

- NOTE:
1. ALL LEVELS AND LENGTHS TO BE CONFIRMED WITH ENGINEER ON SITE PRIOR TO CASTING OR SETTING OUT.
 2. ALL COUPLINGS MUST BE DENSO WRAPPED.
 3. CONTRACTOR TO DEVIATE RIVER IN HALF LENGTHS DURING LOW FLOW.
 4. CONTRACTOR TO FULLY REHABILITATE THE RIVER CROSSING SITE UPON COMPLETION.
 5. IF NO BEDROCK IS ENCOUNTERED 500mm BELOW RIVER BED, THE SCOUR DISTANCE TO TOP OF PIPE ENCASEMENT TO BE INCREASED TO A MIN. 1000mm AND DOWELS TO BE OMITTED.

REINFORCEMENT BENDING TO SANS 282														
REF	DESCRIPTION	No EACH	TYPE SIZE	BAR MARK	TOTAL No	CUT LENGTH	Shape Code	DIMENSIONS						
								A	B	C	D	E/R		
		146	Y20	Ø1	146	1450	37	1250						

CONCRETE PIPE ENCASUREMENT

DOWELS

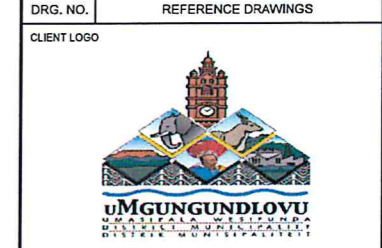
NUMBER OF DOWELS TO BE INCREASED OR DECREASED UPON CONFIRMATION OF LENGTH OF CONCRETE ENCASUREMENT. DOWELS ISSUED FOR 36m LENGTH.

MAKHAOTSE, NARASIMULU & ASSOCIATES (Pty) Ltd
 Consulting Civil Engineers and Project Managers
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DATE: 23/02/2017
 SIGNED BY: [Signature] PR. ENG.
 20150349
 CONSULTING ENGINEER

REV	DATE	DESCRIPTION	BY	CHK

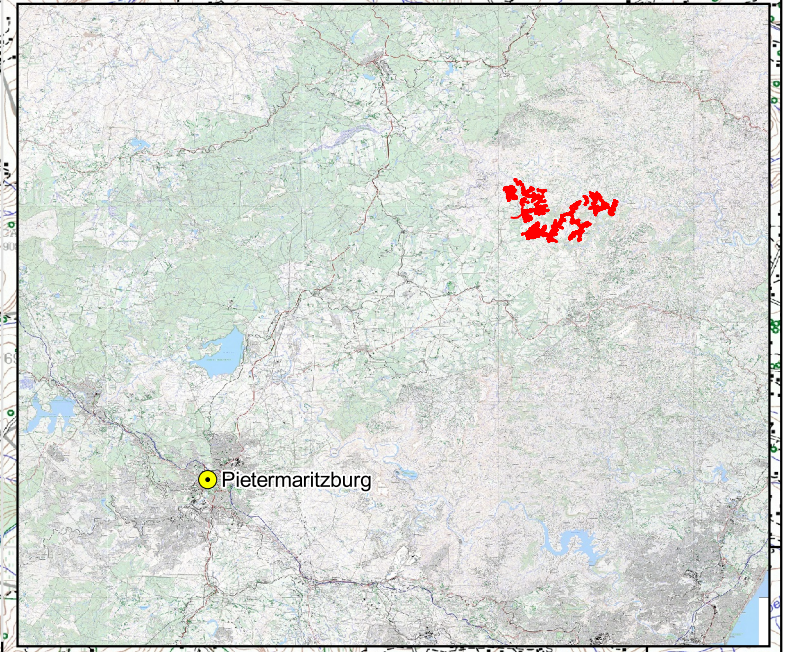
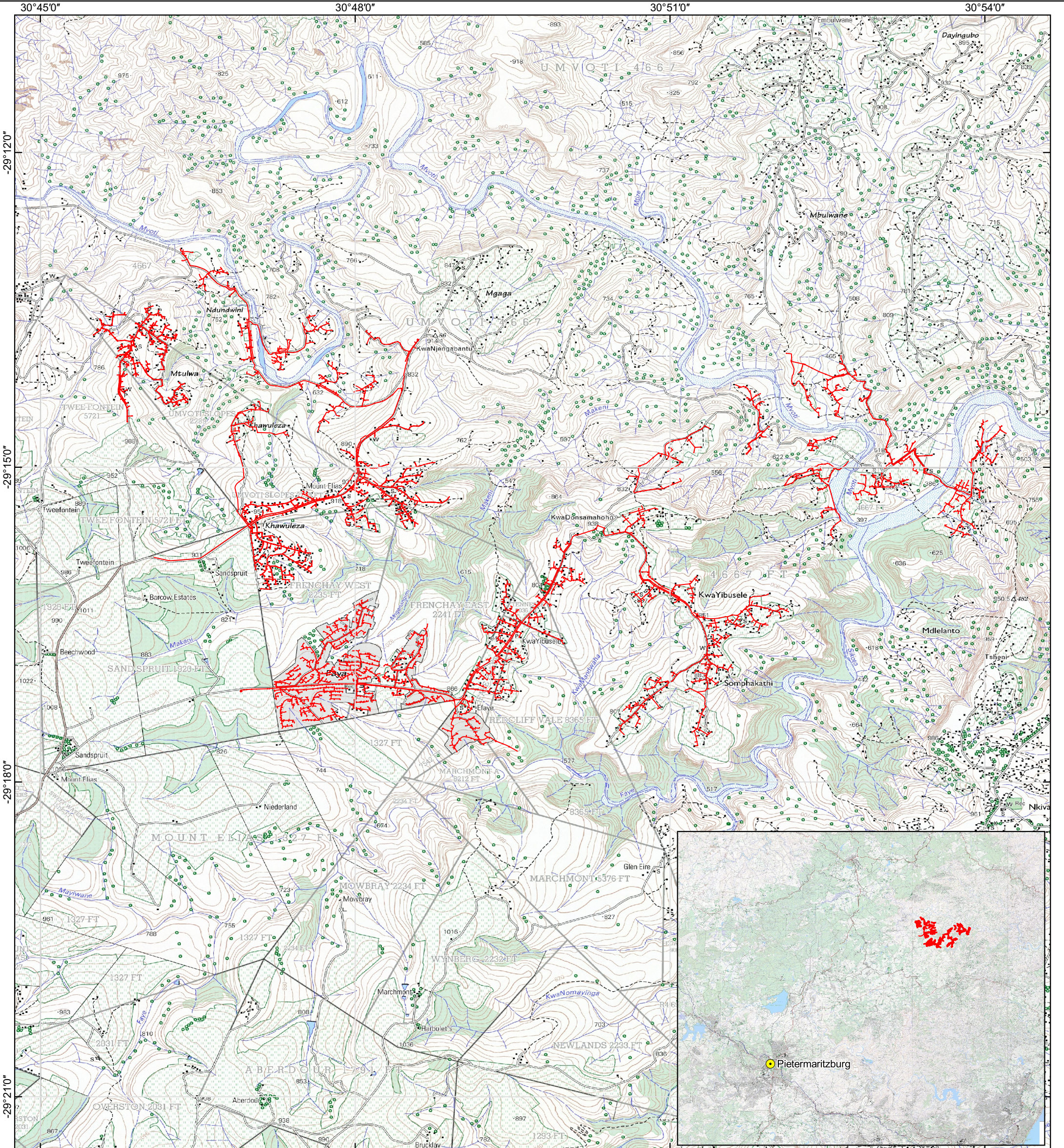


CLIENT NAME
UMGUNGUNDLOVU DISTRICT MUNICIPALITY

PROJECT TITLE
UMSHWATHI SECONDARY BULK WATER SCHEME GREATER EFAYE

DRAWING TITLE
TYPICAL RIVER CROSSING DETAILS GENERAL ARRANGEMEN

	RESPONSIBLE PERSON	DATE
DESIGNED	T. MUNGAL	28-10-2015
CHECKED	T. MUNGAL	28-10-2015
DRAWN	T. MUNGAL	28-10-2015
CHECKED	T. MUNGAL	28-10-2015
SCALES	AS NOTED	SHEET SIZE A1
DRAWING NO.	WPXXXX-MNA-XX-ST-XXX	REVISION A



National Freeway; National Route.....	
Arterial Route.....	
Main Road.....	
Secondary Road; Bench Mark.....	
Other Road; Bridge.....	
Track and Hiking Trail.....	
Railway; Station or Siding.....	
Other Railway; Tunnel.....	
Embankment; Cutting.....	
Power Line.....	
Built-up Area (High, Low Density).....	
Buildings; Ruin.....	
Post Office; Police Station; Store.....	
Place of Worship; School; Hotel.....	
Fence; Wall.....	
Windpump; Monument.....	
Communication Tower.....	
Mine Dump; Excavation.....	
Trigonometrical Station; Marine Beacon.....	
Lighthouse and Marine Light.....	
Cemetery; Grave.....	

International Boundary and Beacon.....	
Provincial Boundary.....	
Protected Area.....	
Perennial River.....	
Perennial Water.....	
Non-perennial River.....	
Non-Perennial Water.....	
Dry Water Course.....	
Dry Pan.....	
Marsh and Vlei.....	
Pipeline (above ground).....	
Water Tower; Reservoir; Water Point.....	
Coastal Rocks.....	
Prominent Rock Outcrop.....	
Erosion; Sand.....	
Woodland.....	
Cultivated Land.....	
Orchard or Vineyard.....	
Recreation Ground.....	
Row of Trees.....	

LOCALITY MAP:
uMshwathi WSS: Phase 4 - Reticulation

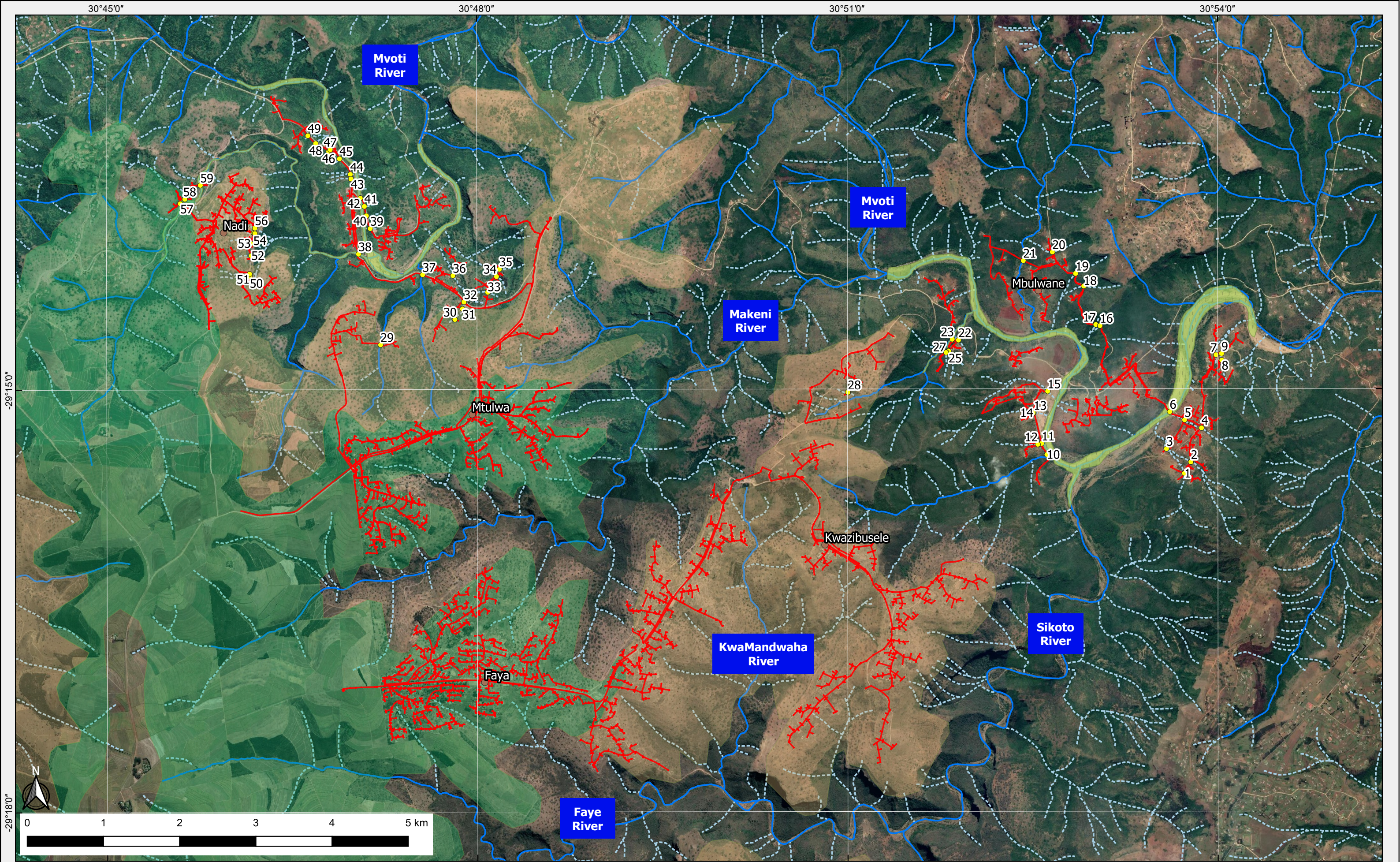
Co-ordinates	29°42'17.42"S, 30°19'16.29"E
Client	uMqungundlovi District Municipality
Topo Sheet No.	2930BB & 2930BD
Drawing No.	uMshwathiP4/01
Date Prepared	16 July 2020
Prepared by	Rowan Buhmann

ENVIROPRO
 IN ASSOCIATION WITH INKANYEZI YETHU

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uMshwathi Reticulation

0 0.5 1 1.5 2 Km



UMSHWATHI WSS: PHASE 4 RETICULATION

Overview	
Projection: Hartebeesthoek94_Lo31_(E-N)	
Client: uMgungundlovu District Municipality	
Date: 13/08/2020	Prepared By: Rowan Buhmann
Project No: EVP1139	Drawing No: uMshwathiP4/02

Legend

- Water Pipeline
- Watercourse Crossings
- Villages
- Channelled Valley Bottom Wetlands
- Drainage Lines**
- Non-Perennial
- Perennial
- Ecosystem Boundaries**
- Midlands Mistbelt Grassland (Vulnerable)
- Ngongoni Veld (Vulnerable)

