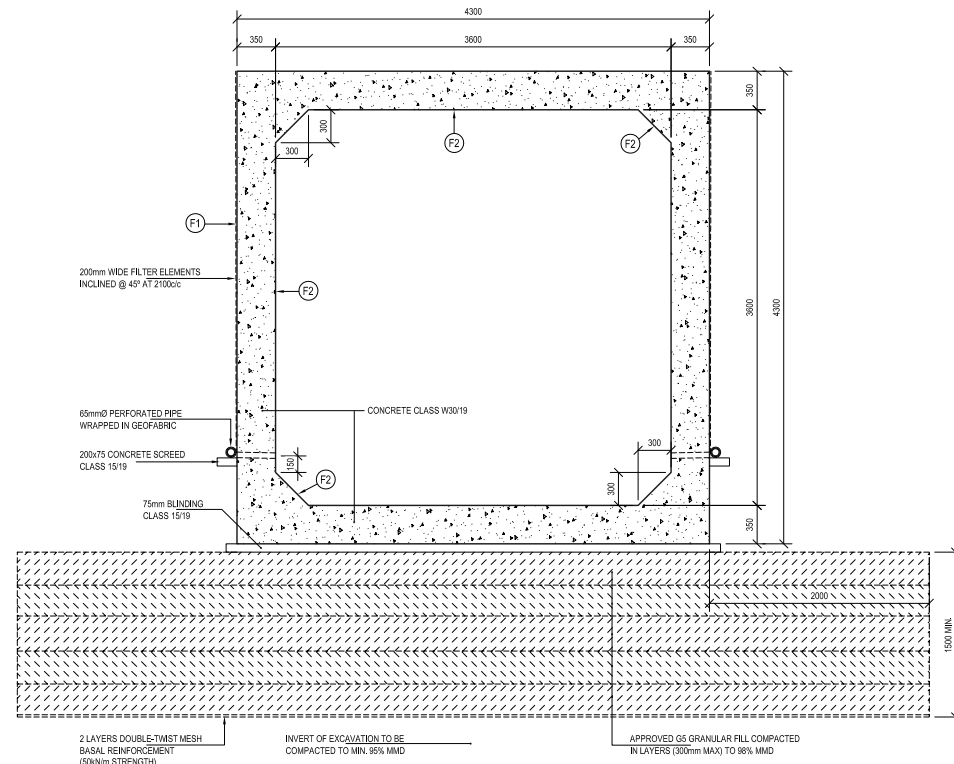
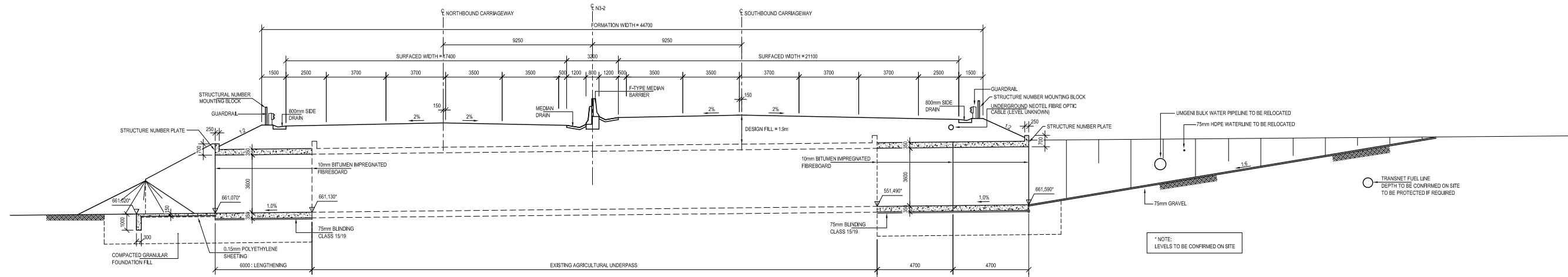


NORTHBOUND ELEVATION
1:50



TYPICAL SECTION
1:25



LONGITUDINAL SECTION
1:100

- NOTES**
- GENERAL
 - STRUCTURAL SYSTEM: SINGLE-SPAN CELL STRUCTURE
 - DESIGN METHOD: LIMIT STATES DESIGN IN ACCORDANCE WITH TMH7 CODE OF PRACTICE FOR THE DESIGN OF HIGHWAY BRIDGES AND CULVERTS IN SOUTH AFRICA
 - SOFTWARE USED:
 - PROKON SUITE OF STRUCTURAL ANALYSIS SOFTWARE
 - DESIGN LOADINGS
 - SELF WEIGHT: 25 kN/m³
 - DESIGN FILL: 1,9 m
 - LIVE LOADS (TMH7 PARTS 1 AND 2, AS AMENDED (1988))
 - NA
 - NB36
 - NC-30x5x40
 - SECONDARY LOADING AS SPECIFIED IN TMH7
 - TEMPERATURE EXPANSION COEFFICIENT - 12 x 10⁻⁶ m/m/°C
 - EARTH PRESSURE - 5,6 kN/m²/m
 - MATERIAL SPECIFICATION
 - CONCRETE IN:

	CLASS	CHARACTERISTIC STRENGTH	YOUNG'S MODULUS	TEMP COEFFICIENT
(a) CELL STRUCTURE	W30/19	30 MPa	26 GPa	12 E ⁻⁶ m/m/°C
(b) WING WALLS	W30/19	30 MPa	26 GPa	12 E ⁻⁶ m/m/°C
(c) APRON SLABS	15/19	15 MPa	23 GPa	12 E ⁻⁶ m/m/°C
(d) MASS CONCRETE	15/19	15 MPa	23 GPa	12 E ⁻⁶ m/m/°C
(e) BLINDING	15/19	15 MPa	23 GPa	12 E ⁻⁶ m/m/°C
 - REINFORCEMENT (SANS 281-2011)

TYPE	YIELD STRENGTH	YOUNG'S MODULUS
(a) MILD STEEL BARS (R)	250 MPa	200 GPa
(b) HIGH TENSILE BARS (Y)	450 MPa	200 GPa
 - FOUNDING MATERIAL: IMPORTED COMPACTED GRANULAR FOUNDATION FILL
 - CONSTRUCTION DETAILS
 - CONSTRUCTION ACTIVITIES TO BE PLANNED IN ACCORDANCE WITH TRAFFIC ACCOMMODATION MASTER PLAN
 - POSITION OF ALL EXISTING SERVICES TO BE CONFIRMED AND SERVICES PROTECTED OR RELOCATED WHERE REQUIRED, PRIOR TO THE COMMENCEMENT OF ANY EXCAVATIONS
 - ALL VISIBLE CORNERS MUST BE CHAMFERED 20mm x 20mm UNLESS SHOWN OTHERWISE
 - CONCRETE COVER: 40mm MIN (EXPOSURE CLASS XC3)
 - CONCRETE FINISH
 - VISIBLE SURFACES - F2 (SMOOTH)
 - NON-VISIBLE SURFACES - F1 (ROUGH)
 - HEALTH AND SAFETY
 - HEALTH AND SAFETY ON SITE IS GOVERNED BY THE OCCUPATIONAL HEALTH AND SAFETY ACT NO 85 OF 1993 AND THE CONSTRUCTION REGULATIONS OF 2003.
 - A HEALTH AND SAFETY PLAN SHALL BE COMPILED, INCORPORATING A RISK ASSESSMENT, IDENTIFICATION OF ALL SITE-SPECIFIC RISKS, THE PROVISION OF SUITABLE SAFETY EQUIPMENT AND A SAFE WORKING ENVIRONMENT.
 - FALSEWORK AND TEMPORARY EMBANKMENT SUPPORT SHALL BE APPROVED BY THE ENGINEER PRIOR TO ERECTION AND IMPLEMENTATION

CONSTRUCTION RECORD WORKS CONTRACT ENGINEER Name: _____ Prof. Reg. No.: _____ Date: _____ SANRAL PROJECT MANAGER Name: _____ Date: _____		DESIGNED BY NAME: JJ RAUTENBACH Prof. Reg. No.: 910252 CHECKED BY NAME: JJ JANSE VAN RENSBURG Prof. Reg. No.: 950018 DRAWN BY NAME: D VENTER	CONSULTANT APPROVAL Name: N H NATHOO Prof. Reg. No.: 920356 Date: 1/1/17	HEAD OFFICE 48 Tambotie Avenue Val de Grace Pretoria 0184 PO Box 415 Pretoria 0001 South Africa Tel: (012) 844 8000	SANRAL SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD BUILDING SOUTH AFRICA THROUGH BETTER ROADS	EASTERN REGION 58 Van Eck Place Mkomoti Pietermaritzburg 3200 PO Box 100410 Scottsville 3209 Tel: (033) 392 8100 Fax: (033) 386 3365	ACCEPTANCE THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING for the SA NATIONAL ROADS AGENCY SOC LTD. Date: _____	PROJECT DESCRIPTION UPGRADING OF NATIONAL ROUTE 3, SECTIONS 2 AND 3, FROM LYNNFIELD PARK (N3/2- KM 30.6) TO ASHBURTON INTERCHANGE (N3/3- KM 0.8) VALLKOP UNDERPASS II C58 AT KM 33,775 GENERAL ARRANGEMENT : SHEET 2	PROJECT NUMBER NRA N003-023-2017/1F DRAWING LOCATION DATA ROUTE: N3 SECTION: 2 DRAWING km DISTANCE: 33.5 DRAWING TYPE STRUCTURES-CULVERTS BRIDGE/STRUCTURE No. C58 CONSULTANT DRAWING No. 15013-C58-03 SANRAL DOCUMENT #	SCALE : AS SHOWN SHEET 3 OF 3 VER V1
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No.	DATE	REVISION	CONSULT. ENG.
V1	26/09/2018	ORIGINAL VERSION	JR

CONSTRUCTION RECORD WORKS CONTRACT ENGINEER Name: _____ Prof. Reg. No.: _____ Date: _____ SANRAL PROJECT MANAGER Name: _____ Date: _____

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DESIGNED BY NAME: JJ RAUTENBACH Prof. Reg. No.: 910252 CHECKED BY NAME: JJ JANSE VAN RENSBURG Prof. Reg. No.: 950018 DRAWN BY NAME: D VENTER
--

CONSULTANT APPROVAL Name: N H NATHOO Prof. Reg. No.: 920356 Date: 1/1/17
--

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SANRAL
 SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD
 BUILDING SOUTH AFRICA
 THROUGH BETTER ROADS

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 PO Box 100410
 Scottsville
 3209
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 Fax: (033) 386 3365

ACCEPTANCE
 THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING
 for the SA NATIONAL ROADS AGENCY SOC LTD.
 Date: _____

PROJECT DESCRIPTION
 UPGRADING OF NATIONAL ROUTE 3, SECTIONS 2 AND 3, FROM LYNNFIELD PARK (N3/2- KM 30.6) TO ASHBURTON INTERCHANGE (N3/3- KM 0.8)
 VALLKOP UNDERPASS II C58 AT KM 33,775
 GENERAL ARRANGEMENT : SHEET 2

PROJECT NUMBER NRA N003-023-2017/1F	DRAWING LOCATION DATA ROUTE: N3 SECTION: 2 DRAWING km DISTANCE: 33.5 DRAWING TYPE STRUCTURES-CULVERTS BRIDGE/STRUCTURE No. C58 CONSULTANT DRAWING No. 15013-C58-03 SANRAL DOCUMENT #
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DRAWING NUMBER: 15013-C58-03