

FIGURE 1

FIGURE 2

FIGURE 3

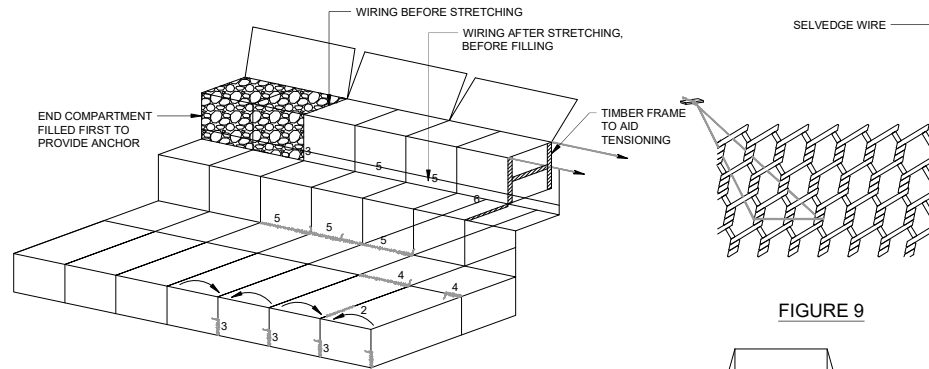


FIGURE 5

FIGURE 9

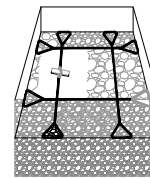


FIGURE 10

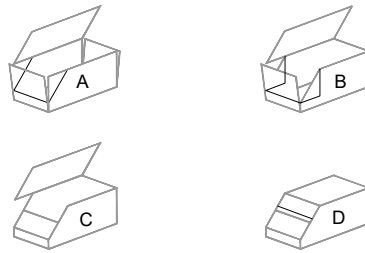


FIGURE 6

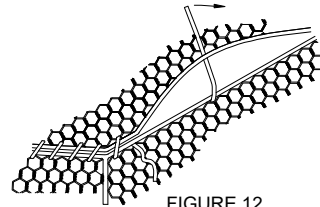


FIGURE 12

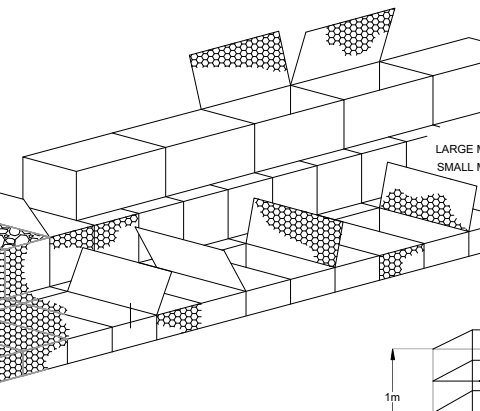


FIGURE 4

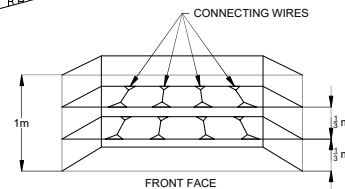


FIGURE 8

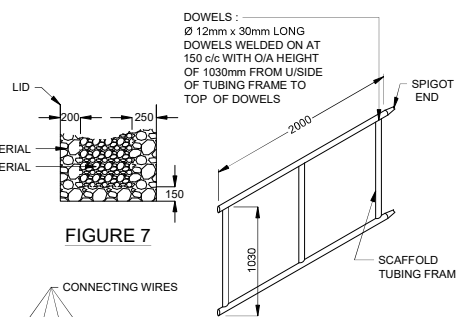


FIGURE 7

FIGURE 11

ASSEMBLY :

- UNFOLD EACH GABION ON A HARD FLAT SURFACE. STRETCH IT OUT AND STAMP OUT ANY KINKS. MAKE SURE THAT ALL CREASES ARE IN THE CORRECT POSITIONS FOR FORMING THE BOX - ONE AT THE EDGE PANEL AND EACH DIAPHRAGM (FIGURE 1)
- FOLD THE SIDE AND END PANELS INTO THE UPRIGHT POSITION TO FORM A RECTANGULAR BOX JOIN THE TOP CORNERS OF THE BOX TOGETHER WITH THE THICK SELVEDGE WIRE STICKING OUT FROM THE CORNERS OF EACH PANEL. THIS ENSURES THAT THE TOPS OF ALL FOUR SIDES OF THE BOX ARE LEVEL (FIGURE 2)
- SECURING THE BINDING WIRE AROUND THE TOP SELVEDGES OF THE PANELS TO BE JOINED TOGETHER, LACE THE WIRE AROUND THE TWO SELVEDGES WITH SINGLE LOOPS AND DOUBLE LOOPS IN TURN AT 100mm INTERVALS (FIGURE 3). FINALLY, FASTEN THE WIRE SECURELY AT THE BOTTOM CORNER SELVEDGES AND POKE THE LOOSE END INSIDE THE GABION BOX. THEN LIFT THE DIAPHRAGMS INTO THE VERTICAL POSITION AND WIRE THEM UP TO THE SIDE PANELS IN EXACTLY THE SAME WAY. THE TIGHTNESS OF THE MESH AND WIRING IS ESSENTIAL AT ALL TIMES.
- IT IS GOOD CONSTRUCTION PRACTICE TO LACE SMALL GROUPS OF GABION BOXES TOGETHER AS COMPLETE SECTIONS BEFORE JOINING THEM TO 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 WIRED DOWN.

FORMING THE STRUCTURE :

- THE SURFACE ON WHICH THE GABION BOXES ARE TO BE CONSTRUCTED, SHALL BE LEVELLED TO THE SPECIFIED DEPTH SO AS TO PRESENT AN EVEN SURFACE. CAVITIES BETWEEN HARD PROTRUSIONS SHALL BE FILLED WITH MATERIAL SIMILAR TO THAT BEING USED FOR FILLING THE GABIONS.
- ONLY ASSEMBLED BOXES ARE TO BE CONSTRUCTED, SHALL BE POSITIONED IN THE STRUCTURE. THE SIDE OR END, FROM WHICH WORK IS TO PROCEED, SHALL BE SECURELY LACED TO COMPLETED WORK AT ALL CORNERS AND DIAPHRAGM POINTS (FIGURE 5), OR ANCHORED BY RODS DRIVEN INTO THE GROUND AT THESE POSITIONS. THE RODS MUST BE SECURED AND REACH AT LEAST TO THE TOP OF THE GABION BOX.
- STRETCH THE OPPOSITE SIDE OF THE BOX OR SECTION BY INSERTING BARS INTO THE BOTTOM CORNERS AND LEVERING THEM FORWARDS BY MEANS OF A WIRE STRAINER OR WINCH. THE TOP AND BOTTOM ARE KEPT STRETCHED IN THIS WAY UNTIL THE GABION HAS BEEN FILLED. WHILE THE GABION IS BEING STRETCHED, ENSURE THAT THE OPPOSITE WIRING OR ANCHORING HAS BEEN PROPERLY CARRIED OUT AND IS NOT PULLING APART OR COLLAPSING (FIGURE 5). THE STRONG INTER-CONNECTION OF ALL THE UNITS IN GABION STRUCTURE IS AN IMPORTANT FEATURE OF THE TECHNIQUE AND IT IS THEREFORE ESSENTIAL THAT THE WIRING IS SECURE.
- WHERE GABION STRUCTURES WITH NON-RECTANGULAR SHAPES ARE SPECIFIED, MODIFICATIONS TO THE BOXES ARE REQUIRED. GABION BOXES ARE FLEXIBLE ENOUGH TO CONFORM TO BENDS DOWN TO A RADIUS OF 25m WITHOUT MITRING. FIRST WIRE A NUMBER OF BOXES TOGETHER AND BEND THEM UP TO THE CURVING SET UP PREVIOUSLY, HOLDING THEM IN POSITION DURING FILLING. OTHER SHAPES, BEVELS AND MITRES, SHOULD BE FORMED BY CUTTING AND FOLDING THE PANELS TO THE REQUIRED ANGLES AND SIZES (FIGURE 6).

ROCK FILLING :

- FILLING SHALL BE CARRIED OUT ONLY WHILEST GABION BOXES ARE UNDER TENSION.
- FILLING MATERIAL SHOULD BE HARD DURABLE STONE NOT LARGER THEN 250mm AND NOT SMALLER THAN THE SIZE OF THE MESH. IDEALLY THE STONE SHOULD BE JUST SLIGHTLY LARGER THEN THE MESH SIZE I ORDER TO ALLOW FLEXIBILITY IN THE STRUCTURE BUT AT THE SAME TIME FILLS THE GABION COMPARTMENTS WITH THE MINIMUM OF VOIDS AND THE MAXIMUM MASS.
- IN AREAS WHERE LARGE ENOUGH FILL IS DIFFICULT TO OBTAIN. THE COMPARTMENT IS LINED WITH LARGE MATERIAL AND THE INTERIOR FILLED WITH SMALLER. THE SMALL MATERIAL CAN BE 5% TO 7% OF THE FILL (FIGURE 7). CARE SHALL BE TAKEN IN PACKING THE VISIBLE FACES OF GABION BOXES WHERE ONLY SELECTED STONE OF THE SPECIFIED SIZE SHALL BE USED SO AS TO OBTAIN AN EVEN FACED FINISH.
- TO AVOID BULGING ON THE VISIBLE SIDE OF THE STRUCTURE. FILL ALL THE OUTSIDE BOXES IN STAGES (1.0m HIGH BOXES IN THREE LEVELS AND 0.5m HIGH BOXES IN TWO LEVELS) WITH HORIZONTAL BRACING IN BETWEEN (FIGURE 8). FIX THE BRACING WIRES IN THE GABION BOX DIRECTLY ABOVE THE STONE LEVEL MAKING SURE THE WIRE PASSES ROUND AT LEAST TWO MESH WIDTHS AND "SPANISH" WINDLASS THE BRACING WIRES TO KEEP THE FACE EVEN AND FREE FROM BULGING (FIGURE 9). BRACING IN BOTH DIRECTIONS SHOULD BE USED IN GABIONS AT CORNERS OF STRUCTURES (FIGURE 10). AS AN ADDITIONAL MEASURE, SCAFFOLD PLANKING AS SHUTTERING ALONG THE FRONT FACE OR A PRE-FABRICATED SCAFFOLD TUBING FRAME SYSTEM CAN BE USED (FIGURE 11).
- LEVEL OFF THE FILL 25mm TO 50mm ABOVE THE TOP OF THE MESH TO ALLOW FOR SETTLEMENT. SMALL MATERIAL IS BEST FOR THIS.
- STRETCH THE LIDS TIGHTLY OVER THE FILLING USING A CROWBAR. SECURE THE CORNERS FIRST BY MEANS OF THE THICK SELVEDGE WIRE PROTRUDING FROM THE LID CORNERS. TO ENSURE THAT THERE IS ENOUGH MESH TO COVER THE WHOLE AREA. SOME FILLING MAY HAVE BEEN REMOVED FROM THE TOP OF THE GABION BOX TO PREVENT THE LID FROM OVERSTRAINING, THEN SECURELY WIRE IT TO THE TOPS OF THE SIDES, ENDS AND DIAPHRAGMS, USING THE ALTERNATE SINGLE AND DOUBLE LOOPS (FIGURE 12)

APPROVED			
TOWN ENGINEER		TRIPLE THREE ENGINEERING	
BENCH MARKS			
BM	Y	X	Z
GENERAL NOTES			
1. THE CONTRACTOR IS TO CONFIRM ALL DIMENSIONS ON SITE AND TO REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.			
2. ALL WORK IS TO BE EXECUTED IN ACCORDANCE WITH THE PROVISIONS OF SANS 1200.			
3. NOTE THAT NO OTHER BURIED SERVICES ARE INDICATED ON THIS DRG.			
4. DIMENSIONS ARE NOT TO BE SCALED FROM THIS DRAWING.			
5. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS SPECIFICALLY DIRECTED OR INDICATED.			
6. THE CONTRACTOR IS REQUIRED TO MINIMISE DUST AND NOISE NUISANCE TO ALL SURROUNDING PROPERTIES.			
7. A MINIMUM NOTICE PERIOD OF 24 HOURS IS REQUIRED FOR ANY INSPECTION.			
8. CONTRACTOR IS TO PROVIDE A DETAILED SCHEDULE OF INFORMATION REQUIRED INDICATING ALL SUCH DATES.			
LEGEND			
REVISIONS			
A	RA	2021-04-20	CONCEPT DRAWING
NO.	DRAWN	DATE	REVISION
CLIENT INFORMATION			
STADIO			
CONSULTING ENGINEERS			
Western Cape Office - Block A&B Pico Village Office Estate, Val de Vin, Paarl, 7646 / P.O. Box 227, Paarl, 7620			
Eastern Cape Office - 36 Buitendop Road, Unit B3 Eagles View, Rooderstrand, / P.O. Box 6403, Waterford Park, 7755			
Tel: +27 (0) 30 743 3327/Fax: +27 (0) 87 333 0283/Email: info@stadio.co.za/Website: www.stadio.co.za			
CESA			
TRIPLE 3			
Group - Since 1999			
ENGINEERING (Pty) Ltd			
PROJECT			
RESIDENTIAL DEVELOPMENT KENGIES EXT. 35			
DESCRIPTION			
ASSEMBLY & ERECTION OF GABION BOXES			
DESIGNED	GLR	SCALE	N.T.S.
PR TECH (ENG)	200070105		A1
DRAWN	RA	DATE	2021-04-14
APPROVED	GLR	CONTRACT NO	355
PR TECH (ENG)	200070105		
DRAWING NO.	355-03-13	SHEET	1 OF 1
PROJECT STATUS			
REVISION			
	A		