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

- VANATORI 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	***STATION BUILDING***			
1.1	Execution of necessary excavation	P.V.	B.E.	

1.2	Ground consolidation by arrangement of compacted ballast cushion	P.V.	B.E.G.	
1.3	Station building drawing , after the project	P.V.T.	B.E.	
1.4	Spreading the necessary bonding layer, after the project	P.V.	B.E.	
1.5	Foundations pouring, after the project – DECISIVE PHASE	P.V. R.C.	I.B.E.P.	
1.6	Achieving higher levels of filler to project, their compaction and spreadingthe floor layers	P.V.	B.E.	
1.7	Making confined masonry (poles, reinforcing the joints, lintels)	P.V.	B.E.	
1.8	Formwork, reinforcing floor, positioning holes and embedded parts (plate, corbels, beams) – DECISIVE PHASE	P.V. R.C.	I.B.E.P.	
1.9	Pouring the concrete in plate	P.V.	B.E.	
1.10	Checking the execution of the roof truss(structural elements and covers)	P.V.	B.E.	
1.11	Set color, texture, appearance	P.V.	B.E.P.	
1.12	Interior finishes - flatness check, uniformity of appearance and color (including verification of the existence of quality certificate)	P.V.	B.E.	
1.13	Exterior finishes - flatness check, uniformity of appearance and color (including verification of the existence of quality certificate)	P.V.	B.E.	
1.14	Checking the carpentry (appearance, color, accessories)	P.V.	B.E.	
II	**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	P.V.	B.E.	

	bridges.			
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	Markingand 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	P.V.L.A.	B.E.G	

	project			
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 structure (plane and vertical on the axis of each pillar)	P.V.R.C.	B.E.(P)	
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	P.V.	B.E	

	work platforms)			
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 of reinforced concrete poured in slabs	P.V.R.C	B.E.	
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.	

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