

RAHEEN GROUP WATER SCHEME

PRICING DOCUMENT / BILL OF QUANTITIES

TENDER ISSUE

Prepared by

FERGAL COUGHLAN CHARTERED ENGINEER LTD

BOQ SUMMARY

RAHEEN GROUP WATER SCHEME - GENERAL SUMMARY					
Class	Description				Reference
A	GENERAL ITEMS incl. specialist booster pump package (A510.1)				Detailed BoQ row 29 / A510.1 linked to Booster Pump Schedule
B	GROUND INVESTIGATION				Detailed BoQ row 34
I	PIPEWORK: PIPES				Detailed BoQ row 42
J	PIPEWORK: FITTINGS AND VALVES				Detailed BoQ row 57
K					Detailed BoQ row 97
L					Detailed BoQ Class L total – row 112
SUBTOTAL					
OMISSION / ADDITION - GENERAL ADJUSTMENT					
TOTAL EXCLUDING VALUE ADDED TAX					
VALUE ADDED TAX - 13.5%					
TOTAL CONTRACT SUM INCLUDING VAT					

DETAILED BOQ

RAHEEN GROUP WATER SCHEME - BILL OF QUANTITIES					
CESMM4 PRICING DOCUMENT					
110 mm PE100 SDR17 main Approx. Ch. 0+000 to 2+300 24 domestic connections Rates and tender adjustments to be entered by Tenderer					
CLASS A - GENERAL ITEMS					
Item ID	Item Description	Unit	Quantity	Rate (€)	
A110.1	Performance bond in accordance with the suitability assessment questionnaire.	sum	1		
A120.1	Public Liability Insurance in accordance with the suitability assessment questionnaire, including the role of Project Supervisor Construction Stage; include Clare County Council as co-insured and a non-vitiation clause.	sum	1		
A130.1	Employers Liability Insurance in accordance with the suitability assessment questionnaire.	sum	1		
A140.1	Contractors All Risks insurance for the full Contract value plus 10%; include Clare County Council and the contracting authority as co-insured and a non-vitiation clause.	sum	1		
A150.1	Compliance with the Safety, Health and Welfare at Work (Construction) Regulations 2013.	sum	1		
A160.1	Provide the services of Project Supervisor Construction Stage pursuant to S.I. No. 291 of 2013.	sum	1		
A170.1	Temporary works obligations and delivery of the Safety File, including all operation and maintenance manuals on completion.	sum	1		
A180.1	Other general items considered necessary to complete the works shown on the tender drawings and specifications. Specify same on separate sheet attached to this document.	sum	1		
A190.1	Prepare and implement the Traffic Management Safety Plan in accordance with the preliminary safety and health plan and statutory requirements.	sum	1		
A210.1	Establishment and removal of road signage, lane restrictions, road closures and all traffic-management measures required to complete the works.	sum	1		
A220.1	Maintenance of road diversions, traffic-management layouts and associated measures for the duration of the works.	sum	1		
A230.1	Establishment, maintenance and removal of warning signs, trench fencing, barriers and lights.	sum	1		
A240.1	Pressure testing of the completed watermain in accordance with the specification and approved test procedure.	sum	1		
A250.1	Flushing, sterilisation and chlorination of the completed watermain, including water-quality sampling.	sum	1		
A260.1	Establishment of benchmarks, survey control and setting out.	sum	1		
A270.1	Protection of streams, drains and watercourses from pollution throughout construction.	sum	1		
A310.1	Provision of clean water required for pressure testing, flushing and chlorination.	sum	1		
A320.1	Temporary potable-water supply to existing consumers during the works, including removal of temporary mains and fittings on completion. Contractor to ensure that existing watermains is kept Live during course of new works.	sum	1		
A328.1	Pre-construction photographic and video condition survey of the entire works area, with indexed records issued to the Engineer prior to commencement of works.	sum	1		
A352.1	Administration and submission of road-opening licence applications to Clare County Council, including compliance with licence conditions; statutory licence fee reimbursed separately where stated in the Contract to the contractor by the contracting authority	sum	1		
A371.1	Full-time competent site supervision in accordance with the Conditions of Contract and Works Requirements.	sum	1		
A500.1	Contractor on completion shall provide an as built drawing showing location of new watermain to include all new fittings, boundary boxes(and tapping locations), fusion pipe joints(these should be surveyed in to ITM automatically by the fusion welding apparatus). Survey should be presented in CAD/DXF Format and the survey should be to ITM & IG coordinate systems. Including the above the contractor to tabulate all connections showing eircode number for connection, watermeter number and coordinates of all boundary boxes fitted.	sum	1		
A510.1	BOOSTER PUMP INSTALLATION – Supply, install, test and commission complete potable-water booster pumping station, including Grundfos Hydro Multi-E 2 CME 5-5 two-pump duty/standby booster set (or approved equivalent), each pump capable of the specified duty; suction and discharge manifolds/pipework; isolation and non-return valves; pressure vessel; full-bore bypass; electromagnetic flow meter; pressure transmitters; VSD/control panel; three-phase electrical installation; telemetry; kiosk; reinforced-concrete base and associated civil works; service ducts; testing, commissioning, training, O&M manuals and as-built information. Detailed components and pricing are set out on the separate 'Booster Pump Schedule'. The total of that schedule is carried directly to this Class A item.	nr	1		
A510.2	CUSTOMER SERVICE / METERING PILLAR – THREE-PHASE BOOSTER PUMP STATION SUPPLY Supply and install complete external customer service/metering pillar suitable for the proposed three-phase LV supply to the booster pump station and providing the designated electricity metering point. Include weatherproof enclosure, doors and locking arrangements, meter accommodation/backboard, incoming ESB Networks service duct termination, outgoing customer cable facilities, gland plates, internal mounting arrangements, foundation/plinth/chamber, excavation, concrete base/surround, fixing, earthing/bonding provisions, identification, duct entries and all associated builder's work. Pillar type, dimensions, metering arrangement, service termination, earthing and final location to be coordinated and agreed with ESB Networks prior to installation. ESB Networks meter, incoming service cable, connection charges, final connection and energisation excluded unless expressly stated otherwise.	nr	1		
A531.1	DECOMMISSION EXISTING PUMPING STATION – GENERAL. Following successful commissioning and putting into permanent operation of the new watermain and booster installation, isolate and decommission the existing water-supply pumping station. Include surveys, method statement, coordination with Raheen GWS/Engineer and relevant utility providers, isolation of existing water supply, draining down, temporary works, protection of retained services and all ancillary work. Existing installation shall remain fully operational until written instruction is issued by the Engineer to proceed with decommissioning. REMOVE EXISTING PUMPS AND ASSOCIATED MECHANICAL EQUIPMENT. Isolate, disconnect, drain, dismantle and remove existing borehole/pumping equipment as applicable, pumps, pressure vessels, manifolds, valves, meters, pipework, supports and associated mechanical equipment within the existing pump house. Include lifting, handling, transport and disposal/recycling, except equipment identified by the Employer for retention. DECOMMISSION EXISTING ELECTRICAL AND CONTROL INSTALLATION. Arrange safe isolation and decommissioning of electrical supply serving the existing pumping installation. Disconnect and remove pump control panels, starters/VSDs, telemetry equipment, cabling, containment and associated electrical equipment where no longer required. Works to be undertaken by competent electrical personnel. Coordinate any ESB Networks supply alteration/disconnection separately where required. DECOMMISSION EXISTING BOREHOLE / BORED WELL. Permanently decommission the existing water-supply borehole following successful commissioning of the replacement supply. Remove pump, rising main, electrical cable and other removable borehole equipment where instructed. Permanently seal/grout the borehole over its required depth using suitable approved materials and methods to prevent the borehole providing a pathway for contamination or uncontrolled movement of groundwater between aquifers/strata. Record borehole location, diameter, accessible depth and decommissioning materials/depths prior to completion. Reinstate wellhead area on completion. EXISTING PUMP HOUSE – DEMOLITION / RETENTION AND MAKING GOOD. Following removal of redundant mechanical/electrical equipment, [demolish existing pump house and remove foundations/slab to the extent instructed OR retain existing structure and make good]. Include removal of redundant pipe penetrations, ducts, plinths and supports; sealing openings; removal of waste; filling voids; and reinstatement of surrounding ground/surfaces. DISCONNECT AND ABANDON REDUNDANT WATERMAINS / PIPEWORK. Disconnect redundant pipework associated with the existing pumping station from the operational network at the locations shown/instructed. Cap permanently at the live-main side using approved fittings. Drain abandoned pipework and grout/fill where required by the Engineer; remove exposed redundant pipework and make good affected surfaces. DECOMMISSIONING RECORDS AND HANDOVER. Provide photographic record before, during and following decommissioning; waste transfer documentation; electrical isolation certification; details of equipment removed/retained; borehole decommissioning record including location, depth and sealing materials; and marked-up/as-built drawings identifying abandoned pipework and retained infrastructure.	ITEM	1		
TOTAL CLASS A - GENERAL ITEMS - FORWARD TO GENERAL SUMMARY					
CLASS B - GROUND INVESTIGATION					
Item ID	Item Description	Unit	Quantity	Rate (€)	
B111.1	Trial holes excavated by hand to locate services, maximum length 2.0 m, width 1.0 m and depth not exceeding 1.0 m, including reinstatement.	nr	15		
B121.1	Extra-over trial holes in rock, maximum length 2.0 m, width 1.0 m and depth not exceeding 1.0 m, including reinstatement.	nr	10		
TOTAL CLASS B - GROUND INVESTIGATION - FORWARD TO GENERAL SUMMARY					
CLASS I - PIPEWORK: PIPES					
Item ID	Item Description	Unit	Quantity	Rate (€)	
I712.1	110 mm OD PE100 SDR17 potable-water main in trench, including supply, laying, jointing, trench excavation in material other than separately measured rock, trimming formation and disposal of surplus excavated material to a licensed waste disposal site using licenced transportation vehicles with a current certificate of roadworthiness. Main is to be installed in: (a) existing bituminous footpath at minimum 900 mm cover to crown; (b) transverse crossings of the R463 Regional Road at minimum 1200 mm cover to crown; and (c) Raheen Arch Bridge culvert crossing where reduced cover is unavoidable. Bedding, surround, backfill, reduced-cover protection and permanent reinstatement are separately measured under Classes L and K. Comply with Uisce Éireann CDS-5020-03 Rev 03 and STD-W-13/STD-W-13A; reduced-cover/culvert crossing proposals subject to Uisce Éireann approval and applicable STD-W-33A/project detail. Include watermain warning tape/mesh and integral tracer wire to current Uisce Éireann requirements as part of the pipe-laying item.	m	2300		

I712.2	90 mm OD PE100 SDR17 potable rider watermain in trench, including supply, laying, jointing, trench excavation in material other than separately measured rock, trimming formation and disposal of surplus excavated material to a licensed waste disposal site using licenced transportation vehicles with a current certificate of roadworthiness. Main is to be installed in: (a) transverse crossings of the R463 Regional Road at minimum 1200 mm cover to crown; and (c) longitudinally along the R463 road verge / DBM surfaced margin at minimum 1200 mm cover, where the opening may be subject to heavy traffic loading. Bedding, surround, backfill and permanent reinstatement are separately measured under Classes L and K. Comply with Uisce Éireann CDS-5020-03 Rev 03 and STD-W-13/STD-W-13A. For the longitudinal heavy-duty R463 verge/DBM opening, permanent reinstatement shall comply with the Purple Book heavy-duty longitudinal opening detail SD6 and the Clare County Council Road Opening Licence. Include watermain warning tape/mesh and integral tracer wire to current Uisce Éireann requirements as part of the pipe-laying item.	m	200		
I712.3	25 mm OD PE80/PE100 domestic service pipe in trench, including excavation, laying, bedding/surround, backfill and connection works. Customer connection and boundary-box arrangement to Uisce Éireann STD-W-03; trench/backfill to STD-W-13 and cover to applicable Uisce Éireann requirements. Reinstatement footpaths/private entrances as separately measured. All excavated material should be removed to a licensed waste disposal site using licenced transportation vehicles with a current certificate of roadworthiness	m	50		
I712.4	Electrofusion tapping tee with 25 mm outlet, transition coupler and connection to 90/110 mm PE watermain, complete. Install as part of customer connection arrangement in accordance with Uisce Éireann STD-W-03 and applicable General Pipe Connection details STD-W-04 to STD-W-10.	nr	24		
TOTAL CLASS I - PIPEWORK: PIPES - FORWARD TO GENERAL SUMMARY					
CLASS J - PIPEWORK: FITTINGS AND VALVES					
Item ID	Item Description	Unit	Quantity	Rate (€)	
J751.1	100 mm existing-main to 110 mm PE flange-adaptor connection, including all couplings, adaptors, dismantling joints, restraints and fittings required for a complete connection. Refer Uisce Éireann General Pipe Connections STD-W-04 to STD-W-10; provide thrust restraint where applicable to STD-W-28.	nr	1		
J811.1	Resilient-seated sluice valve on 110 mm PE watermain, including adaptors, fittings, chamber interface and all ancillary works. Installation to Uisce Éireann STD-W-15 (Sluice Valve for PE Pipe <350 mm dia.) and applicable General Pipe Connection details STD-W-04 to STD-W-10.	nr	8		
J811.2	Resilient-seated sluice valve on 90 mm PE watermain, including adaptors, fittings, chamber interface and all ancillary works. Installation to Uisce Éireann STD-W-15 (Sluice Valve for PE Pipe <350 mm dia.) and applicable General Pipe Connection details STD-W-04 to STD-W-10.	nr	4		
J861.1	Double-orifice combination air valve on 110 mm PE watermain, including isolating valve, fittings and complete installation. Use on-line/off-line arrangement as shown on the drawings and in accordance with Uisce Éireann STD-W-22 / STD-W-23 for PE pipe.	nr	6		
J891.1	Fire hydrant on 110 mm PE watermain, including tee, isolating valve, duckfoot bend/risers where required and complete fittings. Use on-line/off-line PE hydrant arrangement as applicable in accordance with Uisce Éireann STD-W-18 / STD-W-19.	nr	4		
J891.2	Scour/washout valve assembly on 110 mm PE watermain, including isolating valve, fittings, discharge arrangement and all ancillary works, in accordance with Uisce Éireann STD-W-30 series and project drawings.	nr	1		
J891.3	Washout hydrant on 110 mm PE watermain, including all fittings for a complete installation and arrangement shown on the project drawings; coordinate with applicable Uisce Éireann scour/washout details including STD-W-30 series and, where associated with the booster station, STD-W-25.	nr	2		
J891.4	Uisce Éireann approved Electromagnetic bulk water flow meter on 110 mm PE watermain, including isolation, reducers/adaptors, dismantling joints, telemetry interface and commissioning. Meter chamber/installation to applicable Uisce Éireann meter details STD-W-26 series and CDS-5020-03 requirements; meter size/type as scheduled. Specific model to be agreed with Engineer and Uisce Éireann prior to installation	nr	1		
J891.5	Domestic mini-PRV arrangement to Uisce Éireann requirements, including DN20 PRV, integral strainer, stopcock, couplers, logger coupling, chamber and all fittings; associated boundary box to STD-W-03.	nr	24		
J891.6	Provide and install complete domestic service connection boundary box assembly, including Uisce Éireann-approved boundary box, Diehl Metering DN15 ALTAIR V4 CONCENTRIC volumetric cold-water meter, stop cock/stop valve, non-return valve where required, adaptors, couplings and all associated fittings, complete and commissioned. Boundary box and service connection arrangement to current Uisce Éireann requirements and STD-W-03. Include connection to service pipe and local making good; permanent surface restoration is measured separately under Class K.	nr	24		
TOTAL CLASS J - PIPEWORK: FITTINGS AND VALVES - FORWARD TO GENERAL SUMMARY					
CLASS K - PIPEWORK: MANHOLES AND PIPEWORK ANCILLARIES					
Item ID	Item Description	Unit	Quantity	Rate (€)	
K251.1	Sluice-valve chamber complete with precast units/concrete surround, engineering brickwork, cover/frame and all ancillary works to Uisce Éireann STD-W-15 for PE pipe.	nr	12		
K251.2	Fire-hydrant chamber/surface box complete with all concrete units, brickwork, cover/frame and ancillary works to Uisce Éireann STD-W-18 / STD-W-19 as applicable.	nr	4		
K251.3	Air-valve chamber complete with drainage arrangement, precast units, brickwork, cover/frame and ancillary works to Uisce Éireann STD-W-22 / STD-W-23 as applicable.	nr	6		
K251.4	Scour-valve chamber complete with precast units, brickwork, cover/frame and ancillary works in accordance with Uisce Éireann STD-W-30 series.	nr	1		
K251.5	Washout-hydrant chamber complete with precast units, brickwork, cover/frame and ancillary works to the applicable Uisce Éireann washout/scour detail (STD-W-30 series) and project drawings.	nr	2		
K251.6	Electromagnetic bulk-meter chamber complete with precast/reinforced-concrete construction, drainage, access, cover/frame and fittings to applicable Uisce Éireann meter details STD-W-26 series.	nr	1		
K271.1	Supply of approved Boundary-box chamber/civil installation associated with the domestic service connection, coordinated with the complete boundary box, Diehl DN15 ALTAIR V4 CONCENTRIC meter and stop-cock assembly measured under Class J. Installation to current Uisce Éireann requirements and STD-W-03.	nr	24		
K271.2	Dedicated domestic PRV chamber to Uisce Éireann STD-W-45, including 450 x 450 mm internal precast chamber, base/cover slab, heavy-duty cover/frame, surround and associated works; coordinate with boundary box STD-W-03. Note the prv arrangement may be included with boundary box if permitted by Uisce Éireann.	nr	24		
K672.1	Crossing beneath existing stormwater culvert/pipe, including support, protection, temporary works and reinstatement.	nr	4		
K672.2	Crossing above existing stormwater culvert/pipe, including reduced-cover protection, support and reinstatement.	nr	1		
K512.1	125 mm INTERNAL DIAMETER ESB NETWORKS LV SERVICE CABLE DUCT – 1 WAY – LAID IN ROADWAY Provide and install one-way 125 mm internal diameter ESB Networks-approved red PVC/uPVC service cable duct in excavated trench in roadway, from the proposed metering/mini-pillar to the existing three-phase ESB supply pole/connection point, generally along the route shown on the Contract Drawings. Trench: Excavate trench to a nominal minimum width of 450 mm, or greater width where necessary to safely install and compact the specified bedding, surround and backfill. Duct to be installed at a minimum depth of 750 mm in roadway, measured in accordance with ESB Networks requirements, or at greater depth where required by ESB Networks. The ESB detail confirms the 750 mm minimum roadway burial requirement. General-Specification-for-Busin... Duct bedding and surround: Provide approved sand bedding and surround to the duct, maintaining a minimum 75 mm of sand around the duct, including below, to the sides and above the duct, in accordance with the ESB Networks standard detail. General-Specification-for-Busin... Duct installation: Supply, lay and joint approved 125 mm red service duct complete with ESB Networks-approved 1.2 m long-radius bends. Short 90° bends/elbows shall not be permitted. Provide lean-mix concrete at duct joints/bends where required by the ESB Networks detail. General-Specification-for-Busin... Provide 10 mm diameter continuous knot-free draw rope, securely anchored at both ends. Keep duct clean during construction and seal/cap duct ends following installation to prevent ingress of dirt, grit, stones and water. General-Specification-for-Busin... Warning tape: Provide ESB Networks yellow electricity cable warning tape continuously over the duct at a maximum depth of 300 mm below finished road level. General-Specification-for-Busin... Backfill: Above the specified sand surround, backfill the trench with approved imported granular material suitable for the roadway location, placed and mechanically compacted in layers to the requirements of the Road Authority/Road Opening Licence. Include removal and disposal of surplus or unsuitable excavated material. Include excavation, trimming of trench, keeping excavation free of water, protection/support of existing services, temporary works, granular backfill, compaction and all ancillary work required to provide the complete duct installation. Excavation within 1.0 m of existing ESB cables shall be undertaken by hand and only following agreement with ESB Networks. Confirm the position of existing ESB cables with ESB Networks before excavation.	m	100		
K681.1	Crossing over or under telecommunications/service ducts, including support, protection and liaison.	nr	10		
K672.3	Raheen Arch Bridge culvert crossing – 110 mm OD PE100 SDR17 watermain. Extra-over for crossing/traversing the existing bridge culvert, including careful excavation, locating/protecting existing structure and services, temporary works, supports, fittings and coordination of the crossing geometry. Provide protection in accordance with Uisce Éireann STD-W-13 reduced-cover protection requirements and applicable STD-W-33A culvert/services crossing detail, together with the approved project-specific crossing detail. Backfill/protection materials are measured under Class L and surface restoration under Class K.	nr	1		
K821.1	Concrete marker posts and plates for sluice valves.	nr	12		
K821.2	Concrete marker posts and plates for fire hydrants.	nr	4		
K821.3	Concrete marker posts and plates for air valves.	nr	6		
K821.4	Concrete marker posts and plates for scour valves.	nr	1		
K821.5	Concrete marker posts and plates for washout hydrants.	nr	2		
K821.6	Concrete marker posts and plates for bulk meter.	nr	1		

K821.7	Identification markers for domestic meters/PRVs where required by the standard details.	nr	24		
SUBTOTAL CLASS K - GENERAL MANHOLES / ANCILLARIES					
PERMANENT REINSTATEMENT					
K741.1	110 mm OD PE100 WATERMAIN – EXISTING BITUMINOUS FOOTPATH – PERMANENT REINSTATEMENT TO PURPLE BOOK SD11. Existing footpath construction is bituminous. Minimum pipe trench width 500 mm to Uisce Éireann STD-W-13. For permanent reinstatement, saw-cut the existing bituminous surface in straight lines a minimum 150 mm beyond each side of the excavation in accordance with SD11, giving a nominal minimum finished surface width of 800 mm for a 500 mm trench. Remove temporary surfacing and unsuitable material; prepare and compact formation/sub-base; provide Cl.804/808 granular material or, where agreed with the Road Authority, CBGM B; apply bond coat to Cl.920; and provide 65 mm AC10 open surf 160/220 rec to Cl.916 or 65 mm AC10 close surf 160/220 rec to Cl.912. Permanent asphalt shall be machine laid and mechanically compacted. Treat vertical faces with approved bituminous joint treatment and seal finished joints in accordance with SD11. Where the trimmed edge lies within 400 mm of a joint, footpath edge, kerb, ironwork, chamber or previous reinstatement, extend the reinstatement to include same. Existing footpath width is approximately 1.60–1.80 m; any full-width reinstatement required by the Road Authority/ROL is measured separately under K741.3.	m	2300		
K741.2	EXTRA-OVER FOR FULL-WIDTH REINSTATEMENT OF EXISTING BITUMINOUS FOOTPATH. Extra over K741.1/K741.2 where Clare County Council / the Road Opening Licence requires permanent reinstatement across the full existing bituminous footpath width, approximately 1.60–1.80 m. Include saw-cutting/planing, removal of existing or temporary bituminous material, preparation and compaction of foundation, Cl.804/808 or approved CBGM B as required, bond coat to Cl.920, and permanent asphalt construction to SD11 matching the adjoining footpath. Machine lay and mechanically compact the surface, seal joints and make good around kerbs, edgings, channels, chambers and ironwork. Measure only the additional area beyond the normal SD11 trench reinstatement included in K741.1/K741.2.	m2	2760		
K741.3	110 mm OD PE100 WATERMAIN – TRANSVERSE R463 CARRIAGEWAY CROSSINGS – PERMANENT REINSTATEMENT – PURPLE BOOK SD7. DEDICATED 110 mm TRANSVERSE-CROSSING ITEM. Minimum trench width 500 mm to Uisce Éireann STD-W-13. SD7 bound pavement reinstatement to extend minimum 100 mm beyond each side of excavation; nominal minimum finished reinstatement width = 700 mm for a 500 mm trench. Provide 40 mm surface course (SMA/HRA/AC as appropriate to match existing or Road Authority direction), minimum 60 mm or existing depth of AC20 dense binder, CBGM B or approved Cl.804/808, bond coat, machine compaction and sealed joints. Pipe cover 1200 mm to crown. Extend where trimmed edge is within 400 mm of joint/edge/ironwork. Additional/full-lane ROL reinstatement measured separately under K731.4.	m	25		
K731.1	90 mm OD PE100 WATERMAIN – TRANSVERSE R463 CARRIAGEWAY CROSSINGS – PERMANENT REINSTATEMENT – PURPLE BOOK SD7. Minimum trench width 500 mm to Uisce Éireann STD-W-13. SD7 bound pavement reinstatement to extend minimum 100 mm beyond each side of excavation; nominal minimum finished reinstatement width = 700 mm. Provide 40 mm surface course matching existing/Road Authority direction, minimum 60 mm or existing depth of AC20 dense binder, CBGM B or approved Cl.804/808, bond coat, compaction and sealed joints. Pipe cover 1200 mm to crown. Extend to nearby joints/edges/ironwork as required.	m	25		
K731.2	EXTRA-OVER FOR EXTENDED / FULL-LANE R463 CARRIAGEWAY REINSTATEMENT. Extra over K731.2/K731.3 for permanent carriageway reinstatement beyond normal SD7 width where directed by Clare County Council / Road Opening Licence, including planing, regulating, bond coat, machine-laid surface/binder courses matching existing pavement, compaction, joint treatment and tie-in.	m2	400		
K731.3	90 mm OD PE100 WATERMAIN – LONGITUDINAL R463 VERGE / DBM SURFACED MARGIN – HEAVY-DUTY PERMANENT REINSTATEMENT – PURPLE BOOK SD6. Minimum trench width 500 mm to Uisce Éireann STD-W-13. Reinstate longitudinal opening to SD6 including surface/binder courses, CBGM B / approved granular construction, bond coat, compaction and sealed joints. Extend trimmed edge where within 400 mm of joint/edge/ironwork. Pipe cover 1200 mm to crown.	m	210		
K731.4	100mm OD PE100 WATERMAIN – LONGITUDINAL R463 VERGE REINSTATEMENT OVER BRIDGE CROSSING This section of pipe to be laid with reduced cover to details as per Uisce Éireann standard drawings. The area above the pipe trench to be mounded with earth and seeded to achieve 800mm cover to pipe. this is along the road edge. all existing stone dressing over existing bridge to be made good to finish.	m	20		
K731.5	PERMANENT REINSTATEMENT OF BITUMINOUS ROADWAY FOLLOWING INSTALLATION OF 125 mm ESB SERVICE DUCT – LONGITUDINAL OPENING – PURPLE BOOK SD6 Permanent reinstatement of existing bituminous roadway following installation of the 125 mm internal diameter ESB Networks LV service duct, being a longitudinal opening at a heavy-duty location, complete in accordance with Purple Book Standard Detail SD6, the Road Opening Licence and Clare County Council requirements. Include removal of temporary reinstatement and unsuitable material; saw-cutting and trimming of existing bituminous pavement to straight, sound edges; excavation/removal as necessary to accommodate the permanent pavement construction; disposal of surplus material; preparation and compaction of underlying construction; provision and compaction of the specified granular and/or cement-bound pavement layers; binder course and surface course; regulating material where required; bond/tack coats; treatment of vertical faces; sealing of finished joints; machine laying and mechanical compaction; and complete tie-in to the existing road pavement. Reinstatement widths, pavement layer extensions, trim lines and construction shall comply with Purple Book SD6 and any additional requirements imposed by the Road Opening Licence. Where the required trim line falls sufficiently close to an existing pavement joint, road edge, kerb, ironwork, chamber, previous reinstatement or other fixed feature, extend the permanent reinstatement as required by SD6/Road Authority requirements. Finished surface shall match the adjoining carriageway in level, profile, crossfall, texture and surface type. Include adjustment and making good around affected ironwork and other fixed features where applicable.	m	100		
K790.1	ROAD MARKINGS – Reinstate all road markings disturbed by trenching or permanent reinstatement, including transverse R463 crossings, to match existing and Road Authority/Road Opening Licence requirements.	item	1		
K790.2	FIXED FEATURES – Protect, adjust and make good kerbs, edgings, channels, gullies, chamber covers, ironwork and other fixed features affected by permanent reinstatement, including extension of trim lines where required by the Purple Book.	item	1		
SUBTOTAL CLASS K - PERMANENT REI NSTATEMENT					
TOTAL CLASS K - PIPEWORK: MANHOLES AND PIPEWORK ANCILLARIES - FORWARD TO GENERAL SUMMARY					
CLASS L - PIPEWORK: SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION					
Item ID	Item Description	Unit	Quantity	Rate (€)	
L111.1	EXCAVATION OF ROCK In pipe trenches for 110 mm OD PE100 watermain. Extra over normal excavation, including breaking, removal and disposal. Rock quantity is based on the available trial-hole / tender information; Tenderer to satisfy itself as to anticipated site conditions.	m3	180		
L117.1	EXCAVATION OF NATURAL MATERIAL BELOW FINAL SURFACE AND BACKFILLING WITH CONCRETE In pipe trenches where directed / expressly required, including excavation below Final Surface and replacement with blinding / lean concrete Grade C15 (or approved equivalent) to the Engineer's detail.	m3	30		
L531.1	BEDS HAUNCH AND SURROUNDS– IMPORTED GRANULAR MATERIAL 110 mm OD PE100 watermain; imported granular bed , nominal bore not exceeding 200 mm. Provide approved 10 mm single-sized pea gravel / granular bedding to clause 503 lightly compacted and laid uniformly along trench bed to Uisce Éireann STD-W-13 and project trench details.	m	2300		
L531.2	BED HAUNCH AND SURROUNDS – IMPORTED GRANULAR MATERIAL 90 mm OD PE100 watermain; imported granular bed, nominal bore not exceeding 200 mm. Provide approved 10 mm single-sized pea gravel / granular bedding to clause 503 lightly compacted and laid uniformly along trench bed to Uisce Éireann STD-W-13 and project trench details.	m	100		
L116.1	BACKFILLING WITH IMPORTED GRANULAR MATERIAL Pipe trenches where excavated material is expressly not permitted for reuse. imported granular/Clause 804-type material where specified, placing and compaction in layers. Permanent footpath/road surfacing is measured separately under Class K. Trench width 500mm	m3	750		
L541.1	MASS CONCRETE SURROUND / PROTECTION 110 mm OD PE100 watermain at locations where concrete surround/protection is expressly required, including traverse road-crossing or reduced-cover protection to the approved project detail and SD7 of the purple book. Pipe nominal bore not exceeding 200 mm. This for traverse crossings.	m	25		
L541.2	MASS CONCRETE SURROUND / PROTECTION 90 mm OD PE100 watermain at locations where concrete surround/protection is expressly required, including road-crossing or reduced-cover protection to the approved project deta/SD7 purple book. Pipe nominal bore not exceeding 200 mm.This for traverse crossings.	m	25		
L541.3	MASS CONCRETE SURROUND / PROTECTION – RAHEEN ARCH BRIDGE CULVERT 110 mm OD PE100 watermain at the reduced-cover culvert crossing, including lean-mix / concrete protection arrangement where required by the approved crossing design and Uisce Éireann requirements. Pipe nominal bore not exceeding 200 mm.	m	20		

L744.1	CONCRETE STOOLS / THRUST BLOCKS Concrete Grade C20/25 thrust or anchor blocks to 110 mm / 90 mm watermain at bends, tees, blank ends or other locations expressly shown on the drawings or instructed. Individual block volume exceeding 0.5 m³ and not exceeding 1.0 m³; pipe nominal bore not exceeding 200 mm. Include excavation, formwork and pipe fixings in accordance with CESMM4 Class L7 coverage and the project details.	nr	10		
L901.1	WATERMAIN WARNING / DETECTABLE TAPE WITH INTEGRAL TRACER WIRE Provide and install continuous blue potable-water warning tape/mesh with integral tracer wire above the 110 mm and 90 mm PE watermain at the depth/level shown on the Uisce Éireann/project trench detail. Pipe nominal bore not exceeding 200 mm. CESMM4 coding basis: L9 = Class L feature not otherwise listed; second-division digit 0 = not applicable; third-division digit 1 = nominal bore not exceeding 200 mm.	m	2500		
TOTAL CLASS L - PIPEWORK: SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION - FORWARD TO GENERAL SUMMARY					

UE REFERENCES

UISCE ÉIREANN / ROAD REINSTATEMENT REFERENCES – RAHEEN GWS			
Reference	Title / Application	Key Tender Requirement	Source
CDS-5020-03 Rev 03	Code of Practice for Water Infrastructure	Pipe laying, trenching and Section 3.12 road/footway surface reinstatement requirements.	https://www.water.ie/sites/default/files/2025-08/Code-of-Practice-for-Water-Infrastructu-re-CDS-5020-03-Rev-03_0.pdf
CDS-5020-01 Rev 05	Water Infrastructure Standard Details	Current standard-detail suite for applicable connection applications from 16 February 2026.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-03	Customer Connection and Boundary Box	Domestic service connections/boundary boxes.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-04 to STD-W-10	General Pipe Connections	Connections, adaptors and general fitting arrangements.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-13	Trench Backfill / Bedding & Reduced Cover Protection Slab	Bedding, surround, backfill, warning tape and trench construction.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-13A	Depth of Cover Requirements to Watermain Pipes	Cover requirements and trafficked/untrafficked cross-sections.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-15	Sluice Valve for PE Pipe (<350 mm)	Sluice valve installation/chamber arrangement.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-18 / STD-W-19	On-line / Off-line Hydrant for PE Pipe	Fire hydrant installations.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-22 / STD-W-23	On-line / Off-line Air Valve for PE Pipe	Air valve installations.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-24	Pressure Reducing / Sustaining Valve Chamber	Network PRV chamber arrangement.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-25	Booster Pump Station Arrangement	Booster station/bypass arrangement.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-26 series	Meter Chamber Details	Bulk meter chamber/associated meter installation details.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-28	Thrust / Anchor Restraint Detail	Thrust restraint where applicable to fittings/connections.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-30 series	Scour Valve Arrangement	Scour/washout valve arrangements.	https://www.water.ie/sites/default/files/2025-08/Standard-Details-for-Water-Infrastructu-re-CDS-5020-01-Rev-05.pdf
STD-W-45	Mini Pressure Reducing Valve Arrangement	Domestic mini-PRV arrangement.	https://www.water.ie/sites/default/files/iwstandards/IW-STD-W-45.pdf
Purple Book – SD11	Footways: Asphalt Concrete (Bituminous Macadam) – Permanent Reinstatement	Apply to bituminous footpath reinstatement; includes vehicular-access requirements and Road Authority control of longitudinal joints/full-width treatment.	https://www.rmo.ie/system/files/2024-05/guidelines-for-managing-openings-in-public-roads-purple-book.pdf
Purple Book – SD12	Footways: Concrete – Permanent Reinstatement	Not applicable to the identified Raheen GWS footpath/driveway reinstatement; all driveways are bituminous.	https://www.rmo.ie/system/files/2024-05/guidelines-for-managing-openings-in-public-roads-purple-book.pdf
Purple Book – SD13	Footways: Precast Concrete Paving Block / Concrete Slab – Permanent Reinstatement	Not applicable to the identified Raheen GWS footpath/driveway reinstatement; all driveways are bituminous.	https://www.rmo.ie/system/files/2024-05/guidelines-for-managing-openings-in-public-roads-purple-book.pdf
Purple Book – SD7	Roadways: Transverse Openings – Permanent Reinstatement	Apply to transverse R463 watermain crossings, subject to the final Clare County Council Road Opening Licence and any current-equivalent drawing/condition.	https://www.rmo.ie/system/files/2024-05/guidelines-for-managing-openings-in-public-roads-purple-book.pdf
UE STD-W-33A	Typical culvert and services crossing details for water main	Reference for the 110 mm Raheen Arch Bridge culvert crossing only, together with the project-specific approved reduced-cover detail.	
Purple Book – SD6	Roadways: Longitudinal Openings at Heavy Duty Locations – Permanent Reinstatement	Apply to the 90 mm watermain laid longitudinally along the R463 verge / DBM surfaced margin where the opening is subject to heavy traffic loading, subject to final Clare County Council ROL.	
Purple Book – SD7 / SD11	Transverse roadway openings / bituminous footways – Permanent Reinstatement	SD7 applies to transverse R463 crossings; SD11 applies to bituminous footpath and affected bituminous entrances, subject to final ROL.	

BOOSTER PUMP SCHEDULE

BOOSTER PUMP INSTALLATION DETAILED PRICING SCHEDULE					
Raheen Group Water Scheme Detailed pricing breakdown supporting CESMM4 Item A510.1 Tender pricing schedule					
DESIGN INPUT	VALUE	NOTES			
Domestic connections	24	Proposed network			
Design flow	2.0 L/s	7.2 m3/hr			
Worst-case differential head	46.6 m	Based on absolute logged minimum pressure			
Controlled discharge HGL	110.70 m OD	VSD controlled			
Pump arrangement	Duty/standby	Each pump to achieve full duty			
Schedule Item Ref.	Expanded Description	Unit	Quantity	Rate (€)	
BP01	Complete packaged potable-water booster set comprising two Grundfos Hydro Multi-E 2 CME 5-5 pumps, or approved equivalent, arranged duty/standby with each pump independently capable of 2.0 L/s at not less than 46.6 m differential head, including stainless-steel manifolds, common frame, anti-vibration mounts and all accessories.	item	1		
BP02	Detailed pump selection, certified pump curves, efficiency, motor loading and NPSH calculations demonstrating the specified duty and stable operation throughout approximately 27–46.6 m boost.	item	1		
BP03	Potable-water diaphragm pressure vessel sized to limit starts per hour at recorded minimum night flow of 0.08 m3/hr, including pre-charge calculation, isolation, drain, pressure gauge and mounting.	item	1		
BP04	Suction and discharge isolation valves, individual pump non-return valves, dismantling joints, flexible connectors, pressure gauges, upstream and downstream pressure transmitters, independent high-pressure switch and all fittings.	item	1		
BP05	Internal suction and discharge pipework, PE-to-flange transitions, stainless-steel manifolds, supports, anchors, thrust restraint, drain and potable-water sampling connection.	item	1		
BP06	Full-bore booster bypass complete with isolation and non-return arrangement as approved.	item	1		
BP07	Electromagnetic flow meter suitable for low and peak flows, including display, pulse/communications output, isolation and commissioning.	item	1		
BP08	Integrated control panel with individual variable-speed drives, duty/standby automatic alternation, pump-failure changeover, pressure/HGL control, manual/off/automatic selection and emergency stop.	item	1		
BP09	Low-suction-pressure warning and shutdown, dry-run protection, no-flow detection, sleep mode, anti-cycling control, controlled restart, maximum-speed limitation and independent high-discharge-pressure trip.	item	1		
BP10	Incoming three-phase electrical installation including main isolator, distribution/protection equipment, phase failure/reversal protection, surge protection, cabling, glands, containment, earthing and bonding.	item	1		
BP11	Kiosk electrical services including lighting, emergency lighting where required, socket outlet, thermostatic heater, ventilation controls and local small-power wiring.	item	1		
BP12	Telemetry interface and signals for pump run/fail, duty selection, suction/discharge pressure, flow and totalised volume, power failure, high/low pressure, panel fault, intrusion, temperature, running hours and starts.	item	1		
BP13	Standby generator connection point/changeover provision and external connection arrangement.	item	1		
BP14	Weatherproof, insulated, lockable, corrosion- and vandal-resistant booster kiosk sized for safe operation, maintenance and equipment removal, including doors, locks, removable panels and permanent signage. All to Uisce Eireann approved details	item	1		
BP15	Reinforced-concrete foundation slab, plinths, holding-down bolts, equipment bases and associated excavation, formation preparation, backfill and reinstatement. Concrete slab to 200mm deep and 3mx2m.layout to UE standards and requirements	item	1		
BP16	Kiosk drainage, sump/floor drain, frost protection, ventilation, internal pipe supports, safe access, hardstanding and local site drainage.	item	1		
BP17	Service ducts, chambers and draw cords for incoming power, telemetry and ancillary services, including sealing and identification.	item	1		
BP18	Controlled source flow-pressure drawdown test at proposed booster location to 7.2 m3/hr, recording upstream pressure and confirming acceptable suction conditions.	item	1		
BP19	Factory acceptance test and documentation for complete pump set and control panel.	item	1		
BP20	Site testing and commissioning including duty verification, pressure setpoint configuration, duty/standby changeover, sleep-mode and low-flow testing, alarm/trip testing, power-failure response, noise and vibration checks.	item	1		
BP21	Provide ducting from mini pillar to booster station control panel	item	1		
BP22	Pressure testing, flushing, disinfection and water-quality sampling of booster pipework and connected installation.	item	1		
BP23	Telemetry point-to-point testing, operator training, commissioning report, O&M manuals, asset data, warranties and as-built drawings.	item	1		
BP24	Provisional allowance for additional/larger pressure vessel following supplier anti-cycling calculation.	PS	1		
BP25	Provisional allowance for surge vessel or other surge-protection equipment following transient assessment.	PS	1		
BP26	Provisional allowance for potable-water break tank and associated level controls if direct boosting from the existing main is not approved.	PS	1		
BP27	Provisional allowance for electrical network upgrade, utility charges or enhanced standby power provision.	PS	1		
BOOSTER PUMP SCHEDULE TOTAL					