



# L.N. MALVIYA INFRA PROJECTS PVT. LTD.

**Registered Office :** Plot No. 29, F/F Sector-11, Dwarka, New Delhi - 110078

**Corporate Office :** T-10, IIIrd Floor, City Centre, Press Complex,  
Plot No. 1, M.P. Nagar, Zone-I, Bhopal (M.P.) 462011,  
Tel./Fax : 0755 - 4295421

LEI Code : 335800BB4FUFCAG28947

E-MAIL : LNMALVIYA@LNINFRA.COM

CIN No. : U45201DL2010PTC373715

Mob.: 9826452711, 7773000871, 9977004686, 9617777944 | E-mail : lnmalviya@lninfra.com | Web.: www.lninfra.com

**RefNo.:** LNMIPPL/NHIDCL/DBL/NH-102B(PKG-III)/MZ/2025-26/4734 Dated : 02.08.2025

**To,**

M/s Dhariwal Buildcon Limited

Address : Suakphunga Heritage Center,

Village Hilappui, Dist. Saitual

Mizoram -796261

Email: [dbl.hisar@rediffmail.com](mailto:dbl.hisar@rediffmail.com) , [dbl.nh102bmizoram@gmail.com](mailto:dbl.nh102bmizoram@gmail.com)

**Subject :** “Up-gradation to 2 lane with paved shoulders of Pawl rang -Rulchawm section of NH102B of Aizawl- Imphal Economic Corridor from Existing Chainage KM: 72.030 to KM: 104.129 including 2.459KM Re-alignment section from Tuivawl River to Rulchawm connecting KM: 48.150 of NH-6 [Design Chainage KM 68.170 to KM 98.579 (Package-III) in the State of Mizoram under Bharatmala Pariyojana on EPC Mode”. **Reg:** Review & Approval of Strip Seal Expansion Joints for Minor Bridge at Km 96+925 and Major Bridge at Km 96+340Ref: -

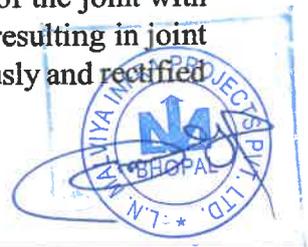
1. **Contractor office letter :** DBL/NHIDCL/NH-102B(PKG-III)/AE/494 Dated: 01.08.2025,

**Dear Sir**

With reference to the above-mentioned subject and the referenced letter, we acknowledge receipt of the design and drawings for the Minor Bridge at Km 96+925 and the Major Bridge at Km 96+340, submitted by the **Contractor** for our review and approval.

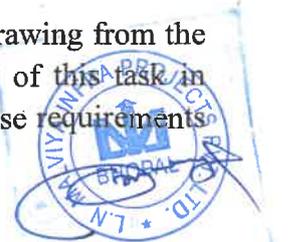
Upon detailed examination, the submitted designs and drawings are generally found to be in order. Accordingly, the proposed strip seal expansion joints are hereby accepted and forwarded for further implementation, subject to the following conditions:

1. The expansion joint length for each structure shall be adequate to accommodate the full range of expected thermal and structural movements. Any additional length required during execution must be incorporated promptly by the **Contractor**, as per the directions of the **Authority Engineer (AE)**.
2. All materials used in the manufacturing and installation of the strip seal expansion joints shall strictly adhere to the relevant standards, including IRC:SP:69, IRC:83 (Part II), MoRT&H Specifications (Clause 2607), and other applicable international standards. No deviation will be accepted without prior written approval.
3. Adequate anchorage systems shall be used to ensure proper fixation of the joint with the bridge superstructure. Any inadequate or substandard anchorage resulting in joint failure, displacement, or noise under traffic loads shall be treated seriously and rectified at the **Contractor's** cost.



4. Manufacturer's test certificates, quality compliance reports, and dimensional verification for all components of the expansion joint shall be submitted prior to installation. Non-conforming components shall be summarily rejected.
5. A detailed Method Statement shall be submitted outlining the procedure for sealing, fixing, and waterproofing activities. A comprehensive Quality Assurance Plan (QAP) must be in place, incorporating stage-wise inspection, testing, and documentation. Third-party testing may be required at the discretion of the **AE**.
6. All expansion joint materials shall be stored in covered, dry, and dust-free conditions at site. Mishandling or exposure to adverse conditions leading to material degradation shall be strictly avoided. Damaged materials shall not be used.
7. The expansion joint system must be installed precisely in line and level with the deck profile. Any vertical or horizontal misalignment shall be avoided. Necessary adjustments, if any, shall be executed under expert supervision with prior approval from the **AE**.
8. All welding shall be carried out by certified welders using approved procedures and materials. No edge cutting or modification of structural steel sections shall be allowed during installation without prior written approval. All field welds shall be visually inspected and may be subjected to Non-Destructive Testing (NDT), if required.
9. Elastomeric seals shall be installed without twist or deformation and must be compressed uniformly across the joint. Any damage to the seal during installation shall necessitate complete replacement. Sealants, if used, must have proven UV resistance and flexibility.
10. A joint inspection shall be carried out post-installation with the **Authority Engineer**. No section of the bridge shall be opened to traffic without written clearance from the **AE** confirming compliance with the approved design and specifications.
11. Adequate safety arrangements including barricading, warning signage, and traffic diversion (where necessary) shall be implemented during the installation. Any non-compliance with safety protocols may result in suspension of work.
12. Any deviation from the approved design or instances of defective workmanship identified during execution or inspection shall be rectified immediately. Repeat non-conformities or failure to rectify defects shall attract penalties and may lead to rejection of the component.

Considering the aforementioned comments, it is crucial to release the GFC drawing from the TL office before initiating construction activities. Ensuring the completion of this task in alignment with the specified points is imperative. Failure to comply with these requirements



will render the concessionaire solely accountable and responsible for any subsequent changes. In the event of disparities as per the concession agreement, M/s Dhariwal Buildcon Limited is obliged to rectify the issues at their own cost.

The approved design and drawing are forwarded for further implementation.

**Thanking you assuring best Services,**

**Yours truly,**

**For L.N.Malviya Infra Projects Pvt. Ltd.,**



**Authorised Signatory**

**Copy for Information and Further Necessary action to:-**

1. Team Leader, L.N. Malviya Infra Projects Private K. Thansiana Building Near Zero Point Ngoppa Email : [aenh102b@gmail.com](mailto:aenh102b@gmail.com)
2. NHAIDCL PMU Seling Mizoram Email : [pmu.seling@nhidcl.com](mailto:pmu.seling@nhidcl.com)



# GALVANO STRUCTURES INDIA PVT. LTD.

(An ISO 9001:2015 RDSO Approved Company) GST No.- 09AADCG0867H2ZH  
Mfg. of : All Types of Bridge Bearings, Expansion Joints, Drainage Spout, Bridge Rehabilitation & Steel Fabrication Etc.

Ref : GSIPL/DBL/DRG/25-26/300

July 30, 2025

To  
M/s Dhariwal Buildtech Limited

Subject: Submission of Drawings Strip Seal Expansion Joint for Approval

**Name of Project:** Up-gradation To 2 Lane With Paved Shoulders Of Pawlrang - Rulchawm Section Of Nh- 102b Of Aizawl - Imphal Economic Corridor From Existing Chainage Km 72.030 To Km 104.129 Including 2.459 Km Re-alignment Section From Tuivawl River To Rulchawm Connecting Km 48.150 Of Nh-6 [design Chainage Km 68.170 To Km 98.579] (Package-iii) In The State Of Mizoram Under Bharatmala Pariyojna On Epc Mode

Dear Sir,

With reference to the above-mentioned work, we are submitting the drawings Strip Seal Expansion Joint for your approval.

S. No.	Chainage	Particular	Drawing No.	Joint Length (RM)	Qty. (Nos.)	Quantity (RM)	Remarks
1	96+340	Strip Seal Expansion Joint	GISPL/DBL/EJ/25/07 - 245	12.30	2.00	24.60	
2	96+925	Strip Seal Expansion Joint	GISPL/DBL/EJ/25/07 - 245	15.00	2.00	30.00	
<b>Total</b>						<b>54.60</b>	

Thanks & Regards

For M/s Galvano Structures India Pvt. Ltd.



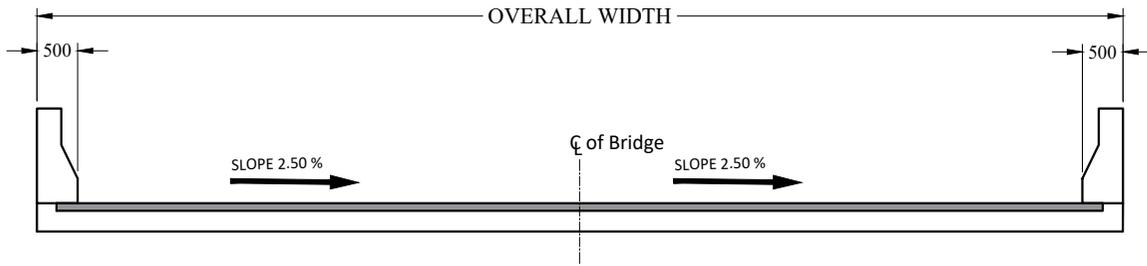
**Amit Singh**  
Design Engineer  
Mob.9034201052

Enclosed: - Drawing of Strip Seal Expansion Joint

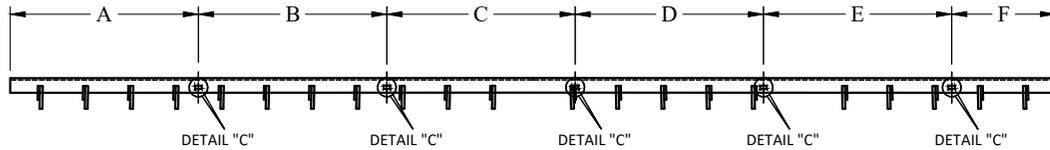


+91-8800916688, 9810037781 galvano.bearings@gmail.com  
www.galvanobearings.com D-14, Site-B, Surajpur Industrial Area, Greater Noida (U.P.) 201306

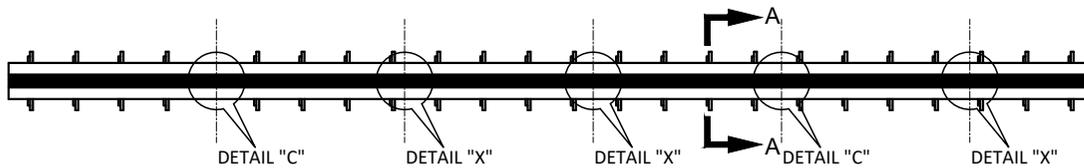
*Excellence and Innovation Build into Every Design*



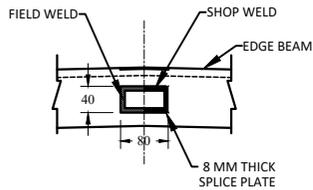
**DECK SLAB PROFILE AT EXPANSION JOINT LEVEL**



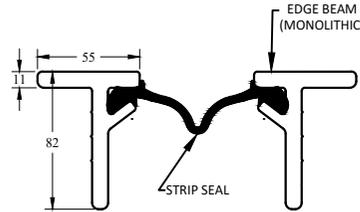
**SECTIONAL ELEVATION OF EXPANSION JOINT**



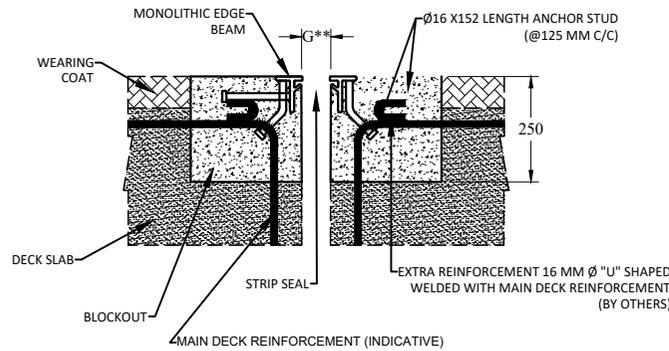
**TOP PLAN VIEW OF EXPANSION JOINT**



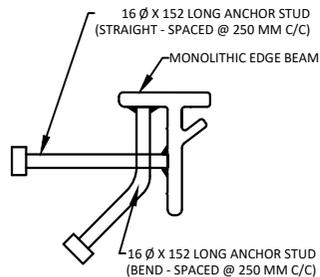
**SPlicing DETAIL AT "C"**



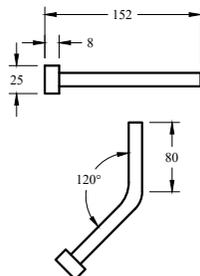
**EDGE BEAM DETAILS**



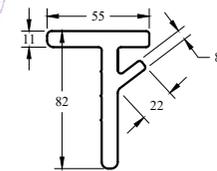
**SECTIONAL VIEW OF EXPANSION JOINT AT A - A**



**ANCHORAGE DETAIL**



**STUD DETAIL**



**EXTRUDED PROFILE FOR EXPANSION JOINT**

Cross Sectional Area of Edge Beam (Monolithic)  
 =  $(55 \times 11) + (71 \times 11) + (22 \times 8)$   
 = 1562 mm<sup>2</sup>

**NOTES :-**

**MATERIALS :**

- ALL DIMENSIONS ARE IN MM
- MILD STEEL USED FOR EDGE BEAM, ANCHOR STUDS, ANCHOR LOOP & ALL STEEL MATERIAL AS PER IS: 2062 OF GRADE B / ASTM A-36.
- FOR SUB ZERO CONDITION AS PER IS: 2062 GARDE C. ( AS PER LATEST SPECIFICATION).

MATERIAL PROPERTIES OF MILD STEEL			
SR NO.	PROPERTIES.	SPECIFICATION	PERMISSIBLE VALUE
1	ULTIMATE TENSILE STRENGTH	IS 2062	Min 410 Mpa
2	YIELD STRESS	IS 2062	Min 250 Mpa
3	ELONGATION	IS 2062	Min 23%

**TESTS OVER FINISHED PRODUCT:**

- ALL JOINTS OF A LOT SHALL BE VISUALLY INSPECTED FOR ABSENCE OF ANY DEFECTS IN SURFACE FINISH, SHAPE OR ANY OTHER DISCERNIBLE SUPERFICIAL DEFECTS.
- ALL JOINTS SHALL BE CHECKED FOR OVERALL DIMENSIONS AS PER MANUFACTURING TOLERANCE SPECIFIED.

**FINISHING :**

- ALL NONWORKING SURFACES WILL BE COATED WITH 2 COATS OF EPOXY PRIMER & ONE OR MORE COATS EACH OF EPOXY INTERMEDIATE AND FINISH PAINT. TOTAL DRY FILM THICKNESS > 150 MICRONS.
- PAINT / PRIMER & SHOT BLAST ON STEEL MATERIAL SHALL BE ACCORDING TO IRC SP 69:2011 CLAUSE 7.5.2.3 PROPER WELDING SIZE OF ANCHOR STUD SHALL BE 8 mm, 45°

**INSTALLATION AT SITE :-**

- "G\*\*" :- TO BE ADJUSTED DEPENDING ON THE SUBJECT TO A MINIMUM OPENING OF 25 mm AND MAXIMUM OPENING OF 80 mm FOR SEAL OF INSTALLATION. (AS PER RECOMMENDATION) OF THE CONSULTANT AT THE TIME

**IMPORTANT NOTES:**

- THE MANUFACTURER SHALL PROVIDE A COMPLETE REPORT OF TEST OF ANCHORAGE SYSTEM IN A RECOGNIZED LABORATORY TO DETERMINE OPTIMUM CONFIGURATION OF ANCHORAGE ASSEMBLY UNDER DYNAMIC LOADING IN SUPPORT OF THE EFFICACY OF THE ANCHORAGE, IN ACCORDANCE TO CLAUSE 8.2.1 OF IRC:SP:69-2011
- SEALING ELEMENT SHALL CONFORM TO THE PROVISIONS OF CLAUSE 7.5.1.3 OF IRC:SP:69-2013
- ALL STEEL SECTIONS SHALL BE PROTECTED AGAINST CORROSION BY METHOD, STATED IN CLAUSE 7.5.2.3 OF IRC:SP:69-2013
- THE EXPANSION JOINTS SHALL BE INSTALLED UNDER THOROUGH SUPERVISION OF THE MANUFACTURER'S/SUPPLIER'S ENGINEER, IN ORDER TO ENSURE THE QUALITY OF THE INSTALLATION SO THAT EXPANSION JOINTS FUNCTION AS INTENDED DURING THE ENTIRE LIFE SPAN, AS PER CLAUSE 9.1 OF IRC:SP:69-2013.
- MANUFACTURING, TESTING, ACCEPTANCE, HANDLING, TRANSPORTATION, STORAGE AND INSTALLATION SHALL BE CARRIED OUT AS PER THE PROVISIONS IRC:SP:69-2011 AND MORTH SPECIFICATIONS OF ROAD AND BRIDGE WORKS, 5TH REVISION, 2013.

TEST ON EXPANSION JOINT ACCORDING TO IRC SP:69-2011		
SR NO.	INSPECTION	SPECIFICATION
1	VISUAL INSPECTION	CLAUSE 6.3.2
2	DIMENSIONAL ANALYSIS	CLAUSE 7.5.1.1&2
3	DYE PENETRATION TEST	IRC SP 69:2011
4	PULLOUT TEST	CLAUSE 8.3.2.4
5	PONDING TEST	CLAUSE 8.3.2.2
6	CYCLIC MOTION TEST	CLAUSE 8.3.2.1
7	RAW MATERIAL TEST	CLAUSE 7.5.2

TEST S ON RUBBER STRIP		
SR NO.	PHYSICAL PROPERTIES TEST	STANDARD
1	HARDNESS	IS 3400 (2)
2	TENSILE STRENGTH	IS 3400 (1)
3	ELONGATION AT BREAK	IS 3400 (1)
4	COMPRESSION SET	IS 3400(10)
5	ACCELERATED AGEING	IS 3400(4)
6	ADHESION STRENGTH TEST	IS 3400(14)

TEST S ON RUBBER STRIP		
SR NO.	CHEMICAL PROPERTIES TEST	STANDARD
1	SPECIFIC GRAVITY	ASTM D - 297
2	ASH CONTENT	ASTM D 297
3	POLYMER IDENTIFICATION	IS 3400 (10)
4	POLYMER CONTENT	IS 3400 (14)

EXPANSION GAP MM	GAP OPENING MM		INSTALLATION TEMPERATURE				
	MIN	MAX	5°	15°	25°	35°	45°
G**	05	80	80	62	44	26	8

STRIP SEAL EXPANSION JOINTS										
Sr. No.	Location	Segment Length						Joint Length (RM)	Qty.	Total Length (RM)
		A	B	C	D	E	F			
1	96+340	-	3000	3150	3150	3000	-	12,300	2.0	24,600
2	96+925	1500	3000	3000	3000	3000	1500	15,000	2.0	30,000
								Total		54,600

PROJECT :- UP-GRADATION TO 2 LANE WITH PAVED SHOULDERS OF PAWL RANG - RULCHAWM SECTION OF NH- 102B OF AIZAWL - IMPHAL ECONOMIC CORRIDOR FROM EXISTING CHAINAGE KM 72.030 TO KM 104.129 INCLUDING 2.459 KM RE-ALIGNMENT SECTION FROM TUIVAWL RIVER TO TUIVAWL RIVER TO KM 98.579] (PACKAGE-III) IN THE STATE OF MIZORAM UNDER BHARATMALA PARIYOJNA ON EPC MODE"

CLIENT :- NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

CONTRACTOR :- M/S DHARIWAL BUILDTECH LIMITED

REF DWG NO. :- NHIDCL-AMAG-23044-MJB.-CH.-96+340-SUB-201  
 NHIDCL-AMAG-23044-MNB.-CH.-96+925-GAD-101

TITLE :- TECHNICAL NOTES & DETAILS OF EXPANSION JOINT SYSTEM

DRG. NO. :- GISPL/DBL/EJ/25/07 - 245 DATE:- 30-07-2025

SCALE : N.T.S. DRAWN BY: A.S. CHECKED BY: A.S. SHEET :- 1 OF 1

MANUFACTURER / DESIGNER

**GALVANO STRUCTURES INDIA PVT. LTD.**  
 An ISO 9001:2015 & RDSO Approved Company