

	<p>C5-5-12: Wall aligned N/S, mortared limestone, exposed length of 2.2m, width 1.1m minimum, minimum height of 1.81m. Tied into wall C5-5-13</p> <p>C5-5-13: Wall aligned E/W, mortared limestone, face exposed for six courses. Regular coursing of rectangular facing stones with rubble mortar core.</p> <p>C5-5-14: Grey black sand, angular stone.</p>
--	--



Figure 106 Location of TT5-5, facing northeast, showing courthouse, cathedral and market



Figure 107 Location of TT5-5, facing southwest, looking down the River Shannon



Figure 108 Intersecting walls revealed at the southwest of TT5-5



Figure 109 Water inundating TT5-5 after excavation of sounding



Figure 110 Walls in TT5-5, showing C5-5-12 on left and C5-5-13 on right of picture



Figure 111 Junction of walls C5-5-12 and C5-5-13.



Figure 112 Plan drawing and photogrammetry of TT5-5

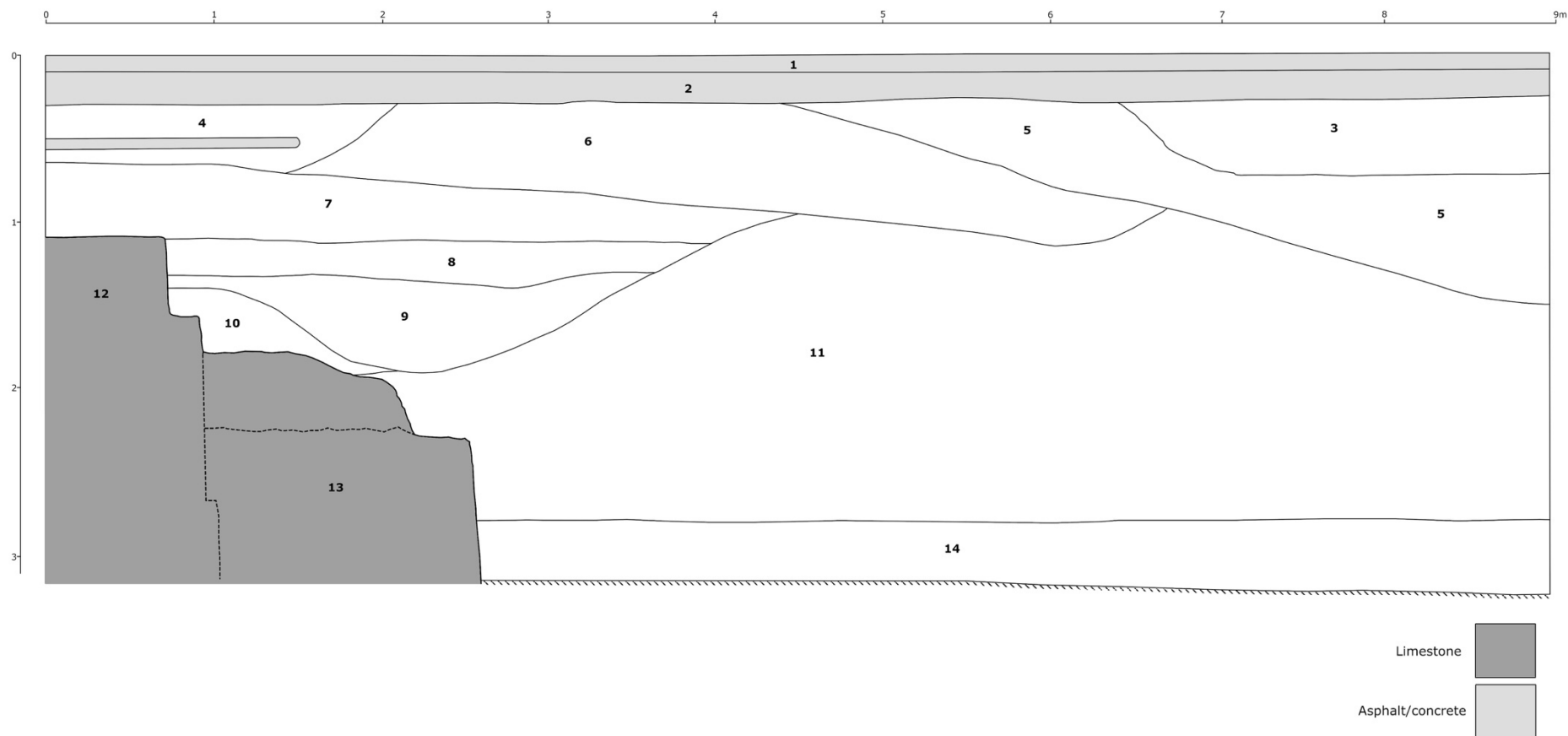


Figure 113 Profile drawing of TT5-5, south-facing wall

Area 6

Area 6 is located in Merchant's Quay, to the west of Bridge Street at the south of King's Island. A review of early mapping indicates that this area has been associated with the harbour and quays since the medieval period. The harbour, on the site of the existing Potato Market, Courthouse, Car Park and Merchant's Quay, was enclosed by the city wall with two guarded access points.

TT6-1

TT6-1 crossed the road at the junction of Merchants Quay, Bridge Street, and the eastern corner of the Potato Market. It extended 13.8m NNE/SSW from the footpath at the south to the kerbside at the north and averaged 1.5m in width, widening to 2.4m in the south. The location has high archaeological potential as it is the location of a Quay Gate, the connecting city wall and a bastion accessed by a flight of steps. The gate leads west towards the quay (SMR number LI005-017072).

The following descriptions and tables describe the four sections of TT6-1 excavated in three sections TT6-1A centre of road, TT6-1B northern side of road and TT6-1C-D southern side of road extending to the edge of Potato Market wall.

It is proposed that a gravity sewer will be constructed along an alignment from Merchant's Quay to George's Quay. It is noted that the gravity sewer increases in depth along its length.

Background

Based on the cartographic record TT6-1 was near the former site of Quay Lane Gate, a guarded tower controlling access to the medieval harbour and part of the town defences. On the 1587 Pictorial Map (Map 4, IHTA) the gate is shown as 'Water Gate', a crenelated tower over an arch with a portcullis. Either side of the tower are projecting walls set diagonally flanking a crescent shaped harbour with an associated long dock. In 1642 the gate was rebuilt and is described subsequently as 'Rooms and turret over Quay Gate' (O'Flaherty, 2010, 26). In 1760 White shows the entrance at the bottom of Quay lane as a simple arch between two developed blocks with a protruding three-sided bastion at the water's edge. In an accompanying legend the bastion marked 'K,' accessed by a flight of steps is described thus:

'The Quay wall raised about 30 feet higher than the bed of the river vaulted underneath over which people walked for recreation, but which is now thrown down.'

Leask in his article 'The ancient walls of Limerick' (Leask, 1941 95-108) provides the following description of the same area:

'Where the Potato Market now is there was one of the most interesting features of ancient Limerick-ship dock or port enclosed by pier like arms of the walls terminating in towers. The southern pier or wall, nearly 400 foot long, started from a tower seemingly three sided, at the foot of 'Rue de Quay' of the French map: the modern Bridge Street, and formed the south boundary of the port. In 1500, say Fitzgerald and McGregor, 'a wall and vault were built on the south side of the Quay. This vault had its entrance at a flight of steps at the end of Quay Lane and formed a covered way to a six gunned battery at the pier head near the flood gate.'

Quay Gate was demolished in c.1752 to make way for the New Quay development as documented in Colles's map of 1769. This development also included improved access to the harbour via a New Bridge, since replaced by the existing Matthew Bridge.

Given its length and to allow vehicular access, 6-1 was initially dug in three sections, in the centre of the carriageway, the north side of road and the south side of the road to the kerbside. Due to the nature and extent of the archaeology exposed, including foundations relating to Quay Lane Gate and the river side bastion, the trench was extended to the south under the pavement at the corner of the Potato Market.

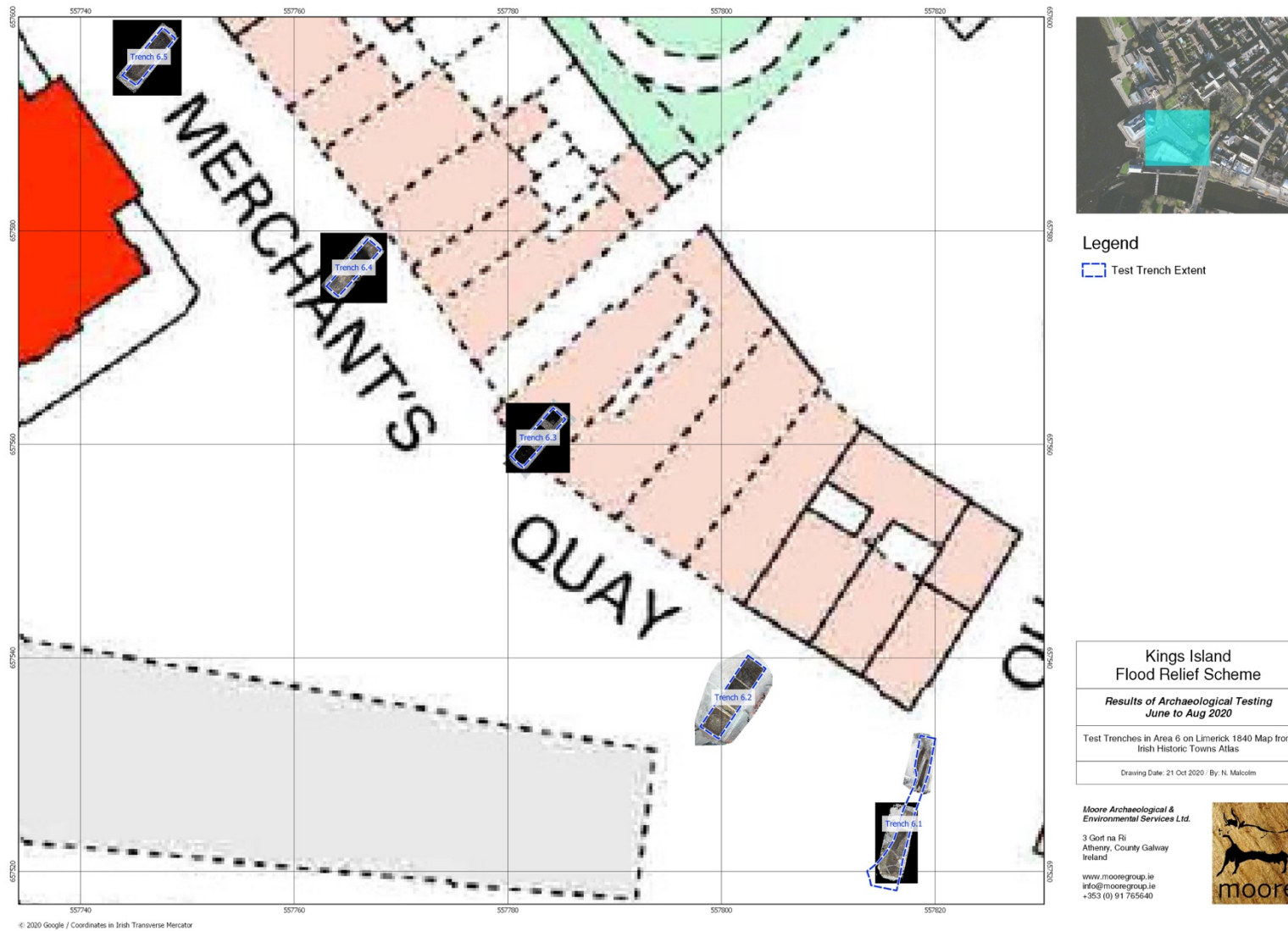


Figure 114 Map of archaeological testing in Area 6, overlaid on O'Flaherty 2010, Map 2, Limerick, 1840.

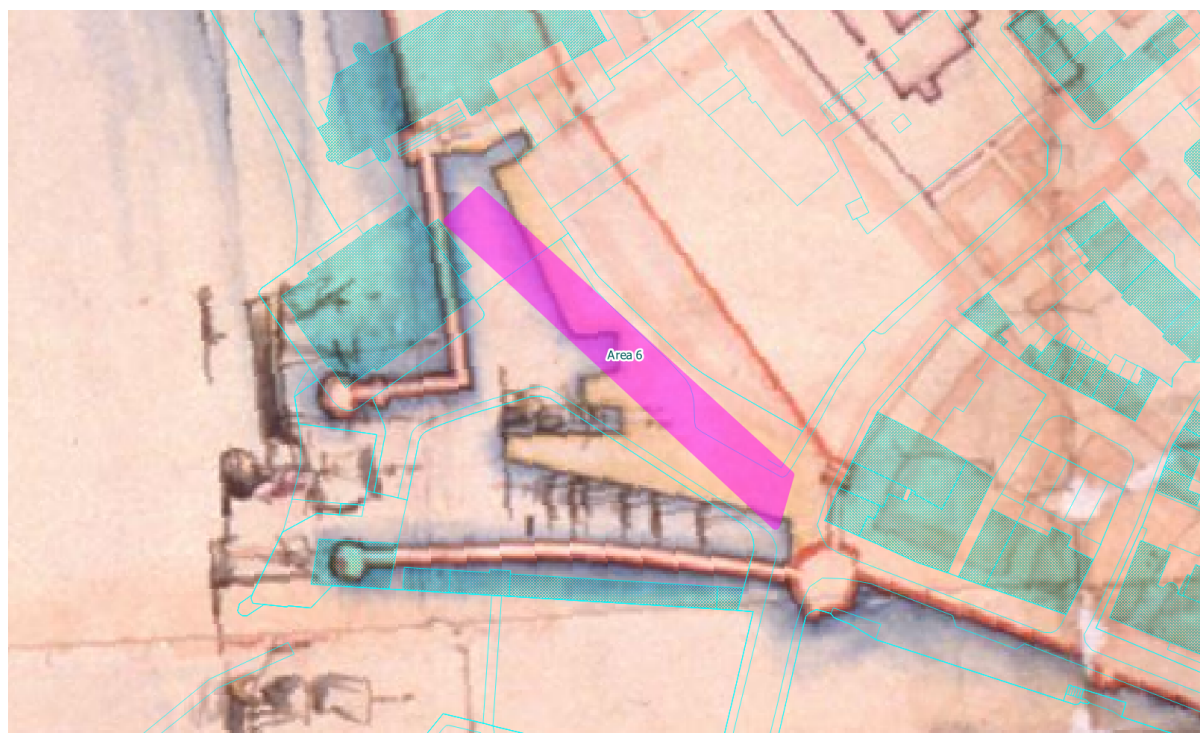


Figure 115 Extract from Limerick, 1685 by Thomas Phillips with Area 6 indicated.

TT6-1A

Results

Testing of TT6-1-A, started with a 1.9m long trench in the centre of the carriageway at the junction of Merchant's Quay and Bridge Street on the 9th of June 2020. The southern end of the trench was 6.25m to the kerbside of the Potato Market footpath.

Excavation exposed two layers of asphalt over a compact gravel road base on geotextile with a cumulative depth of 420mm. At the south of the trench was a thick layer of reinforced concrete. As anticipated, this area, contained frequent services typically exposed at a depth of 500mm. These included two side by side 4" Eircom ducts running N/S through the middle of the trench, a 4" black pipe and an orange flexiduct running along the western and eastern sides respectively and four exposed cables to the south. At a lower depth was a 4" cast iron main running NW/SE across the middle of the trench. This complex of services made accessing the base of the trench difficult.

Below the modern layers and services was a mixed fill of mid-brown, sandy clay with occasional stone, brick and mortar, 1-1.1m thick. This overlaid dark, charcoal enriched silty sand layer 100mm thick (C6-1A-07). Underlying this, near the base, was a sandy yellow mortar around a squared rubble stone. Along the eastern edge of the trench was the top of a wall running N/S along the western section at a depth of 1.38m below the surface (C6-1A-06). This *in situ* feature was visible for a length of 1.8m. Only the upper course to a depth of 380mm was partially visible, its elevation patchily rendered with lime mortar. This wall did not appear to run the length of the trench, terminating 400mm from the southern end. This termination point was not, however, conclusive given the constraints of physically accessing the area.

Conclusion

TT6-1-A exposed the side of a solid wall, along its western section face. The wall was interpreted as a part of the city defences linking Quay Gate to a bastion at the south. Due to

its exposed location, in the middle of a busy junction, was recorded and infilled on the same day.

Table 19: TT6-1A Summary of results

Trench number	TT6-1A
Dates excavated	9/06/2020
Location	Middle of carriageway at corner of Merchants Quay and Bridge Street.
Co-ordinates (NW corner)	E 557818.5192,N 657529.996
Dimensions, orientation	2m L NNE/SSW by 1.5m W
Ground level (ASL)	4.6381m
Maximum depth	Max. D 1.62m
Services exposed	Complex of services including 2 4" black ducts through the middle of the trench, duct along eastern edge of trench, 4" cast iron main running at an angle across width of trench and cables and duct to south of cutting.
Archaeological significance	Exposed remains of a wall along western side of trench at a depth of 1.38m below ground. The wall was rendered along its east facing elevation. Along west side was a squared limestone block surrounded in a sandy mortar layer
Recorded contexts	C6-1A-01: Two layers of asphalt 220mm thick C6-1A-02: Road base, modern gravel over geotextile 200m C6-1A-03: Protective concrete slab on southern side of trench C6-1A-04: Modern sand and aggregate around plastic ducts to 900mm -1m deep C6-1A-05: Mixed mid brown, silty sand with occasional stone, brick and mortar, builders fill 1-1.1m thick C6-1A-06: Edge of wall along western section face at a depth of 1.38m, exposed for a depth of 220mm, this wall had evidence of mortar render along its east facing elevation, exposed for a length of 1.8m C6-1A-07: Dark charcoal enriched silty sand layer over foundations 100mm thick C6-1A-08: Yellow mortar surface with an inset squared stone at west side of trench Note: Features exposed covered in geotextile and backfilled on same day



Figure 116 Looking north to TT6-1A, note edge of wall at base of trench.

TT6-1B

Results

Following the infilling of the TT6-1-A on the 9th of June, TT6-1-B was dug to investigate the northern lane of the carriageway to a point 1.5m south of the kerbside. This section measured 4.4m long N/S by 1.5m wide and was slightly realigned to expose more of the previously exposed wall foundation (TT6-1-A-6). Below the surface layers of tarmac and reinforced concrete were three 4" ducts running N/S across trench, a 4" cast iron pipe running along the western edge, two ducts on the eastern side and a 4" cast running across the trench to the north. The modern service layers overlay a mixed mid brown, silty sandy with small stones with inclusions of red brick, tile, slate, mortar chunks, clay pipe stem and 19th century pottery approximately 500mm thick (C6-1B-04). Beneath this fill was a charcoal enriched layer overlying three significant features: a N/S running wall, a heavily mortared foundation and a well-preserved layer of cobbles. The wall (C6-1B-06) was exposed at a depth of 1.28m below the surface and ran for a visible length of 1.5m and a minimum width of 400mm. Together with the section exposed in TT6-1-A-6 the wall measured a minimum length of 3.3m. Along its

eastern side, it abutted a heavily mortared surface with a minimum depth of 380mm (C6-1B-08). To the north, the wall terminated at an even line where it had a clear interface with a cobbled surface (C6-1B-07). The cobble layer measured 1.25m N/S by 0.8m E/W at its widest narrowing to 200mm to north. The cobbles, well sorted water rolled stones, set on edge averaged 100mm long by 50-60mm wide.

Conclusion

The cobbles interfacing with a wall foundation and a heavily mortared base layer were interpreted as the remains of Quay Gate removed in the 1760s.

Table 20 TT6-1B Summary of results

Trench number	TT6-1B
Dates excavated	10-11/06/2020
Location	North lane of roadway at corner of Merchants Quay and Bridge Street. Extending from N end of TT6-1-A to 1.5m from kerbside
Co-ordinates (NW corner)	N 557818.4045, E 657531.6608
Dimensions, orientation	4.4m L N/S, 1.5m W
Ground level (ASL)	4.4533m
Maximum depth	Max. D 1.65m
Services exposed	Five 4" ducts running N/S across trench, 4" cast iron pipe along western side
Archaeological significance	Exposed remains of a wall along western side of trench at a depth of 1.38m below ground. The wall was rendered along its east facing elevation. Along west side was a squared limestone block surrounded in a sandy mortar layer
Recorded contexts	<p>C6-1B-01: Two layers of asphalt 80mm thick</p> <p>C6-1B-02: Reinforced concrete 290mm thick, at south end of trench 280mm</p> <p>C6-1A-03: Modern sand and aggregate infill around plastic ducts up to 1m deep</p> <p>C6-1B-04: Mixed mid brown, silty sandy with small stones, red brick, and slate, mortar chunks contained clay pipe stem and 19th century modern pottery and red tile 500mm thick (same as TT6-1-A-5), 500mm thick</p> <p>C6-1B-05: Dark grey brown silty sand with charcoal foundations 200mm thick</p> <p>C6-1B-06: Wall foundation (same as TT6-1-A-6), found at a depth of 1.28m below the surface, exposed for a length of 1.5m N/S, continues to south, terminates at N where it abuts a layer of cobbles in a very definite interface, exposed width was 400mm, wall continued under western section face. Bonded by a yellow-white gritty mortar. To the east, the wall abuts a mid-brown, heavily mortared</p>

	<p>surface. Together with the section exposed in TT6-1-A-6 the wall measured a minimum length of 3.3m</p> <p>C6-1B-07: Cobbled surface 1.28m below surface, exposed extent measured 1.25m N/S by 0.8m E/W at its widest narrowing to 200mm to north. The cobbles were well sorted water rolled stones set on edge averaging 100mm long by 50-60mm wide.</p> <p>C6-1B-08: Mid brown mortared surface with inset stones abutting wall TT6-1-B (same as TT6-1-A-7), 310mm thick, this surface, ran the length of the wall, approximately 1.8m N/S by 500mm wide. A small sondage was dug through this layer to a depth of 380mm showing both the interface of the wall (TT6-1-B-8) and a profile through this material – small to medium sized stones in mortar</p> <p>Note: Features covered in geotextile and backfilled</p>
--	---



Figure 117 TT6-1 B Looking towards Potato Market showing ducts and foundation at base of trench, fresh tar at centre of carriageway shows extent of TT6-1 A



Figure 118 TT6-1B facing south to interface of cobbles and masonry surface



Figure 119 TT6-1B facing north across masonry foundation to cobbled surface

TT6-1CD

Results

Excavation of the southern carriageway at the junction of Bridge Street/Merchant's Quay started on the 11th of August 2020, breaking through a thick layer of asphalt and concrete. Prior to digging, it was necessary to relocate an ESB pole that was on the bend of the footpath. This pole and an adjacent manhole had disturbed ground in their immediate vicinity to a depth of between 0.7m and 1.8m. Other services in this area included ESB cables, two green 4" ducts over a yellow gas main (covered in concrete) and ducts running along both the eastern and western edges of the trench.

TT6-1C extended from south of the cut for TT6-1A, 6.6m towards the kerbside of Bridge Street. On the discovery of subsurface structural remains, the trench was extended 2m across the footpath to the edge of the Potato Market wall. Groundworks under the upper layers of modern disturbance exposed a composite infill layer, 500mm thick, of sandy silt with modern pottery and red brick. This layer overlay a mortar rich deposit 100mm thick that in patches ran the length of the trench. Below this, overlying structural remains, was a dark brown silty sand. This layer contained red roof tile and earthenware, a clay pipe stem, North Devon sgraffito, sherds of blue and white delftware and a corroded coin.

At the northern end of the trench, at a depth of 1.45m, was a solid wall foundation with a south facing elevation (C6-1CD-08). This wall, had an exposed length of 1.9m N/S and was visible for a minimum width of 1m E/W. It was abutted to the south by a rubble-built foundation (C6-1CD-09) orientated NE/SW. To determine both the height of the wall and the depth of the rubble foundation, a 2.4m deep sondage was dug near the junction of the two features. Given the depth of the excavation, the sides were braced with ply and timber to grant safe access for inspection. The southern elevation of the wall (C6-1CD-08) was exposed to a height of 1.38m. It was built of uncoursed random, limestone rubble, and the face of the wall had external lime render adhered to the masonry. The rough-hewn stones were bonded with a yellow grey gritty mortar. This wall is a continuation of sections recorded to the north running to the cobbled surface in TT6-1-B.

The abutting mortared foundation (C6-1CD-09) extended 5.6m SSW from the wall running under the boundary wall of the Potato Market. The foundation (C6-1CD-09) exposed at a depth of 1.6m below the surface did not have the same build quality as TT6-1CD-08 and its surface appeared slightly cambered. Along its very rubbly west facing elevation C6-1CD-09 was 1.2m to 1.35m thick built of roughly hewn limestone with occasional brick. The elevation exposed in the deep pit ran at a SSW angle from (C6-1 CD -08) for a distance of 2.8m disappearing into the western baulk. As stated, the top surface was slightly convex with a visible central spine of irregularly set higher stones set lengthways falling approximately 150-200m to both the east and west. This foundation was interpreted as forming part of the three-side riverside bastion accessed by a flight of steps as featured on White's map of 1760.

The deep pit west of the junction of both the wall and foundation was made up of black-brown silt with frequent small to medium sized stones and organic debris and contained shell, bone and flaked quartzite.

Conclusion

The features revealed in TT6-1CD, given their location with reference to historic maps, were interpreted as the structural remains of Quay Lane Gate, a connecting wall and the foundations of a bastion. Quay Lane Gate survived until the 1760s when it was demolished to make way for the development of the new harbour, and a new connecting bridge to the south. According to White's map, the bastion with flight of steps leading to the South Pier, had been thrown down by 1760.

Table 21 TT6-1CD Summary of results

Trench number	TT6-1CD
Dates excavated	10-17/08/2020
Location	Southern side of carriageway at corner of Bridge Street and Merchants quay, north of footpath
Co-ordinates (NW corner)	N 557816.1057, E 657522.8606
Dimensions, orientation	7.5m L NNE/SSW by 1.4m W, 3m wide at S end.
Ground level (ASL)	4.7779m
Maximum depth	Average D 1.7m, Max. D 4.2m (to water level)
Services exposed	P&T Manhole with cables and ducts at kerb of footpath,
Archaeological significance	Exposed foundations possibly base of bastion and connecting town wall over archaeological deposits
Recorded contexts	<p>C6-1CD-01: Surface layer of Asphalt, concrete and paving slabs and sand bedding under the footpath 400mm</p> <p>C6-1CD-02: Modern mixed sandy gravel 0.3-1.5m deep</p> <p>C6-1CD-03: Infill, mixed brown stony, silty, clay 500mm deep</p> <p>C6-1CD-04: Yellow brown mortar enriched layer 100mm, ran the length of the trench 100-120mm deep</p> <p>C6-1CD-05: Dark brown silty sand overlying both the wall (TT6-1- C & D -8) and mortared stone foundation (TT6-1- C & D -8), 400mm thick</p> <p>C6-1CD-06: Reddish brown sandy silt, found under sandy gravel layer beneath footpath.</p> <p>C6-1CD-07: Dark black-brown silty sand overlying mortared foundation (TT6-1- C & D -9), 300mm thick</p> <p>C6-1CD-08: Wall found to north of trench, possibly town wall connecting gate to bastion</p> <p>C6-1CD-09: Mortared foundation, possibly riverside bastion</p> <p>C6-1CD-10: Black brown silt with frequent small to medium sized stones and organic debris abutting both walls 2.4m deep</p>



Figure 120 TT6-1 C, facing north at work in progress, exposing foundations and intersecting wall



Figure 121 TT6-1 C facing northeast, showing wall and foundations