leyland 222” WB chassis shall be fabricated as per the drg.no.UD2260UF18113. The OE structure shall be retained and modified accordingly to suit the fabrication. The cabin floor shall be made in line with saloon floor except at wheels. The OE floor on RH Side of cabin shall be connected to the 1st cross bearer by providing a ‘Z’ riser in G.I. sheet 3.00

- mm. On LH Side, a raised wheel arch box shall be provided on front wheel duly fabricating in MS flats 40x6 mm and MS angles 40x40x6 mm. Gap between the top surface of the tyre and bottom of the wheel arch box shall be minimum 160 mm.
- 11.2** The Tata 218” WB chassis will be fabricated as per the drg.no.UD1860UF18313. The cabin floor longitudinal members shall be connected to a ‘Z’ raiser in G.I. sheet 3.00 mm provided on 1st cross bearer to make up the height difference of cabin and saloon floor. Suitable wheel arch boxes in rectangle shape fabricated in MS flat 40x6 mm and MS angles 40x40x6 mm shall be provided Gap between the top surface of the tyre and bottom of the wheel arch box shall be minimum 160 mm.
- 11.3** The Eicher 230” WB chassis will be supplied with OE cab floor, bulk head structure, out riggers, driver seat and engine bonnet. The cab under frame shall be fabricated as per the drg.no.UD3058UF18213. The OE structure shall be retained and modified accordingly to suit the fabrication. The OE floor on RH Side of cabin shall be connected to the 1st cross bearer by providing a ‘Z’ riser in G.I. sheet 3.00 mm. On LH Side, a raised wheel arch box shall be provided on front wheel duly fabricating in MS flats 40x6 mm and MS angles 40x40x6 mm. Gap between the top surface of the tyre and bottom of the wheel arch box shall be minimum 160 mm.
- 11.4** The dash board frame shall be fabricated in MS angle 40x40x6 mm to the required profile and covered with GI. Sheet 1.22 mm thick. A door with stainless steel piano hinge and stainless steel tower bolt shall be provided at water top up for Radiator, power steering reservoir and Fuse box as required to facilitate easy periodical maintenance.
- 12.0 BODY FRAME STRUCTURE:**
The bus body frame structure should be fabricated as per the following drawings.
ASHOK LEYLAND 222” WB chassis - Drg.nos.UD2260SL18111, and UD2260SR18112.
TATA 218” WB chassis -Drg. Nos. UD1860SL18311 and UD1860SR18312.
EICHER 230” WB chassis - Drg.no. UD3058SL18211 and UD3058SR18212.
- 12.1** Cant rail joint shall be provided with box type reinforcement formed by welding of two GI pressed U sections of 17x27x17x2 mm in 300 mm length and to be plug welded on both sides.
- 12.2** M.S. tapping plates in 30x6 mm flat of 200 mm length shall be provided wherever tapping is to be done for fixing body components such, roof hand grab rail, window guard rail, assist rail, drivers’ partition etc.
- 12.3** Chassis long member cutting is not allowed and they shall be retained as supplied by the manufacturer as shown in the respective drawings while fabricating the rear luggage booth.
- 12.4** An opening of size 250-mm x 250 mm, fabricated in M.S. angles 40x40x6 mm. the opening is to be finished with beading in Indal 5505 and a flap with ball catcher shall be provided at fuel oil tank mouth.
- 13.0 CABIN AND BODY MOUNTING:**
- 13.1** The OE Cabin mountings shall be retained. The remaining portion of cabin floor connecting 1st-cross bearer and OE floor shall be fabricated as per Drg. no.UD2260UF18113 for AL 222” WB, UD1860UF18313 for TATA 218” WB and UD3058UF18213 for EICHER 230”WB chassis.
- 13.2** The OE anti-sag members shall be retained. If the chassis are not supplied with the anti-sag members a 3-piece anti sag channel in ISMC 75x40x6 shall be provided at front end of the chassis bottom frame connecting to the ‘A’ pillars on both sides as shown in the drawing.

- 13.3 Additional Out riggers in M.S.angles 50x50x6 mm shall be provided connecting 'B' pillars to the chassis long members by means of clamps made of M.S flat 50x6 mm.
- 13.4 The body should be mounted on the chassis web duly providing 6 mm (inverted pressed "L" type) M.S. plate as per the size shown in the respective drawings over the chassis long members. These "L" plates shall be bolted together at every cross bearer mounting to Long member web with M12x 50 H.T. bolts at least 4 nos. per plate. OE holes on the chassis long members shall only be picked up for mounting this plate. Wherever the holes are not matching holes shall be drilled on the web 40 mm below the top level of long member with prior approval. Over these plates, cross bearers in ISMC 100x50 channels shall be provided as per the respective drawings. At rear wheels the cross bearers shall be fastened with 16 mm dia. "U" bolts of approved make and with 150mm x 6 mm thick base plate welded to the bottom of cross bearer. Spacers made of Alu. casting shall be placed between bottom flanges of chassis long member and "U" bolts. The "U" bolts are to be made out of EN-15/14B steel as per IS 5517-1978 (Tensile strength 80 kg/Sq.mm minimum). The "U" bolts should be galvanized and fitted with galvanized nyloc nuts as per drg.no. CB15UBG114. The length of bolt shall suit the depth of chassis long member and should not project more than 6 mm after tightening the nuts.
- 13.5 The front bulkhead ends are to be connected to the A-pillar of the body duly giving the support members. In ASHOK LEYLAND and EICHER vehicles a tie bar in front of radiator in 3-piece in ISMC 75x40 connecting I-pillars on both sides and chassis long members shall be provided as shown in the drawing. This tie-bar to be mounted on MSL 50x50x6 mm angle 'L' brackets connected to the chassis long members.
- 13.6 The body mounting must be easily detachable from the chassis during major overhauls. Pillar gussets on four sides of the body shall be provided with 32 mm dia hole to facilitate lifting of the body during major over hauls.
- 13.7 Side luggage booth flooring shall be provided with 2 mm Alu. Chequd. Sheet and sides shall be provided GI sheet 0.91 mm with hammer tone paint.
- 13.8 Rear luggage booth flooring shall be fabricated with 2 mm alu. Chequd. Sheet with dust proof rubber with MS solid revits verticals shall be in 0.91 GI sheet with hammer tone paint as indicated in respective drawing. Flap door with 'Southco' type locks finished in black colour powder coating on both side and balancers of size 550 N shall be provided. The balancers shall have ball joints on both ends.
- 13.9 The body mounting must be easily detachable from the chassis during major overhauls.
- 13.10 The side and rear luggage booth floor shall be in 2 mm Alu Chequred sheet with dust proof rubber and ms solid revits.sides to be provided with 0.91 mm GI sheet with hammer tone paint.
- 14.0 CABIN AND SALOON FLOOR:**
- 14.1 The cabin and saloon floor shall be laid with 12 mm thick polymer impregnated compressed chequered plywood of FR grade conforming to IS: 3513 (Part-3)-1989. The Plywood should be bolted to the under frame members with CSK self tapping screws of 6 mm size (for steel application) at a pitch of 200 mm. The floor plywood should be overlaid with 2.0 mm thick non-skid safety vinyl mat of approved make and design as per IS-3462 of 1986 with good quality adhesives of approved brands with minimum joints, without gaps and air bubbles. The edges

of the vinyl mat shall be welded with hot air welding process. Alu. step edge beading of as per drawing with PVC insert in yellow colour shall be provided along the edges of step well. Aluminum 'L' beading shall be provided along the edges of vinyl mat along the side wall. The flooring shall be made dust proof.

- 14.2 The wheel arches shall be made rectangle shape. The wheel arch frames shall be covered with 0.5 mm stainless steel sheet before laying 12 mm compressed plywood and vinyl mat. The height of rear wheel arch box frame shall be 160 mm minimum from top surface of the tyre.
- 14.3 The number of joints of cheq. Ply used for cabin and saloon flooring should be minimum possible.
- 14.4 In TATA & EICHER vehicles an inspection covers to be provided in saloon floor over fuel tank suction pipe of size 250x250 mm.
- 14.5 The floor longitudes should be in five rows excluding crib rail. They should be arranged in such a way that the seat legs are fixed on the floor longitudes. The floor cheq.ply laying shall ensure dust proof. Floor longitudes shall be provided wherever necessary for floor ply joints. 4' ply sheet shall be used in center portion of saloon floor and remaining in sides.
- 14.6 Trap door of 580x 540 mm size must be provided in cabin flooring above gearbox with proper sealing and M6 tapping bolts. The trap door shall be provided with aluminium beading on periphery and collapsible steel handle.
- 14.7 Four drain holes of 25-mm diameter and 75 mm length ERW pipe shall be provided in saloon flooring corners below seat frames for draining of water while washing.

15.0 BODY PANELING:

Truss Panel:

The interior portion of body side from waist to floor to be provided with 3 mm hylam sheet of FR grade in approved shade/design pasted with PU sealants to the structural members. The vertical butt joints of the hylam sheet shall be on structural members only. The joint shall be provided with decorative beading with PVC insert.

- 15.1 The fascia including front bumper, radiator grill, vertical finishers for Front wind shield glass size of 2620(W) X 1300(H) (Approved) and front end doom and rear end shall be in FRP profile of FR grade in 4 mm thick in approved design. The center portions of front bumper shall be of detachable type. Dash board shall be provided with 3 mm thick FR grade FRP profile of approved design duly providing suitable supports in MS flat 40x6 mm.
- 15.3 Stretch panel:
 - i. The exterior body from waist to floor level to be in 0.91-mm skin pass quality G.I. sheet and shall be laid horizontally in single piece by stretching in a fixture by applying load and then welded rigidly to the rear most pillar and rear pillar of entrance door and driver door. There should not be any wrinkles or waviness or rattling in the stretch panel after welding.
 - ii. The top edge of the stretch panel to be sealed with P.U. sealant to avoid leakage of water to the structure. P.U. sealant shall also be applied on the structural members for bonding the stretch panel to the structure.
 - iii. Approved brands of P.U. sealants are: Sikaflex, Total seal, 3M, Anabond and Henkel.
- 15.4 The remaining portion of exterior body i.e., between crib level and skirt rail is to be paneled with 1.22 mm Alu.sheet to avoid rusting. The vertical butt joint of panels should be on Structural members. End portion of panels at wheel arches and skirt rail shall be folded inside by 20 mm.

- 15.5 The roof exterior sheet should be 0.91 mm GI sheet in full length of body and laid longitudinally in two pieces (with single longitudinal weld joint). The roof sheet shall also be tack welded to the roof structure members. The tack welds shall be applied with PU sealant from inside after conducting water leak test.
- 15.6 Roof joints should be water leak proof. Approved make weather shield strip of 100 mm wide shall be laid longitudinally covering roof center joint from front end to rear end and also at front and rear transverse joint (FRP profile to roof sheet joints) to avoid water leakage from roof.
- 15.7 The interior centre portion of body is to be paneled with 3 mm hylum sheet of approved shade with a width of 610 mm . Remaining interior roof portion shall be finished with 0.7 mm PVC laminated GI sheet.
- 15.8 The hylam sheet butt joints and overlap joints of PVC laminated GI sheet in transverse direction should be on the roof sticks and to be aligned properly.
- 15.9 The joints of hylam and PVC laminated GI sheet shall be provided with decorative beading with PVC insert and ends.
- 15.10 The interior vertical finishers for pillars, horizontal finishers for windows at cant level, waist level and finishers for intermediate rail shall be in 0.5 mm stainless steel of 430 grade and scotch brite finish . The finishers are to be pasted to structural members with PU sealants. There should not be any waviness in finishers and the sealant should not drip through the joints. All the horizontal finishers shall be in single piece per two bays and the overlap joints on pillars only. To avoid the expose of sharp edges and waviness of the SS sheet used, the inner edge of the finisher is to be bent inside and to be provided with suitable PVC 'U' beading.
- 15.11 Panel stiffener in formed section 20x40x20x0.91 mm should be provided in between crib rail to skirt level in order to avoid rattling of exterior panels.
- 15.12 Rear end exterior shall be provided with 4 mm thick FRP profile of approved design.
- 15.13 The FRP profiles shall be fastened rigidly to front & rear end structures with M6 CSK bolts on all structural members. Flat beading is to be provided on front and rear end pillars for fixing FRP profiles. Suitable reinforcement shall be provided in FRP profiles for fixing of front grill, Front bumper centre portion and balancers for RLB door etc.
- 15.14 The rear end saloon glass frame shall be covered with 0.5 mm stainless steel finishers from inside.
- 15.15 The body sides have to be provided with Volvo type rub rail at crib level.
- 15.16 Alu. sheet 1.22 mm formed to 'Z' section (size 25x45x25) shall be provided on waist rail which shall be pasted with PU sealants to waist rail duly overlapping the exterior body panel at a pitch of 100 mm. The ends of 'Z' section shall be bent vertically to overlap the pillar web. Ends and corners shall be applied with P.U.sealant to avoid seepage of water in to saloon.
- 15.17 A GI. Sheet formed 'Z' section (30x8x30) 1.22 mm thick shall be welded to intermediate rail to facilitate bonding of top fixed glass.
- 15.18 The area between exterior and interior panels of waist rail to crib rail in side structure, cant rail to cant rail in roof structure shall be provided with 40 mm thick of FR grade thermocole insulation.
- 15.19 4 no's of Stanchion pipe size 38 X 1.6 mm in SS and 6 mm SS plate with balata packing shall be provided.

16.0 FOOT BOARD:

The foot board structure to suite pneumatically operated in swing door shall

be in three steps built in M.S. angles 40x40x3 mm. The tread portion shall be provided with 12 mm thick chequered ply wood over laid with 2 mm thick vinyl mat. The step well structure on sides up to dash level and the raiser portion shall be paneled with 0.91 GI sheet over laid with 0.5 mm 430 grade stainless steel sheet of scotch brite finish. All Step edges shall be provided with Alu. Beading as per drawing, finished with yellow powder coating and yellow colour PVC insert similar to RKS-21 of M/s RK PROFILES Pvt.Ltd. The tread depth should not be less than 300mm. Maximum step height allowed is 250 mm.

17.0 WHEEL ARCH BOX FRAMES:

The front wheel arch box frames should be fabricated in M S angles 40x40x6-mm and M S flats 40x6 mm in rectangle shape. The height of box frame shall be min. 160 mm above tyre crown level and to accommodate 10.00 R x 20 size tyres. Step edge beadings shall be provided at the riser and ends of wheel arches.

Mud gaurd shall be provided in 0.5 mm thick SS sheet full round along wheel arch area with proper clamping and a clear gap of 160 mm from the edge of tyres.

18.0 DRIVER'S PARTITION:

The construction of driver's partition shall be as per drg.no.CB18DPG120. It should be fixed behind driver seat and shall be supported on structural members duly reinforced in the floor as well as roof. The minimum distance from bonnet shall be maintained as per seat layout drawing. A timing board of size 500 x 500 mm shall be provided in Alu. sheet 1.22mm duly painted with white paint. The board should be provided in a sliding channel frame on 3 sides made of Indal 3620 section and fixed to the partition on saloon side.

19.0 DESTINATION BOXES AND BOARDS:

19.1 The front destination board shall be on dash board as indicated in the structural drawings. The side destination box shall be in 1st 1130 mm bay on LH side at window top fixed glass area. The size of the side and rear destination boards shall be 910x210mm and the size of front destination board is 660 x210. Rear destination board shall be provided at waist level as per shown in drawing.

19.2 The side destination box flap door to be fabricated in Stainless steel sheet 0.70 mm thick with full-length stainless steel piano hinge and locking latches. The destination bracket suitable to keep two destination boards of 910x210mm size is to be riveted to this flap door with solid rivets.

19.3 Four destination boards in G.I sheet 1.22 mm have to be supplied along with the vehicle duly painted in white color. These destination boards shall be provided in a WS-415 frame attached to the flap door with provision for keeping two boards. The destination boards should be visible clearly from outside.

20.0 The rear and side destination boards shall be illuminated by LED lights of 600-mm length of approved design and make with luminosity of 150 to 200 lux.

21.0 HAT RACKS:

21.1 The hat rack with brackets in GI rectangle tube 40x20x2 mm and GI formed 'Z' in 2 mm thick shall be provided. The interior width shall not be less than 460

- mm. Roof ceiling to hat rack clear opening shall be 240 mm.
- 21.2 The exterior of hat rack bottom shall be welded with 0.91 mm GI sheet and over laid with 0.7 mm PVC laminated GI sheet of approved shade. The interior of hat rack shall be provided with reinforcement of formed 'U' section of 1.6 mm GI sheet and covered with PVC coated GI sheet 0.7 mm thick. Hat rack edges are to be provided with Hindalco SP 4850 beading duly powder coated gray colour. Hat rack ends are to be closed and to be made soft duly providing with foam and fabric covering.
- 21.3 GI tapping plates of 150 mm length in 30x6 mm flat shall be provided wherever necessary for fixing body components such as grab rail, assist rail, partition, windows and hat rack etc.,
- 21.4 Hat racks to be fabricated as per respective drawings. Hat rack on right side is to be fabricated up to driver partition.
- 21.5 All the SS welding work shall be done by TIG welding and without any blow holes. Weld area shall be ground for even surface and to be buffed.

22.0 CONTINUOUS ROOF HAND RAIL:

One continuous roof hand rail in stainless steel of 304 grade of 32 mm OD x 2 mm thick as per IS: 6913-1992 as shown in seat layout drawing. The intermediate and end support brackets to be in Alu extruded section Indal 9638 of 30mm width. These brackets are to be grey powder coated. Both ends are to be closed with plastic covers.

22.1 WINDOW GUARD RAILS:

Two rows of guard rails in stainless steel tube in 304 grade and 2B finish of 20mm OD x 1.6 mm thick as per IS: 6913-1992 has to be provided from outside on both sides of the vehicle at a height of 75 mm and 175 mm above waist level. The pipes shall be bolted to the pillars with M6 bolts and intermediate, end sockets as per drg.no.CB18LBG115. Tapping plates in GI flat 30x6 mm x 125-mm long shall be provided inside the pillar for fitment of guard rails.

23.0 CABIN FRONT WINDSCREEN, SALOON REAR GLASSES AND WINDOWS:

23.1 The cabin front-end shall be fitted with single laminated windscreen glasses of size 2620(W)X1300(H) mm. The curved laminated glasses shall be of 7.76 mm thick with minimum 0.76 mm PVB film, select float quality, safety clear WAVE FREE as per IS: 2553-1971 and to be fitted with EPDM quality synthetic rubber extruded section as per drawing No:CB18ERG122. The windshield glass frame assembly shall be made in MSL 25x25x3 mm to match the profile of the curved glasses. The windshield frame shall be welded on all sides. The complete frame to be covered with 0.5 mm SS sheet from inside. The approved brands for glasses are Banglore safety, South Glass, GSC. All corners of windshield glass shall be provided with clamps in Alu.sheet 1.6 mm.

23.2 The saloon rear end glass shall be bonded to the with P.U. sealant. The single piece glass shall be of 1760 x 800 mm size in 5.0 mm thick, toughened safety bronze tinted glass as per IS: 2553 - 1990 & IS: 2835 - 1987. The lettering work to be done on the glasses and at cant level as mentioned below:

“ BREAK THE GLASSES IN EMERGENCY FOR EXIT “

In Telugu:

" అక్కవసర సమయంలో ఏ అర్థమునైనను హగులాగొట్టము"

23.3 The window frames in Hindalco 6482 extruded section shall be provided between waist rail and intermediate rail. For a standard bay of 1130 mm, the window frame size shall be 1125 x 673 mm. The window frame shall have two horizontal sliding bronze tinted toughened glasses of 600 (H)x540(W)x5(T) mm

- size with flock channel of EPDM rubber quality. The area between cant rail to intermediate rail shall be provided with a fixed bronze tinted toughened glass of size 450(H)X1127(W)X5(T) mm. The glass shall be bonded to the 2 mm GI formed section at cant level and 1.22 mm GI. sheet 'Z' flange on the intermediate rail by applying P.U. sealant of approved make/brands. The window sliding glasses and top fixed glasses (except at side destination) shall be toughened float quality, safety bronze tinted glasses as per IS: 2553 - 1990 & IS: 2835 - 1987. Window frames shall be black powder coated. At side destination i.e., at first 1130 mm bay behind entrance door shall be provided with clear fixed glass.
- 23.4 The edges of all sliding glasses shall be ground, chamfered and polished to smooth surface.
- 23.5 All fixed glasses shall be provided with ceramic coating on periphery as per drawing.
- 23.6 All window frames to provide corner cleats with flat rivets besides welding to the window corners should be fitted with M6x30 mm CSK head screws-2 nos. on each vertical side on pillars and -3nos. on intermediate rail. M.S. flat 30x6 mm tapping plates shall be provided on pillars and intermediate rail.
- 23.7 Three drain slots of 50X3 mm shall be punched on side of window frame to drain out water collected in frame grooves.
- 24.8 All sliding shutters are to be provided with finger pulls in Indal 1752 section of 100 mm long powder coated in black colour.
- 23.9 Vertical overlap of window frames on pillars shall be provided with a sealing rubber profile as shown in the drawing. The fixed glasses are to be secured intact.
- 23.10 Approved makes of EPDM rubber profiles are Rubber Extrusions & Moulding/ ASP/ALP.
- 23.11 Approved makes of P.U sealants are Total seal/Sikaflex/3M India/Bostik/ Anabond and Henkel.
- 24.0 PASSENGER ENTRANCE, ASSIST RAILS AND DRIVER'S DOOR:**
- 24.1 The passenger service door shall be on LH side in front of front wheels with pneumatically operated in swing door as shown in the drawings.
- 24.2 The door frame shall be made in rectangle tubes 40x20x 2 mm thick covered with 0.91 mm G.I sheet on outside . Door frame height shall not be less than 2150 mm. Door frame verticals should be provided with side valence and male / female rubbers. The door rubbers along the edges shall ensure dust/water leak proof. The actuating mechanism shall be provided with approved make pneumatic air cylinder. The linkages shall be as per drawing with thrust bearing at bottom and taper roller bearing at top side. The door actuating mechanism shall be of fail-safe i.e., shall have 'open', 'close' and 'manual' stages.
The in-swing door should have one window at top side with horizontal sliding glasses of 5.0 mm thick toughened bronze tinted glasses and one 5.0 mm thick toughened bronze tinted glass as drawing pasted to the doorframe with P.U. sealant at bottom side.
- 24.3 The bottom of the door shall be provided with brushes PVC / Plastic bristle to clean the tread of 1st step.
- 24.4 One PU handle of min. 400 mm length shall be provided on inner side of in-swing door. One assist rail cum grab rail in stainless steel 32 mm dia x2 mm thick shall be provided from floor to cant rail to partition wall with suitable brackets.
- 24.5 One LED light assembly shall be provided above the entrance door with concealed wiring for foot board illumination.

24.6 DRIVER'S DOOR:

The driver's cabin door shall be provided with a full drop type window duly extending up to floor level as per sketch no.CB18DRG119. The window frame shall be in Hindalco 6482 section as per the window design. The door shall have one heavy-duty door lock of approved make with outer handle, one locking latch from inside, striking plates and dovetail catches. The door shall be fitted with two forged hinges on 'A' pillar. Driver door frame shall be provided with one horizontal bar in stainless steel 20x1.6 pipe from inside for holding.

24.7 EMERGENCY DOOR:

One Emergency door extending from intermediate cant rail to saloon floor on right side shall be provided as per the layout and drawings. The door is to be provided with one horizontal sliding window and one heavy duty lock of approved make operable from inside. The location of the emergency door is to be exhibited from inside with vinyl stickers and outer periphery is to be provided with red colour reflective radium sticker.

25.0 LUGGAGE CARRIER: (Drg.no. CB18LCG124)

A luggage carrier fabricated on the lines of drawing no. CB18LCG124 covering four bays (Overall length of 4520 mm) from rear end shall be provided on the roof top. The floor of luggage carrier shall be 2 mm thick Aluminium chequered sheet. The luggage carrier mounting shall be by means of bolting to facilitate easy removal at the time of major overhauls. The side frame shall be covered with Alu. Sheet of 1.22 mm thick. The frame and floor of the luggage carrier shall be applied with epoxy primer as in case of structure, before fitment on roof.

25.1 Access Ladder & Unloader: An access ladder with detachable lower part at the rear end should and Unloader be provided as per Drg.no. CB18LDG113. Unloader grill in left side above rear wheels has to be provided in ERW 1900X1.6 mm and it should be covered with 1.22 mm Alu.chequed sheet.

26.0 PASSENGER SEATS:

26.1 The seat layout plan and seating arrangement shall be as per the respective drawing nos. UD2260SG18114 for AL, UD3058SG18214 for Eicher and UD1860SG18314 for TATA.

26.2 Deluxe type seats with 125 mm reclining supplied by Corporation shall be fitted in the bus as per seat layout. The seat legs shall be fastened with M8 hexagonal head H.T. bolts using plain washers and nyloc nuts. Seat numbers in red letters on 2mm thick milky white acrylic sheet of size 65x50mm shall be provided on intermediate rail. The aisle and window seat numbers shall be indicated clearly as per seat layout.

27.0 DRIVER'S SEAT:

27.1 The OE knitted type driver seats supplied with chassis shall be retained. The driver seat frame mounting on cabin floor shall match the OE mounting position.

27.2 In case of non-supply of OE knitted driver seat with the chassis, approved HDPE knitted driver seat shall be fitted. The seat shall have fore and aft, up and down adjustment of 100mm with reclining back and to be fitted 350 mm away from steering wheel edge when the seat is fully forwarded.

27.3 The height of driver seat bottom shall be 450 mm when measured in fully lowered position.

- 27.4 There shall be a thigh clearance of 200 to 260mm between steering wheel edge and driver seating position.
- 27.5 The driver seat shall be fitted with original driver seat mounting holes provided in OE floor by the chassis manufacturers.
- 27.6 The driver seat shall be provided with “ELR” type safety belt of M/s. Autoliv or Rane make, complying the provisions of AIS:05

28.0 BATTERY BOX:

The battery box shall be provided on LHS side below floor level to accommodate two 12V batteries of size 521Lx292Wx248H mm with a push and pull type cradle/slider arrangement. The battery box is to be fabricated with MS L 40X40X6mm and MS Flat 40x6 and is to be paneled with 12 mm cheq.ply on floor and 0.91 mm GI sheet on three vertical sides. Complete interior of the battery box is to be overlaid with 0.5 mm stainless steel sheet of 430 grade. Wood packing shall be provided between holding clamps and batteries to prevent vibrations while the vehicle is in operation. Four rows of single -length battery cables to be connected to the battery cut-off switch terminals to self starter and batteries. The terminals and cables should be firmly clipped in position with cable tie. The cut-out provided for passage of cables shall be provided with rubber grommet.

29.0 ELECTRICAL WIRING AND OTHER FITMENTS:

- 29.1 The earth return system of wiring should be used. All automotive cables used shall be of approved brands conforming to IS: 2465 - 1984 quality covered with PVC sleeve as per IS: 1951-1961. Wherever the cables have to pass through roof and side structures PVC conduits of ½” dia shall be provided.
- 29.2 modular switches as per IS: 9433 -1980, 230Vx5 amps shall be used. A 6-pole disc type fuse box with independent fuse designated for every electrical circuit shall be fitted on switch board provided at cant level. Maximum current capacity of a circuit shall not exceed 15 Amps. The current carrying capacity shall be 1.5 times the load current of the electrical circuit. The fuses used shall conform to IS-4063 /1982. Switches and fuse box are to be fitted on hylam/decolam sheet of 3 mm thick and to be fitted on sunken tray located above the driver door with non metallic shielding to avoid short circuits.
- 29.3 All wiring shall be carried through Aluminum extruded section wire casing in Indal 2735 section in two rows along the cant rail offside and near side in such a way that it shall be easily accessible at all points with out the need to strip major paneling of body. The extruded section shall be so located and fitted as not to affect the appearance of body. Any wiring, which has to run along the chassis frame shall be securely, clipped to ensure that there shall be no chaffing with any of the moving parts. Further care shall be taken to route such wiring in such a way that it is not subjected to splashing of oil, water, mud etc.,
- 29.4 The battery main cable of size 398/0.40 mm shall be provided as required duly using good quality lugs with proper soldering, bolting and insulation etc. No joint is allowed in battery cables.
- 29.5 One LED lamp assembly shall be provided in cabin above the engine bonnet.
- 29.6 The side luggage booths and rear luggage booth shall be illuminated with LED lamp assemblies.
- 29.7 One LED lamp assembly with separate switch shall be provided at conductor seat in approved design.
- 29.8 6 nos. 390x130 mm long LED type light assemblies of approved design & make shall be provided in saloon. Out of these, 2 assemblies shall be provided with built in night lamp in blue colour.

- 29.9** All OE electrical fitments shall be retained and kept in working condition. Any extension of wiring harness should be done by providing male female connectors only. Tapping of power for saloon lighting etc., shall be taken from the OE female sockets provided by the chassis manufacturers. There should not be any tapping of power by slashing the main harness.
- 29.10** One radial type wiper machine of 80W capacity with twin blades of 815mm length of approved make shall be provided for front windshield glass below the front waist rail on left side. The mounting bracket (formed 'L' in MS 6 mm plate) shall be welded to the structural members in such a way that it shall not interfere while removing radiator.
- 29.11** One single tone Air horn of Roots/ELGI make shall be provided. In addition to the OE electrical horn, one more electrical horn conforming to type -3 of IS 1884- 1993 shall be provided AL vehicles. The noise levels of these horns should be between 93 dB to 112dB.
- 29.12** Cable ends shall be suitably crimped with connectors so as to withstand vehicle vibrations. The inter connections shall be made through connectors/ couplers/ junction boxes / terminal blocks only. Weather proof connectors shall be used for connecting cables which are exposed to atmosphere to avoid water/moisture ingress during use.
- 29.13** Four head lamp assemblies with 75/70W-H4 bulbs (including two OE head light assemblies in AL) shall be fitted at a distance not more than 400 mm from the extreme outer edge body and not more than 1200 mm height from the ground in AL vehicles. OE head light assemblies supplied with chassis in TATA & Eicher buses to be returned.
- 29.14** Two parking lamps at front in white colour provided beside head lamp on either side with mounting distance not more than 1500 mm from the ground.
- 29.15** Front direction indicator lamps shall be provided below 1500 mm height on the outer edge of body in amber colour. In addition to this, four more direction indicator lamps in amber color shall be provided on the lateral side of the body at wheels and below 1500 mm height from the ground.
- 29.16** Height marker lamps in white colour at front and in red at rear shall be provided. The marker lamps shall be above windshield glass at front and above cant level at rear on maximum possible outer edges.
- 29.17** The tail lamps 3 nos of 5" dia round type (one-red, one-white and one - amber) on each side shall be provided. The red lights shall have individual circuits for parking and brake lights. The mounting of tail lamps shall be below 1500 mm height from ground and 400 mm from the outer edge.
- 29.18** Rear number plates shall be illuminated with 300 mm length LED light.
- 29.19** Electrical side flashers shall be provided at cant level on all four corners in addition to the above lamps.
- 29.20** One inverter of 600 VA capacity in full sine wave type and one amplifier of approved make Argee/MG Solar Powertronics shall be provided.\
- 29.21** Provision for mounting 28" LED TV shall be made on driver partition with suitable brackets.
- 29.22** One Amplifier of approved make i.e. AHUJA/SONY shall be provided.
- 29.23** Six Nos 6" dia speakers of Boston (Si-600) or Pioneer (TS 1641 GS) make shall be provided in parcel rack with FRP speaker boxes with separate switch control for LH/RH side speakers.
- 29.24** OE battery cut-off switch supplied with chassis shall be provided with separate fuse control. In case of non supply of battery cut-off switch along with the chassis, IGSA-552 or part no. LP-134/3 of Lucas India Services Ltd., make shall be fitted in driver's cabin with a label "Battery Cut-off switch". The battery cut-off switch to be located 300mm above the cabin floor on 3

- mm thick GI base plate provided in side structure with suitable insulation.
- 29.25 One 24V, 3-pin plug socket mounted on suitable gang box has to be provided on the dashboard in driver's cabin for connecting inspection lamp/ TMS.
- 29.26 Conductor's buzzer with bell switches 4 nos. to be provided.
- 29.27 One reverse gear horn/alarm shall be provided with noise level not more than 100 db if not supplied with the chassis.
- 29.28 In the driver cabin Instrument panel all gauges, OE switches & indicators with labels shall be provided at 45-degree angle and shall be in the reach of driver from his seat. The frame shall be fabricated in MS angle 25x25x3 mm covered with 1.22 mm thick G.I. sheet.
- 29.29 Two fog lamps shall be provided in front bumper.
- 29.30 Power for connecting Wiper, Indicators, Fog lamps shall be drawn from the OE fuse box with sockets duly providing male / female sockets.
Never connect the circuits with twists & knots. Never tap power by slashing the main harness.

30.0 BODY PAINTING AND COLOR SCHEME:

- 30.1 Body to be painted on the exterior with premium quality PU paints. The body under frame and chassis shall be painted with anti corrosive rubberized paint. The exterior painting process shall consist of carefully cleaning and etching followed by surface leveling with polyester putty application, P.U primer surface coats, finish coat and glaze coat as per the recommendations of paint manufacturer.
- 30.2 Approved paint brands are 'Deltron' of Asian PPG, 'Glassurit' of BASF(Wuerth), 'Sikkens' of Akzo Nobel, 'Imron 9100' of Dupont(Axalta) and Nax Ultima of Nippon.
- 30.3 Color Scheme: As per the approved Color scheme.
- 30.4 The exterior transparent stickers of approved design and quality shall be affixed as per the sketch.
- 30.5 The color scheme may be modified or changed at the time of execution of bus body fabrication as per the orders of Chief Mechanical Engineer (C&B).
- 30.6 APSRTC monogram shall be provided on both sides of body as per SKETCH1516.

31.0 MISCELLANEOUS FITTINGS TO BE PROVIDED:

- 31.1 Two Fiber handles of 100 mm size are to be provided at waist level of cabin front end. Two-foot steps on the bumper shall be provided for cleaning of front windshield. Footsteps should not protrude outside the bumper.
- 31.2 Two OE fully adjustable rear view mirrors of convex type supplied with chassis shall be fitted with brackets of Markopolo type, one convex mirror to be fitted inside driver cabin . The location of rear view mirrors shall be so located to have at least 2500 mm wide vision from the body line of vehicle when viewed from driver seat.
- 31.3 The size of the number plate shall be 660 x 125 mm. The rear registration number plate shall be on rear bumper.
- 31.4 One conductor's clipboard 200x150 mm size in Alu. sheet 1.22mm shall be supplied with the vehicle.
- 31.5 Single seat ear marked for conductor shall be provided with a barricade in SS tube of 304 grade of 25 dia x1.6 mm thick.
- 31.6 Two fire extinguisher of approved make and dry chemical type 2.0 kg capacity conforming to IS: 2171 of 1985 suitable for 'A', 'B & C' class of fires shall be provided with suitable MS clamping arrangement one in cabin and one under rear most seat.

- 31.7** Rubber mud splashguards of size 762x457 mm for rear and front wheels to be provided.
- 31.8** First aid box of stainless steel of size 300x200x120 mm with leather straps and locking arrangement shall be provided in driver's cabin. First aid medicine kit containing the items mentioned under Rule 138(d) (4) of the latest C.M.V. Rules shall be provided in the box.
- a. Antiseptic cream of 5.0% centrimide I.P
in non-greasy base 5 mg ... 2 pcs.
 - b. Sterile Surgical gauge dressing ... 1 pack of 4 pcs.
 - c. Wash proof plaster ... 5 pcs.
 - d. Sterile elastic plaster - size 6cmx30 cm ... 1 pc.
 - e. Gauge rollede - size 7.5 cm x 2.5 mtr. ... 3 pcs.
 - f. Elastic bandage for wounds and burns
Size - 8 cm x 1.5 mtr. ... 1 pc.
- 31.9** One pair of towing hooks with 36 mm eye dia. in MS flat 75x12 shall be provided at the rear end attached to chassis long member with 4nosxM12 bolts.
- 31.10** All lettering work shall be done as per the guidelines.
- 31.11** Two sunken footsteps of size 150x150mm shall be provided below the driver door one at 700 mm from the ground and another at 950 mm.
- 31.12** The entrance and driver's door shall be provided with water drain canopies at cant level in GI sheet of 0.91 mm powder coated in black colour.
- 31.13** Pure rubber matting of 3.0mm thick shall be provided for foot control pedal in driver's cabin.
- 31.14** A footstool for driver to be provided in Alu.5-bar cheq. sheet 3.00mm and Indal 2651 as legs. Size: 450x150mm.
- 31.15** Tapping of compressed air for windscreen wiper and air horn should be from port no.24 of system protection valve with proper unions, 'T' joints. Metallic pipeline of 5.0-mm dia. with copper coating on inner side shall be used for tapping air for wiper. The pipeline shall be firmly clamped in position.
- 31.16** One roller type sun visor of 24" size to be provided in driver cabin.
- 31.17** The OE spare wheel carrier if supplied with the chassis shall be located as shown in the structural drawing. In case of non-supply of carrier type bracket, one Spare wheel carrier arrangement shall be provided as per Drg.no.CB18SWG131 on LHS at rear of rear wheels. If the chassis are not supplied with carrier type bracket, the firm shall provide one spare wheel carrier fabricated in MS flat 75x12mm. Care shall be taken to avoid fouling of spare tyre with any of chassis units/parts under any circumstances. The Spare Wheel carrier shall be provided with flap door with full length stainless steel hinge of 30x1.6 mm from the bottom of the cross bearer to skirt rail with locks and stay rod in SS rod 6 mm. It shall accommodate 10R20 size tyre.
- 31.18** Driver seat & engine bonnet area shall be separated by providing a barricade at a height of 760 mm from cabin floor. The barricade shall be provided with vertical supports in Stainless steel pipe (304 grade) of 25 OD x 1.6 mm thick with suitable sockets of PP/NYLON/Stainless Steel.
- 31.19** All unutilized chassis components to be returned at the time of delivery of bus.
- 31.20** The seats earmarked for ladies, PHC persons; senior citizens are to be very clearly exhibited with printed metallic plates of size 100x150 mm. Emergency exit symbol also shall be exhibited in metallic plate in red colour.
- 31.21** Retro-Reflective Conspicuity Marking tapes of dimond grade 50 mm wide conforming to AIS: 90 and approved by STA, Govt. of A.P shall be bonded to the body sides as per the sketch provided. The cumulative length of tapes provided shall not be less than 80% of length of that side. These tapes shall be white in color at front, yellow on sides and in red at rear of the body.
- 31.22** Driver's cabin shall be suitably ventilated. One Alu. disc ventilator shall be

- provided below dash structure.
- 31.23 One Stainless steel tube of 304 grade in 32 mm dia x1.6 mm thick up to a height of 600 mm from floor shall be provided on 'B' pillar from inside.
- 31.24 One flap door shall be provided from floor level to skirt on LH side to take out the chassis units like gear box, tanks etc.
- 31.25 2 nos CC Cameras, DVR & accessories supplied by APSRC shall be provided. One camera shall be facing the road and another saloon.
- 31.26 Head light assemblies should be fitted to a rigid frame welded to front end structure and should not be mounted on front FRP facia.
- 31.27 G.I. sheet of 0.50 mm thick shall be provided inside the bonnet.
- 31.28 Stainless steel sheets, tubes, pipes etc. should be of Jindal /any other make approved by APSRTC.
- 31.29 Each one set of head rest covers to be supplied along with the bus. The head rest cover should cover to the full width of the seat.
- 31.31 Roof hatch of size 500X500 mm above the driver seat to be provided.
- 31.32 One Fan of REMI make for driver to be provided.
- 31.33 Courier box is to be provided in left side of the hat track as per the drawing.
- 31.34 E1 set of window locks to be supplied along with vehicle.
- 31.35 Crash guard of 40X40X2 mm GI for front bumper shall be provided.
- 31.36 Provision of two inspection doors with dicky locks and sealing rubber for air suspension bellows attention.
- 31.37 The firm has to return the OE TATA E2 head lights assemblies with new vehicle.
- 31.38 A slogan in Telugu to be exhibited as follows on driver partition glass.
- 31.39 USB wiring harness for crystal model seats to be provided in both sides of saloon and rear with Alu. Extruded section of INDAL 2735 with suitable connectors.

**“ఈ బస్సు మనందరిది !
దీనిని పరిశుభ్రంగా వుంచుదాం !! ”**
