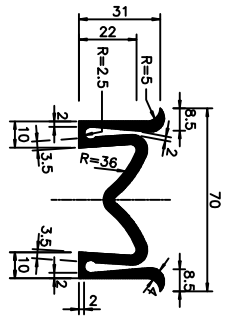
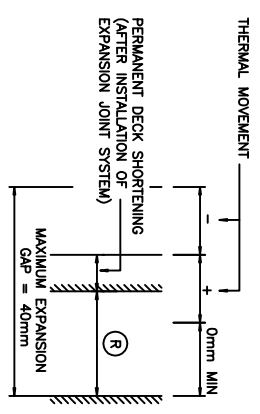


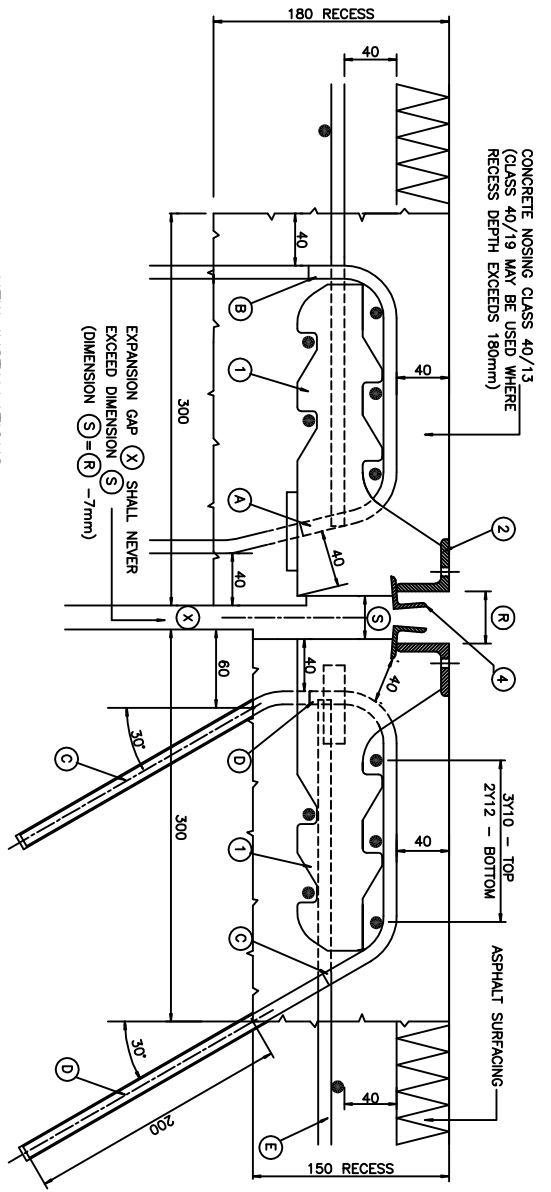
DETAIL OF "BSP" 40 PROFILE AND ANCHORAGE
SCALE 1:1



DETAIL OF SEALING STRIP
SCALE 1:1



PERMISSIBLE MOVEMENT RANGE OF JOINT
(THE MOVEMENT RANGE OF THE JOINT, MEASURED AT THE DIMENSION (R) IS 20 TO 60mm)
SCALE 1:1



NEW INSTALLATIONS
DETAIL AT TRAFFIC LANES AND SHOULDERS
SCALE 1:2

EXISTING JOINT REPLACEMENT
DETAIL AT TRAFFIC LANES AND SHOULDERS
SCALE 1:2

LEGEND

- ① BSP ANCHORAGES: 10 mm PLATE PROFILE CUT AS DETAILED AND WELDED TO ITEM ② AT 200 CENTRES.
- ② "BSP" 40 PROFILE: 40 x 40 x 6 ANGLE.
- ③ 60 x 40 x 8 mm PLATE WELDED TO ITEM ①
- ④ 2/16 x 16 x 60 SQUARE BARS OR 2/20 mm ROUND BARS - 60mm LONG WELDED TO ITEM ①
- ⑤ 25 x 25 x 3 mm ANGLE WELDED TO ITEMS ① AND ②
- ⑥ 7mm DIA BREAKER HOLES AT 100mm CENTRES FOR FULL LENGTH OF EXPANSION
- ⑦ HOLES TO BE EQUIDISTANT ABOUT ANCHORS.
- ⑧ Y10 AT 200mm CENTRES OR R12 AT 150mm CENTRES BENT TO FORM STIRRUPS DURING INSTALLATION OF EXPANSION JOINT SYSTEM.
- ⑨ Y10 ANCHORS GROUTED INTO POSITION DURING INSTALLATION OF EXPANSION JOINT SYSTEM.
- ⑩ EXISTING REINFORCEMENT PROTRUDING INTO RECESS OF CONCRETE NOSINGS TO BE RETAINED.
- ⑪ EXPANSION GAP WIDTH AT TIME OF INSTALLATION OF EXPANSION JOINT SYSTEM
- ⑫ NOTE : ALL RILET WELDS TO BE CONTINUOUS UNLESS OTHERWISE STATED.

NOTES

- 1. GENERAL
- 1.1 THIS DRAWING DETAILS THE EXPANSION JOINT SYSTEM "BSP" 40 CATERING FOR A TOTAL MOVEMENT OF 40 mm.
- 1.2 THE JOINT CONFIGURATION WILL BE ADJUSTED TO MATCH THE "AS CONSTRUCTED" PROFILE OF THE PARAPETS, SKEW ANGLE AND BRIDGE DECK PROFILE FOR EACH INDIVIDUAL BRIDGE.
- 1.3 FOR EXISTING WORK REQUIRING JOINT REPLACEMENT THE POSITIONS OF THE BENDS IN THE EXPANSION JOINT SYSTEM WILL MATCH THE JOINT LAYOUT AND BRIDGE DECK PROFILE OF THE INDIVIDUAL BRIDGES. IN NO CASE WILL THE RADII OF A BEND BE LESS THAN 100 mm.
- 1.4 COMBINED VERTICAL AND HORIZONTAL BENDS WILL BE AVOIDED BY PROVIDING DEEPER RECESSES INTO PARAPETS AND/OR KEMB FACES TO ACCOMMODATE THE BENT-UP SECTIONS OF THE JOINT PROFILES.
- 1.5 THE EXPANSION JOINT SYSTEM RELIES ON REINFORCEMENT PROTRUDING INTO THE RECESSES OF THE CONCRETE NOSINGS

2. DESIGN LOADINGS

- 2.1 THE EXPANSION JOINT SYSTEM (EXCLUDING SECTIONS EXTENDING OVER SIDEWALKS AND/OR PAVED MEDIANS) HAS BEEN DESIGNED TO ACCOMMODATE WITH THE BRITISH DEFENDANT DEPARTMENT OF TRANSPORT STANDARD BS 5794 TO WITHSTAND THE COMBINATION OF THE FOLLOWING NOMINAL LOADS:
 - 2.1.1 VERTICAL NOMINAL LOAD COMPRISING EITHER A SINGLE WHEEL LOAD OF 100 kN OR A 200 kN AXLE WITH A 1.8m TRACK. THE LOAD FROM EACH WHEEL HAS BEEN UNIFORMLY DISTRIBUTED OVER A CIRCULAR AREA ASSUMING AN EFFECTIVE PRESSURE OF 1.1 N/mm² (IE. 340 mm DIAMETER) APPLIED SEPARATELY TO EITHER EDGE OF THE JOINT FOR THE MOST SEVERE EFFECT.
 - 2.1.2 HORIZONTAL A NOMINAL TRAFFIC LOAD TAKEN AS A UNIFORMLY DISTRIBUTED HORIZONTAL LOAD OF 80kN/m RUN OF JOINT, ACTING AT RIGHT ANGLES TO THE JOINT AT CARRIAGEWAY LEVEL.
 - 2.1.3 DESIGN LOAD EFFECTS THE FOLLOWING FACTORS APPLY:
 - WHEEL LOADS HORIZONTAL LOADS
 - Y_{FL} X Y_{F3} Y_{FL} X Y_{F3}
 - ULTIMATE LIMIT STATE: 1.50 x 1.1 = 1.65 1.25 x 1.0 = 1.25
 - SERVICEABILITY LIMIT STATE: 1.20 x 1.0 = 1.2 1.00 x 1.0 = 1.0

- 2.2 DESIGN FOR FATIGUE COMPUTES WITH BS 5400 PART 10 AS IMPLEMENTED BY THE BRITISH DEPARTMENT OF TRANSPORT STANDARD BS 5794. AN ADDITIONAL HORIZONTAL LOAD EQUAL TO 20% OF THE VERTICAL LOAD HAS BEEN APPLIED TO THE JOINT FOR FATIGUE ANALYSIS.

NUMBER OF MILLIONS OF VEHICLES (< 30 kN)	FATIGUE LIFE (YEARS)
2.0	40
1.5	40
1.0	>60
0.5	>80

- 2.3 EXPANSION UNITS EXTENDING OVER SIDEWALKS AND/OR RAISED MEDIANS HAVE BEEN DESIGNED TO ACCOMMODATE A STATIC VERTICAL WHEEL LOAD FOR 45 kN DISTRIBUTED OVER A CIRCULAR CONTACT AREA OF 0.1 SQUARE METRES.

3. MATERIALS

- 3.1 MATERIALS
- 3.1.1 STRUCTURAL STEEL (PLATES AND ANGLES) GRADE 300 W TO SANS 1431.
- 3.1.2 EPDM STRIP SEAL : TO ASTM D5973
- 3.2 MANUFACTURING
- 3.2.1 WELDING: IN ACCORDANCE WITH THE REQUIREMENTS OF BS 5135 (THE DESIGN LOAD EFFECTS DO NOT EXCEED 75% OF THE CAPACITY OF THE SPECIFIED WELDS).
- 3.2.2 GALVANISING: IN ACCORDANCE WITH SANS 121.
- 3.2.3 THE EXPANSION JOINT UNITS WILL BE MANUFACTURED TO AN APPROVED "JOINT PLAN" DRAWN UP TO SUIT THE BRIDGE STRUCTURE AND THE PROPOSED CONSTRUCTION SEQUENCE. GENERALLY THE JOINT SECTIONS SHOULD BE IN SUITABLE LENGTHS TO FACILITATE TRANSPORT AND HANDLING. THE JOINT LENGTHS ARE TO BE INSTALLED AS PER THE PLAN AND COUPLED AS DETAILED ON DRAWING No DZ/3

4. CORROSION PROTECTION

- 4.1 STRUCTURAL STEEL MEMBERS ARE HOT-DIP GALVANISED AFTER COMPLETION OF WELDING AND DRILLING OF HOLES IN ACCORDANCE WITH SANS 121 TO THE THICKNESSES INDICATED:
 - 4.1.1 STANDARD TREATMENT A HEAVY DUTY GALVANISED COATING NOT LESS THAN 105 MICRON THICKNESS.
 - 4.1.2 EXTREME CORROSIVE CONDITIONS IN ADDITION TO 4.1.1 ABOVE WHEN SPECIFIED ALL AREAS LOCATED WITHIN 50mm OF THE EXPOSED STEEL OR THE CONCRETE WILL BE PREPARED AND COATED AS FOLLOWS:
 - PREPARATION
 - ALL SURFACES TO BE PAINTED WILL BE VERY THOROUGHLY DEGREASED BY USING "TRASCORP AOUSSOUL" OR EQUAL APPROVED WATER DEGREASER APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, FOLLOWED BY WASHING WITH CLEAN PORTABLE WATER. IF THE SURFACE IS NOT WATER BREAK FREE THE CLEANING PROCESS WILL BE REPEATED.
 - PRIMING
 - A TWO COMPONENT EPOXY PRIMER DESIGNED FOR APPLICATION TO GALVANISED STEEL "PLASCON GWS" OR EQUAL APPROVED PRIMER, TO DRY FILM THICKNESS OF 80±20 MICRONS WILL BE APPLIED.
 - TOP COAT
 - ONE COAT OF TWO COMPONENT ACRYLIC MODIFIED ALIPHATIC POLYURETHANE "TRASCORP GPC" OR EQUAL APPROVED PRIMER WILL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO DRY FILM THICKNESS OF 35±10 MICRONS. THE COLOUR OF THE TOP COAT WILL BE 020 LIGHT GREY TO SANS 1091.

ALL DAMAGE TO CORROSION PROTECTION LOCATED WITHIN 50mm OF THE EXPOSED STEEL AND /OR EXPOSED CONCRETE FACES WILL BE REPAIRED WITH ZINCPAX TO A DRY FILM THICKNESS OF 100 MICRONS. WHERE THE REPAIR OVERLAPS THE GALVANIZING, THE COAT MUST BE APPLIED WITH 50 GRM ABRASIVE PAPER AND CLEANED THOROUGHLY WITH CLEAN WASHED IRON CLEANER. THE REPAIR MUST NOT EXTEND BEYOND THIS PREPARED AREA.

5. GUARANTEES

GUARANTEES AS PER CONTRACT AGREEMENT, WHERE REQUIRED, GUARANTEES FOR THE PRODUCT MUST BE AGREED BETWEEN THE CLIENT AND THE CERTIFICATE HOLDER.

6. MANUFACTURERS

MANUFACTURED UNDER LICENSE TO BRIDGE SEALS AND PRODUCTS CC BY
 MANUFACTURER
 DSC ZENDON CC
 42 MICHELSON ROAD, ANDERBOLT, BOKSBURG
 P.O. BOX 6221, DUNSWART, 1508, GAUTENG.
 TEL No (011) 894-1129, FAX No (011) 894-2612

7. APPROVED INSTALLERS

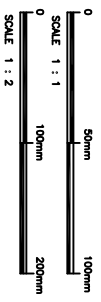
MWUWALANGA BRIDGE REPAIRS & SEALS CC - TEL No (011) 894-1129
 DSC ZENDON CC - TEL No (011) 894-1129

BRIDGE EXPANSION JOINT	
DATE OF INSTALLATION	Nov. 2001
TYPE	Thomajoint
REF. No	M915
BRIDGE No	

DSC ZENDON c.c.
 TEL No: (011) 894-1129
 BSP 40
 Certificate 2004/308
AGREEMENT
 SOUTH AFRICA

IDENTIFICATION PLATE TO BE CAST INTO BALUSTRADE AT EVERY JOINT (OPTIONAL)
SCALE 1:10

DZ/6	THOMAJOINT® - GENERAL DETAILS
DZ/5	MAURER D80.C (FP) - GENERAL DETAILS
DZ/4	DETAILS OF BOLTED AND SITE WELDED CONNECTIONS
DZ/3	DETAILS AND INSTALLATION OF COVER PLATES
DZ/2	"BSP" 40 - GENERAL DETAILS
DZ/1	"BSP" 90 - GENERAL DETAILS



REV	DATE	AS PER FINAL AGREEMENT CERTIFICATION AMENDMENTS
1	01/07/2004	

SNA CIVIL AND DEVELOPMENT ENGINEERS (PTY) LTD.
 286 ALBERTUS STREET
 LA MONTAGNE
 LYNNWOOD RIDGE
 0040
 P.O. BOX 7277
 TEL: (011) 842 0000
 FAX: (011) 803 4429
 E-MAIL: info@sna.co.za

DSC ZENDON CC
 42 MICHELSON ROAD
 ANDERBOLT, BOKSBURG,
 P.O. BOX 6221
 DUNSWART 1508
 TEL No: (011) 894-1129
 FAX No: (011) 894-2612
 E-MAIL: info@zendon.co.za

BRIDGE EXPANSION JOINTS
 FOR MOVEMENTS → 40mm
 "BSP" 40 - GENERAL DETAILS

SCALE:	AS SHOWN
PLAN No	DZ/2