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

- MAIERUS HALT -

As beneficiary.....

- represented by.....……...

as designer …….....**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	**Substation rehabilitation drive**			
1.1	Delivery-Receive Location	P.V.	B.E.	

1.2	Excavation works: check the flatness foundation share and quality of work	P.V.	B.E.	
1.3	Pouring the simple concrete for equalization : check in advance land before casting and thickness of concrete (including verification of the existence of quality certificates for materials)	P.V.R.C.	B.E.	
1.4	Execution of formwork for reinforced concrete for the machine foundations and drawing rooms, checking dimensions, formwork quotas and binding with anchors.	P.V.	B.E.	
1.5	Installation of steel reinforcement in concrete foundation columns, to the foundations and the cable equipment: checking the valves size, a coating and binding (including quality inspection certificates) - DETERMINED PHASE	P.V.R.C.	B.E.P.I	
1.6	Location and positioning of pillars in the foundation pits: verification rates both in plan and height (including verification of the existance of certificate of quality for materials)	P.V.R.C.	B.E.	
1.7	Casting of reinforced concrete in the resistance elements prior checking of the concrete pouring site and vibrating compaction (including verification of the existance of certificate of quality for materials)	P.V.R.C.	B.E.	
1.8	Stripping the resistance structure: checking the concrete surfaces and their quality	P.V.R.C.	B.E.	
1.9	Installing precast concrete elements and drawing rooms: checking layout, flatness, stability and relationship with photo mortar between precast and monolithic concrete structure (including verification of the existance of certificate of quality for materials)	P.V.R.C.	B.E.	

1.10	Installation of concrete panels for enclosure: check leaks, checking catching the poles, quality execution and uniformity in height (including verification of the existance of certificate of quality for materials).	P.V.R.C.	B.E.	
1.11	Taking-Over-Determinant phase	P.V.	B.E.P.I.	
//	**TUNNEL**			
2.1	Drawing pedestrian tunnel (cf. project)	P.V.T.	B.E.	
2.2	Execution of necessary excavation trenches opened, 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, - DETERMINED 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-DETERMINANT PHASE	P.V.	B.E.P.I.	
IV	***ANTENA GSM-R***			
4.1	Delivery – receiving location	P.V.	B.E. P.	
4.2	Execution of the excavation	P.V.	B.E.	
4.3	Check the site stratification at the end of excavation	P.V.	B.E.G.	
4.4	Decisive phase - check installing micropilot before injection mortar for concrete micropilot -Checking the head micropilot mounting	P.V.R.C.	I.B.E. P.	
4.5	Mortar injection for concrete micropilot	P.V.	B.E.	
4.6	Checking reinforcement in slab before pouring concrete	P.V.	B.E.P.	
4.7	Anchorage system check from slab before pouring the concrete	P.V.	B.E.P.	
4.8	Concrete slab	P.V.	B.E.	
4.9	Checking the quality and appearance of the foundation		B.E.	
4.10	Decisive phase: Taking-Over	P.V.R.C.	I.B.E.P.	
IV	**CONTAINER**			
5.1	Delivery – receiving location	P.V.	B.E. P.	
5.2	Execution of the excavation	P.V.	B.E.	
5.3	Check the site stratification at the end of excavation	P.V.	B.E.G.	
5.4	Decisive phase - verification of the excavation geometry -Checking reinforcement before pouring concrete	P.V.R.C.	I.B.E.P.	
5.5	Container anchoring system check before concreting of foundation	P.V.	B.E.P.	
5.6	concrete foundation	P.V.	B.E.	

5.7	Checking the quality and appearance of the foundation		B.E.	
5.8	Decisive phase Taking-Over	P.V.R.C.	I.B.E.P.	
VI	**Control Block**			
	Demolition, repair and reinforcement			
6.1	Breaking and excavation required in order to achieve the necessary goals	P.V.	B.E.	
6.2	Excavation required in order to achieve the goals necessary to recover technical channels and breaking the bushing foundation necessary to the cable channels	P.V.	B.E.	
6.3	Achieving adequate support	P.V.	B.E.	
6.4	Creating new goals stipulated in the work in foundation and floor lining technology	P.V.	B.E.P	
6.5	Evacuation of the overloads from demolition	P.V.	B.E.	
6.6	Decisive phase - installing reinforcement check for technical channels and inner liners foundation	P.V.R.C.	I.B.E.P.	
6.7	Concrete (technical channel restoration and bolster the foundation provided in the project)	P.V.	B.E.	
6.8	Checking the quality and appearance of the restored elements	Ledger bet. + certified	B.E.	
6.9	necessary breaking for removal of existing masonry attic	P.V.	B.E.	
6.10	Setting new truss roof rafters in the recovery	P.V.	B.E.P.	
6.11	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