List of works for **installation of water flow and pressure measurement and control equipment with necessary and adequate fittings**			
Pipeline for connecting the new tank with the manhole for measurement and control equipment OD225 PN6			
Item number	Description	Unit	Quantity
1. Prepearing on site construciton field			
1.1	Pipeline survey	m	20.00
2. Earth works			
2.1	Combined earth excavation (machine and manual) for pipeline trench with a width of 0.9 m and a depth of up to 1.2 m in III and IV category of soil. Support for an average pressure should be uesed of depths greater than 0.9 m.		
	Machine exacvation 90%	m^3	21.60
	Manual exacvation 10%:	m^3	2.40
2.2	Planning the bottom of the trench with an accuracy of ± 2 cm.	m^2	16.00
2.3	Supply, transport and installation with compaction of layer of sand with tickness of 10cm.	m^3	1.60
2.4	Supply, transport and installation of sand around the pipe and 30 cm above it, with compaction in layers of 30 cm with material with a maximum grain size of 31.5 mm with manual compaction up to 95%, according to the standard Proctor test.	m^3	7.20
2.5	Backfilling the trench with earth selected from the excavation. The backfill should be in layers of 30 cm with manual and machine compaction. Where there is no asphalt	m^3	12.80
2.6	Removing of the remaing material from the excavation at a distance of maximum 10 km, with uploading and spreading it at the place of unloading.	m^3	2.40
Single BOQ for manhole for measurement and control equipment			
Item number	Description	Unit	Quantity
3. Earth works			
3.1	Combined earth excavation in a wide excavation with a slope of 1: 3 for the manhole		
	Machine exacvation 80%		41.86
	Manual exacvation 20%	m^3	10.47
3.2	Supply, transport and installation of gravel below the bottom of the manhole d=20cm.	m^3	3.01

3.3	Installation with compaction of earthen material for backfilling the construction pit. The backfill should be in layers of 30 cm with manual and machine compaction.	m^3	26.27
3.4	Removing of the remaing material from the excavation at a distance of maximum 10 km, with uploading and spreading it at the place of unloading.	m^3	22.87
4. Concrete and reinforcement works			
4.1	Supply, transport and installation of lean concrete with d=10cm.	m^3	1.20
4.2	Supply, transport and installation of concrete MB30 for:		
	Bottom plate with d=20cm		2.13
	Walls with d=20cm		7.78
	Top plate with d=20cm	m^3	2.08
4.3	Supply, transport and installation of concrete MB30 fo the support of the fittings.	m^3	0.20
4.4	Supply, transport, cutting and installation of reinforcement		
	MA 500/600, Q335 (Ø8/15cm)		599.50
	RA 400/500 Ø12		59.95
	RA 400/500 Ø8		14.99
	Wasting 5%		33.72
	Total	kg	708.16
4.4	Supply, transport and installation of stair made of reinforcement ø18mm (every stair L= 0,66m reinforcement ф18mm). The stairs should be at a distance of 30 cm from each other along the height of the shaft	piece	1.00
New tank			
Item number	Description	Unit	Quantity
5	Deinstalation and reinstallation of Q90 DN200 piece Q90 DN200 piece with installation of new gaskets	piece	1.00
Single BOQ for manhole for flow measurement at Jankovec			
Item number	Description	Unit	Quantity
6. Earth work			
6.1	Combined earth excavation in a wide excavation with a slope of 1: 3 for the manhole		
	Machine exacvation 80%		25.78
	Manual exacvation 20%	m^3	6.44

6.2	Supply, transport and installation of gravel below the bottom of the manhole d=20cm.	m^3	1.35
6.3	Installation with compaction of earthen material for backfilling the construction pit. The backfill should be in layers of 30 cm with manual and machine compaction.	m^3	20.39
6.4	Removing of the remaing material from the excavation at a distance of maximum 10 km, with uploading and spreading it at the place of unloading.	m^3	10.64
7. Concrete and reinforcement works			
7.1	Supply, transport and installation of lean concrete with d=10cm.	m^3	0.48
7.2	Supply, transport and installation of concrete MB30 for:		
	Bottom plate with d=20cm		0.80
	Walls with d=20cm		2.56
	Top plate with d=20cm	m^3	0.74
7.3	Supply, transport and installation of concrete MB30 fo the support of the fittings.	m^3	0.20
7.4	Supply, transport, cutting and installation of reinforcement		
	MA 500/600, Q335 (Ø8/15cm)		205.00
	RA 400/500 Ø12		20.50
	RA 400/500 Ø8		5.13
	Wasting 5%		11.53
	Total	kg	242.16
7.5	Supply, transport and installation of stair made of reinforcement ø18mm (every stair L= 0,66m reinforcement ф18mm). The stairs should be at a distance of 30 cm from each other along the height of the shaft	psc	1.00
Single BOQ for flow measurement point at Pump Station CarevDvor			
Item number	Description	Unit	Quantity
8. Preparatory works			
8.1	Dismantling of the old fittings	lump sum	1.00
Single BOQ for Electric valve DN150			
Item number	Description	Unit	Quantity
9. Preparatory works			

9.1	Excavatipon for access to a permanent PVC pipe in front of and after the permanent manhole and cutting of the permanent PVC DN250 pipe for placing the valve with the backfilling the earth to its original position	lump sum	1.00
Single BOQ for Automatic air valve DN50 on pipeline HDPE OD225			
Item number	Description	Unit	Quantity
10. Earth work			
10.1	Combined earth excavation in a wide excavation with a slope of 1: 3 for the manhole		
	Machine 4xcavation 80%		10.61
	Manual 4xcavation 20%	m^3	2.65
10.2	Supply, transport and installation of gravel below the bottom of the manhole d=20cm.	m^3	1.15
10.3	Installation with compaction of earthen material for backfilling the construction pit. The backfill should be in layers of 30 cm with manual and machine compaction.	M^3	6.85
10.4	Removing of the remaing material from the excavation at a distance of maximum 10 km, with uploading and spreading it at the place of unloading.	M^3	5.44
11. Concrete and reinforcement works			
11.1	Supply, transport and installation of lean concrete with d=10cm.	m^3	0.40
11.2	Supply, transport and installation of concrete MB30 for:		
	Bottom plate with d=20cm		0.65
	Walls with d=20cm		0.59
	Top plate with d=20cm	m^3	1.68
11.3	Supply, transport and installation of concrete MB30 fo the support of the fittings.	M^3	0.10
11.4	Supply, transport, cutting and installation of reinforcement		
	MA 500/600, Q335 (Ø8/15cm)		200.47
	RA 400/500 Ø12		20.05
	RA 400/500 Ø8		5.01
	Wasting 5%		11.28
	Total	kg	236.80
11.5	Supply, transport and installation of stair made of reinforcement ø18mm (every stair L= 0,66m reinforcement ф18mm). The stairs should be at a distance of 30 cm from each other along the height of the shaft	psc	1
Single BOQ for Automatic air valve DN50 on pipeline HDPE OD110			

Item number	Description	Unit	Quantity
12. Earth work			
12.1	Combined earth excavation in a wide excavation with a slope of 1: 3 for the manhole		
	Machine exacvation 80%		10.61
	Manual exacvation 20%	m^3	2.65
12.2	Supply, transport and installation of gravel below the bottom of the manhole d=20cm.	m^3	1.15
12.3	Installation with compaction of earthen material for backfilling the construction pit. The backfill should be in layers of 30 cm with manual and machine compaction.	m^3	6.85
12.4	Removing of the remaing material from the excavation at a distance of maximum 10 km, with uploading and spreading it at the place of unloading.	m^3	5.44
13. Concrete and reinforcement works			
13.1	Supply, transport and installation of lean concrete with d=10cm.	m^3	0.40
13.2	Supply, transport and installation of concrete MB30 for:		
	Bottom plate with d=20cm		0.65
	Walls with d=20cm		0.59
	Top plate with d=20cm	m^3	1.68
13.3	Supply, transport and installation of concrete MB30 fo the support of the fittings.	m^3	0.10
13.4	Supply, transport, cutting and installation of reinforcement		
	MA 500/600, Q335 (Ø8/15cm)		200.47
	RA 400/500 Ø12		20.05
	RA 400/500 Ø8		5.01
	Wasting 5%		11.28
	Total	kg	236.80
13.5	Supply, transport and installation of stair made of reinforcement ø18mm (every stair L= 0,66m reinforcement ф18mm). The stairs should be at a distance of 30 cm from each other along the height of the shaft	piece	1.00
Single BOQ for type hydrant DN80 for pipeline HDPE OD225			
Item number	Description	Unit	Quantity
14. Concrete and reinforcement works			

14.1	Supply, transport and installation of concrete MB30 for anchor A/B/H=75/20/20cm:	m^3	0.03
14.2	Supply, transport and installation of concrete MB30 for support for hydrant cap and cap AB/H=120/40/10cm:	m^3	0.05
15. Instalation works			
15.1	Supply, transport and installation of T piece - tapper OD225/90. The joining of the pipes is with front welding.	piece	1.00
15.2	Supply, transport and installation of pipes PEHD PE100 OD225 PN10, L=1000mm. The joining of the pipes is with front welding.	piece	1.00
15.3	Supply, transport and installation of hydrant cap	piece	1.00
15.4	Supply, transport and installation of cap	piece	1.00
Single BOQ for type hydrant DN80 for pipeline HDPE OD110			
Item number	Description	Unit	Quantity
16. Concrete and reinforcement works			
16.1	Supply, transport and installation of concrete MB30 for anchor A/B/H=75/20/20cm:	m^3	0.03
16.2	Supply, transport and installation of concrete MB30 for support for hydrant cap and cap AB/H=120/40/10cm:	m^3	0.05
17. Instalation works			
17.1	Supply, transport and installation of T piece - tapper OD110/90. The joining of the pipes is with front welding.	piece	1.00
17.2	Supply, transport and installation of pipes PEHD PE100 OD110 PN10, L=1000mm. The joining of the pipes is with front welding.	piece	1.00
17.3	Supply, transport and installation of hydrant cap	piece	1.00
17.4	Supply, transport and installation of cap	piece	1.00