

APPROVED,
Chief Inspector

**PROGRAM FOR QUALITY CONTROL OF
CONSTRUCTION WORKS**

REHABILITATION OF RAILWAYS BRASOV - SIMERIA, PART OF PAN
EUROPEAN CORRIDOR IV, TO RUN TRAINS WITH MAXIMUM SPEED OF 160
KM/H

- FELDIOARA STATION -

As
beneficiary.....

- represented by.....

as designer:**Italfer S.p.A – Scott Wilson – Obermayer – Tecnic –AREX LIDER
COMPANY**

- represented by.....

as contractor

- represented by

According to Law no. 10/1995, HG no. 261/1994, HG no. 272/1994, HG no.
273/1994 and the norms in force,

Commonly agree upon this quality control program for construction works.

No.	Works to be controlled, checked or accepted from quality point of view that require written documents	Written document to be concluded: PV – report PVRC – quality acceptance report PVT – tracing report CRM – register book for received materials	Drawn up and signed by: I – Construction inspectorate B – beneficiary E – contractor P – designer	No. and date of concluded document
0	1	2	3	4

I	DEVELOPMENT OF PASSENGER BUILDING			
	Demolition works, repair works, infrastructure consolidations			
1.1	Strippings, necessary crushings and excavation for carrying out the consolidation of foundations and the slab over the basement	P.V.	B.E.	
1.2	Carrying out the appropriate proppings	P.V.	B.E.	
1.3	Evacuating the overloads coming from the strippings	P.V.	B.E.	
1.4	Decisive phase – Checking the mounting of reinforcement in the case of the necessary for consolidating the foundations by structural coating - Checking the mounting of girders (IPN profiles) necessary for consolidating the slab over the basement	P.V.R.C.	I.B.E.P.	
1.5	Concreting (consolidation by widening the foundations according to the project)	P.V.	B.E.	
1.6	Reinforced plastering with jetcrete mortar (consolidation of the small vaults which form the slab over the basement according to the design)	P.V.	B.E.	
1.7	Checking the quality and the aspect of the consolidated elements of the foundations, slab over basement)	Conc book. + notes	B.E.	
	Demolition works, repair works, consolidations of superstructure			
1.8	The crushings necessary for mounting the beams, IPN profiles, necessary for supporting the existing loads	P.V.	B.E.	
1.9	Decisive phase - Checking the mounting of the reinforcement necessary for cladding the exterior walls	P.V.R.C.	I.B.E.P.	
1.10	Concreting (cladding the exterior reinforced concrete walls provided by the design)	P.V.	B.E.	

1.11	Checking the quality and the aspect of the consolidated elements	Conc book. + notes	B.E.	
1.12	Decisive phase Acceptance at the end of the works	P.V.R.C.	I.B.E.P.	
//	TUNNEL			
2.1	Drawing pedestrian tunnel (cf. project)	P.V.T.	B.E.	
2.2	Execution of necessary excavation, opened trenches, partially supporting wood and metal sheet piling, partially in embankment with temporary bridges.	P.V.	B.E.	
2.3	Spreading the bottom of excavation and concrete compaction equalization	P.V.	B.E.	
2.4	Waterproofing foundation tunnel	P.V.	B.E.	
2.5	Checking the reinforcement and concrete forming of the tunnel walls	P.V.	B.E.	
2.6	Concreting the tunnel slab	P.V.	B.E.	
2.7	Checking the reinforcement and concrete forming of the tunnel walls, - DECISIVE PHASE	P.V.R.C.	I.B.E.P.	
2.8	Concreting the tunnel walls	P.V.	B.E.	
2.9	Hydro tunnel walls	P.V.	B.E.	
2.10	Reinforcement and concrete forming of the floor tunnel	P.V.	B.E.	
2.11	Concreting the tunnel floor	P.V.	B.E.	
2.12	Hydro tunnel floor	P.V.	B.E.	
2.13	Excavation in execution speed required to carry tunnel access stairs	P.V.	B.E.	
2.14	Spreading and compacting the excavation bottom layer stepped equalization	P.V.	B.E.	
2.15	Waterproofing foundation stairs	P.V.	B.E.	

2.16	Checking the reinforcement and concrete forming slab of the tunnel access stairs	P.V.	B.E.	
2.17	Concreting slab of the access stairs	P.V.	B.E.	
2.18	Reinforcement and concrete forming of the stairs wall	P.V.	B.E.	
2.19	Concreting stairs wall	P.V.	B.E.	
2.20	Waterproofing stairs walls	P.V.	B.E.	
III	PLATFORMS			
3.1	Survey of crossings for TCF, IE and TTR existing cables, not be destroyed and their right precast elements will be executed as a monolith to be able to encapsulate	P.V.	B.E.	
3.2	Teaching site - drawing new platforms, after project	P.V.T.	B.E.P.	
3.3	Execution of necessary excavation trenches	P.V.	B.E.G.	
3.4	Compaction of excavation bottom, leveling layer spreading for the necessary components	P.V.	B.E.	
3.5	Marking and mounting wall support elements type	P.V.T	B.E.	
3.6	Networks for installations, foundations of lighting columns, lamps, etc.	P.V.	B.E.	
3.7	Making and Spreading compacted fill layer of gravel and polyethylene film	P.V.	B.E.	
3.8	Checking installing prefabricated tiles on elements such wall support, the reinforcement in order to concrete each other to complete the monolith areas and level crossing	P.V.	B.E.	
3.9	Concreting of the platform tiles	P.V.	B.E.	
3.10	Taking-Over- DECISIVE PHASE	P.V.	B.E.P.I.	
IV	NEW CANOPIES			
4.1	Delivering - Receiving location	P.V.	B.E.P	

4.2	Drawing the new canopies, according to project	P.V.T.	B.E	
4.3	Diggings execution / fillings, according to project	P.V.	B.E.G	
4.4	Networks for installations, TTR and CED undercrossing, manhole, etc., related to the platform and to canopy	P.V.	B.E	
4.5	Compaction of the excavation bottom, compacted ballast cushion achievement (thickness check, level of compaction, smoothness), check the foundation share, according to the project	P.V.L.A.	B.E.G	
4.6	Simple concrete casting (bonding layer)	P.V.	B.E	
4.7	Check longitudinal and transverse axes network for the canopies foundations, according to project	P.V.T	B.E	
4.8	Formwork and reinforcing of the foundations canopy pillars, including housing anchor bolts, checking dimensions, the odds – DECISIVE PHASE	P.V.L.A.- F.D.	B.E.P.I	
4.9	Concreting foundation pillars of awning (material quality checking certificate)	P.V.R.C.	B.E	
4.10	Checking the quality, appearance, shape, dimensions and protective layers of metal manufactures to the receiveing on the building site	C.R.M.	B.E	
4.11	Checking the of de-energizing the line of contact in the assembly area of awning pillars (according to work rules in the c.f. electrified area)	P.V.	B.E	
4.12	Installing awning pillars of the transversal beams corresponding to the position required by the project (in conjunction with awning pillars on foot tunnel)	P.V.	B.E	
4.13	Checking the gauge to the canopy	P.V.R.C.	B.E.(P)	

	structure (plane and vertical on the axis of each pillar)			
4.14	Casting mortar to canopy poles	P.V.	B.E	
4.15	Making compacted fill to the top of the canopy columns foundations (in conjunction with platforms work)	P.V.	B.E	
4.16	Concreting foundation pillars (protection head bolts), network connection equipment leaks and filling up the completion to the project level, its compactness (in conjunction with work platforms)	P.V.	B.E	
4.17	Installing other parts of the canopy (breakdown, bracing, roofing, etc..)	P.V.R.C.	B.E	
4.18	Checking the the execution of the cover as surface, catching, flatness, color, leak slope, gutters and connections	P.V.R.C.	B.E	
4.19	Checking the overall loading gauge of the canopy (in plan and vertically)	P.V.	B.E	
4.20	Taking-Over – DECISIVE PHASE	P.V.R.C.- F.D.	B.E.P.I	
V	Additional buildings installations			
5.1	Deliverying location, checking the correct trace shown in plans	P.V.R.C	B.E.	
5.2	Checking the excavations dimensions	P.V.R.C	B.E.	
5.3	Checking the the quality of materials on the construction site receiving	C.R.M	B.E.	
5.4	Checking the size and the correct mounting of formwork	P.V.R.C	B.E.	
5.5	Checking the quality and positioning of walls reinforcement	P.V.R.C.	I.B.E.	
5.6	Checking the quality and appearance of cast reinforced concrete in walls	P.V.R.C	B.E.	
5.7	Checking the quality and reinforcement positioning and metallic confections embedded in concrete	P.V.R.C	I.B.E.	
5.8	Checking the quality and appearance	P.V.R.C	B.E.	

	of reinforced concrete poured in slabs			
VI	ANTENA GSM-R			
6.1	Delivery – receiving location	P.V.	B.E. P.	
6.2	Execution of the excavation	P.V.	B.E.	
6.3	Check the site stratification at the end of excavation	P.V.	B.E.G.	
6.4	Decisive phase - check installing micropilot before injection mortar for concrete micropilot -Checking the head micropilot mounting	P.V.R.C.	I.B.E. P.	
6.5	Mortar injection for concrete micropilot	P.V.	B.E.	
6.6	Checking reinforcement in slab before pouring concrete	P.V.	B.E.P.	
6.7	Anchorage system check from slab before pouring the concrete	P.V.	B.E.P.	
6.8	Concrete slab	P.V.	B.E.	
6.9	Checking the quality and appearance of the foundation		B.E.	
6.10	Decisive phase: Taking-Over	P.V.R.C.	I.B.E.P.	
VII	SAFETY FENCE BETWEEN LINES			
7.1	Introducing in field the fence posts	P.V.	B.E.	
7.2	Installing the fence panels	P.V.	B.E.	
7.3	Checking the correct installing of the fence in field, it's verticality and linearity	P.V.	B.E.	
VIII	LOADING-DOWNLOADING RAMP	P.V.R.C.	I.B.E.P.	
8.1	Drawing the new ramp according to the project	P.V.T.	B.E.	
8.2	Execution of the necessary excavation	P.V.	B.E.	
8.3	Compaction of the excavation bottom, spreading of the ballast bed and casting the layer of equalization necessary to the components	P.V.	B.E.	

8.4	Installing the wall support elements ,checking the correct fitting – DECISIVE PHASE	P.V. R.C.	I.B.E.P.	
8.5	Achieve the filling up to the superior project level , its compactness, the layer of ballast and polyethylene foil	P.V.	B.E.	
8.6	Achievement of the stair	P.V.	B.E.	
8.7	Concreting the ramp board	P.V.	B.E.	
8.8	Installing the balustrade	P.V.	B.E.	
IX	CONTAINER BUILDING			
9.1	Deliverying - Receiving location	P.V.	B.E. P.	
9.2	Digging execution	P.V.	B.E.	
9.3	Checking the ground stratification to the excavation assessment	P.V.	B.E.G.	
9.4	Decisive phase - Checking the excavation geometry -Checking the reinforcement before pouring concrete	P.V.R.C.	I.B.E.P.	
9.5	Checking the anchorage system of the foundation containers before pouring the concrete	P.V.	B.E.P.	
9.6	Concreting the foundation	P.V.	B.E.	
9.7	Checking the quality and appearance of the foundation	Condica bet. + buletine ????????????	B.E.	
9.8	Decisive phase Taking-Over	P.V.R.C.	I.B.E.P.	

NOTE:

1. Column 4 is to be filled in when the document provided in col. 2 is concluded.
2. The contractor will notify in writing the other parties interested to participate with minimum 10 days before the date of checking.
3. During the object acceptance, one copy of this program properly filled in will be attached to the Construction book.

BENEFICIARY:

DESIGNER:

CONTRACTOR:

AREX LIDER COMPANY