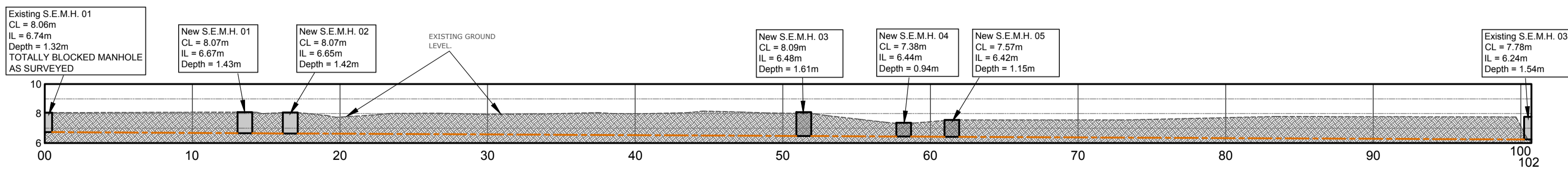
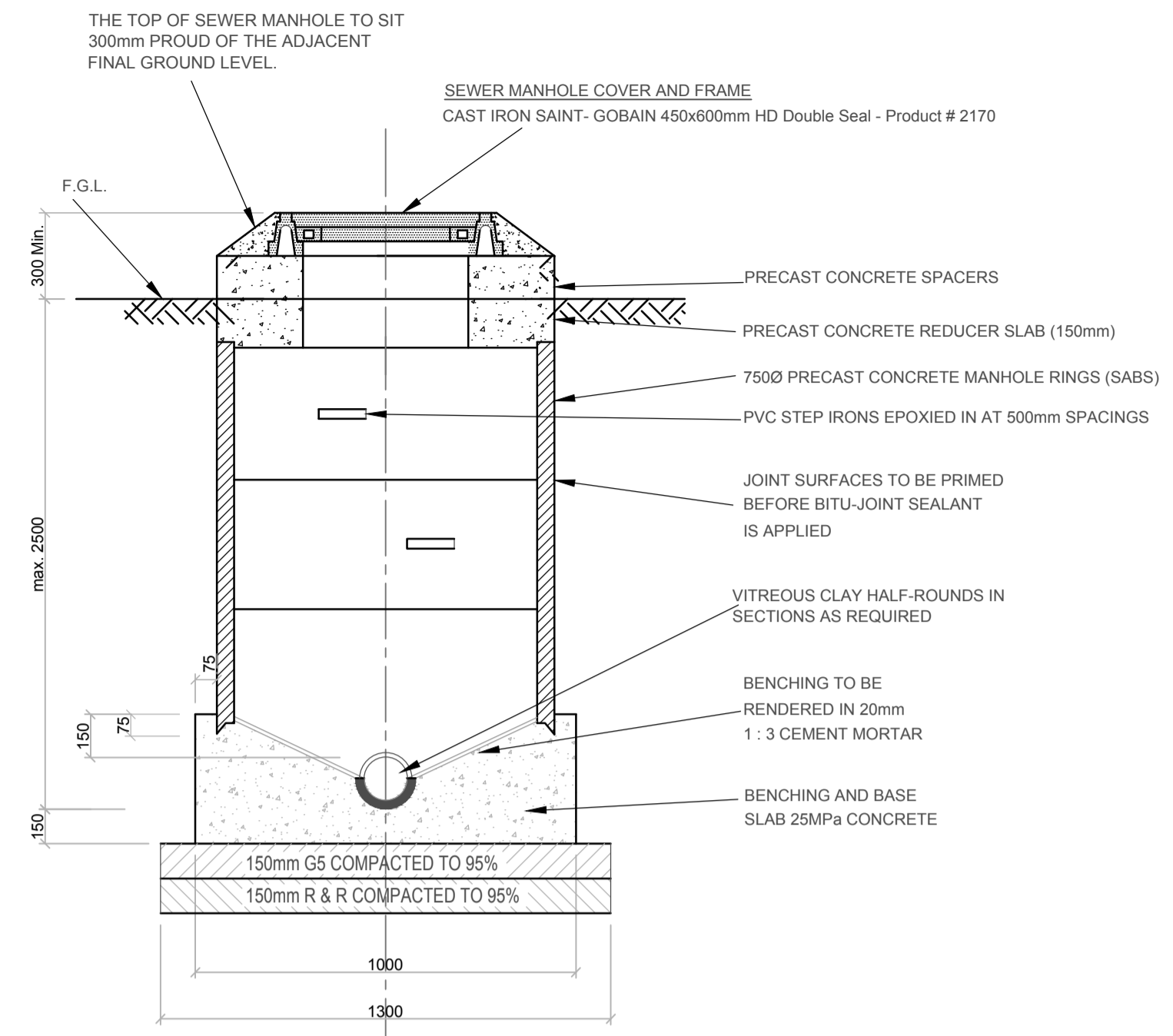


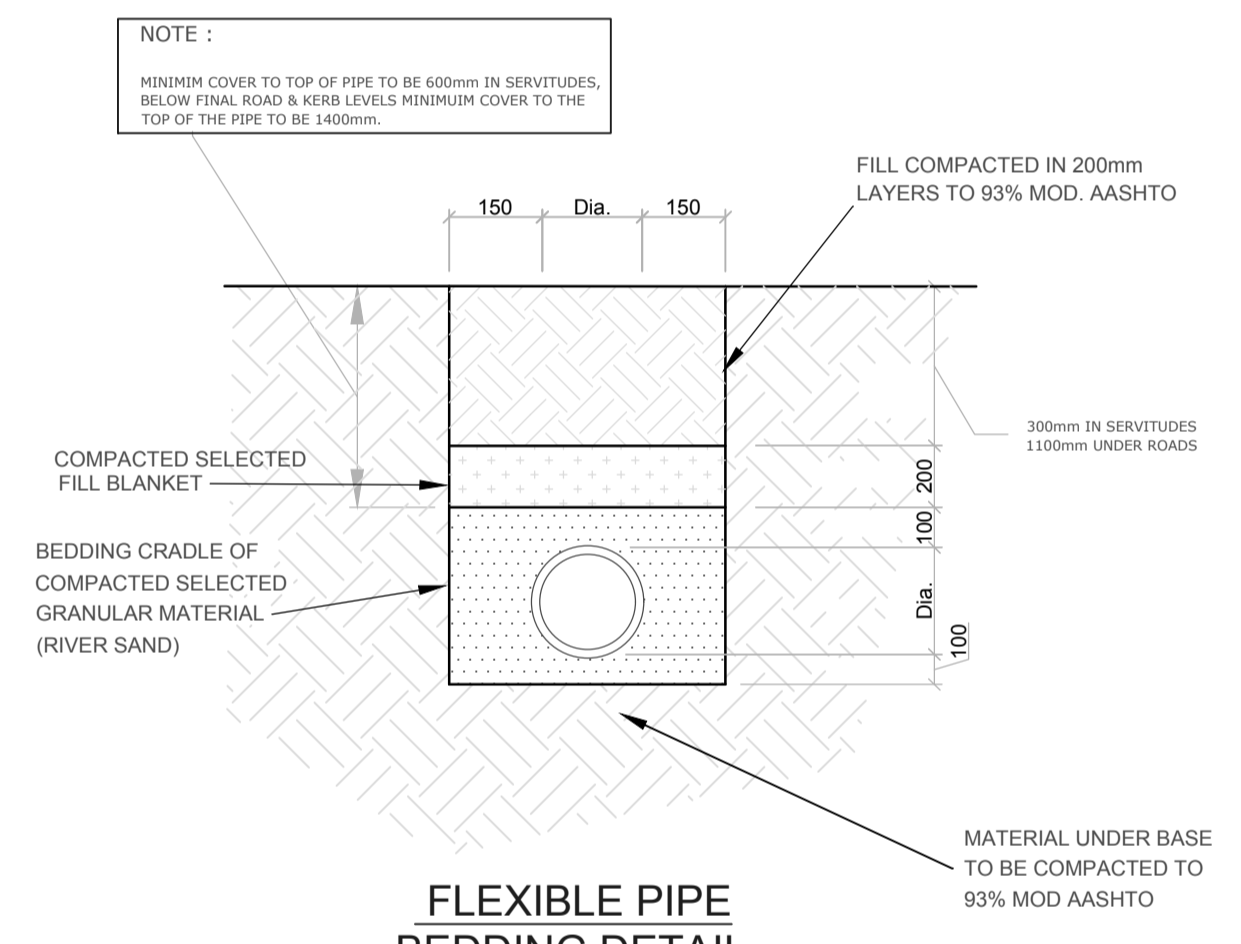
**SEWER PLAN LAYOUT**  
Scale 1:250



**SEWER LONG SECTION ALIGNMENT - (A-A)**  
FROM +0.000 TO 101.000  
Scale 1:250



**TYPICAL SEWER - EFFLUENT MANHOLE DETAIL**  
N.T.S.



**FLEXIBLE PIPE BEDDING DETAIL**  
N.T.S.

LEGEND	
○R01	DENOTES FINAL ROAD LEVEL
---	DENOTES STORMWATER PIPES
---	DENOTES STORMWATER PIPES TO HAVE CONCRETE COVER
---	DENOTES SEWER PIPE MAINS
---	DENOTES WATER PIPE MAINS
---	DENOTES 110mm Dia. Class 16 uPVC FIRE MAIN
---	DENOTES 75mm Dia. Class 16 uPVC FIRE MAIN
---	DENOTES EXISTING WATER LINE
☒	DENOTES STORMWATER MANHOLE
☒	DENOTES SIDE INLET STORMWATER MANHOLE
☒	DENOTES SEWER MANHOLE
☒	DENOTES STORMWATER MANHOLE INVERTS
☒	DENOTES SEWER MANHOLE INVERTS
(M)	DENOTES PROPOSED WATER METER
AV	DENOTES PROPOSED ISOLATION VALVE
FH	DENOTES PROPOSED WATER AIR VALVE
FH	DENOTES PROPOSED FIRE HYDRANT
SV	DENOTES PROPOSED SCOUR VALVE
---	DENOTES SW RECTA GRID
81.50	DENOTES FINAL GROUND FLOOR LEVEL
UNITS 65-68	DENOTES UNIT NUMBER

**GENERAL NOTES :**

- 1.0 ALL BUILDING WORKS TO BE IN ACCORDANCE WITH RELEVANT S.A.B.S. BUILDING CODES AND NATIONAL BUILDING REGULATIONS.
- 2.0 DRAWINGS MUST BE CHECKED BY THE CONTRACTOR, WHERE DISCREPANCIES IN THE DIMENSIONS ARE FOUND THESE MUST BE REPORTED TO THE ENGINEER BEFORE WORK COMMENCES.
- 3.0 ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT'S DRAWINGS.

**EARTHWORKS NOTES :**

- 1.0 MAXIMUM SLOPE OF CUT BANKS : 1:1.5
- 2.0 MAXIMUM SLOPE OF FILL BANKS : 1:1.5
- 3.0 ALL FILL MATERIAL TO BE COMPACTED TO 93% MOD AASHTO DENSITY IN LAYERS NOT EXCEEDING 200mm LOOSE THICKNESS.
- 4.0 MAXIMUM SOULDER SIZE IN FILL = 67mm.
- 5.0 MAXIMUM TEMPORARY CUT BANKS TO BE 1:1.

**PLACEMENT OF FILL NOTES :**

- 1.0 ALL EXISTING GRASS & TOPSOIL TO BE STRIPPED & REMOVED TO STOCKPILE.
- 2.0 SELECTED G7 FILL MATERIAL TO BE PLACED IN 200mm THICK LAYERS.
- 3.0 MINIMUM GRADE OF SELECTED FILL MATERIAL TO BE OF G7 QUALITY, SHALL BE CLEAN, COHESIONLESS MATERIAL WHICH IS NON-PLASTIC AND HAS LESS THAN 10% SILT AND CLAY.
- 4.0 ALL LAYERS TO BE COMPACTED TO 93% MOD AASHTO DENSITY.
- 5.0 THE CONTRACTOR IS TO SUPPLY TROLLEX DENSITY TEST RESULTS BY AN INDEPENDENT LABORATORY ON A 10.0m GRID ALONG THE TOP OF EARTHWORKS AND ALL SELECTED FILL LAYERS. SEE COMPACTION DENSITY TEST NOTES.
- 6.0 ALL FILL TO BE BENCHES INTO THE IN-SITU MATERIAL THROUGH 1200mm WIDE x 300mm DEEP BENCHES.

**COMPACTION DENSITY TESTS TO EARTHWORKS LAYERS :**

TROLLEX DENSITY TESTS ARE TO BE PERFORMED ON A 10m GRID ON EACH LAYER BY AN INDEPENDENT APPROVED SOILS LABORATORY.

THE TEST RESULTS ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE PLACEMENT OF THE NEXT LAYER.

ANY AREA FAILING THE TEST IS TO BE REWORKED AND RETESTED TO ACHIEVE THE REQUIRED DENSITY.

THE COSTS OF THE TESTS ARE TO BE INCLUDED IN THE CONTRACTORS TENDER PRICE AND INDICATED AS SUCH AS A SEPARATE ITEM.

SHOULD THE CONTRACTOR FAIL TO SUPPLY TEST RESULTS PRIOR TO THE PLACEMENT OF THE NEXT LAYER, THE UNTESTED LAYER IS TO BE EXPOSED AT THE STATED NUMBER OF PLACES AND TESTED AS REQUIRED. SHOULD THESE TESTS INDICATE A FAILURE TO MEET THE REQUIRED DENSITIES, THE CONTRACTOR SHALL AT HIS OWN EXPENSE REMOVE THE UPPER LAYER AND REWORK THE FAILED AREAS TO THE ENGINEERS SATISFACTION.

**SEWER PIPE NOTES :**

- 1.0 ALL FLEXIBLE PIPES ARE TO BE MANUFACTURED IN ACCORDANCE WITH SANS 966:2004.
- 2.0 ALL FLEXIBLE PIPING TO BE LAID ON FLEXIBLE PIPE BEDDING AS DETAILED.
- 3.0 ALL SEWER AND SANITATION PIPING TO BE CLASS 34 uPVC (or similar approved) TO 160mm DIAMETER UNLESS NOTED OTHERWISE. (U.N.O.)
- 4.0 THE MIN FALL TO ALL SEWER AND SANITATION PIPES TO BE 0.5% U.N.O.
- 5.0 ALL SEWER PIPES ARE TO BE LAYED IN A DIRECT LINE BETWEEN MANHOLE INVERTS. HORIZONTAL OR VERTICAL CHANGES IN GRADE ARE NOT PERMITTED. IF A BEND IS REQUIRED THE ENGINEER IS TO BE NOTIFIED PRIOR TO CONSTRUCTION.
- 6.0 ALL SEWER PIPES WITH FALLS GREATER THAN 1:8 ARE TO HAVE 500x500x50mm ANCHOR BLOCKS AT ANY HORIZONTAL AND VERTICAL CHANGES OF GRADE.
- 7.0 ALL PIPES ARE TO BACKFILL IMMEDIATELY AFTER THE PLACING OF THE PIPE IN ITS SAND CRADLE WITH THE JOINTS LEFT OPEN FOR WATER TESTING.
- 8.0 ALL PIPES ARE TO BE WATER TESTED ON COMPLETION OF THE BACKFILL.
- 9.0 THE POSITION OF TWO SEWER CONNECTIONS INTO THE EXISTING ESTATE SYSTEM ARE TO BE ESTABLISHED ON-SITE BY THE CONTRACTOR AND VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTION OF THE SEWER LAYOUT.
- 10.0 THE TOP OF THE SEWER MANHOLES ARE TO SIT 300mm PROUD OF THE ADJACENT FINAL GROUND LEVEL.

**NOTE :**

1.0 THE CONTRACTOR IS TO INSURE THAT THE EXACT POSITION AND DEPTH OF ALL EXISTING SERVICES THAT ARE CURRENTLY WITHIN THE 2m WIDE SERVICITUDE ARE ESTABLISHED PRIOR TO ANY CONSTRUCTION TAKING PLACE WITHIN THE SERVICITUDE. SHOULD THE PROPOSED NEW SEWER SERVICE FOR THE SITE INTERSECT AND CLASH WITH THE POSITION / DEPTH OF EXISTING SERVICES, THE ENGINEER IS TO BE INFORMED IMMEDIATELY. WORK ON THE NEW SERVICE IS TO BE POSTPONED UNTIL A SUITABLE ROUTE UNDER OR OVER THE EXISTING SERVICES IS CLARIFIED BY THE ENGINEER.

DRAWING LIST:	
11	
10	
09	
08	
07	
06	
05	
04	
03	
02	
01	SEWER PLAN LAYOUT & DETAILS

Dwg. No.	Description
	Beskriving

**COPYRIGHT RESERVED**

Rev. No.	Description	Date	By
02	ISSUED FOR TENDER PURPOSES	12/06/2017	S.E.
01	ISSUED FOR PRELIMINARY USE	11/06/2017	S.E.

**TENDER PURPOSES ONLY**

DESIGNED/ONTWERP	R. SHUTTELWORTH
DRAWN/GETEKEN	S. EKSTEEN
CAD FILE NAME/CAD LÉER NAAM	Brettenwood Civi's.dwg
CHECKED/NAGESIEN	R. SHUTTELWORTH
APPROVED/GOEDGEKEUR	

**MONOBLOCK**  
STRUCTURAL/CIVIL/RESIDENTIAL

CK 9959460/23  
P.O. Box 143  
LPH-41  
4390

Tel : (032) 9470716  
Fax : (032) 9470718  
www.monoblock.co.za

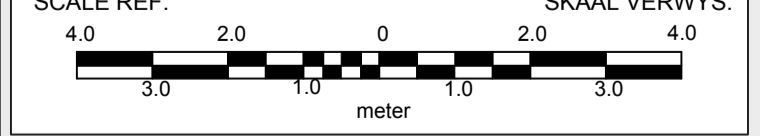
CLIENT: **SHOMAC PROPERTIES INVESTMENT** KLIËNT:

PROJECT: **PTN 15 OF ERF 17 ZIMBALI SOUTH** PROJ.EK:

PROJECT NO: **RM** PROJ.EK NO:

TITLE: **SEWER PLAN LAYOUT** TITEL:

DATE/DATUM: **JUNE 2018**  
SCALE/SKAAL: **AS SHOWN**



CONSULTANT DWG. NO. **01** KONSULTANT TEK. NR.

CLIENT DWG. NO. KLIËNT TEK. NO.