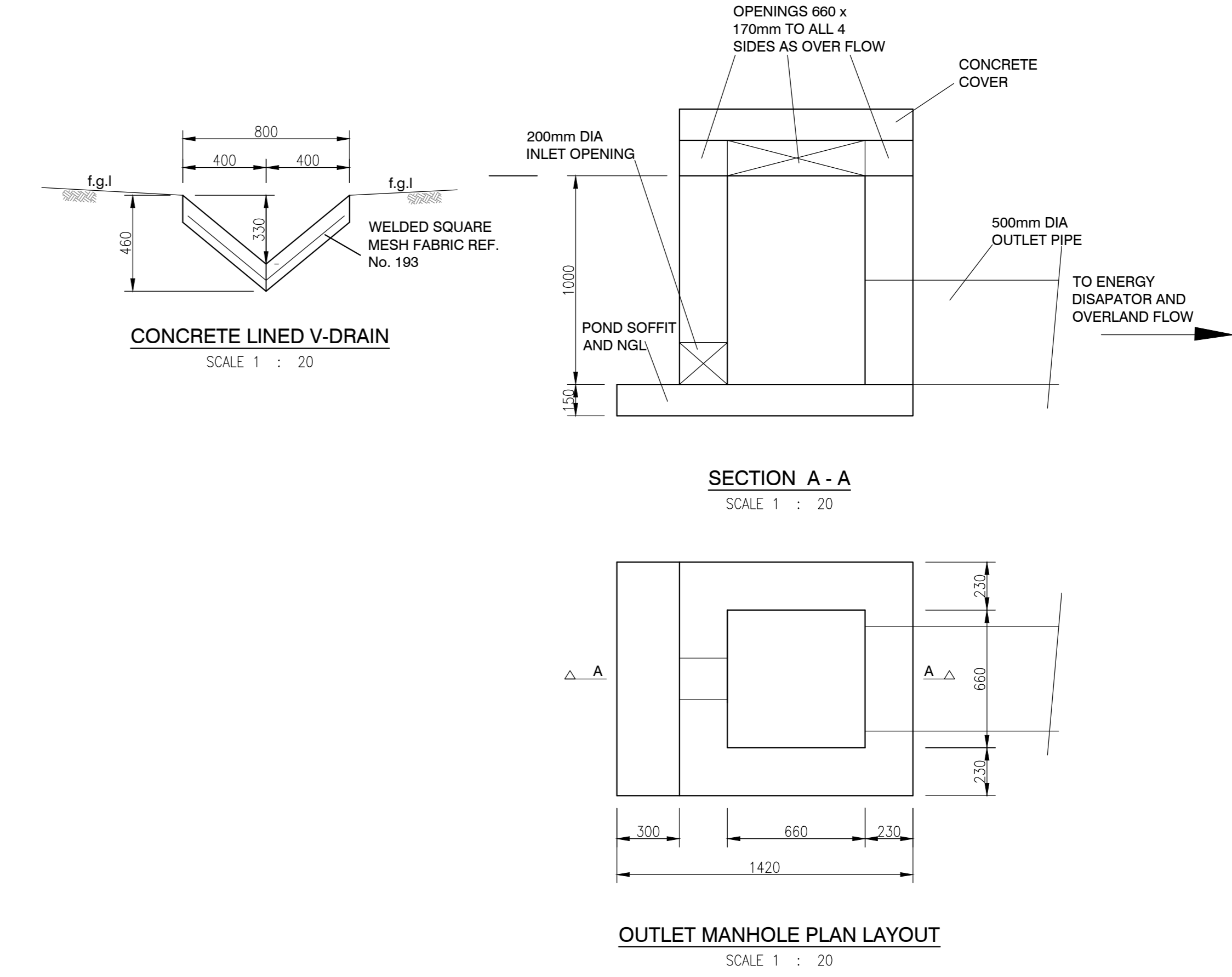




MAKHELEMPONGO LAYOUT PLAN
SCALE 1 : 500



CONCRETE LINED V-DRAIN
SCALE 1 : 20

SECTION A - A
SCALE 1 : 20

OUTLET MANHOLE PLAN LAYOUT
SCALE 1 : 20

DESIGN PHILOSOPHY

- ALL STORMWATER FLOW TO BE DIRECTED TO ATTENUATION POND
- DISCHARGE TO BE LIMITED TO PRE-DEVELOPED DISCHARGE RATE PER METER OF BOUNDARY ALONG BOUNDARY LENGTH INFLUENCED BY POND LIMIT.
- DISCHARGE BY CALCULATION:

PRE DEVELOPMENT DISCHARGE	0.977 CUMEC/S = 0.0047 CUMEC/S/M OF BOUNDARY LENGTH AFFECTED BY POND DISCHARGE 60 METERS
PERMITTED FLOW	0.0047 X 60 = 0.28 CUMEC/S
PIPE FLOW (300mm DIA)	0.157 CUMEC/S
NUMBER OF DISCHARGE PIPES REQUIRED	2 No. EQUALLY SPACED ALONG POND
THEORETICAL DRAIN TIME	43 MINUTES
- POND DIMENSIONS

DEPTH	= 1000mm
VOLUME	= 1030 CUMEC/S (MINIMUM)
LENGTH	= 45m AT BOTTOM
WIDTH	= 23m AT BOTTOM

NTUSA CONSULTING ENGINEERS

STORMWATER MANAGEMENT	CALCULATIONS
ASSESSMENT METHOD	RATIONAL METHOD
PROJECT No.	
TOTAL SITE AREA	113050 m ²
HARDENED AREA	18862m ²
UNHARDENED AREA	94188m ²
HARDENED RUNOFF COEFFICIENT	0.85 (DEVELOPED)
UNHARDENED RUNOFF COEFFICIENT	0.42 (UNDEVELOPED)
EFFECTIVE COEFFICIENT DEVELOPED STATE	0.85
RAINFALL INTENSITY	137.93 mm/hr
1:50 PREDEVELOPED FLOW	1.747 cumecs
1:50 DEVELOPED FLOW	3.641 cumecs
BALANCE TO BE ATTENUATED (30 Minutes)	1.895 cumecs
VOLUME REQUIRED	719 m (30 minutes)
VOLUME REQUIRED	1031 m (43 minutes)
PERMITTED FLOW	1.814 cumecs (Limit to 0.28 cumecs)
PIPE DIAMETER	0.300m
PIPE AREA	0.07 m
WATER DEPTH (AVERAGE)	1000mm
PIPE FLOW	0.157 cumecs
AREA OF POND	719m (30 minutes)
AREA OF POND	1031m (43 minutes)

STORMWATER MANAGEMENT PLAN:

PREDEVELOPEMENT FLOW DURING CONSTRUCTION: EARTHWORKS WILL BE CONSTRUCTED TO SABS 1200 STANDARD SPECIFICATIONS AND CUT AND FILL SLOPES ARE MAXIMUM 1:2. RETAINING WALL DETAILS WILL BE COMPACTED TO 90% MOD. A.A.S.H.T.O. DENSITY. STORMWATER CONTROL MUST BE MAINTAINED AT ALL TIMES. DURING CONSTRUCTION, EARTH BERMS AND/OR SAND BAGS ARE TO BE USED. ALL BANKS MUST BE GRASSED AS SOON AS PRACTICALLY POSSIBLE. ONCE THE PROPOSED STORMWATER NETWORK AND STORMWATER CHAMBERS ARE CONSTRUCTED, ALL TEMPORARY STORMWATER MEASURES DETAILED ABOVE SHOULD BE CHANNELLED TOWARDS INLETS.

POST DEVELOPMENT / CONSTRUCTION: ALL ROOF DRAINAGE MUST BE CONVEYED FROM GUTTERS TO RAINWATER PIPEWORK INTO PIPES OR CHANNELS WITH SIZES FOR A 1:10 YEAR RETURN PERIOD. SURFACE WATER OFF PAVED SURFACES SHOULD BE DIRECTED TOWARDS THE STORMWATER NETWORK. ALL RAINWATER MUST BE DIRECTED INTO THE INFILTRATION CHAMBERS.

THE AMOUNT OF SOAKAWAY CHAMBERS HAS BEEN DESIGNED SO AS TO ACCOMMODATE AS MUCH INFILTRATION AS PRACTICALLY POSSIBLE AND MINIMISE OUTFLOW INTO THE OVERALL SYSTEM. ALL STORMWATER FLOW AND STORAGE CALCULATIONS ARE SHOWN.

SCHEDULE OF AREAS:

- HOUSE No. 8 = 1674 m²
- HOUSE No. 9 = 1854 m²
- TOTAL ADDED AREA = 3528 m²

All work to be done in accordance with SANS 10400
Figured dimensions to be taken in preference to scaled dimensions
Approved drawings are the property of the architect and remain with the architect
This drawing is copyright and remains with the architect

REV	DATE	BY	CHECKED
0	09.02.2022	N.M.	S.M.

1. FOR INFORMATION ONLY.

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ENGINEERS SIGNATURE: _____ ECSA REG. NO: _____

PROPOSED DEVELOPMENT USE:
KILLARNEY FARM

STREET ADDRESS: _____

CADASTRAL DESCRIPTION (ERP No.): _____

OWNER / CLIENT SIGNATURE: _____ PHONE: _____

DRAWING TITLE:
STORMWATER_MANAGEMENT_PLAN

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
N. MKHWANAZI	N. MKHWANAZI	S. MASANGO	S. MASANGO

PAGE NO.	DRAWING UNITS	SCALE	DATE
01	MM	AS SHOWN	09/02/2022

PROJECT NO.	DRAWING NO.	REV	REV
no	drawing_no	rev	rev

DRAWING TYPE: _____