1. All dimensions are in mm. Written dimensions are to be followed.
2. The design is in accordance with IRC and IS codes.
3. Grade of concrete:
   - Pile - M40
   - Pile Cap, Abutment, Dirtwall - M35
   - Seismic Arrester, Pedestal, Return Wall, Retaining Wall - M35
   - Deck Slab, Crash Barrier - M40
   - Approach Slab - M30
   - Girder - M30
4. Grade of reinforcement steel shall be Fe-500 D conforming to IS: 1786.
5. Clear cover to any reinforcement shall be
   a) Foundations and in contact with soil - 75mm
   b) At all other locations - 40mm
6. Pedestal thickness varies with thickness of bearing.
7. 600 TH. Filter media behind abutment shall be provided as per para 2.1 of Appendix - 6 of IRC.
8. In the event of any interference with existing structures, not exceeding one metre spacing in both directions.
9. Pitching for slope protection may be provided as per site requirement.
10. Filtration for slope protection is not required as per IRC.
11. All filter shall consist of sound gravel. Stone, slag, and burnt bricks or coarse sand.
12. Foundation, wall, and all other structures shall be provided with the necessary fire protection.
13. This drawing is indicative only. The final design shall be prepared by the concessionaire for execution.

Client: MINISTRY OF EXTERNAL AFFAIRS
Consultancy services for Topographical Survey, Design Review and Redesign of Highway Section as per NH Specification from Kolkata to Zorinpui (India-Myanmar Border) in Chin State of Myanmar.

Consultant: IRCON INFRASTRUCTURE & SERVICES LIMITED

Design Details of RCC Superstructure

Date: March 2013
R 1
Drawing No: MYANMAR/KALETWA-ZORINPUI/MNR02-J885/201
A2
Scale: As Shown
## DATA (NOMINAL) FOR DESIGN OF BEARING

<table>
<thead>
<tr>
<th>BEARING TYPE</th>
<th>SHOWN IN THIS</th>
<th>TYPE OF BEARING</th>
<th>MAXIMUM VERTICAL REACTION (kN)</th>
<th>MINIMUM VERTICAL REACTION (kN)</th>
<th>HORIZONTAL LOAD/ENG. (kN)</th>
<th>ORIATIONAL MOVEMENT (mm)</th>
<th>TRANVERSE MOVEMENT (mm)</th>
<th>TOLERANCE #</th>
<th>REMARKS</th>
<th>TYPICAL PIVOTAL SIZE</th>
<th>UNIT OF MEASURE</th>
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<td>mm</td>
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<td>mm</td>
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</table>

* EXPANSION / = CONTRACTION

### NOTES

1. All dimensions are in millimeters, unless otherwise specified.
2. For general notes and standard drawings refer DRG No.
3. Surface roughness requirements are to be provided at grader unit & below bearing as per bearing manufacturer.

### REFERENCE DRG NO.

1. MYANMAR/KALETWA-ZORINPU/04/01-4955/101
2. MYANMAR/KALETWA-ZORINPU/04/01-4955/201
3. MYANMAR/KALETWA-ZORINPU/04/01-4955/202
4. MYANMAR/KALETWA-ZORINPU/04/01-4955/203
5. MYANMAR/KALETWA-ZORINPU/04/01-4955/204

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### Layout Plan of Bearings

Scale: 1:1000

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**Client:**

**MINISTRY OF EXTERNAL AFFAIRS**

**NEW DELHI**

**Consultant:**

**IRCON INFRASTRUCTURE & SERVICES LIMITED**

**Detailed Project Report**

Consultancy services for Topographical Survey, Design Review and Redesign of Highway Section as per NH Specification from Kaletwa to Zorinpui (India-Myanmar Border) in Chin State of Myanmar.

**Details of Bearings**

Drawing No: MYANMAR/KALETWA-ZORINPU/ MNB002-8862/265

**Scale:** As Shown
NOTE:-

1. ALL DIMENSIONS ARE IN MM. WRITTEN DIMENSIONS ARE TO BE FOLLOWED.

2. THE DESIGN IS IN ACCORDANCE WITH IRC AND IS CODES.

3. GRADE OF CONCRETE:
   - PILE - M40
   - PILE CAP, ABUTMENT, DIRTWALL - M35
   - SEISMIC ARRESTOR, PEDESTAL, RETURN WALL, RETAINING WALL - M35
   - DECK SLAB, CRASH BARRIER - M40
   - APPROACH SLAB - M30

4. GRADE OF REINFORCEMENT STEEL SHALL BE Fe-500 D CONFORMING TO IS : 1786.

5. CLEAR COVER TO ANY REINFORCEMENT SHALL BE
   - FOUNDATIONS AND IN CONTACT WITH SOIL - 75MM
   - AT ALL OTHER LOCATIONS - 40MM

6. PEDESTAL THICKNESS VARIES WITH THICKNESS OF BEARING.

7. 600 TH. FILTER MEDIA BEHIND ABUTMENT SHALL BE PROVIDED AS PER PARA 2.1 OF APPENDIX - 6 OF IRC:

8. 100 DIA WEEP HOLES IN ABUTMENTS & RETURN WALLS NOT EXCEEDING ONE METRE SPACING IN BOTH DIRECTIONS SHALL BE PROVIDED.

9. BACK FILLING SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX : 6 OF IRC : 78-2014

10. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH FINAL HIGHWAY PLAN AND PROFILE DRAWINGS, ALL LEVELS GIVEN IN DRAWING SHALL BE VERIFIED BEFORE EXECUTION AT SITE.

11. FOR SUPERSTRUCTURE, WEARING COAT, EXPANSION JOINT, & DRAINAGE SPOUT REFER STANDARD MOST DRG.

12. CONSIDERATIONS FOR DESIGN: SEISMIC ZONE - V, MAY BE CHECKED/CONFIRMED WITH LOCAL AUTHORITY BEFORE EXECUTION AND IMPORTANCE FACTOR - 1.0

13. PITCHING FOR SLOPE PROTECTION MAY BE PROVIDED AS PER SITE REQUIREMENT

14. NO STONE WEIGHT LESS THAN 40 kg SHALL BE USED. WHERE THE REQUIRED SIZE STONES ARE NOT ECONOMICALLY AVAILABLE, CEMENT MIXED WITH FOREIGN MATERIALS MAY BE USED TO ENSURE STONE SUBJECT TO POOR WEATHERING. CEMENT CONCRETE BLOCKS WILL BE PREFERRED WHEREVER PRACTICAL.

15. FILTER SHALL CONSIST OF SAND, GRAVEL, AND BRICK RAISED ON A MOISTURIZED BASE.


17. FOUNDATION BEARING SHALL BE PROVIDED UNDER EACH FOUNDATIONAL BEARING OF STRUCTURE.

18. THIS DRAWING IS INDICATIVE ONLY. THE DETAIL DESIGN/DRAWING SHALL BE PREPARED BY CONCESSION AIRE FOR EXECUTION.

Client: MINISTRY OF EXTERNAL AFFAIRS

Consultancy services for Topographical Survey, Design Review and Redesign of Highway Section as per NH Specification from Kalewa to Zorinpui (India-Myanmar Border) in Chin State of Myanmar.

DetaiL PROJECT REPORT

Drawing No:- MYANMAR/KALETWA-ZORINPUI/MNB/07+340/201

Revision - H 1

Scale: As Shown

Release Date: March 2013

Bill No: 01

Checked by: Vikas Gupta

Approved by: C.K. Nayar

IRCON INFRASTRUCTURE & SERVICES LIMITED
1. All dimensions are in mm and levels in metres, unless otherwise specified.
2. The drawing shall not be scaled off, only written dimensions shall be followed.
3. All reinforcing steel shall be off HYSD bars (grade designation S 500) conforming to IS 1786.
4. Minimum clear cover to reinforcement including stirrups shall be 40mm.
5. The anchorage length & lap lengths of bars shall be as per clause 304 of IRC: 21.
6. 200 @ 100 bars shall be provided at 100 C/C between two tiers of longitudinal bars of girders.
7. Two layers of mesh reinforcement type 'A' one at 20mm and other at 75mm shall be provided from the bottom of girder.

**Reference Drg No.:**
1. MYANMAR/KALETWA-ZORINPUI/MNB/07+340/102
2. MYANMAR/KALETWA-ZORINPUI/MNB/07+340/201
3. MYANMAR/KALETWA-ZORINPUI/MNB/07+340/203
4. MYANMAR/KALETWA-ZORINPUI/MNB/07+340/204
5. MYANMAR/KALETWA-ZORINPUI/MNB/07+340/205
6. MYANMAR/KALETWA-ZORINPUI/MNB/07+340/206
NOTES:
1. ALL DIMENSIONS ARE IN mm AND LEVELS IN METER UNLESS OTHERWISE MENTIONED.
2. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. GRADE OF CONCRETE FOR CAST-IN-SITU DECK SLAB SHALL BE M20.
4. ALL REINFORCEMENT BARS SHALL BE M.Y.S.D.
   BARS (GRADE DESIGNATION Fa 500) CONFORMING TO IS 1706, WITH LATEST AMENDMENT.
5. THE ANCHORAGE LENGTH & LAP LENGTH OF BARS SHALL BE AS PER CLAUSE 304 OF RC:21
6. MINIMUM CLEAR COVER FOR DECK SLAB SHALL BE 40mm
7. R.C.C. CROSS GIRDER AND 220mm THICK DECK SLAB SHALL BE CAST-IN-SITU.

REFERENCE DRG NO.:
1. MYANMAR/KALETWA-ZORINPU/WB/07-340/001
2. MYANMAR/KALETWA-ZORINPU/WB/07-340/201
3. MYANMAR/KALETWA-ZORINPU/WB/07-340/202
4. MYANMAR/KALETWA-ZORINPU/WB/07-340/203
5. MYANMAR/KALETWA-ZORINPU/WB/07-340/205
6. MYANMAR/KALETWA-ZORINPU/WB/07-340/206

Client: MINISTRY OF EXTERNAL AFFAIRS NEW DELHI
Consultancy services for Topographical Survey, Design Review and Redesign of Highway Section as per NH Specification from Kalewta to Zorinpui (India- Myanmar Border) in Chin State of Myanmar.

REINFORCEMENT DETAILS OF DECK SLAB & DIAPHRAGM

Drawing No.- MYANMAR/KALETWA-ZORINPU/ MNB/07-340/284

Revision - 8 1
Date  - March 2013
Scale  - As Shown

IRCON INFRASTRUCTURE & SERVICES LIMITED

Consultant:
DATA (NOMINAL) FOR DESIGN OF BEARING

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<th>BEARING TYPE</th>
<th>DRAWN THRU</th>
<th>TYPE OF BEARING</th>
<th>MAXIMUM VERTICAL REACTION (kN)</th>
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<th>LONGITUDINAL MOVEMENT (mm)</th>
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NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
2. FOR GENERAL NOTES AND STANDARD DRAWINGS REFER ORG NO.
3. SURFACE MACHINING REQUIREMENTS ARE TO BE PROVIDED AS PER bearing MANUFACTURERS.

REFERENCE BEAR NO:
1. MYANMAR/KALETWA-ZORINPUI/MNB/07/340/103
2. MYANMAR/KALETWA-ZORINPUI/MNB/07/340/06
3. MYANMAR/KALETWA-ZORINPUI/MNB/07/340/04
4. MYANMAR/KALETWA-ZORINPUI/MNB/07/340/02
5. MYANMAR/KALETWA-ZORINPUI/MNB/07/340/01

Client: MINISTRY OF EXTERNAL AFFAIRS NEW DELHI
Consultancy services for Topographical Survey, Design Review and Redesign of Highway Section as per NH Specification from Kaletwa to Zorinpui (India-Myanmar Border) in Chin State of Myanmar.

Client: IRCON INFRASTRUCTURE & SERVICES LIMITED

Everything As Shown