

**Preston Hills Rifle Range,
Lullingstone Country Park, Kent**

**NGR TQ 5312 6284
(553120, 162840)**

Level 2 Historic Building Record

**ASE Project no: 4800
ASE Report no: 2012077**



April 2012

Prepared by Justin Russell

**With assistance from Jane Briscoe,
Leslie Davidson and
Richard James**

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1.0 INTRODUCTION

- 1.1 In March 2012 Archaeology South-East (a division of the Centre for Applied Archaeology, UCL) were commissioned by Kent County Council to undertake a Level 2 Historic Building Record of the Preston Hills Rifle Range, Lullingstone (Figs 1 & 2), in accordance with English Heritage guidance.¹
- 1.2 The Rifle Range, which is owned by Kent County Council and managed by the KCC Countryside Unit, has no statutory historic designations that protect it from development, but it was recognised as a priority HER feature of some significance within the Farm Environment Plan (FEP) consultation which is carried out pre-HLS application.
- 1.3 The site is designated as a SSSI (ref. no. 1000333) for biological interest and includes areas of species-rich grassland, scrub and woodlands on a variety of soils. It supports one of the last stands of Juniper scrub in Kent and also supports a range of scarce and rare invertebrates.

2.0 METHODOLOGY

- 2.1 The site was surveyed in accordance with the Level 2 English Heritage standard, on 12th and 13th March 2012, by Jane Briscoe, Leslie Davidson, Richard James and Justin Russell. A full photographic and written record was compiled, along with drawn elevations and plans to be used in conjunction with a DGPS survey placed into the British National Grid, as defined by the Ordnance Survey. The photographic record was created using colour digital and 35mm black and white film.

3.0 LOCATION

- 3.1 The Rifle Range lies to the immediate east of Preston Farm, near the village of Shoreham, in Kent (Grid reference TQ 53210, 62750) and forms part of Lullingstone Country Park (Fig. 1). It sits below the tree line of the west facing slope of the valley of the River Darent, within a shallow dry valley or embayment within the scarp. Running approximately parallel with it, in a north-south direction, are the A225 and the Sevenoaks to Swanley railway line.

4.0 BRIEF DESCRIPTION OF A TYPICAL RIFLE RANGE

- 4.1 Musketry skills, an essential part of the training for the development of the armed forces, must be performed in a controlled and safe environment. By their very nature small arms are lethal over long distances, therefore an area dedicated to their use must be well located and designed to provide for maximum safety of both those using it and those within the immediate surroundings. By making use of hills and valleys in less populated areas, siting of a range can be made much more quickly and effectively than by building the necessary protective banks and walls from scratch. Frequently in the South and North Downs rifle ranges can be found set within the upper end of steep sided valleys (Steyning and Cissbury, West Sussex) or up against the slope of a coombe (Wolstonbury and Thundersbarrow, East Sussex) whereby the

¹ *Understanding Historic Buildings - A guide to good recording practice*. English Heritage (2006)

danger from accidental shots straying from the range is greatly reduced. To compliment this, a danger area is marked out surrounding the whole site, which during operational times becomes out of bounds to all persons.

- 4.2 The rear slopes of the valley or coombe sit behind the targets and are termed the 'stop-butt' or 'back-stop', essentially a catchment zone for all wide bullets fired on the range. Lower down the slope is the 'butt' or 'bullet trap', a point at which most of the bullets would impact, often made of a soft material such as sand, to absorb their great velocity. Earlier target areas were primitive affairs, often with targets placed on posts or painted on steel plates, in front of an earthen mound, besides which would be a structure where the target operator could shelter in safety. Called a Mantelet, these could be made of iron or brick with an open front, facing the target with an earthen mound at the rear, preventing bullet penetration. To show the shooters' how accurate they had been, the target operator would have a set of dummy targets arranged immediately around the open front of the mantelet, to which he could safely point to a corresponding area with a pole.
- 4.3 By the late 19th to early 20th Century target areas generally took the form of an embankment behind which lay a trench, sunk into the ground. Within this trench, the target operating staff (markers) could work in safety, raising targets on metal frames and assessing the competence of those practicing on the range by using pointers visible over the embankment. Thus the target trench is also known as a Markers' Gallery.
- 4.4 To highlight the actual positions on the target, the markers would place a white disc attached to a pole in front of the entrance point of the bullet on the black target (a black disc, if the entry point was on a white area of the target), so that from the firing position (and with the aid of a lens) the firer could assess their work. Each target would be marked with a large number visible from the firing positions and relating to a numbered position/firing lane there – this would have been placed on the embankment beneath the targets. A telephone system would also allow communication between the firing positions and target area, confirming the start and end of the practice sessions (Victor Smith, *pers. com.*)
- 4.5 Located behind the embankment, or nearby and protected by its own embankment, would be the target store. This is where all the paper targets and wooden frames to which they are attached could be stored securely. The hut often doubled as a welfare unit during firing, providing water and latrine facilities.
- 4.6 Rifle practice involved firing while lying, kneeling and standing at various distances. Thus at 100 yard intervals from the target area, firing positions in the form of long, low banks and sometimes more permanent masonry structures can be found providing a drained and raised location with a clear view for the trainees to shoot from. The firing positions closest to the targets could accommodate both rifle and pistol practice, while those further out (frequently up to, but often no further than 1000 yards) were set up for long range rifle use.
- 4.7 Ammunition was be brought to site as required and there may be a building or hut located to the rear of the firing lines from which it could be distributed to those taking part. On completion of a round of firing, those in the target area would swap roles with those in the firing positions and the procedure would repeat.
- 4.8 Prior to live firing taking place, red warning flags would be hoisted on poles at designated points on the danger area around the range, usually where roads and

footpaths intersect with it and on high, visible ground. Notifications explaining the occasions and lengths of all firing sessions would be posted to the flag poles.

5.0 HISTORICAL BACKGROUND

- 5.1 In 1859 Great Britain's army was involved in a number of wars around the world, a situation that could result in the nation being left in a potentially undefended state. The Volunteer Force, created in 1859, was designed to solve this problem by recruiting and training civilians to fight in defence of their country in the event of an invasion. Musketry practice was one of the many duties carried out by this part time army and as a result, rifle ranges began to appear dotted across the landscape. The site at Preston Hills was identified by Nicola Bannister as being 'built in 1897 on land owned by Bingham Mildmay and leased to Lt. Col. G. Henderson of The Queen's Own Royal West Kent Regiment' (Bannister 2009). Lieutenant Colonel Henderson was appointed to this position in the 1st Volunteer Battalion, in 1890 (London Gazette, 9 May 1890), thus making it more than likely that the range can be attributed to the Volunteers. In 1908 the Volunteer Force became the Territorial Force (the 1st Battalion Volunteers being renamed as the 4th Territorial Force of the Queen's Own Royal West Kent Regiment) and while their Garrison HQ was in Maidstone, they were probably recruited in the vicinity of Tonbridge where a Drill Hall (for Territorial use) was built in 1910, serving the 4th Battalion. The range is easily accessible from there, on the Southern Railway line with a station at Shoreham 1.5km to the south.
- 5.2 The first Ordnance Survey map to show the rifle range, is the 25" 1896 map (Fig. 4), corresponding roughly with the date given above (there is certainly nothing marked on the previous 25" map, from 1870). The layout of the of the range from this date is fairly simple, the target position located in the south, with one firing line aligned along an existing field boundary and five firing positions at 100 yard intervals. The target area seems to consist of a central earthen mound with two ancillary mounds to the north on each side. These would appear to be Mantelets, their banks facing north and the open fronts of the structures facing the targets, of which there are four.
- 5.3 By the time of the 1909 25" Ordnance Survey map (Fig. 5), the range had expanded to include three firing lines, and two target areas. The British Army introduced a new rifle in 1890, the Lee-Metford (and later the Lee-Enfield) which was able to fire a smaller calibre round (known as the .303) over a greater distance and with more accuracy than previous weapons – 1000 yards, with precision. Reflecting this, the Preston Hills rifle range introduced firing positions beyond the 500 yard maximum point, but due to the restrictions of the woodland to the immediate north (Coombe Firs) the 600 yard position was sited on an adjacent firing line, to the north-west, downslope and up against the boundary of the woodland. The 700 and 800 yard firing positions were placed yet further downslope, beside the railway utilising an entirely separate, smaller target area to the south-west of the original. The main target area has now expanded to incorporate an increased number of targets within a gallery which in turn is set into an embankment.
- 5.4 The 1963 1:10560 Ordnance Survey shows the Coombe Firs woodland area to have encroached on the 600 to 800 yard firing positions and by the 1963 1:2500 map (Fig. 6) just the one original firing line existed, with the 400 yard position as the maximum extent.

6.0 DESCRIPTION OF THE RIFLE RANGE AS EXISTING

6.1 The Preston Hills rifle range can be divided into five main units: the main target area, the 100 to 500 yard firing line, the 600 yard firing line (which both use the main target area), the 700 to 800 yard firing line and the target area associated with this (Fig. 2).

6.2 The Main Target Area

6.2.1 The main target area sits beneath Gold Hill (which forms a natural stop butt) which, conforms broadly to a standard used by the British military from the late 19th Century. The butt lies just upslope, 43m east to west and 10m deep (Fig. 7). It is a sand filled scoop cut into the slope, into which the bullets that have passed through the paper targets can safely expend their energy. Above this is a second cut into the slope, this time not filled with any material other than natural slumping. Originally it seems this would have presented a near vertical slope for further bullet catchment. This area is the transition zone between the formal butt area and the general stop-butt area of the natural slope running down from Gold Hill.

6.2.2 The trench/markers' gallery itself lies roughly east-west, with a length and breadth of 30m by 4.9m (Fig. 8). To the immediate north lies the protective embankment wall, made of earth from the trench excavation. A concrete retaining wall, built by pouring concrete with a high quantity of shingle into wooden shuttering (imprints of which are visible throughout the site) forms the southern side of the embankment, while the northern side is graded to approximately a 45 degree angle and 4mm wide at base. This forms the main protective barrier between the firing positions and the markers operating the targets. A covered gallery is formed by the addition of a concrete roof attached to the north of the embankment, to give further protection for the markers from ricochets and falling debris. Sixteen vertical steel bars provide support for the roof on the southern side. To the rear of the markers' gallery is a retaining wall of brick (English bond), sloped at approximately 65 degrees and supported by eight brick buttresses.

6.2.3 The metal target frames are set into troughs within the floor of the markers' gallery, 0.76m below the floor level and each trough is separated from its neighbour by a low brick wall. 'T' shaped iron bars form the four corners of the frame which are bolted to the base of the trough (Fig. 9). On both long faces of the frame are balanced rectangular carriages into which a removable wooden target frame sits. The motion of raising one unit causes the other to lower via a connecting wire looped over a wheel at the top of the mechanism. This speeds up the process of changing and scoring targets – while one is being assessed the other is raised in a ready position, held in place by a hook on a chain fixed to the highest point of the mechanism. A smooth operation of the raising is achieved by four sets of three wheels set against the corner T bars of the overall frame.

6.2.4 The targets themselves took the form of paper or canvas tacked onto a roughly square wooden frame 1.81m by 1.83m, which in turn was fixed to taller frame 2.72m in height. The latter wooden frame allowed the target firm seating in a carriage with which the targets could be raised and lowered over the embankment. The remains of a least one of these wooden frames is present.

6.2.5 The tops of the southern two T bars are attached by two angle irons running into the sloped brick wall, where they are embedded. This seems to be distinct of the style of target mechanism used on British 20th Century rifle ranges, known as 'Hythe Pattern' targets, after the rifle practice range on War Office land at Hythe. A tab bolted to each

frame identifies the makers as 'JEFFRIES SUTON SURREY', the same company which produced the target mechanisms on a rifle range in Steyning, West Sussex. While Jeffries may not have held a contract for production of this somewhat specific apparatus, they may well have been the favoured contractors of the Rifle Volunteers/Territorial Army.

- 6.2.6 In total there remain six Hythe Pattern target raising frames, although in the western extremity of the trench there is a fully back-filled trough for a seventh frame. The most likely explanation of the decommissioning of this target is that it formed one of five original targets placed in the trench which was later added to with the two most eastern targets. Perhaps due to poor visibility from the firing positions the western target was removed at a later date. The troughs within which the eastern two sit are separated by 2m of concrete flooring, instead of the low brick walls within the first five. A low concrete step protrudes from the north and south retaining walls, which continues to the easterly wall of the trench. The northern brick wall is built onto this step and a line in the poured concrete separating east and west elements of the north retaining wall suggests the concrete was laid at different times. Whether this phase of construction was merely an afterthought in the overall construction or took place some time later is uncertain.
- 6.2.7 Associated with each target frame is a wooden bench for the use of the Markers, set within the gallery, five out of seven remaining.
- 6.2.8 On the face of the embankment retaining wall are a number of features relating to the operation of the target facility (Fig. 8, elevation). A metal pipe enters the trench at ceiling height at the east and runs to point corresponding with the fifth target trough, ending in a Bakelite terminal (now fallen from its fixings and resting on the floor). Beneath this is the location for a shelf on which the main trench telephone would sit, now only visible by the absence of surrounding paintwork and some fixing holes. Three groups of slots are visible along the wall, possibly for accessories required for operation, at roughly seven metre intervals, although only within the original trench area. Finally there are ten sites of 150mm by 200mm wooden boards, 1.5m above floor level and arranged so that there are two for each original five troughs. These would seem to relate to the targets themselves, there being two balanced targets within each trough, and may have held hooks for scoring cards or numbers relating to each target.
- 6.2.9 To the east of the target trench and accessed by 4 concrete steps is the target store. Brick built (of Sussex bond) and at over 3 metres tall, the building projects over the maximum cover bestowed by the embankment, resulting in the need for an additional mound to be formed to provide the required protection (Fig. 10). The roof of the structure is constructed of one layer of corrugated iron, which slopes at 4 degrees to the rear, dropping by 230mm. A sheet metal plated door, 1.07m by 2.74m leads to the interior. The plating provides a level of protection from ricocheting bullets and the unusual height to allow for passage of the wooden target frames. At 5.3m by 4.1m the building would be used for storage of not only the paper targets and wooden frames but also the paraphernalia associated with small repairs and scoring. In the south-west corner is a brick framed cupboard, (with a wooden interior and sheet metal exterior covering) which would accommodate these items. An earlier store cupboard, made of steel, has been removed from the building and placed on its side at the base of the steps to the markers gallery. The remains of a coal burner are located in the south-east corner, a flue fitted through the east wall allowing for the exhaust to vent.

- 6.2.10 Above two short wooden shelves in the south wall is the window. Fitted with three panes of glass, there are eleven vertical iron bars on the interior. On the exterior a rectangular wooden box is attached over the window, projecting some 200mm and covered in sheet metal (the latter now detached, and leaning against the wall). This was intended to provide protection from ricochets while allowing for the windows to be opened and the room ventilated. A curious addition to the window box is a thick wire mesh fixed to the rear of the sheet metal. A similar mesh is found suspended beneath the ceiling of the building, in two layers separated by 230mm. Access to the two layers can only be gained from the top of the doorway, making it a somewhat ungainly spot for storage. The only current explanation is that the wall at roof level has ventilation holes within it (to prevent the build-up of moisture which could damage the paper items) and these mesh layers are a preventative measure against the ingress of vermin.
- 6.2.11 A concrete path extends around the northern side of the building, between it and a concrete wall 2.5m in height, which turns at the eastern corner, heading south for only a metre or so before becoming covered with thick slumped soil.
- 6.2.12 On top of the mound in front of the building is a flagstaff on a pivoting mount made of two concrete bollards. This, when raised and flying a red flag would be an indicator that the range was in use.
- 6.2.13 Access to the building and trench appears to have been solely from the north-western corner where a concrete path with fencing on both sides crosses from front to back of the trench, the route then turning east to follow along the rear of the trench. There is also evidence for a ladder descending from the concrete path to the floor of the trench (Fig. 8), represented by a gap in the fencing and metal fixings on the west wall of the trench, but the ladder itself is now no longer present.

6.3 100 Yard Firing Position

- 6.3.1 The first firing position sits 100 yards from the target (actually 103 yards, 95 metres) and on the eastern side of the access track (Fig. 11). An east-west brick wall of English bond with a soldier top course, runs down the slope (20.5m), behind which is banked earth, creating seven level platforms in the form of steps, ending with a short retaining wall at the western end (2.75m). Each of the seven platforms correspond to a firing position, and thus also to one of the seven targets in the target area. All forms of firing posture can be adopted at this point, lying, kneeling or standing and at this short range pistol practice would be common. Four short wooden posts remain standing in the second, third, fourth and fifth platforms – these would have been painted with the lane number, again relating to the number of the target.
- 6.3.2 A concrete post 450mm square at the base and tapering at the top, is set 3.5m behind the brick wall. This retains the Bakelite terminal fixed in a recess and covered by two wooden boards. These boards would probably have been painted brightly with the yard position to be visible from the rear firing positions and to thus prevent accidental bullet damage to the telephone connections. A portable telephone could be plugged in at this point to maintain contact with the target area during the session. A metal pipe is visible beside the post, cut off at ground level and this may be the remains of a pole from which a flag denoting that the position was in use could be flown.

6.4 200 Yard Firing Position

- 6.4.1 182m (199 yards) from the targets, this consists of a brick wall of Flemish bond, running east to west (on the western side of the access track) behind which earth has been banked to create a single large level firing platform (13m by 8m). Four buttresses extend on the southern side of the retaining wall and their full length is hard to ascertain due to considerable slumping (Fig. 12). Unlike the 100 yard firing position there is no western retaining wall. The telephone communication post has the remains of the visibility board tacked to its northern side.

6.5 300 Yard Firing Position

- 6.5.1 This firing position (269m/294 yards from the targets) is of a somewhat more elaborate construction than the lower numeric positions (Fig. 13). Placed on the west of the access track, it consists of a banked earthwork into which has been built a brick and concrete trench. Entered by steps from the track, it progresses down the slope in a series of seven level platforms, each 2.5m by 1.1m. The trench is constructed out of brick walls (laid in English bond) with a concrete floor, around which the bank has been placed. Finally seven concrete platforms have been placed on the southern side of each of the steps on a level with the top of the bank and covering the top layer of bricks in that wall. The position enables shooter the ability to fire standing from a covered trench position and it is tempting to think this is in response to the experiences learnt of trench warfare from the 2nd Boer War and the Great War. The concrete platform in the fore area gives a clean and dry base on which the firers can rest their arms. To the rear of the position the earthen bank extends beyond 2 metres and this could probably have been used for other postures. The telephone post retains what appears to be its full wooden covering, again facing to the rear positions. Three wooden lane marker posts remain.

6.6 400 Yard Firing Position

- 6.6.1 There are no structural elements involved in the construction of this firing position, being purely an earthwork of bank and ditch, lying 357m/390 yards from the targets (Fig. 14). The ditch (possibly silted) lies in the front of the position, 14m in length and approximately 300mm deep, running east-west. It dissipates as it heads down slope, added to provide drainage. The bank, immediately to the north, is 2m wide, 14m long and flat topped, the profile of which follows the gradual drop in the land, rather than remaining level as in the previous positions. This is the more common form of firing position found on many other ranges, its popularity no doubt being down to its ease of construction and its low cost in materials.
- 6.6.2 The telephone post is present but has at some time been unearthed from its original position and now lies on its length to the north of the earthwork. One wooden firing position lane marker remains.

6.7 500 Yard Firing Position

- 6.7.1 Located within woodland (that appears to have encroached on the site by 1963) the 500 yard position is difficult to see in its entirety (Fig. 15). It bears most similarity with the 200 yard position, formed of an earthen mound to the west of the access track,

although instead of a brick retaining wall, this position has corrugated iron fixed in place by at least three steel revetting poles on the southern side. Animal burrowing has also caused a significant amount of damage, making the overall shape of the mound somewhat indistinct. A concrete telephone post is situated to the north-east.

6.8 600 Yard Firing Position

6.8.1 Originally located on the second firing line, some 54m down the slope to the west and set back against the boundary of the woodland, there is now nothing remaining of this position (Fig. 3 and Fig. 5). The field it lies within has been turned to agriculture and if the position was of a structural composition as the 1909 25" Ordnance Survey map suggests, it was probably dismantled after being decommissioned and any further signs removed by subsequent ploughing.

6.9 700 and 800 Yard Target Area

6.9.1 When the extension of the range firing positions was undertaken the limitations of the space between the main target area and the edge of the woodland to the north meant that not only was a decision made to place the 600 yard position on a separate firing line, the 700 and 800 yard positions had to be placed on a further firing line and an alternative target position created solely for their use (Fig. 3 and Fig. 5).

6.9.2 The location of this is some 60m south-west from the main target area as well as being further up the slope. The target arrangement is very simple, consisting of four plates of cast iron bolted together, 0.61m wide and 1.3m high, although the base of each plate is embedded into the ground for a depth that was unable to be ascertained (Fig. 16). The face of each plate is divided into squares of 150mm (6 inches) by scores cut into the surface. At the rear, two hinged legs firmly fix each plate into place. By the time these targets were created at Preston Hills, the technology was rather old, a reference in a contemporary manual (Hawes 1859) describing exactly the type and use of these targets, giving the full height of each plate as 6 feet (1.82m). These plates may well have been originally placed in the main target area and when that was modernised, some of them could have been re-sited here. A circular bull's-eye was painted on to the surface (sometimes over an incised circle, which appears not to be present here) and each of the 6 inch squares were numbered. Each bullet that hit the target left a mark in the paint while the iron remained undamaged. The Marker, having recorded each shot, painted over the impact mark with a brush 'on the end of a pole', so that practice may resume. To point out the strike marks to those at the 700 and 800 yard firing positions the marker would use 'a stick with a flat end, painted black', most probably on a dummy target located in the proximity of the mantelet. There are no telephone posts visible at this target. A butt is situated to the rear and extends around the east and west sides in a horseshoe shape (measuring 18m by 16m).

6.9.2 Approximately ten metres to the south of the butt is a quarry pit, possibly the site of the material excavated to build the butt. During firing, the marker would shelter in the Mantelet, which lies 14 metres to the north-west. A brick structure of English Bond, 1.66m by 1.07m in plan, with an arched roof supported by iron bars mortared into the side walls, this has suffered from a large amount of infilling by soil moving downslope. The Mantelet may have had steps leading down into it, but there was no sign of these under present conditions. A mound to the north (7 metres in diameter) protects the structure from bullet penetration and while it now does not fully cover the

top skin of bricks, it originally would have done to prevent bullets ricocheting off of the hard surface and causing structural damage.

6.10 700 Yard Firing Position

6.10.1 Nothing now remains of this firing position, set in the north-west corner of the field bounded by Coombe Firs and the railway line. By the time the 1937 25" Ordnance Survey map, the 600, 700 and 800 yard firing positions are no longer marked, the firing lines having been removed, only the 100 to 500 yard firing line remaining. The 1909 25" map shows the 700 yard firing position as a short L-shaped structure, possibly along the lines of the 100 yard position (Fig. 5).

6.10 800 Yard Firing Position

6.10.1 There is currently also no trace of the 800 yard position – the 1909 25" map places it on a latterly constructed track running alongside the railway, which was no doubt the reason for the removal of any remains post decommissioning (Fig. 5). The shape of the position is given as rectangular area minus the north-east corner, perhaps of hard-standing, there being no earthwork hachuring present.

6.11 Miscellaneous sites

6.11.1 Not included in the field survey but worthy of note are four flag poles to the south of the target area, highlighted by the Bannister survey of 2009 (Fig. 2). These all represent the danger area markers at the boundaries of the zone closed to access during firing. A fifth flag pole was noted close to the 400 yard firing position, along with a 2m upright length of telegraph post with a metal telephone wire fixing hook attached at the top. The placing of these items, apparently within the firing line from the 500 yard position, suggest that they were added at a point when the maximum range was reduced to 400 yards. The 1963 1:2500 Ordnance Survey map shows the 500 yard position incorporated into the boundary of the Coombe Firs woodland as well as an additional structure just to the north of the 400 yard position (perhaps a storage depot), suggesting that by this time the events related above had taken place.

6.11.2 The access track joining up the various existing firing and target positions seems to have been laid, at its northern end, along the upper side of a lynchet, thereby making use of a more level surface (Fig. 3).

6.11.3 Midway between the 300 and 400 yard positions and twenty metres to the east up the slope of Preston Hill, is a series of three irregular interconnecting pits (2m maximum depth) and banked earthworks, approximately 18m east to west and 14m north to south (Fig. 17). Much, perhaps all, of the material removed from these pits has been placed on the southern side only, forming a parapet of sorts, facing the target areas. A possible entrance in the form of a trench is visible in the western side. Within the pits themselves, are numerous sections of corrugated iron, most showing signs of having been tipped, but at least two seem to be in situ, forming a simple revetment to the sides of the pits. During the Second World War corrugated iron was frequently used as a cheap and portable building material used in a number of

defensive and non-defensive military structures. At the Steyning rifle range in West Sussex, the Home Guard often trained in other fields of expertise on the same site – gas mask/gas attack practice being conducted in a specially designed building overlooking the range (Gilbert Saunders, Partridge Green Home Guard *pers. com.*) With this in mind, it is not overstressing the evidence to suggest that this could be a Second World War feature, perhaps created to provide more of an improvised defensive fieldwork setting to shoot from. The area of light woodland to the immediate south of this feature, which currently obscures the line of sight to the main target area, was not present on the 1937 25" Ordnance Survey map, therefore giving an unrestricted view.

7.0 Conclusion

- 7.1 Those sites that remain at the Preston Hills rifle range provide a good cross section of buildings and earthworks associated with the development of rifle ranges from the late 19th Century into the 20th Century. Preservation is generally very good (especially in the markers' gallery), although there is structural damage to the 100 yard position and Mantelet, while the 500 yard position is in serious disrepair. There is some difficulty in assigning specific periods of construction to individual elements within the range, but certain factors might provide clues to this extent. The main target area, the 100 yard position and the 300 yard position are all constructed with English bond – these three features all have seven firing platforms or targets and may have been built contemporaneously. The Target store, of Sussex bond, with its roof of corrugated tin, suggests a later build date, perhaps related to the Great War or Second World War. The historic maps therefore, provide the best dating of the features.

8.0 References

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Appendix 1

OASIS ID: [archaeol6-122516](#)

Project details

Project name	Preston Hills Rifle Range, Lullingstone
Short description of the project	A Walkover Survey and Historic Building Recording Of a 19th Century rifle range
Project dates	Start: 12-03-2012 End: 04-04-2012
Previous/future work	Yes / Yes
Type of project	Building Recording
Site status	Site of Special Scientific Importance (SSSI)
Current Land use	Grassland Heathland 4 - Regularly improved
Monument type	RIFLE BUTTS Modern
Significant Finds	NONE None
Significant Finds	NONE None
Methods & techniques	'Annotated Sketch','Measured Survey','Photographic Survey','Survey/Recording Of Fabric/Structure'
Prompt	Conservation/ restoration

Project location

Country	England
Site location	KENT SEVENOAKS ASH CUM RIDLEY Preston Hills
Postcode	TN14 7UD
Study area	20.00 Hectares
Site coordinates	TQ 53170 62870 51.3437176734 0.199473684656 51 20 37 N 000 11 58 E Point

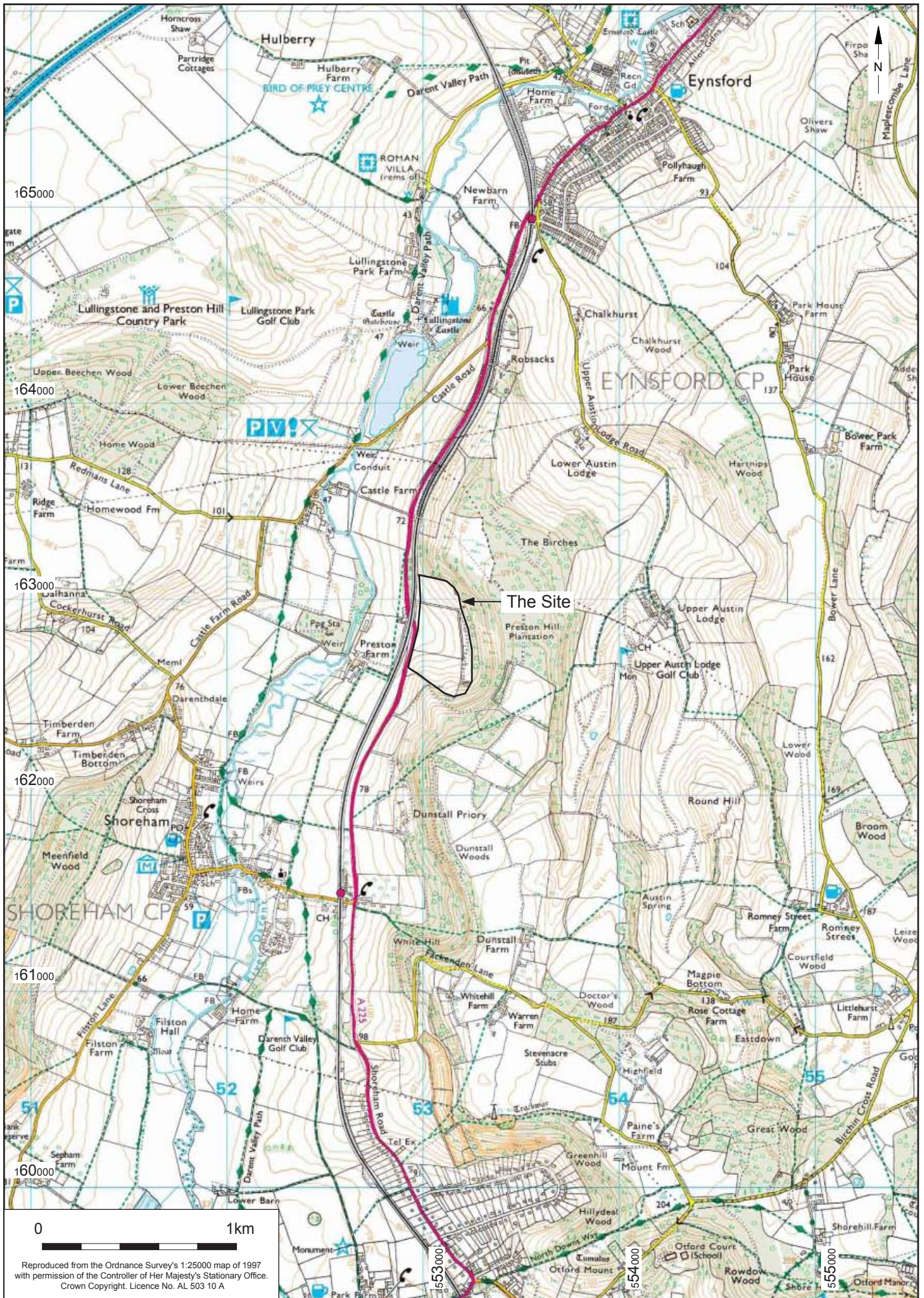
Project creators

Name of Organisation	Archaeology South-East
Project brief originator	Archaeology South-East
Project design originator	Archaeology South-East
Project director/manager	Ron Humphrey
Project supervisor	Justin Russell
Type of sponsor/funding body	County Council
Name of sponsor/funding body	Kent County Council

Project archives

Physical Archive Exists?	No
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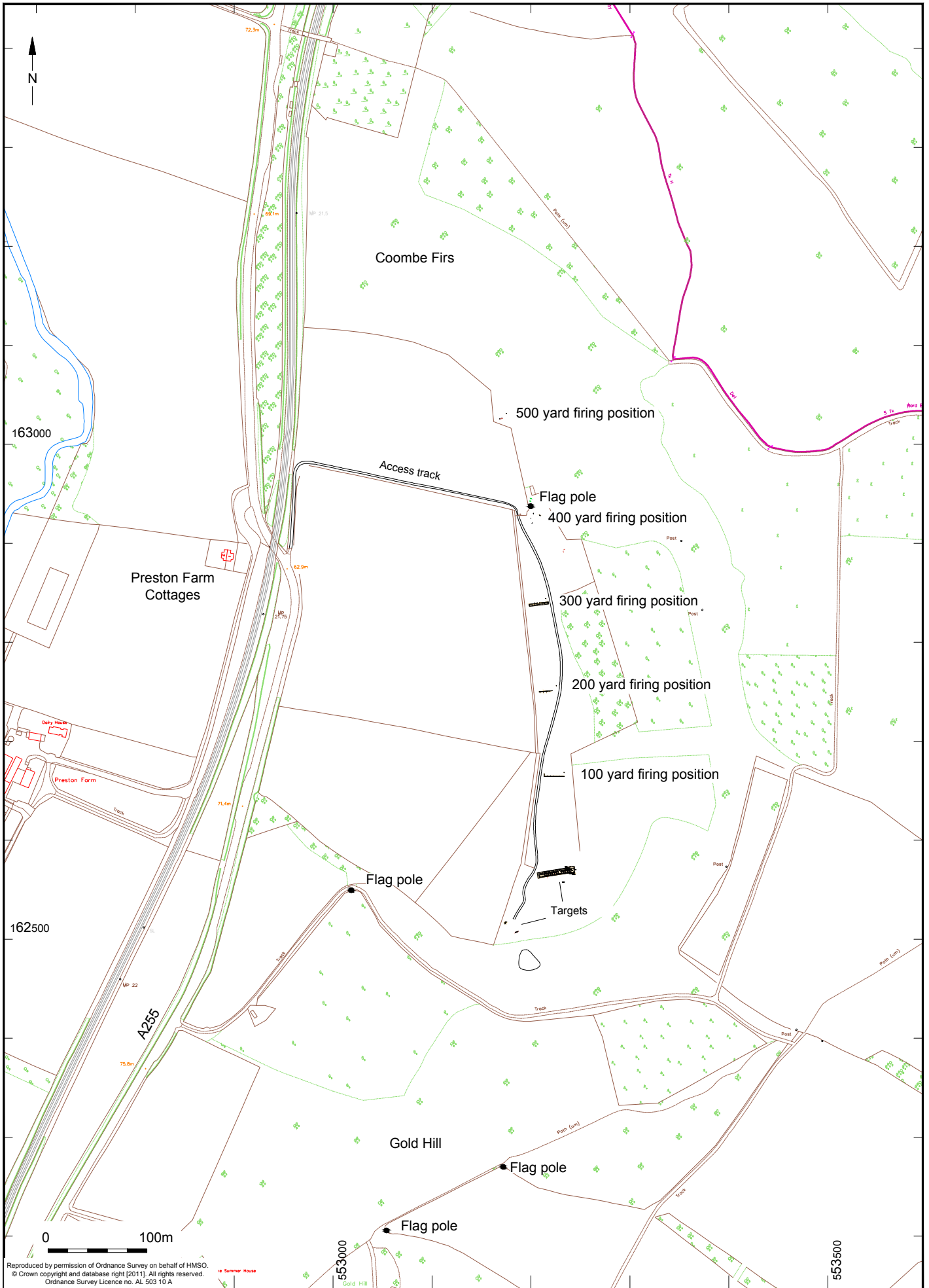
Entered by	Justin Russell (justin.russell@ucl.ac.uk)
Entered on	3 April 2012



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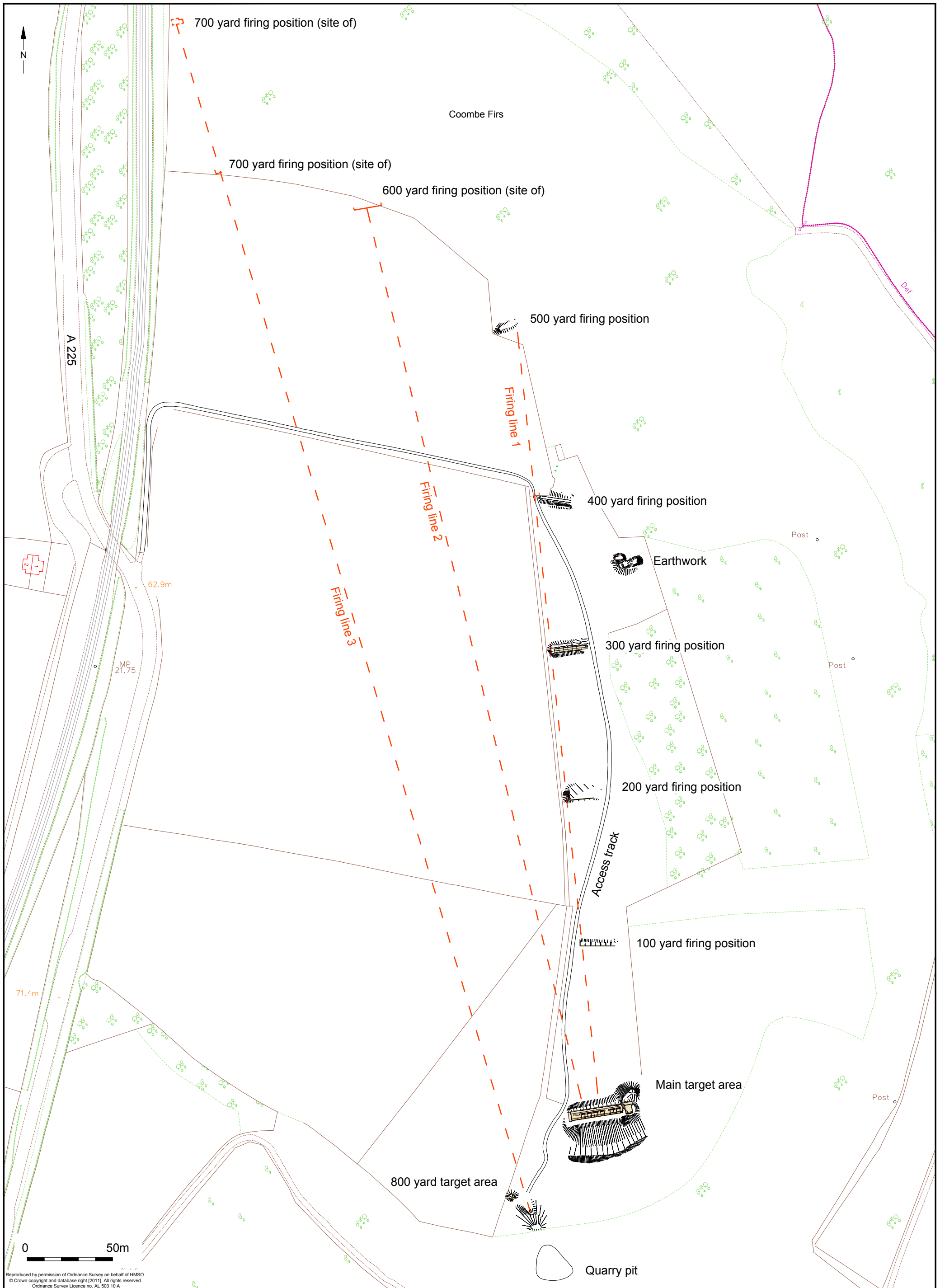
© Archaeology South-East		Preston Hills Rifle Range	
Project Ref: 4800	April 2012	Site location	
Report Ref: 2012077	Drawn by: JLR		

Fig. 1



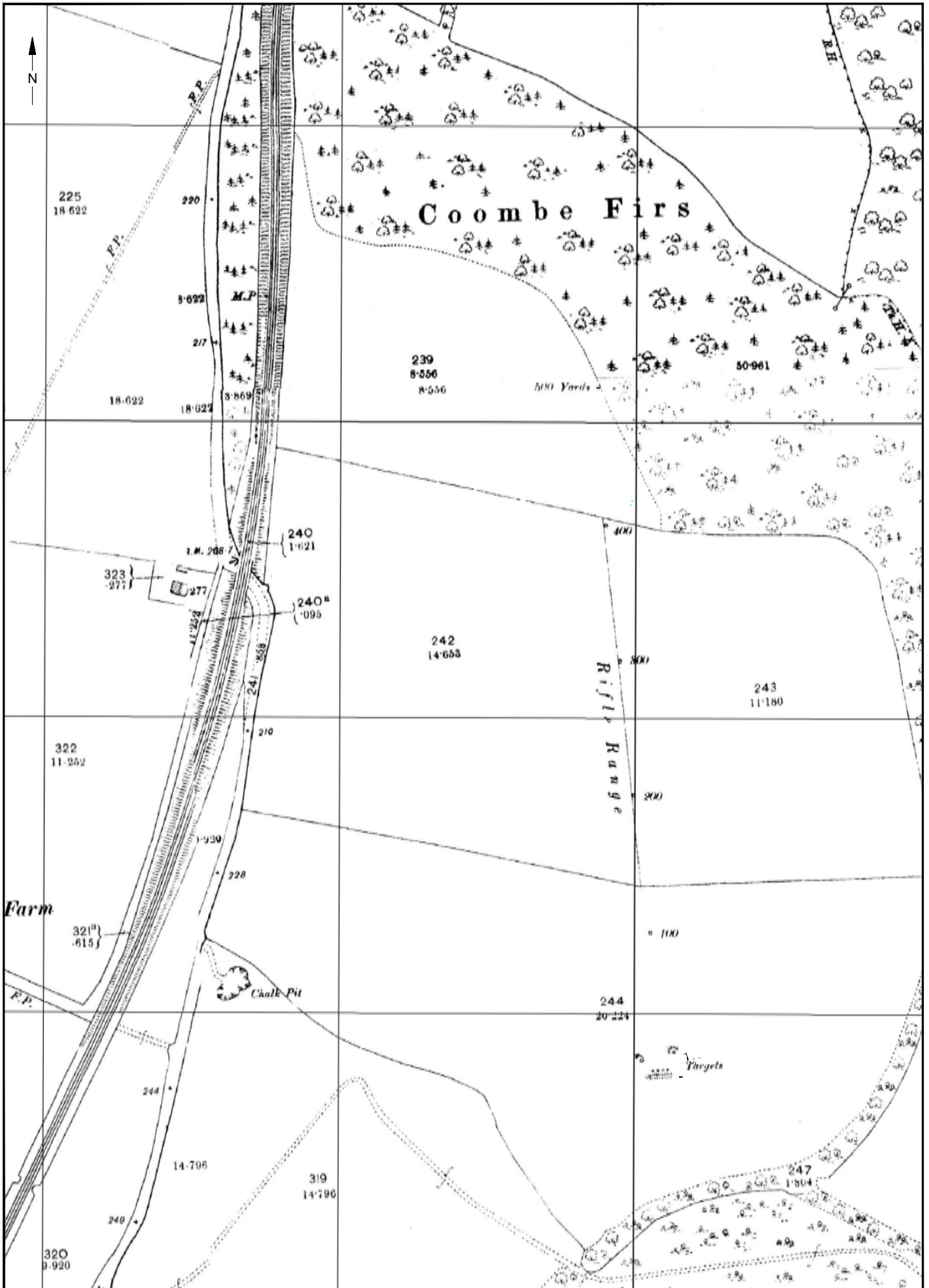
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© Archaeology South-East		Preston Hills Rifle Range, Lullingstone		Fig. 2
Project Ref: 4800	March 2012	Site plan		
Report Ref: 2012077	Drawn by: JLR			

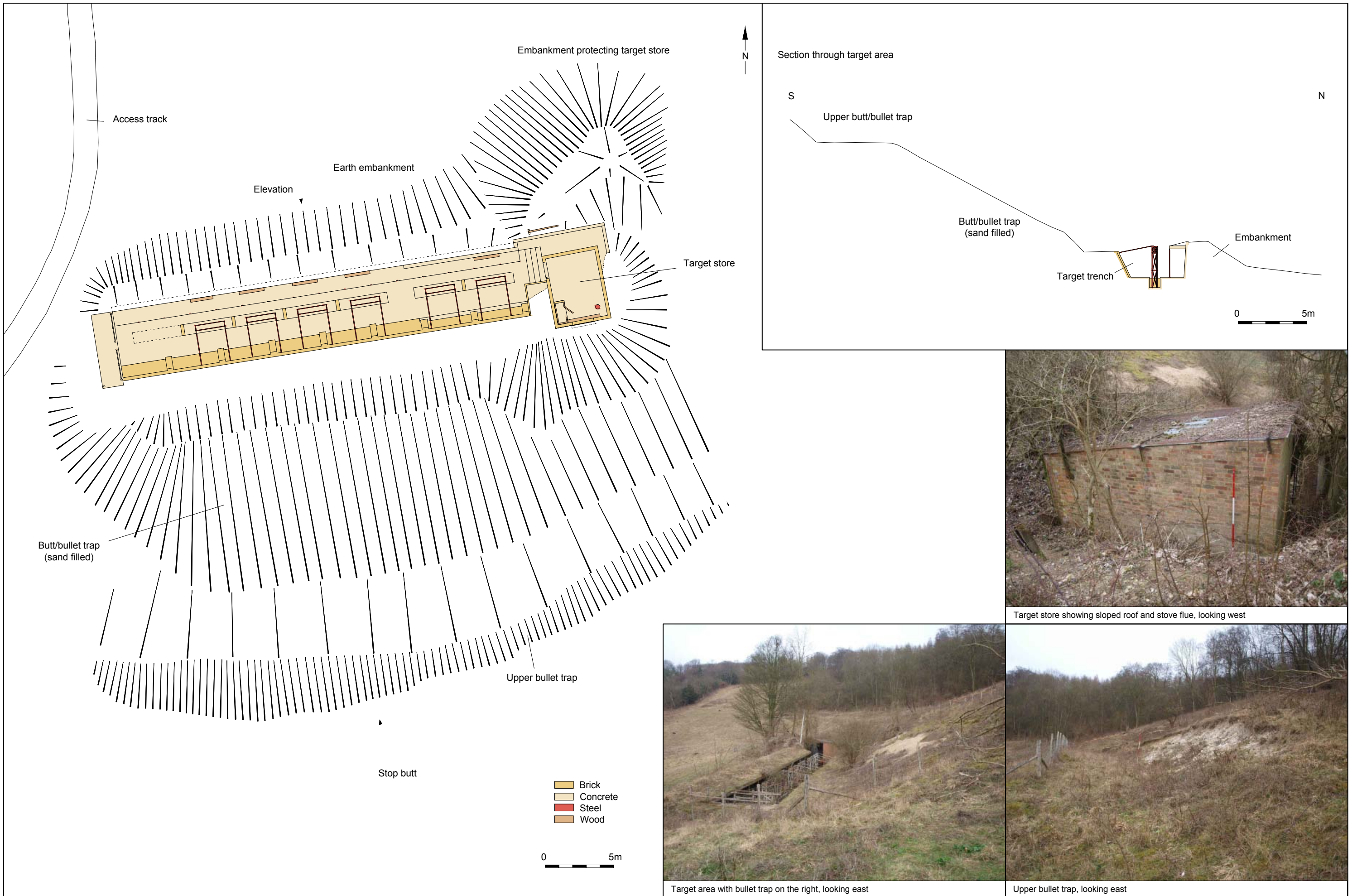


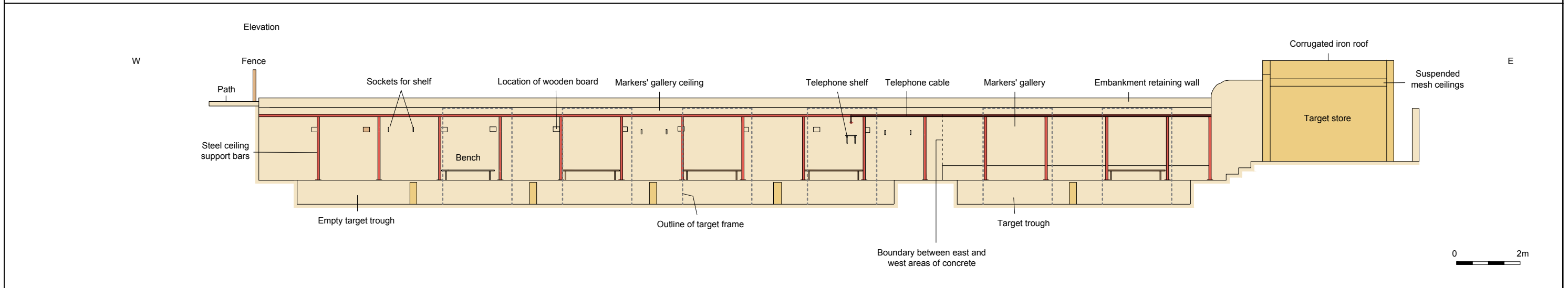
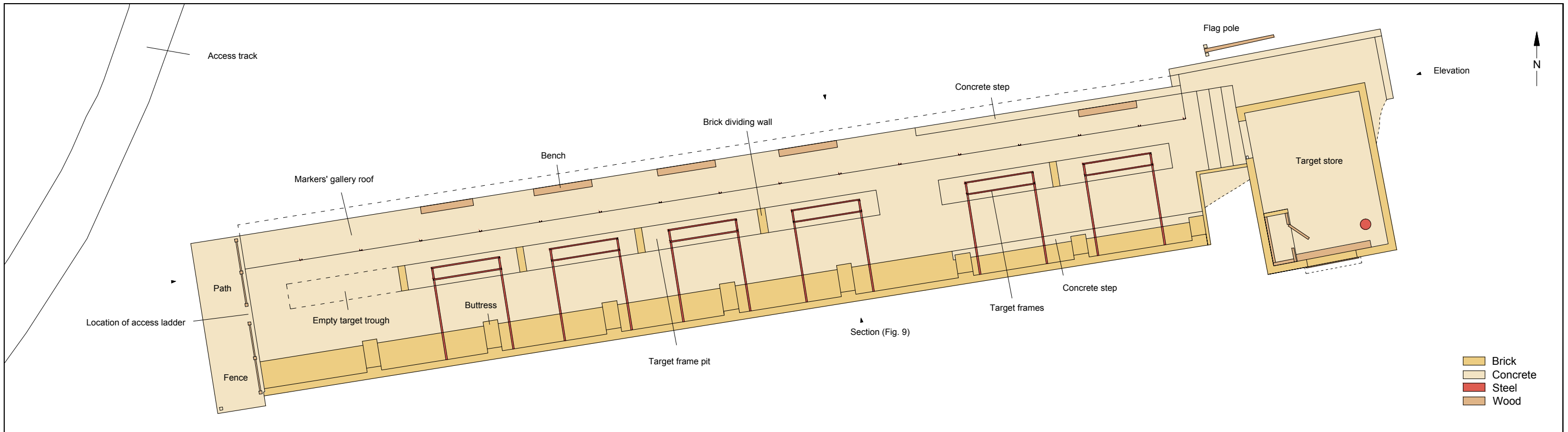
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© Archaeology South-East		Preston Hills Rifle Range, Lullingstone	Fig. 3
Project Ref: 4800	March 2012	Plan of rifle range	
Report Ref: 2012077	Drawn by: JLR		



© Archaeology South-East		Preston Hills Rifle Range, Lullingstone	Fig. 4
Project Ref: 4800	March 2012	OS 1897 25" map	
Report Ref: 2012077	Drawn by: JLR		





Markers' gallery, looking west



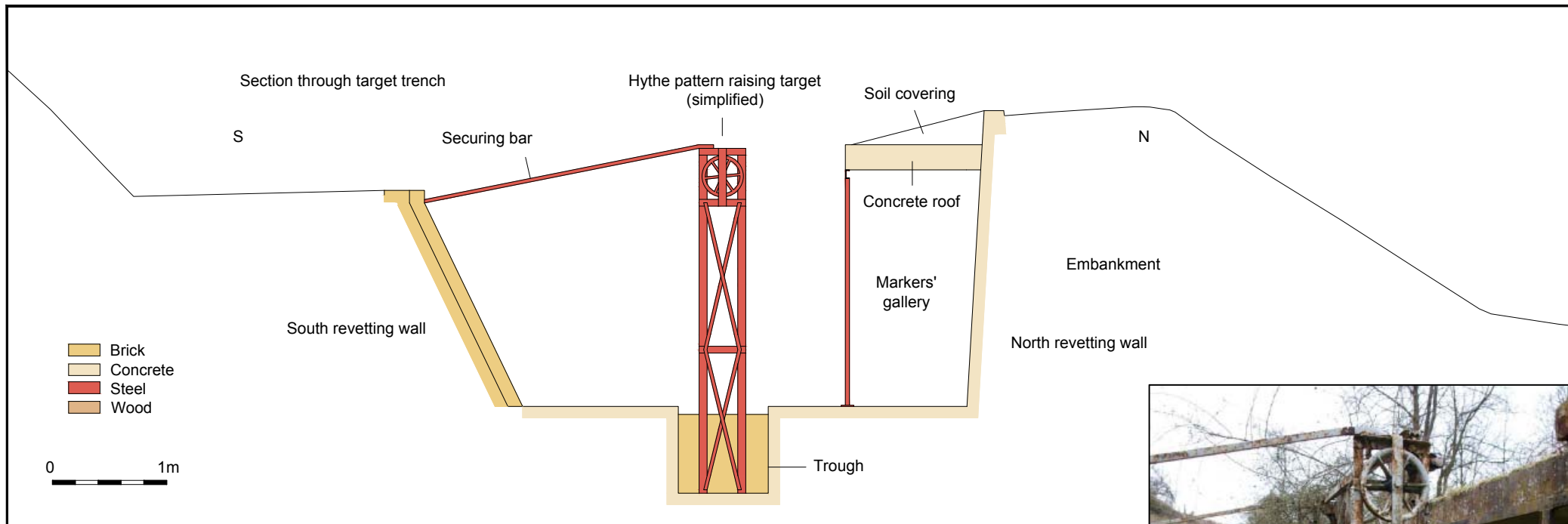
Markers' benches against north retaining wall



North retaining wall showing construction boundary and concrete step



Concrete path and fence with central section for ladder access, looking north

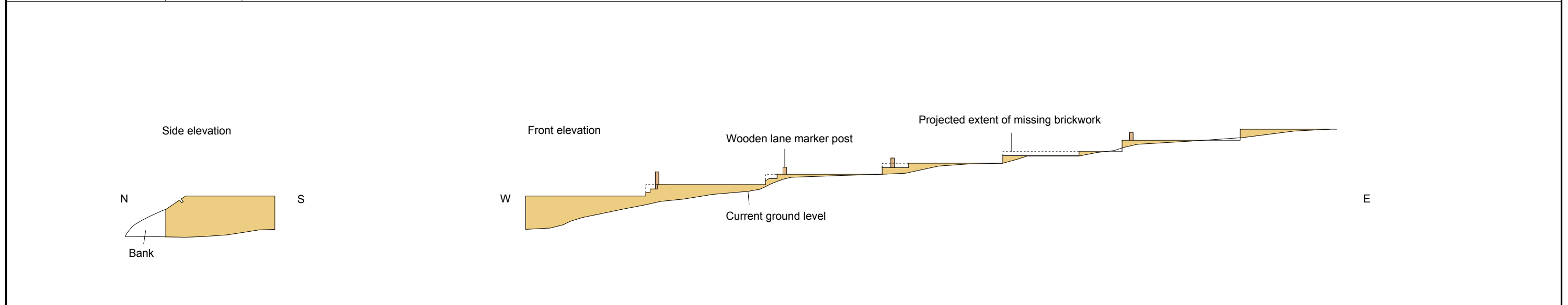
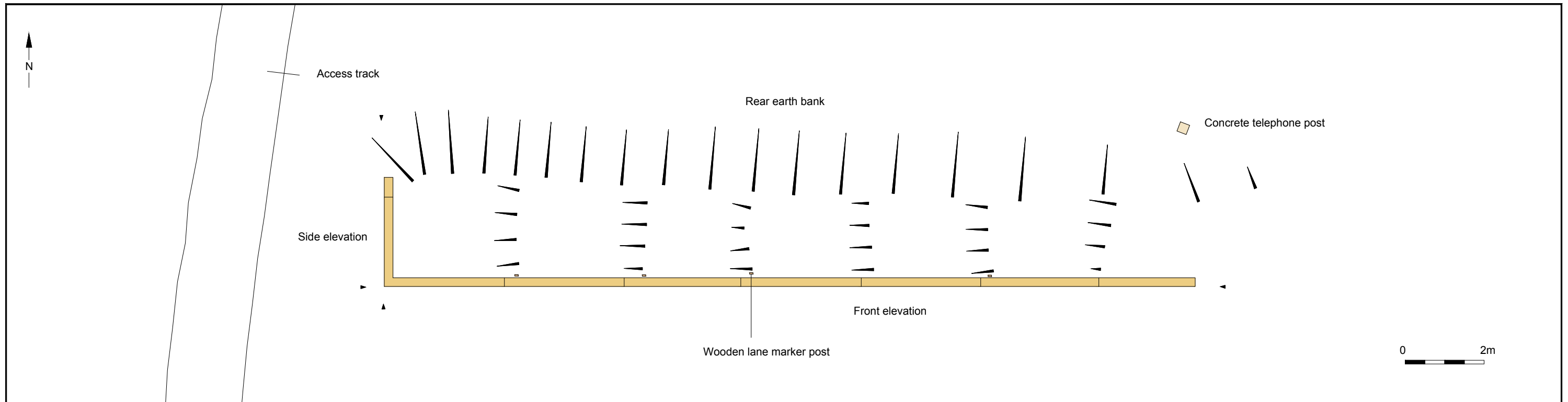


Remaining wooden target frame

Target frame (Hythe pattern), showing carriages and securing bars, looking north

Target frame (Hythe pattern), side view





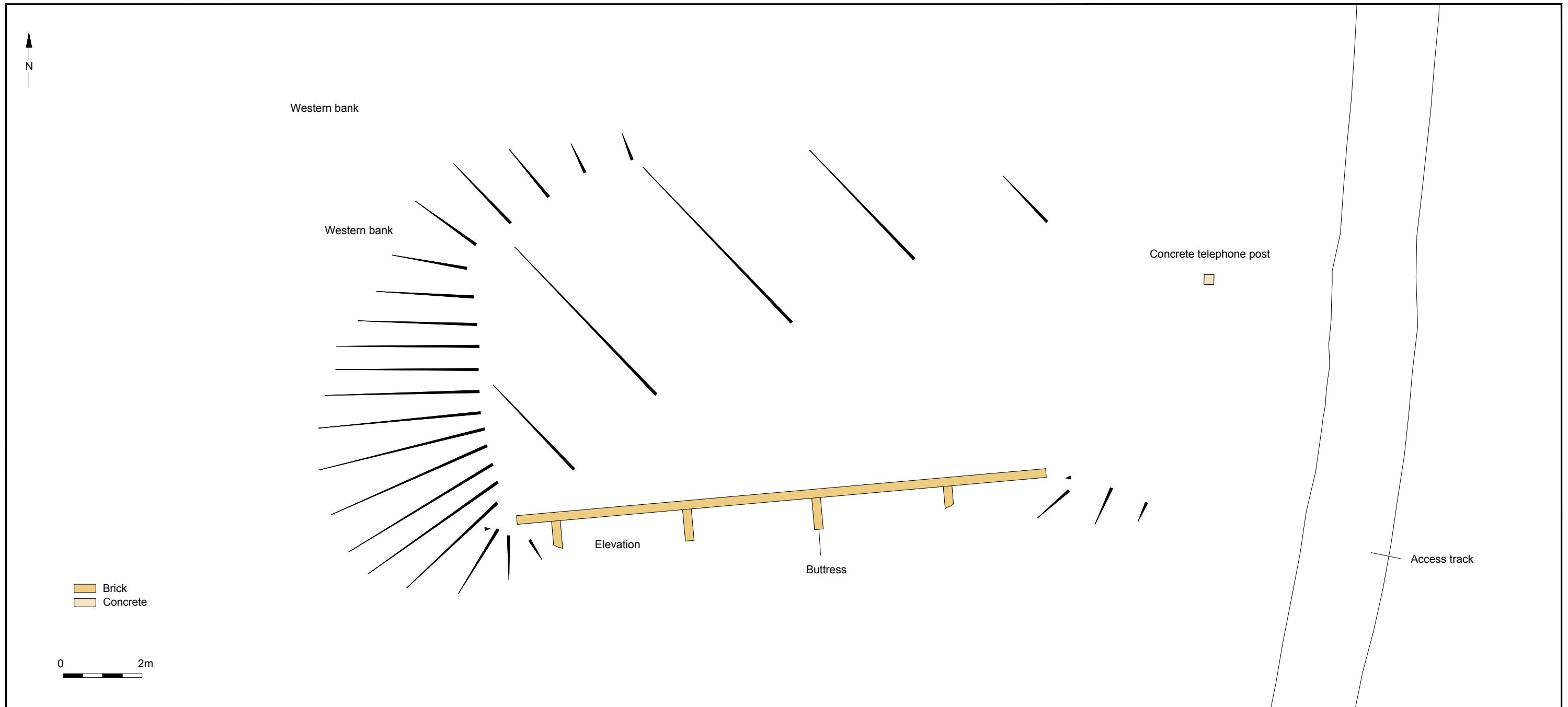
Brick
Concrete
Wood

0 2m

100 yard position west wall, looking east

100 yard position, looking north

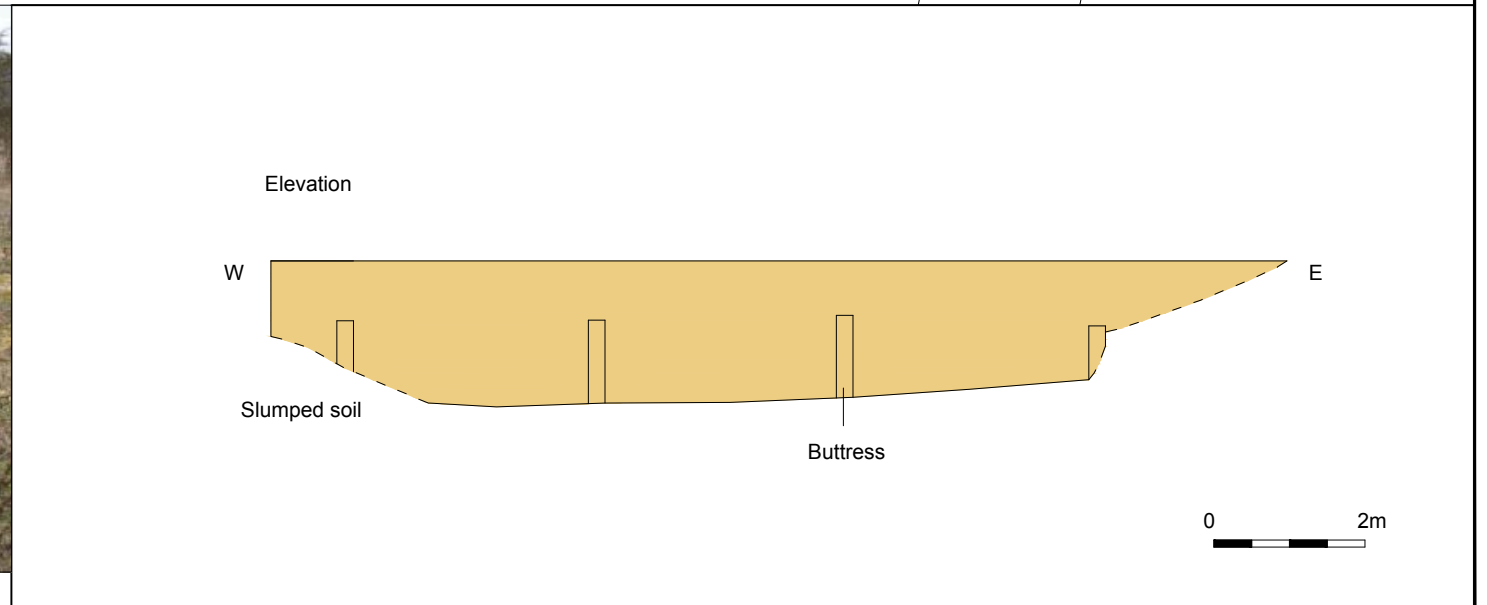
Concrete telephone post with wooden board attached, looking south-west

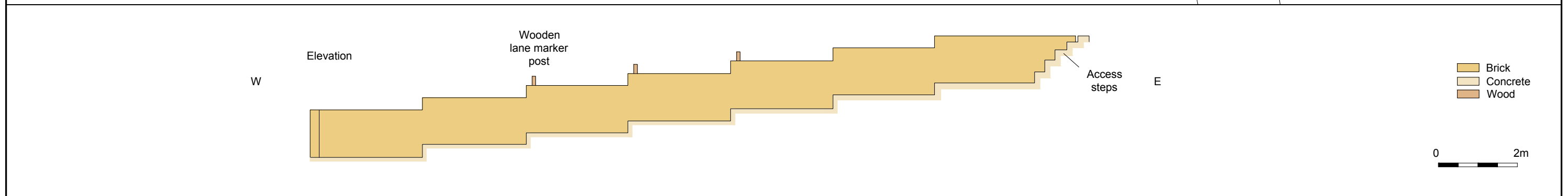
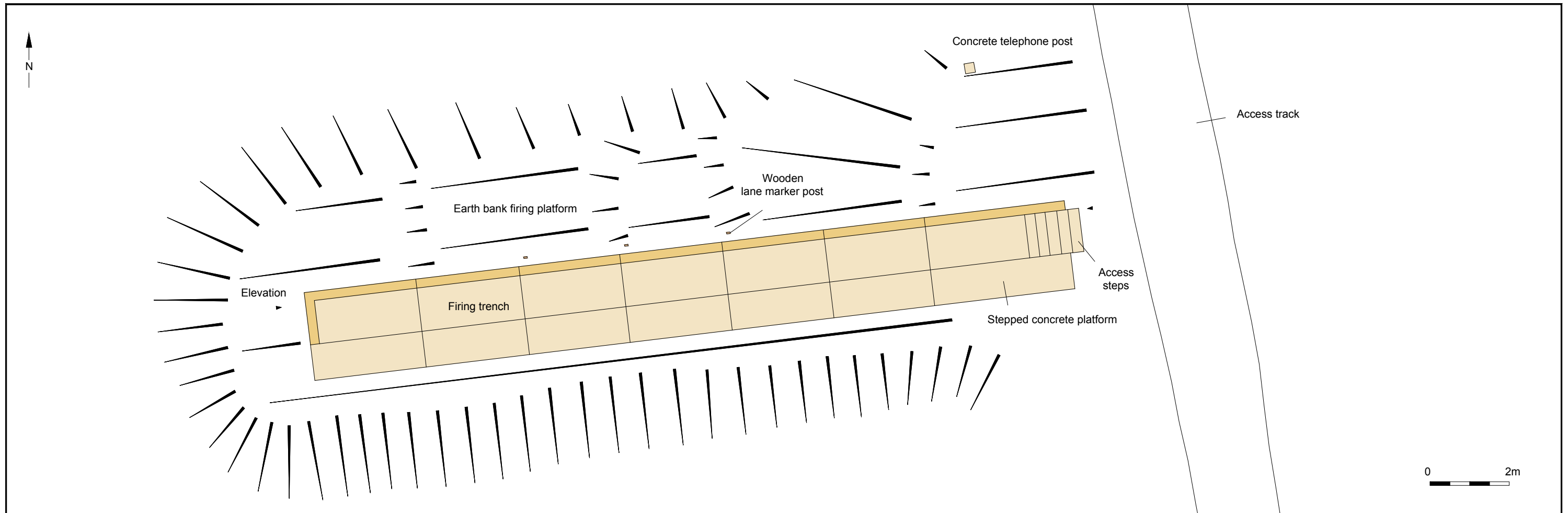


200 yard firing position,, looking north



200 yard firing position, looking west.





300 yard firing position, looking north



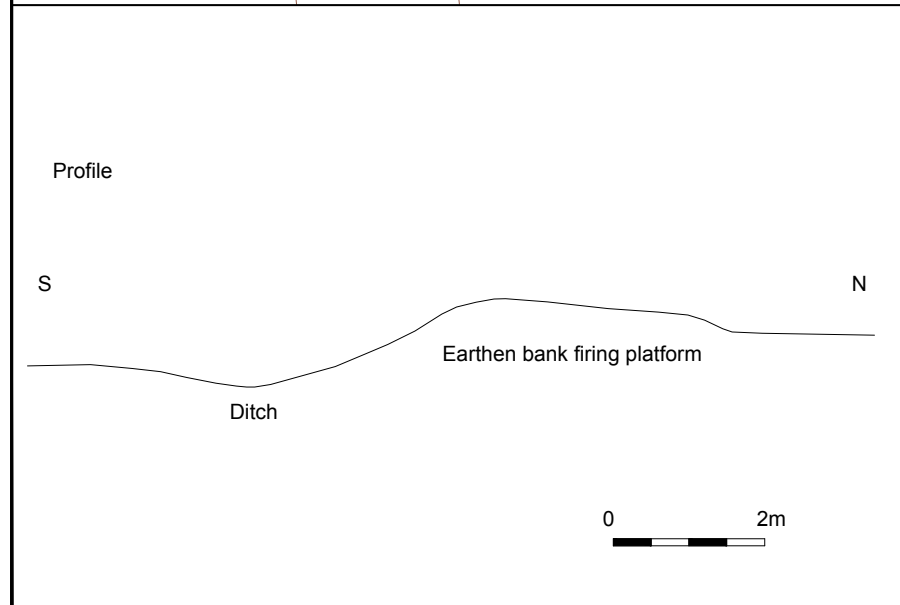
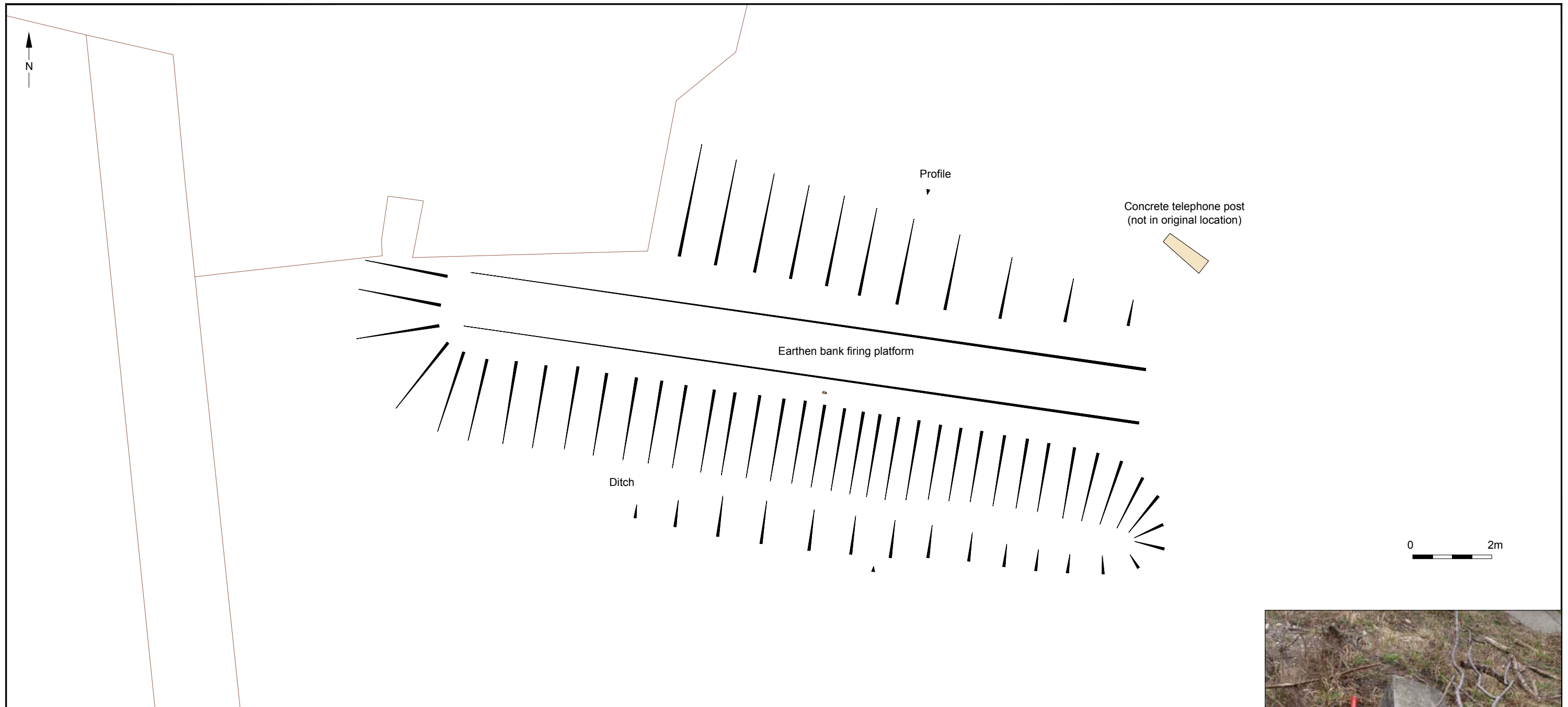
300 yard firing position looking east



300 yard firing position, looking west



Concrete telephone post with complete board covering, looking west



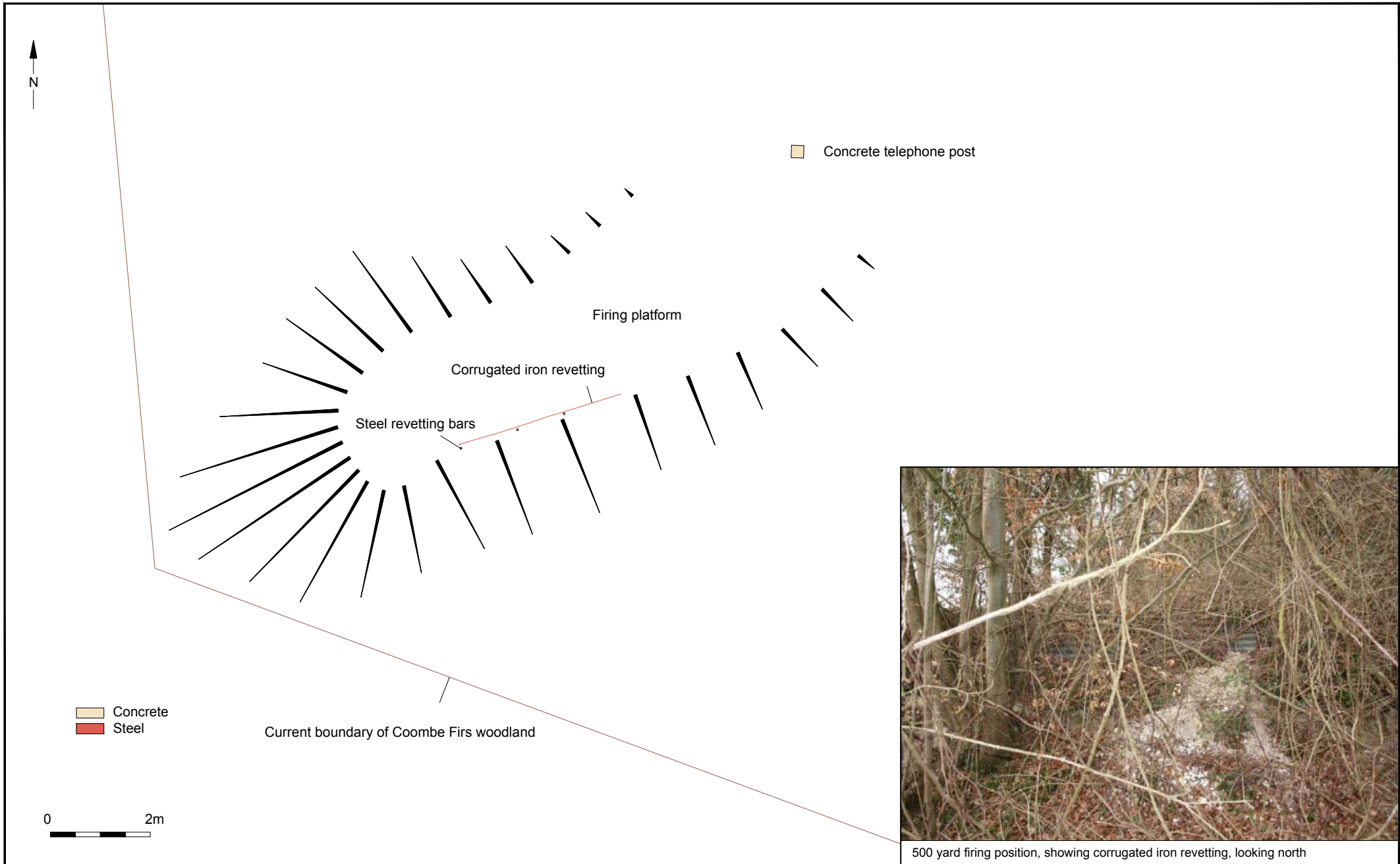
400 yard firing position, looking north-west



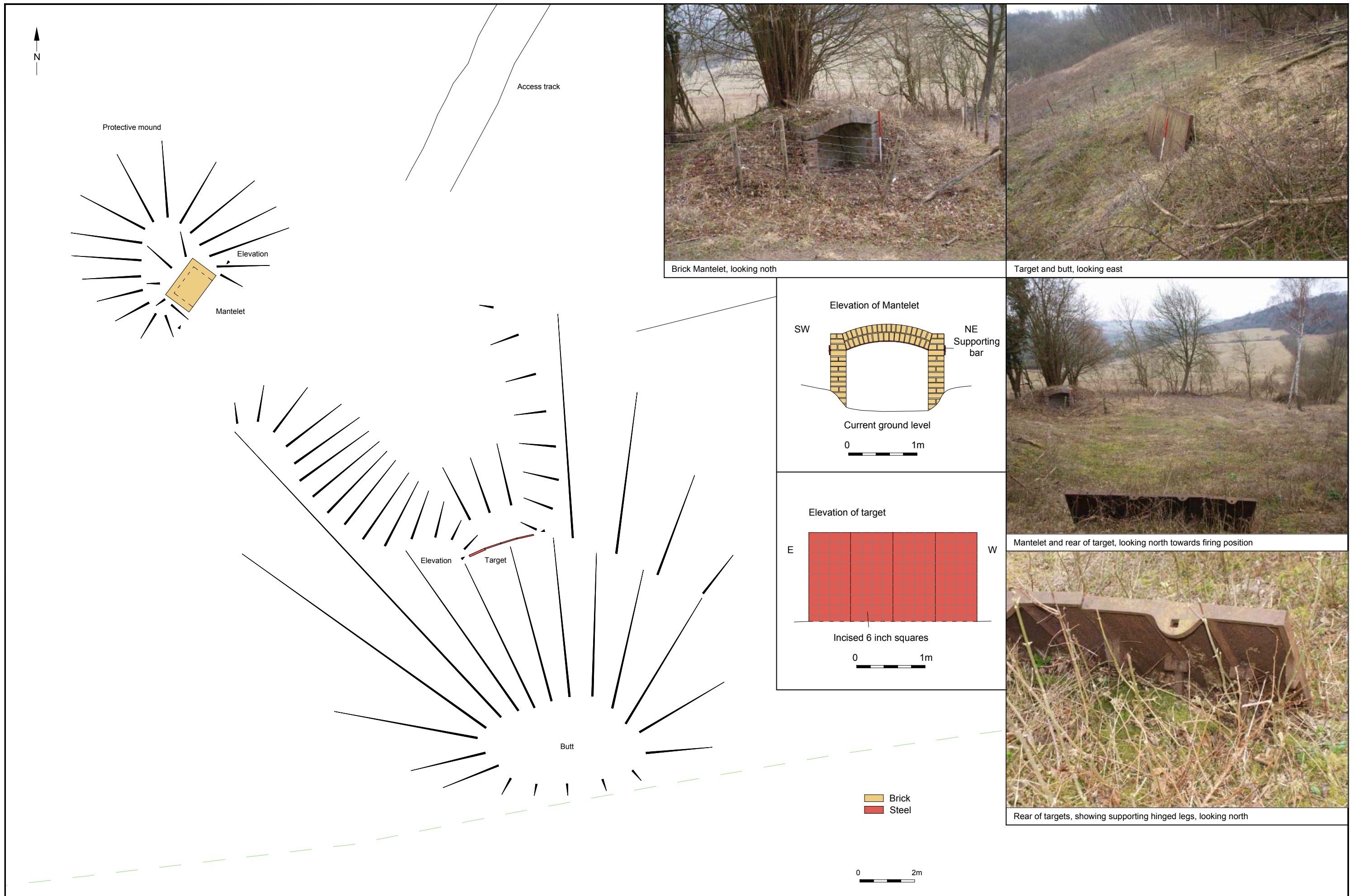
400 yard firing position, looking west

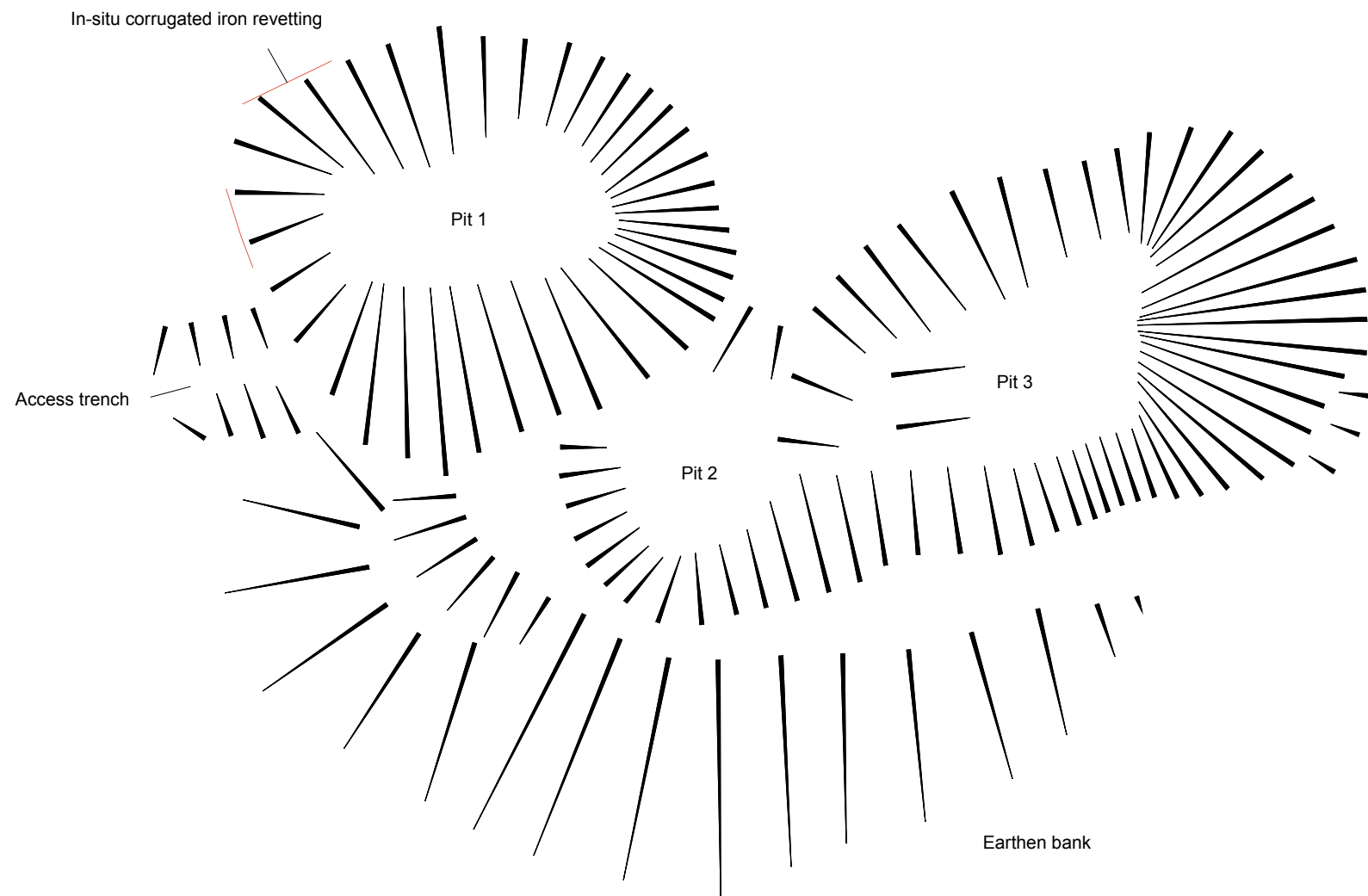
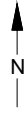


Concrete telephone post, in current position



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Project Ref: 4800	March 2012	500 yard firing position	
Report Ref: 2012077	Drawn by: JLR		





Pit 1, access trench and earthen bank, looking south-west



Pits and access trench (on right) looking east



Pits, looking west



Target frame carriage, kept in position by hook and chain



Target frame carriage wheels



Target frame hoist wheel



Empty target trough at western end



Brick dividing wall within target troughs



Low concrete step in south retaining wall



Wooden board on markers' gallery wall



Location of main telephone shelf on markers' gallery wall

© Archaeology South-East		Preston Hills Rifle Range	Fig. 18
Project Ref: 4800	April 2012	Photographs	
Report Ref: 2012077	Drawn by: JLR		



Flag pole on target store embankment



Door to target store and suspended mesh ceilings



Target store window and box



Target store cupboard, interior



Earlier target store cupbord, now in marks' gallery



Concrete post at 200 yard position, showing telephone connection

© Archaeology South-East		Preston Hills Rifle Range	Fig. 19
Project Ref: 4800	April 2012	Photographs	
Report Ref: 2012077	Drawn by: JLR		

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