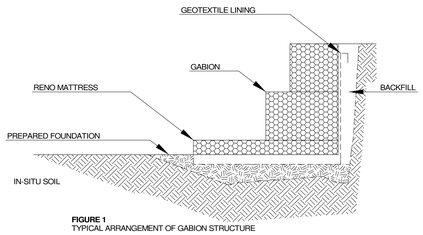

FIGURE 1
TYPICAL ARRANGEMENT OF GABION STRUCTURE

NOTES: FOUNDATION PREPERATION

1. THE FOUNDATIONS SHOULD BE LEVEL AND GRADED TO THE ELEVATIONS AS SPECIFIED BY THE ENGINEER
2. THE FOUNDATIONS SHOULD BE SMOOTH AND FREE FROM SURFACE IRREGULARITIES LOOSE MATERIAL AND VEGETATION.
3. THE COMPACTION OF THE GABION FOUNDATIONS SHOULD BE AT LEAST 90% OF THE MOD AASHTO DENSITY.
4. CAVITIES BETWEEN ROCK PROTRUSIONS IN FOUNDATIONS SHOULD BE FILLED AND LEVELED USING 15 MPa CONCRETE
5. A CONCRETE LEVELLING PAD AND DOWEL ANCHORS SHOULD BE USED WHEN FOUNDING ON ROCK.

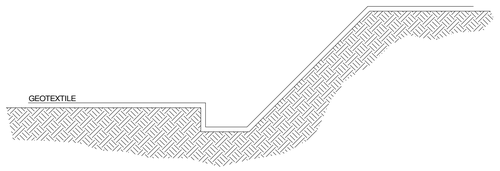

FIGURE 2

GEOTEXTILE PLACING

NOTES: GEOTEXTILE PLACING

1. FILTER FABRIC SHOULD BE PLACED AT ALL SOIL-GABION INTERFACES TO PREVENT LOSS OF FINES FROM THE SOIL BEHIND THE GABION.
2. THE FILTER FABRIC SHALL BE A GRADE 3 GEOTEXTILE ACCORDING TO THE SPECIFICATIONS STIPULATED UNDER CLAUSE 2104 (a)(iii) OF THE COLTO STANDARD.
3. THE GEOTEXTILE SHOULD BE PLACED IN STRIPS ON THE PREPARED FOUNDATION (FIGURE 2) WITH A MINIMUM OVERLAP OF 300mm AT THE JOINTS AND SHOULD BE PROPERLY FASTENED TO PREVENT ANY MOVEMENT OR SLIPPING WHEN THE GABIONS ARE BEING PLACED OR PACKED.

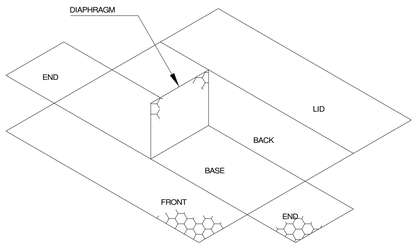

FIGURE 3

UNFOLDING OF UNITS FOR ASSEMBLY PURPOPSES

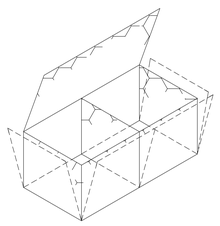

FIGURE 4

FOLDING OF UNITS FOR ASSEMBLY PURPOSES

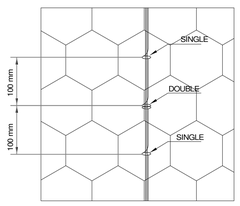

FIGURE 5

LACING OF UNITS DURING ASSEMBLY

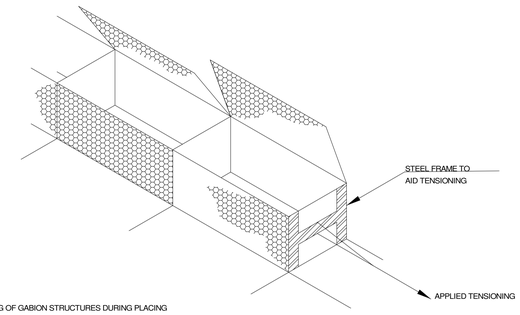

FIGURE 6

TENSIONING OF GABION STRUCTURES DURING PLACING

NOTES: ASSEMBLY

1. UNFOLD EACH INDIVIDUAL UNIT ON A HARD FLAT SURFACE AND PRESS THE GABION OUT TO ITS ORIGINAL SHAPE. (FIGURE 3)
2. LIFT THE FRONT, BACK AND END PANELS INTO AN UPRIGHT POSITION TO FORM AN OPEN BOX (FIGURE 4)
3. FASTENED THE PANELS TOGETHER WITH WIRE BY FIRMLY WRAPPING THE SELVEDGE WIRE AROUND THE SELVEDGE OR EDGE OF INTERSECTING PANELS. THE INNER DIAGRAMS SHALL BE LIFTED VERTICALLY AND SECURED IN THE SAME MANNER
4. LACE THE EDGES OF PANELS TO BE JOINED USING THE DOUBLE AND SINGLE LOOP TECHNIQUE ALONG THE WIRE MESH OPENINGS WITH 100mm BETWEEN LOOPS. (FIGURE 5)
5. FOR TYING EDGES, PIECES OF WIRE APPROXIMATELY 1,5 TIMES THE LENGTH OF THE EDGES SHOULD BE USED. THE MAXIMUM LENGTH OF EDGE TO BE JOINED SHOULD NOT EXCEED 1m LONGER EDGES SHOULD BE JOINED BY SEVERAL LENGTHS OF WIRES.

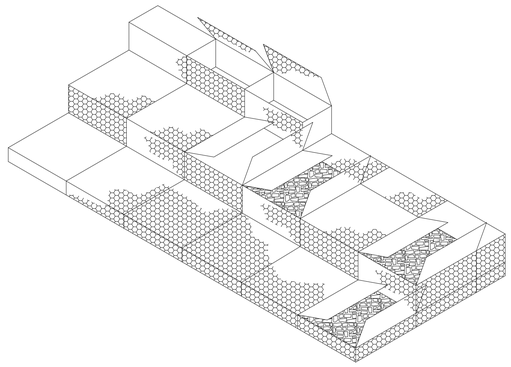

FIGURE 7

PLACING OF UNITS IN GABION STRUCTURE

NOTES: PLACING THE UNITS

1. PLACE A NUMBER OF INDIVIDUALLY LACED UNITS SIDE BY SIDE IN THE REQUIRED POSITION TAKING CARE NOT TO DAMAGE THE GEOTEXTILE. THE ALIGNMENT OF THE UNITS SHOULD BE
2. LACE SMALL GROUPS OF GABION BOXES TOGETHER AS COMPLETE SECTIONS BEFORE JOINING TO DONE USING STANDARD ENGINEERING METHODS, I.E. FISH LINES, DUMPY LEVELS AND FORMWORK. THE REST OF THE STRUCTURE, USING EXACTLY THE SAME METHOD AS FOR ASSEMBLING SINGLE BOXES. PLACE THEM FRONT TO FRONT AND BACK TO BACK, SO THAT PAIRS OF FACING LIDS CAN LATER BE LACED DOWN TOGETHER.
3. LACE THE INDIVIDUAL UNITS TOGETHER IN A SIMILAR MANNER AS WHEN LACING UP THE EDGE OF EACH UNIT AS DESCRIBED ABOVE
4. THE CORNERS OF THE INDIVIDUAL UNITS SHOULD BE FIRMLY WIRED TOGETHER TO FORM A
5. TENSION THE UNITS LONGITUDINALLY USING A FENCING WIRE TENSIONER. THE GABIONS, UNIFORM SURFACE, SHOULD REMAIN IN TENSION DURING FILLING TO ENSURE GOOD ALIGNMENT AND FINISH. (FIGURE 6)

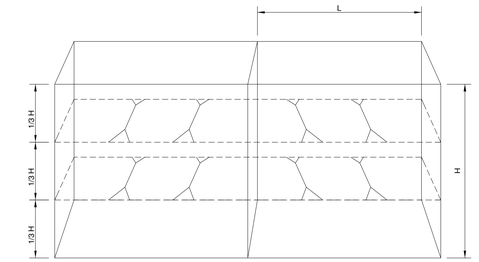

FIGURE 9

BRACING OF UNITS

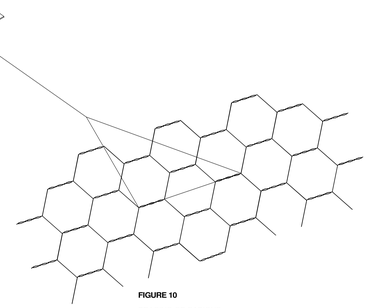

FIGURE 10

BRACING OF GABIONS

NOTES: GABION FILLING AND BRACING

1. ONLY USE STONE AS SPECIFIED IN TABLE 6 OF DRAWING 558/VV/17Td TAKING PARTICULAR CARE IN PACKING THE VISIBLE FACES TO ENSURE A EVEN-FACED FINISH.
2. FILL EACH GABION CELL TO 1/3 H. INSTALL BRACING WIRES AT THIS HEIGHT (FIGURE 9) A MINIMUM OF FOUR BRACING WIRES PER SQUARE METRE OF GABION FRONT FACE SHOULD BE USED. BRACE EACH GABION OF THE UNIT BEFORE PROCEEDING TO FILL THE GABIONS FURTHER
3. USE APPROXIMATELY 2,3 - 2,7m OF BINDING WIRE PER BRACE FOR A 1M GABION AND 3,3 - 3,7m FOR A 1,5m GABION. THREAD THE WIRE AROUND TWO MESH OPENINGS ON THE FRONT AND THE REAR FACES OF THE BASKET AND TWIST THE ENDS TOGETHER IN THE MIDDLE. TENSION THE BRACE BY WINDLASSING WITH A PLIER HANDLE UNTIL THE FRONT FACE IS IN LINE. (FIGURE 10)
4. FILL THE GABIONS UP TO 2/3 H. AGAIN BRACE ALL THE GABIONS IN A SIMILAR MANNER
5. FILL THE GABIONS TO THE TOP. EACH GABION SHOULD BE OVERFILLED BY APPROXIMATELY 25 - 50mm TO ALLOW FOR NATURAL SETTLEMENT.

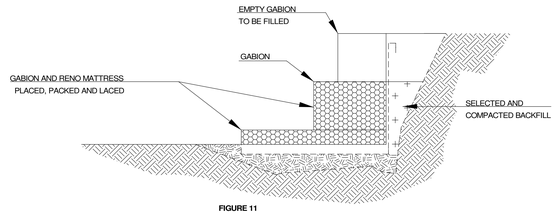

FIGURE 11

BACKFILLING BEHIND GABION STRUCTURES

NOTES: BACKFILLING

1. COMPACTION OF THE BACKFILL MUST BE DONE SIMULTANEOUSLY WITH EVERY ROW OF GABIONS LAID IN MAXIMUM 200mm LAYERS (FIGURE 11). CARE MUST BE TAKEN NOT TO DAMAGE THE GEOTEXTILE DURING PLACING AND COMPACTING OF THE BACKFILL. ONLY SMALL HAND HELD COMPACTION EQUIPMENT MAY BE USED ADJACENT TO THE GABION BASKET UP TO A DISTANCE OF 1m

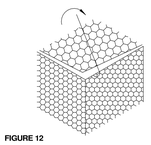

FIGURE 12

CLOSING OF THE GABION UNITS

NOTES: CLOSING

1. FOLD THE LID DOWN AND STRETCH IT INTO POSITION WITH A SUITABLE TOOL. LACE THE DOWN THE LID FRONT AND ENDS AS WELL AS THE TOP IF THE DIAPHRAGM AS DESCRIBED ABOVE. (FIGURE 12).

Rev	Date	Description	Checked	Signed
A	28-09-2023	ISSUED FOR APPROVAL	BM	

AMMENDMENTS

AS BUILT

Supervising Engineer _____ Date _____

Supervising Authority _____

Continued from :		Designed by :	T. Mkhize
Continued on :		Checked by :	B. Manyela
Cross Section No :		Drawn by :	S. Maphumulo
Longitudinal Section No :		Checked by :	T. Mkhize
Survey Plan No :		Date of approval :	

transport
Department:
Transport
Province of KwaZulu-Natal

Designed by :

IBHONGO CONSULTING

Director _____ Date _____

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Tel: (031) 324 2200
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email:info@ibhongo.co.za

Structural Design: Chief Engineer

Head: Transport

PROVINCIAL ROAD P52/3 - NONGOMA TO PONGOLA
S 27 39 47.18 E 31 43 12.14

PROPOSED MKHUZE RIVER BRIDGE

GABION DETAILS - SHEET 1 OF 2

Staked km distance	27.400
Scale :	1 : 35
Sheet :	50
of :	51
Ibhongo Dwg No:	2203-SL-005
DOT Dwg No:	3801-50

3801-50