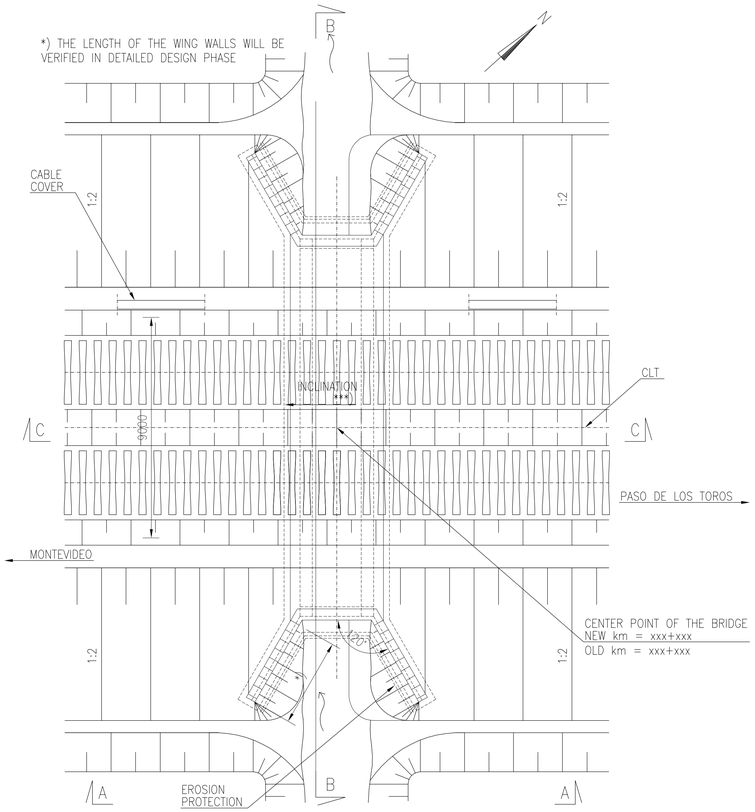
MVD -PdT km -+- -

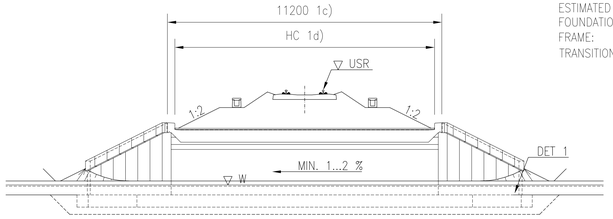
CULVERT BRIDGE
3 m
PRELIMINARY GENERAL
DRAWING

CULVERT BRIDGE 3 m 1:100



B – B 1:100

1 TRACK



1c) 1d) THE LENGTH OF THE CULVERT BRIDGE AND HC ARE DEPENDING ON THE EMBANKMENT HEIGHT AND AMOUNT OF TRACKS.
EACH CULVERT BRIDGE SHALL BE VERIFIED IN THE DETAILED DESIGN PHASE.

CULVERT FOR 1 TRACK

ESTIMATED AMOUNT OF CONCRETE
FOUNDATION SLAB: 32 m3
FRAME: 59 m3

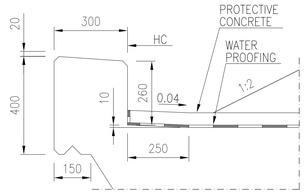
ESTIMATED REINFORCING STEEL
FOUNDATION SLAB: 100 kg
FRAME: 190 kg/m3 (CONCRETE)
TRANSITION SLABS: 325 kg/m3 (CONCRETE)

CULVERT FOR 2 TRACKS

ESTIMATED AMOUNT OF CONCRETE
FOUNDATION SLAB: 42 m3
FRAME: 76 m3

ESTIMATED REINFORCING STEEL
FOUNDATION SLAB: 100 kg
FRAME: 190 kg/m3 (CONCRETE)
TRANSITION SLABS: 325 kg/m3 (CONCRETE)

EDGE BEAM 1:10



CONCRETE: C35/45
Cmin=40 mm

REINFORCING STEEL: B500P
REINFORCING MESH: B500K

TRANSITION SLABS: PREFABRICATED TRANSITION SLABS FOR 1 TRACK
2 x 4 x 1.0 m x 5,0 m
OR CAST IN SITU 2 x 4,0 m x 5,0 m

PREFABRICATED TRANSITION SLABS FOR 2 TRACKS
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

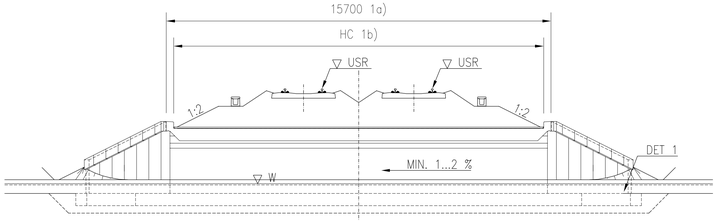
RAILING / FENCE: h = 1.1 m
S355J2H
HORIZONTAL LINE LOAD 1,0 KN/m
VERTICAL POINT LOAD 1.0 KN

SURFACE STRUCTURE: WATER PROOFING MATERIAL 10 mm
PROTECTIVE CONCRETE 50 mm
(BALLAST 550 mm)

FILLING: REQUIREMENTS ACCORDING TO TRACK INTERMEDIATE LAYER

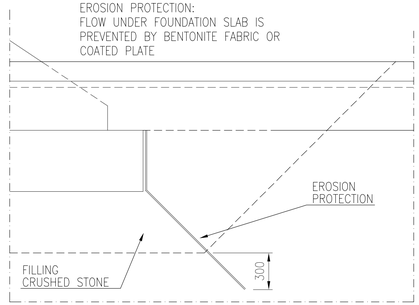
B – B 1:100

2 TRACKS



1a) 1b) THE LENGTH OF THE CULVERT BRIDGE AND HC ARE DEPENDING ON THE EMBANKMENT HEIGHT AND AMOUNT OF TRACKS.
EACH CULVERT BRIDGE SHALL BE VERIFIED IN THE DETAILED DESIGN PHASE.

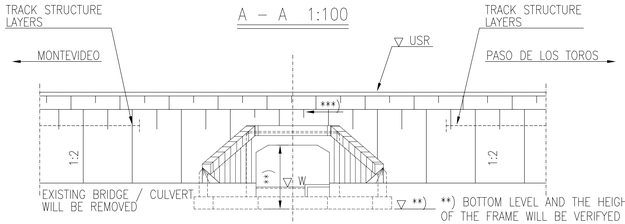
DET 1 1:20



CLT = CENTER LINE of the TRACK
HC = HORIZONTAL CLEARANCE
LSD = LOWER SURFACE of the DECK
USR = UPPER SURFACE of the RAIL

MAP

A – A 1:100



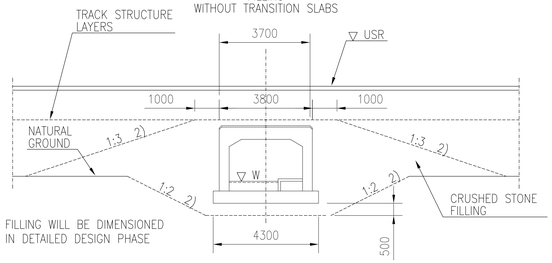
***) BRIDGE WILL BE BUILT MIN. 1 % INCLINATION ACCORDING TO VERTICAL GEOMETRY OF TRACK

SOIL INFORMATION

**) BOTTOM LEVEL AND THE HEIGHT OF THE FRAME WILL BE VERIFYED IN DETAILED DESIGN PHASE

C – C 1:100

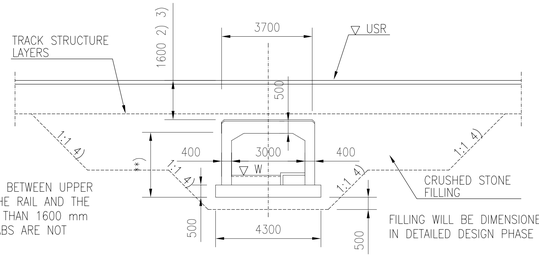
FILLING WITHOUT TRANSITION SLABS



FILLING WILL BE DIMENSIONED IN DETAILED DESIGN PHASE

C – C 1:100

DIMENSIONS



2) IF DISTANCE BETWEEN UPPER SURFACE OF THE RAIL AND THE DECK IS MORE THAN 1600 mm TRANSITION SLABS ARE NOT NEEDED

3) IF DISTANCE BETWEEN UPPER SURFACE OF THE RAIL AND THE DECK IS LESS THAN 1600 mm TRANSITION SLABS AND CANTILEVER BRACKETS ON THE SIDE OF THE FRAME ARE NEEDED
FILLING ACCORDING TO NOTE 4)

4) FILLING IF TRANSITION SLABS ARE NEEDED

FILLING WILL BE DIMENSIONED IN DETAILED DESIGN PHASE

**) BOTTOM LEVEL AND THE HEIGHT OF THE FRAME WILL BE VERIFYED IN DETAILED DESIGN PHASE

BRIDGETYPE	REINFORCED CONCRETE BRIDGE FRAME PLATE
SPANS	3.00 m
HORIZONTAL CLEAR SPAN	– VERTICAL CLEARANCE –
HORIZONTAL CLEARANCE	1 TRACK: >6.30 m; 2 TRACKS: >10.80 m

VERSION
23.10.2017

Revision	Explanation	Date	Designer	Date	Acceptor

Customer: MINISTERIO DE TRANSPORTE Y OBRAS PÚBLICAS
Supplier: VR TRACK

Project: Railway Project
Design phase: Pre-engineering, Phase 2
Content: Culvert bridge 3 m
Preliminary general drawing
Km+m -+-

Drawer	23.10.2017	Ilkka Tiiro
Designer	23.10.2017	Ilkka Tiiro
Supervisor	23.10.2017	Reima Niklander
Accept	-	-
Cust. acc.	-	-

Loading: LM71-25
Coordinate and elevation reference system: WGS 84 UTM 21
Railway line:
Archive Type Number Rev. Sheet: RB - - 1