

Part 2 MATERIALS/EQUIPMENT SUPPLIED FROM ABROAD

LOT 1

WATER MAIN REHABILITATION SECTIONS/SEGMENTS 1 AND 2

Part 2.1 Segment A1. Rehabilitation of emergency sections of the WPS “Shubranets” - CWR “Popova” pressure water main DN = 900 mm with a total length of ~ 7 km in Chernivtsi city, Chernivtsi region.

Rehabilitation of the water main sections with an estimated length of 3.5 km that are not included in Phase 1 (the 1st segment of the water main near Ocheret village from the gravel road).

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
2.1	Socket pipes made of spheroidal graphite ductile iron DN800 PN25	m	2089
2.2	Anchored joint DN800 PN25 with locking ring	pcs	339
2.3	Bolt M 45x170 (dxL), washer M45, spring washer M45, nut M45	pcs	338
2.4	Bell reducer made of spheroidal graphite ductile iron DN800	pcs	20
2.5	Joint gasket DN800	pcs	35
2.6	Hub elbow made of spheroidal graphite ductile iron 45° DN800 PN25	pcs	4
2.7	Hub elbow made of spheroidal graphite ductile iron 22° DN800 PN25	pcs	3
2.8	Hub elbow made of spheroidal graphite ductile iron 11° DN800 PN25	pcs	4
2.9	Flexible coupling for pipes made of ductile iron DN800 PN25	pcs	57
2.10	Ductile iron flange adapter PN25 DN900x800	pcs	1
2.11	Ductile iron branch, flange hub DN800 PN25	pcs	1

Part 2.2 Segment A2. Rehabilitation of emergency sections of the WPS
 “Shubranets” - CWR “Popova” pressure water main DN = 900 mm with a total
 length of ~ 7 km in Chernivtsi city, Chernivtsi region.

Rehabilitation of the water main sections with an estimated length of 3.5 km that are
 not included in Phase 1 (the 2nd segment of the water main near Ocheret village to
 the gravel road)

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
2.1	Socket pipes made of spheroidal graphite ductile iron DN800 PN25	m	1737
2.2	Anchored joint DN800 PN25 with locking ring	pcs	303
2.3	Bolt M 45x170 (dxL), washer M45, spring washer M45, nut M45	pcs	300
2.4	Bell reducer made of spheroidal graphite ductile iron DN800	pcs	25
2.5	Joint gasket DN800	pcs	38
2.6	Hub elbow made of spheroidal graphite ductile iron 45° DN800 PN25	pcs	4
2.7	Hub elbow made of spheroidal graphite ductile iron 22° DN800 PN25	pcs	3
2.8	Hub elbow made of spheroidal graphite ductile iron 11° DN800 PN25	pcs	5
2.9	Flexible coupling for pipes made of ductile iron DN800 PN25	pcs	55
2.10	Smooth flanged branch with ductile iron end DN800 L=0.6 m PN25	pcs	2
2.11	Ductile iron flange T-bend DN800x800x800 PN25	pcs	1
2.12	Dismantling joint DN800 PN25	pcs	1
2.13	Ductile iron branch, flange hub DN800 PN25	pcs	1
2.14	Ductile iron flange adapter PN25 DN900x800	pcs	3
2.15	Two-stage air valve DN150 PN25	pcs	1
2.16	Short flange ductile iron gate valve PN25 DN150	pcs	2
2.17	Flywheel for gate valve DN150	pcs	2
2.18	CIPP Liner including the curing materials or other materials to be used for no-dig method	m	51.64

Part 3 WORKS

LOT 1

WATER MAIN REHABILITATION SECTIONS/SEGMENTS 1 AND 2

Part 3.1 Segment A1. Rehabilitation of emergency sections of the WPS “Shubranets” - CWR “Popova” pressure water main DN = 900 mm with a total length of ~ 7 km in Chernivtsi city, Chernivtsi region.
Rehabilitation of the water main sections with an estimated length of 3.5 km that are not included in Phase 1 (the 1st segment of the water main near Ocheret village from the gravel road).

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.1	PIPEWORK - PIPES IN TRENCHES		
3.1.1	Laying of Socket pipes made of spheroidal graphite ductile iron DN800 PN25	lm	2089
3.1.2	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 4	m ³	1978.58
3.1.3	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 2	m ³	2595.01
3.1.4	Excavation loading the, group of soils is 4, with further transportation for up to 40 km	m ³	103.86
3.1.5	Excavation loading the soil, group of soils is 2, with further transportation for up to 40 km	m ³	1618.4
3.1.6	Finishing manually, hand stripping of the bottom and walls with the soil displacement in the excavation pits and tranches developed by mechanical means	m ³	691.22
3.1.7	Arrangement of a sand foundation under the pipelines	m ³	228.92
3.1.8	Sand dusting, h=500 mm	m ³	35.86
3.1.9	Filling the trenches, excavation of pit hollows and pits manually, the group of soils is 1	m ³	233.58
3.1.10	Backfilling of trenches with bulldozers using the soil of 1,2 type, and its further compaction with air rammers	m ³	3052.65
3.1.11	Backfilling of trenches with bulldozers using the soil of 3,4 type, and its further compaction with air rammers	m ³	1977.95
3.1.12	Installation of concrete stops on the network	pcs	11
3.3	PIPEWORK - FITTINGS AND VALVES		
3.3.1	Installation of anchored joint DN 800 PN25 with locking ring with a set of mount hardware	pcs	338
3.3.2	Installation of bell reducer made of spheroidal graphite ductile iron DN800 PN25	pcs	20
3.3.3	Installation of joint gasket DN800	pcs	35
3.3.4	Installation of hub elbow made of spheroidal graphite ductile iron 45° DN800 PN25	pcs	4
3.3.5	Installation of hub elbow made of spheroidal graphite ductile iron 22° DN800 PN25	pcs	3
3.3.6	Installation of hub elbow made of spheroidal graphite ductile iron 11° DN800 PN25	pcs	4
3.3.7	Installation of flexible coupling for pipes made of ductile iron DN800 PN25	pcs	57
3.4	PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES		
3.4.1	<i>Chamber, which incl the next works:</i>	pcs	1

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.1.1	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 4, with its further transportation for up to 40 km	m ³	10.84
3.4.1.2	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 2 with further transportation for up to 40 km	m ³	52.38
3.4.1.3	Arrangement of gravel basis under the foundations	m ³	1.81
3.4.1.4	Arrangement of concrete foundation mattress	m ³	1.8
3.4.1.5	Arrangement of pasting waterproofing with the sealing membrane in bituminous mastic, the first layer	m ²	17.3
3.4.1.6	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	3.5
3.4.1.7	Arrangement of levelling concrete with a thickness of 20 mm, considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	9
3.4.1.8	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	0.4
3.4.1.9	Installation of basement wall blocks of ФБС 24.4.6 type, DSTU B.V.2.6-108:2010 (with the weight of up to 1.5 t)	pcs.	8
3.4.1.10	Installation of basement wall blocks of ФБС 12.4.6 type, DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	14
3.4.1.11	Installation of basement wall blocks of ФБС 9.4.6 type, DSTU B.V.2.6-108:2010 (with the weight of up to 0.5 t)	pcs.	4
3.4.1.12	Installation of basement wall blocks of ФБС 12.4.3 type, DSTU B.V.2.6-108:2010 (with the weight of up to 0.5 t)	pcs.	2
3.4.1.13	Reinforcement of walls with the greed of 40x40 A240C type, d=10	m ²	1.3
3.4.1.14	Installation of reinforced concrete rings KC-7-6	pcs.	4
3.4.1.15	Laying of ceiling slabs ПТ 75.180.14-6	pcs.	2
3.4.1.16	Laying of ceiling slabs ПТО 150.180.14-6	pcs.	2
3.4.1.17	Installation of beam Б7 (3580x380x300)	pcs.	1
3.4.1.18	Installation of ductile iron hatch for the well	pcs.	4
3.4.1.19	Installation of wall bracket for ladder	pcs.	8
3.4.1.20	Installation of emergency stairs with a fence	pcs.	4
3.4.1.21	Priming of metal surfaces at a time with zinc protective primer	m ²	6.8
3.4.1.22	Arrangement of pits 400x400x200	pcs.	1
3.4.1.23	Arrangement of belts in the form	m ³	1.1
3.4.1.24	Arrangement of cement covering with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of cement covering (up to the thickness of 40 mm)	m ²	9.1204
3.4.1.25	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	53.2
3.4.1.26	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	13.2
3.4.1.27	Welding of flanges to steel pipelines DN900 PN25	pcs	1
3.4.1.28	Installation of ductile iron flange adapter PN25 DN900x800	pcs.	1
3.4.1.29	Installation of ductile iron branch, flange hub DN800 PN25	pcs.	1
3.4.1.30	Installation of anchored joint DN 800 PN25 with locking ring	pcs.	1
3.4.2	<i>Breaking Up, Temporary and Permanent Reinstatement of Surfaces around Manholes and buried</i>		
3.4.2.1	Arrangement of concrete pavement around the wells	m ³	1.24
3.4.3	<i>Pipework – Reinstatement. Breaking Up, Temporary and Permanent Reinstatement of Surfaces of Different Types along Pipe Routes</i>		
3.4.3.1	Arrangement of levelling layers of the sand base with a motor grader	m ³	12.5

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.3.2	Arrangement of black gravel foundations using infiltration method if the thickness is 8 cm. If the thickness of the foundation changes, add to/from standard 27-23-5 for every 1 cm (up to a thickness of 18 cm)	m ²	50
3.4.3.3	Arrangement of the top layer of 5-cm-thick coating of asphalt and concrete mixture with an asphalt paver if the width of laying is 7 m. If the thickness changes, add to/from standards 27-27-1 – 27-27-4 for every 0.5 cm (up to a thickness of 6 cm)	m ²	50
3.4.3.4	Installation of concrete curb stones on a concrete base of up to 100 mm	lm	20
3.4.4	<i>Crossings Through the Walls of Chambers or Buildings</i>		
3.4.4.1	Hole in the reinforced concrete well	pcs.	2
3.4.4.2	Installation of the sealing as specified under the Sub-Chapter 2.1.1 in the Chapter 2 Particular Technical Specifications	pcs.	2
3.5	HYDRAULIC PRESSURE TEST		
3.5.1	Hydraulic pressure tests, flushing and disinfection of pipelines DN800	lm	2089
3.6	DEMOLITION AND SITE CLEARANCE		
3.6.1	Dismantling of existing steel water supply pipes DN900	lm	5
3.6.2	Transportation of waste material up to 15 km	t	1
3.6.3	Dismantling of a metal fence made of welded mesh panels on reinforced concrete pillars without a base, up to 2.2 m high	lm	10
OPTIONAL WORKS TO CONNECT PHASE 1 AND PHASE 2 PIPEWORKS IN CHAMBERS (Details are provided in the Chapter 2 Particular Technical Specifications Sub-Chapter 2.1.1)			
3.8	CONNECTION CHAMBER BETWEEN TWO DI DN800 MM PIPES AND EXISTING DN1000 MM PIPE (PK0) including following works		
3.8.1	Redesign of the chamber as shown on Figure 3 Sub-Chapter 2.1.1, Chapter 2 Particular Technical Specifications	ls	1
3.8.2	Construction of the Chamber following requirements set under Chapter 2 and under 3.4 in the Price Schedule	ls	1
3.8.3	Installation of the DI DN800 Tee and clamps	ls	1
3.8.4	Installation of Valve DN800 and needed fittings	ls	1
3.8.5	Connection with the DN1000 steel pipe	ls	1
3.9	CONNECTION CHAMBER TO CONNEC PHASE 1 AND PHASE 2 DI DN 800 MM PIPES as specified under Chapter 2 Particular Technical Specifications Sub-Chapter 2.1.1 Figure 5 and under items 3.3 and 3.4 in the BoQ	ls	1

**Part 3.2 Segment A2. Rehabilitation of emergency sections of the WPS
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length of ~ 7 km in Chernivtsi city, Chernivtsi region.**

Rehabilitation of the water main sections with an estimated length of 3.5 km that are
not included in Phase 1 (the 2nd segment of the water main near Ocheret village to
the gravel road)

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.1	PIPEWORK - PIPES IN TRENCHES		
3.1.1	Laying of Socket pipes made of spheroidal graphite ductile iron DN800 PN25	m	1737
3.1.2	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 4	m ³	1891.45
3.1.3	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 2	m ³	1372.77
3.1.4	Excavation loading the soil, group of soils is 4, with its further transportation for up to 40 km	m ³	99.31
3.1.5	Excavation loading the soil, group of soils is 2, with its further transportation for up to 40 km	m ³	1301.96
3.1.6	Finishing manually, hand stripping of the bottom and walls with the soil displacement in the excavation pits and tranches developed by mechanical means	m ³	533.28
3.1.7	Arrangement of a sand foundation under the pipelines	m ³	190.27
3.1.8	Sand dusting, h=500 mm	m ³	30.54
3.1.9	Filling the trenches, excavation of pit hollows and pits manually, the group of soils is 1	m ³	152.77
3.1.10	Backfilling of trenches with bulldozers using the soil of 1,2 type, and its further compaction with air rammers	m ³	1753.28
3.1.11	Backfilling of trenches with bulldozers using the soil of 3,4 type, and its further compaction with air rammers	m ³	1891.45
3.1.12	Installation of concrete stops on the network	pcs	12
3.2	PIPEWORK – TRENCHLESS		
3.2.1	Clean the Host Pipe DN900	m	51.5
3.2.2	Set up bypass, flow management	m	51.5
3.2.3	Installation of CIPP liner	m	51.5
3.2.4	UV light or Heat for curing	m	51.5
3.2.5	Testing of the section	m	51.5
3.2.6	Arrangement of waterproofing	m ²	9.75
3.2.7	Excavation loading the soil, group of soils is 4, with its further transportation for up to 40 km	m ³	36.13
3.2.8	Excavation loading the group of soils is 2, with its further transportation for up to 40 km	m ³	90.31
3.2.9	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 4, during the trenches development	m ³	13.87
3.2.10	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 2, during the trenches development	m ³	39.69
3.2.11	Finishing manually, hand stripping of the bottom and walls with the soil displacement in the excavation pits and tranches developed by mechanical means	m ³	10
3.2.12	Backfilling of trenches with bulldozers using the soil of 1,2 type, and its further compaction with air rammers	m ³	49.69
3.2.13	Backfilling of trenches with bulldozers using the soil of 3,4 type, and its further compaction with air rammers	m ³	13.87
3.3	PIPEWORK - FITTINGS AND VALVES		
3.3.1	Welding of flanges to steel pipelines DN900 PN25	pcs.	4
3.3.2	Installation of anchored joint DN 800 PN25 with locking ring with set of mount hardware	pcs.	300

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.3.3	Installation of bell reducer made of spheroidal graphite ductile iron DN800	pcs.	25
3.3.4	Installation of joint gasket DN800	pcs.	38
3.3.5	Installation of hub elbow made of spheroidal graphite ductile iron 45° DN800 PN25	pcs.	4
3.3.6	Installation of hub elbow made of spheroidal graphite ductile iron 22° DN800 PN25	pcs.	3
3.3.7	Installation of hub elbow made of spheroidal graphite ductile iron 11° DN800 PN25	pcs.	5
3.3.8	Installation of flexible coupling for pipes made of ductile iron DN800 PN25	pcs.	55
3.4	PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES		
3.4.1	Chamber 1*, which includes the following works	pcs.	1
3.4.1.1	Excavation loading the soil, group of soils is 4, with its further transportation for up to 40 km	m ³	24.53
3.4.1.2	Excavation loading the soil, group of soils is 2, with its further transportation for up to 40 km	m ³	53.14
3.4.1.3	Arrangement of gravel basis under the foundations	m ³	2.73
3.4.1.4	Arrangement of concrete foundation mattress	m ³	2.7
3.4.1.5	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	26.22
3.4.1.6	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	5.3
3.4.1.7	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	15.75
3.4.1.8	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	1.1
3.4.1.9	Installation of basement wall blocks of ФБС 24.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t)	pcs.	10
3.4.1.10	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	9
3.4.1.11	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	30
3.4.1.12	Reinforcement of walls with a greed of 40x40, d=10, A240C type	m ²	1.63
3.4.1.13	Installation of reinforced concrete rings KO6 (3.900.1-14 released 1 (Ф321)	pcs.	4
3.4.1.14	Laying of ceiling slabs ПТ 75.240.14-6	pcs.	4
3.4.1.15	Laying of ceiling slabs ПТО 150.240.14-6	pcs.	4
3.4.1.16	Installation of a metal ladder МД-1 (MD-1)	pcs.	4
3.4.1.17	Installation of ductile iron hatch for the well	pcs.	4
3.4.1.18	Installation of beam Б12 (4300*500*400)	pcs.	1
3.4.1.19	Priming of metal surfaces at a time with zinc protective primer	m ²	6.8
3.4.1.20	Installation of pits 400x400x200	pcs.	1
3.4.1.21	Installation of cast-in place reinforcing belt ПМ-1	m ²	1.4
3.4.1.22	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	15.9094
3.4.1.23	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	54.44
3.4.1.24	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	21.14

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.1.25	Installation of smooth flanged branch with ductile iron end DN800 L=0.6 m PN25	pcs.	1
3.4.1.26	Installation of ductile iron flange T-bend DN800x800x800 PN25	pcs.	1
3.4.1.27	Installation of dismantling joint DN800 PN25	pcs.	1
3.4.1.28	Installation of anchored joint DN 800 PN25 with locking ring	pcs.	1
3.4.1.29	Welding of flanges to steel pipelines DN900	pcs.	1
3.4.1.30	Installation of short flange ductile iron gate valve PN25 DN150 with flywheel DN150	pcs.	2
3.4.1.31	Installation of ductile iron flange adapter PN25 DN900x800	pcs.	1
3.4.1.32	Welding of flat steel flanges BCт9сн2, BCт9сн3 PN25 DN150	pcs.	2
3.4.1.33	Welding of the steel blind flange DN150	pcs.	1
3.4.1.34	Installation of steel nipple DN150	m	0.3
3.4.1.35	Welding of flanges to steel pipelines DN800	pcs.	1
3.4.1.36	Installation of a two-stage air valve DN150	pcs.	1
3.4.2	Chamber 2 and 3 including the following works:	pcs.	2
3.4.2.1	Installation of steel structures remaining in the body of concrete (running staples)	pcs.	16
3.4.2.2	Arrangement of gravel basis under the foundations	m ³	3.62
3.4.2.3	Arrangement of concrete foundation mattress	m ³	3.6
3.4.2.4	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	34.6
3.4.2.5	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	7
3.4.2.6	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	18
3.4.2.7	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	0.8
3.4.2.8	Installation of basement wall blocks of ФБС 24.4.6 type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t	pcs.	16
3.4.2.9	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t	pcs.	28
3.4.2.10	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 with the weight of up to 0,5 t	pcs.	8
3.4.2.11	Installation of basement wall blocks of ФБС 12.4.3-T type, DSTU B.V.2.6-108:2010	pcs.	4
3.4.2.12	Reinforcement of walls with a greed of 40x40, d=10, A240C type	m ²	2.6
3.4.2.13	Installation of reinforced concrete rings KC-7-6	pcs.	8
3.4.2.14	Laying of ceiling slabs ПТ 75.180.14-6	pcs.	4
3.4.2.15	Laying of ceiling slabs ПТО 150.180.14-6	pcs.	8
3.4.2.16	Installation of beam Б7 (3580*380*300)	pcs.	2
3.4.2.17	Installation of ductile iron hatch for the well	pcs.	8
3.4.2.18	Installation of a metal ladder МД-1	pcs.	8
3.4.2.19	Priming of metal surfaces at a time with zinc protective primer	m ²	13,6
3.4.2.20	Installation of pits 400x400x200	pcs.	2
3.4.2.21	Installation of cast-in place reinforcing belt ПМ-2	m ²	2.2
3.4.2.22	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	18.2408
3.4.2.23	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	106.4
3.4.2.24	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	26.4

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.2.25	Welding of flanges to steel pipelines DN900	pcs.	2
3.4.2.26	Installation of ductile iron flange adapter PN25 DN900x800	pcs.	2
3.4.2.27	Installation of ductile iron branch, flange hub DN800 PN25	pcs.	1
3.4.2.28	Installation of smooth flanged branch with ductile iron end DN800 L=0.6 m PN25	pcs.	1
3.4.2.29	Installation of anchored joint DN 800 PN25 with locking ring	pcs.	2
3.4.3	<i>Breaking Up, Temporary and Permanent Reinstatement of Surfaces around Manholes and buried</i>	pcs.	3
3.4.3.1	Arrangement of concrete pavement around the wells	m ³	3.72
3.4.4	<i>Crossings Through the Walls of Chambers or Buildings</i>		
	<i>Chamber 1, which incl:</i>	pcs.	1
3.4.4.1	Hole in the reinforced concrete well	pcs.	3
3.4.4.2	Installation of the sealing as specified under the Sub-Chapter 2.1.1 in the Chapter 2 Particular Technical Specifications	lm	0.4
	<i>Chamber 2 and 3:</i>	pcs.	2
3.4.4.3	Hole in the reinforced concrete well	pcs.	4
3.4.4.4	Installation of the sealing as specified under the Sub-Chapter 2.1.1 in the Chapter 2 Particular Technical Specifications	lm	0.8
3.4.5	<i>Pipework – Reinstatement. Breaking Up, Temporary and Permanent Reinstatement of Surfaces of Different Types along Pipe Routes</i>		
3.4.5.1	Arrangement of levelling layers of the sand base with a motor grader	m ³	2.5
3.4.5.2	Arrangement of black gravel foundations using infiltration method if the thickness is 8 cm with adding add to/from standard 27-23-5 for every 1 cm (up to a thickness of 18 cm)	m ²	10
3.4.5.3	Arrangement of the top layer of 5-cm-thick coating of asphalt and concrete mixture with an asphalt paver if the width of laying is 7 m. If the thickness changes, add to/from standards 27-27-1 – 27-27-4 for every 0.5 cm (up to a thickness of 6 cm)	m ²	10
3.4.5.4	Installation of concrete curb stones on a concrete base of up to 100 mm	lm	8
3.5	HYDRAULIC PRESSURE TESTS		
3.5.1	Hydraulic pressure tests, flushing and disinfection of pipelines DN800-900	lm	1788.5
3.6	DEMOLITION AND SITE CLEARANCE		
3.6.1	Dismantling of existing steel water supply pipes DN900	lm	25
3.6.2	Transportation of waste up to 15 km	t	5.1
3.7	WATER MAIN RENOVATION AND ANCILLARY WORKS		
3.7.1	Laying pipelines with polyethylene pipes DN300, hydraulic test	m	5
3.7.2	Laying of polyethylene water supply pipes using hydraulic-pressure test, the pipes diameter is 160 mm	m	3
3.7.3	Installing a filter box for round channel DN100	pcs.	1
3.7.4	Installation of polyethylene shaped parts DN160	pcs.	1
3.7.5	Installation of ventilation fungus DN160	m ²	0.04

Part 2 MATERIALS/EQUIPMENT SUPPLIED FROM ABROAD

LOT 2

WATER MAIN REHABILITATION SECTIONS/SEGMENTS 3, 4 AND 5

Part 2.1 Segment A3. Rehabilitation of emergency sections of the WPS “Shubranets” - CWR “Popova” pressure water main DN900 with a total length of ~ 7 km in Chernivtsi city, Chernivtsi region.

Rehabilitation of the water main section with an estimated length of 2 km (the segment of the water main from Halytskyi Shliakh Street to the Prut River).

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
2.1	Rotary butterfly valve DN900 PN25	pcs	3
2.2	Ductile iron flange T-bend DN900x900x900 PN25	pcs	2
2.3	Dismantling joint DN900 PN25	pcs	3
2.4	Two-stage air valve DN150 PN25	pcs	1
2.5	Short flange ductile iron gate valve PN25 DN150	pcs	2
2.6	Flywheel for gate valve DN150	pcs	2
2.7	CIPP Liner including the curing materials	m	808.78

Part 2.2 Segment A4. Rehabilitation of emergency sections of the WPS “Shubranets” - CWR “Popova” pressure water main DN = 900 mm with a total length of ~ 7 km in Chernivtsi city, Chernivtsi region.
 Rehabilitation of the water main section with an estimated length of 2 km (Water main segment in the area of Lenkivtsi village to Halytskyi Shliakh Street)

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
2.1	Socket pipes made of spheroidal graphite ductile iron DN800 PN25	m	978.5
2.2	Anchored joint DN800 PN25 with locking ring	pcs	153
2.3	Bolt M 45x180 (dxL), washer M45, spring washer M45, nut M45	pcs	151
2.4	Bell reducer made of spheroidal graphite ductile iron DN800	pcs	25
2.5	Joint gasket DN800	pcs	165
2.6	Hub elbow made of spheroidal graphite ductile iron 45° DN800 PN25	pcs	8
2.7	Hub elbow made of spheroidal graphite ductile iron 22° DN800 PN25	pcs	6
2.8	Hub elbow made of spheroidal graphite ductile iron 11° DN800 PN25	pcs	9
2.9	Flexible coupling for pipes made of ductile iron DN800 PN25	pcs	5
2.10	Ductile iron flange adapter PN25 DN900x800	pcs	2
2.11	Smooth flanged branch with ductile iron end DN800 L=0.6 m PN25	pcs	1
2.12	Ductile iron flange T-bend DN800x300x800 PN25	pcs	1
2.13	Ductile iron branch, flange hub DN800 PN25	pcs	1
2.14	Rotary butterfly valve DN800 PN25	pcs	1
2.15	Dismantling joint DN800 PN25	pcs	1
2.16	Rotary butterfly valve DN300 PN25	pcs	1
2.17	Flywheel for gate valve DN300	pcs	1

Part 2.3 Segment A5. Rehabilitation of emergency sections of the WPS “Shubranets” - CWR “Popova” pressure water main DN = 900 mm with a total length of ~ 7 km in Chernivtsi city, Chernivtsi region.

Rehabilitation of the water main segment with an estimated length of 1.5 km between Zolochivska and Stryiska Streets

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
2.1	Socket pipes made of spheroidal graphite ductile iron DN800 PN25	m	650
2.2	Anchored joint DN800 PN25 with locking ring	pcs	117
2.3	Bolt M 45x170 (dxL), washer M45, spring washer M45, nut M45	pcs	109
2.4	Bell reducer made of spheroidal graphite ductile iron DN800	pcs	20
2.5	Joint gasket DN800	pcs	120
2.6	Hub elbow made of spheroidal graphite ductile iron 45° DN800 PN25	pcs	10
2.7	Hub elbow made of spheroidal graphite ductile iron 22° DN800 PN25	pcs	6
2.8	Hub elbow made of spheroidal graphite ductile iron 11° DN800 PN25	pcs	8
2.9	Flexible coupling for pipes made of ductile iron DN800 PN25	pcs	3
2.10	Ductile iron flange adapter PN25 DN900x800	pcs	4
2.11	Ductile iron branch, flange hub DN800 PN25	pcs	3
2.12	Smooth flanged branch with ductile iron end DN800 L=0.6 m PN25	pcs	5
2.13	Ductile iron flange T-bend DN800x800x800 PN25	pcs	1
2.14	Ductile iron flange T-bend DN800x300x800 PN25	pcs	1
2.15	Dismantling joint DN900 PN25	pcs	1
2.16	Short flange ductile iron gate valve PN25 DN150	pcs	4
2.17	Flywheel for gate valve DN150	pcs	4
2.18	Two-stage air valve DN150 PN25	pcs	2
2.19	Rotary butterfly valve DN300 PN25	pcs	1
2.20	Flywheel for gate valve DN300	pcs	1
2.21	Ductile iron flange T-bend DN900x900x900 PN25	pcs	1
2.22	Dismantling joint DN800 PN25	pcs	1
2.23	Coupling with short split bolts DN900 PN25	pcs	2
2.24	CIPP Liner including the curing materials	m	670.56

Part 3 WORKS

LOT 2

WATER MAIN REHABILITATION SECTIONS/SEGMENTS 3, 4 AND 5

Part 3.1 Segment A3. Rehabilitation of emergency sections of the WPS “Shubranets” - CWR “Popova” pressure water main DN900 with a total length of ~ 7 km in Chernivtsi city, Chernivtsi region.

Rehabilitation of the water main section with an estimated length of 2 km (the segment of the water main from Halytskyi Shliakh Street to the Prut River).

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.2	PIPEWORK – TRENCHLESS		
3.2.1	Clean the Host Pipe DN900	m	808.5
3.2.2	Set up bypass, flow management	m	808.5
3.2.3	Installation of CIPP liner	m	808.5
3.2.4	UV light or Heat for curing	m	808.5
3.2.5	Pressure testing and cleaning of the section	m	808.5
3.2.6	Arrangement of waterproofing	m ²	19.5
3.2.7	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 4 with its further transportation for up to 40 km	m ³	12.75
3.2.8	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 2 with its further transportation for up to 40 km	m ³	74.38
3.2.9	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 4	m ³	54.5
3.2.10	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 2	m ³	239.74
3.2.11	Finishing manually, hand stripping of the bottom and walls with the soil displacement in the excavation pits and trenches developed by mechanical means	m ³	25
3.2.12	Backfilling of trenches with bulldozers using the soil of 1,2 type, and its further compaction with air rammers	m ³	264.74
3.2.13	Backfilling of trenches with bulldozers using the soil of 3,4 type, and its further compaction with air rammers	m ³	54.5
3.3	PIPEWORK - FITTINGS AND VALVES		
3.3.1	Welding of flanges to steel pipelines DN900 PN25	pcs.	8
3.4	PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES		
3.4.1	Chamber 1, which includes the following works	pcs.	1
3.4.1.1	Arrangement of gravel basis under the foundations	m ³	2.13
3.4.1.2	Arrangement of concrete foundation mattress	m ³	2.1
3.4.1.3	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	20.4
3.4.1.4	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	4.2
3.4.1.5	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	11.25
3.4.1.6	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	1.2
3.4.1.7	Installation of basement wall blocks of ФБС 24.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t)	pcs.	12

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.1.8	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	18
3.4.1.9	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	4
3.4.1.10	Reinforcement of walls with a greed of 40x40, d=10, A240C type	m ²	2.4
3.4.1.11	Installation of reinforced concrete rings КС-7-6	pcs.	4
3.4.1.12	Laying of ceiling slabs ПТ 75.180.14-6	pcs.	4
3.4.1.13	Laying of ceiling slabs ПТО 150.180.14-6	pcs.	4
3.4.1.14	Installation of a metal ladder МД-1 (MD-1)	pcs.	4
3.4.1.15	Installation of ductile iron hatch for the well	pcs.	4
3.4.1.16	Installation of beam Б12 (4300*500*400)	pcs.	1
3.4.1.17	Priming of metal surfaces at a time with zinc protective primer	m ²	8.4
3.4.1.18	Installation of pits 400x400x200	pcs.	1
3.4.1.19	Installation of cast-in place reinforcing belt ПМ-1	m ³	1.2
3.4.1.20	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 40 mm)	m ²	11.3854
3.4.1.21	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	68.5
3.4.1.22	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	15.81
3.4.1.23	Installation of running staples remaining in the body of concrete	pcs.	8
3.4.1.24	Installation rotary butterfly valve DN900 PN25	pcs.	1
3.4.1.25	Installation of ductile iron flange T-bend DN900x900x900 PN25	pcs.	1
3.4.1.26	Installation of dismantling joint DN900 PN25	pcs.	1
3.4.1.27	Welding of steel flange to steel pipelines DN900 PN25	pcs.	2
3.4.1.28	Welding of steel blind flange to steel pipelines DN900 PN25	pcs.	1
3.4.1.29	Installation of a two-stage air valve DN150 PN25	pcs.	1
3.4.1.30	Welding of flat steel flanges BCτ9ц2, BCτ9ц3 PN25 DN150	pcs.	2
3.4.1.31	Welding of the steel blind flange DN150	pcs.	1
3.4.1.32	Installation of steel nipple DN150	m	0,3
3.4.1.33	Installation of short flange ductile iron gate valve PN25 DN150 with flywheel DN150	pcs.	2
3.4.2	Chamber 2 including the following works:	pcs.	1
3.4.2.1	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 4, with its further transportation for up to 40 km	m ³	23.75
3.4.2.2	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 2, with its further transportation for up to 40 km	m ³	75.69
3.4.2.3	Arrangement of gravel basis under the foundations	m ³	3
3.4.2.4	Arrangement of concrete foundation mattress	m ³	3
3.4.2.5	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	28.6
3.4.2.6	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	6
3.4.2.7	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	18.9
3.4.2.8	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	2.8

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.2.9	Installation of basement wall blocks of ФБС 24.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t)	pcs.	10
3.4.2.10	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	8
3.4.2.11	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	23
3.4.2.12	Reinforcement of walls with a greed of 40x40, DN10, A240C type	m ²	1.8
3.4.2.13	Installation of reinforced concrete rings KC-7-6	pcs.	4
3.4.2.14	Laying of ceiling slabs ПТ 75.240.14-6	pcs.	2
3.4.2.15	Laying of ceiling slabs ПТО 150.240.14-6	pcs.	6
3.4.2.16	Installation of a metal ladder МД-1 (MD-1)	pcs.	4
3.4.2.17	Installation of ductile iron hatch	pcs.	4
3.4.2.18	Installation of running staples remaining in the body of concrete	pcs.	8
3.4.2.19	Installation of ceiling beams, under-crane and binding at a height of supporting platform up to 6 m at the height of the beams over 500 mm to 800 mm	m ³	1.16
3.4.2.20	Priming of metal surfaces at a time with zinc protective primer	m ²	6.8
3.4.2.21	Installation of pits 400x400x200	pcs.	1
3.4.2.22	Installation of cast-in place reinforcing belt ПМ-2	m ³	1.6
3.4.2.23	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	19.07
3.4.2.24	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	69.01
3.4.2.25	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	24.65
3.4.2.26	Installation of steel structures remaining in the body of concrete (staple УП2-8)	pcs.	2
3.4.2.27	Installation rotary butterfly valve DN900 PN25	pcs.	2
3.4.2.28	Installation of ductile iron flange T-bend DN900x900x900 PN25	pcs.	1
3.4.2.29	Installation of dismantling joint DN900 PN25	pcs.	2
3.4.2.30	Welding of steel welded flange to pipelines DN900 PN25	pcs.	3
3.4.3	<i>Breaking Up, Temporary and Permanent Reinstatement of Surfaces around Manholes and buried</i>	pcs.	2
3.4.3.1	Arrangement of concrete pavement around the wells	m ³	2.48
3.4.4	<i>Crossings Through the Walls of Chambers or Buildings</i>		
3.4.4.1	Hole in the reinforced concrete well	pcs.	4
3.4.4.2	Installation of the sealing as specified under the Sub-Chapter 2.1.1 in the Chapter 2 Particular Technical Specifications Installation of ring space seal	pcs.	4
3.4.5	<i>Pipework – Reinstatement. Breaking Up, Temporary and Permanent Reinstatement of Surfaces of Different Types along Pipe Routes</i>		
3.4.5.1	Mechanized soil preparation for arranging parterre and ordinary lawn without introduction of plant soil with further sowing parterre, moorish and ordinary lawns in manual	m ²	90
3.5	HYDRAULIC PRESSURE TESTS		
3.5.1	Hydraulic pressure tests, flushing and disinfection of pipelines DN900	m	808.5
3.6	DEMOLITION AND SITE CLEARANCE		
3.6.1	Dismantling of rectangular water supply concrete wells with monolithic walls and a precast reinforced concrete coating in wet soils	m ³	31.5
3.6.2	Dismantling of steel gate latches or reverse valves DN900	pcs.	2

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.6.3	Dismantling of steel gate latches or reverse valves DN150	pcs.	1
3.6.4	Transportation of waste material up to 15 km	t	9
3.7	WATER MAIN RENOVATION AND ANCILLARY WORKS		
3.7.1	Laying of polyethylene water supply pipes DN160 using hydraulic-pressure test	m	3
3.7.2	Installing a filter box for round channel DN100	pcs.	1
3.7.3	Installation of polyethylene shaped parts DN160	pcs.	1
3.7.4	Installation of ventilation fungus DN160	pcs.	1
OPTIONAL WORKS TO CONNECT PHASE 1 AND PHASE 2 PIPEWORKS IN CHAMBERS (Details are provided in the Chapter 2 Particular Technical Specifications Sub-Chapter 2.1.1)			
3.8	CONNECTION CHAMBER BETWEEN TWO DI DN800 MM PIPES AND EXISTING DN1000 MM PIPE (PK0) including following works		
3.8.1	Redesign of the chamber as shown on Figure 3 Sub-Chapter 2.1.1, Chapter 2 Particular Technical Specifications	ls	1
3.8.2	Construction of the Chamber following requirements set under Chapter 2 and under 3.4 in the Price Schedule	ls	1
3.8.3	Installation of the DI DN800 Tee and clamps	ls	1
3.8.4	Installation of Valve DN800 and needed fittings	ls	1
3.8.5	Connection with the DN1000 steel pipe	ls	1
3.9	CONNECTION CHAMBER TO CONNEC PHASE 1 AND PHASE 2 DI DN 800 MM PIPES as specified under Chapter 2 Particular Technical Specifications Sub-Chapter 2.1.1 Figure 5 and under items 3.3 and 3.4 in the Price Schedule	ls	1

Part 3.2 Segment A4. Rehabilitation of emergency sections of the WPS “Shubranets” - CWR “Popova” pressure water main DN = 900 mm with a total length of ~ 7 km in Chernivtsi city, Chernivtsi region.
Rehabilitation of the water main section with an estimated length of 2 km (Water main segment in the area of Lenkivtsi village to Halytskyi Shliakh Street)

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.1	PIPEWORK- PIPES IN TRENCHES		
3.1.1	Laying of Socket pipes made of spheroidal graphite ductile iron DN800 PN25	m	978.5
3.1.2	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 4	m ³	494.33
3.1.3	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 2	m ³	1898.67
3.1.4	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 4, with further transportation for up to 40 km	m ³	29.11
3.1.5	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 2, with further transportation for up to 40 km	m ³	794.47
3.1.6	Finishing manually, hand stripping of the bottom and walls with the soil displacement in the excavation pits and trenches developed by mechanical means	m ³	359.29
3.1.7	Arrangement of a sand foundation under the pipelines	m ³	107
3.1.8	Sand dusting, h=500 mm	m ³	17.2
3.1.9	Filling the trenches, excavation of pit hollows and pits manually, the group of soils is 1	m ³	145.35
3.1.10	Backfilling of trenches with bulldozers with the further compaction using air rammers, type of the soil 1,2	m ³	2112.61
3.1.11	Backfilling of trenches with bulldozers with the further compaction using air rammers, type of the soil of 3,4	m ³	494.33
3.1.12	Installation of concrete stops on the network	pcs.	28
3.3	PIPEWORK - FITTINGS AND VALVES		
3.3.1	Installation of anchored joint DN 800 PN25 with locking ring with a set of mount hardware	pcs.	151
3.3.2	Installation of bell reducer made of spheroidal graphite ductile iron DN800	pcs.	25
3.3.3	Installation of joint gasket DN800	pcs.	165
3.3.4	Installation of hub elbow made of spheroidal graphite ductile iron 45° DN800 PN25	pcs.	8
3.3.5	Installation of hub elbow made of spheroidal graphite ductile iron 22° DN800 PN25	pcs.	6
3.3.6	Installation of hub elbow made of spheroidal graphite ductile iron 11° DN800 PN25	pcs.	9
3.3.7	Installation of flexible coupling for pipes made of ductile iron DN800 PN25	pcs.	5
3.4	PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES		
3.4.1	Chamber 1, which includes the following works	pcs.	1
3.4.1.1	Excavation loading the soil, group of soils is 4, with its further transportation for up to 40 km	m ³	3.61
3.4.1.2	Excavation loading the soil, group of soils is 2, with its further transportation for up to 40 km	m ³	58.7
3.4.1.3	Arrangement of gravel basis under the foundations	m ³	1.81
3.4.1.4	Arrangement of concrete foundation mattress	m ³	1.8
3.4.1.5	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	17.3

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.1.6	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	3.5
3.4.1.7	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	9
3.4.1.8	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	0.4
3.4.1.9	Installation of basement wall blocks of ФБС 24.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t)	pcs.	8
3.4.1.10	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	14
3.4.1.11	Installation of basement wall blocks of ФБС 12.4.3-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	2
3.4.1.12	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	4
3.4.1.13	Reinforcement of walls with a greed of 40x40, d=10, A240C type	m ²	1.3
3.4.1.14	Installation of reinforced concrete rings KC-7-6	pcs.	4
3.4.1.15	Laying of ceiling slabs ПТ 75.180.14-6	pcs.	2
3.4.1.16	Laying of ceiling slabs ПТО 150.180.14-6	pcs.	4
3.4.1.17	Installation of a metal ladder МД-1 (MD-1)	pcs.	4
3.4.1.18	Installation of ductile iron hatch	pcs.	4
3.4.1.19	Installation of beam Б7 (3580*380*300)	pcs.	1
3.4.1.20	Priming of metal surfaces at a time with zinc protective primer	m ²	6.8
3.4.1.21	Installation of metal grille of pits 400x400x200	pcs.	1
3.4.1.22	Installation of cast-in place reinforcing belt ПМ-1	m ³	1.1
3.4.1.23	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	9.12
3.4.1.24	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	52.5
3.4.1.25	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	13.2
3.4.1.26	Installation of running staples remaining in the body of concrete	pcs.	8
3.4.1.27	Welding of flanges to steel pipelines DN900	pcs.	1
3.4.1.28	Installation of ductile iron flange adapter PN25 DN900x800	pcs.	1
3.4.1.29	Installation of smooth flanged branch with ductile iron end DN800 L=0.6 m PN25	pcs.	1
3.4.1.30	Installation of anchored joint DN 800 PN25 with locking ring	pcs.	1
3.4.2	Chamber 2 including the following works:	pcs.	1
3.4.2.1	Excavation loading the soil on dump trucks with excavators, group of soils is 4, with its further transportation for up to 40 km	m ³	12.75
3.4.2.2	Excavation loading the soil on dump trucks with excavators, group of soils is 2, with its further transportation for up to 40 km	m ³	61.63
3.4.2.3	Arrangement of gravel basis under the foundations	m ³	2.13
3.4.2.4	Arrangement of concrete foundation mattress	m ³	2.1
3.4.2.5	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	20.34
3.4.2.6	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	4.2

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.2.7	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	11.25
3.4.2.8	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	0.9
3.4.2.9	Installation of basement wall blocks of ФБС 24.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t)	pcs.	6
3.4.2.10	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	14
3.4.2.11	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	15
3.4.2.12	Reinforcement of walls with a greed of 40x40, d=10, A240C type	m ²	1.6
3.4.2.13	Installation of reinforced concrete rings KC-7-6	pcs.	4
3.4.2.14	Laying of ceiling slabs ПТ 75.180.14-6	pcs.	4
3.4.2.15	Laying of ceiling slabs ПТО 150.180.14-6	pcs.	4
3.4.2.16	Installation of a metal ladder МД-1 (MD-1)	pcs.	4
3.4.2.17	Installation of ductile iron hatch	pcs.	4
3.4.2.18	Installation of beam Б12 (4300*500*400)	m ³	1
3.4.2.19	Priming of metal surfaces at a time with zinc protective primer	m ²	6.8
3.4.2.20	Installation the metal grille of pits 400x400x200	pcs.	1
3.4.2.21	Installation of cast-in place reinforcing belt ПМ-2	m ³	1.2
3.4.2.22	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	11.39
3.4.2.23	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	58.5
3.4.2.24	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	15.81
3.4.2.25	Installation of running staples remaining in the body of concrete	pcs.	8
3.4.2.26	Installation of ductile iron flange adapter PN25 DN900x800	pcs.	1
3.4.2.27	Installation of ductile iron flange T-bend DN800x300x800 PN25	pcs.	1
3.4.2.28	Installation of anchored joint DN 800 PN25 with locking ring with a set of mount hardware	pcs.	1
3.4.2.29	Installation of ductile iron branch, flange hub DN800 PN25	pcs.	1
3.4.2.30	Installation rotary butterfly valve DN800 PN25	pcs.	1
3.4.2.31	Laying pipelines with polyethylene pipes «MultiPipe II RC» DN300 with hydraulic testing	m	2
3.4.2.32	Installation of welded flange bushing DN300	pcs.	1
3.4.2.33	Installation of steel flange for PE pipes DN300	pcs.	1
3.4.2.34	Installation of heat-resistant coupling GF DN300	pcs.	1
3.4.2.35	Installation of dismantling joint DN800 PN25	pcs.	1
3.4.2.36	Installation rotary butterfly valve DN300 PN25 with flywheel DN300	pcs.	1
3.4.2.37	Welding of flanges to steel pipelines DN900	pcs.	1
3.4.2.38	<i>Drainage well including the following works:</i>		
3.4.2.38.1	Excavation loading the soil on dump trucks with excavators, group of soils is 4, with its further transportation for up to 40 km	m ³	3.44
3.4.2.38.2	Excavation loading the soil on dump trucks with excavators, group of soils is 2, with its further transportation for up to 40 km	m ³	25.19
3.4.2.38.3	Soil compaction with crushed stone	m ²	5.72
3.4.2.38.4	Arrangement of concrete foundation mattress	m ³	0.57

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.4.2.38.5	Laying of bottom reinforced concrete slabs ПН20 series 3.900.1-14 production 1	pcs.	1
3.4.2.38.6	Laying of reinforced concrete rings КС20.9 series серия 3.900.1- 14 production 1	pcs.	5
3.4.2.38.7	Laying of bottom reinforced concrete slabs 1ПП20-2 series 3.900.1-14 production 1	pcs.	1
3.4.2.38.8	Installation of ductile iron hatch for the well	pcs.	1
3.4.2.38.9	Concrete spraing of the surface with preliminary sandblasting processing with surface ironing	m ²	37.7
3.4.2.38.10	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 40 mm)	m ²	3.14
3.4.3	<i>Breaking Up, Temporary and Permanent Reinstatement of Surfaces around Manholes and buried</i>		
3.4.3.1	Arrangement of concrete pavement around the wells	m ³	2.79
3.4.4	<i>Crossings Through the Walls of Chambers or Buildings</i>		
3.4.4.1	Hole in the reinforced concrete well	pcs.	6
3.4.4.2	Installation of the sealing as specified under the Sub-Chapter 2.1.1 in the Chapter 2 Particular Technical Specifications	pcs.	6
3.4.5	<i>Pipework – Reinstatement. Breaking Up, Temporary and Permanent Reinstatement of Surfaces of Different Types along Pipe Routes</i>		
3.4.5.1	Arrangement of levelling layers of the sand base with a motor grader	m ³	6.25
3.4.5.2	Arrangement of black gravel foundations using infiltration method if the thickness is 8 cm with adding for every 1 cm (up to a thickness of 18 cm)	m ²	25
3.4.5.3	Arrangement of the top layer of 5-cm-thick coating of asphalt with adding for every 0.5 cm (up to a thickness of 6 cm)	m ²	25
3.4.5.4	Installation of concrete curb stones on a concrete base of up to 100 mm	m	10
3.5	HYDRAULIC PRESSURE TESTS		
3.5.1	Hydraulic pressure tests, flushing and disinfection of pipelines DN800	m	978.5
3.5.2	Flushing and disinfection of pipelines DN300	m	2
3.6	DEMOLITION AND SITE CLEARANCE		
3.6.1	Dismantling of existing steel water supply pipes DN900	m	80
3.6.2	Rooting of trees with trolling up to 100 m, tree diameter over 32 cm	pcs.	6
3.6.3	Transportation of waste material up to 15 km	t	16.2
3.7	WATER MAIN RENOVATION AND ANCILLARY WORKS		
3.7.1	Laying pipelines with polyethylene pipes DN300, hydraulic test	lm	7

Part 3.3 Segment A5. Rehabilitation of emergency sections of the WPS “Shubranets” - CWR “Popova” pressure water main DN = 900 mm with a total length of ~ 7 km in Chernivtsi city, Chernivtsi region.

Rehabilitation of the water main segment with an estimated length of 1.5 km between Zolochivska and Stryiska Streets

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
3.1	PIPEWORK- PIPES IN TRENCHES		
3.1.1	Laying of Socket pipes made of spheroidal graphite ductile iron DN800 PN25	m	650
3.1.2	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 4	m ³	2247.09
3.1.3	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 2	m ³	4451.45
3.1.4	Excavation loading the soil, group of soils is 4, with further transportation for up to 40 km	m ³	124.53
3.1.5	Excavation loading the, group of soils is 2, with further transportation for up to 40 km	m ³	796.9
3.1.6	Finishing manually, hand stripping of the bottom and walls with the soil displacement in the excavation pits and trenches developed by mechanical means	m ³	410.21
3.1.7	Arrangement of a sand foundation under the pipelines	m ³	70.37
3.1.8	Sand dusting, h=500 mm	m ³	103.05
3.1.9	Filling the trenches, excavation of pit hollows and pits manually, the group of soils is 1	m ³	269.47
3.1.10	Backfilling of trenches with bulldozers with the further compaction using air rammers, type of the soil of 1,2	m ³	4592.19
3.1.11	Backfilling of trenches with bulldozers with the further compaction using air rammers, type of the soil of 3,4	m ³	2247.09
3.1.12	Installation of concrete stops on the network	pcs	24
3.2	PIPEWORK – TRENCHLESS		
3.2.1	Clean the Host Pipe DN900	lm	670
3.2.2	Set up bypass, flow management	lm	670
3.2.3	Installation of CIPP liner	lm	670
3.2.4	UV light or Heat for curing	lm	670
3.2.5	Pressure testing and cleaning of the section	lm	670
3.2.6	Arrangement of waterproofing	m ²	39
3.2.7	Excavation loading the soil, group of soils is 4 with its further transportation for up to 40 km	m ³	51.02
3.2.8	Excavation loading the soil, group of soils is 2 with its further transportation for up to 40 km	m ³	275.2
3.2.9	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 4	m ³	58.98
3.2.10	Excavation into a disposal area with the “dragline” or “back hoe” excavators, the group of soils is 2	m ³	331.05
3.2.11	Finishing manually, hand stripping of the bottom and walls with the soil displacement in the excavation pits and trenches developed by mechanical means	m ³	30
3.2.12	Backfilling of trenches with bulldozers with the further compaction using air rammers, type of the soil of 1,2	m ³	361.05
3.2.13	Backfilling of trenches with bulldozers with the further compaction using air rammers, type of the soil of 3,4	m ³	58.98
3.3	PIPEWORK - FITTINGS AND VALVES		
3.3.1	Installation of anchored joint DN 800 PN25 with locking ring with a set of mount hardware	pcs.	109
3.3.2	Installation of bell reducer made of spheroidal graphite ductile iron DN800	pcs.	20
3.3.3	Installation of joint gasket DN800	pcs.	120

3.3.4	Installation of hub elbow made of spheroidal graphite ductile iron 45° DN800 PN25	pcs.	10
3.3.5	Installation of hub elbow made of spheroidal graphite ductile iron 22° DN800 PN25	pcs.	6
3.3.6	Installation of hub elbow made of spheroidal graphite ductile iron 11° DN800 PN25	pcs.	8
3.3.7	Installation of flexible coupling for pipes made of ductile iron DN800 PN25	pcs.	3
3.3.8	Welding of flanges to steel pipelines DN900 PN25	pcs.	16
3.4	PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES		
3.4.1	Chamber 1, 2, 3 and 5 includes the following works	pcs.	4
3.4.1.1	Excavation loading the soil on dump trucks with excavators, group of soils is 4, with its further transportation for up to 40 km	m ³	14.5
3.4.1.2	Excavation loading the soil on dump trucks with excavators, group of soils is 2, with its further transportation for up to 40 km	m ³	47.9
3.4.1.3	Arrangement of gravel basis under the foundations	m ³	7.24
3.4.1.4	Arrangement of concrete foundation mattress	m ³	7.2
3.4.1.5	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	69.2
3.4.1.6	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	14
3.4.1.7	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	36
3.4.1.8	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	1.6
3.4.1.9	Installation of basement wall blocks of ФБС 24.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t)	pcs.	52
3.4.1.10	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	64
3.4.1.11	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	24
3.4.1.12	Installation of basement wall blocks of ФБС 12.4.3-T DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	6
3.4.1.13	Reinforcement of walls with a greed of 40x40, d=10, A240C type	m ²	7.8
3.4.1.14	Installation of reinforced concrete rings KC-7-6	pcs.	24
3.4.1.15	Laying of ceiling slabs ПТ 75.180.14-6	pcs.	8
3.4.1.16	Laying of ceiling slabs ПТО 150.180.14-6	pcs.	16
3.4.1.17	Installation of a metal ladder МД-1 (MD-1)	pcs.	16
3.4.1.18	Installation of ductile iron hatch	pcs.	16
3.4.1.19	Installation of beam Б7 (3580*380*300)	pcs.	4
3.4.1.20	Priming of metal surfaces at a time with zinc protective primer	m ²	35.2
3.4.1.21	Installation of metal grille of pits 400x400x200	pcs.	4
3.4.1.22	Installation of cast-in place reinforcing belts	m ³	5.5
3.4.1.23	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	36.48
3.4.1.24	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	277
3.4.1.25	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	52.8
3.4.1.26	Installation of running staples remaining in the body of concrete	pcs.	36

3.4.1.27	Welding of flanges to steel pipelines DN900	pcs.	4
3.4.1.28	Installation of ductile iron flange adapter PN25 DN900x800	pcs.	4
3.4.1.29	Installation of ductile iron branch, flange hub DN800 PN25	pcs.	2
3.4.1.30	Installation of smooth flanged branch with ductile iron end DN800 L=0.6 m PN25	pcs.	2
3.4.1.31	Installation of anchored joint DN 800 PN25 with locking ring	pcs.	4
3.4.2	Chamber 3.1 and 4, which includes the following works	pcs.	2
3.4.2.1	Excavation loading the soil on dump trucks with excavators, group of soils is 4, with its further transportation for up to 40 km	m ³	38.8
3.4.2.2	Excavation loading the soil on dump trucks with excavators, group of soils is 2, with its further transportation for up to 40 km	m ³	129.61
3.4.2.3	Arrangement of gravel basis under the foundations	m ³	4.86
3.4.2.4	Arrangement of concrete foundation mattress	m ³	4.8
3.4.2.5	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	46.54
3.4.2.6	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	9.5
3.4.2.7	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	27
3.4.2.8	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	1.7
3.4.2.9	Installation of basement wall blocks of ФБС 24.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t)	pcs.	16
3.4.2.10	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	23
3.4.2.11	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	45
3.4.2.12	Reinforcement of walls with a greed of 40x40, d=10, A240C type	m ²	3.2
3.4.2.13	Installation of reinforced concrete rings KC-7-6	pcs.	8
3.4.2.14	Laying of ceiling slabs ПТ 75.240.14-6	pcs.	4
3.4.2.15	Laying of ceiling slabs ПТО 150.240.14-6	pcs.	4
3.4.2.16	Laying of ceiling slabs ПТ 75.180.14-6	pcs.	4
3.4.2.17	Laying of ceiling slabs ПТО 150.180.14-6	pcs.	4
3.4.2.18	Installation of a metal ladder МД-1 (MD-1)	pcs.	8
3.4.2.19	Installation of ductile iron hatch	pcs.	8
3.4.2.20	Installation of beam Б12 (4300*500*400)	pcs.	2
3.4.2.21	Priming of metal surfaces at a time with zinc protective primer	m ²	13.6
3.4.2.22	Installation of pits 400x400x200	pcs.	2
3.4.2.23	Installation of cast-in place reinforcing belt ПМ-3.1	m ³	1.4
3.4.2.24	Installation of cast-in place reinforcing belt ПМ-4	m ³	1.2
3.4.2.25	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	27.3
3.4.2.26	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	124.5
3.4.2.27	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	36.95
3.4.2.28	Installation of running staples remaining in the body of concrete	pcs.	16
3.4.2.29	Installation of smooth flanged branch with ductile iron end DN800 L=0.6 m PN25	pcs.	3
3.4.2.30	Installation of ductile iron flange T-bend DN800x800x800 PN25	pcs.	1

3.4.2.31	Installation of ductile iron flange T-bend DN800x300x800 PN25	pcs.	1
3.4.2.32	Installation of dismantling joint DN800 PN25	pcs.	1
3.4.2.33	Installation of anchored joint DN 800 PN25 with locking ring	pcs.	4
3.4.2.34	Installation of ductile iron branch, flange hub DN800 PN25	pcs.	1
3.4.2.35	Installation of short flange ductile iron gate valve PN25 DN150 with flywheel DN150	pcs.	2
3.4.2.36	Welding of flat steel flanges BCТ9сн2, BCТ9сн3 PN25 DN150	pcs.	2
3.4.2.37	Welding of the steel welded blind flange DN150	pcs.	1
3.4.2.38	Installation of steel brunch DN150	m	0.3
3.4.2.39	Welding of steel welded blind flange DN800	pcs.	1
3.4.2.40	Installation of a two-stage air valve DN150 PN25	pcs.	1
3.4.2.41	Laying pipelines with polyethylene pipes «MultiPipe II RC» DN300 with hydraulic testing	m	2
3.4.2.42	Installation of welded flange bushing DN300	pcs.	1
3.4.2.43	Installation of steel flange for PE pipes DN300	pcs.	1
3.4.2.44	Installation of heat-resistant coupling GF DN300	pcs.	1
3.4.2.45	Installation of rotary butterfly valve DN300 PN25 with a flywheel DN300	pcs.	1
3.4.2.46	<i>Drainage well including the following works:</i>		
3.4.2.46.1	Excavation loading the soil on dump trucks with excavators, group of soils is 4, with its further transportation for up to 40 km	m ³	4.58
3.4.2.46.2	Excavation loading the soil on dump trucks with excavators, group of soils is 2, with its further transportation for up to 40 km	m ³	18.32
3.4.2.46.3	Soil compaction with crushed stone	m ²	5.72
3.4.2.46.4	Arrangement of concrete foundation mattress	m ³	0.6
3.4.2.46.5	Laying of bottom reinforced concrete slabs ПН20 series 3.900.1-14 production 1	pcs.	1
3.4.2.46.6	Laying of reinforced concrete rings KC20.9 series серия 3.900.1- 14 production 1	pcs.	4
3.4.2.46.7	Laying of bottom reinforced concrete slabs 1ПП20-2 series 3.900.1-14 production 1	pcs.	1
3.4.2.46.8	Installation of ductile iron hatch for the well	pcs.	1
3.4.2.46.9	Concrete spraing of the surface with preliminary sandblasting processing with surface ironing	m ²	31.4
3.4.2.46.10	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 40 mm)	m ²	3.14
3.4.3	Chamber 6 and 7 including the following works:	pcs.	2
3.4.3.1	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 4, with its further transportation for up to 40 km	m ³	17
3.4.3.2	Excavation loading the soil on dump trucks with single-bucket diesel-powered crawler excavators, group of soils is 2, with its further transportation for up to 40 km	m ³	70.13
3.4.3.3	Arrangement of gravel basis under the foundations	m ³	3.41
3.4.3.4	Arrangement of concrete foundation mattress	m ³	3.4
3.4.3.5	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, the first layer	m ²	32.5
3.4.3.6	Arrangement of flat bottoms of rectangular structures with a wall thickness of more than 150 mm, B 30 (M 400) heavy-weight concrete, aggregate size is 5-10 mm	m ³	6.6
3.4.3.7	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	16.65
3.4.3.8	Arrangement of concrete pillars, B 10 (M 150) heavy-weight concrete, aggregate size is 40 mm	m ³	1.3

3.4.3.9	Installation of basement wall blocks of ФБС 24.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 1,5 t)	pcs.	14
3.4.3.10	Installation of basement wall blocks of ФБС 12.4.6-T type DSTU B.V.2.6-108:2010 (with the weight of up to 1 t)	pcs.	28
3.4.3.11	Installation of basement wall blocks of ФБС 9.4.6-T type, DSTU B.V.2.6-108:2010 (with the weight of up to 0,5 t)	pcs.	32
3.4.3.12	Reinforcement of walls with a greed of 40x40, d=10, A240C type	m ²	4.1
3.4.3.13	Installation of reinforced concrete rings KC-7-6	pcs.	8
3.4.3.14	Laying of ceiling slabs ПТ 75.180.14-6	pcs.	4
3.4.3.15	Laying of ceiling slabs ПТО 150.180.14-6	pcs.	4
3.4.3.16	Laying of ceiling slabs П11д-8 75.150.10-6	pcs.	4
3.4.3.17	Laying of ceiling slabs ПТО 150.150.12-6	pcs.	2
3.4.3.18	Installation of a metal ladder МД-1 (MD-1)	pcs.	6
3.4.3.19	Installation of ductile iron hatch for the well	pcs.	6
3.4.3.20	Installation of beam Б12 (4300*500*400)	pcs.	1
3.4.3.21	Installation of beam Б5 (2840*380*300)	pcs.	1
3.4.3.22	Priming of metal surfaces at a time with zinc protective primer	m ²	12.6
3.4.3.23	Installation of pits 400x400x200	pcs.	2
3.4.3.24	Installation of cast-in place reinforcing belt	m ³	3
3.4.3.25	Arrangement of levelling concrete with a thickness of 20 mm considering adding or removing for every 5 mm change in the thickness of levelling concrete (up to an average thickness of 55 mm)	m ²	16.88
3.4.3.26	Horizontal pasting waterproofing of walls and foundations in 1 layer	m ²	127
3.4.3.27	Arrangement of pasting waterproofing with sealing membrane in bituminous mastic, first layer	m ²	25
3.4.3.28	Installation of running staples remaining in the body of concrete	pcs.	12
3.4.3.29	Installation of ductile iron flange T-bend DN900x900x900 PN25	pcs.	1
3.4.3.30	Installation of dismantling joint DN900 PN25	pcs.	1
3.4.3.31	Welding of steel welded flange DN900 PN25	pcs.	2
3.4.3.32	Welding of steel welded blind flange DN900 PN25	pcs.	1
3.4.3.33	Installation of a two-stage air valve DN150 PN25	pcs.	1
3.4.3.34	Welding of flat steel flanges БСТ9сн2, БСТ9сн3 PN25 DN150	pcs.	2
3.4.3.35	Welding of the steel blind flange DN150	pcs.	1
3.4.3.36	Installation of steel nipple DN150	m	0.3
3.4.3.37	Installation of short flange ductile iron gate valve PN25 DN150 with flywheel DN150	pcs.	2
3.4.3.38	Installation of coupling with short split bolts DN900 PN25	pcs.	2
3.4.4	<i>Crossings Through the Walls of Chambers or Buildings</i>		
3.4.4.1	Hole in the reinforced concrete well	pcs.	20
3.4.4.2	Installation of the sealing as specified under the Sub-Chapter 2.1.1 in the Chapter 2 Particular Technical Specifications	pcs.	20
3.4.5	<i>Breaking Up, Temporary and Permanent Reinstatement of Surfaces around Manholes and buried</i>		
3.4.5.1	Arrangement of concrete pavement around the wells	m ³	9.61
3.4.6	<i>Pipework – Reinstatement. Breaking Up, Temporary and Permanent Reinstatement of Surfaces of Different Types along Pipe Routes</i>		
3.4.6.1	Arrangement of levelling layers of the sand base with a motor grader	m ³	62.5
3.4.6.2	Arrangement of black gravel foundations with adding add to/from standard 27-23-5 for every 1 cm (up to a thickness of 18 cm)	m ²	250

3.4.6.3	Arrangement of the top layer of 5-cm-thick coating of asphalt. If the thickness changes, add to/from standards 27-27-1 – 27-27-4 for every 0.5 cm (up to a thickness of 6 cm)	m ²	250
3.4.6.4	Installation of concrete curb stones on a concrete base of up to 100 mm	m	100
3.4.6.5	Soil preparation for lawn arrangement with subsequent sowing of the lawn manually	m ²	2105
3.5	HYDRAULIC PRESSURE TESTS		
3.5.1	Hydraulic pressure tests, flushing and disinfection of pipelines DN800-900	m	1320
3.5.2	Flushing and disinfection of pipelines DN300	m	2
3.6	DEMOLITION AND SITE CLEARANCE		
3.6.1	Dismantling of steel water supply pipes DN900	m	50
3.6.2	Dismantling of round manholes in wet soils	m ²	22
3.6.3	Dismantling of steel valves DN150	pcs.	1
3.6.4	Rooting of trees diameter over 32 cm	pcs.	33
3.6.5	Transportation of waste material up to 15 km	t	25
3.7	WATER MAIN RENOVATION AND ANCILLARY WORKS		
3.7.1	Laying pipelines with polyethylene pipes DN300, hydraulic test	m	5
3.7.2	Manual backfilling of a concrete well, soil group 1	m ³	8
3.7.3	Dismantling of reinforced concrete non-pressure flared pipes DN500	m	10
3.7.4	Laying of non-pressure reinforced concrete flared pipes DN500	m	10
3.7.5	Laying of polyethylene water supply pipes using hydraulic-pressure test, the pipes DN160	m	6
3.7.6	Installing a filter box for round channel DN100	pcs.	2
3.7.7	Installation of polyethylene fittings DN160	pcs.	2
3.7.8	Installation of ventilation fungus DN160	m ²	0.08
3.7.9	Installation and dismantling up a profiled fence letters	m ²	50
3.7.10	Installation and dismantling of a metal fence made of welded mesh panels on reinforced concrete pillars without a base, up to 2.2 m high	m	25