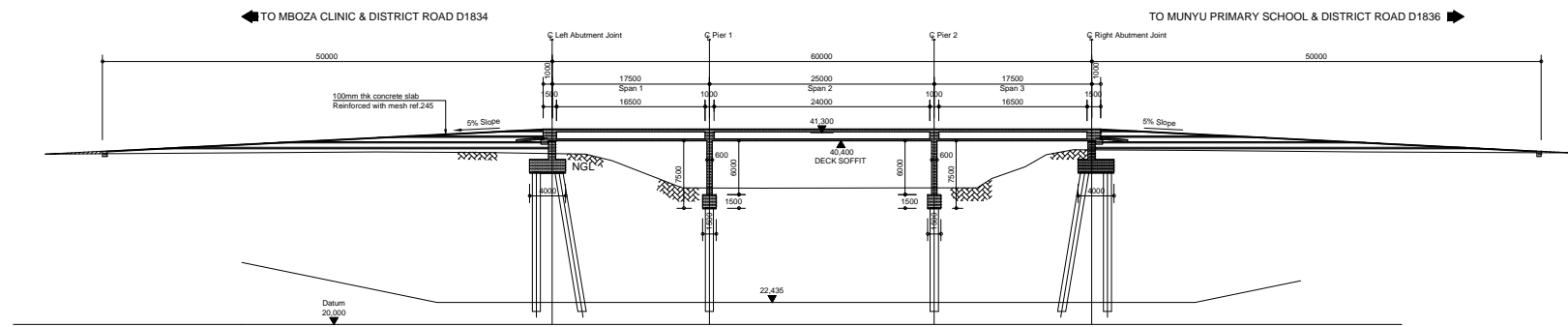
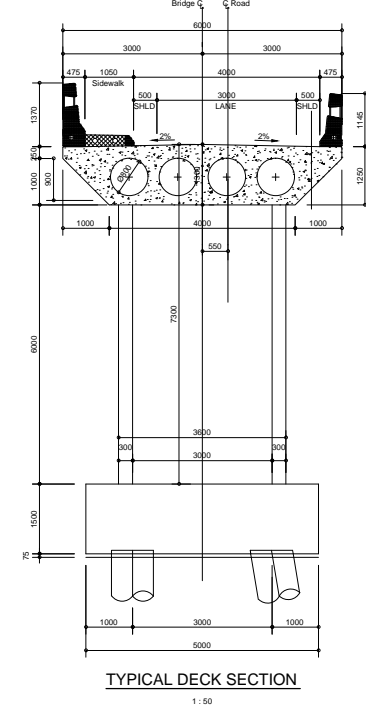


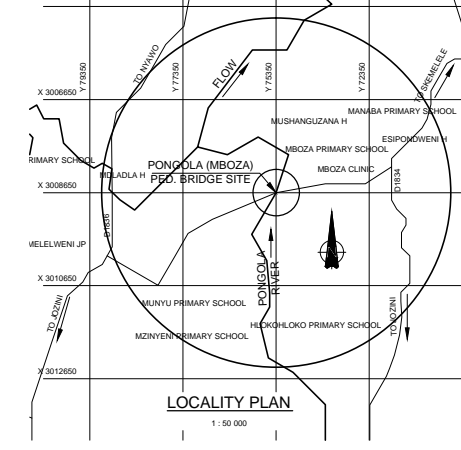
ELEVATION  
1:250



BRIDGE LONGITUDINAL SECTION  
1:250

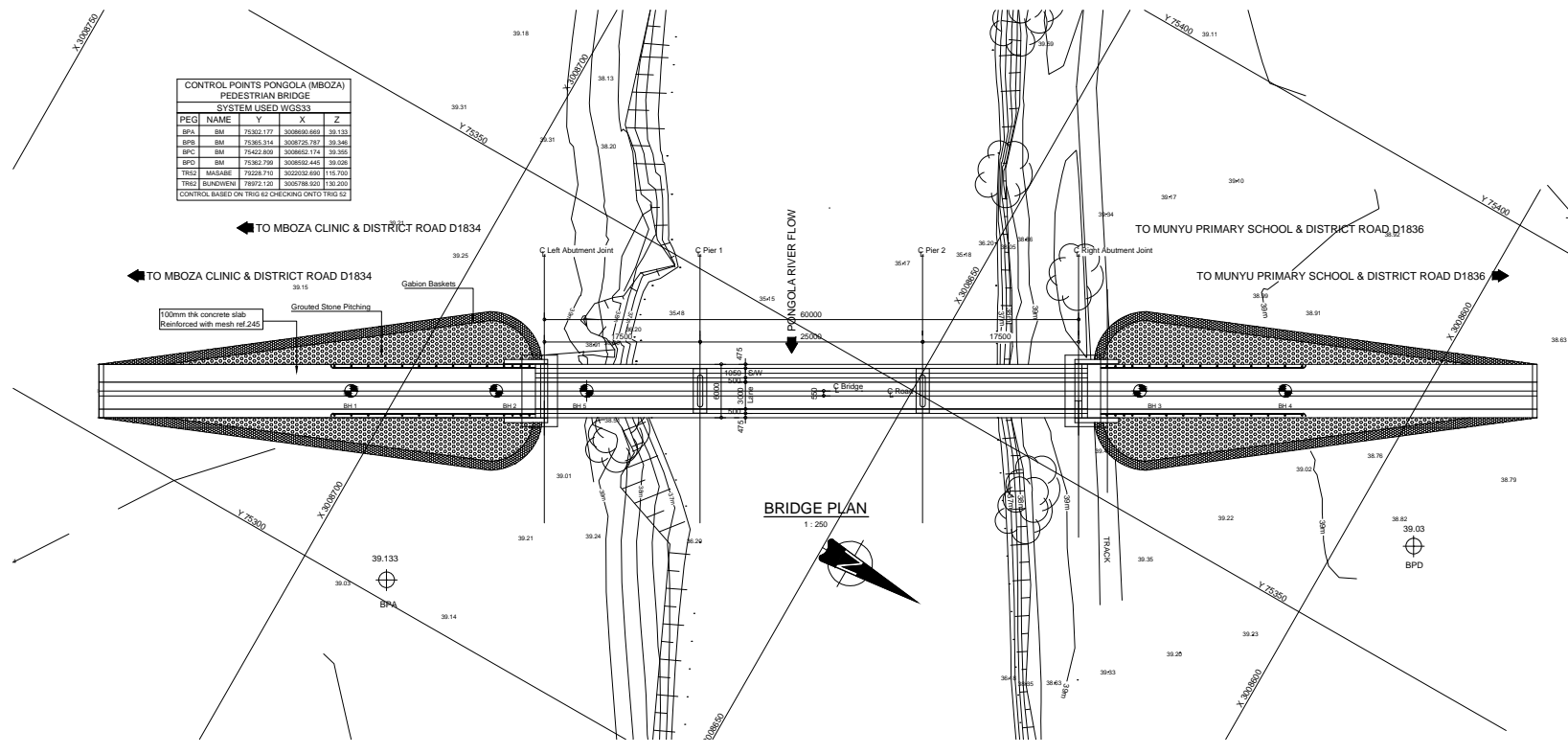
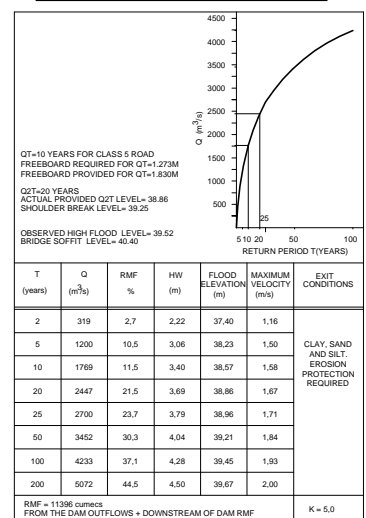


TYPICAL DECK SECTION  
1:50



LOCALITY PLAN  
1:50 000

HYDRAULIC & HYDROLOGICAL DATA



BRIDGE PLAN  
1:250

CONTROL POINTS PONGOLA (MBOZA) PEDESTRIAN BRIDGE

PEG	NAME	Y	X	Z
BPA	889	75361.77	300869.668	38.133
BPB	889	75361.544	300870.761	38.146
BPC	889	75421.833	300865.174	38.165
BPD	889	75362.739	300869.444	38.168
TRD1	MANAGE	75228.713	300202.689	31.5700
TRD2	BUNDCHEN	75272.120	300578.920	31.5200

CONTROL BASED ON TRD 62 CHECKING ON TRD 52

NOTES

- STRUCTURE DESCRIPTION**
  - Deck: Three-span continuous reinforced concrete voided slab.
  - Abutments: Reinforced concrete box abutments.
  - Piers: Reinforced concrete walls with semi-circular cutwaters.
  - Foundations: Piers and Abutments supported on 8000 piles.
  - Auxiliary Components: Elastic bearings at abutments. Baised movement joints at abutments. F-Type in-situ reinforced concrete parapets and end blocks. Guardrails on both approaches.
- HYDROLOGY AND HYDRAULICS**
  - Hydrology: The total catchment of the Pongola River at the Mboza Site is 890km² with a longest collector of 376 km. However the flow at the site is controlled by flood gates. The flow at this site comprises of water released from the Pongola Dam and the flow from the catchment downstream of the dam. The floods released from the dam were provided by the Department of water affairs. The releasing is done annually in September / October and released floods are measured accurately. The catchment downstream of the dam is 114km² with the longest collector being 53km, the flows at the site were determined using the SDF method these flows were added to the flows from the flood gates to provide the design floods. The road is a minor rural road connector class 5 (P.9.2) hence designed for Q10 (10 year flood return period). The minimum headboard required is 1.27m from fig. 6.3 of SANRAL Drainage Manual. The Q27 level for the 20 year flood return period is satisfied.
  - Hydraulics: (see hydraulics Table above)
- DESIGN CODES AND LOADING**
  - Code: TM7/ Parts 1, 2 and 3 (As amended 1988)
  - Loading: Live loads: - NA, MS24  
: Dead loads: Reinforced concrete: 25.0 kN/m³  
: Asphalt (on 100mm): 22 kN/m³  
: Compacted fill: 20 kN/m³  
: Earth Pressure: - At rest earth pressure assumed
- DESIGN METHOD AND PARAMETERS**
  - Design Method: - Limit State Design to TM7/ Parts 1, 2 and 3 (As amended 1988)  
: Deck analysis: Grillage Analysis
  - Parameters: Concrete Young's Modulus  
Short term: 28 GPa (30/19)  
Long term: 34 GPa (30/19)  
Steel: - 200 GPa  
Temperature: - Range ±20°C  
Coefficient of thermal exp.: - 12 x 10⁻⁶  
Shrinkage: - 250 x 10⁻⁶
- MATERIALS AND STRESSES**
  - Concrete: 15/18: Foundation fill  
15/19: Scribed/Blinding  
30/19: Bases, Pier caps and piles  
30/19: Abutment walls, earnings: pier walls  
: wingwalls, walkway slabs  
40/18: Deck slab  
40/13: NJ Concrete parapets and End Blocks  
Reinforcing steel: 11/15  
MS: 250 MPa  
HTS: 450 MPa
  - CONCRETE COVER AND FINISHES
    - Minimum concrete cover to reinforcement  
75mm: Piles and pile caps  
40mm: Abutments and pier walls  
40mm: Deck  
30mm: NJ Parapets and end blocks
    - All sharp concrete edges to be chamfered 20mm x 20mm U.O.S.
    - Formed concrete finishes:
      - Class F1: Concated surfaces
      - Class F2: Exposed surfaces
      - Class F3: NJ parapets and end blocks
    - Uniformed concrete finishes:
      - Class U1: Tops of pile caps and bases
      - Class U2: Tops of walls and bridge bearing areas
      - Class U3: Tops of parapets
  - CONSTRUCTION SAFETY
    - The contractor shall observe all safety requirements of the Construction Regulations of the OHS Act No. 85 of 1993
    - Special attention shall be paid to:
      - Lateral support of excavations exceeding 1.5m in depth
      - Protection around open excavations
      - Full protection from all components during erection and concreting

SCHEDULE OF DRAWINGS

Drawing No.	Description
3513/01	General Arrangement
3513/02	Site Plan and Geotechnical Details
3513/03	Foundation Plan and Setting Out Details
3513/04	Pile Layout Details
3513/05	Left Abutment - Concrete Details
3513/06	Left Abutment - Reinforcement Details
3513/07	Right Abutment - Concrete Details
3513/08	Right Abutment - Reinforcement Details
3513/09	Piers 1 and 2 - Concrete and Reinforcement Details
3513/10	Deck - Concrete Details
3513/11	Deck - Reinforcement Details - Sheet 1 of 2
3513/12	Deck - Reinforcement Details - Sheet 2 of 2
3513/13	Parapets and End Block Concrete Details
3513/14	Parapets and End Block Reinforcement Details
3513/15	Inspection Eye Frame and Cover Plate Details
3513/16	Schedule of Reinforcement - Sheet 1
3513/17	Schedule of Reinforcement - Sheet 2
3513/18	Schedule of Reinforcement - Sheet 3

<p><b>AS BUILT</b></p> <p>Supervising Engineer: _____ Date: _____</p> <p>Supervising Authority: _____</p>		<p>Designed by: M. Mgbobazi</p> <p>Checked by: S. Jaya</p> <p>Drawn by: S. Jaya</p> <p>Checked by: Y. Rajjee</p> <p>File Reference: D1834/6/3513/4</p>		<p>Designed by: _____</p> <p>Checked by: _____</p> <p>Drawn by: _____</p> <p>Checked by: _____</p> <p>File Reference: _____</p>	<p>OFF DISTRICT ROAD D1834 (MBOZA CLINIC) TO D1836</p> <p><b>MBOZA RIVER BRIDGE No.3513</b></p> <p>GENERAL ARRANGEMENT</p>	<p>Scaled in distance off 19 km peg on D1834 6' 27" 11" 48.77 6' 32" 14" 29.97</p> <p>Scale: As shown</p> <p>Additional Sheet: 1 of 1</p> <p>Plan No.: 3513/1</p>
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