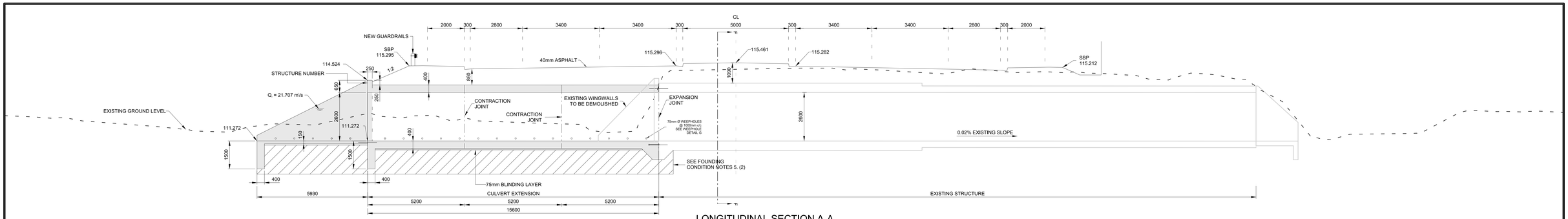
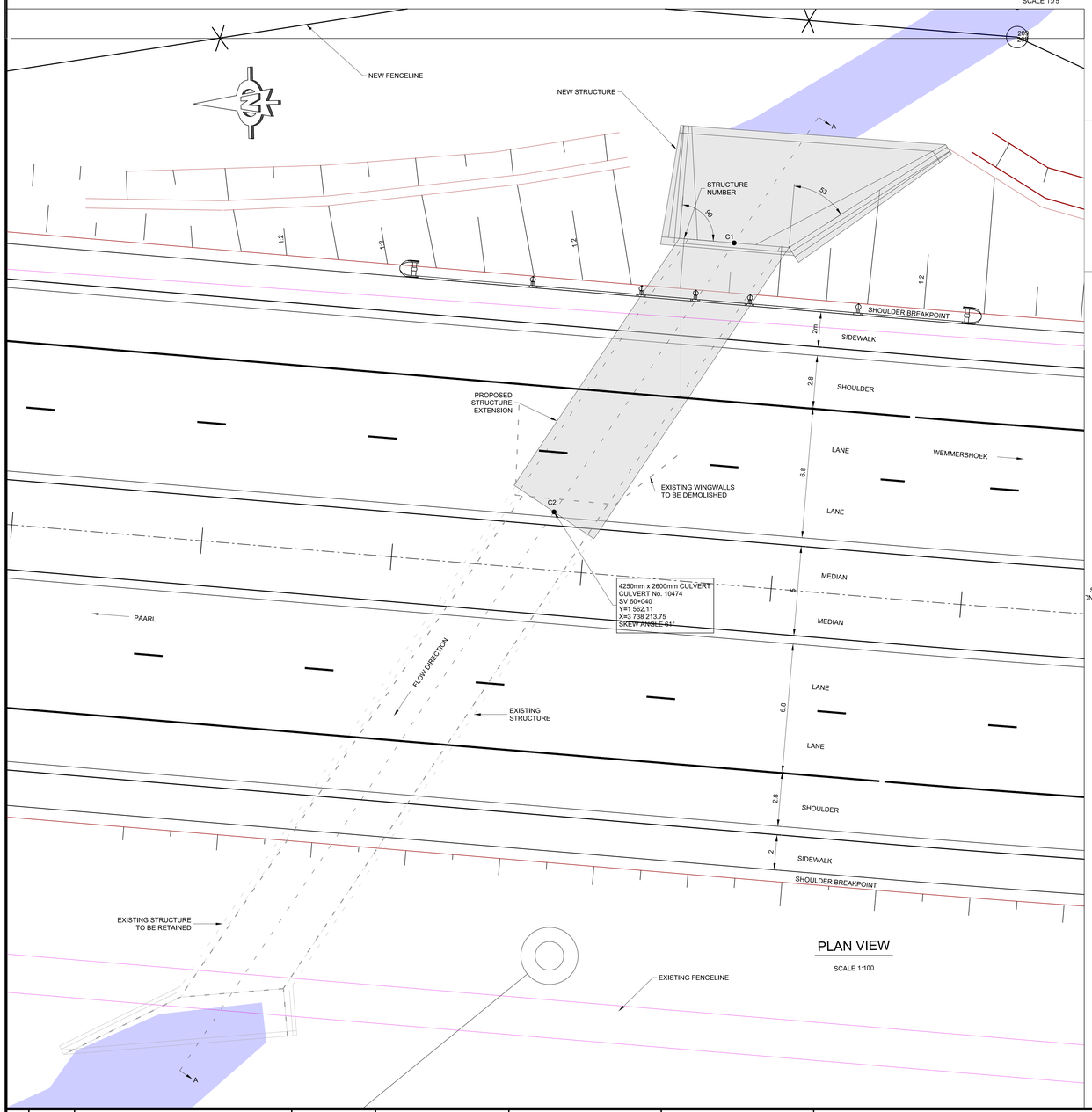


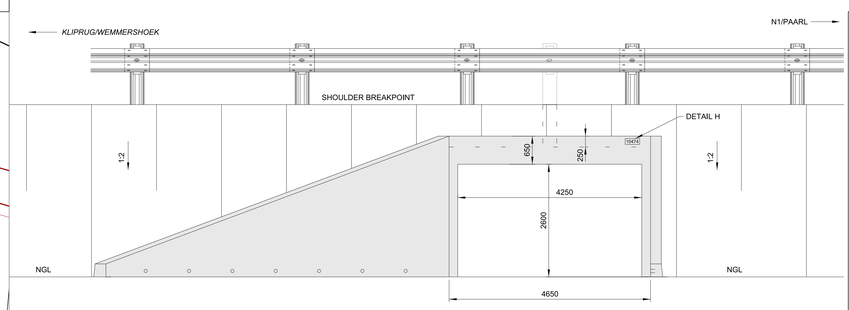
LONGITUDINAL SECTION A-A

SCALE 1:75



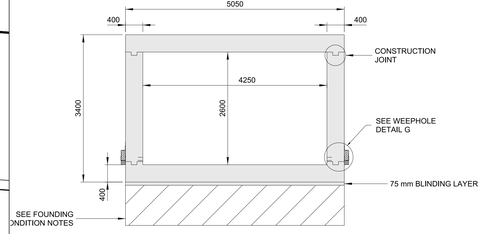
PLAN VIEW

SCALE 1:100



INLET ELEVATION

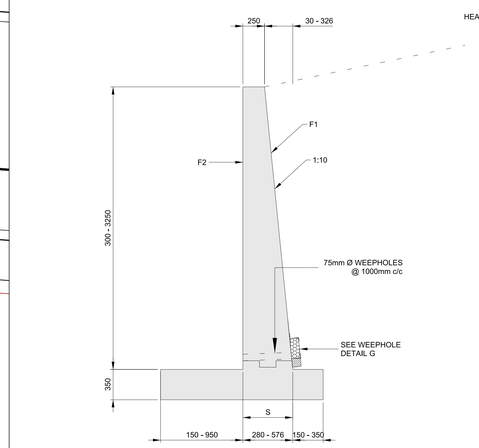
SCALE 1:25



SECTION F-F

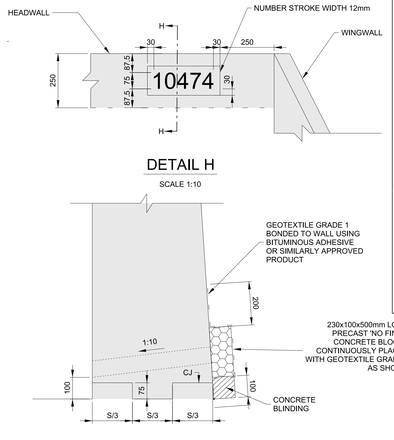
SCALE 1:50

HYDRAULIC INFORMATION CULVERT 10473	
EFFECTIVE CATCHMENT AREA (Km²)	8.696
DESIGN FLOOD (yrs)	20
DESIGN FLOOD Q (m³/s)	21.707
HYDROLOGICAL METHOD	RATIONAL METHOD ALTERNATIVE 3
STREAM AVERAGE SLOPE (m/m)	9
DESIGN FLOW VELOCITY (m/s)	2.87
LEVEL OF Q_ AND LEVEL OF SBP (m)	112.995 ; 115.295
FREEBOARD AT CULVERT	FREEBOARD LEVEL DICTATED BY ROAD GEOMETRY



SECTION E-E

SCALE 1:25



DETAIL H

SCALE 1:10

DETAIL G

WEEPHOLE DETAIL

SCALE 1:10

GENERAL NOTES:

1. THE CULVERTS ARE DESIGNED ACCORDING TO TMH7 PARTS 1-3 CODE OF PRACTICE FOR THE DESIGN OF HIGHWAY BRIDGES AND CULVERTS IN SOUTH AFRICA, AS AMENDED IN 1988.
2. SINGLE CAST INSITU PORTAL CULVERT WITH 4250 mm X 2600 mm
3. FILL HEIGHTS

   MIN FILL HEIGHT = 860 mm
   MAX FILL HEIGHT = 1090 mm
4. DESIGN TABLE (WCS/60/4/C5)

   FILL HEIGHT = 1000 mm
   DESIGN SPAN = 4800 mm

DESIGN LOADING AND CONDITIONS ON CULVERTS :

1. PRIMARY TRAFFIC LOADING ON CULVERTS (TMH7 PART 2 - 2.6.6):
   (1) NA LOADING
   (2) NB 36 LOADING
   (3) NC LOADING
2. VERTICAL EARTH LOADING ON CULVERTS (TMH7 PART 2 - 2.3.3)
   (1) FILL HEIGHT VARIES FROM 0 TO 6 METERS ABOVE TOP OF CULVERT
3. HORIZONTAL EARTH PRESSURE ON CULVERTS (TMH7 PART 2 - 2.4):
   (1) SOIL TYPE I - 5.6 kN/m² PER METER DEPTH
   (2) SOIL TYPE II - 7.8 kN/m² PER METER DEPTH
   (3) SURCHARGE PRESSURE OF NA, NB36 AND NC HIGHWAY TRAFFIC LOADING
   (4) NO ALLOWANCE WAS MADE FOR HORIZONTAL WATER PRESSURE BEHIND THE WALLS AND SHOULD BE RELIEVED BY MEANS OF A PROPER DRAINAGE SYSTEM AND WEEPHOLES.
4. MATERIAL DENSITIES :
   (1) SOIL = 2000 kg/m
   (1) CONCRETE = 2600 kg/m
5. FOUNDING CONDITIONS:
   (1) CULVERTS WERE DESIGNED BOTH FOR YIELDING AND UNYIELDING FOUNDATION CONDITIONS.
   (2) UNSUITABLE FOUNDING MATERIAL SHALL BE REPLACED WITH COMPACTED GRANULAR MATERIAL/MASS CONCRETE UP TO MINIMUM DEPTH OF 500mm AND TO A WIDTH OF 500mm BEYOND THE FOUNDATION LIMIT OR SPECIFIED BY THE ENGINEER

MATERIAL SPECIFICATION :

1. CONCRETE	CLASS	CHARACTERISTIC STRENGTH (MPA)	MIN CEMENTITIOUS CONTENTS
(1) BLINDING LAYER	15/20	15	
(2) SLABS AND WALLS	30/20	30	300 kg/m³

2. REINFORCEMENT TYPE	YIELD STRENGTH (MPA)	MIN RADIUS
(1) MILD STEEL BARS (R)	250	2 x DIAM
(2) HIGH TENSILE STEEL BARS (Y)	450	3 x DIAM

CONSTRUCTION :

1. ALL EXPOSED SHARP EDGES TO HAVE 20 x 20mm CHAMFERS.
2. CONCRETE COVER TO REINFORCING: 50mm FOR ALL STRUCTURAL ELEMENTS. 75mm ELSEWHERE
3. CONCRETE FINISH:
   NON-VISIBLE SURFACES - F1
   VISIBLE SURFACES - F2
   UNFORMED SURFACES - U2
4. STRUCTURE NUMBER TO BE INSCRIBED ON OUTSIDE FACE OF HEADWALL AS PER DETAIL WCS/60/8/D1

NO.	DATE	ADDITIONS AND AMENDMENTS
VI	12/12/19	

DESIGNED BY:	MNCEDI OJI
CHECKED BY:	WESSEL LOURENS
DRAWN BY:	MNCEDI OJI
CHECKED BY:	WESSEL LOURENS

Western Cape Government
Transport and Public Works

PROJECT DESIGN CO-ORDINATOR
DATE: _ _ _ _ _ _ _ _

WESTERN CAPE GOVERNMENT

DEPARTMENT OF TRANSPORT AND PUBLIC WORKS

APPROVED
THIS APPROVAL IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OF ANY KIND FROM WHATSOEVER OR HOWEVER ARISING

PROVINCIAL ROADS ENGINEER
DATE: _ _ _ _ _ _ _ _

PROPOSED EXTENSION OF CULVERT 10474 ON MAIN ROAD 201 AT KM 60.040 AT BERG RIVER TRIBUTARY

GENERAL ARRANGEMENT

P.R.E's FILE No.	SCALE
TPW 16/6/4/1/4 - MR00201	AS SHOWN
CONTRACT No.	WCG STRUCTURE PLAN No.
C1120	10474-02
ORIGINAL PAPER SIZE.	WCG INDEX No.
A0	A93/676 VI