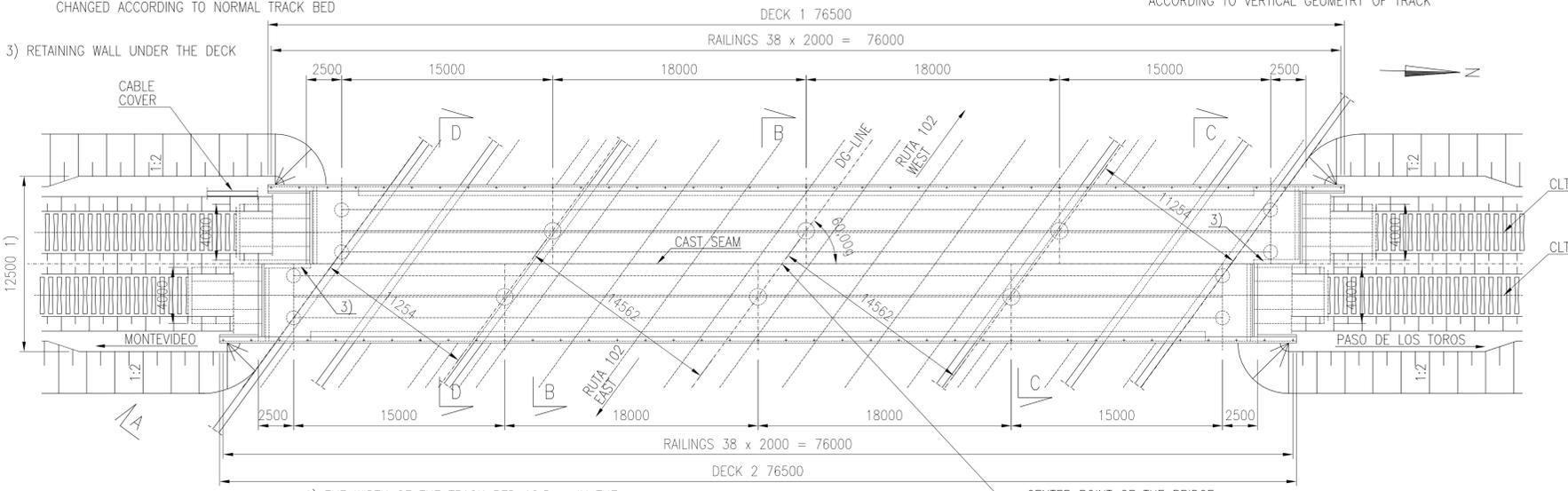


UNDERPASS BRIDGE 1:200

DOUBLE DECK, RUTA 102

***) BRIDGE WILL BE BUILT MIN. 1 % INCLINATION
ACCORDING TO VERTICAL GEOMETRY OF TRACK



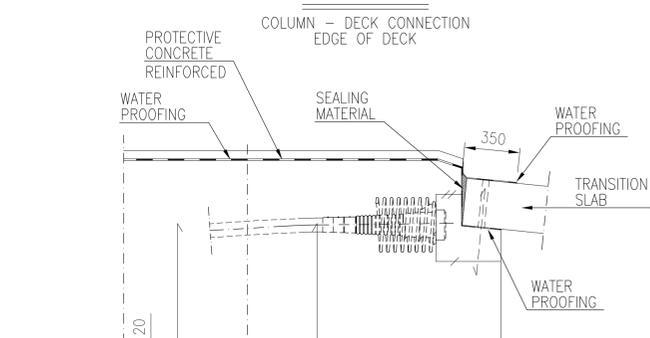
1) THE WIDTH OF THE TRACK BED 8.0 m IN THE
END OF THE BRIDGE, AFTER 10 m WIDTH WILL BE
CHANGED ACCORDING TO NORMAL TRACK BED

3) RETAINING WALL UNDER THE DECK

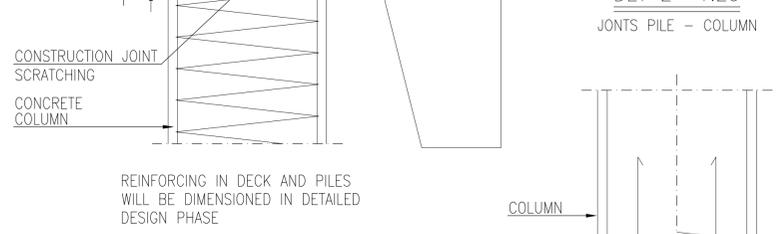
1) THE WIDTH OF THE TRACK BED 12.5 m IN THE
END OF THE BRIDGE, AFTER 10 m WIDTH WILL BE
CHANGED ACCORDING TO NORMAL TRACK BED

CENTER POINT OF THE BRIDGE
NEW km = 013+200
OLD km = 013+200

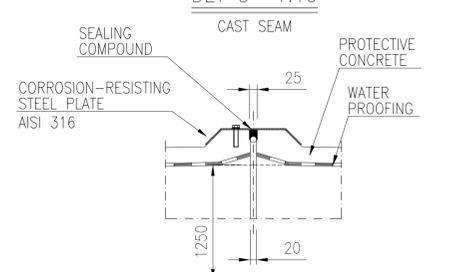
DET 1 1:20



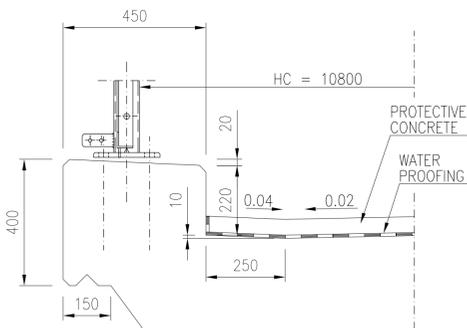
DET 2 1:20



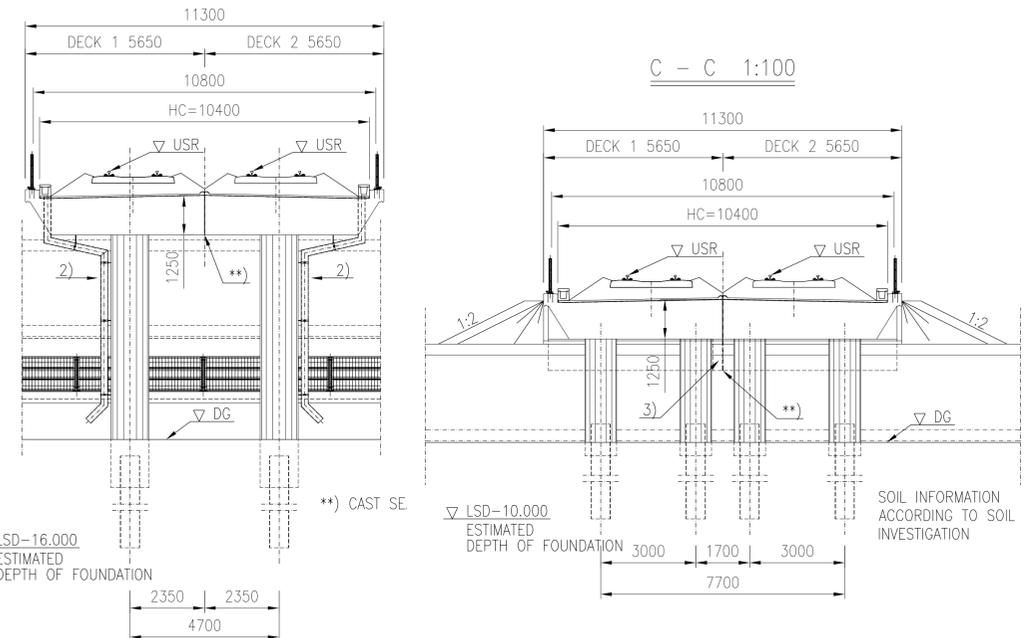
DET 3 1:10



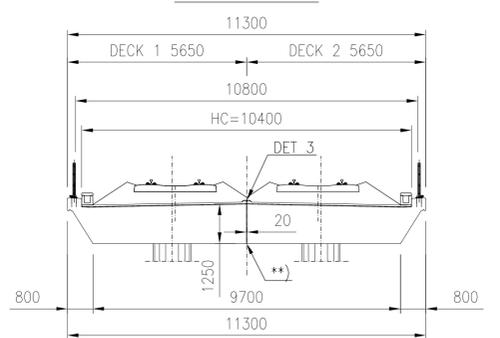
B - B 1:100



C - C 1:100



D - D 1:100



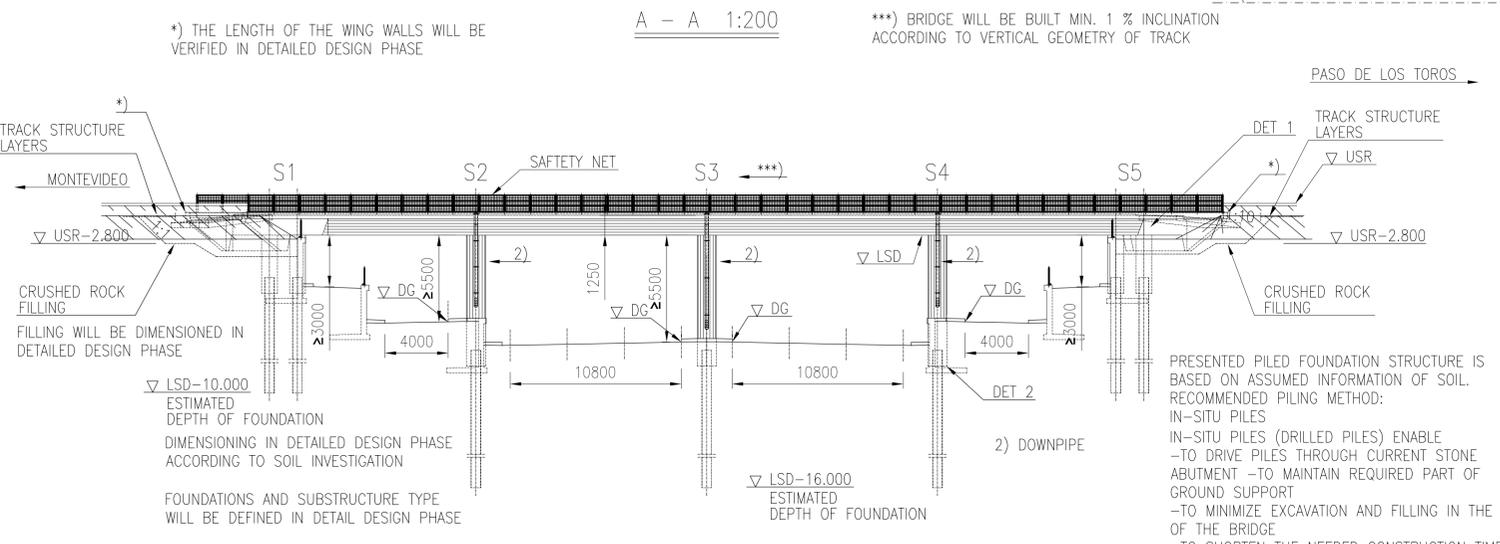
ESTIMATED AMOUNT OF CONCRETE
PILES: 30 m³
COLUMNS: 80 m³
SUPERSTRUCTURE: 932 m³

ESTIMATED PRESTRESSING STEEL
SUPERSTRUCTURE: 23 kg/m³ (CONCRETE)

ESTIMATED REINFORCING STEEL
PILES: 4200 kg
COLUMNS: 260 kg/m³ (CONCRETE)
SUPERSTRUCTURE: 90 kg/m³ (CONCRETE)
TRANSITION SLABS: 325 kg/m³ (CONCRETE)

PROTECTIVE CONCRETE: 3 kg/m²

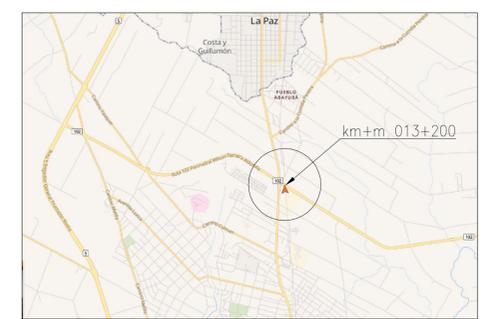
A - A 1:200



***) BRIDGE WILL BE BUILT MIN. 1 % INCLINATION
ACCORDING TO VERTICAL GEOMETRY OF TRACK

PRESENTED PILED FOUNDATION STRUCTURE IS
BASED ON ASSUMED INFORMATION OF SOIL.
RECOMMENDED PILING METHOD:
IN-SITU PILES
IN-SITU PILES (DRILLED PILES) ENABLE
-TO DRIVE PILES THROUGH CURRENT STONE
ABUTMENT -TO MAINTAIN REQUIRED PART OF
GROUND SUPPORT
-TO MINIMIZE EXCAVATION AND FILLING IN THE END
OF THE BRIDGE
-TO SHORTEN THE NEEDED CONSTRUCTION TIME

- CONCRETE: C35/45
C_{min}=40 mm
 - REINFORCING STEEL: B500B
 - REINFORCING MESH: B500K
 - PILES / FOUNDATION: DRILLED PILES D610x14,2 S355J2H
 - TRANSITION SLABS: PREFABRICATED TRANSITION SLABS
2 x 2 x 4 x 1.0 m x 5.0 m
OR CAST IN SITU 2 x 2 x 4.0 m x 5.0 m
CONCRETE C35/45
 - CONSTRUCTIONAL STEEL: S355 J2, HOT-DIP ZINC COATED
 - RAILING / FENCE: h = 1.1 m
S355J2H
HORIZONTAL LINE LOAD 1.0 KN/m
VERTICAL POINT LOAD 1.0 KN
 - SURFACE STRUCTURE: WATER PROOFING MATERIAL 10 mm
PROTECTIVE CONCRETE 50 mm
BALLAST 550 mm
 - FILLING: REQUIREMENTS ACCORDING TO TRACK INTERMEDIATE LAYER
- CLT = CENTER LINE of the TRACK
HC = HORIZONTAL CLEARANCE
LSD = LOWER SURFACE of the DECK
USR = UPPER SURFACE of the RAIL



BRIDGE TYPE	PRESTRESSED CONCRETE BRIDGE
	CONTINUOUS CANTILEVER PLATE
SPANS	2.50m + 15.00m + 2x18.00m + 15.00m + 2.50m
HORIZONTAL CLEAR SPAN	10.80 m
HORIZONTAL CLEARANCE	10.80 m
VERTICAL CLEARANCE	-

VERSION
15.12.2017

Revision	Explanation	Date	Designer	Date	Acceptor
1	Initial design	15.12.2017	Ilkka Tiito		
2	Revised design	15.12.2017	Ilkka Tiito		
3	Final design	15.12.2017	Reima Niklander		

Customer	MTOP MINISTERIO DE TRANSPORTE Y OBRAS PÚBLICAS	Project	Railway Project
Supplier	VR TRACK	Design phase	Pre-engineering, Phase 2
Drawer	15.12.2017 Ilkka Tiito	Content	Underpass bridge Ruta 102 Preliminary general drawing Km+m 013+200
Designer	15.12.2017 Ilkka Tiito	Coordinate and elevation reference system	WGS 84 UTM 21
Supervisor	15.12.2017 Reima Niklander	Railway line	
Accept.	-	Archive	Type Number Rev. Sheet
Cust. acc.	-	UP	xxxx - 1