

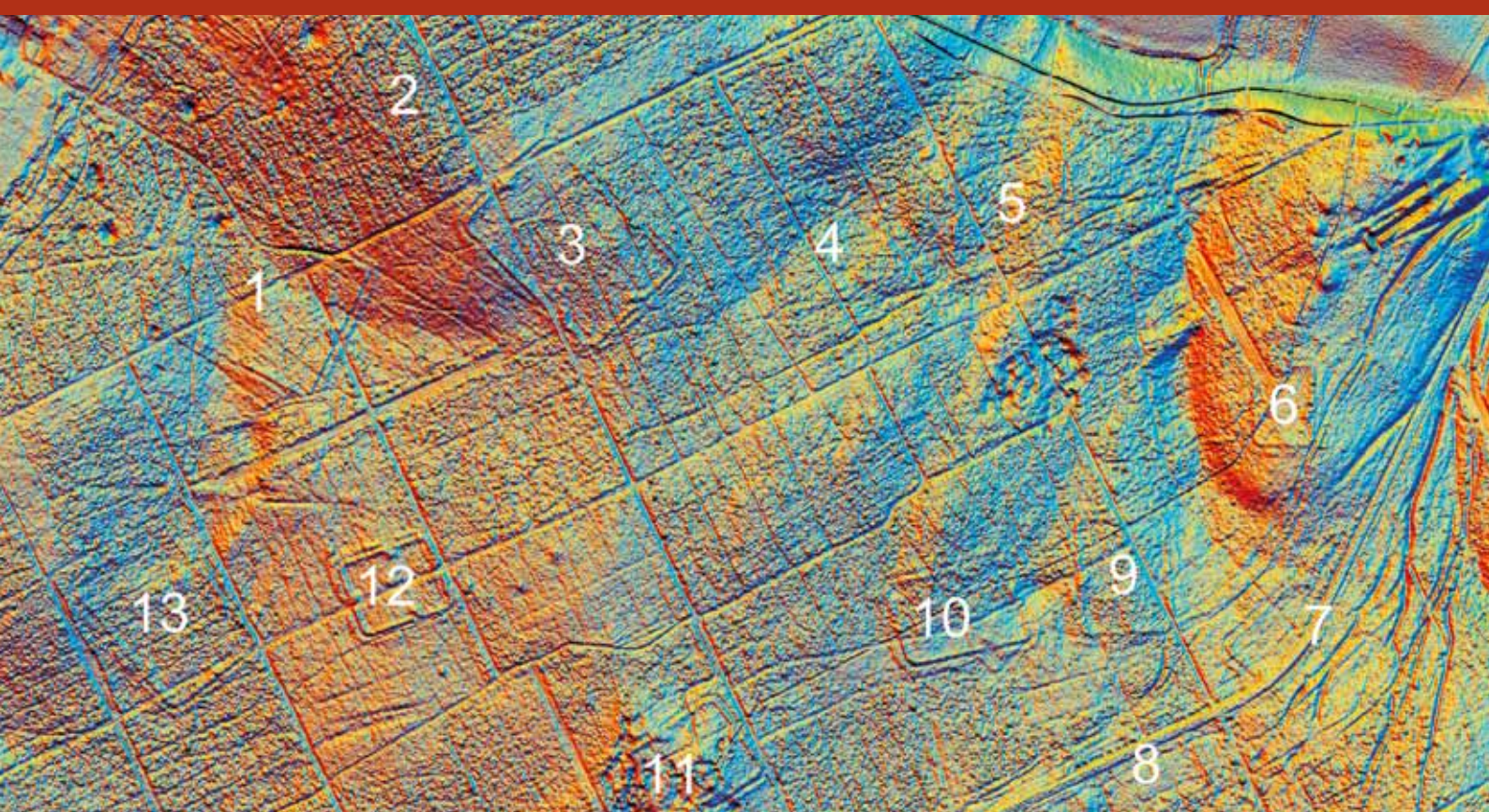


## FRONTIERS OF THE ROMAN EMPIRE – THE LOWER GERMAN LIMES

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PART II B – ANNEX 1 | CATALOGUE OF COMPONENT PARTS | GERMANY

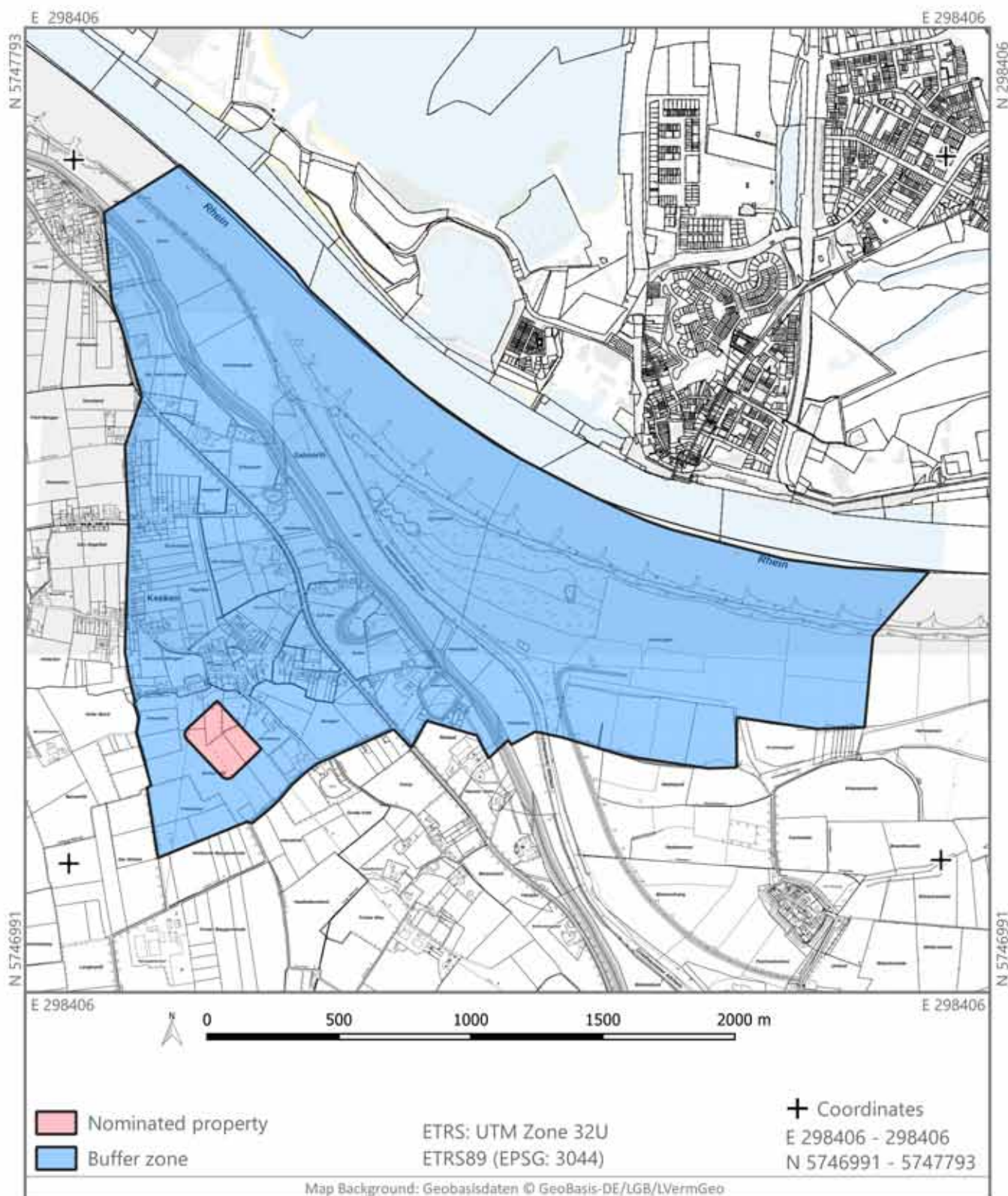






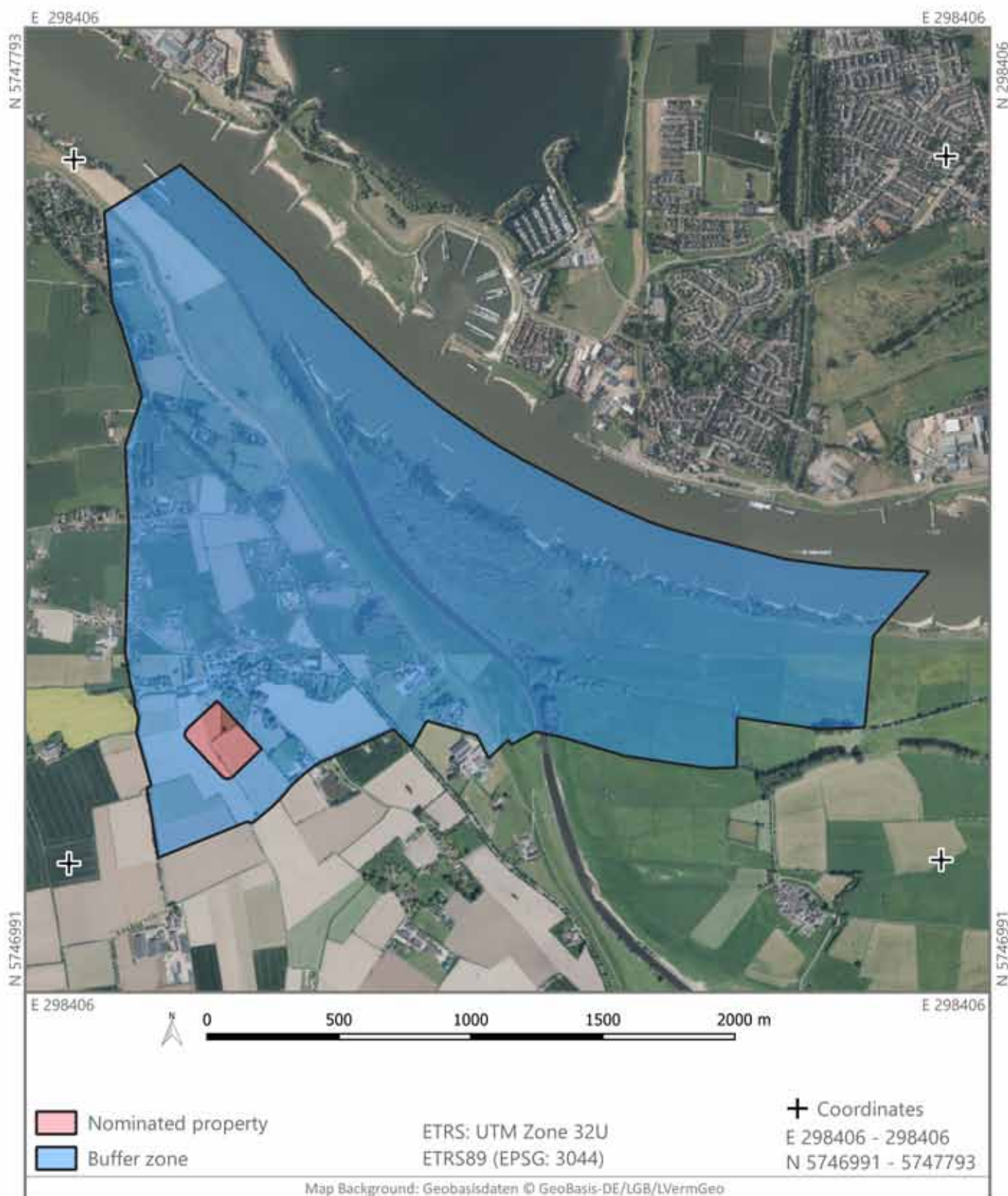


## 20 - Kleve-Keeken





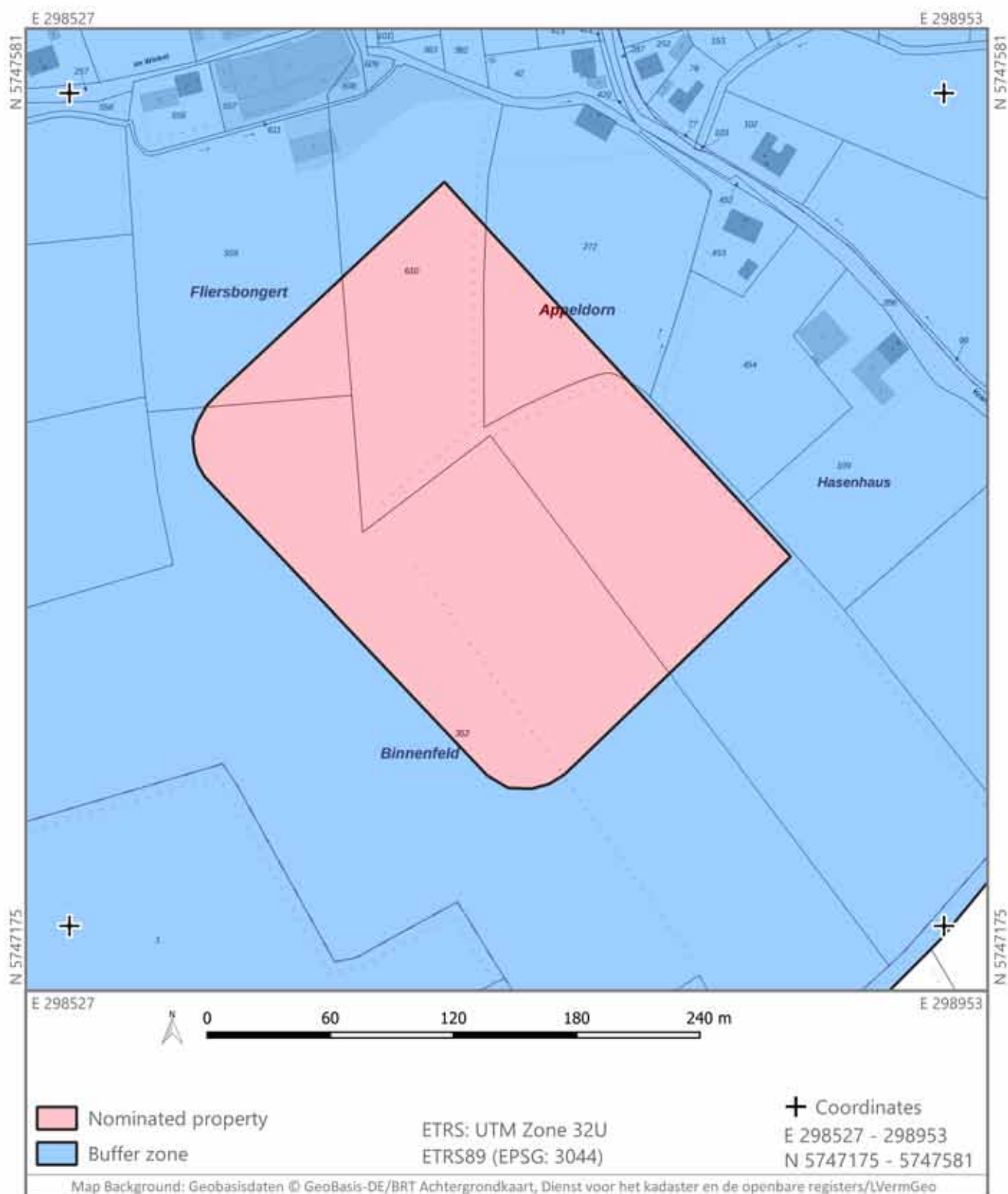
## 20 - Kleve-Keeken







## 20 - Kleve-Keeken



## COMPONENT PART 20 KLEVE-KEEKEN

Fort or semi-permanent camp

id	State Party	Federal state	Municipality	Coordinates central point
20	Germany	North Rhine-Westphalia	Kleve	E 6°4'41" N 51°50'28"

	Area in ha	Ownership
Component part	4.52	Private
Buffer zone	374.71	-

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Kleve) EU bird direction guideline (EU-Vogelschutzgebiet 'Unterer Niederrhein')	

### Brief description

No internal structures (indicating the use of tents or barracks) of the semi-permanent camp or fort are known as yet. It has two parallel ditches some 1.5 m in width indicating a longer occupation period than overnight marching camps which usually have only one ditch.

The site is situated on a slight elevation on a floodplain terrace, directly west of an old course of the river Rhine and next to the bifurcation of the Rhine and the Waal. It was positioned opposite the fort of Herwen-De Bijland ►19 and its function may have been to control and protect river transport at this strategic point. The camp or fort was first discovered in 2016 by aerial photography. The western side is some 240 m in length. The eastern side has not yet been detected. It measures at least 150 m so the camp encompasses an area of at least 3.6 ha. It is thought that the camp could have occupied an area up to 8.5 ha in size. No information on the chronology of the camp is currently available.

### Attributes and values

The military site of Keeken, positioned to the south of the bifurcation of the Rhine and the Waal, must have played a major role in controlling the river at this vital strategic point. It probably acted as a counterpart of De Bijland ►19, which was positioned downstream of the bifurcation, between the Rhine and the Waal branches. Fortification with two ditches instead of the usual one suggests a longer occupation than an overnight marching camp, providing further evidence of its military importance, at least at a specific point in time. Only one other example of such a semi-permanent camp on the Lower German Limes is known so far (►22 Till, Lager A).



### Integrity

Wholeness	Good. Even though it has not so far been possible to determine the entire extent of the camp, it is highly probable that the entire site has been preserved.
Intactness	Good. The aerial photographs show that the ditches, 1.5 m in width, are mostly well preserved.
Exposure to threats	Minor. The area is mainly used as meadow or farm land.

### Authenticity

Form and design	Unaffected. The site was not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. The fill of the ditches is preserved over several hundred metres.
Location and setting	Fair. Even if there is now no view to the bifurcation of the Rhine and the Waal which now run further north, the strategic position in the open landscape is apparent.

### Buffer zone

The buffer zone is projected to include the bifurcation of the rivers Rhine and Waal in Roman times and any surviving remains of the groyne which was once positioned there. The buffer zone is therefore connected with the buffer zone of Herwen-De Bijland ► 19.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential development	Minor	The area is used for agriculture. The component part is protected against changes or modifications in use by the land-use plan.
(i) Agriculture: ploughing	Minor	Deep ploughing might affect archaeological remains, so careful monitoring is planned.

### Presentation

None

### Community involvement

Volunteers give on-site support through field surveys.  
Planned interpretation at the existing info centre 'De Gelderse Poort' in Keeken.

### Ancient sources

Not mentioned in written sources.

### Further details

#### Main building phase

unknown.

#### Main research activities

2016 discovered on aerial photographs

#### Garrisons

unknown (several cohorts and cavalry units?)

#### Literature

unpublished report 2019.

Fig. 172 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 173 Cropmarks of the NW corner of the fort at Keeken from 2014.

Fig. 174 Course of the defensive ditches of the fort at Keeken drawn from several aerial images.

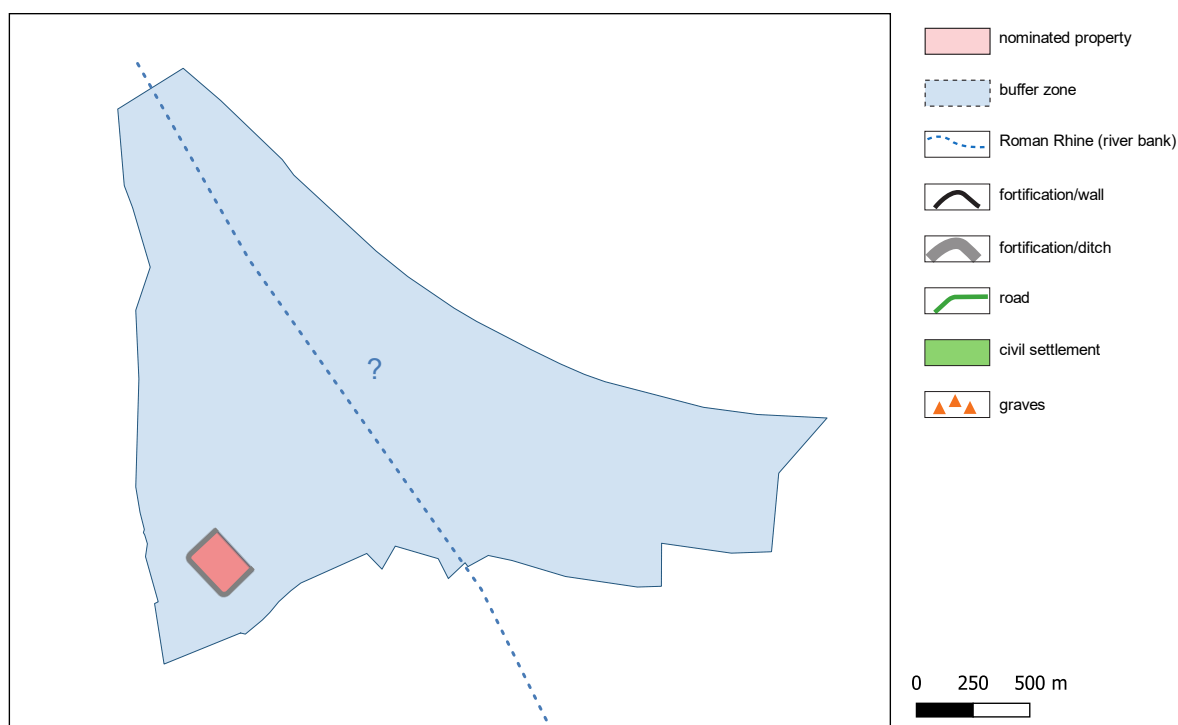


Fig. 172





Fig. 173

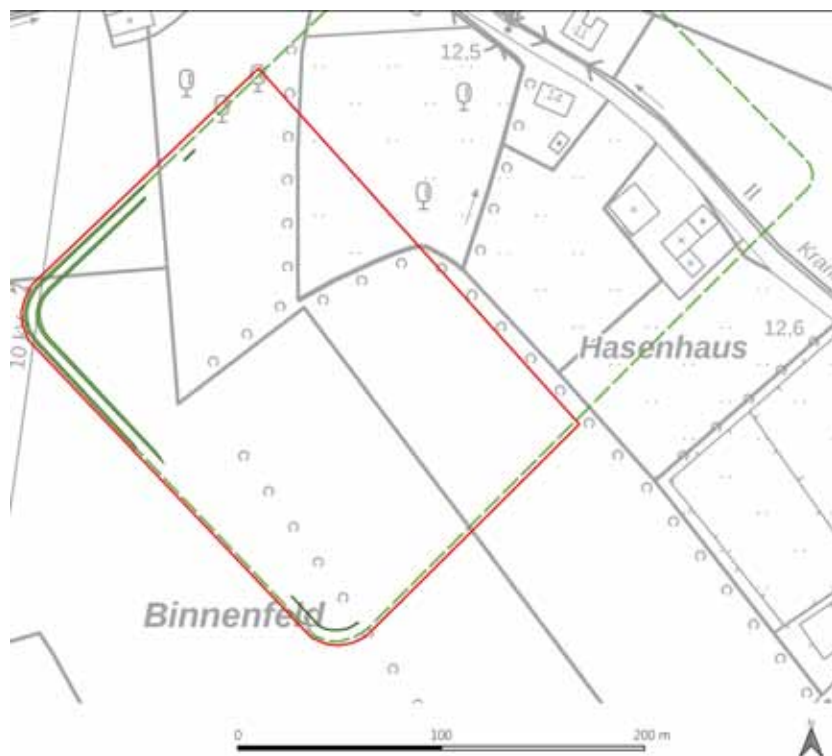


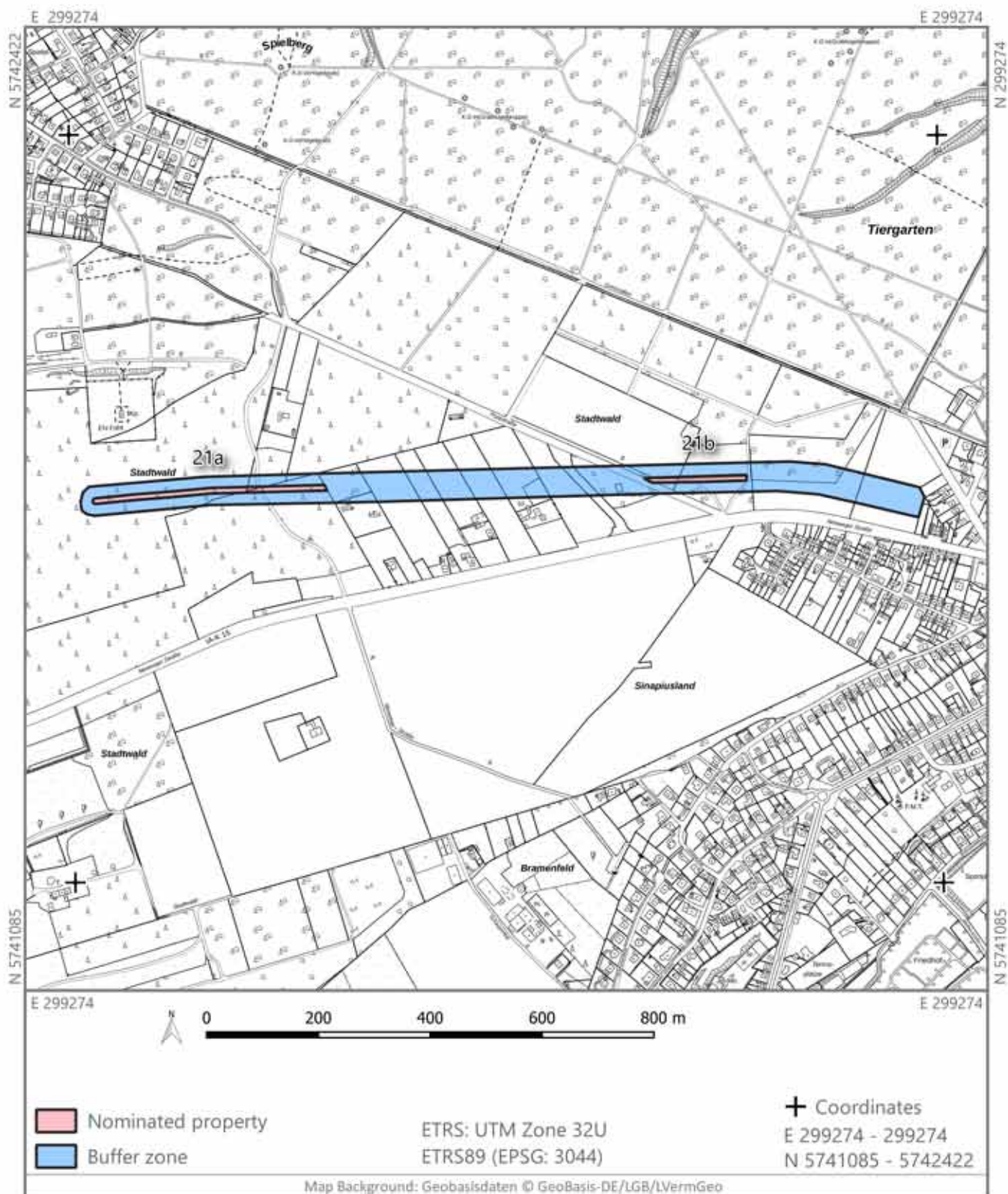
Fig. 174







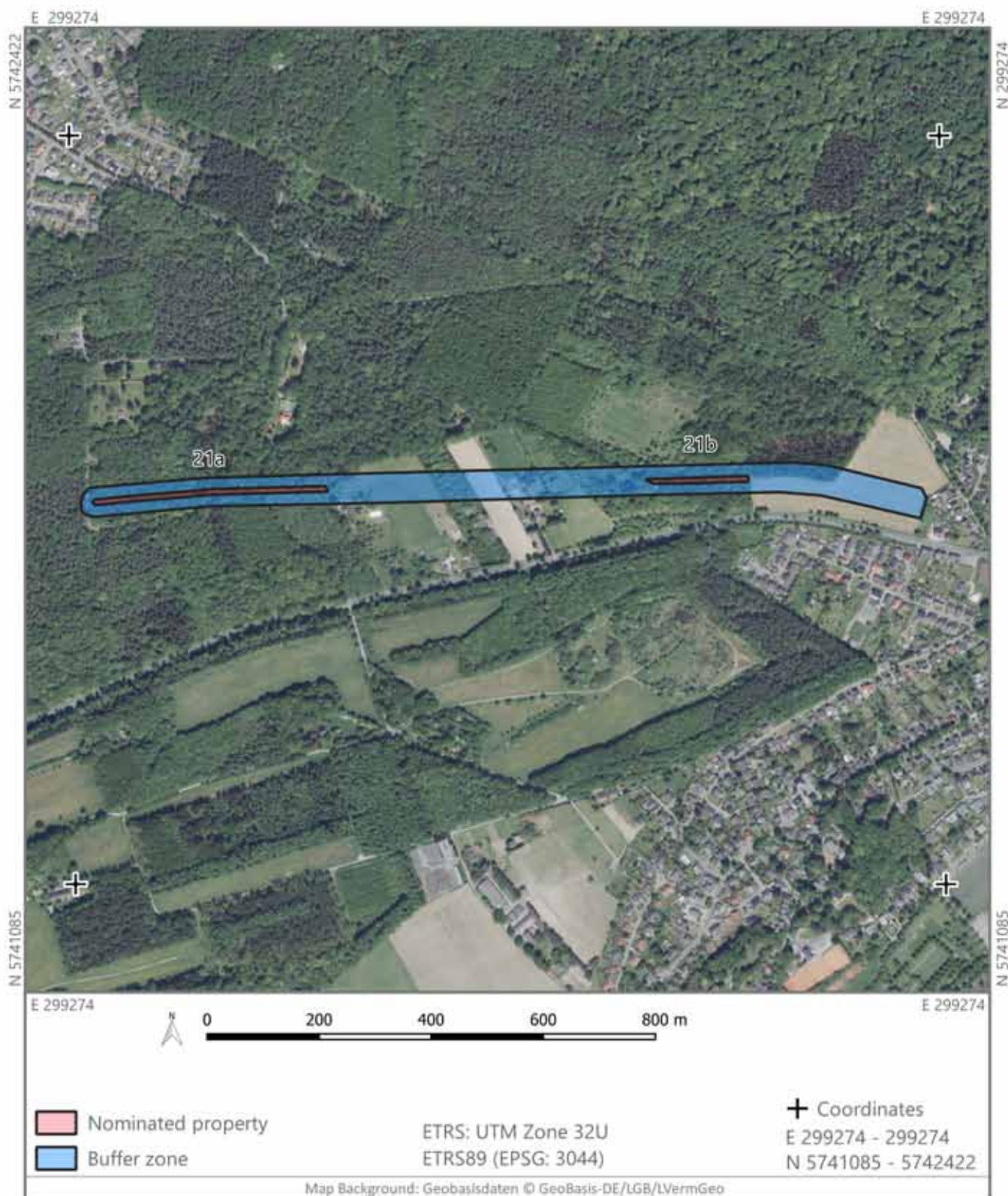
## 21 - Kleve-Reichswald







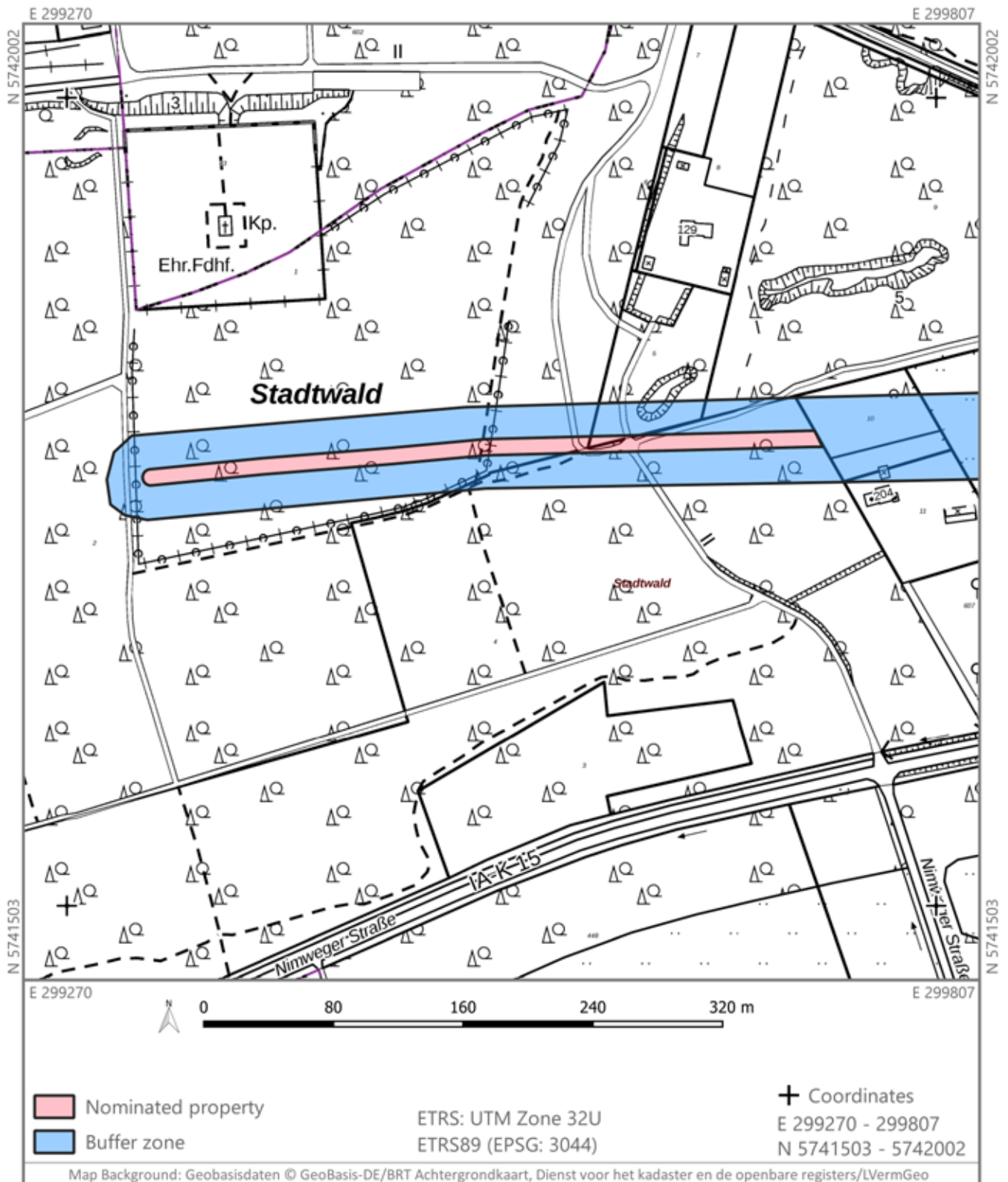
## 21 - Kleve-Reichswald





21a - West

## 21 - Kleve-Reichswald

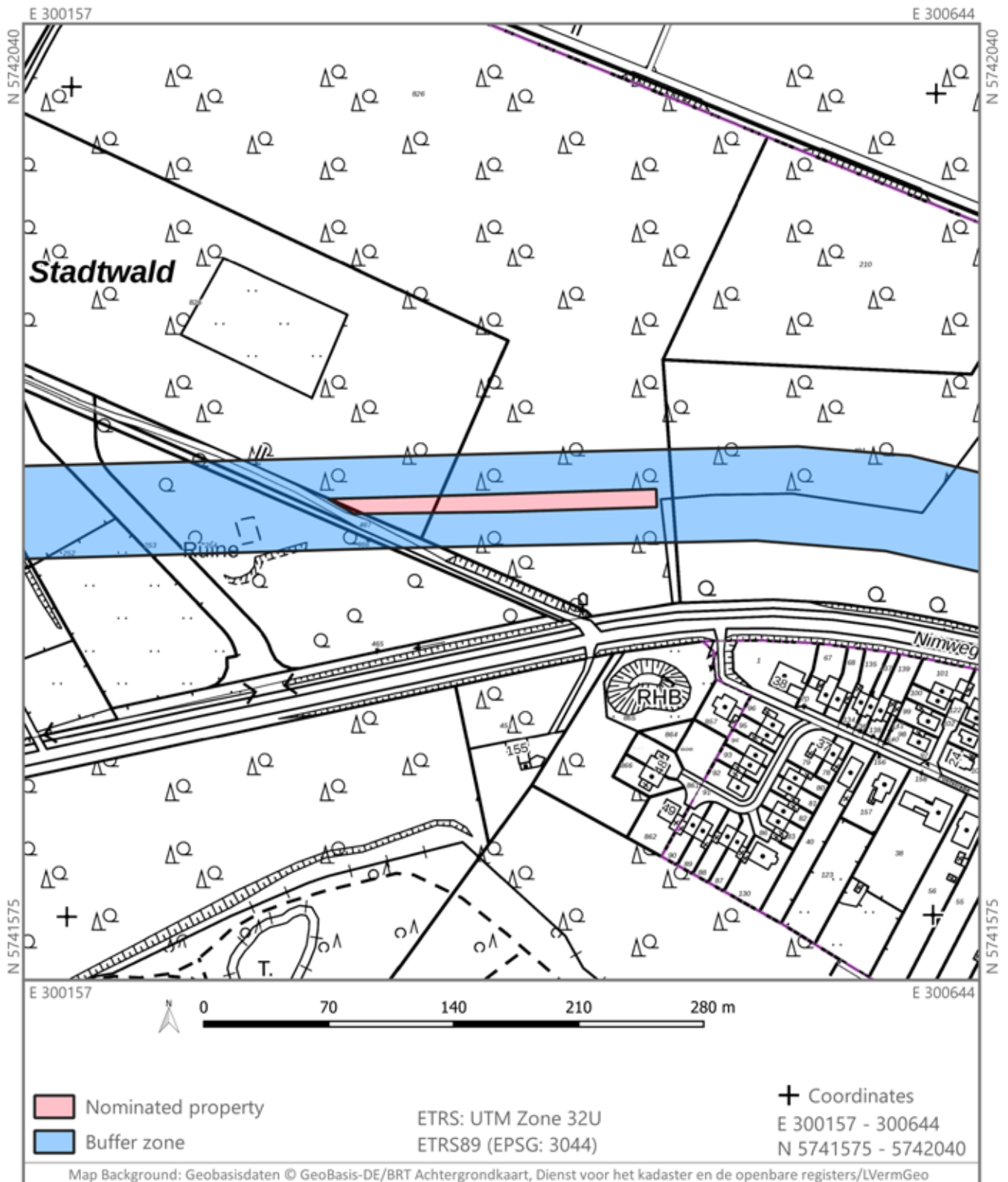






21b - East

## 21 - Kleve-Reichswald



## CLUSTER 21 KLEVE-REICHSWALD

Limes road

Id	State Party	Federal state	Municipality
21	Germany	North Rhine-Westphalia	Kleve

### Brief description

Two component parts represent a well-preserved section of the Limes road between Till ►22 and Nijmegen ►14–16. The road runs in an east-west direction along the ice-pushed ridge at Kleve. Traces of a 7 m-wide road embankment have been recorded by LiDAR. The embankment still has a height of c. 0.5 m. Two stretches are recorded, measuring 410 m (western part) and 175 m (eastern part). A stretch of 570 m in between has not been preserved above ground. Recent excavations revealed that the road had a width of approx. 12–15 m including the road ditches. The embankment is formed of several layers of compacted gravel.

The date of the Limes road in this section is not yet known. It may have served as the major military road from the beginning of the Roman occupation in the 2<sup>nd</sup> decade BC until the end of the Lower German Limes in the 5<sup>th</sup> century AD.

### Attributes and values

The section of the Limes road in the Reichswald is the best-preserved stretch of the Limes road in the German part of the Lower German Limes. It provides visible testimony to Rome's desire to connect its frontier outposts with a highly developed road system. The section in the Reichswald is an important example of Roman road construction using several layers of compacted gravel, complementing the well preserved timber construction technique used for the Limes road near Utrecht ►7.

### Integrity

Wholeness	Good. The nominated property encompasses the only two known sections of preserved road embankments on the Limes road.
Intactness	Good. The road is preserved above ground. The two component parts of the Limes road represent a complete picture of a Roman road with accompanying ditches and compact gravel layers. A small test excavation was carried out on this element; the rest is untouched.
Exposure to threats	Minimal. The two component parts are located in forest and are well protected.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. A small test excavation proved that the structure of the road is in an almost complete state. The road ditches are also preserved. The elements in forest have only degraded naturally since Roman times.
Location and setting	Affected. Today the Limes road runs through forest and its course is no longer visible as a feature in an open landscape as it was in Roman times.

### Buffer zone

The buffer zone encloses and connects the two component parts. It also includes a further stretch of the road to the east, where its course is suggested by stretches of gravel in the top soil, indicating that the road is not preserved in situ here.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Forestry	Minor	Sustainable forestry management with minimal ground disturbance in accordance with Federal Forestry Act, Federal Soil Conservation Law and Monument Protection Law of North Rhine-Westphalia.

### Presentation

None

### Community involvement

None

### Ancient sources

None

### Further Details

#### Main building phase

1<sup>st</sup> century BC – 5<sup>th</sup> century AD

#### Main research activities

2015 excavation trench proving Roman dating

#### Garrisons

-

#### Literature

Berkel/Obladen-Kauder 2016.

Fig. 175 Digital terrain model based on LiDAR scan of the roman road embankment at Keeken-Reichswald.

Fig. 176 Cross-section of a Roman road near Kleve-Reichswald with the different layers of its substructure clearly visible.



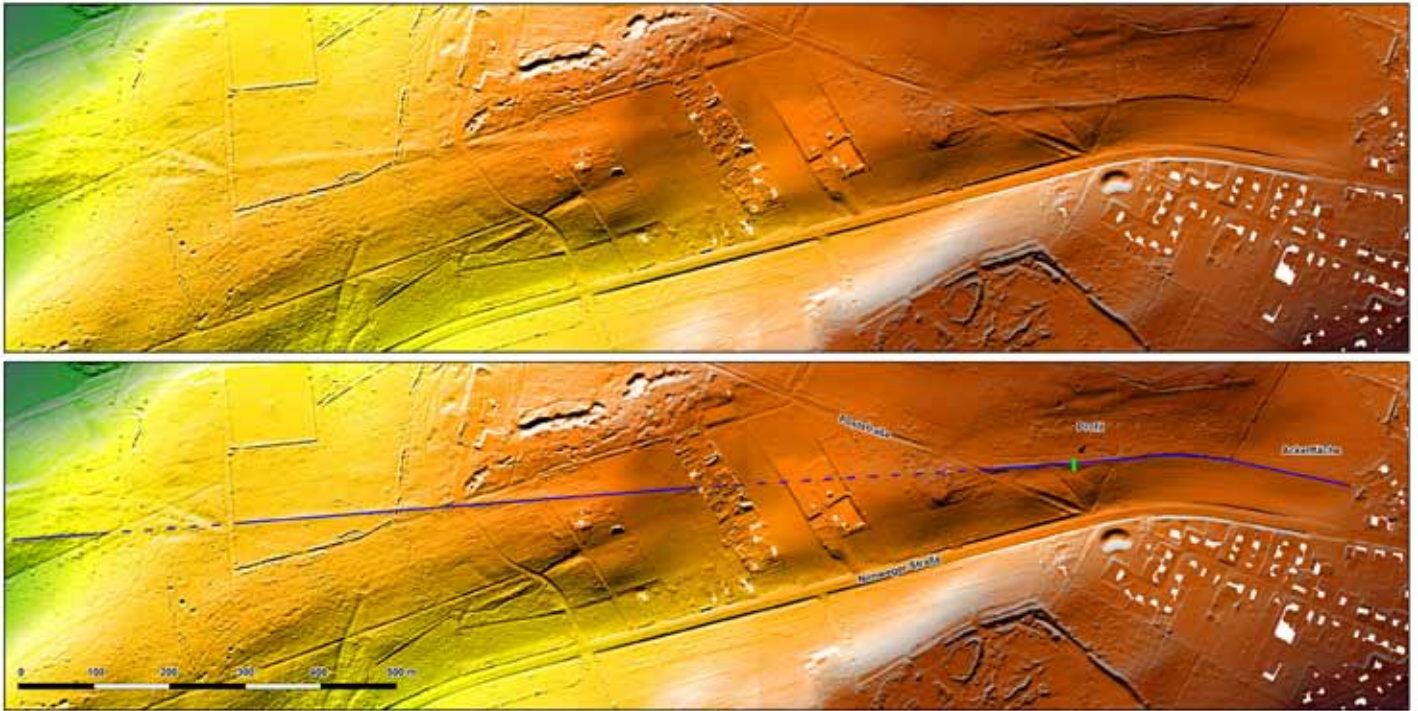


Fig. 175

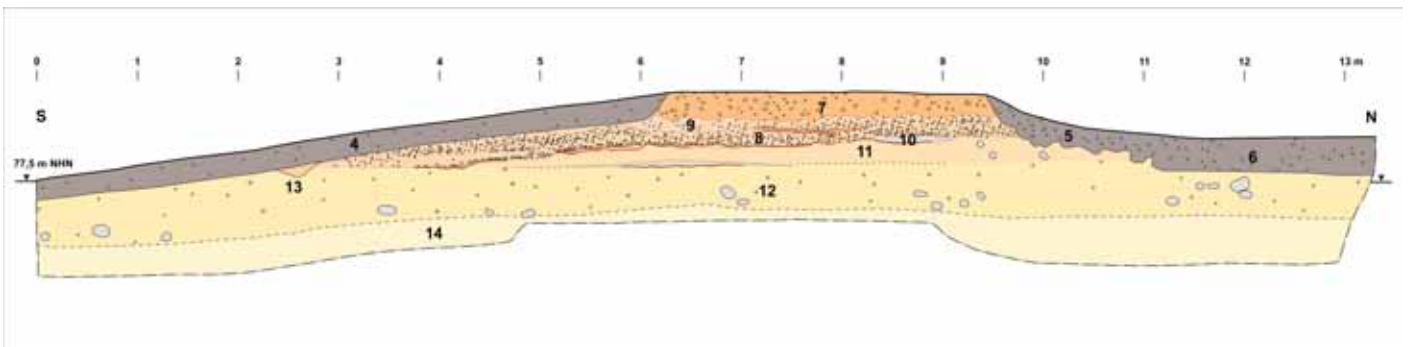


Fig. 176



## COMPONENT PART 21A KLEVE-REICHSWALD | WEST

Limes road

Id	State Party	Federal state	Municipality	Coordinates central point
21a	Germany	North Rhine-Westphalia	Kleve	E 6°5'35" N 51°47'28"

	Area in ha	Ownership
Component part	0.42	Private, public
Buffer zone	7.31 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Kleve)	
	Landscape protection area (Landschaftsschutzgebiet 'Waldgebiet des Tiergartenwaldes')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

See the text for the cluster.

### Integrity

See the text for the cluster.

### Authenticity

See the text for the cluster.

### Buffer zone

See the text for the cluster.



**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

None

**Community involvement**

None

**Ancient sources**

None

**Further Details****Main building phase**

1<sup>st</sup> century BC – 5<sup>th</sup> century AD

**Main research activities**

2015 excavation trench proving Roman dating

**Garrisons**

-

**Literature**

Berkel/Obladen-Kauder 2016.

## COMPONENT PART 21B KLEVE-REICHSWALD | EAST

Limes road

Id	State Party	Federal state	Municipality	Coordinates central point
21b	Germany	North Rhine-Westphalia	Kleve	E 6°6'22" N 51°47'28"

	Area in ha	Ownership
Component part	0.17	Private, public
Buffer zone	7.31 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Kleve) Landscape protection area (Landschaftsschutzgebiet 'Standortübungsplatz einschließlich der Umgebung westlich Kleve')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

See the text for the cluster.

### Integrity

See the text for the cluster.

### Authenticity

See the text for the cluster.

### Buffer zone

See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

None

**Community involvement**

None

**Ancient sources**

None

**Further Details****Main building phase**

1<sup>st</sup> century BC – 5<sup>th</sup> century AD

**Main research activities**

2015 excavation trench proving Roman dating

**Garrisons**

-

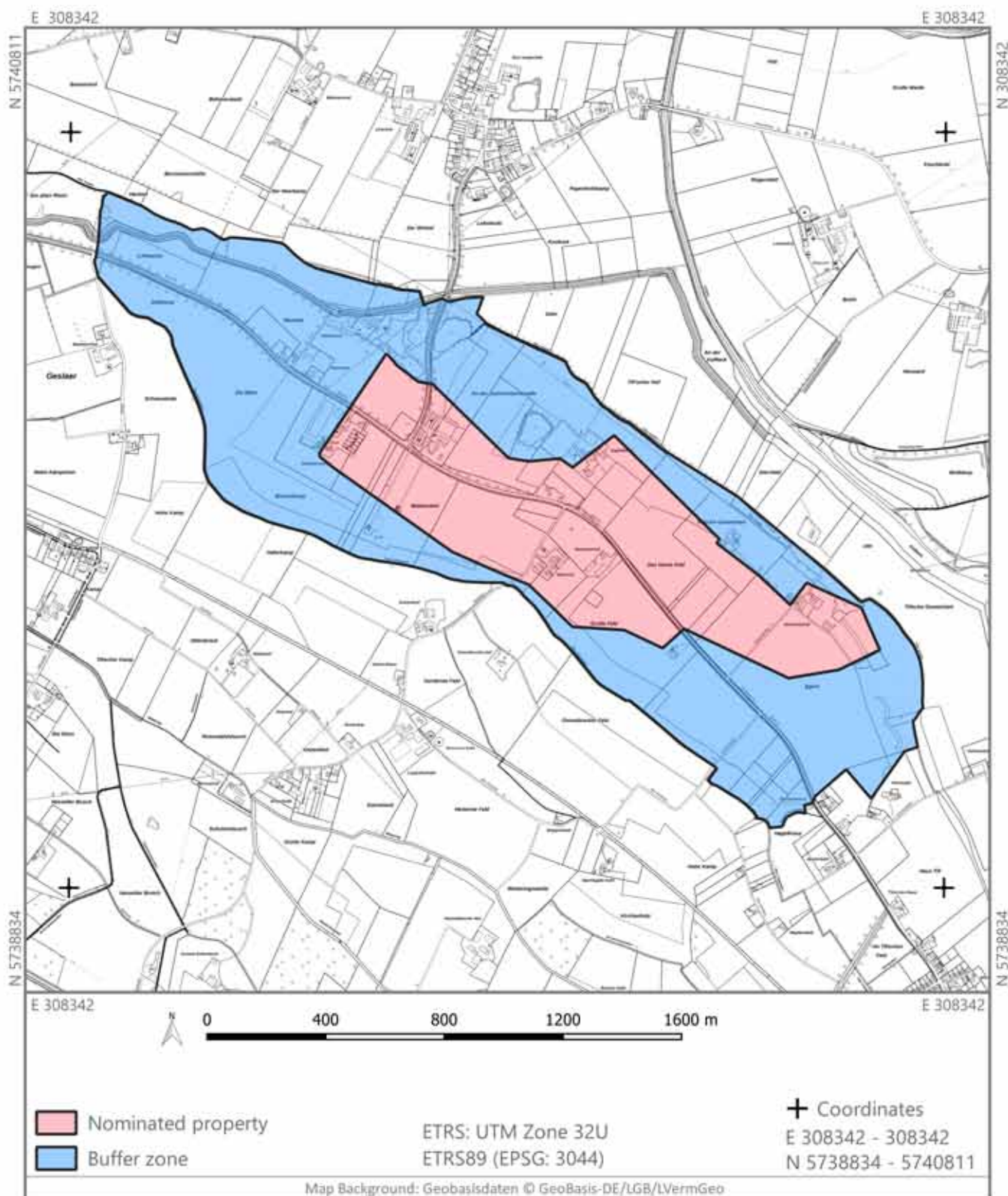
**Literature**

Berkel/Obladen-Kauder 2016.



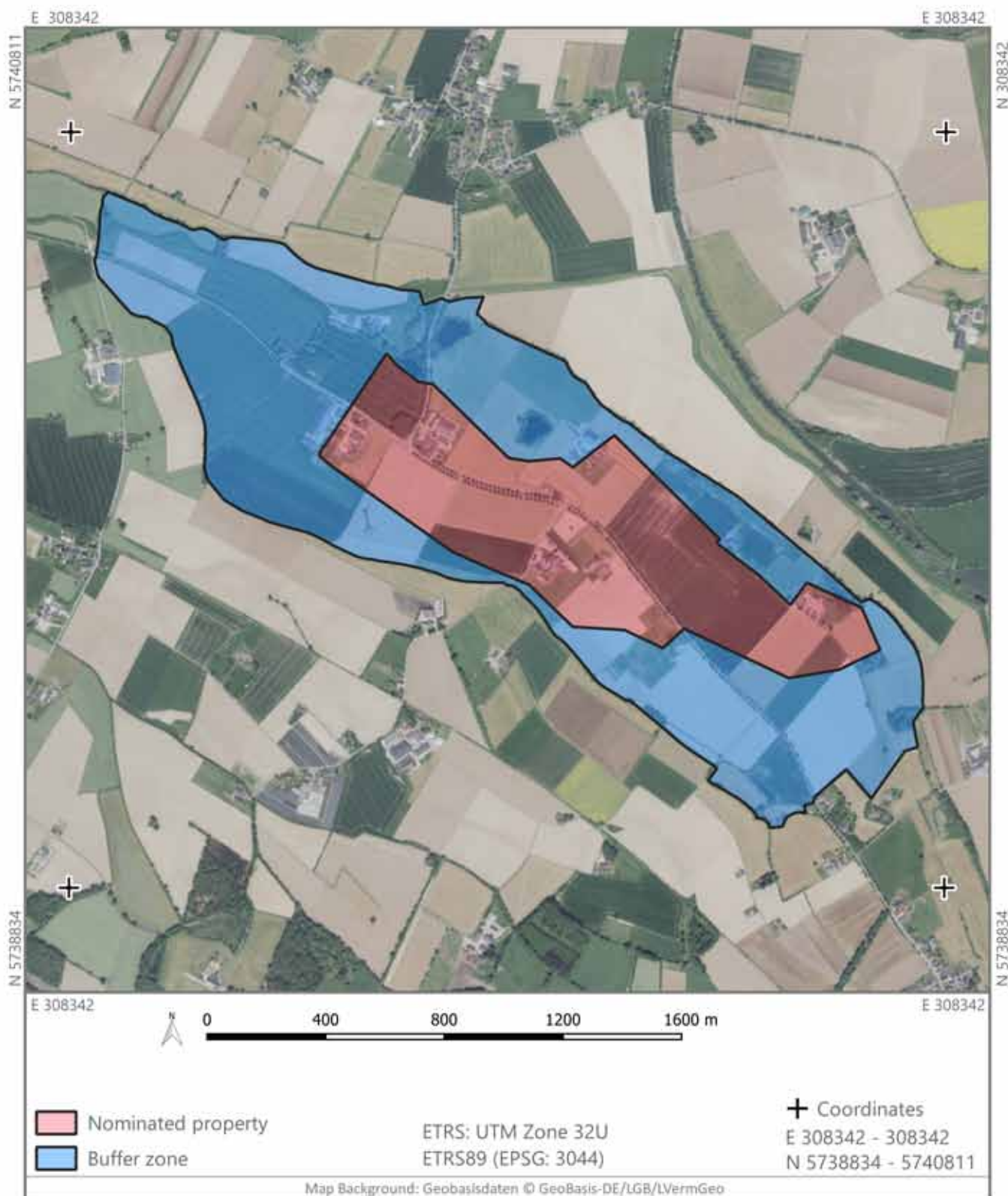


## 22 - Till





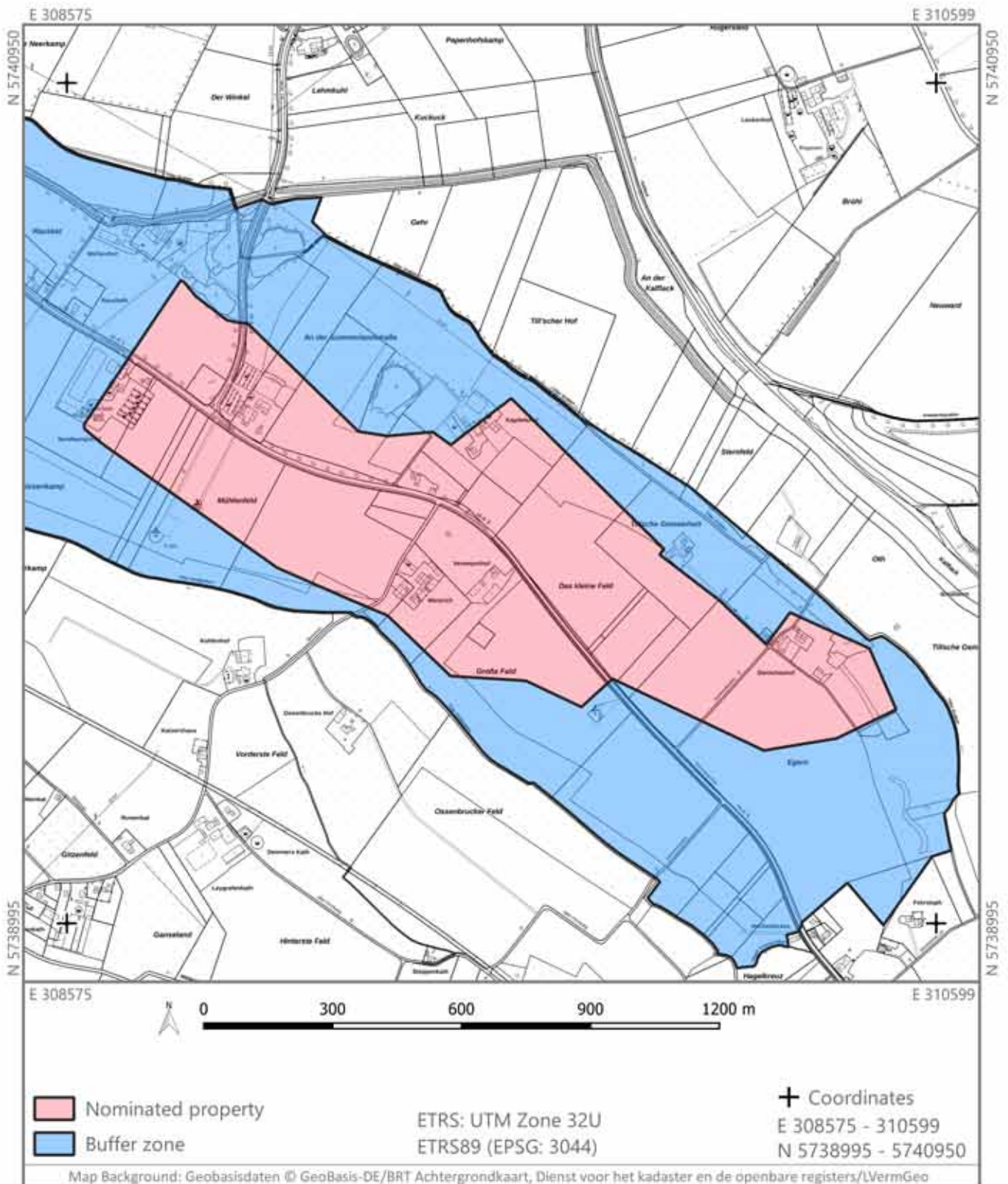
## 22 - Till







## 22 - Till



## COMPONENT PART 22

### TILL

Legionary fortress, fort, temporary camps, civil settlement.

Id	State Party	Federal state	Municipality	Coordinates central point
22	Germany	North Rhine-Westphalia	Bedburg-Hau	E 6°14'20" N 51°46'37"

	Area in ha	Ownership
Component part	75.84	Private, public, other
Buffer zone	150.98	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Bedburg-Hau)	

### Brief description

The nominated property of Till includes a range of eight military installations of different size and function. The installations range from temporary camps to a permanently occupied auxiliary fort. The whole area is fairly level and slightly raised above the flood plain. The area is defined by a small, early Holocene course of the Rhine to the west and by a larger pre-Roman course of the Rhine to the east, silted up in the Bronze age (Tiller Graben). The Roman course of the river Rhine, which probably ran several hundred metres further east, has been eroded by later courses of the river in the Middle Ages.

The earliest dated military installation is a camp at the Steincheshof measuring 184 × 180 m. A V-shaped ditch dating to the 1<sup>st</sup> century is the only known feature. Interior structures are not recorded. Its function as a temporary (marching?) camp or early permanent fort is unclear. It was succeeded by an auxiliary fort with an area of 2 ha (162 × 140 m), constructed in the centre of its predecessor. The fort was probably built early in the 70s AD. Excavations have revealed several building phases. It continued in use at least into the 180s AD. About 300 m NW, around the neighbouring Kapitelshof, five military installations of different size and function are recorded. The exact sequence has not so far been determined.

Through a combination of aerial photographic and geophysical data, it has been possible to determine that fortress B measured about 515 × 382 m (19.2 ha). It was fortified with up to five ditches and an earth-and-timber rampart which has been recorded in part. It is unclear whether the troops lived under canvas or whether interior buildings were constructed.

Fortress B was followed by camp A, which is defined by two or three ditches. It measures about 314 m from SE to NW and at least 414 m transversely. It encloses a minimum of 13.1 ha and overlaps the northern part of fortress B. Both installations were probably abandoned after several weeks or months of use in the second half of the 1<sup>st</sup> century AD. Aerial photographs show parts of defensive ditches of at least three further temporary camps of unknown size and dating. They may all have served as marching camps.



Further to the NW lies a very large marching camp next to the Sandkampshof. The south-west side of the camp measures 552 m, and over 380 m of the south-east side has been recorded. The camp, therefore, occupies an area of at least 25 ha but may have been larger. A series of pits is visible inside the camp in two locations; close to the perimeter and in the centre.

### Attributes and values

The range of different military installations in Till represents one of the most important military sites along the Lower German Limes. From a small temporary camp of 1 ha to the large marching camp of 25 ha a broad range of different sizes and functions of Roman camps is attested within this property. The military site of Till provides testimony to the wide range of designs of military bases, reflecting very different military purposes. They also provide important testimony to the very different sizes of troop units operating in this landscape, ranging from small units of cohort strength with a few hundred men to the presence of almost the whole army of Lower Germany, comprising several thousand soldiers, horses and large baggage trains, brought together in one camp. The placing of a fort, a fortress and so many temporary camps on this narrow flood free ridge between the river Rhine in the east and former, pre-Roman river channels in other directions illustrates the careful selection by Roman army staff of strategically important points to locate their troops.

### Integrity

Wholness	Very good. The entire layouts of most of these camps are well documented. Only the north side of the large marching camp at Sandkampshof has not so far been determined.
Intactness	Good. The whole area is mostly undisturbed by buildings and infrastructure. Almost all knowledge has been acquired by non-invasive methods, so only very small excavations in very few locations have affected the substance. Ditches and pits with their fills are very well preserved.
Exposure to threats	Minor. The component parts are located in agricultural areas with very little development.

### Authenticity

Form and design	Unaffected. The full extent of each of the camps, fortress and fort are almost completely preserved. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. The remains of the ditch fills, ovens and pits reflect different activities in and outside of the military installations. They are all well preserved under fairly thick alluvial layers.
Location and setting	Unaffected. The course of the Roman Rhine changed in mediaeval times. The modern flood dyke runs along almost the same line as the former Roma course, which helps understand the original connection between the military site and the Roman Rhine. The silted up pre-Roman Rhine courses to which the Roman installations were orientated are still distinct marshy channels today, giving an almost authentic character to the topography, representing the landscape as it was in Roman times.

## Buffer zone

The buffer zone is intended to ensure the coherence of the elements and to encompass the coherent topographical setting. The buffer zone also includes probable traces of a further small (practice?) camp, many undated but probably Roman crop marks, a ditch, probably belonging to a Roman road, as well as areas probably occupied by the vicus as suggested by geophysical surveys. The buffer zone therefore includes areas of further potential scientific value.

## Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Industrial development (farm buildings)	Minor	The area is used for agriculture. The component part is protected against transformation of use or further modifications by the land-use plan. In accordance with heritage law all building activities must be supervised.
(i) Agriculture: ploughing	Minor	Deep ploughing might affect archaeological remains, therefore careful monitoring is required.

## Presentation

None

## Community involvement

Not applicable

## Ancient sources

The site can probably be identified with Arenacum, an important military base and battlefield at the time of the Batavian revolt, mentioned by Tacitus (Hist. 5,20,1):

*'In fact the war was so far from being over that in a single day Civilis attacked the winter camps of the auxiliary infantry and cavalry and of the regular legions as well, at four several points, assailing the Tenth legion at Arenacum, the Second at Batavodurum, and the camp of the auxiliary foot and horse at Grinnes and Vada.'*

The site might also be identified with Arenatium in the *Tabula Peutingeriana* (Segm. II.4), a medieval copy of a Roman road map and with Harenatium in the *Itinerarium Antonini Augusti* (256 and 369), a Roman register of stations and distances along roads.

## Further Details

### Main building phases

Steincheshof: c. 70–180

Camps A and B: c. second half 1<sup>st</sup> century

### Main research activities

since 2010 aerial photography

2015, 2016 small scale excavation trenches

2017–2019 large scale geomagnetic survey

### Garrisons

unkown cohorts (equitata?) at Steincheshof;

unkown legion at fortress B (legio X gemina?);

*exercitus Germanicus inferior* at Sandkampshof

## Literature

Bödecker et al. 2018; Englert/Bödecker 2016; Bödecker et al. 2015b; Drechsler 2014; Brüggler et al. 2010.

Fig. 177 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 178 Interpretation of the geophysical survey of the auxiliary fort Till-Steincheshof.

Fig. 179 Results of the geophysical surveys carried out at Till. Corner of a large marching camp with a single ditch (a) and corner of a fortress with several ditches (b).

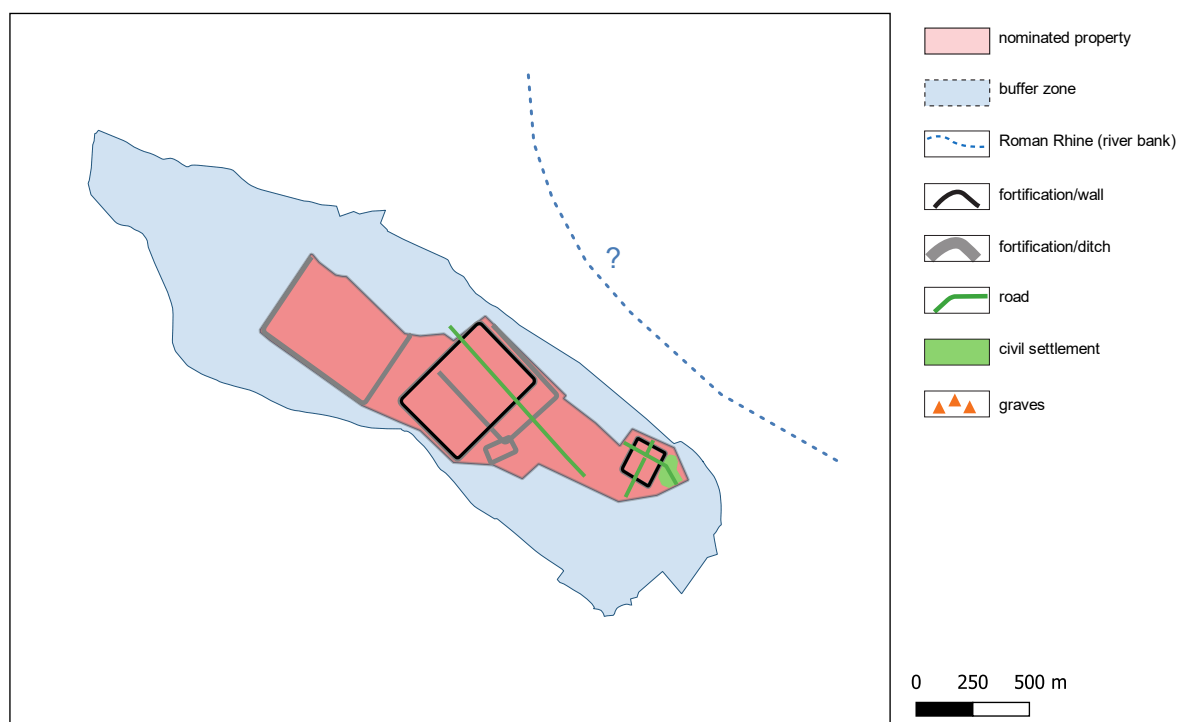


Fig. 177

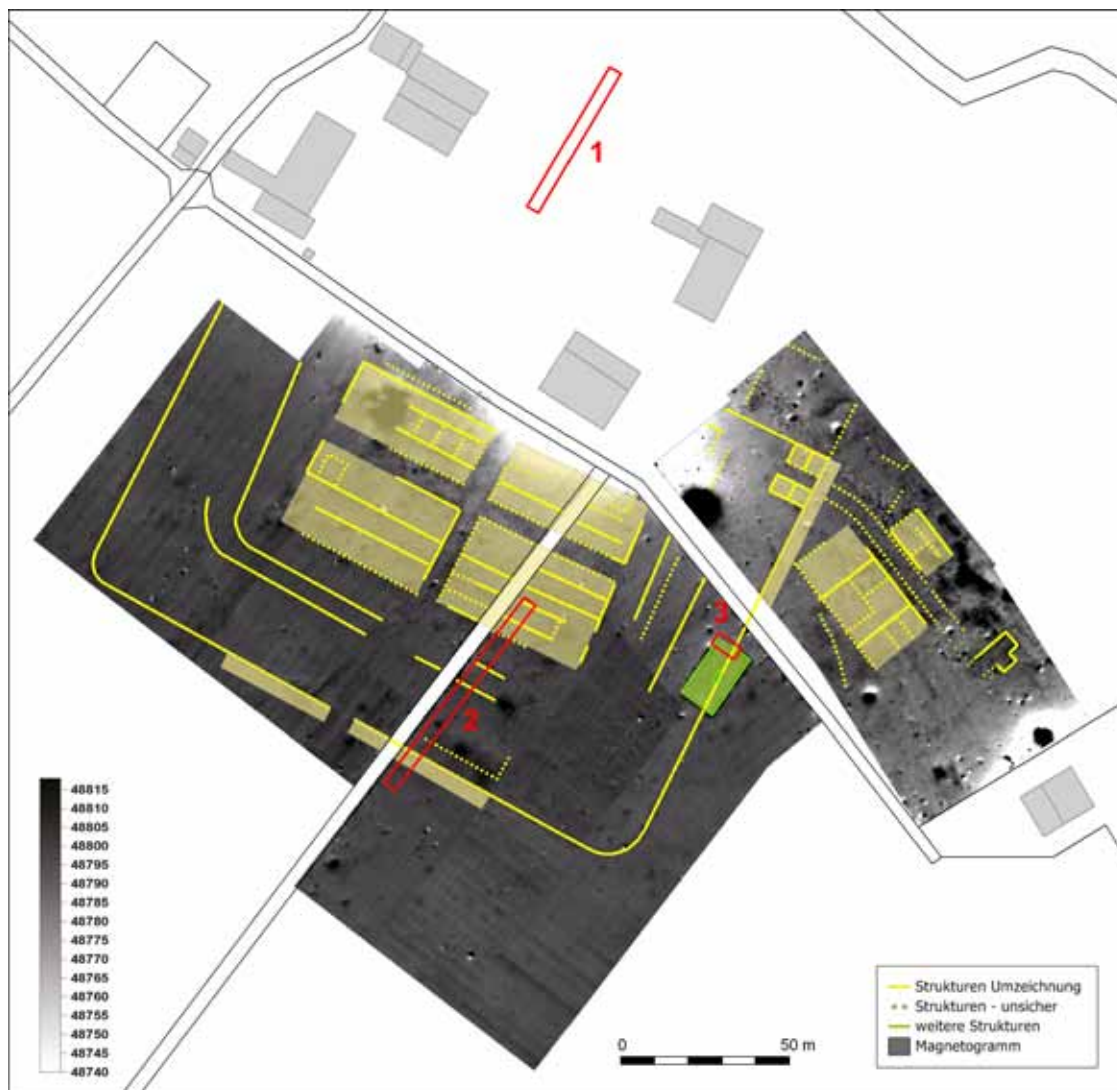


Fig. 178

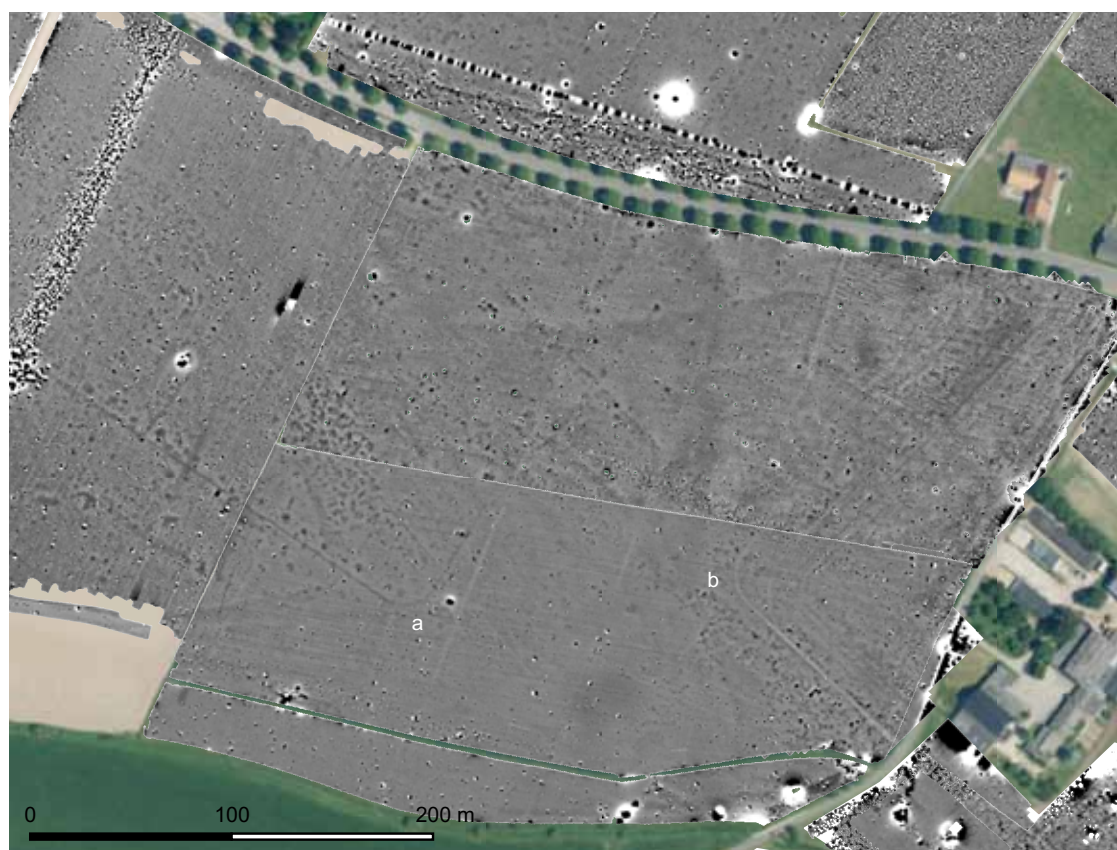
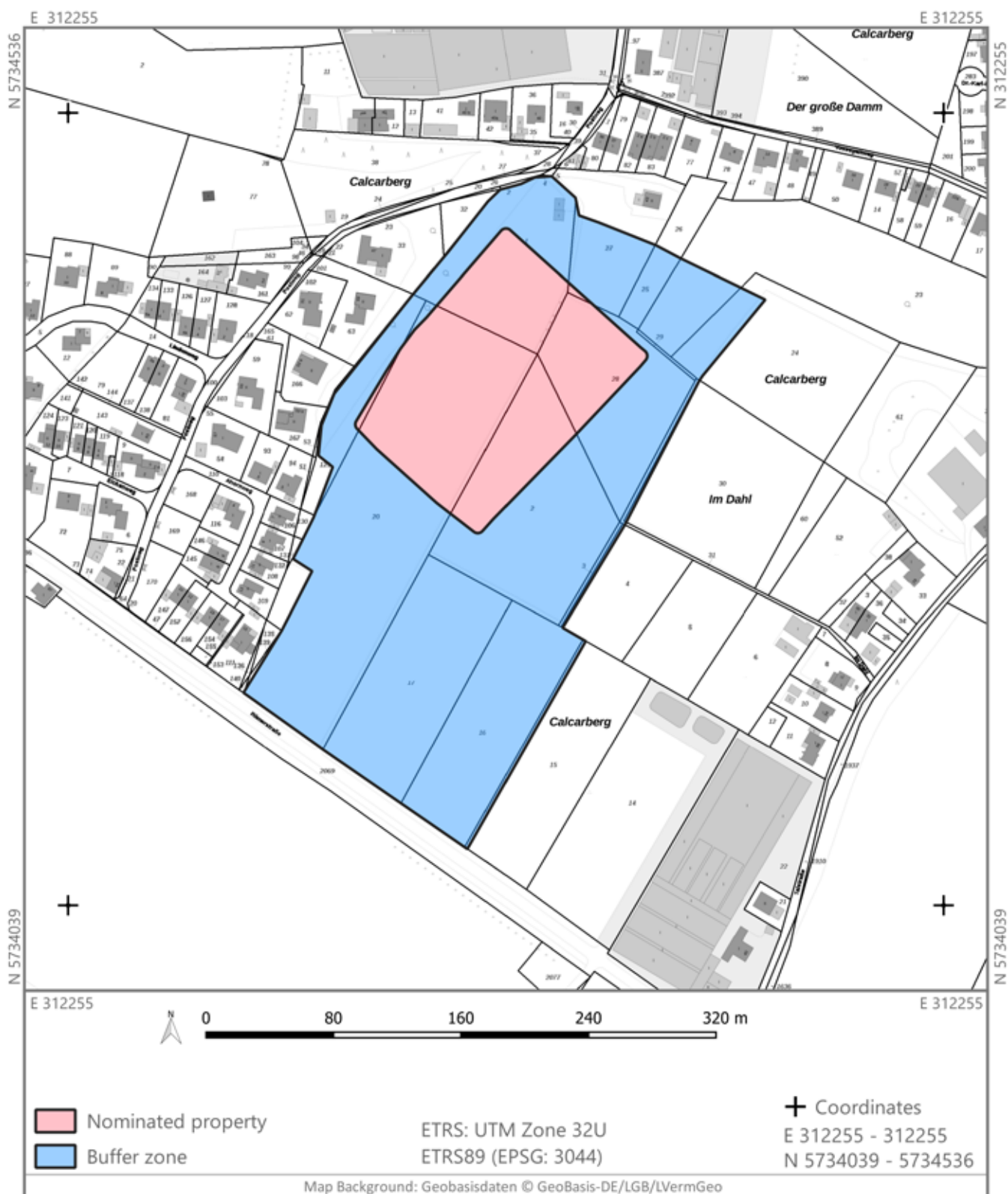


Fig. 179



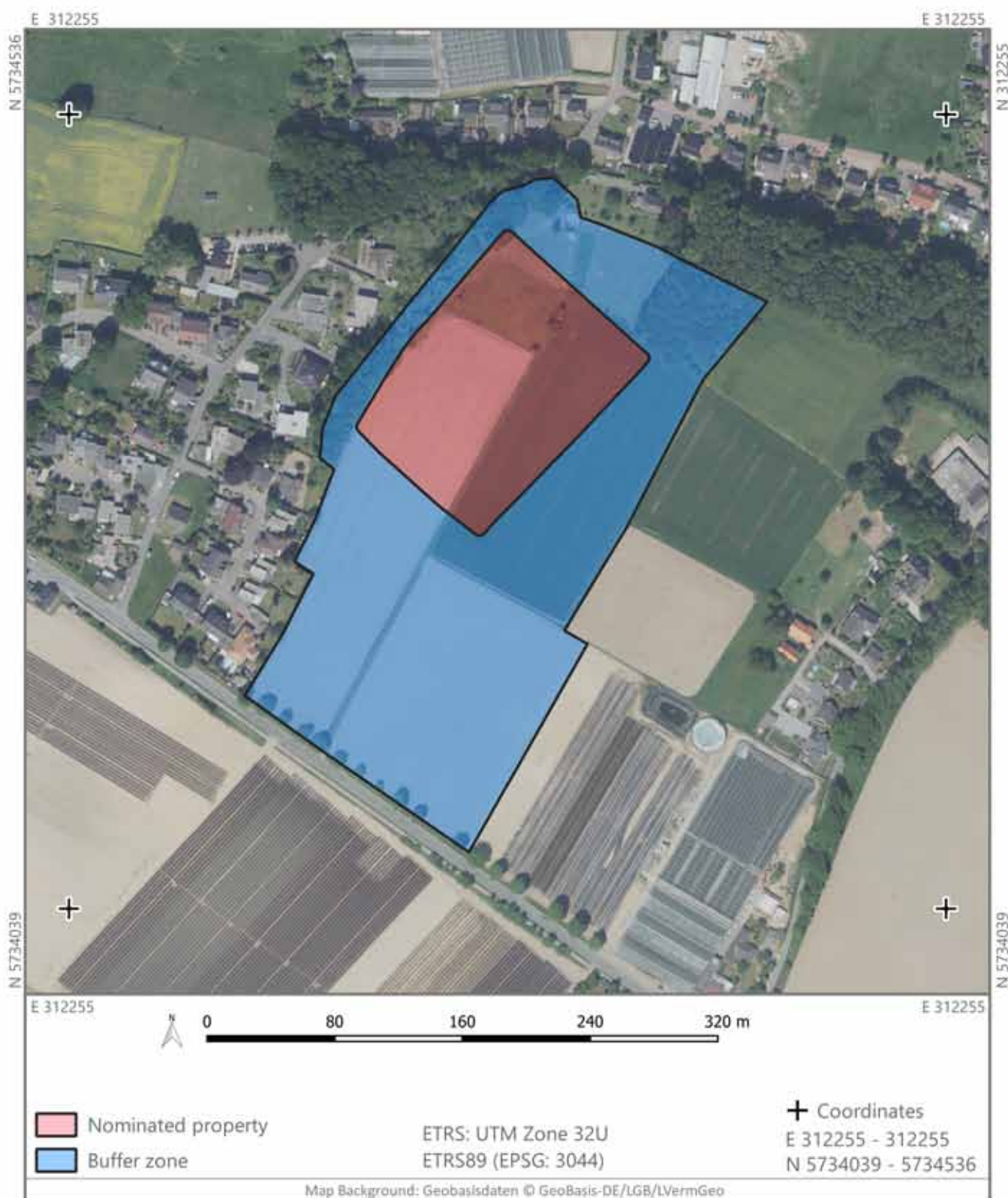


## 23 - Kalkar-Kalkarberg





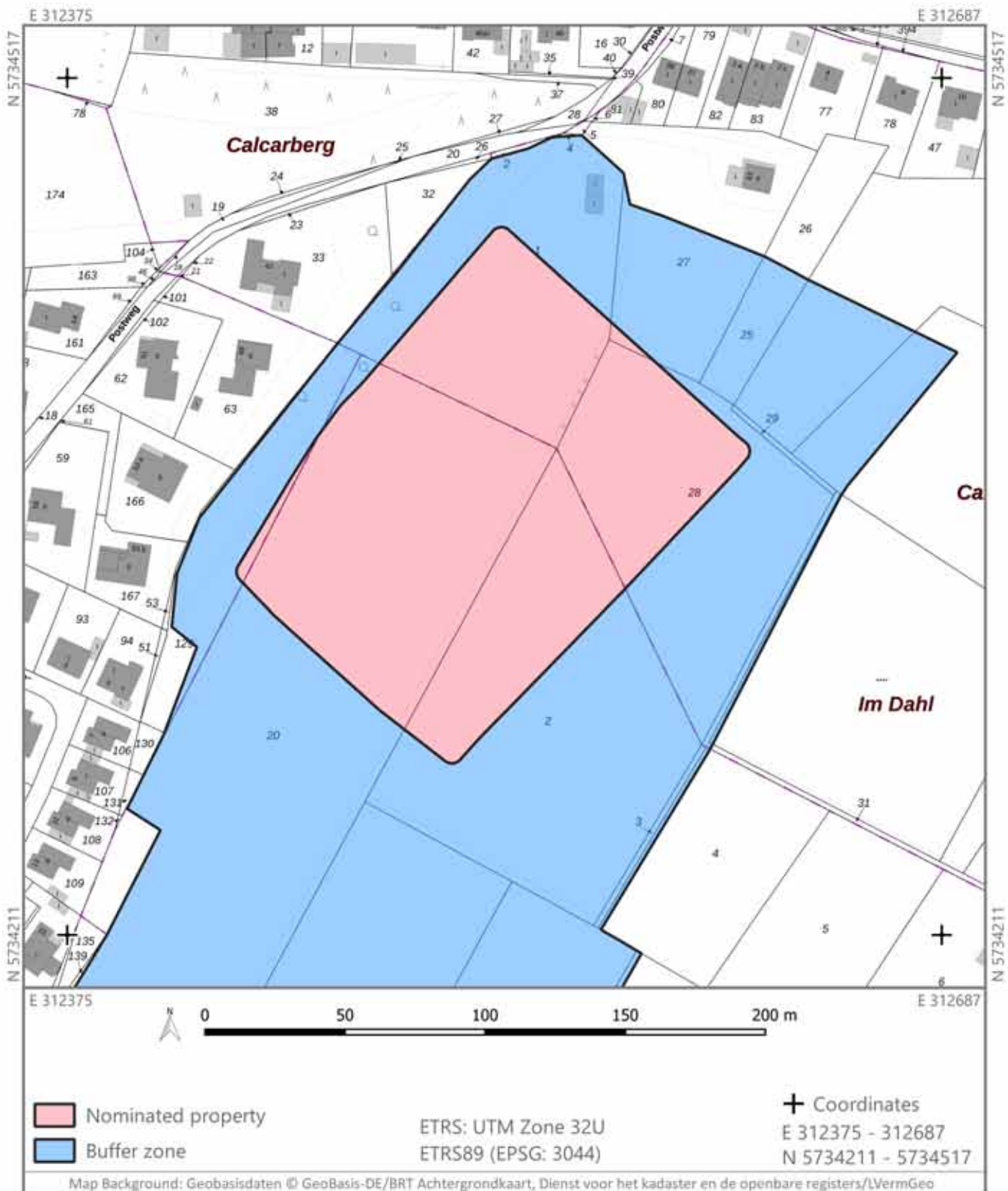
## 23 - Kalkar-Kalkarberg







## 23 - Kalkar-Kalkarberg



## COMPONENT PART 23 KALKAR-KALKARBERG

Sanctuary

Id	State Party	Federal state	Municipality	Coordinates central point
23	Germany	North Rhine-Westphalia	Kalkar	E 6°17'6" N 51°43'44"

	Area in ha	Ownership
Component part	1.83	Private, public
Buffer zone	5.05	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Kalkar) Partly landscape protection area (Landschaftsschutzgebiet 'Kermisdahl und Spoykanal')	

### Brief description

The sanctuary lies on the edge of an ice-pushed moraine with a wide field of visibility into the valley of the meandering Rhine to the east. The main road between Kalkar via Kleve-Reichswald to Nijmegen ran on this moraine and passed the sanctuary on its western side.

The sanctuary was enclosed by a *temenos* wall enclosing an area of 1.6 ha (150 × 110 m). In the centre of the sanctuary is a Gallo-Roman temple measuring 15 × 15 m. It is clearly smaller, but similar in construction to the temple at Elst ► 13, with a *cella* and a surrounding colonnade. Next to it there is another rectangular cult building of 14 × 8 m. At the back of the complex there is a residential building, which probably accommodated priests or pilgrims. Dedicatory inscriptions have been found, left by soldiers from Kalkar-Bornsches Feld ► 24 and legionaries from Xanten-Fürstenberg ► 28. The Roman sanctuary existed from the 1<sup>st</sup> to the 4<sup>th</sup> centuries. Below the temple a pre-Roman cult site was detected. It consisted of at least two ditches forming an irregular oval of around 65 × 70 m.

### Attributes and values

The sanctuary for the Germanic war goddess Vagdavercustis at the Kalkarberg is the only one that has been proven by epigraphic and archaeological evidence. Within the sacred area, many items of military equipment have been found by metal detector survey and excavation, providing a unique insight into the religious activities and ritual practices of soldiers from the cavalry unit stationed nearby at Burginatum and legionaries from *Vetera castra* over almost four centuries. The sanctuary is therefore of very great value in helping to understand the religious life of Roman soldiers of the Lower German army.



### Integrity

Wholness	Very good. The sanctuary is entirely included within the nominated property.
Intactness	Good. The area is not covered by buildings. Excavations have shown that the main features in the central part of the sanctuary are well preserved.
Exposure to threats	Minimal. The property is located in an agricultural area. The poor state of preservation in some parts of the area requires careful management. Illegal metal detector activity still occurs, but seems to threaten topsoil finds rather than in situ archaeology.

### Authenticity

Form and design	Unaffected. The full extent of each of the camps, fortress and fort are almost completely preserved. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. The remains of the ditch fills, ovens and pits reflect different activities in and outside of the military installations. They are all well preserved under fairly thick alluvial layers.
Location and setting	Unaffected. The course of the Roman Rhine changed in mediaeval times. The modern flood dyke runs along almost the same line as the former Roma course, which helps understand the original connection between the military site and the Roman Rhine. The silted up pre-Roman Rhine courses to which the Roman installations were orientated are still distinct marshy channels today, giving an almost authentic character to the topography, representing the landscape as it was in Roman times.

### Buffer zone

The buffer zone is intended to protect views over the surrounding landscape. Parts of a predecessor site may be located in this area and this also should therefore be protected.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Agriculture: ploughing	Minimal	The erosion map is used to check regularly whether there is a risk of erosion. Measures to reduce plough erosion are being pursued. Deep ploughing might affect archaeological remains, so careful monitoring is planned.
(i) Industrial development (nursery)	Minimal	The possible expansion and impacts of nursery (farming) companies are considered in spatial planning.
(i) Metal detecting	minor	Illegal excavation and metal detecting are prohibited by law, but cannot be ruled out.

**Presentation**

None

**Community involvement**

None

**Ancient sources**

Several Roman inscriptions on altars mention the worship of Vagdavercustis, a Germanic war goddess, by Roman soldiers from *Burginatum* and *Vetera castra*.

**Further Details****Main building phase**

c. 12 BC – late 4<sup>th</sup>/early 5<sup>th</sup> century AD

**Main research activities**

1980–2000 surface and metal detector surveys  
2000 geophysical survey and aerial photo interpretation  
2000–2009 excavations to prove further extent and status of preservation

**Garrisons**

-

**Literature**

Sarge/Bödecker 2014, Bödecker 2010; Obladen-Kauder/Willer 2007; Obladen-Kauder/Bödecker 2005; Obladen-Kauder 2003.

Fig. 180 Excavation plan of the roman sanctuary for Vagdavercustis.

Fig. 181 Selection of finds from the sanctuary Kalkar-Kalkarberg.

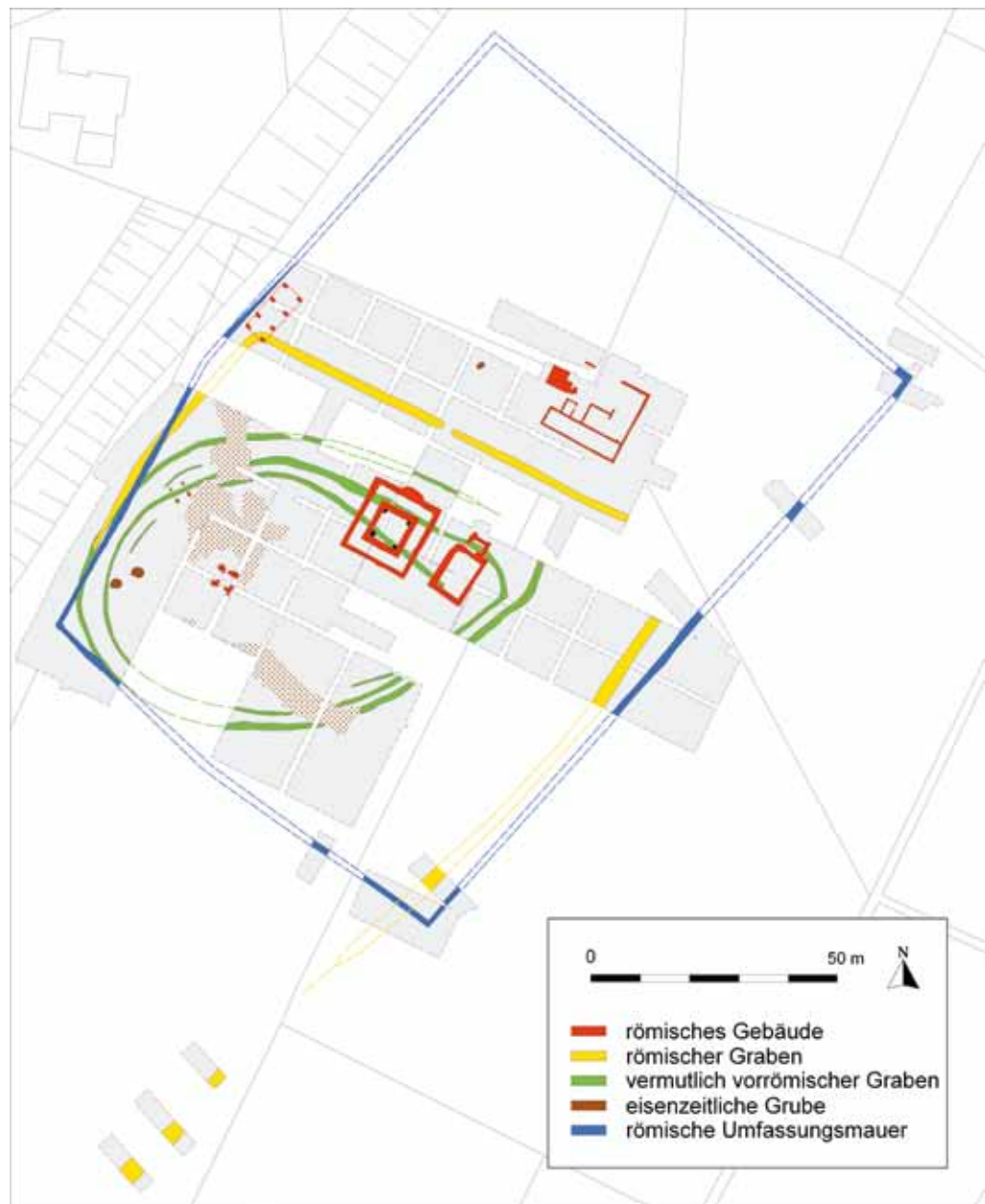


Fig. 180



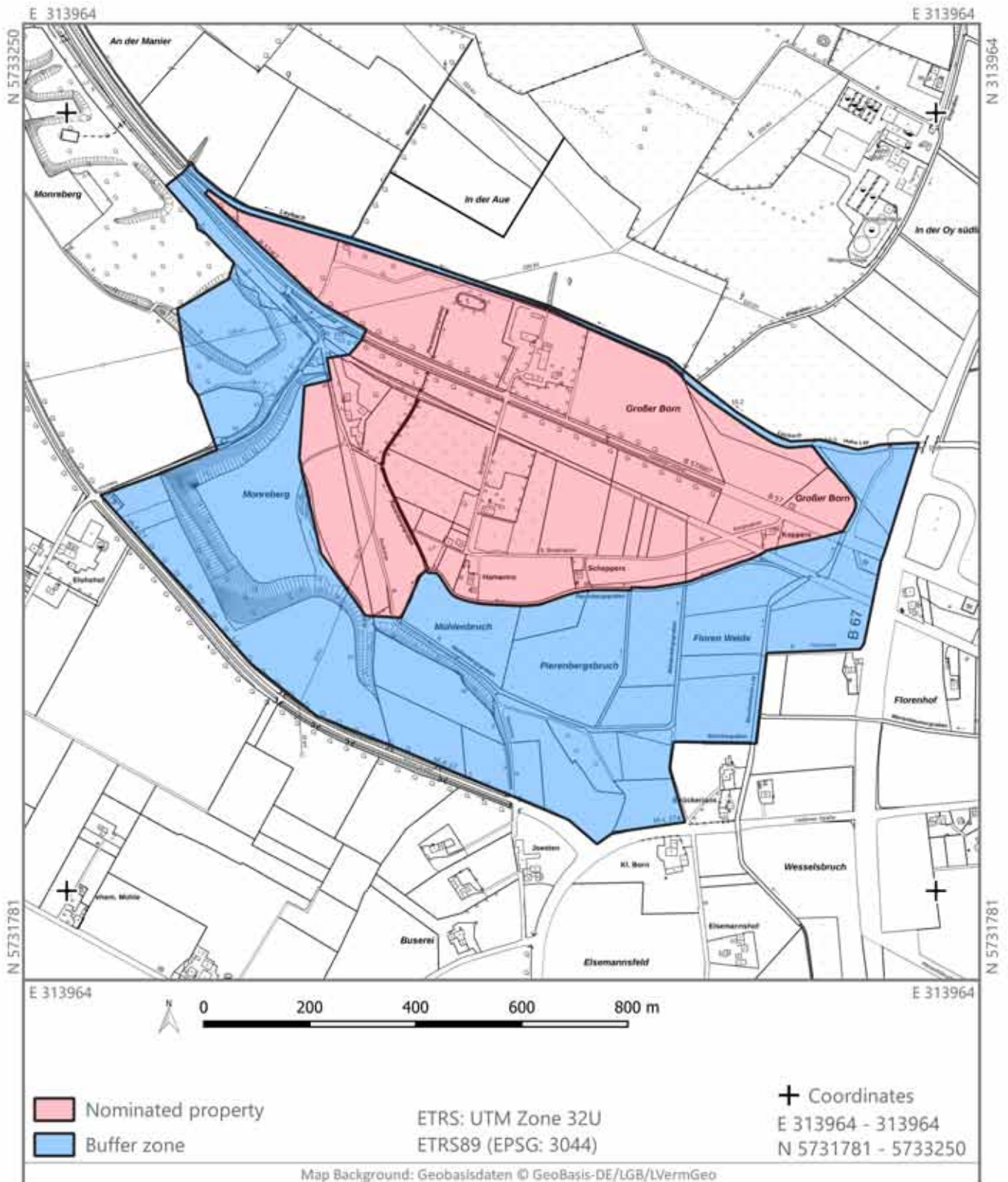
Fig. 181





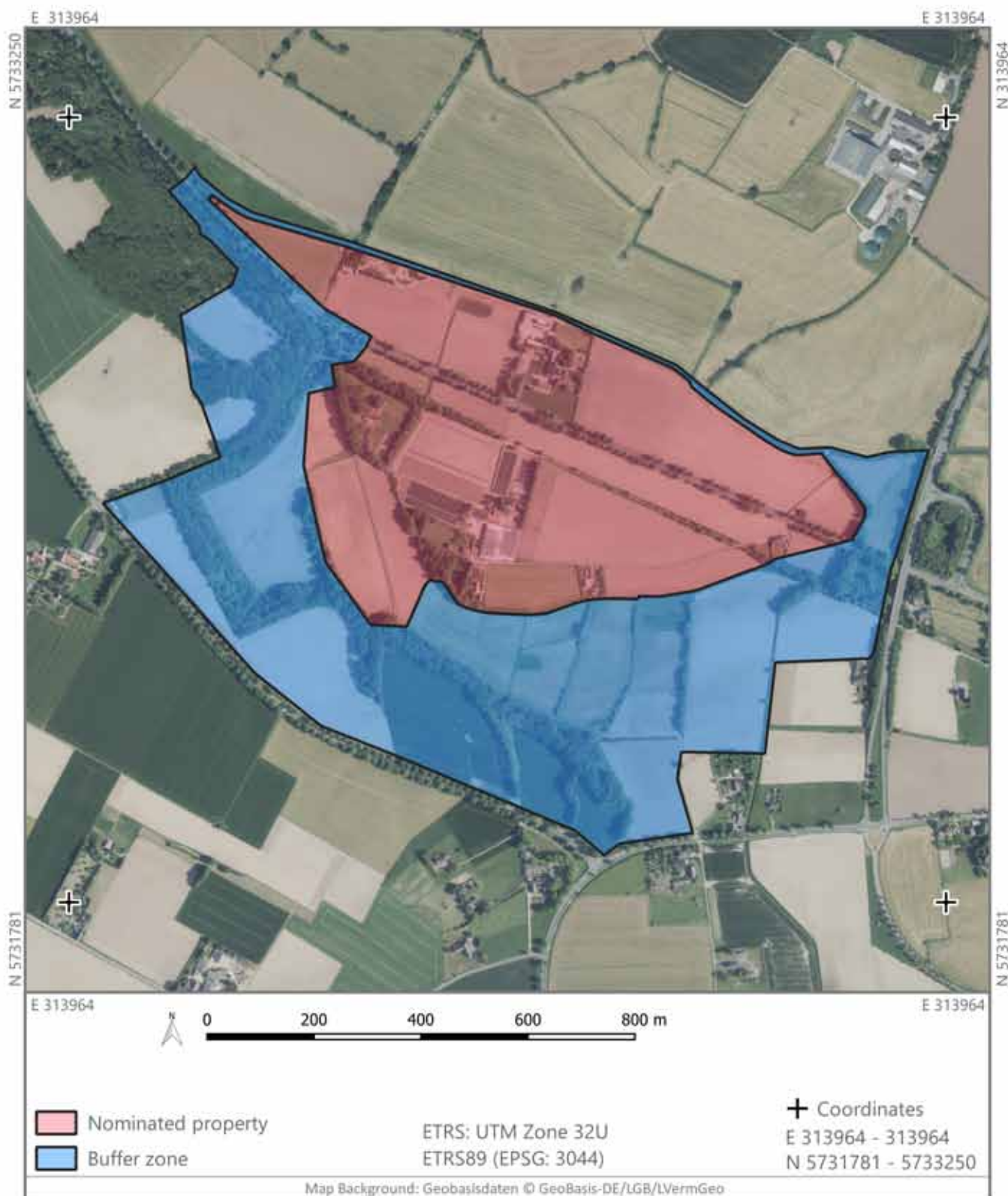


## 24 - Kalkar-Bornsches Feld





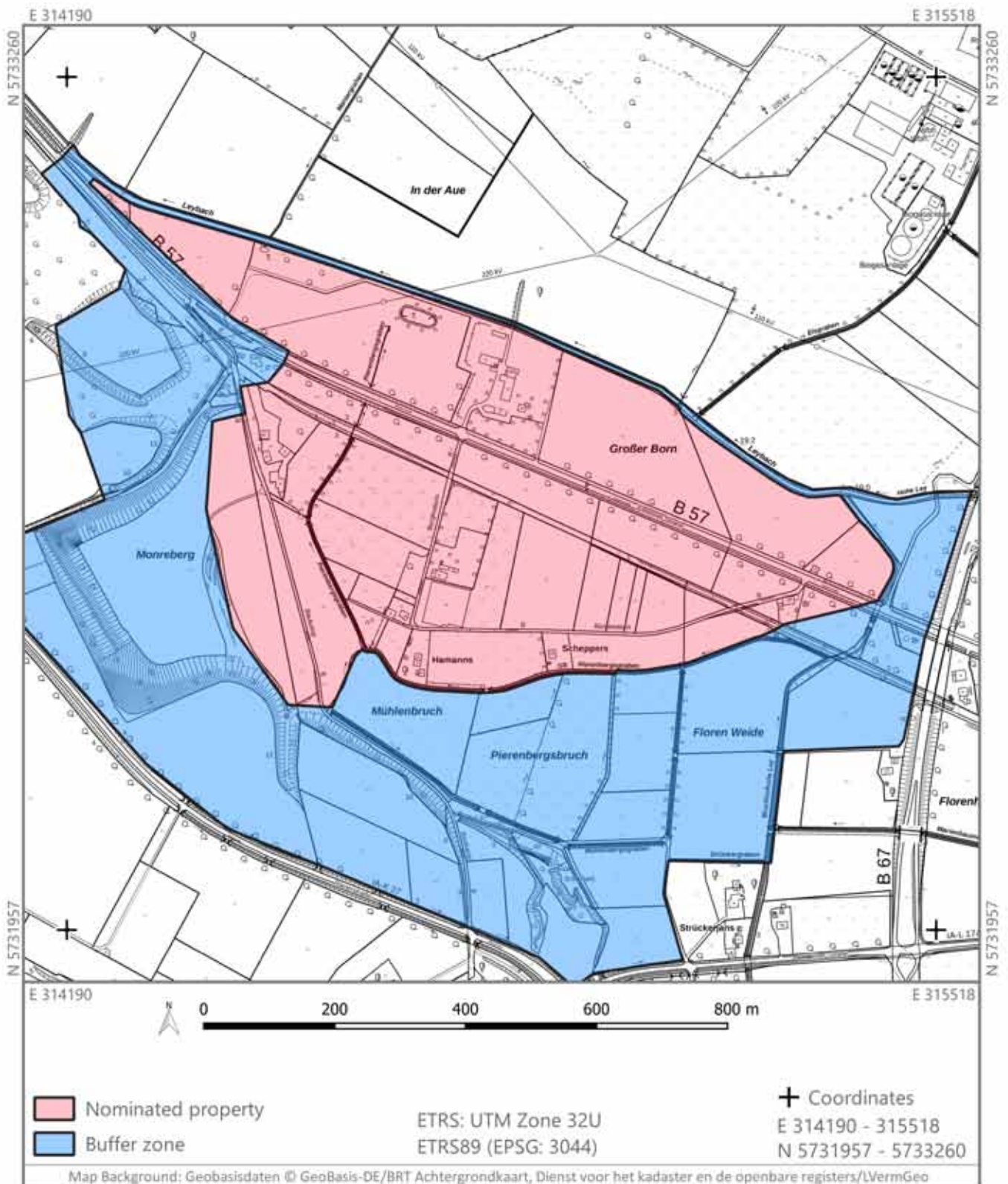
## 24 - Kalkar-Bornsches Feld







## 24 - Kalkar-Bornsches Feld



## COMPONENT PART 24

### KALKAR-BORNSCHES FELD

Auxiliary Fort, civil settlement, cemetery, limes road, fort (fleet base?), temporary camp or fort, waste deposit

Id	State Party	Federal state	Municipality	Coordinates central point
24	Germany	North Rhine-Westphalia	Kalkar	E 6°19'8" N 51°42'50"

	Area in ha	Ownership
Component part	47.18	Private, public
Buffer zone	58.27	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1992, 2013
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Kalkar) Landscape protection area (Landschaftsschutzgebiet 'Leybach, Oybaum und Golfplatz Niedermörmter')	

### Brief description

The nominated property of Kalkar-Bornsches Feld includes several military and civil installations which extend over an area of at least 1,000 × 600 m. Most of them are known from geophysical surveys. The elements are situated on a flood-free area directly on the Roman course of the Rhine at the bottom of the ice-pushed moraine.

A smaller fort detected by geophysical survey, with a defensive ditch and a central building (*principia*?), was probably its predecessor. It was at least 100 × min. 30 m in size. The front side facing the Rhine is unknown and it may be that the fort was open to the river bank as is the case for early fleet bases elsewhere.

The cavalry fort of *Burginatum* is situated in the centre of this intensively used site. The fort measured 205 × 190 m (3 ha) in the main building phase, including the defensive ditches. In the Late Roman period, the fort was reduced in size to about 2 ha and the main wall strengthened by an outer second wall. At 2 ha this was still a large base compared to other Late Roman forts along the Lower German Limes. Erosion seems to have caused the loss of the north-eastern corner over an area of approx. 800 m<sup>2</sup> whilst the fort was in use. A new massive wall closed the gap, following the newly formed bank of the river Rhine.

Remains of another camp can be found further east, largely washed away by the Roman Rhine.

The *vicus* with several buildings (strip houses) and cellars extends about 500 m along a road running southwest of the fort. A *mansio* (Roman hostel) measuring 65 × 37 m is located in the centre of the *vicus* at a main crossroads. The road turning off to the southeast runs in an arc around the fort. The road embankment can still be seen on the surface. Several graves have been found to the west and south of the *vicus*, indicating larger cemeteries.



### Attributes and values

The component part represents a varied and fairly complete military complex, comprising a cavalry fort and its extramural settlement including a Roman hostel and cemeteries, all connected to the Limes road and to the major waterway of the Rhine. The extensive geophysical surveys also evidence a complex development of different fort designs from the early 1<sup>st</sup> century AD to Late Antiquity.

The early dating of the site and the design of the early fort with strong parallels to fleet bases makes *Burginatum* an important element of the first linear frontier.

The reduction of the fort in the Late Roman period underlines the high value of the site for understanding the long term development history of Rome's most northern river frontier.

The vast organic deposits in the Leybach in front of the fort probably contain extensive and rich organic layers, preserving an abundant treasure chest of well-preserved organic materials and metal objects.

The military installations of *Burginatum* demonstrate a distinctive relationship and interdependence with the river landscape. *Burginatum* is a key site for understanding the high importance of undercut riverbanks to the Roman army, providing the continuous high water level essential for secure navigation. Later, the destructive power of the river Rhine at the undercut bank led to massive erosion, forcing the Roman army at *Burginatum* to adapt to the destructive power of the river. The organic rubbish deposits in front of the fort, not washed away by the river, provide insights into the later development of the Roman river landscape. *Burginatum* is consequently of great value in helping us to understand the process of adaptation to the river landscape by the Roman army over four centuries of dynamic change.

### Integrity

Wholeness	Very good. The whole area of the fort is included in the nominated property. The full extent of the vicus has recently been recorded by geomagnetic survey. The component parts also incorporate much of the cemeteries and the Limes road.
Intactness	Very good. A modern road crosses the fort but without deep foundations or engineering structures. There is evidence of well-preserved organic materials in the Leybach. Large built structures are present in the fort and in the vicus. The cemeteries have been subject to very limited disturbance from test excavation.
Exposure to threats	Minor. The nominated property is built over in a few areas only; most of the land is used for agricultural purposes with little potential for impact on the archaeology. Illegal metal detector activity still occurs, but seems to threaten topsoil finds rather than in-situ archaeology.

### Authenticity

Form and design	Unaffected. All elements of the military complex are preserved and were not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Unaffected. The sequence of archaeological layers, up to 2 m high, is almost free of post-Roman buildings and can be identified today as a slight elevation. The foundations of stone walls as well as ditches and pits are well preserved. Rich organic deposits containing numerous and varied finds are preserved in the Leybach.
Location and setting	Fair. Today, the active course of the Rhine no longer follows the same bed as in Roman times. However, the river landscape is still easily understood through the course of the Leybach, which follows the oxbow left when the Rhine changed its course.

### Buffer zone

In the north, the buffer zone comprises the whole of the Leybach. In this stream valley, which formed the course of the Rhine in Roman times, there are rubbish deposits with rich organic finds. In the south, the buffer zone includes further possible elements of the vicus.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Industrial development (nursery)	Minor	The area is used for agriculture and as nurseries. The component part is protected against change or modification in use by the land-use plan.
(i) Agriculture: ploughing	Minor	The erosion map is used to check regularly whether there is any risk of erosion. Measures to reduce erosion by ploughing are being pursued. Deep ploughing might affect archaeological remains, so careful monitoring is undertaken.
(iv) Metal detecting	Minor	Illegal excavations and metal detecting are prohibited by law, but cannot be ruled out.

### Presentation

None

### Community involvement

None

### Ancient sources

The site is listed as *Burginatum* in the *Tabula Peutingeriana* (Segm. II.4/5), a medieval copy of a Roman road map and also in the *Itinerarium Antonini Augusti* (256,2 and 370,1), a Roman register of stations and distances along roads.

### Further Details

#### Main building phases

Augustan fort/fleet base  
1<sup>st</sup>–3<sup>rd</sup> century AD cavalry fort  
Late Roman fort with reduction

#### Main research activities

2005/6 geophysical survey of fort and partly of *vicus*  
2016–2018 geophysical survey of the whole site

#### Garrisons

ala Noricorum: c. 70–83  
ala Vocontiorum: c. 83–122  
ala Classiana: c. 122–3<sup>rd</sup> century AD?

#### Literature

Bödecker et al. 2007; Brüggler 2014; Bödecker et al. 2014a.

Fig. 182 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 183 Results of the geophysical surveys carried out at Kalkar-Bornsches Feld (*Burginatum*).

Fig. 184 Grave stele of C. Iulius Primus. Iulius was born in the *civitas Treverorum* (region of today Trier) and served in the *ala Noricorum*, a cavalry regiment raised in the Alpine region.

Fig. 185 Collection of roman leather fragments, mainly parts of shoes found at the silted-up Roman Rhine course near Kalkar-Bornsches Feld (*Burginatum*).

Fig. 186 Structures of the fort at Kalkar-Bornsches Feld (*Burginatum*) reveal themselves as crop-marks in this aerial photograph. The combination of different survey methods, such as aerial photography, geophysics or LiDAR, are very likely to lead to the discovery of sites yet unknown.

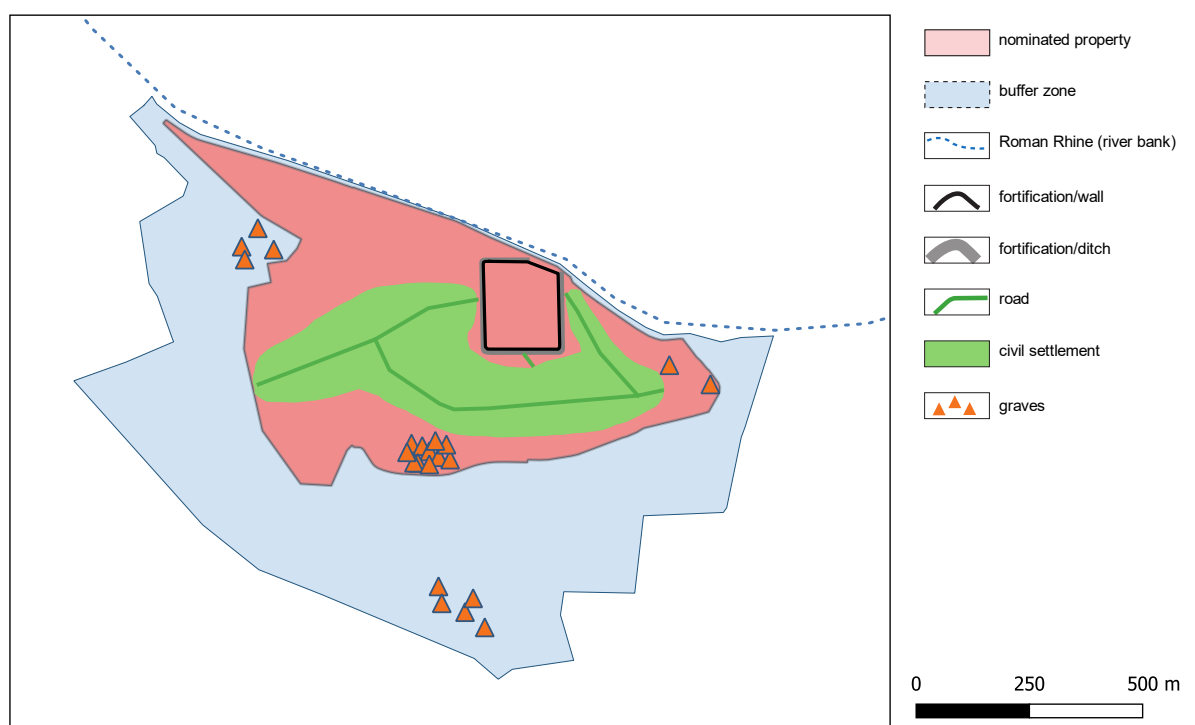


Fig. 182



Fig. 183



Fig. 184





Fig. 185

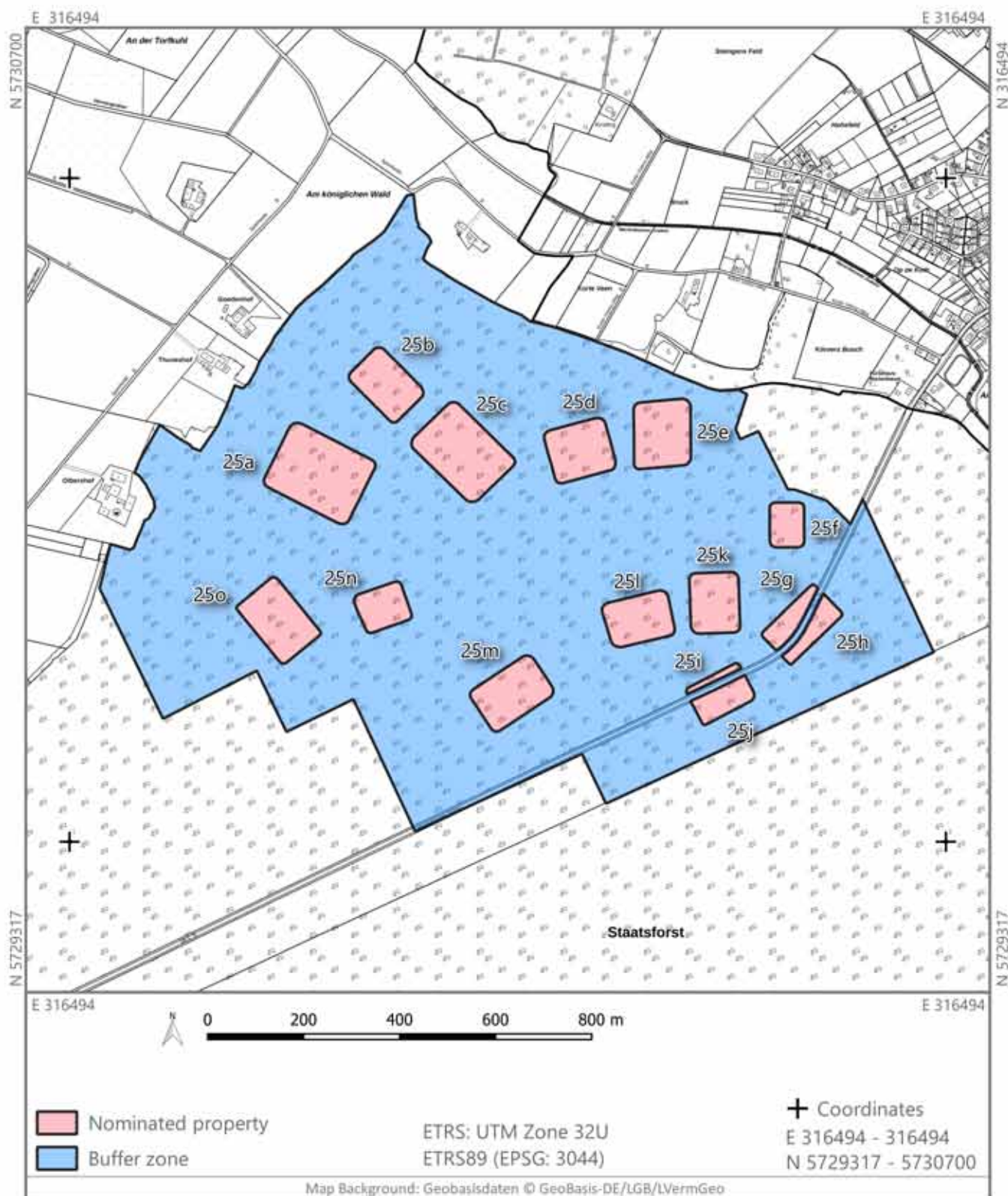


Fig. 186





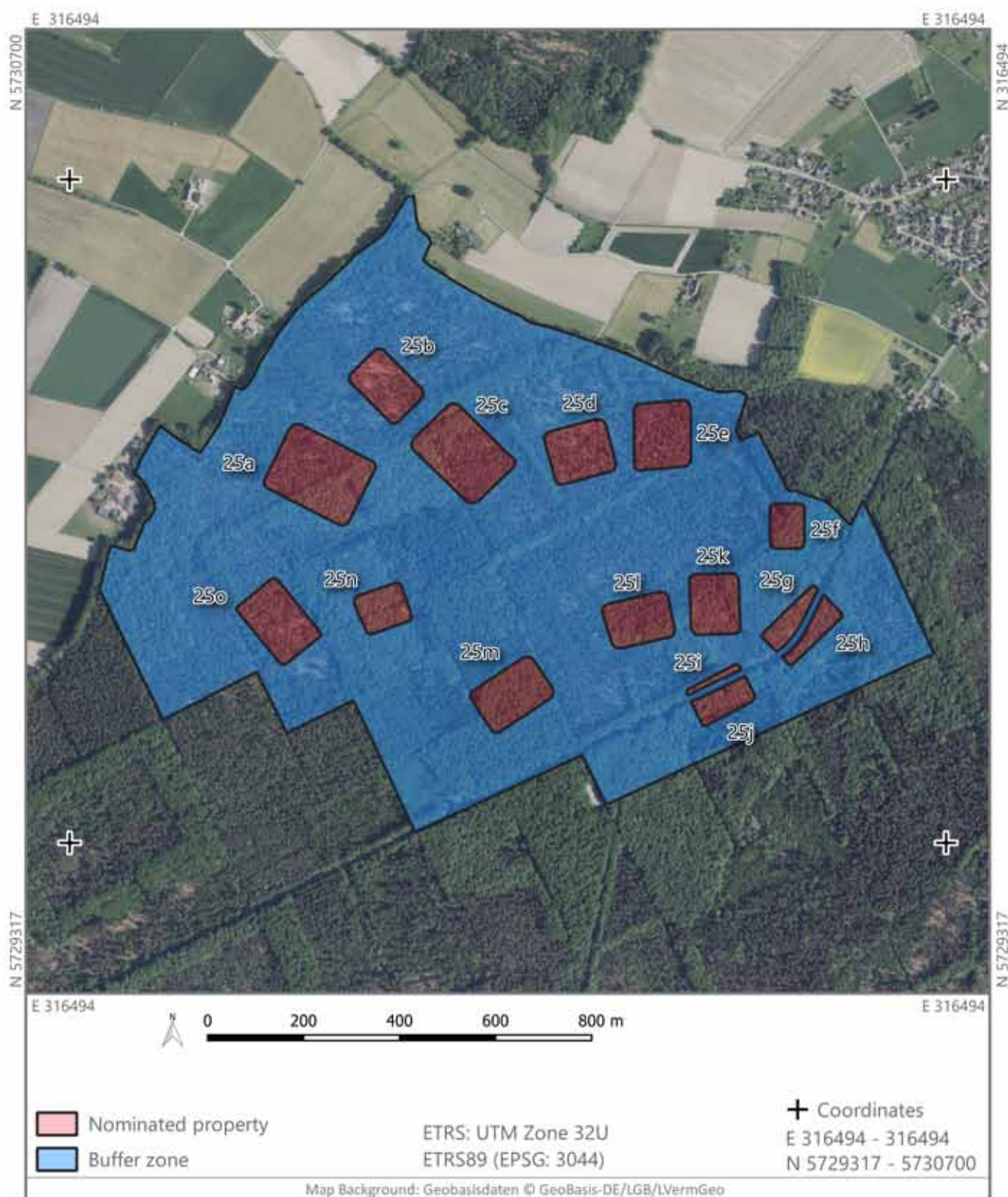
## 25 - Uedem-Hochwald







## 25 - Uedem-Hochwald

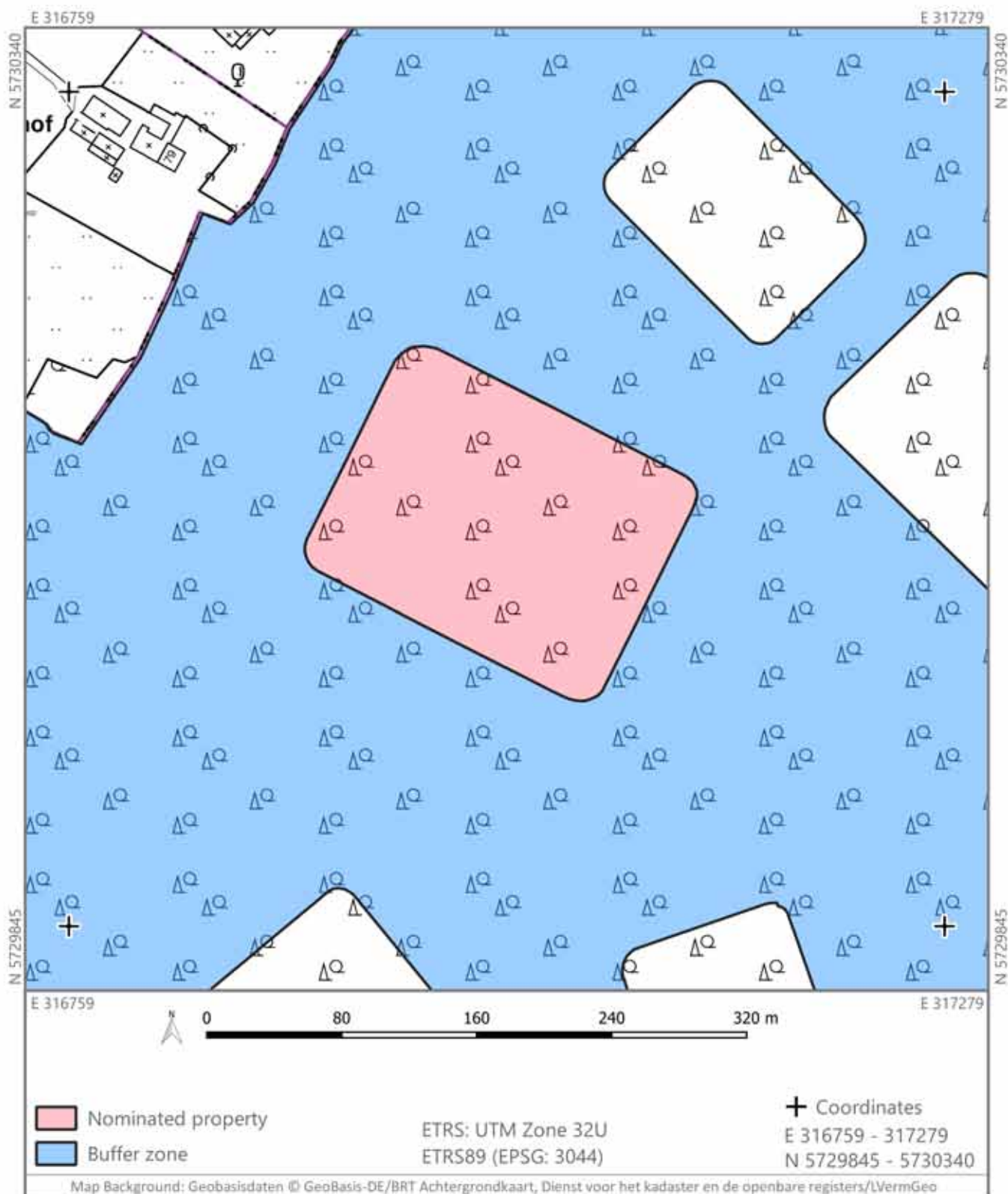






25a - Hochwald 1

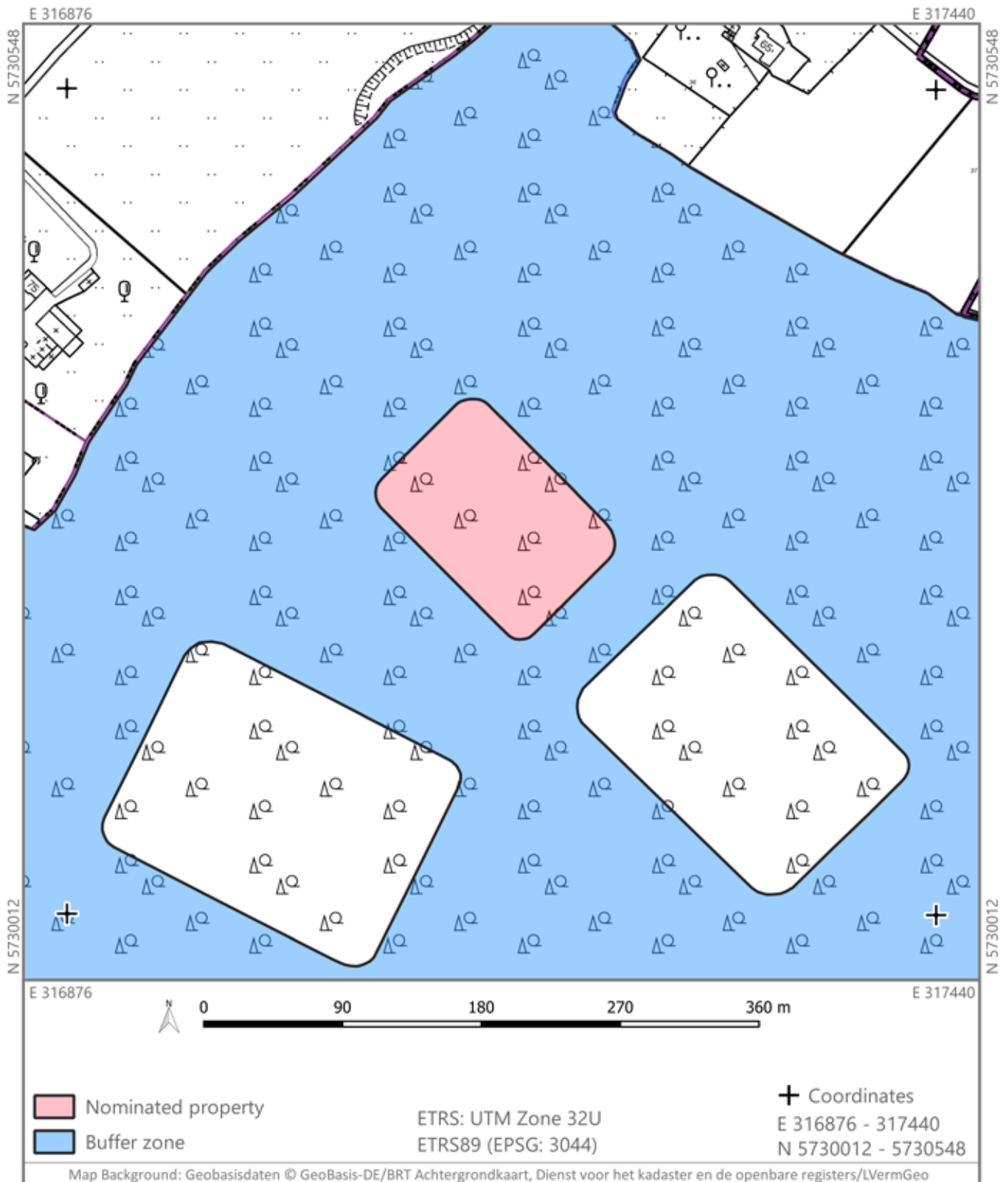
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25b - Hochwald 2

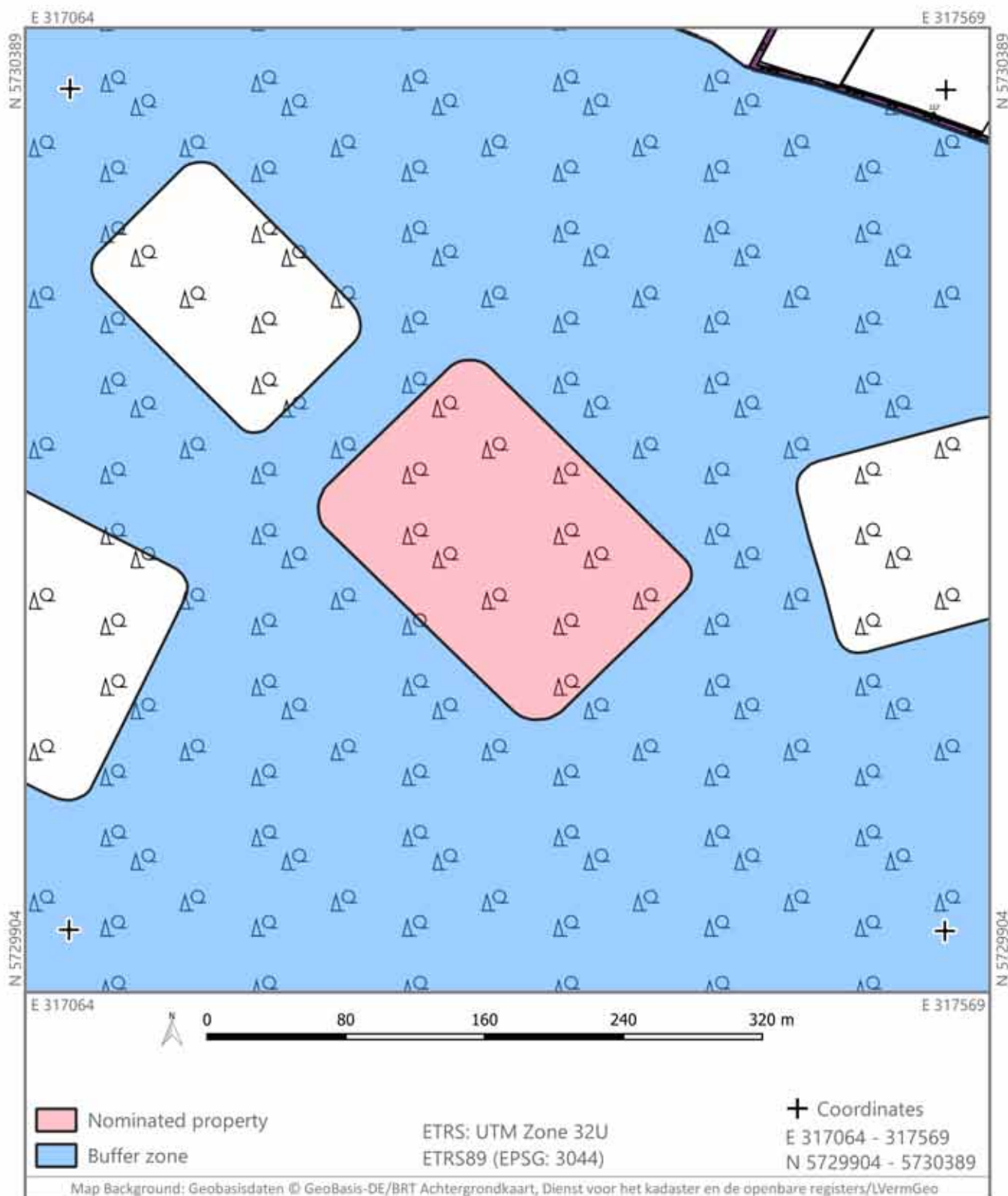
## 25 - Uedem-Hochwald





25c - Hochwald 3

## 25 - Uedem-Hochwald

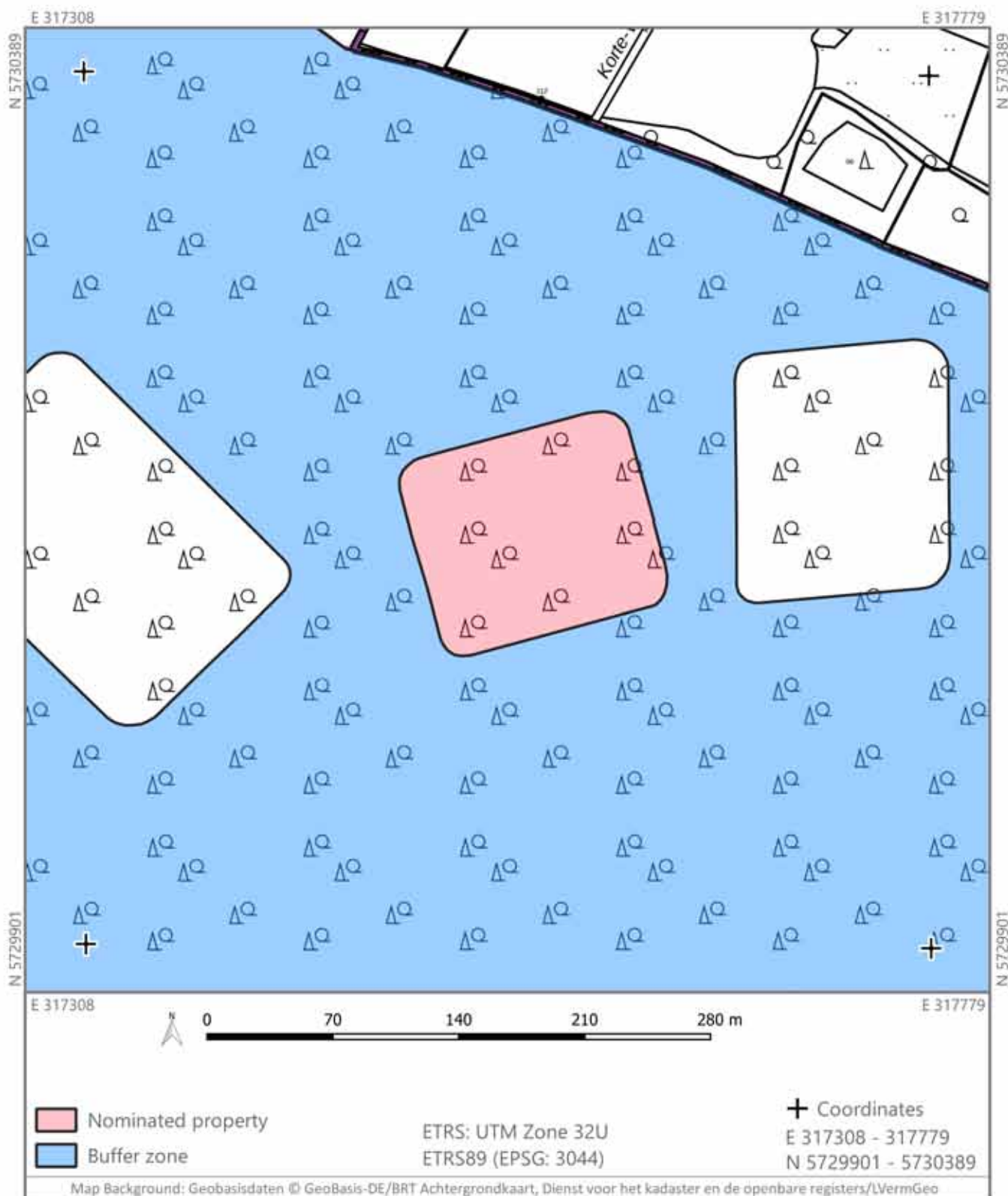






25d - Hochwald 4

## 25 - Uedem-Hochwald

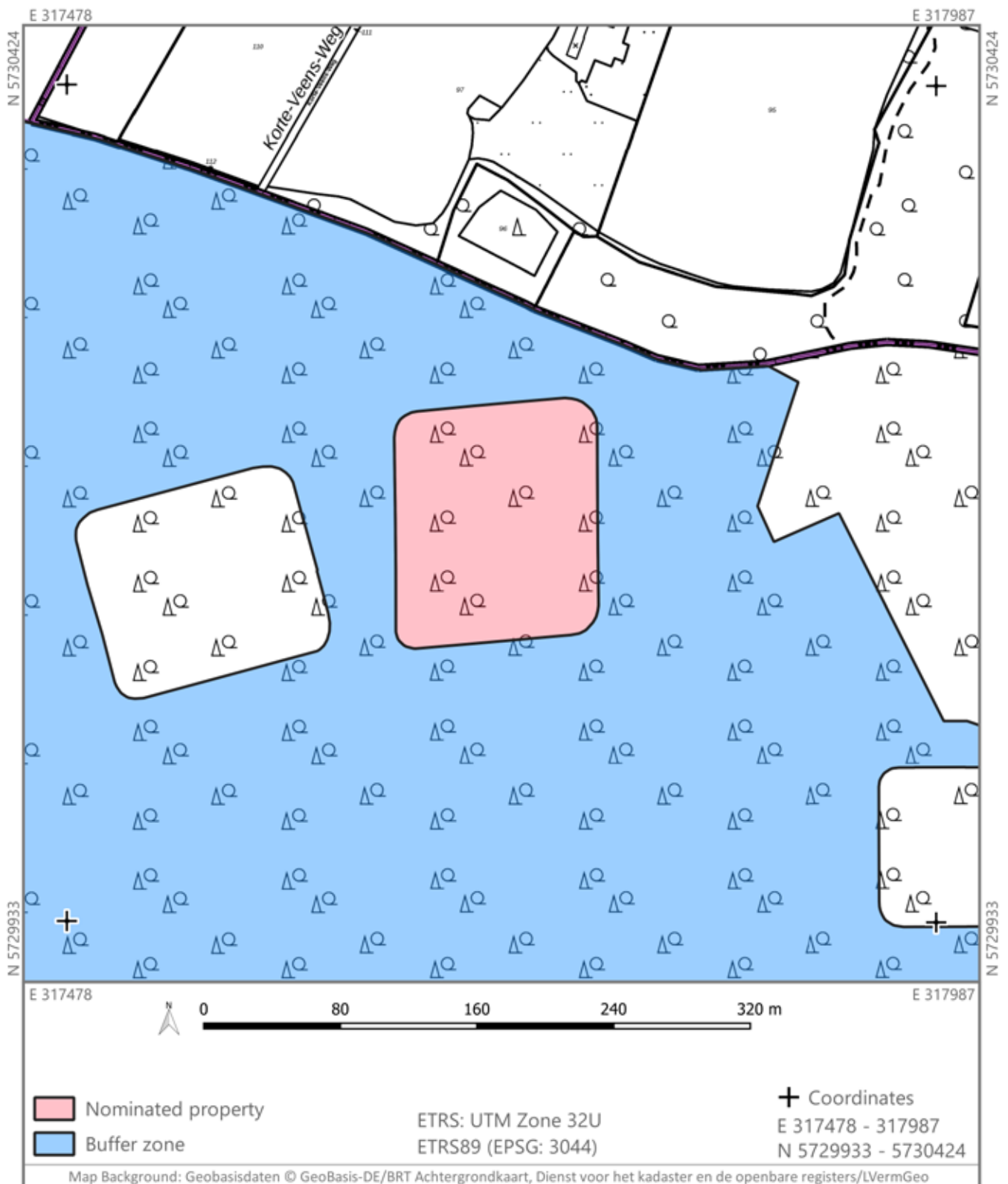






25e - Hochwald 5

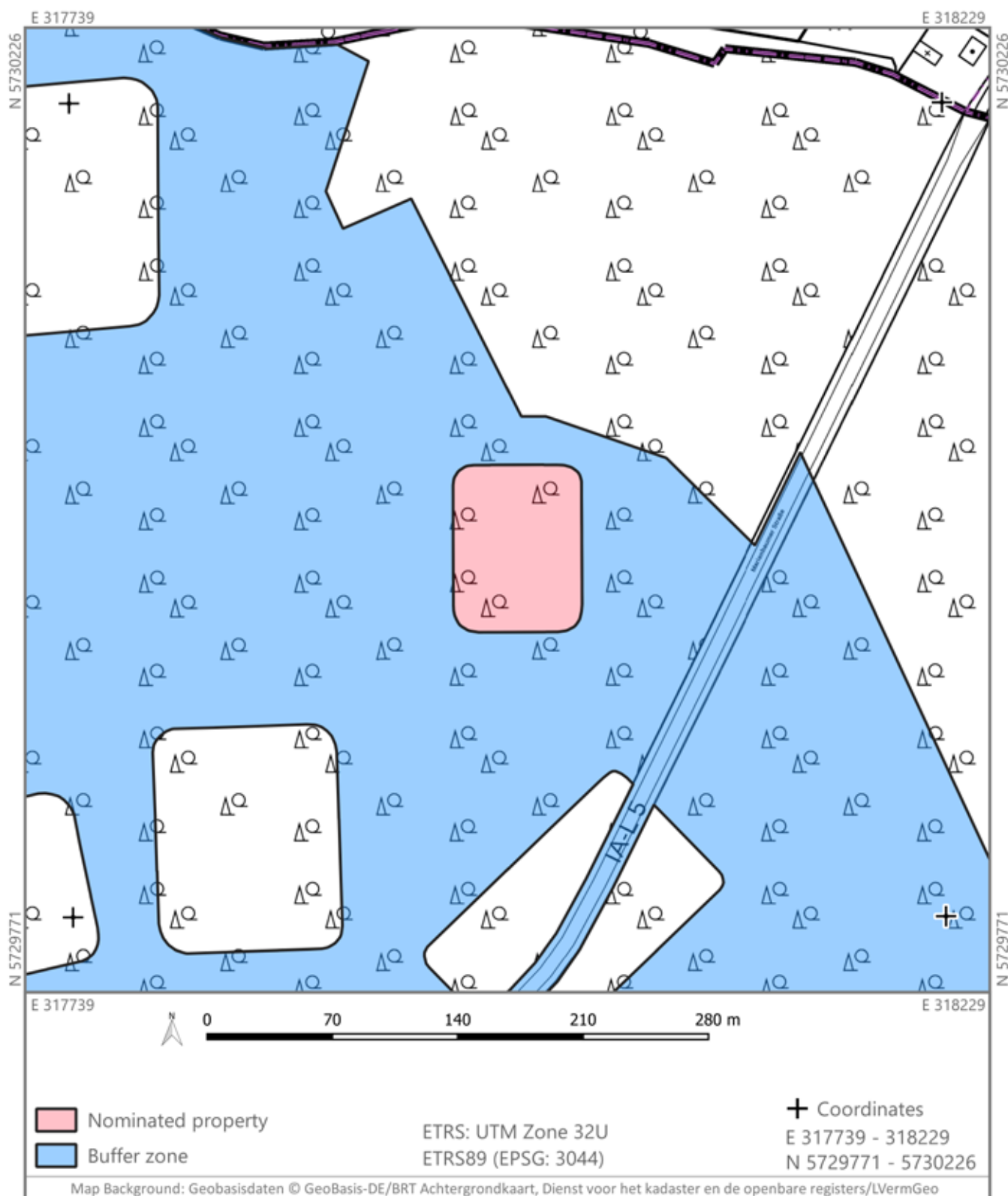
## 25 - Uedem-Hochwald





25f - Hochwald 6

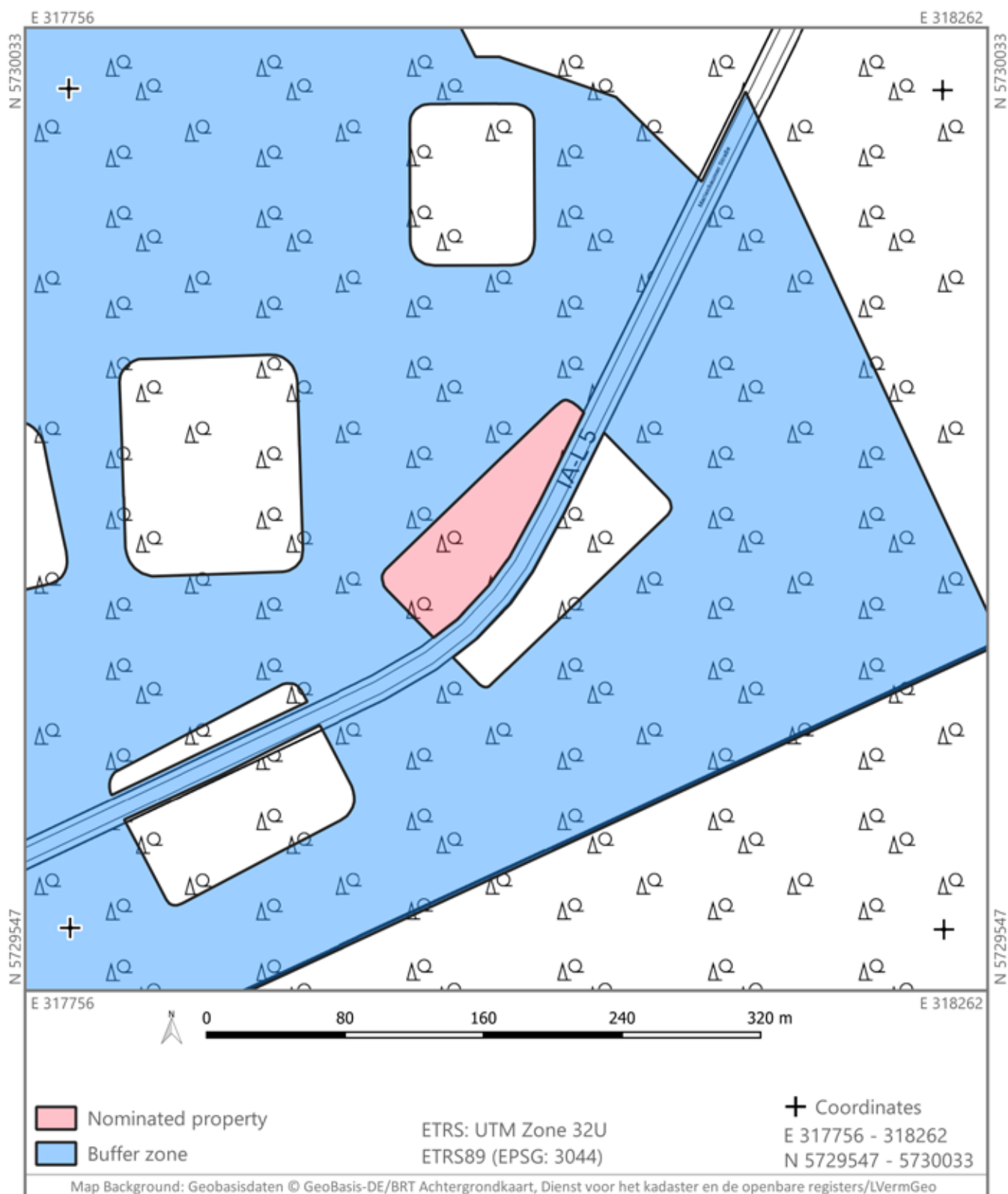
## 25 - Uedem-Hochwald





25g - Hochwald 7.1

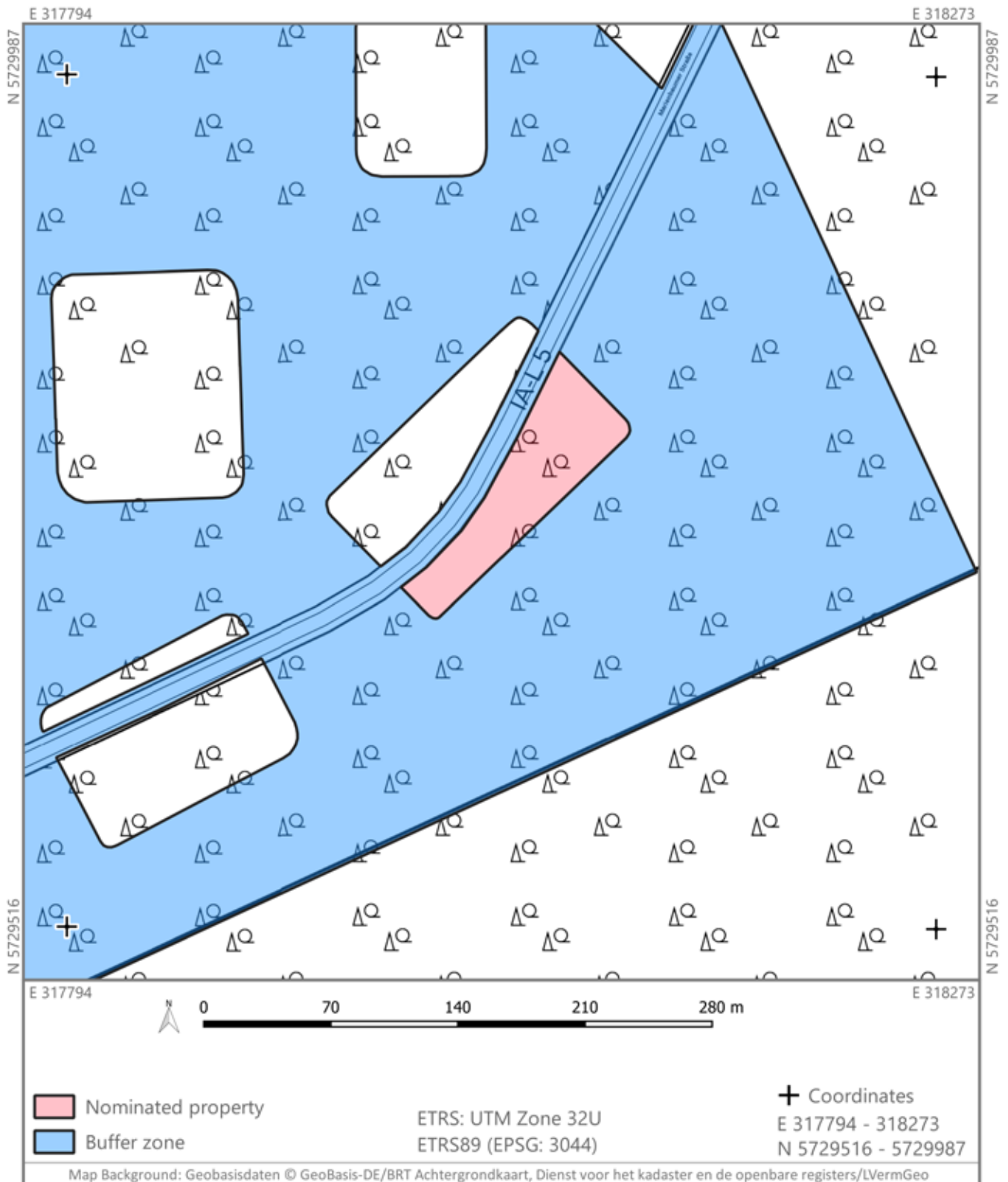
## 25 - Uedem-Hochwald





25h - Hochwald 7.2

## 25 - Uedem-Hochwald

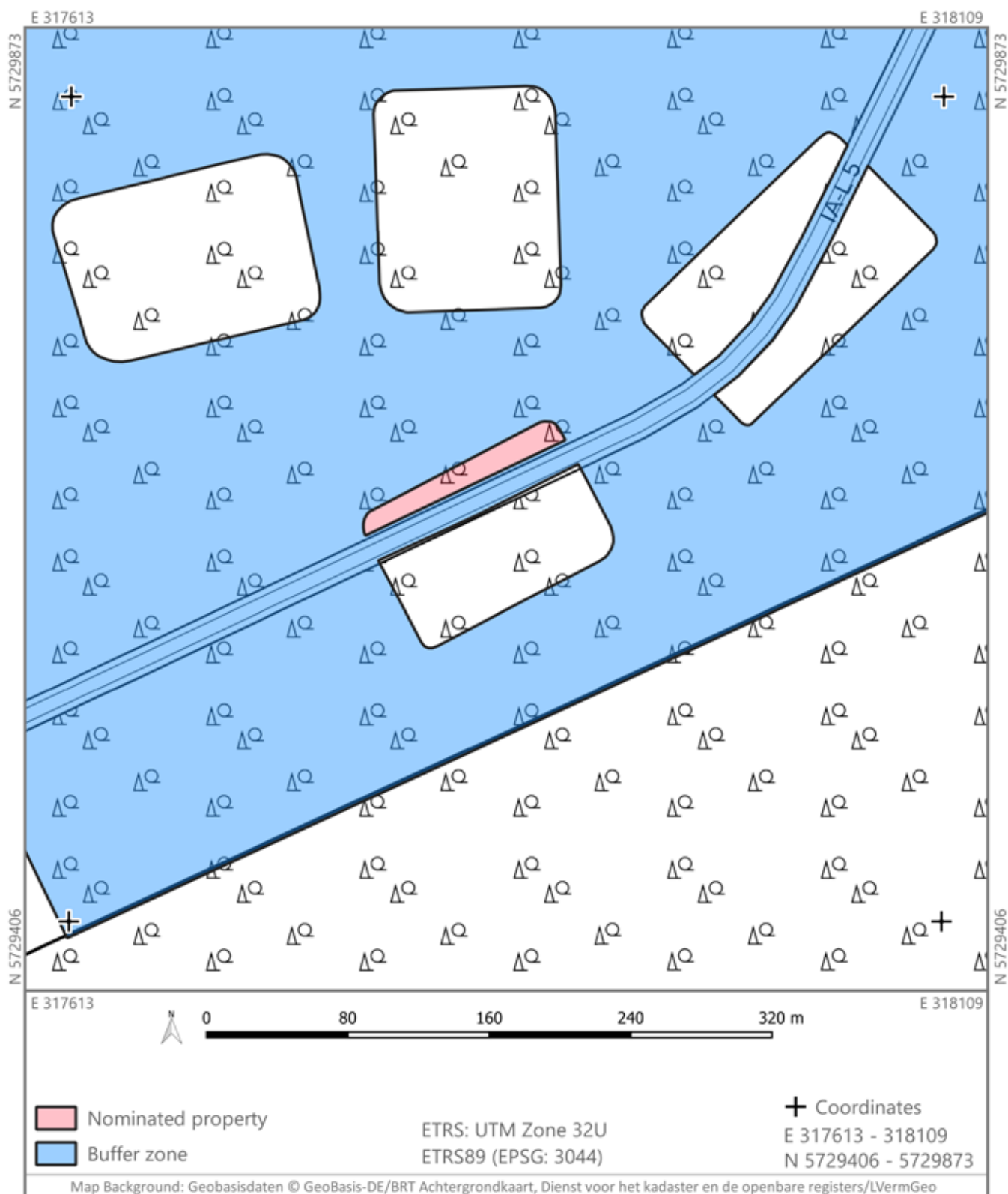






25i - Hochwald 8.1

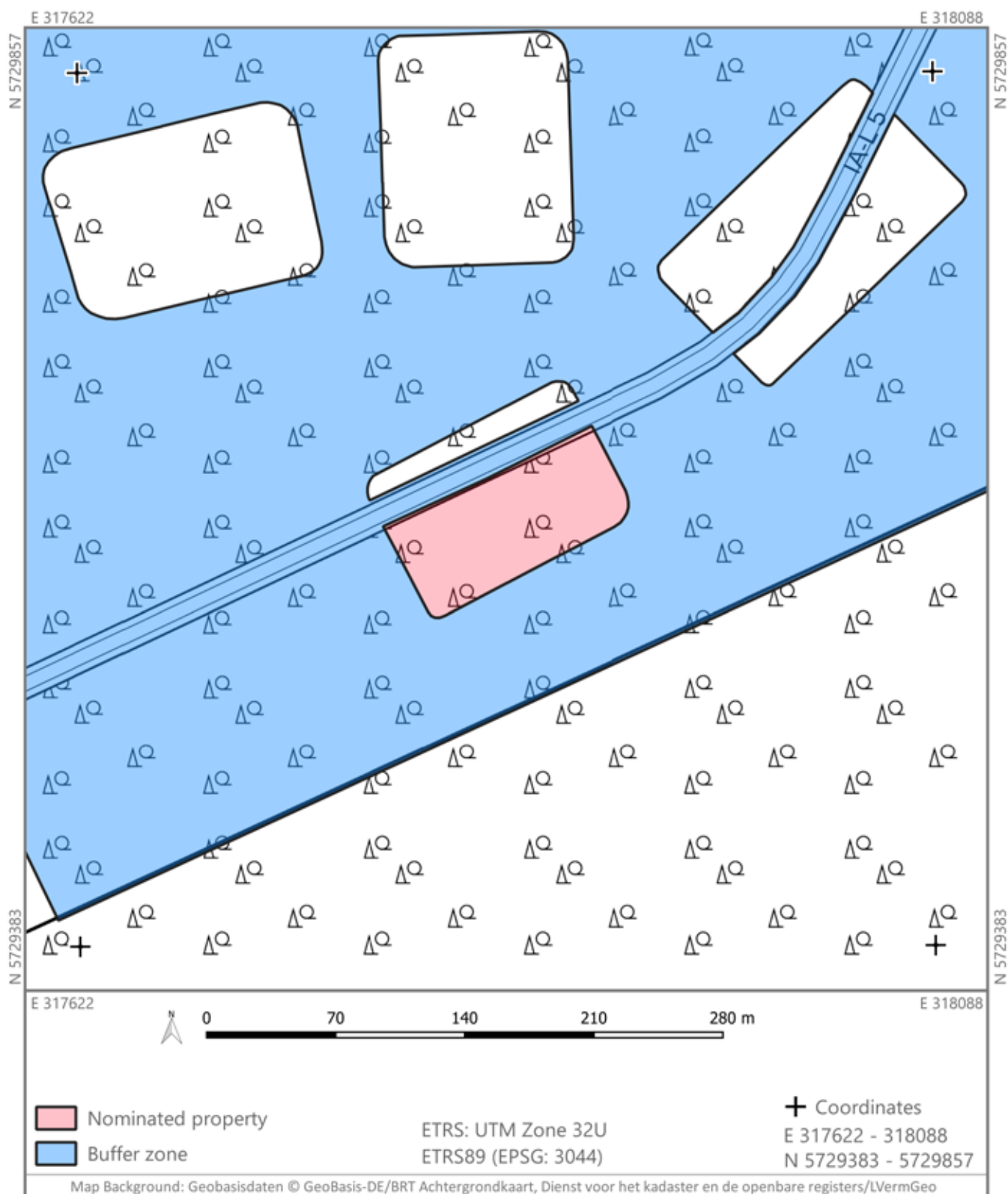
## 25 - Uedem-Hochwald





25j - Hochwald 8.2

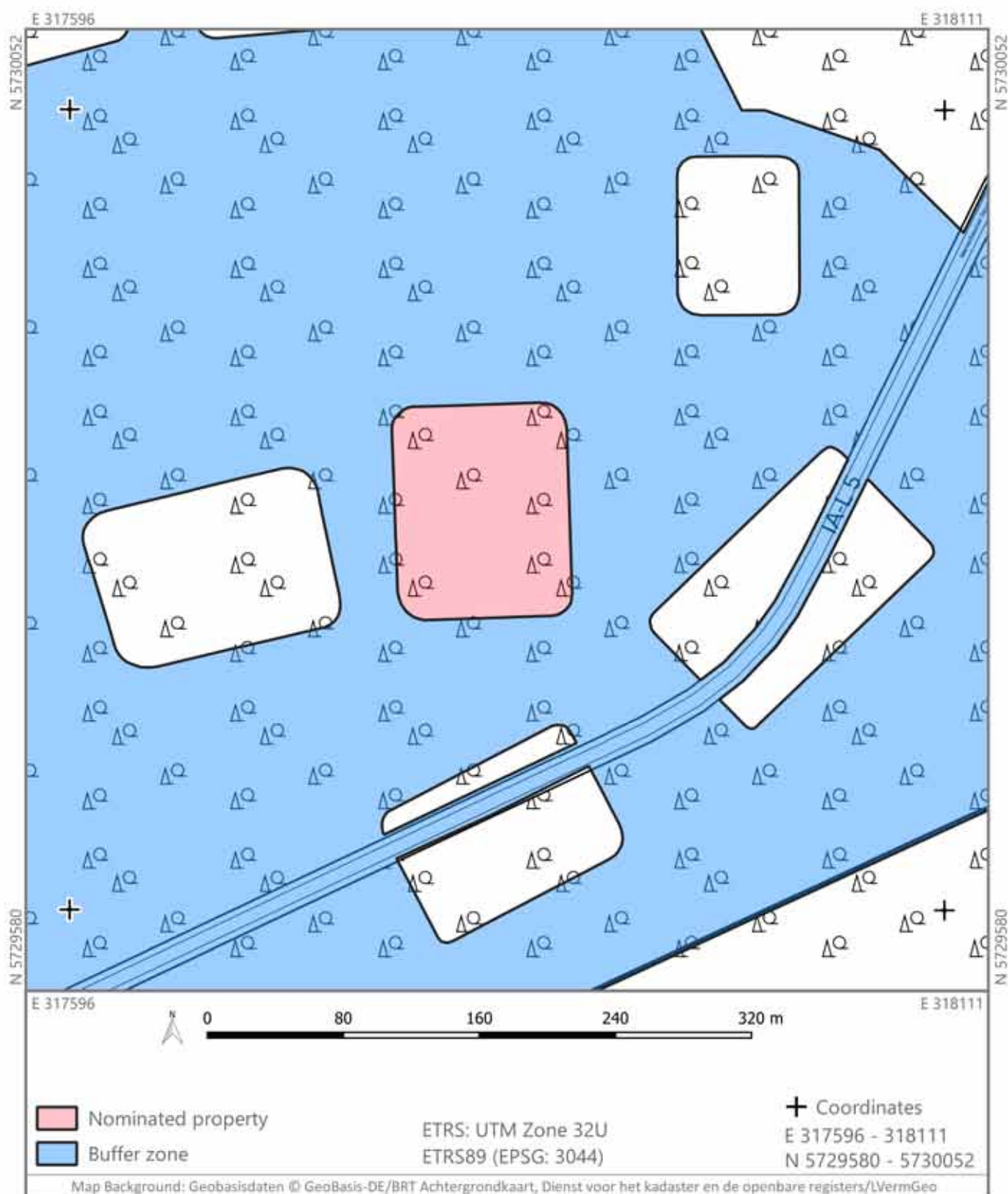
## 25 - Uedem-Hochwald





25k - Hochwald 9

## 25 - Uedem-Hochwald

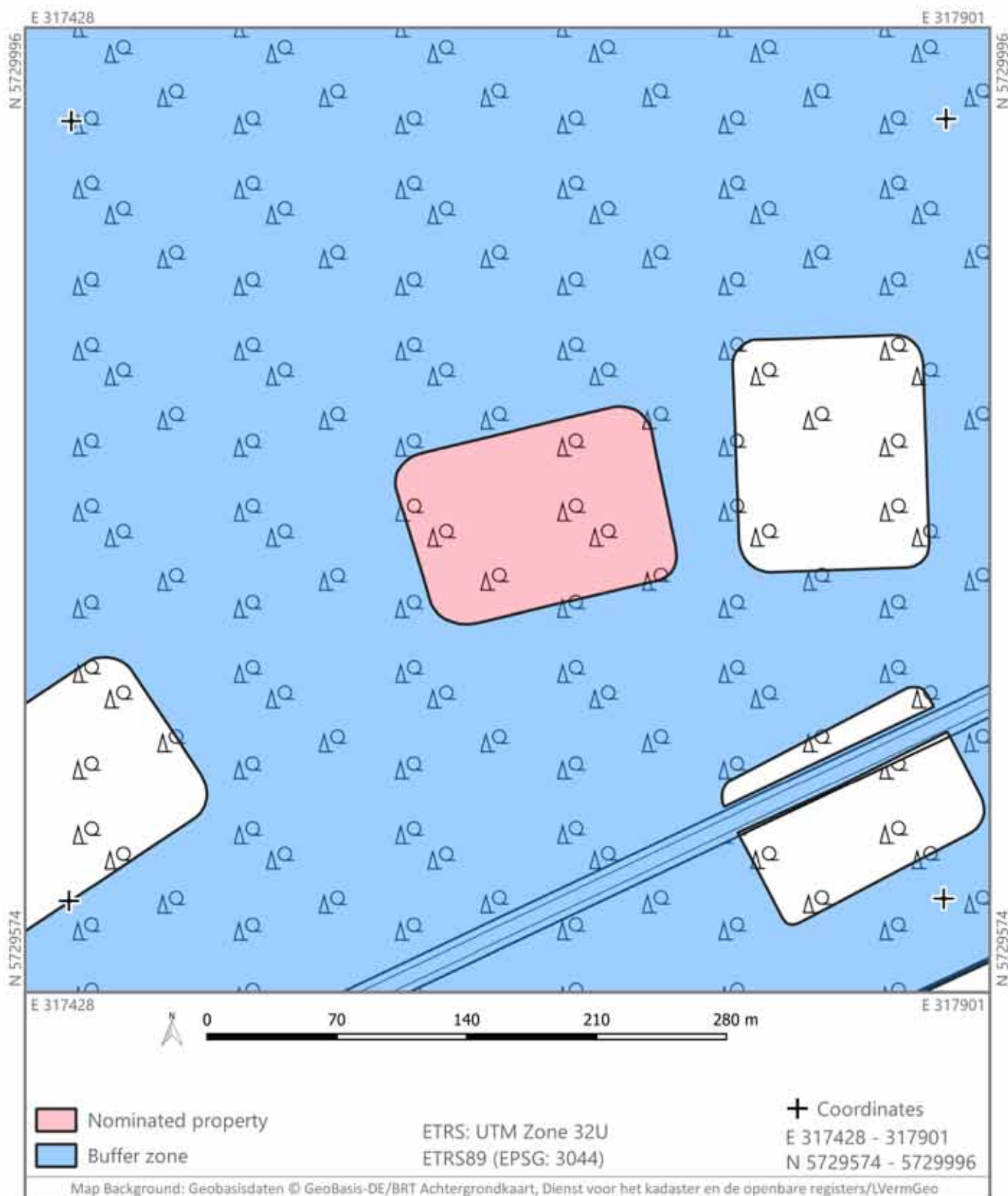






25I - Hochwald 10

## 25 - Uedem-Hochwald





# Frontiers of the Roman Empire

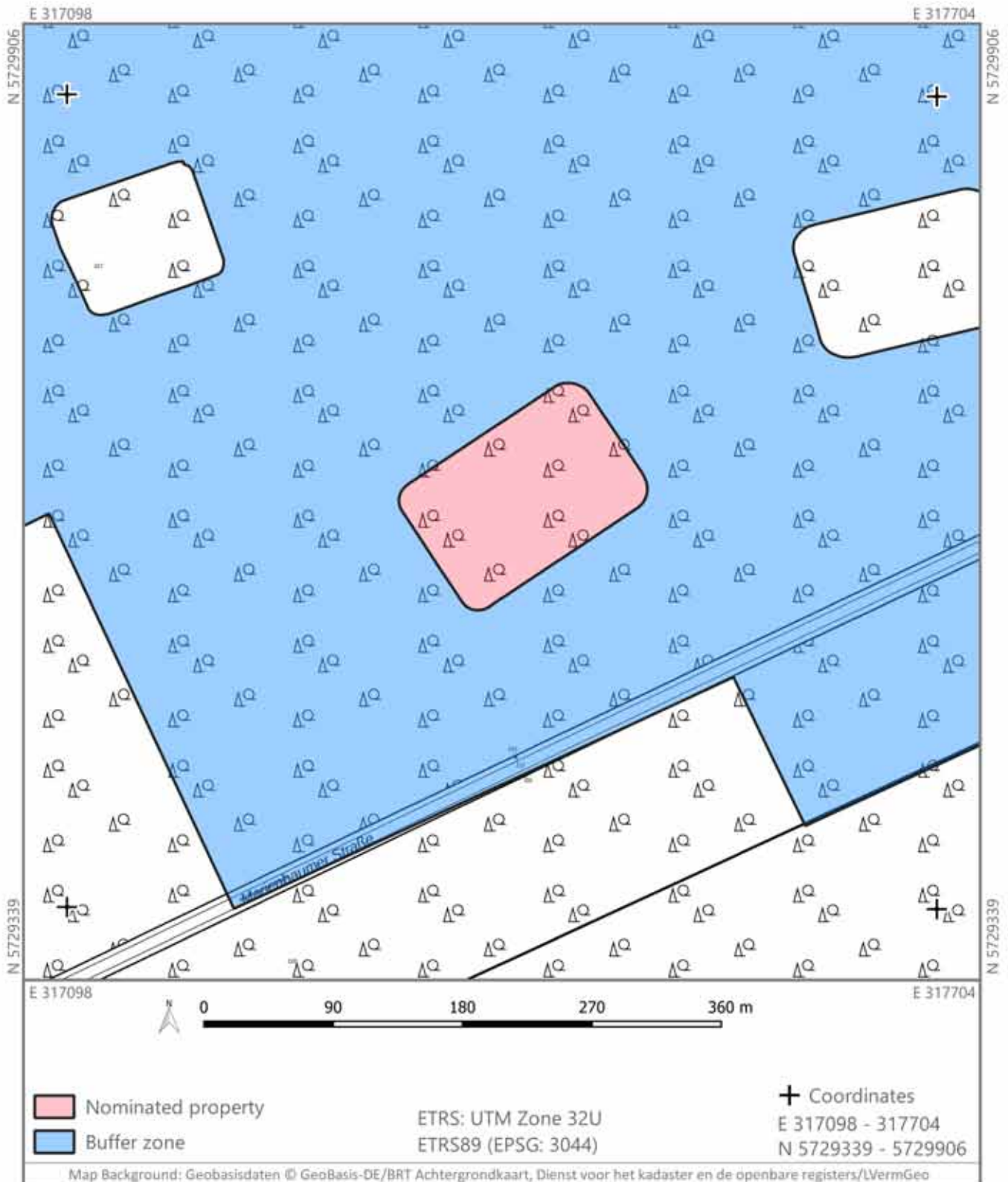
The Lower German Limes  
De Neder-Germaanse Limes  
Der Niedergermanische Limes



25m

25m - Hochwald 11

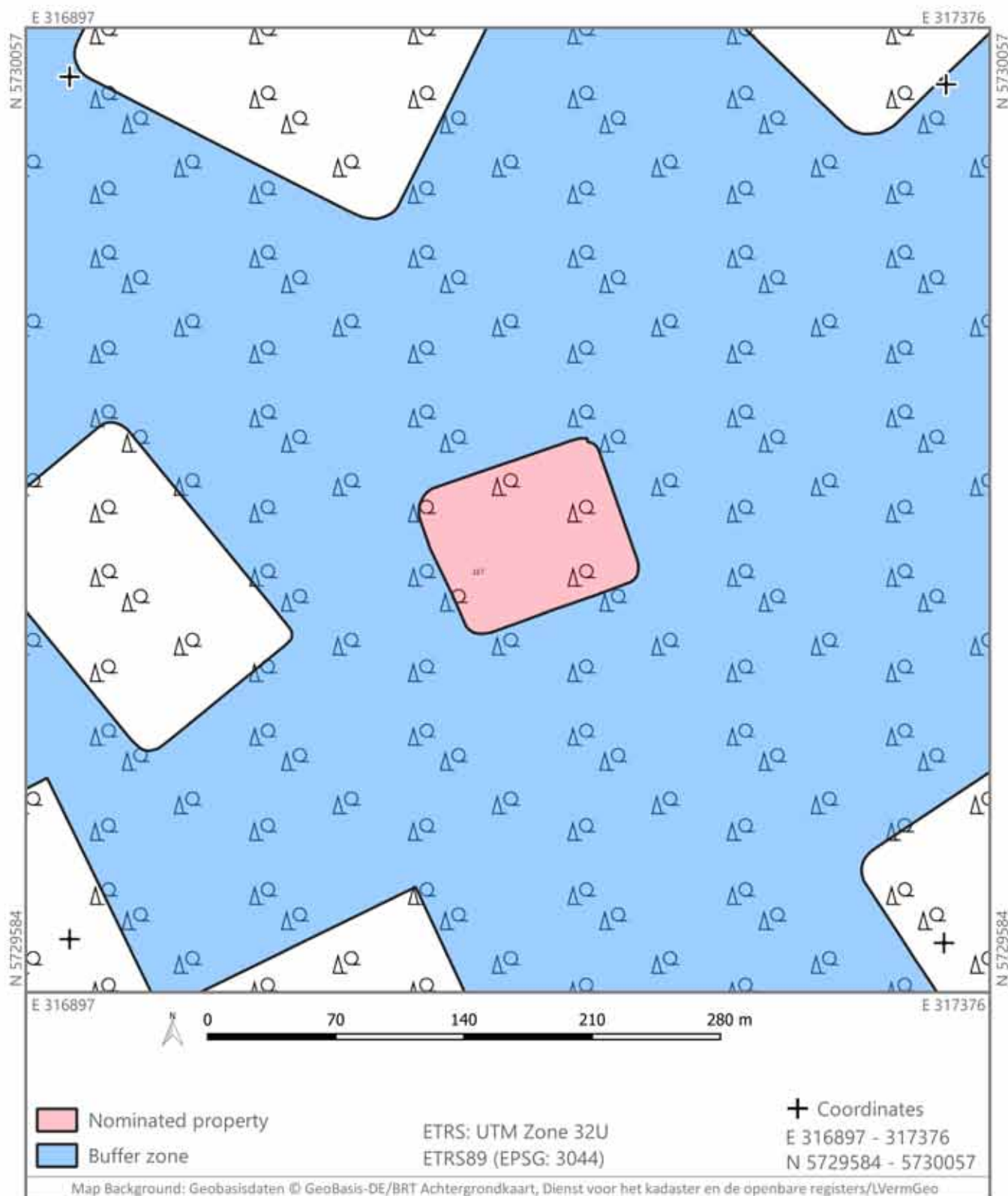
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25n - Hochwald 12

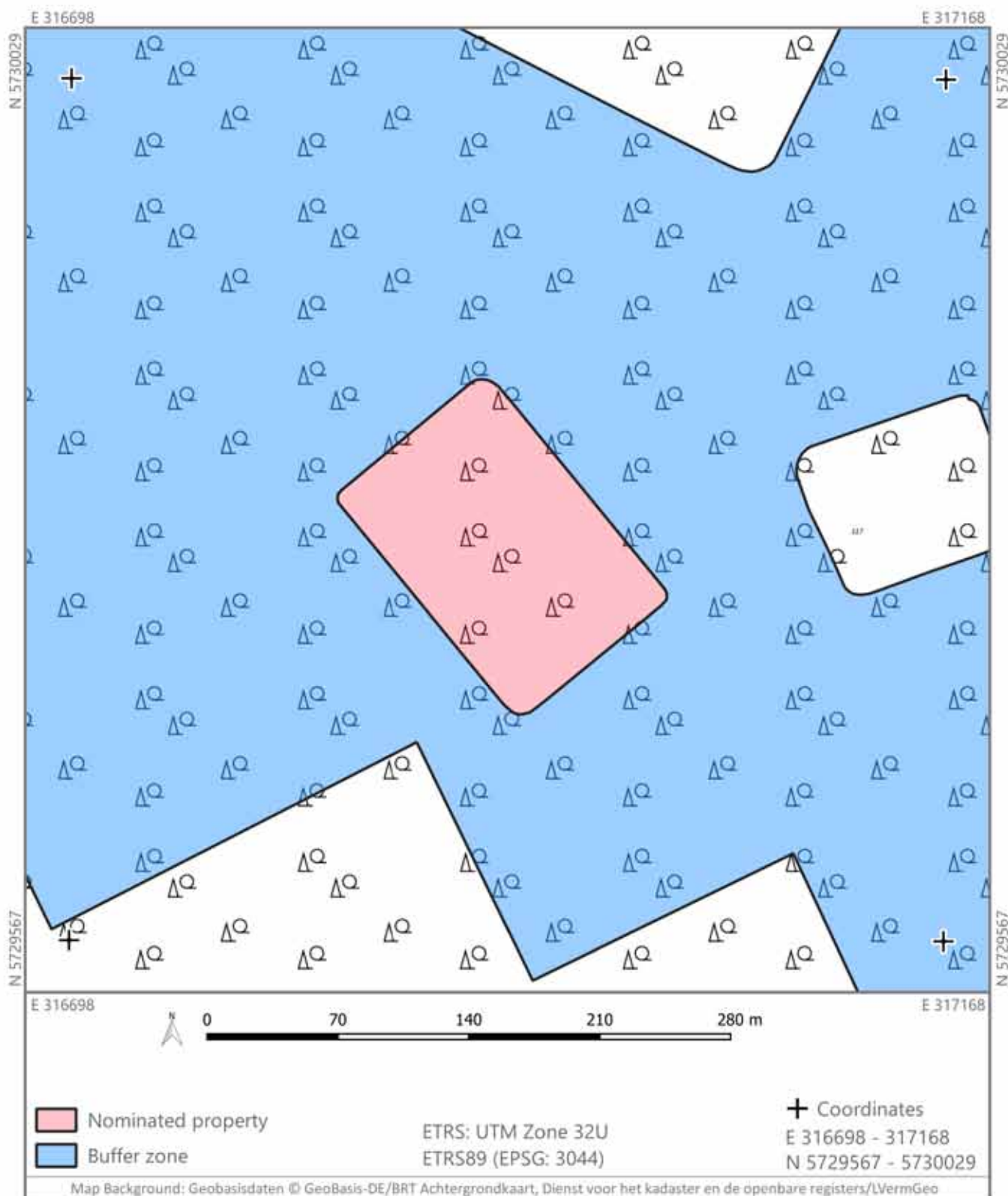
## 25 - Uedem-Hochwald





25o - Hochwald 13

## 25 - Uedem-Hochwald





## CLUSTER 25 UEDEM-HOCHWALD

Temporary camps

Id	State Party	Federal state	Municipality
25	Germany	North Rhine-Westphalia	Uedem

### Brief description

The camps are located in what is now a wooded area, on the northern edge of the ice-pushed moraine and on meltwater sands. The complete cluster comprises 13 camps ranging in size from 0.5–2.5 ha. Oriented partly in rows or in the same orientation, they relate to each other. There is no overlap. The defences of the camps consist of an earthen rampart, which is typical for Roman marching camps. These ramparts were constructed with turves (lat. *caespites*), laid to form a wall. The gates are without exception in the form of *claviculae* (literally keys) his special method of fortification can be identified clearly in the field today.

### Attributes and values

The camps have outstanding value due to the high quality of preservation of the ramparts above ground. This concentration of camps in the Hochwald represents a complete Roman army manoeuvring area; an important contribution to the broader picture of the military footprint within the Roman frontier landscape. Situated on the edge of an ice-pushed moraine, looking east over the Rhine valley, the site demonstrates the desire of the Roman army to position these camps with a commanding view over the landscape. The site contributes to understanding the process of adaptation to the river landscape by the Roman military.

### Integrity

Wholeness	Very good. The entire cluster of camps is preserved.
Intactness	Very good. The ramparts of the camps are preserved up to 0.5 m high.
Exposure to threats	Minimal. The camps are located in forest and a detailed conservation and monitoring programme was been established 2015 by the state forest service of North Rhine-Westphalia.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Unaffected. Very good preservation of ramparts and ditches (fills).
Location and setting	Affected. The camps were originally laid out in an open landscape and are under forest today.



### Buffer zone

The buffer zone comprises the complete cluster. There are no archaeological remains in between the camps.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Forestry	Minimal	Sustainable forestry with minimal ground disturbance is planned in accordance with Federal Forestry Act, Federal Soil Conservation Law and Monument Protection Law of North Rhine-Westphalia. An agreement on this has been made with the competent forestry authority, with a system of measures for each camp.

### Presentation

None.

### Community involvement

None.

### Ancient sources

Not mentioned in written sources.

### Further Details

#### Main building phase

n.a.

#### Main research activities

2012 discovery through laserscan interpretation

#### Garrisons

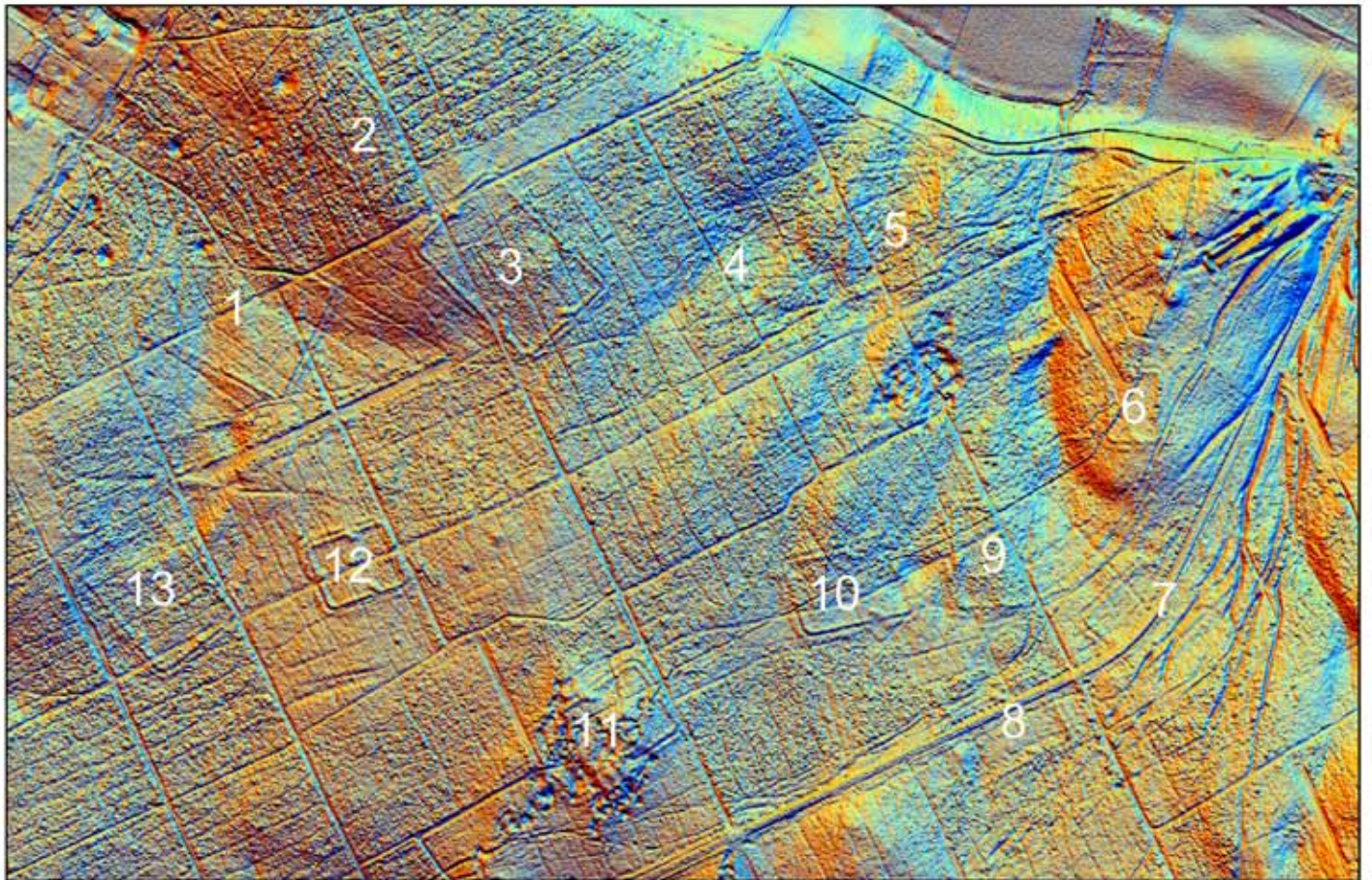
legionaries from Xanten

#### Literature

Bödecker 2013; Bödecker 2012.

Fig. 187 Digital elevation model of the temporary camps at Uedem-Hochwald. North at top.

Fig. 188 Detail of the temporary camps at Uedem-Hochwald. 3D-view of the digital terrain model. In the foreground camp 12 ► [25n](#). Looking North.



0 250 500 m

Fig. 187

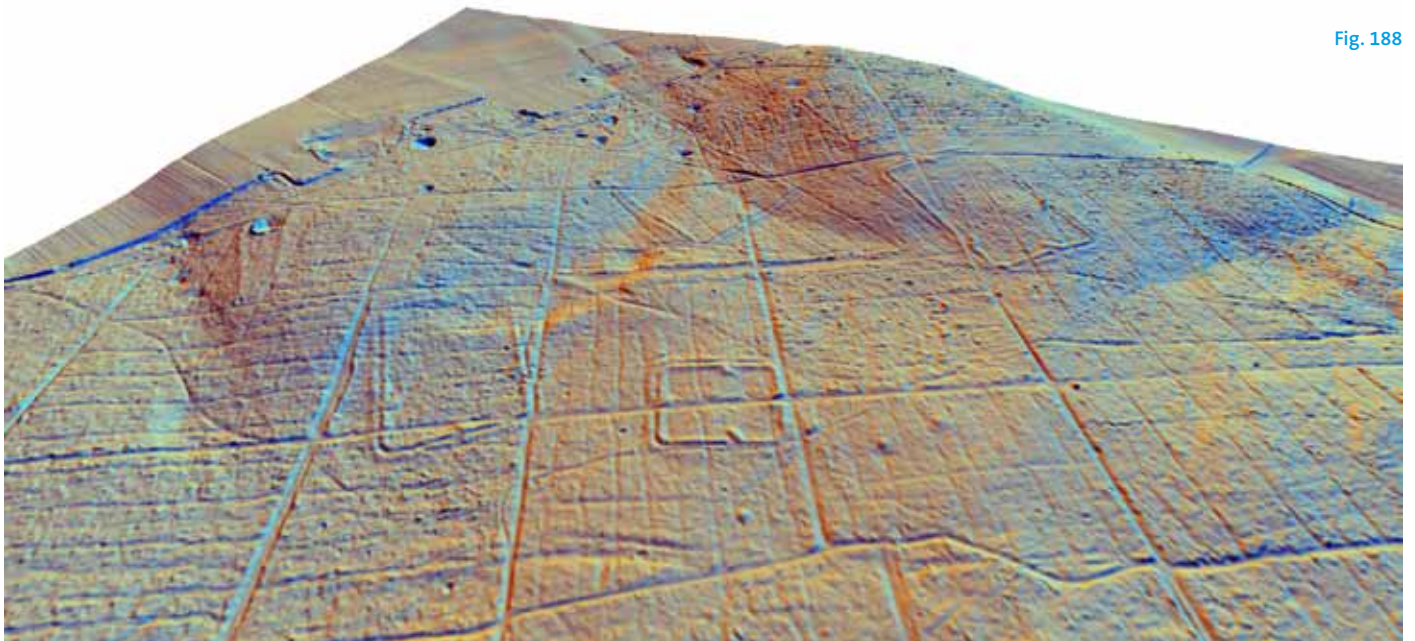


Fig. 188



## COMPONENT PART 25A

### UEDEM-HOCHWALD | HOCHWALD 1

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25a	Germany	North Rhine-Westphalia	Uedem	E 6°21'7" N 51°41'31"

	Area in ha	Ownership
Component part	2.93	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Hoehenruecken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.



## COMPONENT PART 25B

### UEDEM-HOCHWALD | HOCHWALD 2

Temporary camp

Id	State Party	Province	Municipality	Coordinates central point
25b	Germany	North Rhine-Westphalia	Uedem	E 6°21'14" N 51°41'38"

	Area in ha	Ownership
Component part	1.34	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

### COMPONENT PART 25C UEDEM-HOCHWALD | HOCHWALD 3

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25c	Germany	North Rhine-Westphalia	Uedem	E 6°21'25" N 51°41'31"

	Area in ha	Ownership
Component part	2.45	Public
Buffer zone	106.16 (shared)	

#### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

#### Brief description

For a general description see the text concerning the cluster.

#### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

#### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.



## COMPONENT PART 25D

### UEDEM-HOCHWALD | HOCHWALD 4

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25d	Germany	North Rhine-Westphalia	Uedem	E 6°21'36" N 51°41'31"

	Area in ha	Ownership
Component part	1.47	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 25E

### UEDEM-HOCHWALD | HOCHWALD 5

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25e	Germany	North Rhine-Westphalia	Uedem	E 6°21'47" N 51°41'35"

	Area in ha	Ownership
Component part	1.63	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.



## COMPONENT PART 25F

### UEDEM-HOCHWALD | HOCHWALD 6

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25f	Germany	North Rhine-Westphalia	Uedem	E 6°22'1" N 51°41'28"

	Area in ha	Ownership
Component part	0.66	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 25G

### UEDEM-HOCHWALD | HOCHWALD 7.1

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25g	Germany	North Rhine-Westphalia	Uedem	E 6°22'1" N 51°41'20"

	Area in ha	Ownership
Component part	0.57	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.



## COMPONENT PART 25H

### UEDEM-HOCHWALD | HOCHWALD 7.2

Temporary camp

Id	State Party	Province	Municipality	Coordinates central point
25h	Germany	North Rhine-Westphalia	Uedem	E 6°22'5" N 51°41'20"

	Area in ha	Ownership
Component part	0.56	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 25I

### UEDEM-HOCHWALD | HOCHWALD 8.1

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25i	Germany	North Rhine-Westphalia	Uedem	E 6°21'54" N 51°41'17"

	Area in ha	Ownership
Component part	0.16	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.



## COMPONENT PART 25J

### UEDEM-HOCHWALD | HOCHWALD 8.2

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25j	Germany	North Rhine-Westphalia	Uedem	E 6°21'54" N 51°41'17"

	Area in ha	Ownership
Component part	0.69	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 25K UEDEM-HOCHWALD | HOCHWALD 9

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25k	Germany	North Rhine-Westphalia	Uedem	E 6°21'54" N 51°41'24"

	Area in ha	Ownership
Component part	1.27	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.



## COMPONENT PART 25L

### UEDEM-HOCHWALD | HOCHWALD 10

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25L	Germany	North Rhine-Westphalia	Uedem	E 6°21'43" N 51°41'20"

	Area in ha	Ownership
Component part	1.31	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 25M

### UEDEM-HOCHWALD | HOCHWALD 11

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25m	Germany	North Rhine-Westphalia	Uedem	E 6°21'32" N 51°41'17"

	Area in ha	Ownership
Component part	1.55	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Uedem) Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.



## COMPONENT PART 25N

### UEDEM-HOCHWALD | HOCHWALD 12

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
25n	Germany	North Rhine-Westphalia	Uedem	E 6°21'18" N 51°41'20"

	Area in ha	Ownership
Component part	0.86	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 250

### UEDEM-HOCHWALD | HOCHWALD 13

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
250	Germany	North Rhine-Westphalia	Uedem	E 6°21'4" N 51°41'20"

	Area in ha	Ownership
Component part	1.65	Public
Buffer zone	106.16 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 2015
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Uedem)	
	Landscape protection area (Landschaftsschutzgebiet 'Balberger Höhenrücken mit den Waldgebieten Uedemer Hochwald und Tueschenwald')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest and a detailed conservation and monitoring programme was established in 2015 with the forest service of NRW.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone is shared by all component parts belonging to this cluster. See the text for the cluster.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

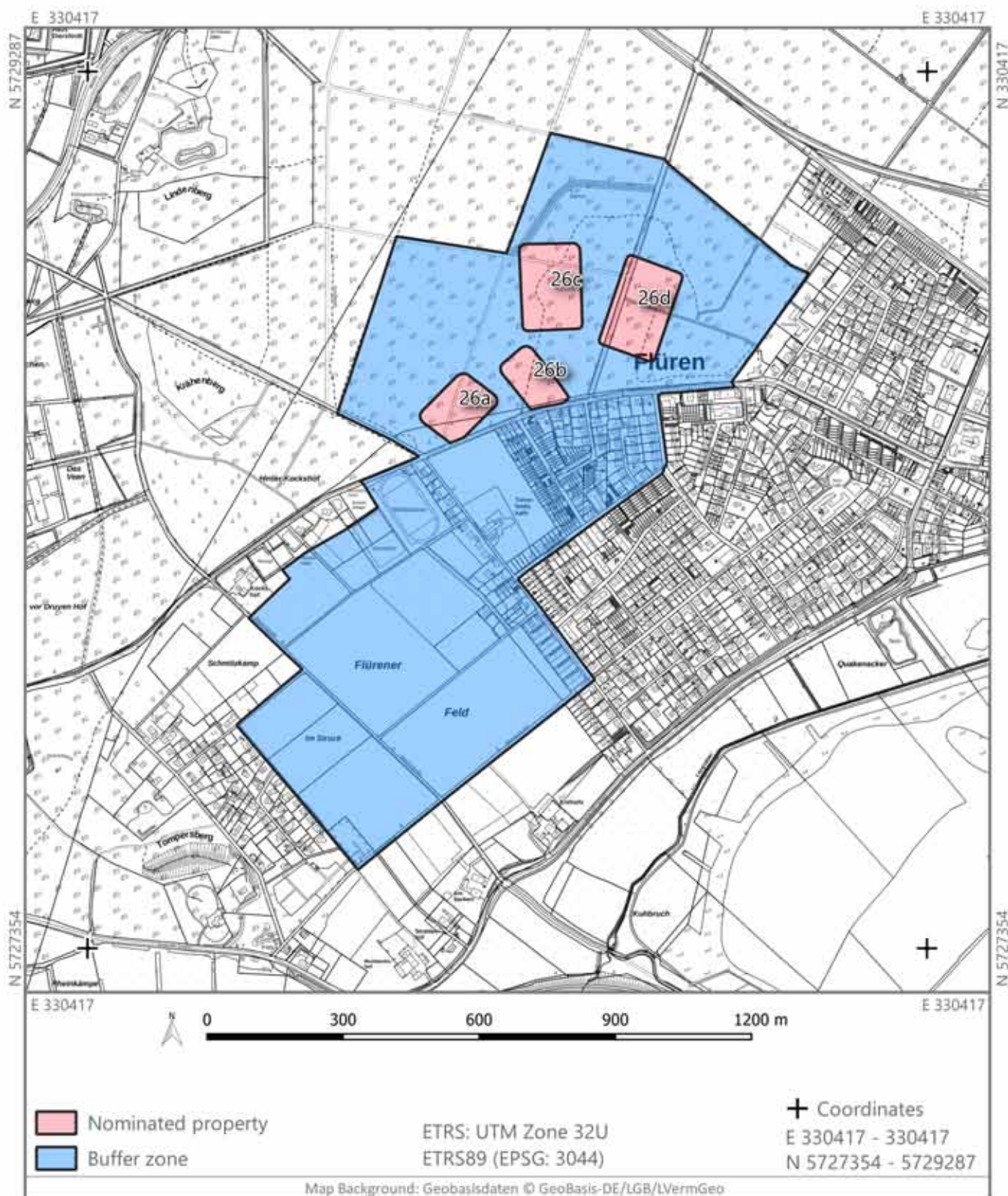
Not mentioned in written sources.

**Further details**

See the text for the cluster.



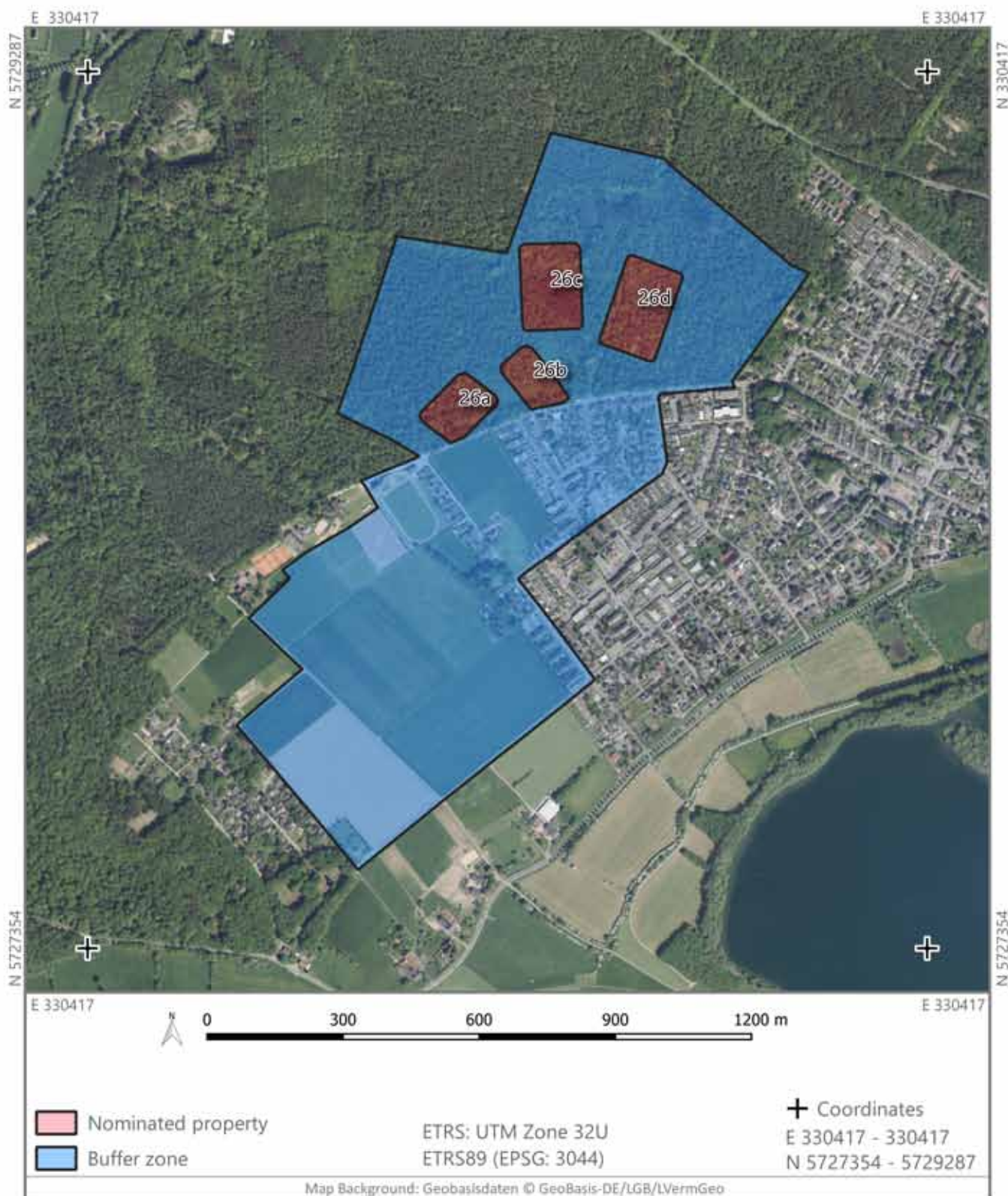
## 26 - Wesel-Flüren







## 26 - Wesel-Flüren

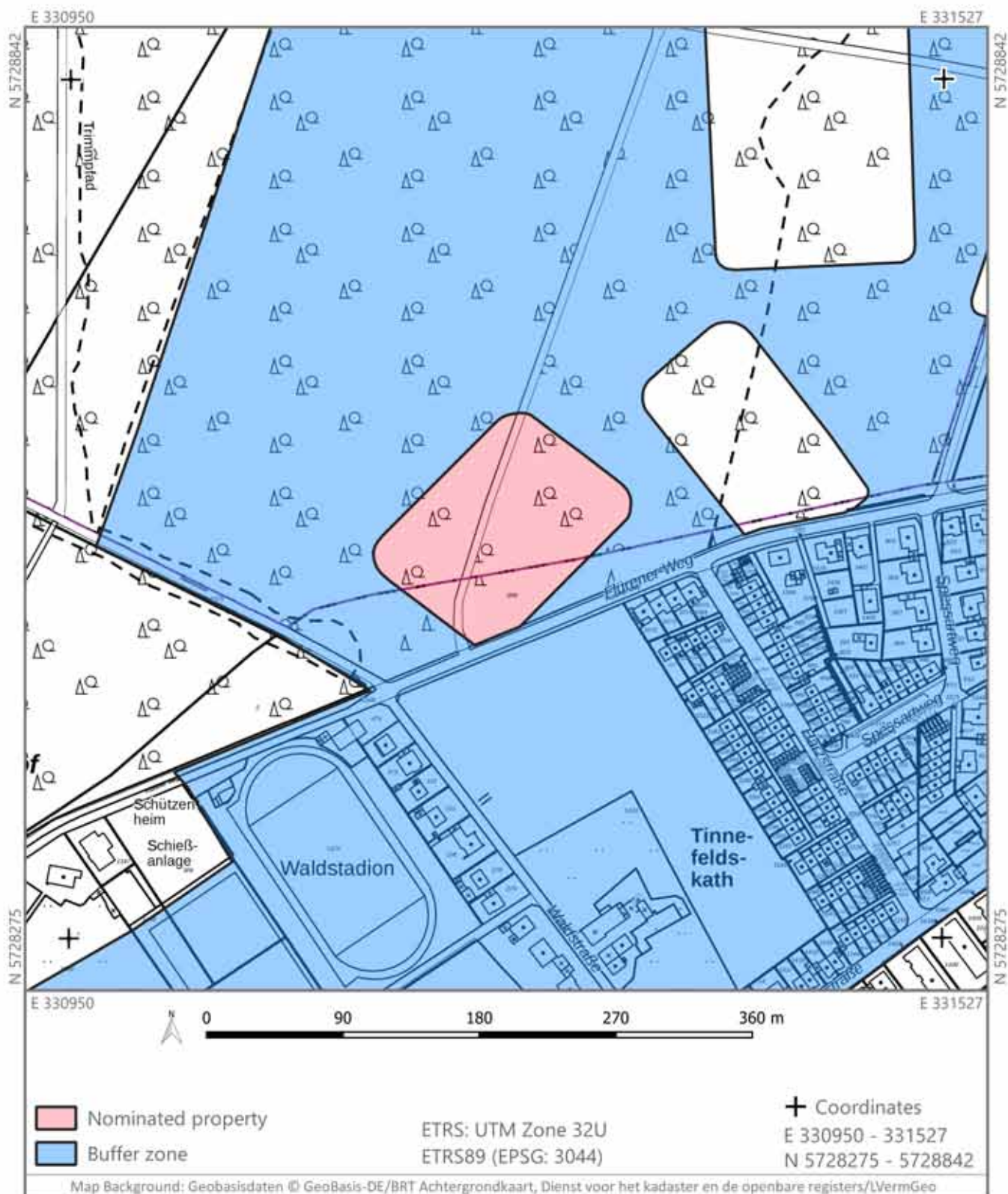






26a - Flürener Feld 1

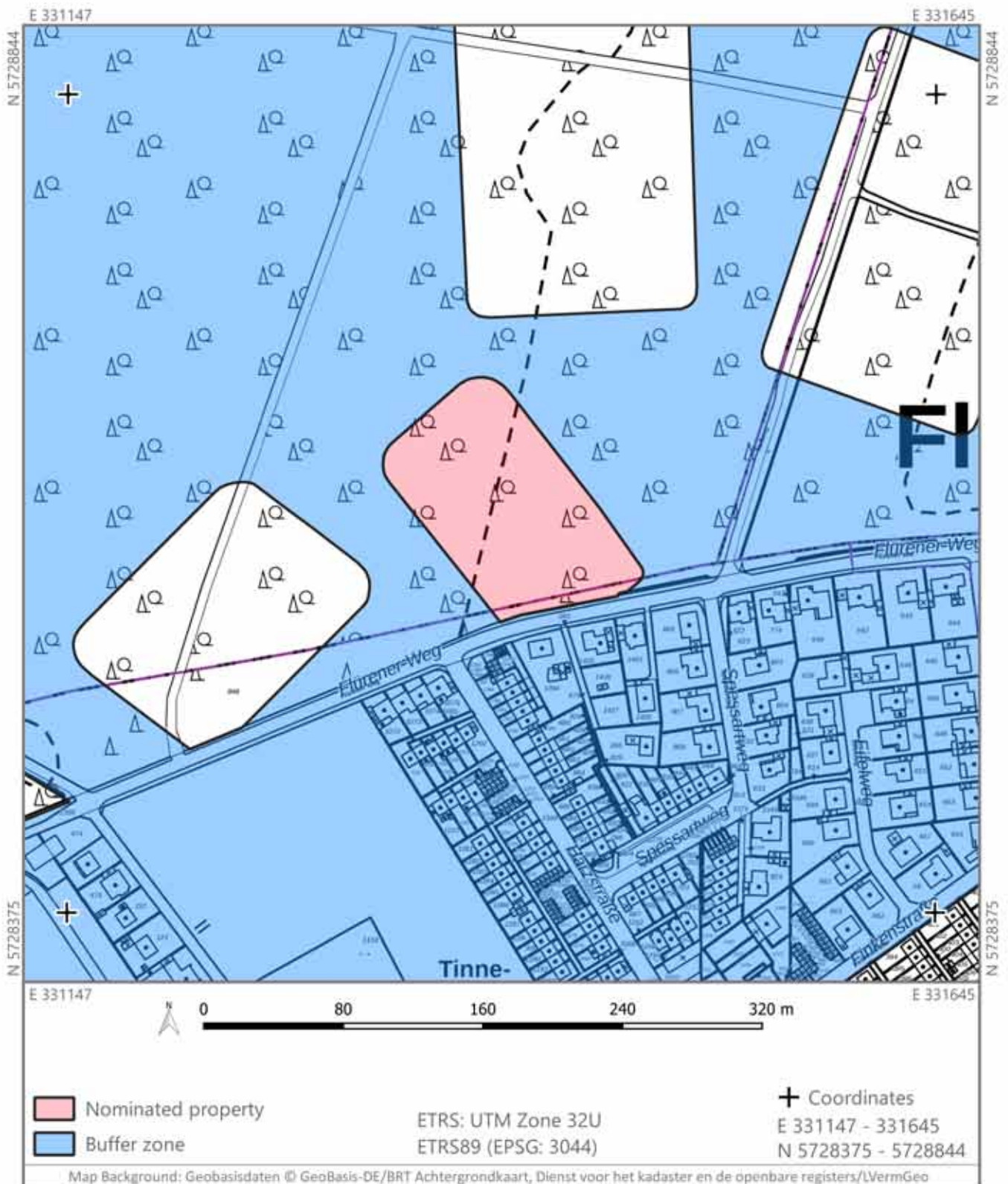
## 26 - Wesel-Flüren





26b - Flürener Feld 2

## 26 - Wesel-Flüren

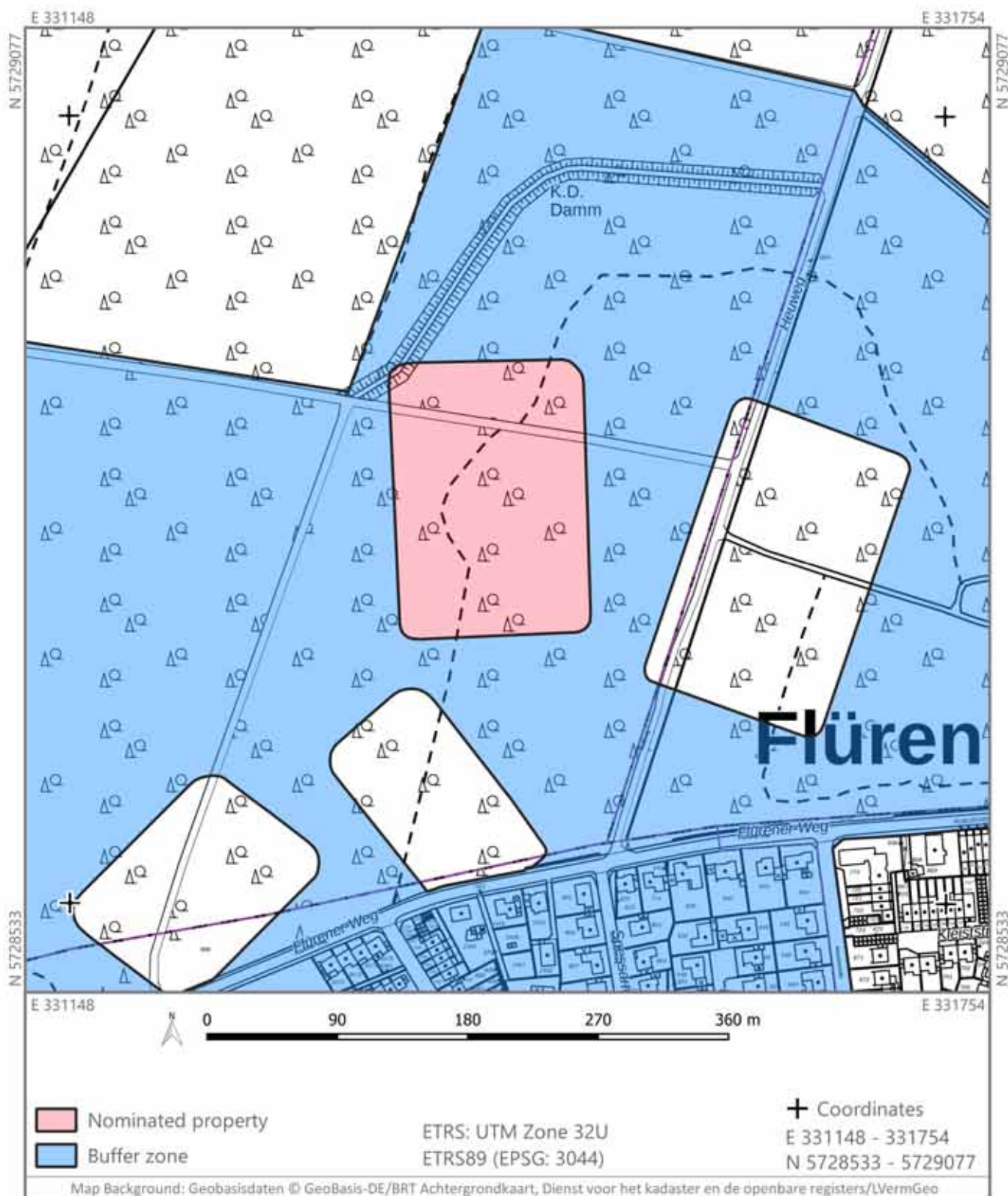






26c - Flürener Feld 3

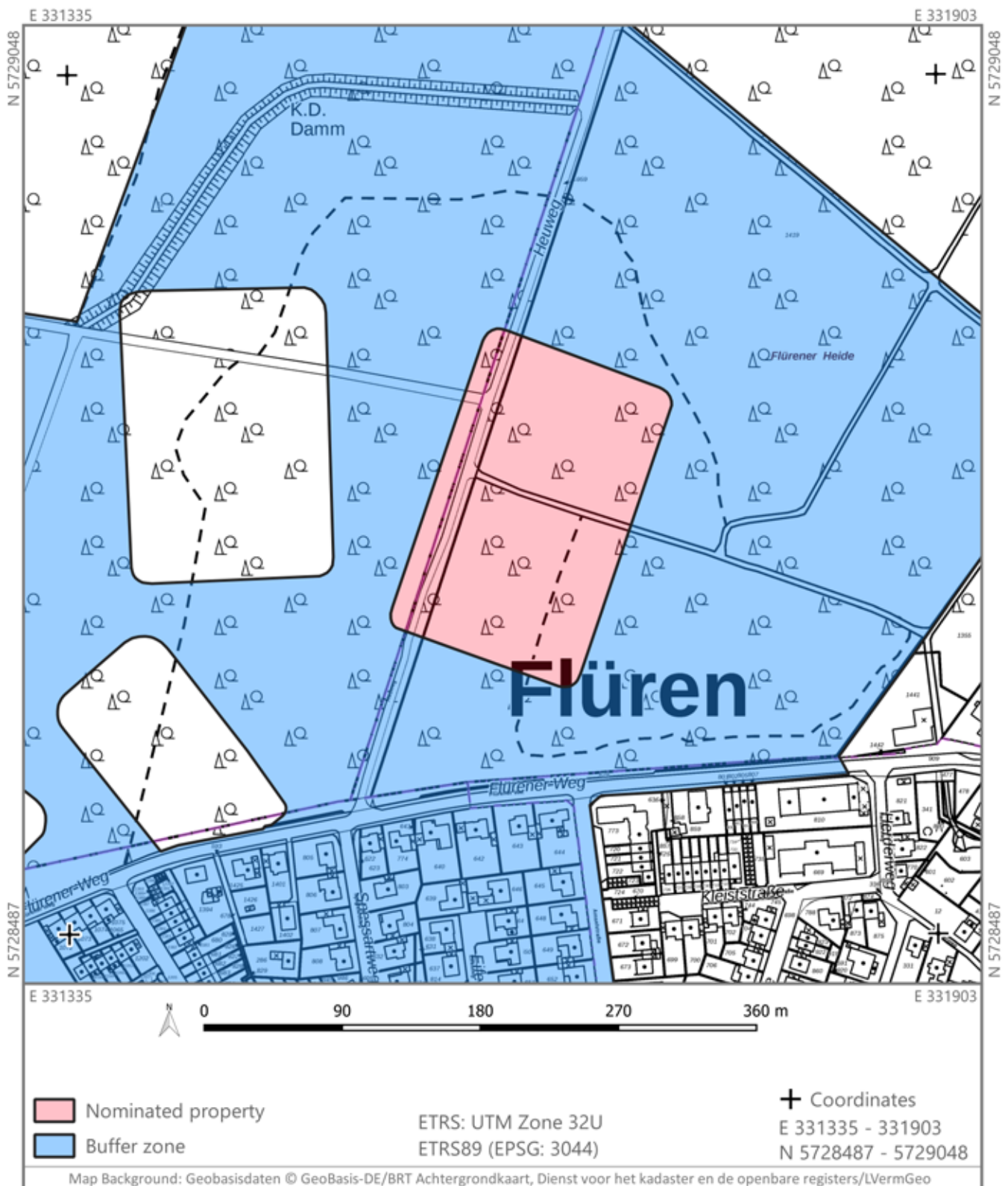
## 26 - Wesel-Flüren





26d - Flürener Feld 4

## 26 - Wesel-Flüren





## CLUSTER 26 WESEL-FLÜREN

Temporary camps

Id	State Party	Federal state	Municipality
26	Germany	North Rhine-Westphalia	Wesel

### Brief description

The camps are located on the right bank of the river Rhine and north of the mouth of the Lippe valley, in a raised position on the lower terrace. Four camps with a size of 1.2–2.4 ha preserved above-ground form part of a cluster along with further camps known from aerial reconnaissance. The defences of the camps consist of an earthen rampart, which is typical for Roman marching camps. These ramparts were constructed with turves (lat. *caespites*) laid to form a wall. The gates are without exception in the form of *claviculae* (literally keys).

### Attributes and values

The four camps contribute to outstanding universal value through the preserved earthen ramparts which are a rare and significant example of Roman military architecture on campaign. Together with four other camps known from aerial photographs south of the property, the cluster of the camps in the Flürener Feld represents a manoeuvring or gathering area of the Roman army on the east bank of the river Rhine. It demonstrates the desire and the ability of the Roman army to move large bodies of troops across the river Rhine. It can also be seen as a rare although indirect indication of the use of pontoon bridges, a technique often used by the Rhine fleet according to the 3<sup>rd</sup> century AD historian Cassius Dio. The temporary camps served as a bridgehead in Germanic territory for possible further penetration into the Lippe valley. The camps at Flüren provide important testimony to adaptations to the river landscape and the strategic value of this area for armies operating in the central part of the Rhine.

### Integrity

Wholeness	Good. Four of the eight camps are included in the property.
Intactness	Very good. The ramparts of the camps are preserved up to 0.5 m high.
Exposure to threats	Minimal. The camps are located in the forest.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Unaffected. Very good preservation of ramparts and ditches (fills).
Location and setting	Affected. The camps were originally laid out in an open landscape and are under forest today.

### Buffer zone

The buffer zone also includes the camps located south of the nominated property, of which only the ditches are known from aerial photographs.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Forestry	Minimal	Sustainable forestry with minimal ground disturbance in accordance with Federal Forestry Act, Federal Soil Conservation Law and Monument Protection Law of North Rhine-Westphalia is planned.

### Presentation

None.

### Community involvement

None.

### Ancient sources

Not mentioned in written sources.

### Further details

#### Main building phase

n.a.

#### Main research activities

2012 discovery through laserscan interpretation

#### Garrisons

legionaries from Xanten

#### Literature

unpublished.

Fig. 189 Digital elevation model of the temporary camps at Wesel-Flüren. North at top.

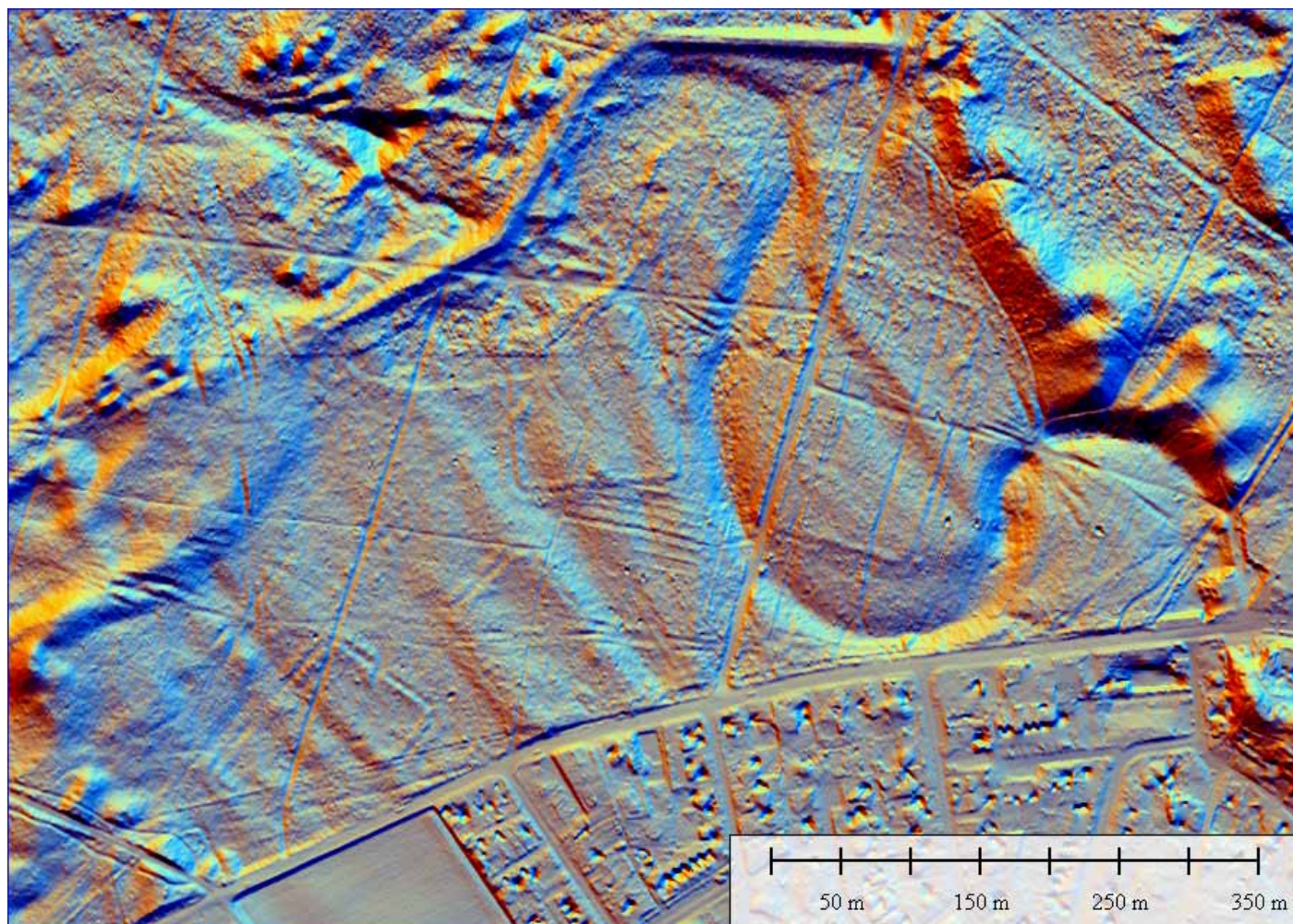


Fig. 189





## COMPONENT PART 26A

### WESEL-FLÜREN | FLÜRENER FELD 1

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
26a	Germany	North Rhine-Westphalia	Wesel	E 6°33'32 N 51°40'55"

	Area in ha	Ownership
Component part	1.5	Private
Buffer zone	84.86 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014)  Landscape protection area (Landschaftsschutzgebiet 'Randbereiche des Diersfordter Waldes und Wittenhorster Graben')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is intact and located in forest.

### Authenticity

See the text for the cluster.

**Buffer zone**

The buffer zone also includes the camps located south of the nominated property, of which only the ditches are known from aerial photographs.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 26B

### WESEL-FLÜREN | FLÜRENER FELD 2

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
26b	Germany	North Rhine-Westphalia	Wesel	E 6°33'40" N 51°40'59"

	Area in ha	Ownership
Component part	1.17	Private
Buffer zone	84.86 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014)  Landscape protection area (Landschaftsschutzgebiet 'Randbereiche des Diersfordter Waldes und Wittenhorster Graben')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is intact and located in forest.

### Authenticity

See the text for the cluster.

**Buffer zone**

The buffer zone also includes the camps located south of the nominated property, of which only the ditches are known from aerial photographs.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.



## COMPONENT PART 26C

### WESEL-FLÜREN | FLÜRENER FELD 3

Temporary camp

Id	State Party	Province	Municipality	Coordinates central point
26c	Germany	North Rhine-Westphalia	Wesel	E 6°33'43" N 51°41'6"

	Area in ha	Ownership
Component part	2.51	Private
Buffer zone	84.86 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014)  Landscape protection area (Landschaftsschutzgebiet 'Randbereiche des Diersfordter Waldes und Wittenhorster Graben')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is intact and located in forest.

### Authenticity

See the text for the cluster.

**Buffer zone**

The buffer zone also includes the camps located south of the nominated property, of which only the ditches are known from aerial photographs.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 26D

### WESEL-FLÜREN | FLÜRENER FELD 4

Temporary camp

Id	State Party	Province	Municipality	Coordinates central point
26d	Germany	North Rhine-Westphalia	Wesel	E 6°33'50" N 51°41'6"

	Area in ha	Ownership
Component part	2.67	Private
Buffer zone	84.86 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014)  Landscape protection area (Landschaftsschutzgebiet 'Randbereiche des Diersfordter Waldes und Wittenhorster Graben')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is intact and located in forest.

### Authenticity

See the text for the cluster.

**Buffer zone**

The buffer zone also includes the camps located south of the nominated property, of which only the ditches are known from aerial photographs.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

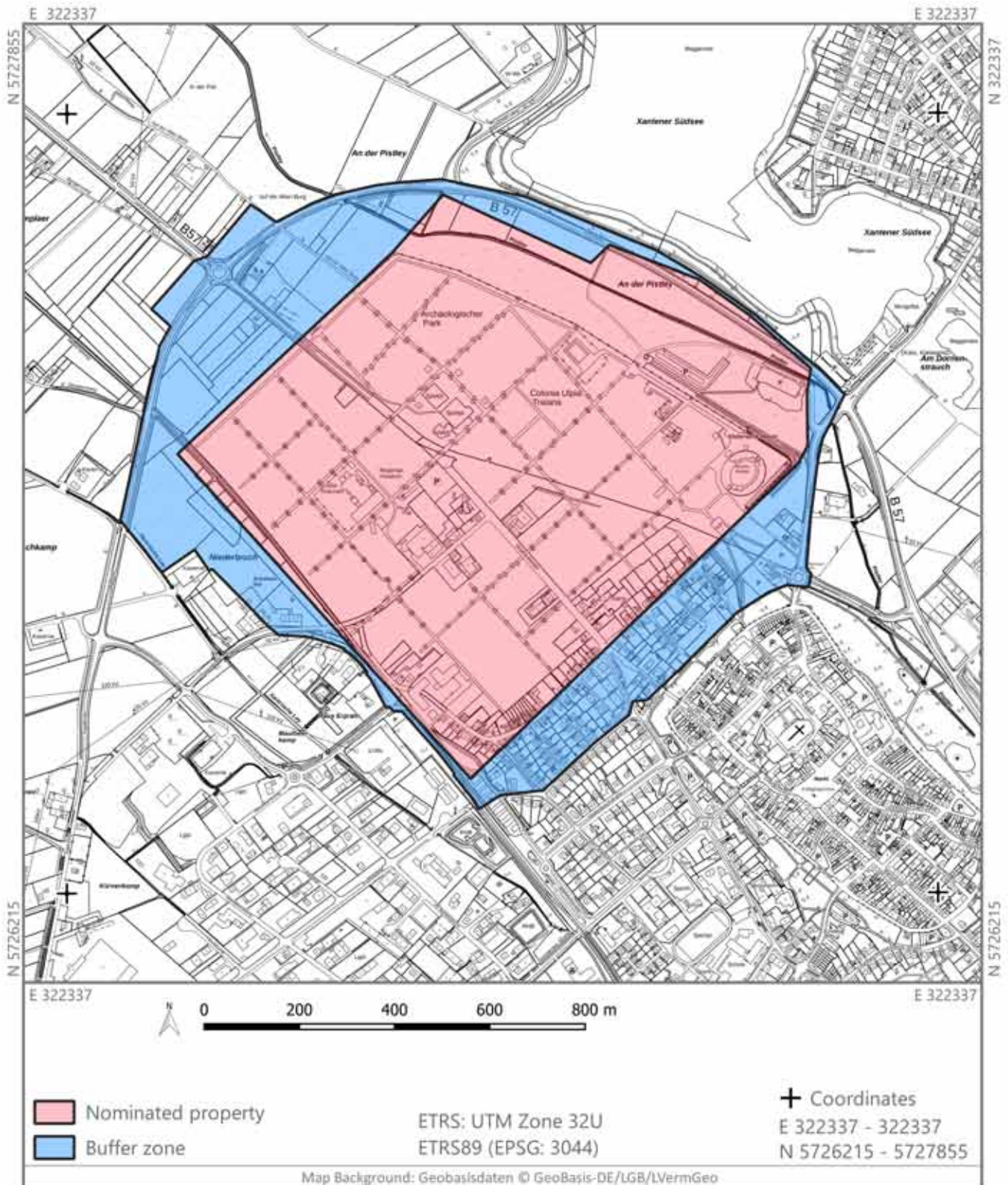
Not mentioned in written sources.

**Further details**

See the text for the cluster.



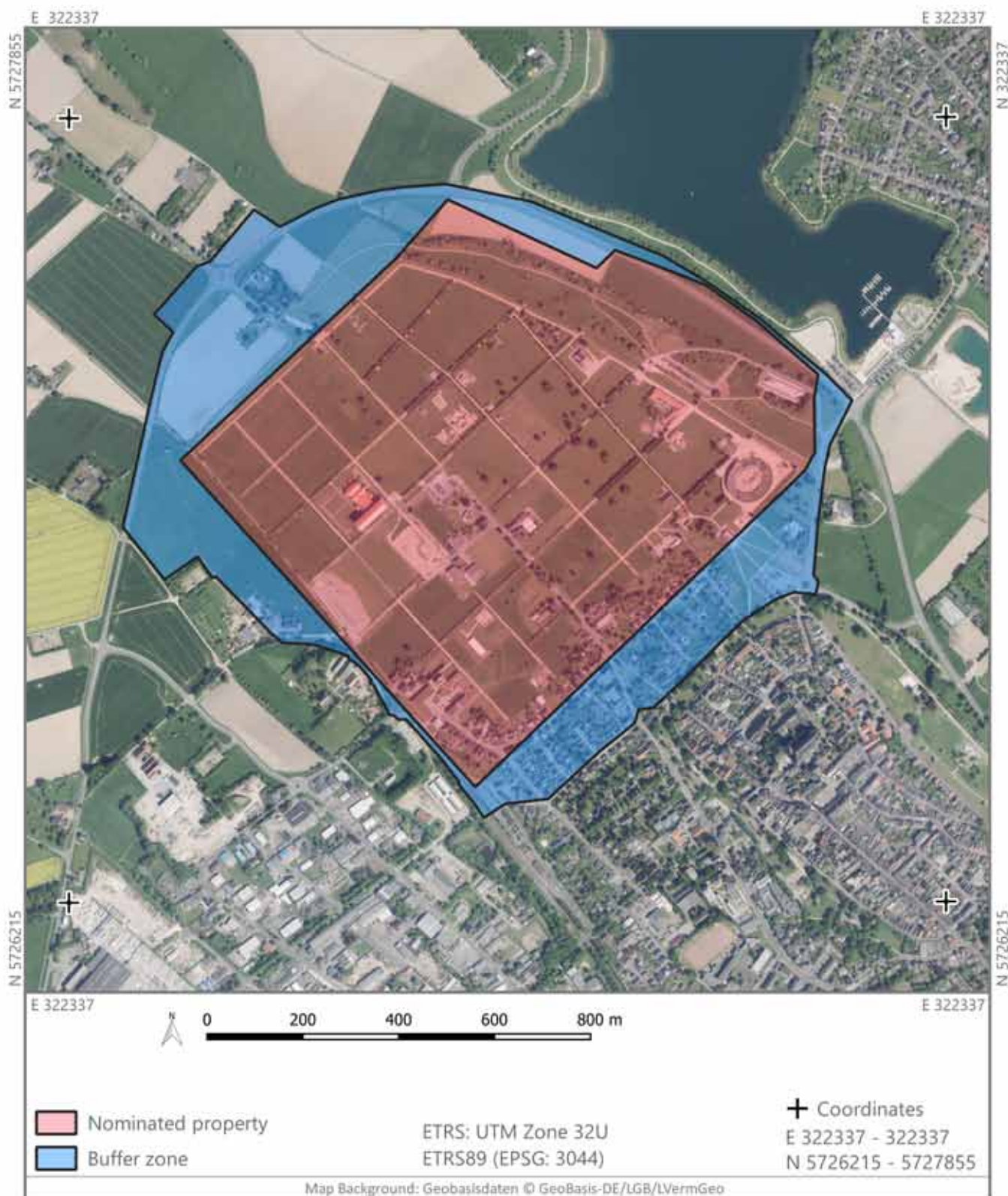
## 27 - Xanten-CUT







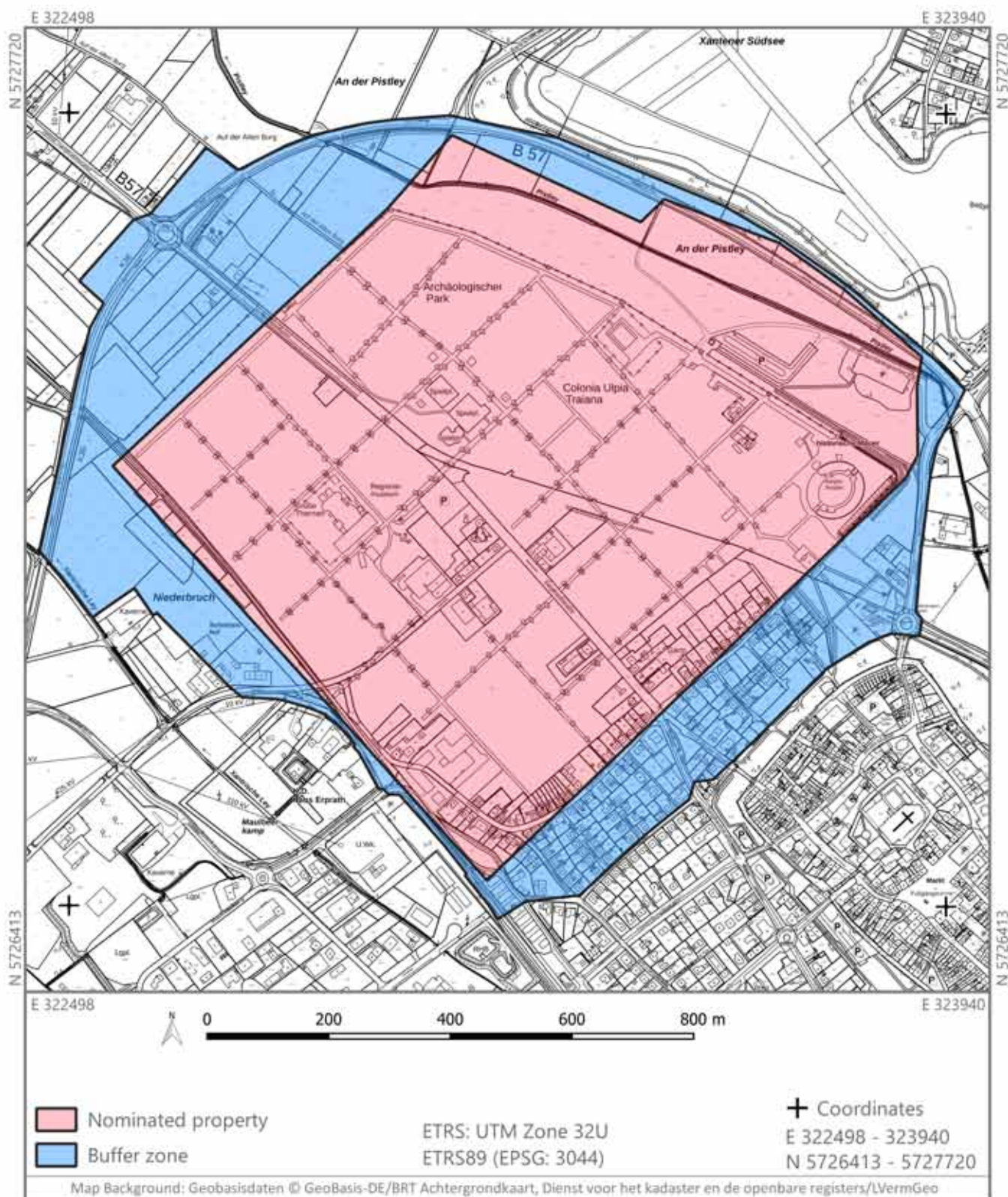
## 27 - Xanten-CUT







## 27 - Xanten-CUT



## COMPONENT PART 27

### XANTEN-CUT

Limes road, town, harbour, fort

Id	State Party	Federal state	Municipality	Coordinates central point
27	Germany	North Rhine-Westphalia	Xanten	E 6°26'38" N 51°40'1"

	Area in ha	Ownership
Component part	90.19	Public, private
Buffer zone	39.86	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1984
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014) Land-use plan (Flächennutzungsplan Xanten) Partly landscape protection area (Landschaftsschutzgebiet 'Niederung Pistley')	

### Brief description

The component part lies in a slightly elevated position on the lower terrace, directly above the Roman Rhine. Several military installations were located on the 70 ha area of the *Colonia Ulpia Traiana* (CUT). The Limes road runs from northwest to southeast through CUT. Its course is slightly different to the orientation of the later division of the Roman city into *insulae* and therefore older. The road had a width of 18.5 m and consisted of a gravel base with a hard, concrete-like surface. There are accompanying ditches on both sides. In the surface of the road there are clear grooves approx. 1.4 m apart, created by carts and wagons. It is clear therefore that the ancient road surface is preserved.

In the south of CUT is an area of 3.9 ha fortified with a wall in the second half of the 3<sup>rd</sup> century AD. At its south-western and south-eastern end points, this wall connects directly to the CUT city wall, using it as the southern boundary. There were simple gates with gate towers in the north-west and north-east sides of the enclosure. The military use of the fortified area is obvious. One possible interpretation is that it was erected as a temporary military camp in the context of the Franconian raids of the last third of the 3<sup>rd</sup> century AD and the planning and construction of the *Tricensima* within the former city area of CUT.

The *Tricensima* was created by transformation of the central nine *insulae* of CUT into a fortification in Late Antiquity. The defence of the *Tricensima* consisted of a 3.5 m wide wall with 11 intermediate towers, four corner towers and gates. Around 8.5 m in front of the wall, the fortress was protected by two surrounding ditches, each 12 m wide. It probably played a fundamental role in the organisation of Late Roman border security. In addition to stationing military units, it probably also offered shelter to civilians from the former Colonia.

In front of the city walls, the harbour quay extended over a maximum length of 230 m along the banks of the Rhine, mainly in front of the later Insula 36. The harbour was probably built around the middle of the 1<sup>st</sup> century AD and so served as a supply station for the legionary fortresses for at least half a century before the foundation of CUT. The bank was reinforced to protect it from erosion. There is evidence of a boathouse southeast of the dock.

### Attributes and values

Besides *Colonia Claudia Ara Agrippinensium* (CCAA), the capital of Lower Germany, *Colonia Ulpia Traiana* was the only town along the Roman Rhine accorded the highest status of a Roman city. Providing its inhabitants full Roman citizenship, the city was able to serve as a major recruitment base for Roman legionaries. The town also gave veterans with full Roman citizenship a place to settle in the vicinity of their main garrison *Vetera castra*, allowing them to acquire property on Roman ground.

The foundation of CUT by Emperor Trajan in AD 100, next to the legionary fortress of *Vetera castra*, is best understood in the context of the important role the Lower German army played in the establishment of his Emperorship in AD 98. As a major recruitment base and veteran settlement, CUT connects the primary military installations of forts and fortresses with the civilian sphere. It therefore contributes to understanding the total footprint of a Roman frontier.

With its harbour, the largest one between the CCAA and *Forum Hadriani*, the site served also as a key point on the Roman army's major supply line along the river Rhine. The polygonal layout of CUT, caused by the course of the river, clearly illustrates the close connection to the river landscape.

The reduction in the early 4<sup>th</sup> century AD to the Late Roman fortress *Tricensima* reflects the major changes in the strategic concepts of the Roman army in Late Antiquity.

### Integrity

Wholeness	Very good. The entire city including military installations is included in the component part.
Intactness	Good. Excavations are carried out in a sustainable way, ensuring layers of all periods are preserved.
Exposure to threats	Minimal. The entire Colonia is well protected as an archaeological park and all excavation is carried out to the highest standards.

### Authenticity

Form and design	Unaffected. Only small parts of the site have been built over in the post-Roman period, leaving the Roman remains relatively untouched. Sustainably excavated areas form an exception.
Materials and substance	Fair. The physical substance of the surviving Roman remains is intact.
Location and setting	Unaffected. The connection between the city and the former Roman Rhine is still very evident. The entire site provides an outstanding illustration of a planned city with <i>Colonia</i> status.

### Buffer zone

The buffer zone includes the immediate vicinity of the Roman city of *Colonia Ulpia Traiana*.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Other spatial development/ construction	Minimal	Development of the LVR-Archaeological Park Xanten takes place sustainably and to high standards, informed by long term planning for research and public presentation.
(iv) Visitors	Minimal	The large number of visitors to the LVR-Archaeological Park Xanten does not endanger the archaeological remains. Original surfaces, if exposed, cannot be accessed.

### Presentation

The whole *colonia* is presented as an archaeological park. It houses a very large Roman Museum and various themed pavilions. Some buildings have been fully or partially reconstructed with modern materials, preserving the in-situ remains. These modern full scale visualisations provide a good impression of a Roman city at the height of its prosperity.

### Community involvement

None.

### Ancient sources

The site is known as *Colonia Ulpia Traiana* from Roman inscriptions and listed in the *Tabula Peutingeriana* (Segm. II.5), a medieval copy of a Roman road map and also in the *Itinerarium Antonini Augusti* (255,52 and 370,3), a Roman register of stations and distances along roads.

The name of the 4<sup>th</sup> century AD Roman fortress inside the former city was probably *Tricensima* as mentioned by the Late Roman historian Ammianus Marcellinus (Amm. Marc. 18,2,4 and 20,10,1), named after the 30<sup>th</sup> legion (*legio tricensima*), of which detachments may have formed the garrison of the new fortification and military base.



### Further details

#### Main building phases

98/99 CUT awarded status of *colonia*  
 Second half 3<sup>rd</sup> century AD Südquartier  
 Late 3<sup>rd</sup> century AD

#### Main research activities

19<sup>th</sup> century excavations (i.a. city wall)  
 1930s excavations (amphitheatre)  
 Since 1977 excavations within the archaeological park

#### Garrisons

-/?

#### Literature

Rüger 1979; Bridger 2001; Otten/Ristow 2008; Müller et al. 2008; Otten 2011; Reuter 2012; Leih 2012; Zieling 2015 Mirschenz 2017; Zieling 2017; Selke/Leih 2018.

Fig. 190 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 191 Plan showing the Colonia Ulpia Traiana in the 2<sup>nd</sup>/3<sup>rd</sup> century AD and the Late Roman fortress *Tricensimae* in the 3<sup>rd</sup>/4<sup>th</sup> century AD.

Fig. 192 The flat-bottom ship from Xanten may have also been used as a reaction ferry for crossing the Rhine.

Fig. 193 Artist's impression of the *Colonia Ulpia Traiana* in the 2<sup>nd</sup> century AD. The city's internal layout is defined by streets laid out in a grid pattern forming square blocks of buildings, so called *insulae*.

Fig. 194 Timber structures of the harbour of Xanten-CUT during excavation.

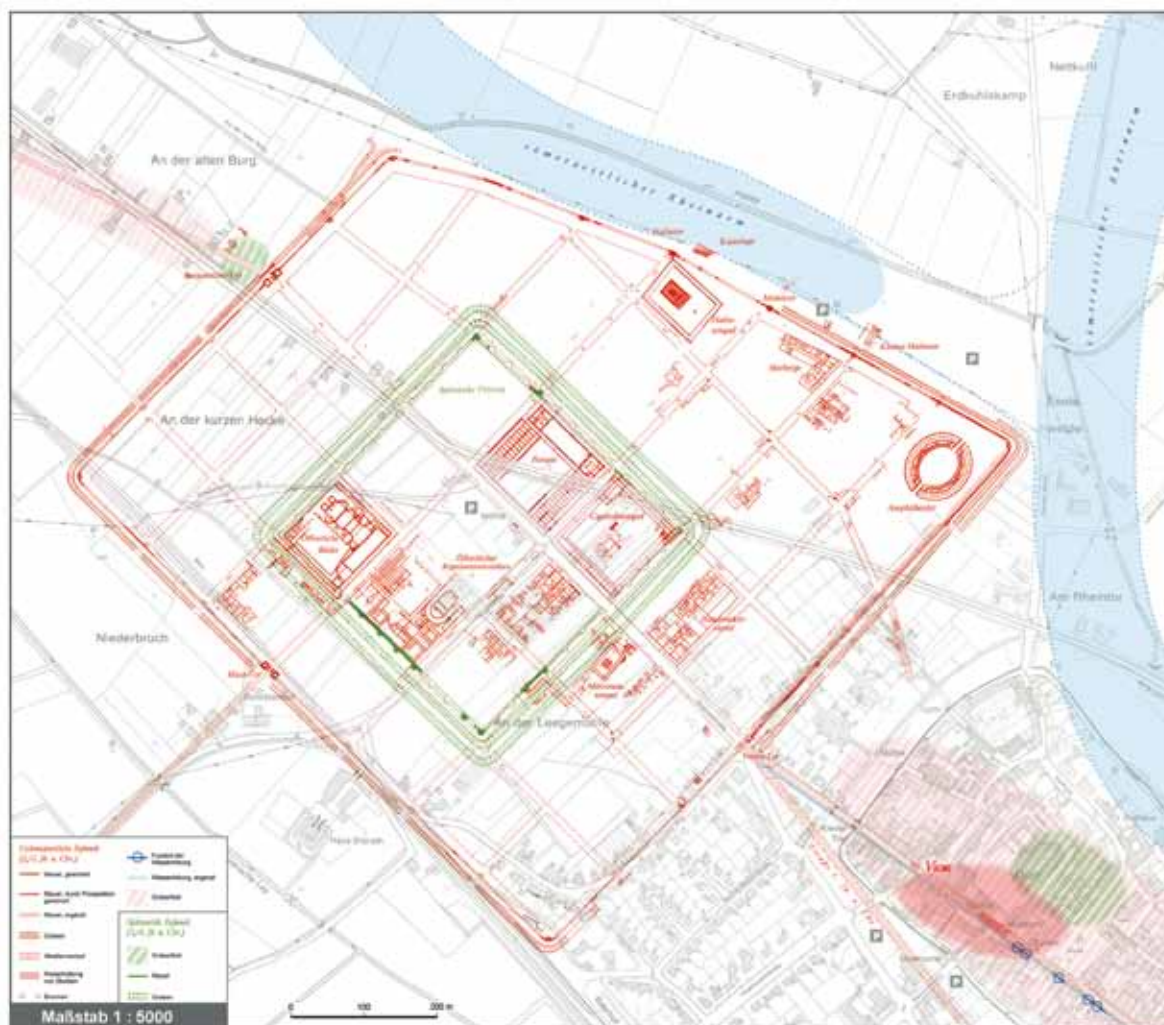
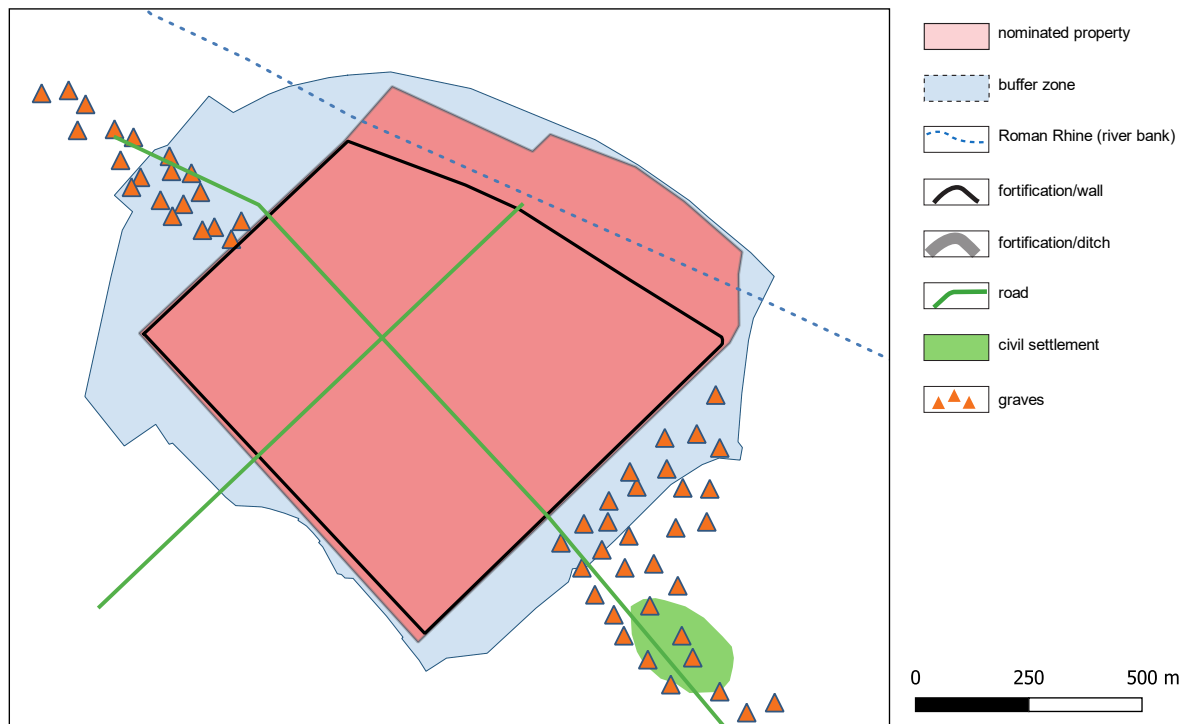




Fig. 192



Fig. 193





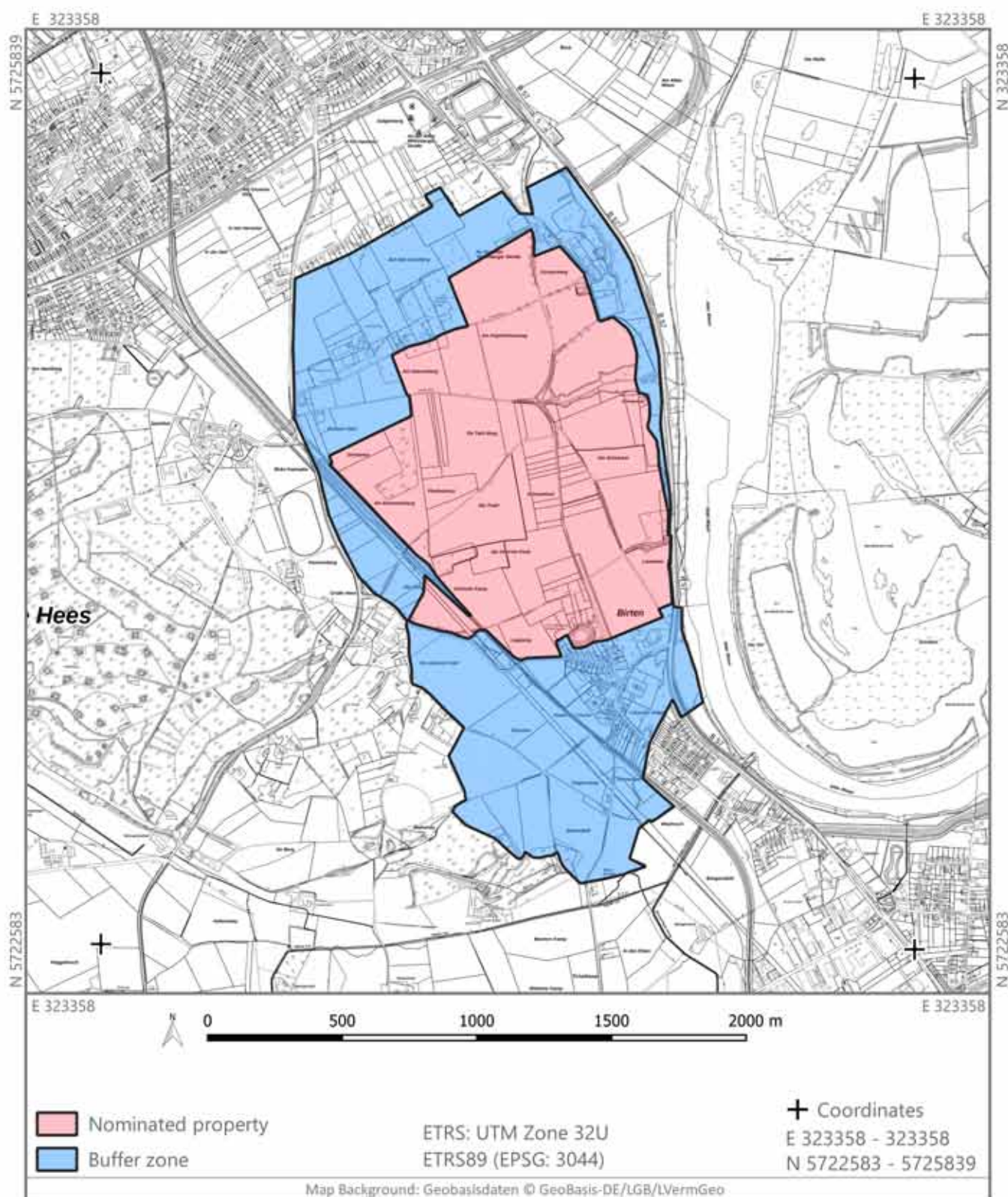
Fig. 194







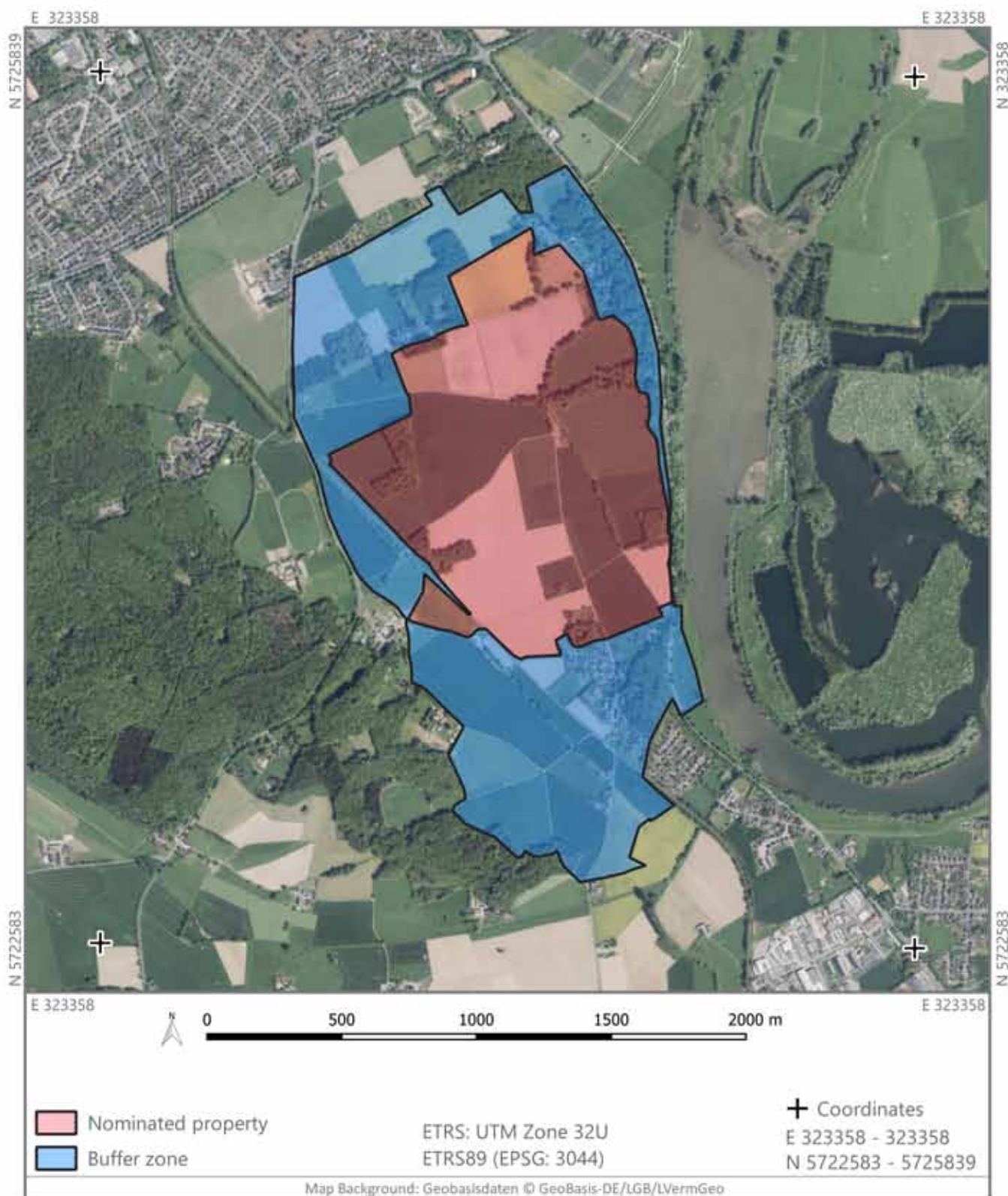
## 28 - Xanten-Fürstenberg







## 28 - Xanten-Fürstenberg







## COMPONENT PART 28 XANTEN-FÜRSTENBERG

Legionary fortresses, civil settlement

Id	State Party	Federal state	Municipality	Coordinates central point
28	Germany	North Rhine-Westphalia	Xanten	E 6°28'12" N 51°38'35"

	Area in ha	Ownership
Component part	126.17	Public, private, other
Buffer zone	137.08	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1991
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014) Land-use plan (Flächennutzungsplan Xanten) Partly Nature Reserve (Naturschutzgebiet 'Fürstenberg') Partly landscape protection area (Landschaftsschutzgebiet 'Offenland zwischen der Hees und Fuerstenberg')	

### Brief description

The component part, which includes legionary fortresses, civil settlement, an amphitheatre and several very large military building units, is located on an ice-pushed moraine clearly elevated above an old arm of the Rhine. The total area of the complex measures about 1,600 × 900 m. The highest point today is 71.6 m above sea level. The amphitheatre is located in a depression 30 m above sea level.

The two legionary fortresses each covered a similar area of about 57 ha. However, their form and orientation differ. The early fortress is polygonal in shape with internal rectangular divisions. It dates to the Augustan-Tiberian period and was of earth-and-timber construction. The dimensions measure about 750 × 800 m. The succeeding Claudio-Neronian fortress measures approx. 600 × 900 m and has the typical rectangular playing card shape. The interior buildings are of stone while the rampart comprises earth-and-timber. Its location half on a slope and half on level ground as described by Tacitus can still be seen today. The almost complete ground plans of both legionary fortresses are known from large-scale geophysical survey.

In addition to the double-legionary fortresses, there are at least two large parade grounds within the property, (so-called *campi*, which offered the legionaries space for training and marching) as well as the amphitheatre. In the north, there are also structures that may represent civilian settlement structures in the immediate vicinity of the legionary fortresses (*canabae legionis*). Roads have been found leading in every direction, demonstrating the importance of Lower Germany's largest legionary fortress as a key junction for traffic in this region.

### Attributes and values

The Fürstenberg shows a broad range of elements. It comprises the largest double-legion fortresses in the Roman Empire, which have never been built over. The Roman topography has also been preserved intact and the description by the Roman historian Tacitus can still be experienced as he saw it, in a completely authentic manner. Within the component part, in addition to the legionary fortresses, there are large military installations such as *campi*, an amphitheatre and buildings and built structures north and south of the fortresses, demonstrating the wide range and variety of ancillary features associated with a large legionary base.

The foundation of CUT by Emperor Trajan in AD 100, next to the legionary fortress of *Vetera castra*, is best understood in the context of the important role the Lower German army played in the establishment of his Emperorship in AD 98. As a major recruitment base and veteran settlement, CUT connects the primary military installations of forts and fortresses with the civilian sphere. It therefore contributes to understanding the total footprint of a Roman frontier.

With its harbour, the largest one between the CCAA and *Forum Hadriani*, the site served also as a key point on the Roman army's major supply line along the river Rhine. The polygonal layout of CUT, caused by the course of the river, clearly illustrates the close connection to the river landscape.

The reduction in the early 4<sup>th</sup> century AD to the Late Roman fortress *Tricensima* reflects the major changes in the strategic concepts of the Roman army in Late Antiquity.

### Integrity

Wholeness	Very good. The legionary fortresses and their associated military and civilian environments are all included in the nominated property.
Intactness	Very good. Using non-invasive techniques including geophysical survey, it is possible to reconstruct the ground plans of the legionary fortresses and associated buildings almost completely. Some elements and parts of elements are preserved above ground.
Exposure to threats	Minimal. The area is under agricultural use and topsoil erosion is occurring. Illegal metal detecting seems not to be a threat to in-situ preservation.

### Authenticity

Form and design	Unaffected. The complete legionary fortresses as well as their surroundings are included in the nominated property. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Unaffected. Very narrow test excavation trenches, not always taken down to undisturbed ground, have revealed the archaeological features are well preserved and have several phases.
Location and setting	Fair. The strategically important setting with its view over the landscape into the area on the right bank of the Rhine can still be experienced. The riverine topography of the Rhine and its confluence with the Lippe has changed since ancient times and is no longer authentic.

### Buffer zone

The buffer zone is intended to protect views over the Fürstenberg.

In addition, it should include areas of the *canabae* and the immediate surrounds of the legionary fortresses in which features have been identified.



### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Agriculture: ploughing	Minimal	Careful monitoring of possible erosion by ploughing is needed in sensitive areas. Further conversion of intensive arable to extensive land-use is planned.
(i) Metal detecting	Minor	Illegal excavations and metal detecting are prohibited by law, but cannot be ruled out.

### Presentation

The amphitheatre, which has been preserved above ground, can be visited. Here and at various other points on the Fürstenberg, panels provide information about the history of the site and archaeological finds. The information panels are connected by a circular path. In the RömerMuseum in the LVR-Archaeological Park Xanten several finds from the Fürstenberg are exhibited and the site is explained.

### Community involvement

None.

### Ancient sources

The site is known as *Vetera castra* ('the old camp') by the Roman historian Tacitus (Tac. Ann. 1,45; Tac. Hist. 4,21). He describes the topography of the legionary fortress: '*Part of the fortress lay on a gentle slope; part could be approached on level ground.*' (Tac. Hist. 4,23). This view can still be recognised in the landscape at the Fürstenberg.

The site played a major role in the Batavian Revolt (AD 69–70) and was several times the scene of sieges and major battles between the Roman army and the Batavians and their Germanic allies. These events are described in detail by Tacitus in his Histories, books 4 and 5.

### Further details

#### Main building phases

10?–40? (timber)  
40?–70 (partly stone)

#### Main research activities

1905–1934 numerous narrow trenches  
1960s continuous aerial prospection (still ongoing)  
2011 small scale excavation for monitoring  
2015–2018 large scale geophysical prospection

#### Garrisons

legio XVIII and legio XIX 15 BC? – AD 9  
legio V alaudae 14–69  
legio XXI rapax 9/10–41/44  
legio XV Primigenia 45–69

#### Literature

Lehner 1930; Hanel 1995; Hanel/Song 2007; Obladen-Kauder 2012; Obladen-Kauder 2005; Bödecker et al. 2018.

Fig. 195 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 196 Reconstruction model of the headquarter building (*principia*) of the legionary fortress *Vetera castra* at Xanten-Fürstenberg. The *principia* of *Vetera castra* was one of the largest Roman buildings along the Rhine.

Fig. 197 Cenotaph for the centurion Marcus Caelius, garrisoned at *Vetera castra* and killed in the battle of the Teutoburg Forest in AD 9.

Fig. 198 Results of the geophysical surveys carried out at Xanten-Fürstenberg. Indicated are the fortresses of the Augustan and Claudio-Neronian periods.

Fig. 199 Details of the results of the geophysical surveys carried out at the legionary fortress of Xanten-Fürstenberg. Rampart (A) and parade ground (B) of the latest period from the 60s AD. Roads (C) and barracks

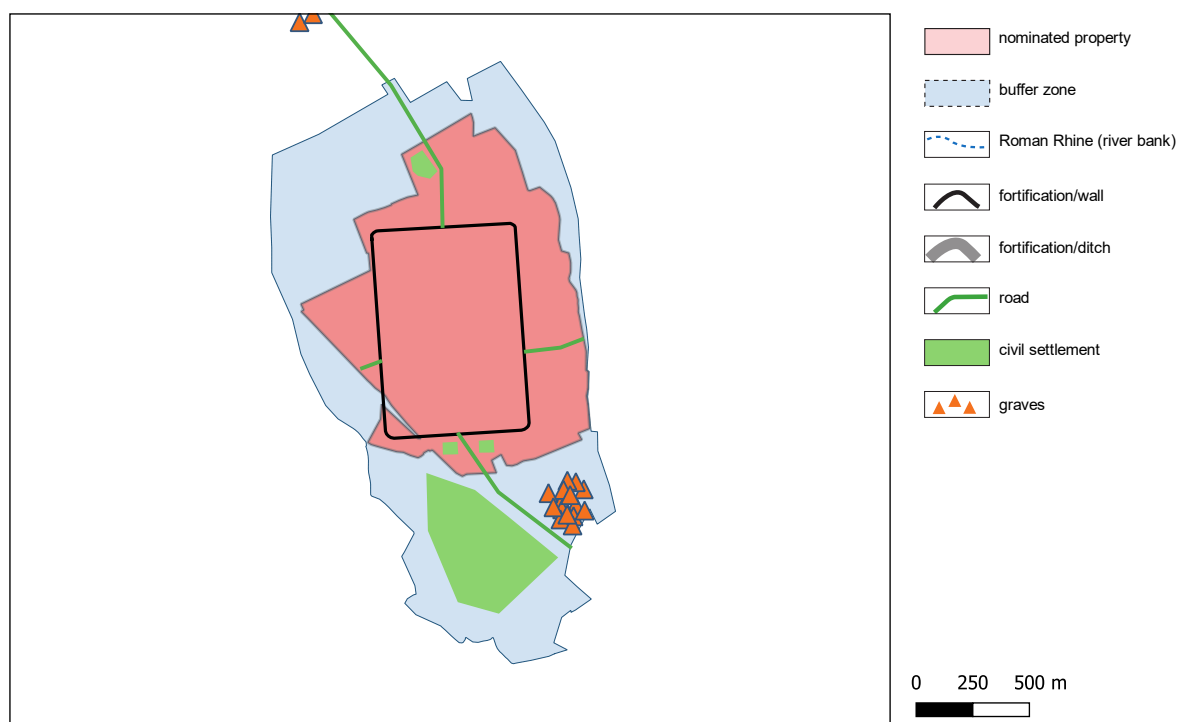


Fig. 195



Fig. 196

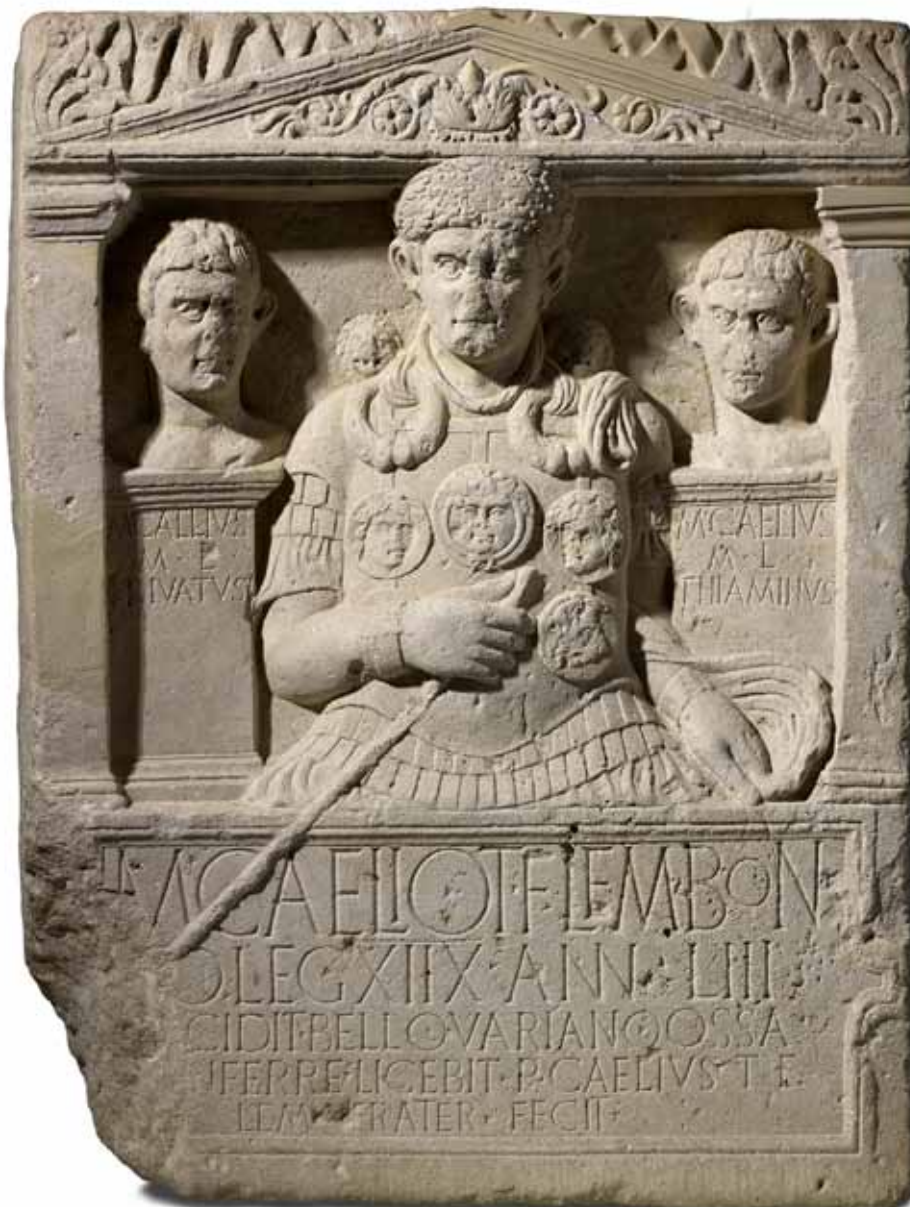


Fig. 197





Fig. 198

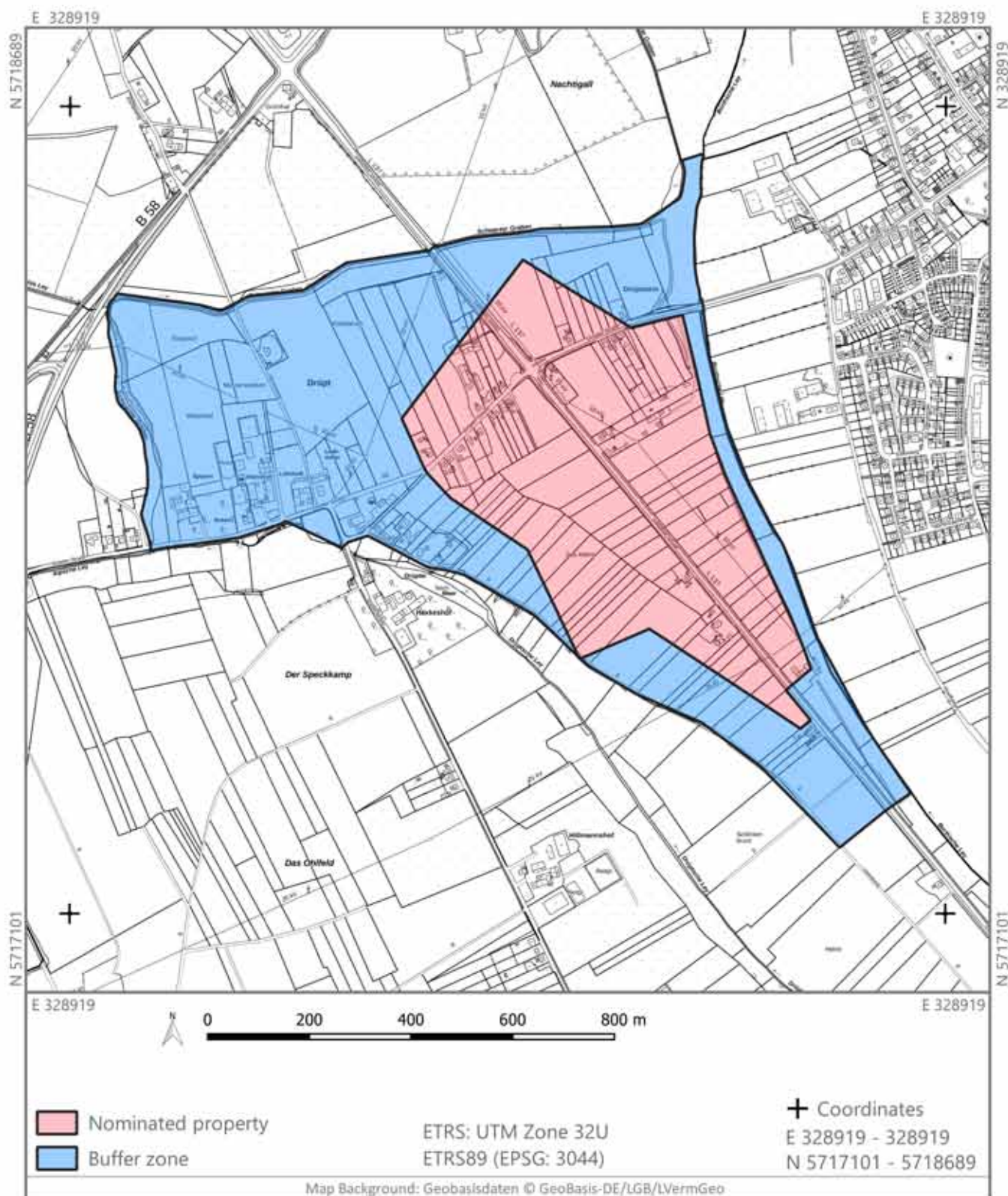




Fig. 199



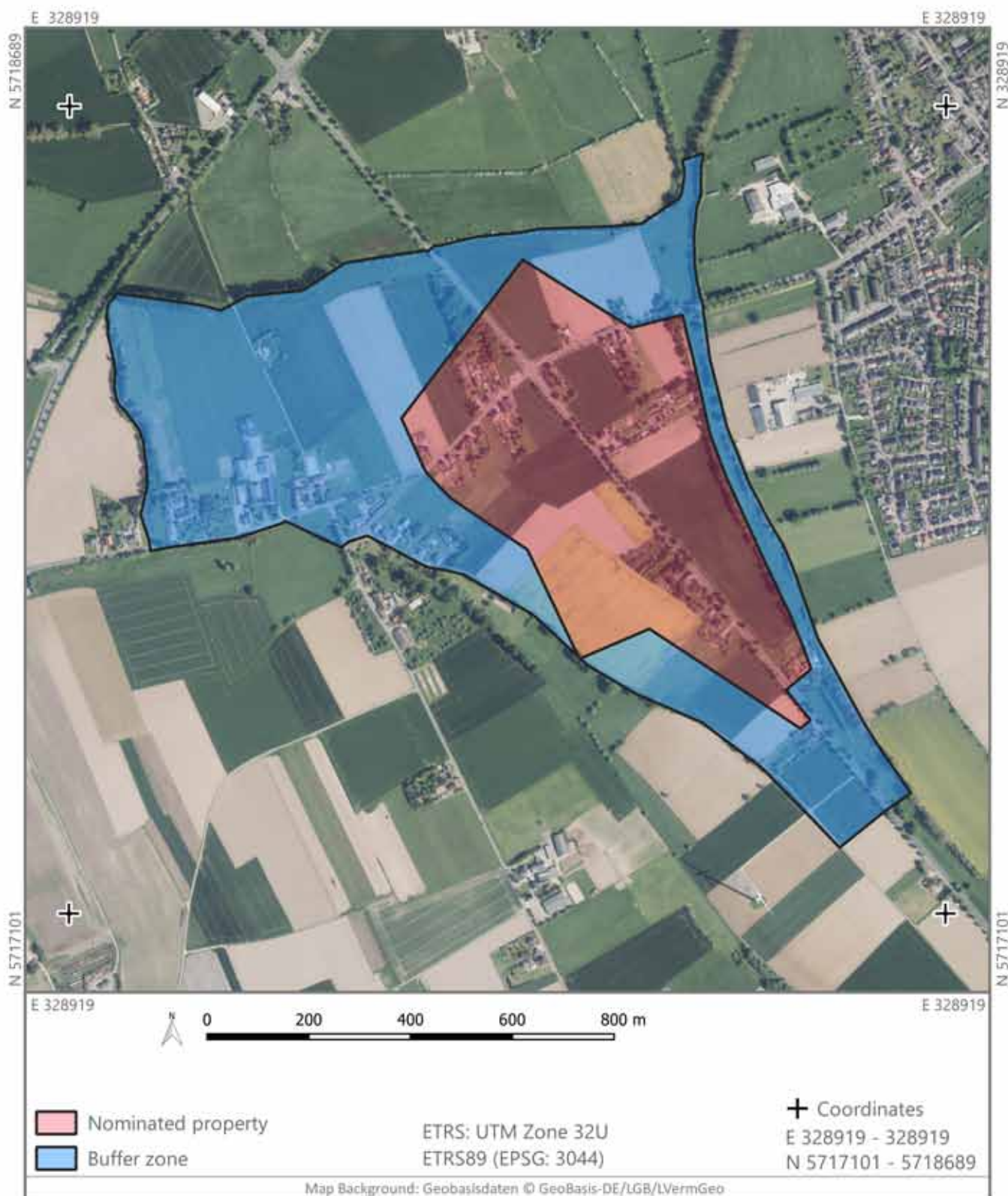
## 29 - Alpen-Drüpt





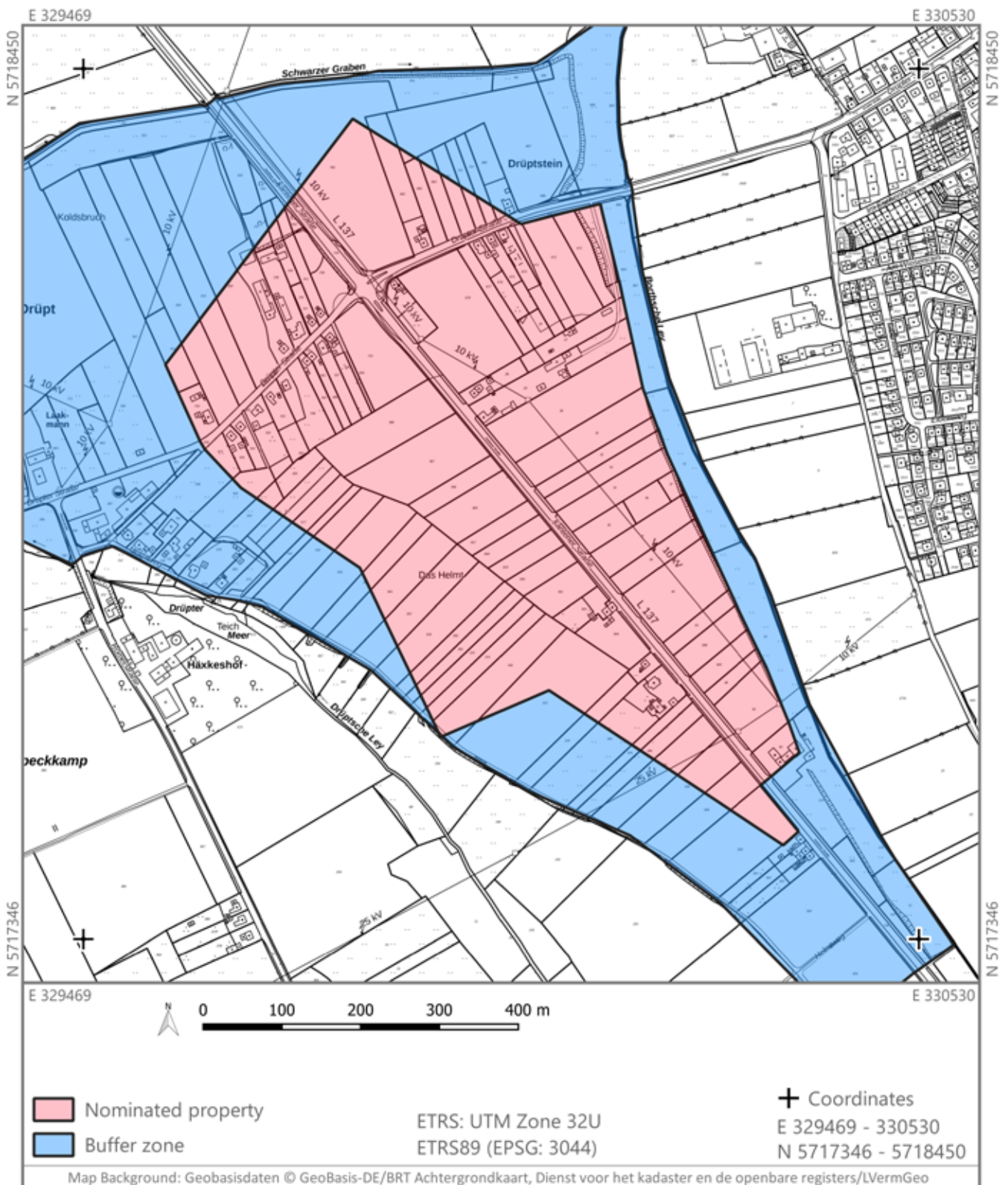


## 29 - Alpen-Drüpt





## 29 - Alpen-Drüpt





## COMPONENT PART 29 ALPEN-DRÜPT

Fort, large temporary camps

Id	State Party	Federal state	Municipality	Coordinates central point
29	Germany	North Rhine-Westphalia	Xanten	E 6°32'46" N 51°35'13"

	Area in ha	Ownership
Component part	36.2	Public, private
Buffer zone	53.7	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014) Land-use plan (Flächennutzungsplan Alpen)	

### Brief description

The cluster is located on the younger lower terrace, above an oxbow of the Rhine that silted up in Late Roman or medieval times. The site is surrounded by pre-Roman river courses still marshy today, making the location a very narrow strip between the riverine landscape and dry land.

In the southern part of the property lies an auxiliary fort, the eastern part of which has been eroded by the Rhine. An area of 1.5 ha of the fort has been preserved. The central part of the interior layout of the fort is very well documented through non-invasive methods. The headquarters (*principia*), the commander's house (*praetorium*) and a storage building (*horreum*) are recorded by aerial photographs and magnetometer survey. Outside the fort there is another large building which probably served as a storage depot.

North of the fort lie two large marching camps whose ditches can be traced over several hundred metres. Rounded corners evidence the typical Roman army design. The eastern side of camp 2 has been eroded by the Late Roman or early medieval Rhine. It is preserved to a size of at least 517 × 400 m (c. 20 ha) making it the second largest marching camp along the Lower German Limes besides fortress B at Till ► 22.

Camp 3 partly overlaps camp 2, and is rotated about 45 degrees. This slightly smaller camp of at least 15 ha has dimensions of 369 × at least 380 m.

Parallel to the west side of camp 3 a road runs from NW to SW cutting or cut by camp 2 and passing the auxiliary fort. It is probably a branch of the Limes road demonstrating the importance of this site as an interchange between water and land transport.

The absolute dating and relative sequence of the components of this intensively used military site are currently not clear.

### Attributes and values

The newly discovered auxiliary fort closes an important gap in the chain of sites between *Asciburgium* and *Vetera castra*. Its position south of the mouth of the Lippe, the main corridor for penetration into Germanic territories, emphasises its strategically important position for the Roman army. Additionally, its function in controlling the main transport interchange between the principal land traffic route along the Limes road and the main river transport corridor along the Rhine provides important testimony to the way the Roman army adapted to the river landscape.

The two unusually large marching camps underline the strategic role this site played for the Roman army. The contrast between large temporary camps for thousands of soldiers and a smaller permanent garrison provides outstanding testimony to the complexity and dynamics of strategic planning by the Roman army, and how military installations along the Lower German Limes developed.

### Integrity

Wholeness	Good. Three Roman military sites are included in the nominated property.
Intactness	Good. Since no excavations have yet been carried out at this site, it can be concluded from the non-invasive investigations that the features are well preserved.
Exposure to threats	Minor. The nominated property is located in an agricultural area with very little development.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. No excavations have taken place, so the archaeological remains are completely untouched.
Location and setting	Fair. The course of the Rhine moved away from the military settlement after the Roman period, and later silted up, but its Roman course is still clearly identifiable in the modern landscape, the former river bed providing a defined edge to the terrain.

### Buffer zone

The buffer zone includes the eroded areas of the fort and the camp to the east. In the northeast the Late Roman site at the Drüptstein is also included. As a whole, the buffer zone covers all the topography that was strategically important for the Romans.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Agriculture: ploughing	Minor	Careful monitoring of possible erosion by ploughing is needed in sensitive areas.

### Presentation

None.

### Community involvement

Volunteer support with field surveys.

### Ancient sources

Not mentioned in written sources.

### Further details

#### Main building phase

n.a.

#### Main research activities

1960s Detection of the large marching camps by aerial prospection  
2015 investigation programme with extensive geophysical surveys and small trial trenches, detection of the fort

#### Garrisons

unknown

#### Literature

Bödecker et al. 2017b; Bödecker 2017.

Fig. 200 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 201 Crop-marks of the the structures of the fort at Alpen-Drüpt.

Fig. 202 Roman fort (A) and marching camps (B–C) at Alpen-Drüpt (D: undated enclosure).

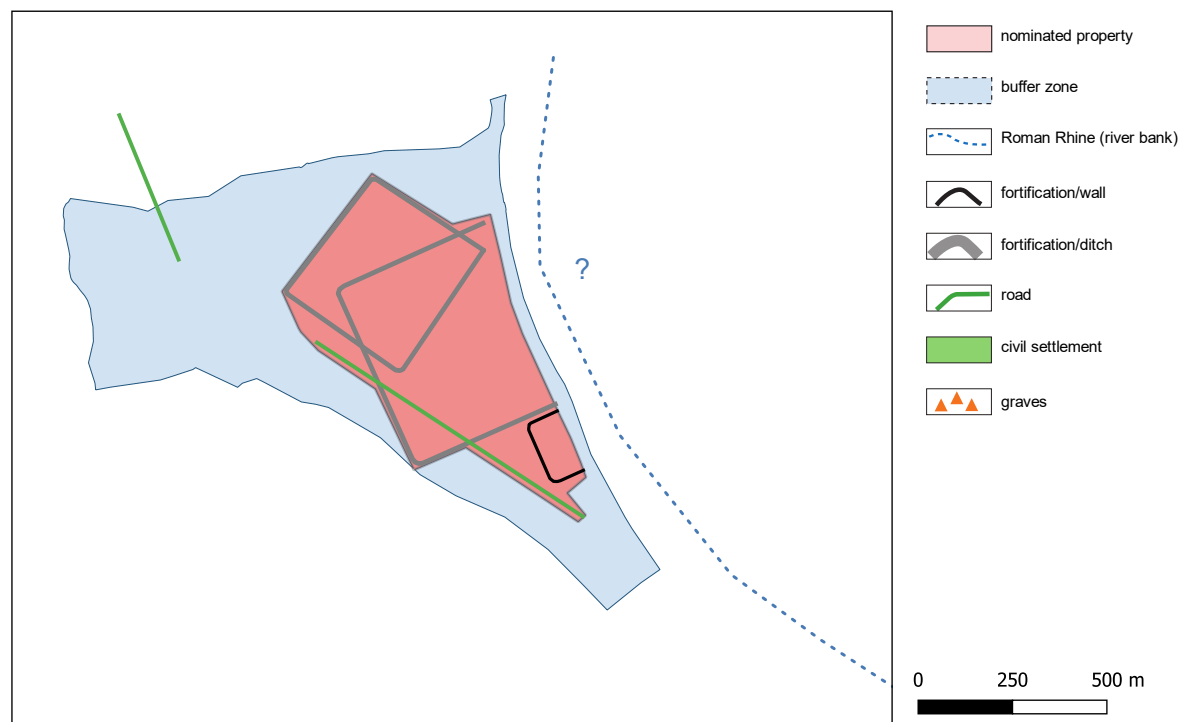
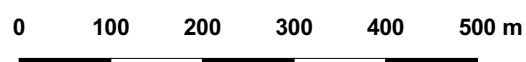
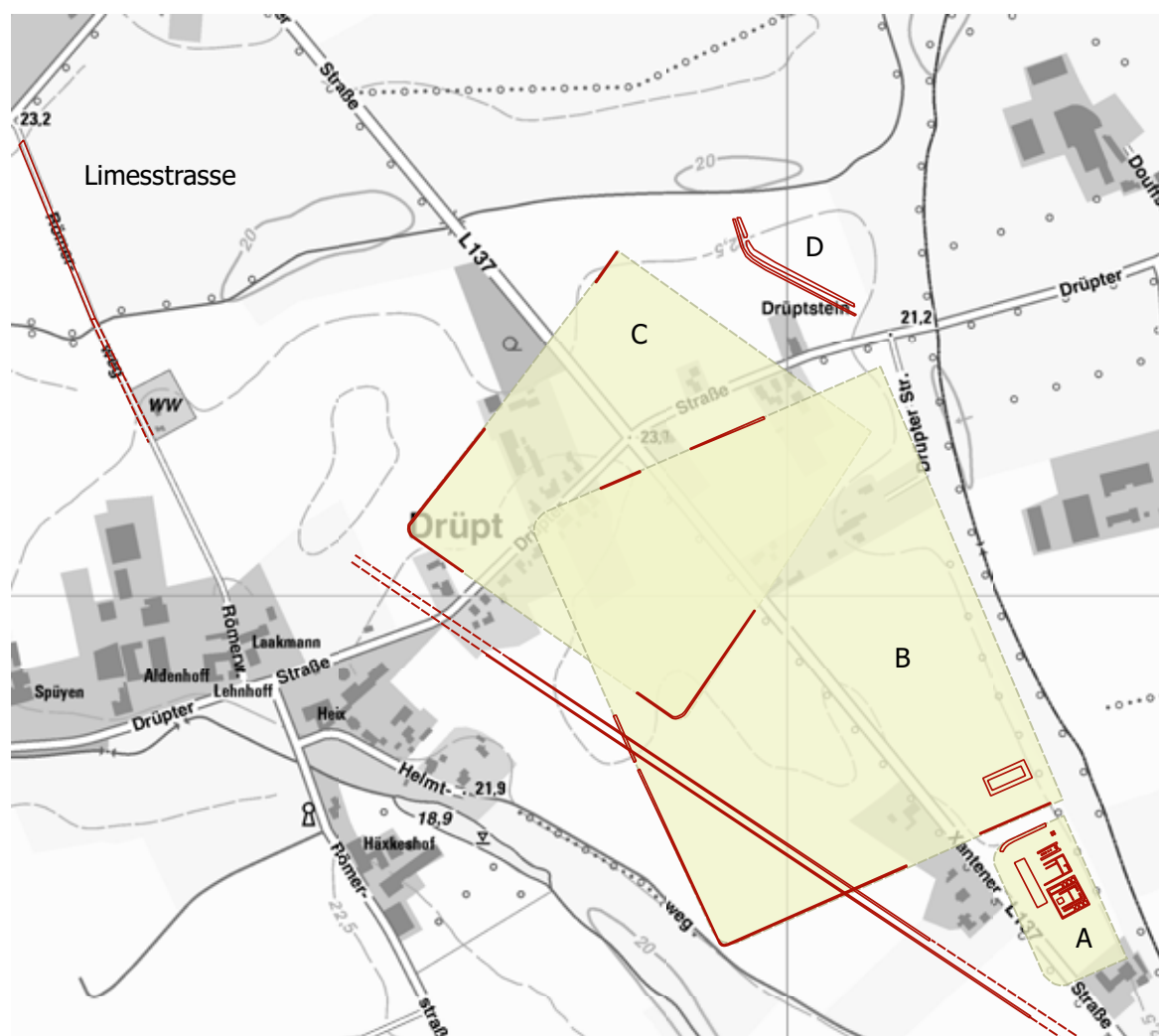


Fig. 200



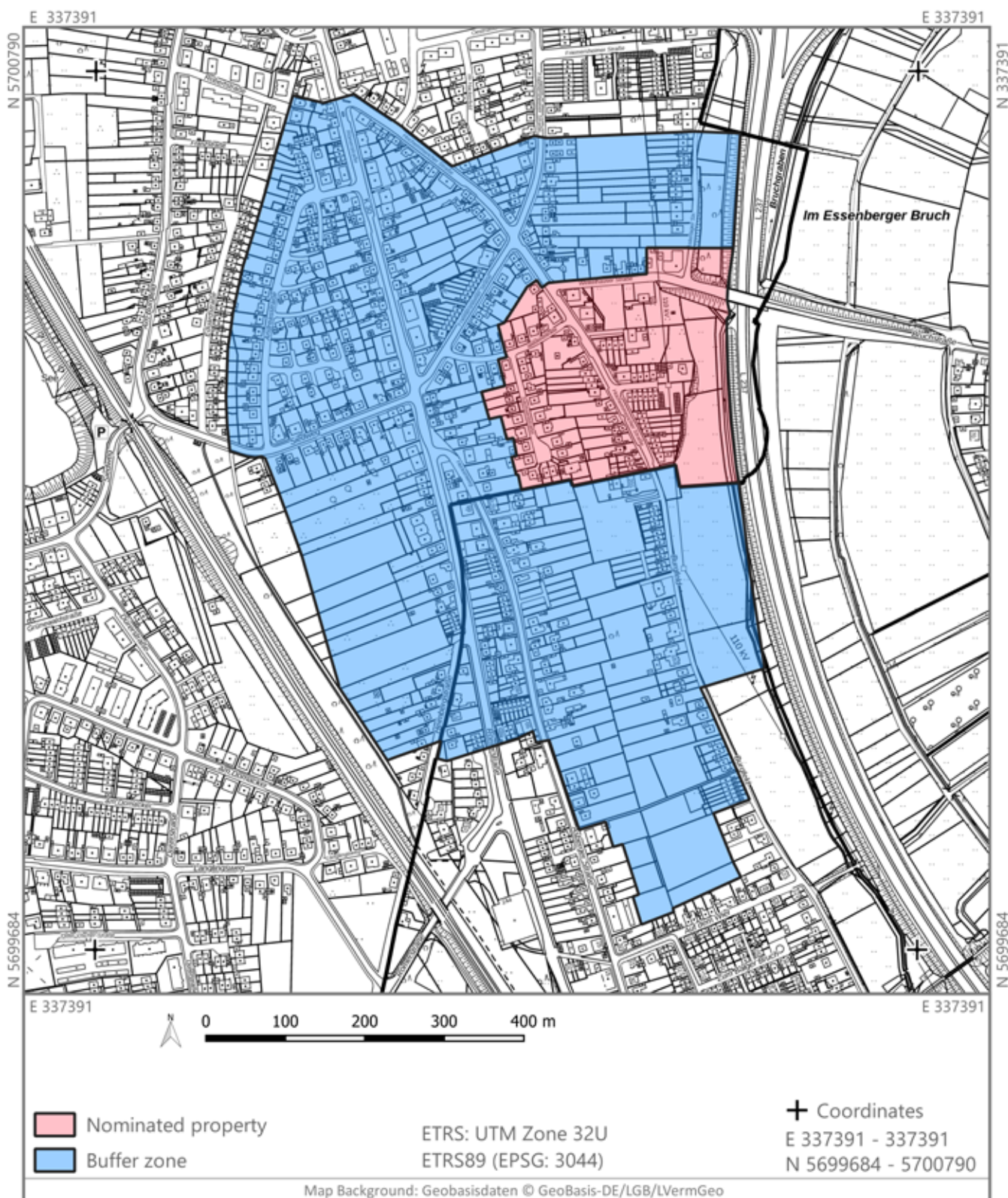
Fig. 201







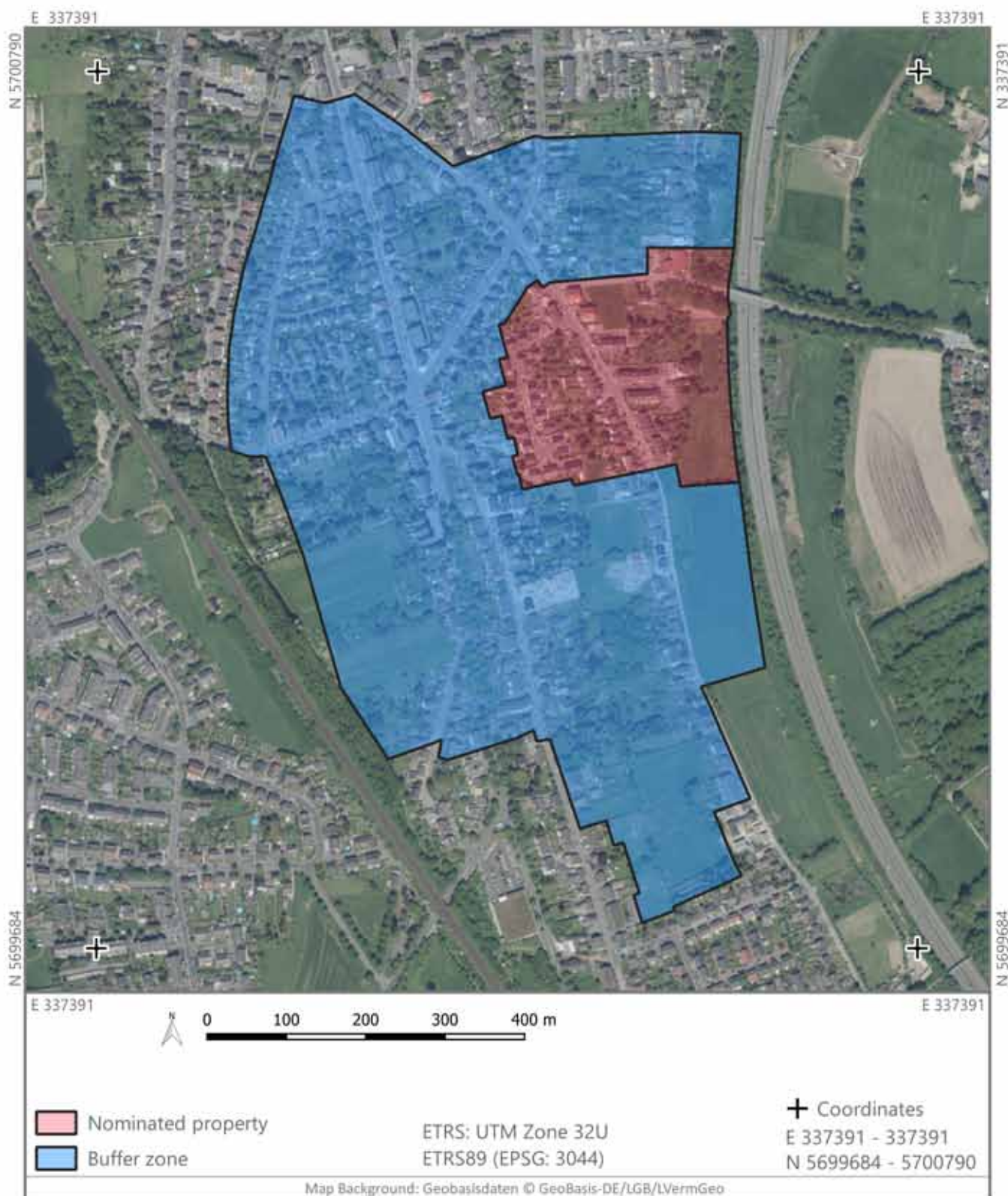
## 30 - Moers-Asberg





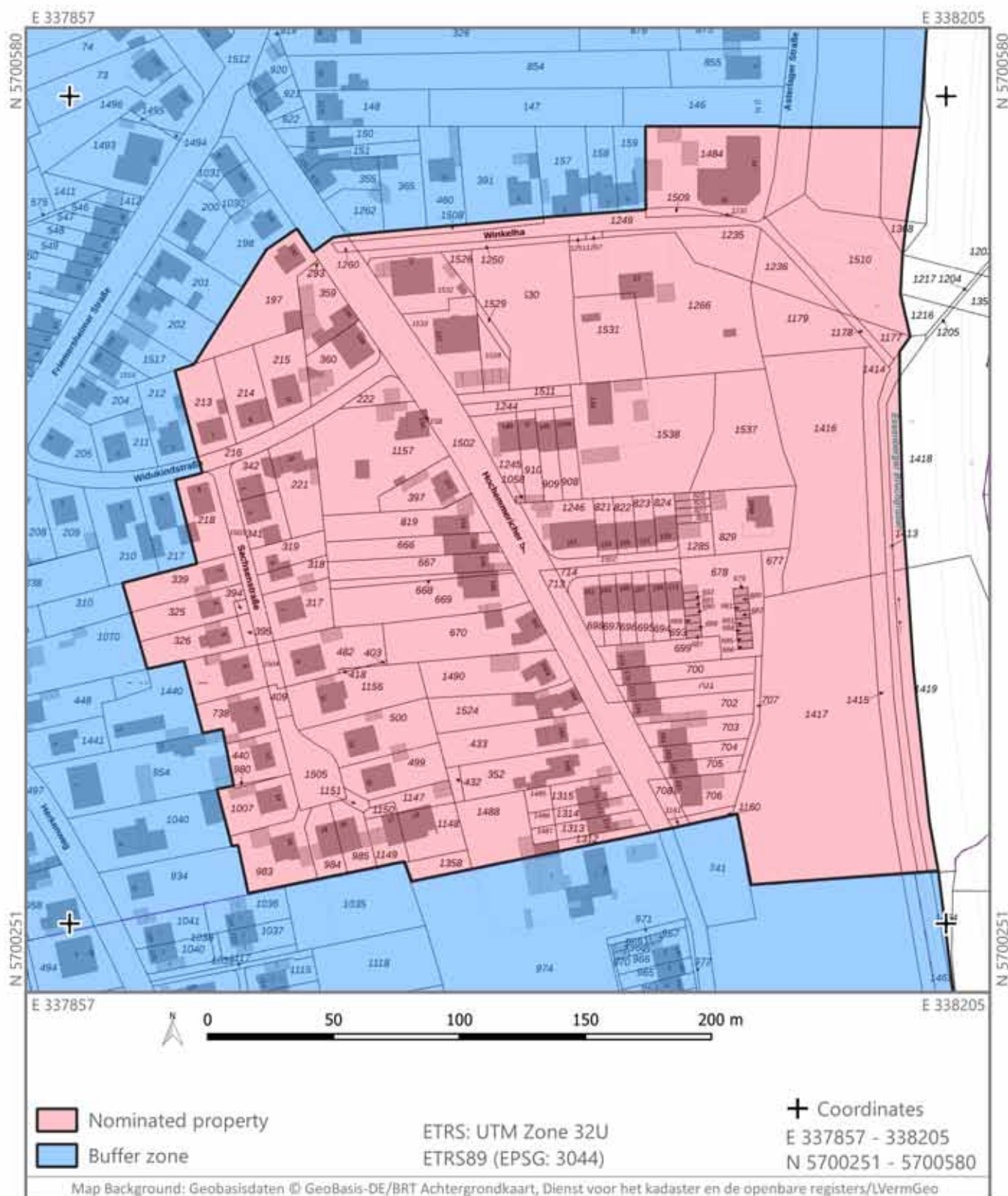


## 30 - Moers-Asberg





### 30 - Moers-Asberg





## COMPONENT PART 30 MOERS-ASBERG

Auxiliary fort, Late Roman *burgus*

Id	State Party	Federal state	Municipality	Coordinates central point
30	Germany	North Rhine-Westphalia	Duisburg	E 6°40'12" N 51°25'55"

	Area in ha	Ownership
Component part	7.56	Public, private
Buffer zone	40.61	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1986, 1991
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014) Land-use plan (Flächennutzungsplan Moers)	

### Brief description

The fort is situated on the flood-free left bank of the Rhine, at the later Essenberger Altarm, which silted up in Late Antiquity, on a site that still dominates the modern topography of this area.

The first fort was built around 16/15 BC in polygonal form and was surrounded by an earth-and-timber rampart and two ditches. There is no evidence for interior buildings; the soldiers seem to have lived under canvas. After AD 17 a new fort was built in a similar manner, with several subsequent re-building phases. The fourth phase is marked by the foundation, around AD 45, of a regular auxiliary fort for a cavalry unit of about 500 men (*ala*). This had interior buildings, of which the headquarters and barracks are attested. After the Batavian revolt, the fort was totally rebuilt in an almost rectangular form of c. 170 × 190 m (3.2 ha), still serving a cavalry unit (*ala*).

In Late Antiquity, a small fortification with a central tower and a wide ditch (*burgus*) was erected in the south-eastern area of the long abandoned auxiliary fort.

### Attributes and values

The fort provides important testimony to early stationing of troops during the early phase of the development of the Rhine as a river frontier. Detailed research has revealed that troops were already present here in the time of Emperor Augustus. The site therefore reflects the very beginning of Rome's new strategy to place smaller contingents of troops along its outer border, developing its first river frontier.

From here, the Roman army was able to control river transport through a commanding view over the wide valley of the river Rhine. The topographic situations at Kalkar-Bornsches Feld and Krefeld-Gellep are similar and cavalry forts were built here also. In the 2<sup>nd</sup> and 3<sup>rd</sup> centuries the area seems to have lost its importance for reasons that are not fully understood. Reuse of the site in the 4<sup>th</sup> century AD underlines the strategic importance for the Late Roman army of the wide bend in the river in times of crisis. Earth-and-timber ramparts are preserved as post holes.

### Integrity

Wholeness	Very good. The nominated property includes the various auxiliary forts and the <i>burgus</i> .
Intactness	Good. Excavations have demonstrated that the physical substance is well preserved.
Exposure to threats	Minor. Any future building projects in the area need to comply with the regulations of the national protection law.

### Authenticity

Form and design	Unaffected. The ground plan is well known and not affected subsequently.
Materials and substance	Fair. The physical substance of the surviving Roman remains is intact.
Location and setting	Fair. The Rhine has shifted further east since the Roman period. The former Rhine course is still a distinctive feature of the landscape today.

### Buffer zone

The buffer zone comprises the fort and parts of the adjacent civil settlement.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential development	Minor	Damage to archaeological remains will be prevented or minimised in accordance with the monument protection law.

### Presentation

Information panels at different locations within the site.

## Community involvement

None.

## Ancient sources

The site is called *Asciburgium* in the *Tabula Peutingeriana* (Segm. II.5), a medieval copy of a Roman road map and mentioned by the Roman historian Tacitus in his histories (Tac. Hist. 4,33.) and in his description of Germanic lands and tribes (Tac. Germ. 3), where the mythical foundation of *Asciburgium* by the Greek hero Odysseus is described.

## Further details

### Main building phases

16/15 BC – AD 83/85 (timber)  
Second half 4<sup>th</sup> century AD – early 5<sup>th</sup> century AD (*burgus* in stone)

### Main research activities

1956–1981 excavations

### Garrisons

cohors Silauciensium: Tiberian to early Claudian times (c. 14–45)  
ala I Tungrorum Frontoniana: Claudian to Neronian times (c. 45–69)  
ala Moesica felix torquata: 70–c. 100

### Literature

Bechert 1989; Bechert 2005; Bechert 2011; Brüggler 2015.

Fig. 203 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone of Moers-Asberg and Duisburg-Werthausen.

Fig. 204 Results of the excavations at Moers-Asberg (*Asciburgium*) with an interpretation plan of the latest period (orange).

Fig. 205 Information panel made by local residents at Moers-Asberg (*Asciburgium*) demonstrating the identification with the roman history at this site.

Fig. 206 Glass vessels from a cremation burial uncovered in Moers-Asberg (*Asciburgium*).

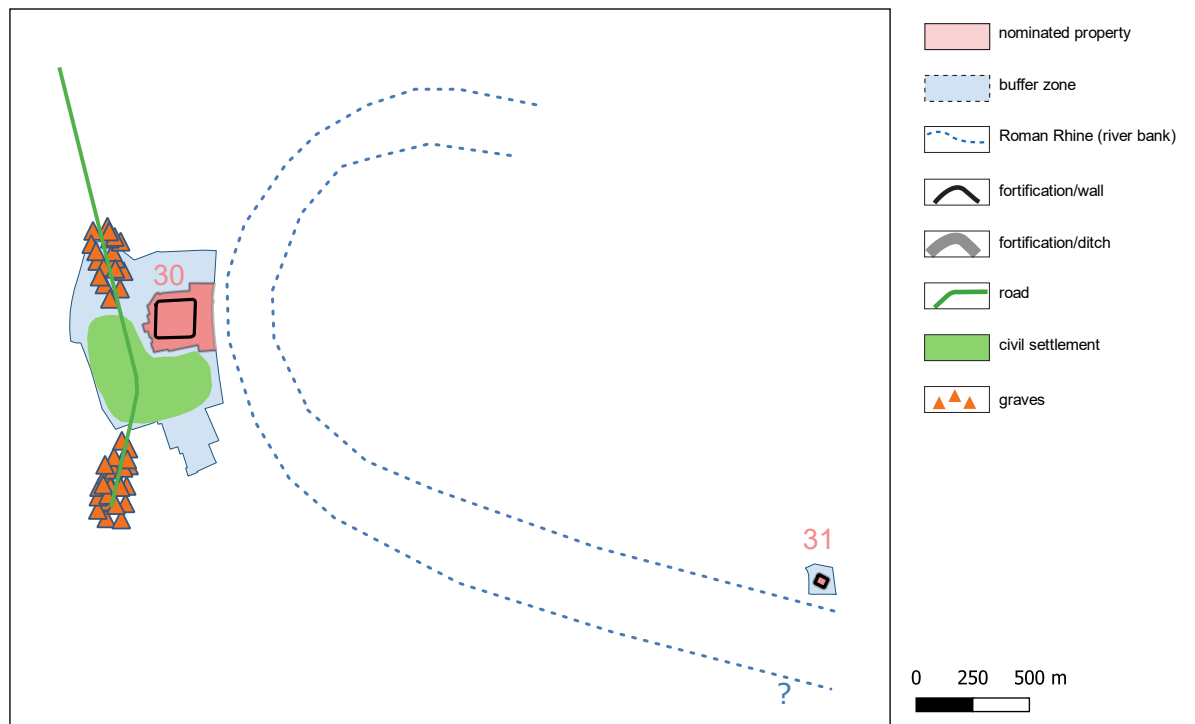


Fig. 203

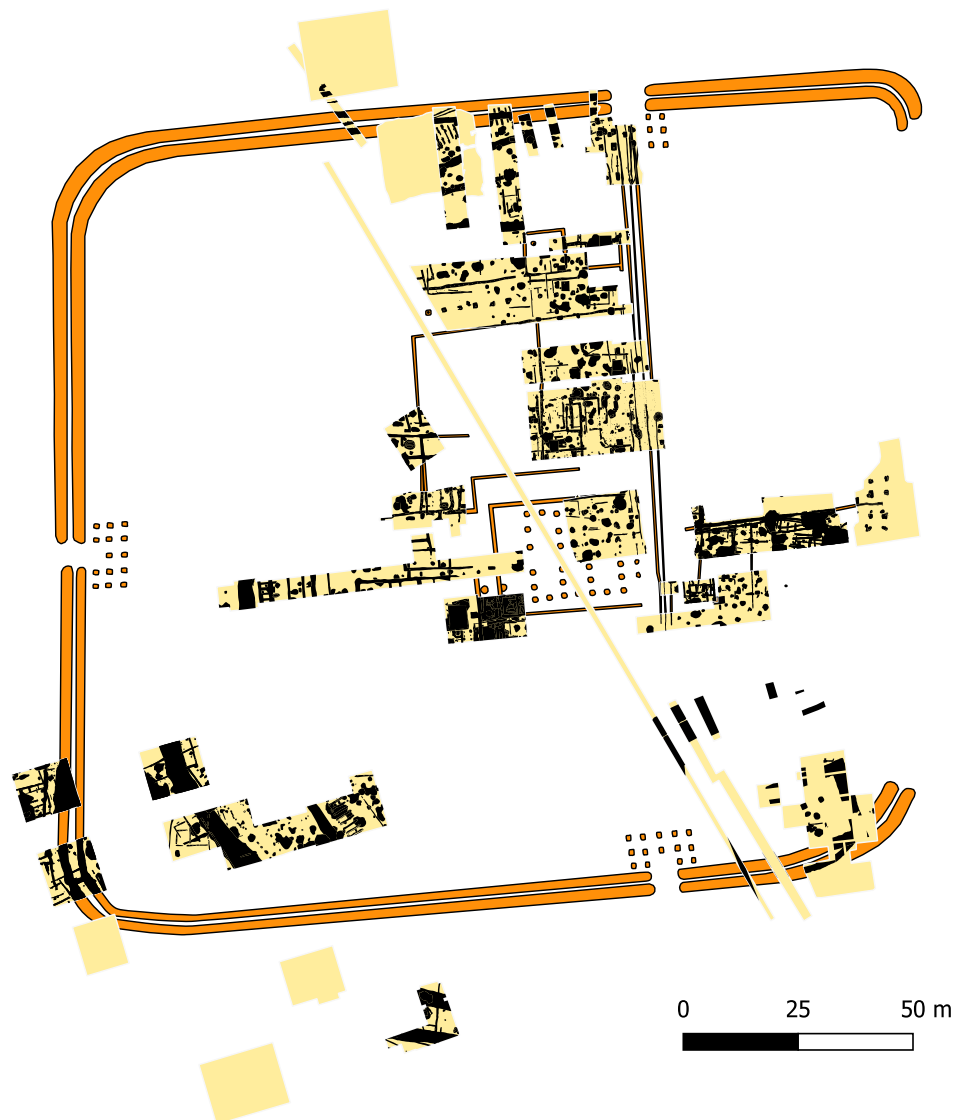


Fig. 204





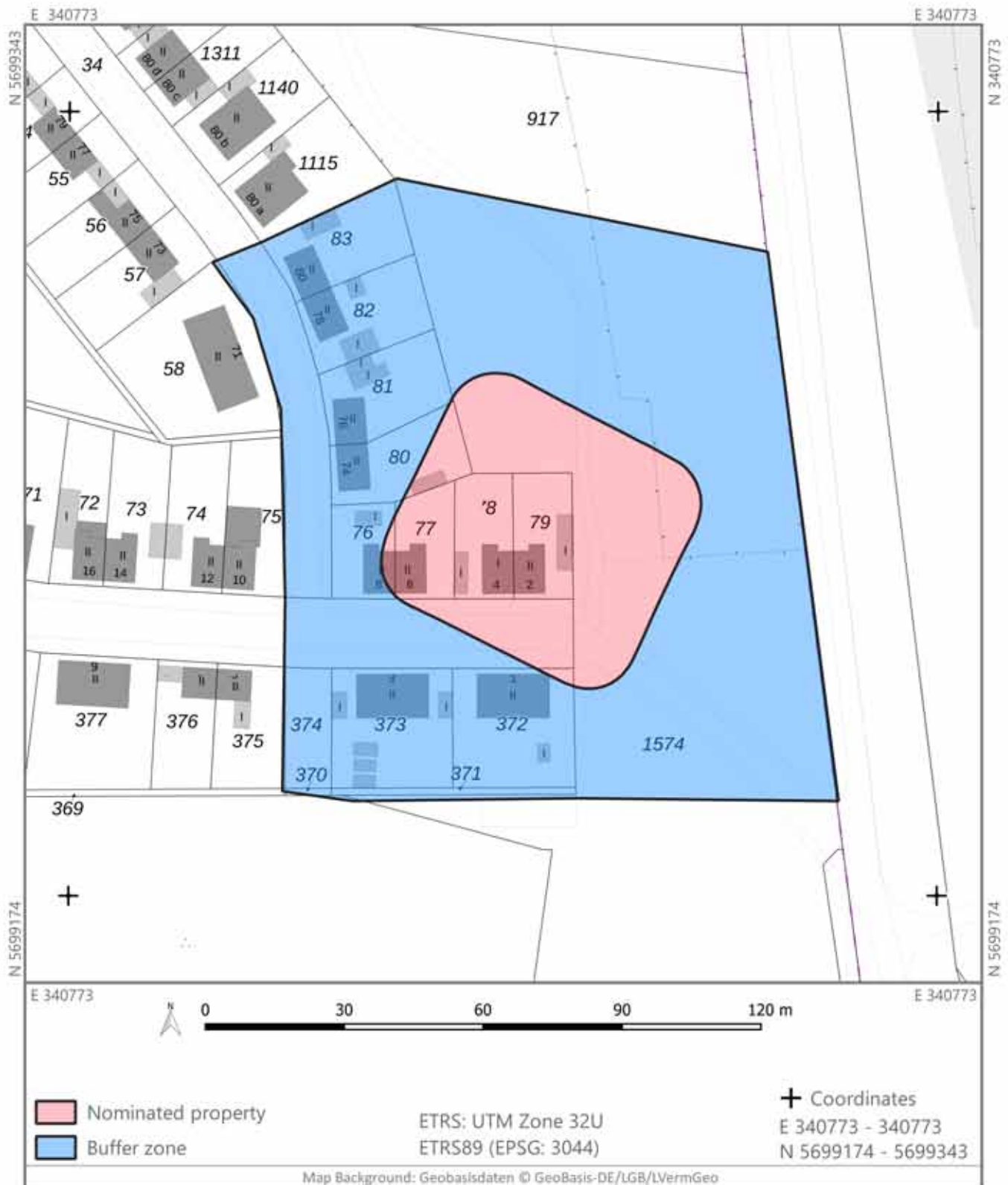
Fig. 205



Fig. 206



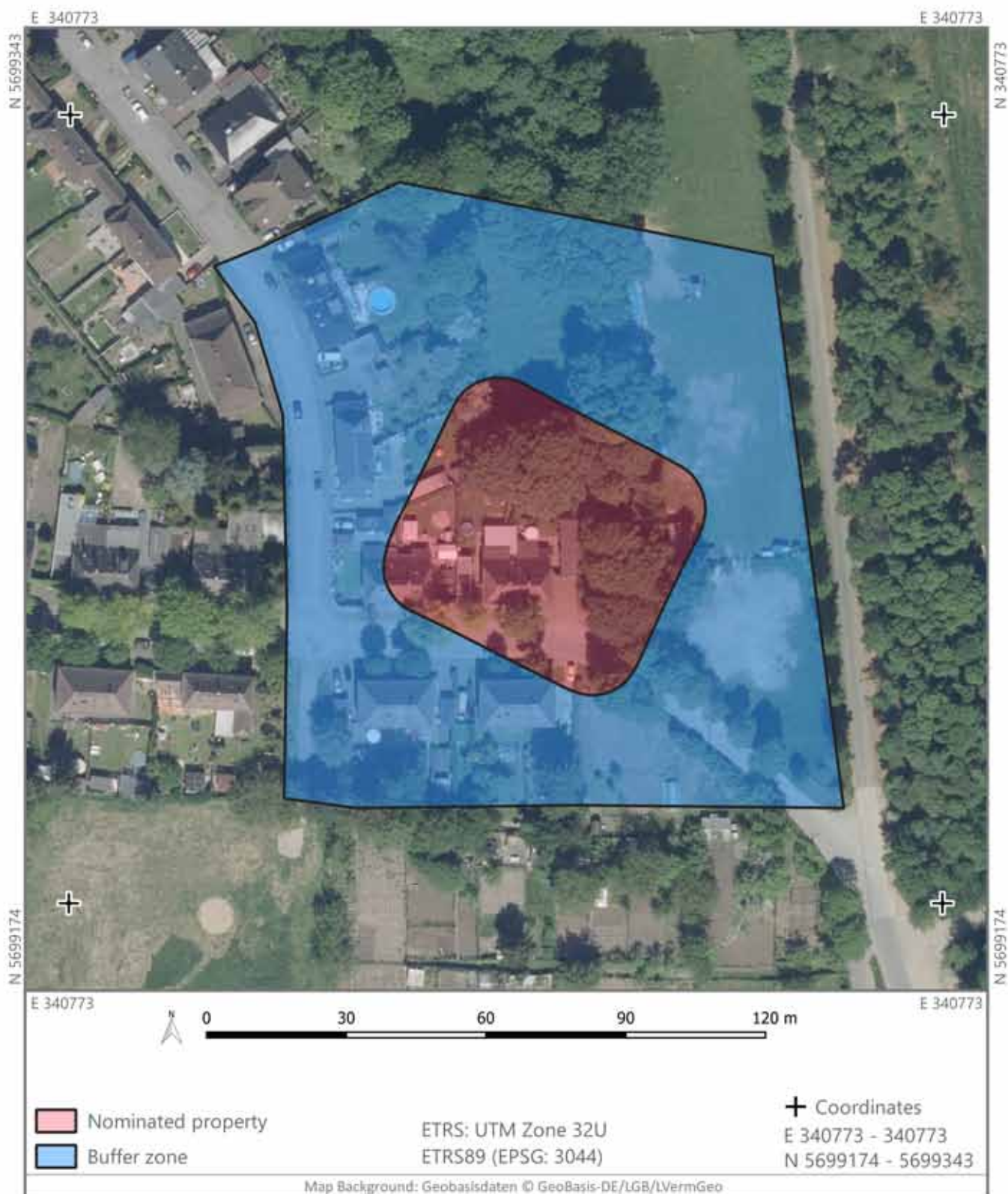
## 31 - Duisburg-Werthausen







## 31 - Duisburg-Werthausen





## 31 - Duisburg-Werthausen





## COMPONENT PART 31 DUISBURG-WERTHAUSEN

Fortlet

Id	State Party	Federal state	Municipality	Coordinates central point
31	Germany	North Rhine-Westphalia	Duisburg	E 6°42'40" N 51°25'19"

	Area in ha	Ownership
Component part	0.31	Public, private
Buffer zone	1.13	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1991
Other laws and instruments	Regional plan (Regionalplan Ruhr, Fachbeitrag Kulturlandschaft, 2014) Land-use plan (Flächennutzungsplan Duisburg)	

### Brief description

The fortlet was located on the former right bank of the Rhine, near the auxiliary fort of *Asciburgium*.

It measured about 46 × 41 m. The wall had two gates, in the east and in the west, and four corner towers. The walls, made of tuff set in mortar, lie almost directly under the topsoil. In the west-east running road a cistern has been preserved which was mistakenly interpreted as a burial place during excavations at the end of the 19<sup>th</sup> century. The fortlet was probably built after AD 85, when the auxiliary fort *Asciburgium* was abandoned. It existed until the middle of the 3<sup>rd</sup> century AD.

### Attributes and values

The fact that this small fort was located on the former right side of the Rhine, in the narrow part of a river bend, indicates that the Rhine was not a rigid border, but that its entire broad riverbed was at least partly under Roman control. The small fort played a strategically important role in controlling the bank and the Rhine.

This fortlet is one of only a few along the Lower German Limes. Similar installations are typical of land borders. This suggests the fortlet had a similar function in controlling the border.

### Integrity

Wholeness	Good. The fort is entirely included in the nominated property. The ditches are not known.
Intactness	Good. During excavations the walls were uncovered and found to be in a good state of preservation.
Exposure to threats	Minor. Any future building projects in the area need to comply with the regulations of the national protection law.

### Authenticity

Form and design	Unaffected. The ground plan is complete and preserved.
Materials and substance	Fair. The physical substance of the surviving Roman remains is intact.
Location and setting	Affected. Today the small fort is located on the left side of the Rhine in a built-up area behind an earth dump. The Rhine is not visible and the course of the ancient riverbed is not apparent.

### Buffer zone

The buffer zone encloses the adjacent blocks of houses round the fortlet. No other Roman structures are known in the surrounding area, but this may be due to the fact that the excavations were designed specifically to investigate the fort.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential development/ construction	Minor	Damage to archaeological remains will be prevented or minimised in accordance with the monument protection law.

### Presentation

Information panel and marking of the perimeter of the fortlet in the modern road.

### Community involvement

None.

### Ancient sources

None.

### Further details

#### Main building phase

c. 85–mid-3<sup>rd</sup> century AD (stone)

#### Main research activities

1891, 1924 excavations

#### Garrisons

unknown

#### Literature

Koenen 1892; Bechert 1989; Gerlach et al. 2018.

Fig. 207 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone of Moers-Asberg and Duisburg-Werthausen.

Fig. 208 Reconstructed oxbow of the Rhine of Late Roman date near the fort and *burgus* of Moers-Asberg ►30 (*Asciburgium*) (1) and the fortlet of Duisburg-Werthausen ►31 (2). The river's banks are partially still discernible in the field today (solid line) or their course can be conjectured (dashed line) based on archaeological, geoarchaeological (3, coring) and archaeobotanical data.

Fig. 209 Results of the excavations at the fortlet of Duisburg-Werthausen.

Fig. 210 Today's situation of the site of the fortlet of Duisburg-Werthausen. Looking south.

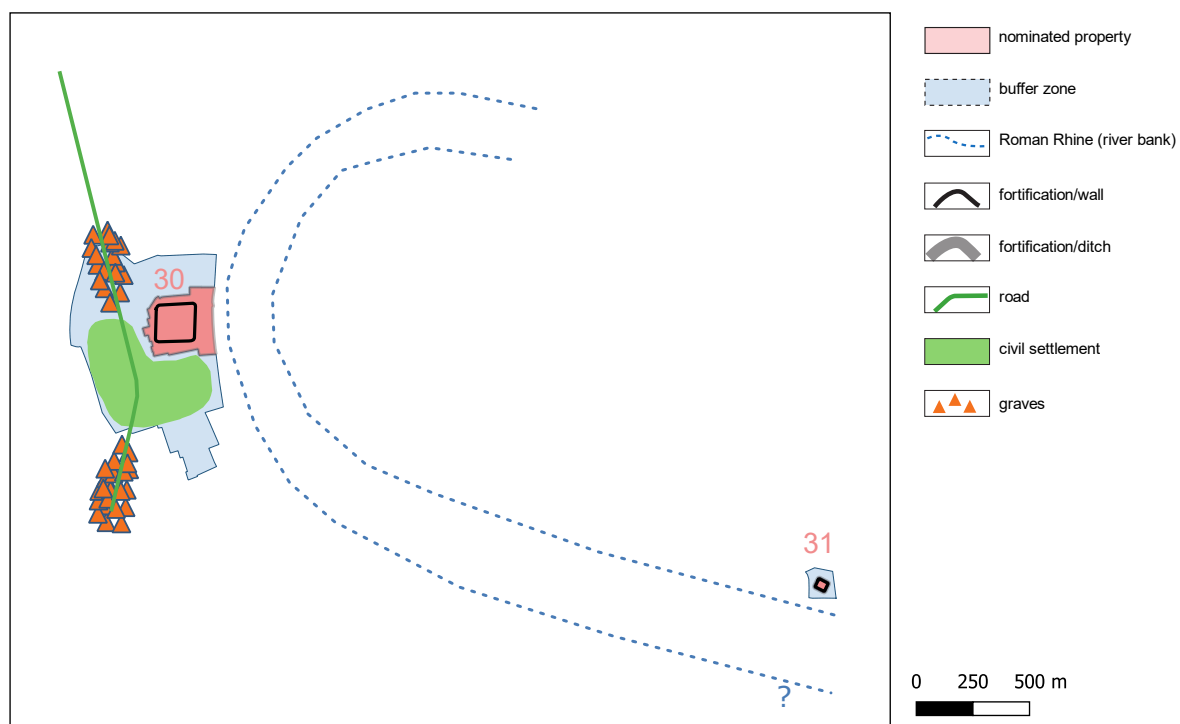


Fig. 207

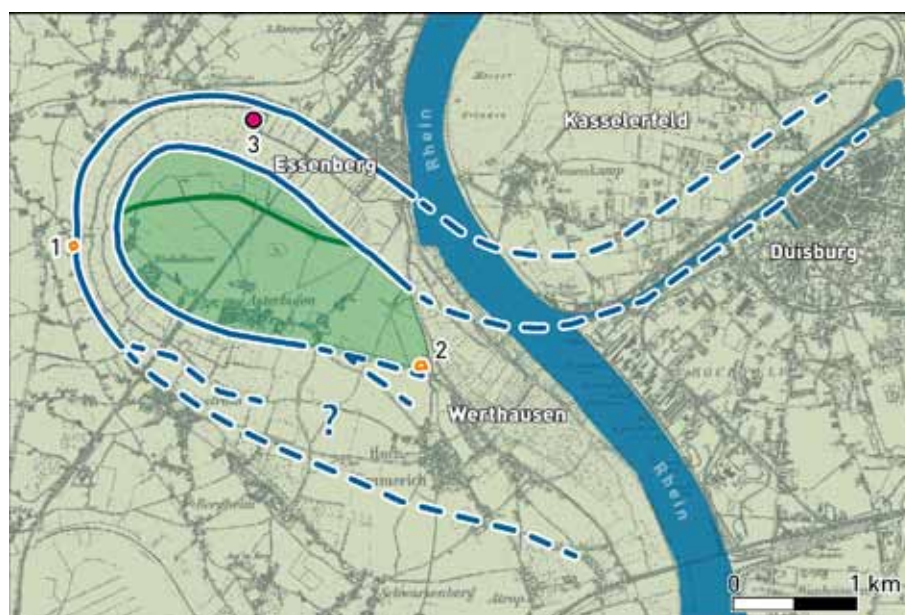


Fig. 208



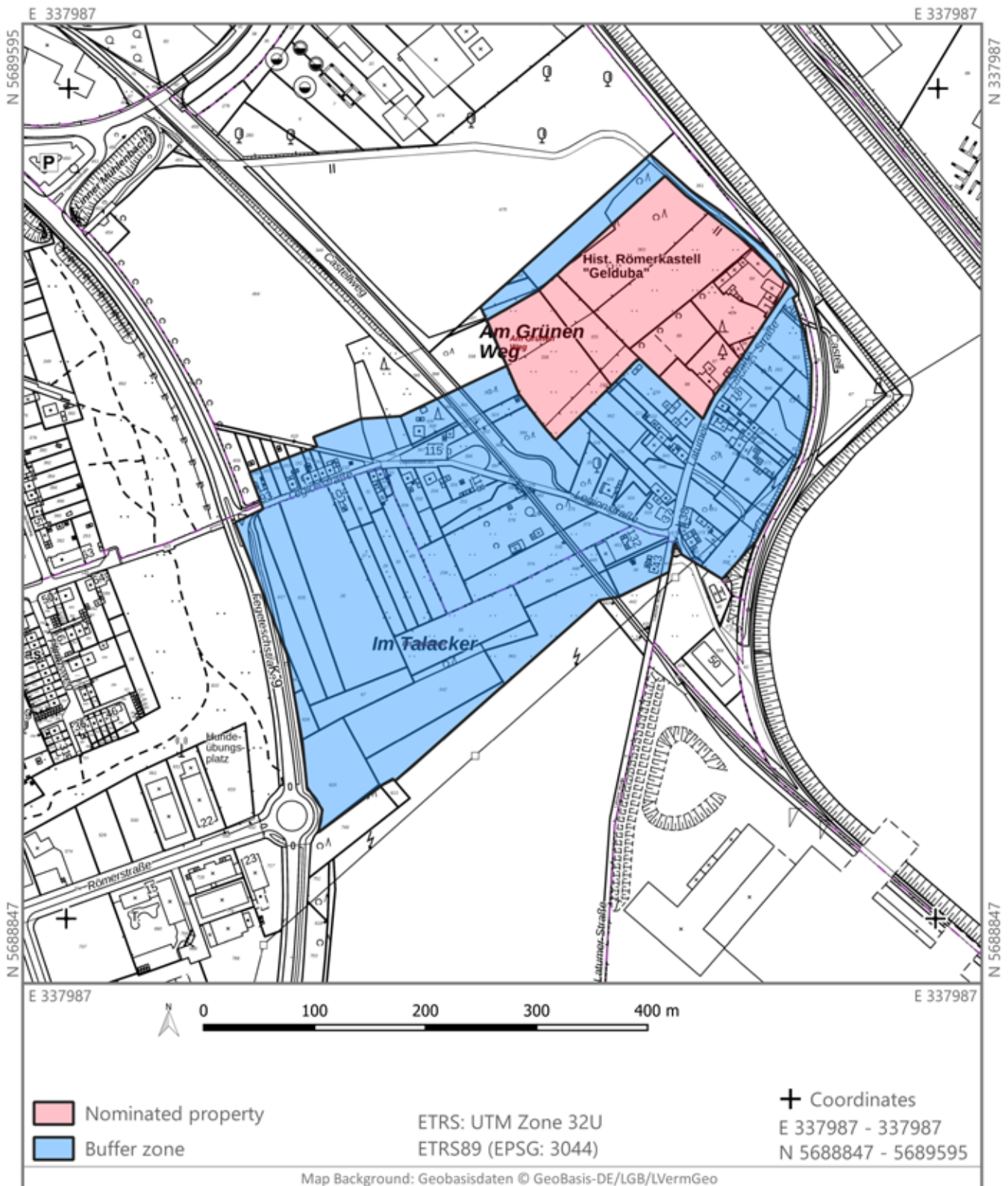


Fig. 209



Fig. 210

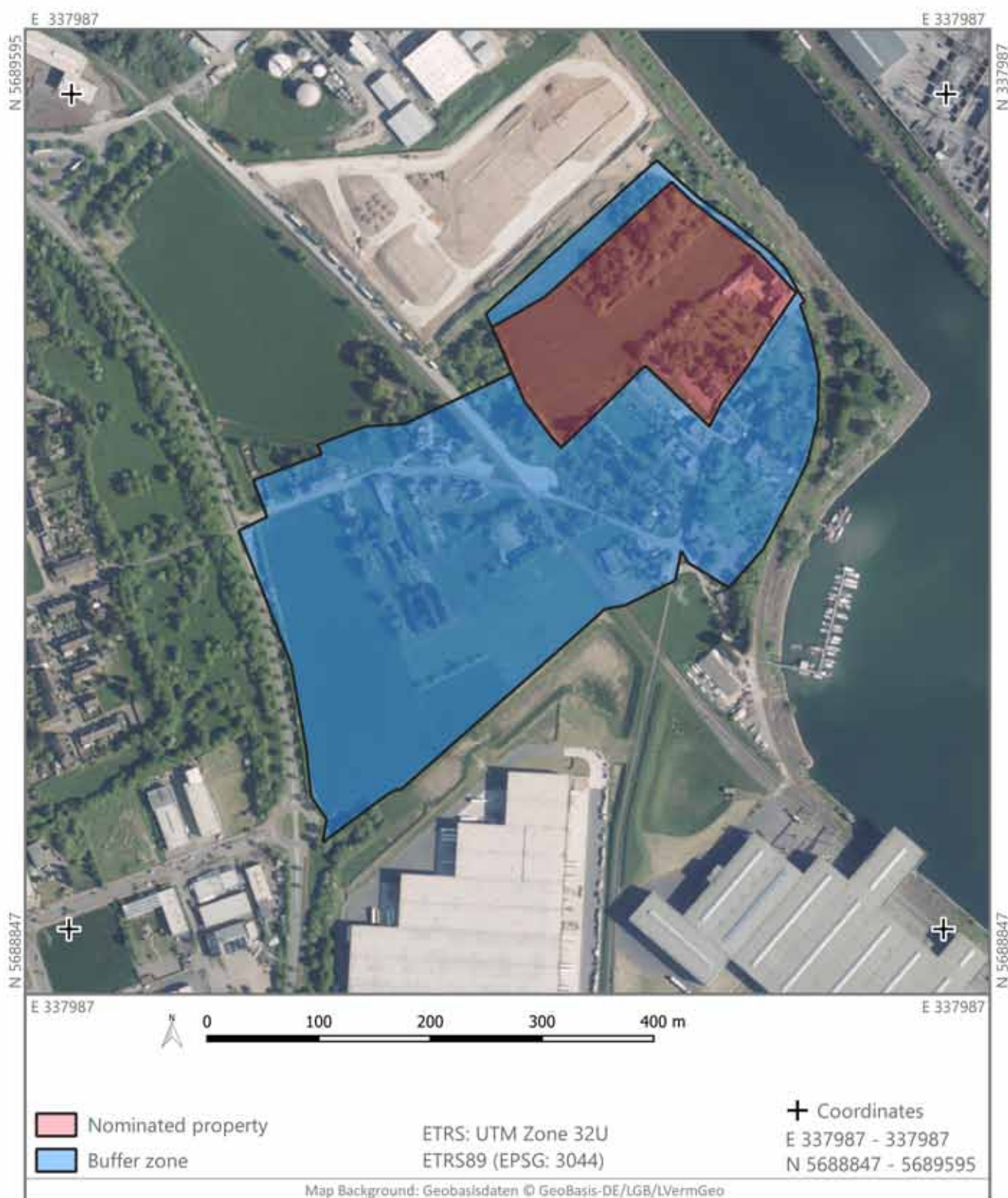
A map of the Rhine river system. The river is shown in blue, flowing from the top right towards the bottom left. Three cities are marked with grey squares: Den Haag (The Hague) at the top left, Nijmegen in the middle, and Bonn at the bottom right. A red dot is located on the river between Nijmegen and Bonn, indicating the location of the Rhine-Meuse delta.







## 32 - Krefeld-Gellep







## COMPONENT PART 32

### Krefeld-Gellep

Auxiliary fort, battlefield, civil settlement and cemetery

Id	State Party	Federal state	Municipality	Coordinates central point
32	Germany	North Rhine-Westphalia	Krefeld	E 6°40'55" N 51°19'59"

	Area in ha	Ownership
Component part	3.36	Public, private
Buffer zone	12.14	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1991
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Krefeld)	

### Brief description

The fort lay on the flood-free terrace next to the Rhine. The Roman course of the Rhine is similar to the modern harbour basin, but the modern Rhine is about 600 m away.

Gelduba is also a battlefield site associated with the Batavian revolt. Parts of the battlefield with unique archaeological features are located under the fort or in the immediate vicinity. They tell the story of the attack by the Batavians on the camp of the Governor Caius Dillius Vocula.

The auxiliary fort was founded as a base for a cavalry unit (*ala*) after the Batavian revolt in AD 70 and redesigned over various phases. At first it was of timber construction. Further timber construction phases were replaced by a stone construction of about 140 × 170 m (2.38 ha) in the middle of the 2<sup>nd</sup> century AD.

In the second half of the 3<sup>rd</sup> century AD the fort was rebuilt following Germanic invasions. In the 4<sup>th</sup> and early 5<sup>th</sup> centuries, the fort comprised a new, smaller construction (2.25 ha) with strong defensive elements. Traces of the battlefield are both attested and projected south of the fort.

### Attributes and values

The battle of Gelduba in AD 70 between the Roman army and the uprising Batavians played an important role in the revolt. The Roman army was almost defeated in a surprise attack by Batavian cavalry. Many horse burials and loose finds of military equipment have been recorded from the battlefield site. A significant part of the battlefield lies south of the succeeding fort and is unexcavated.

With the later construction of the fort in the early 70s AD on the site of the former battlefield, an important milestone was reached in the development of the Lower German Limes. This process of development continued when the fort was rebuilt in Late Roman times, playing an important role in the Late Roman river frontier system.

Recent archaeobotanical and geological investigations show that the fort was situated on an active arm of the Rhine, guaranteeing a navigable water level all year round.

### Integrity

Wholeness	Good. A part of the <i>praetentura</i> is no longer preserved due to the construction of a new harbour basin.
Intactness	Good. Excavations have demonstrated that the physical substance of the remains is well preserved.
Exposure to threats	Minimal. Any future building projects in the area need to comply with the regulations of the national protection law.  In addition, urban planning measures specially adapted for the purpose protect the location of the fort next to the industrial area.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. The physical substance of the surviving Roman remains is intact.
Location and setting	Affected. The Rhine has changed its course since the Roman period and cannot be seen from the site today.

### Buffer zone

The buffer zone comprises unexcavated parts of the cemeteries and the battlefield.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Industrial development (factories)	Minor	Damage to archaeological remains will be prevented or minimised in accordance with the monument protection law.
(i) Residential development	Minor	Damage to archaeological remains will be prevented or minimised in accordance with the monument protection law.

### Presentation

None.

### Community involvement

None.

### Ancient sources

The site is known from the encyclopaedic *Natural History* by Pliny the Elder (written c. AD 75) as *Gelduba*, name of a fort situated on the Rhine. It is also mentioned as *Gelduba* several times by the Roman historian Tacitus in his detailed description of the Batavian Revolt for the year AD 69 ('*The name of the site is Gelduba.*'; Tac. Hist. 4,26). It was the site of a major battle between the Roman commander Didius Vercula and the leader of the Batavian Revolt with many casualties amongst both Roman legionaries and Batavian horsemen (Tac. Hist. 4,33).

### Further details

#### Main building phases

I 70 (only ditches)  
 II 70–150? (timber)  
 III 150?–260 (stone)  
 IV 261/62–? (stone)  
 V 294/95–340? (stone)

#### Main research activities

1934–2002 excavations (cemeteries)  
 1964–1968 excavations (fort)  
 1970s, 2017/2018 excavations (vicus)

#### Garrisons

ala Sulpicia civium Romanorum: Vespasian (70–79)  
 cohors II Varcianorum equitata?: since Domitian  
 ala?: 3<sup>rd</sup>–5<sup>th</sup> century AD

#### literature

Paar/Rüger 1971; Reichmann 1987; Bechert 2005; Schmitz 2008; Reichmann 2009; Reichmann/Siepen 2016; Schletter 2018.

Fig. 211 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 212 Horse burial from Krefeld-Gellep (*Gelduba*) on the battlefield of AD 69.

Fig. 213 Excavation of one of the interval towers from Krefeld-Gellep (*Gelduba*).

Fig. 214 Layout roman fort of *Gelduba* and archeological features of different types and dating in its vicinity.

Fig. 211

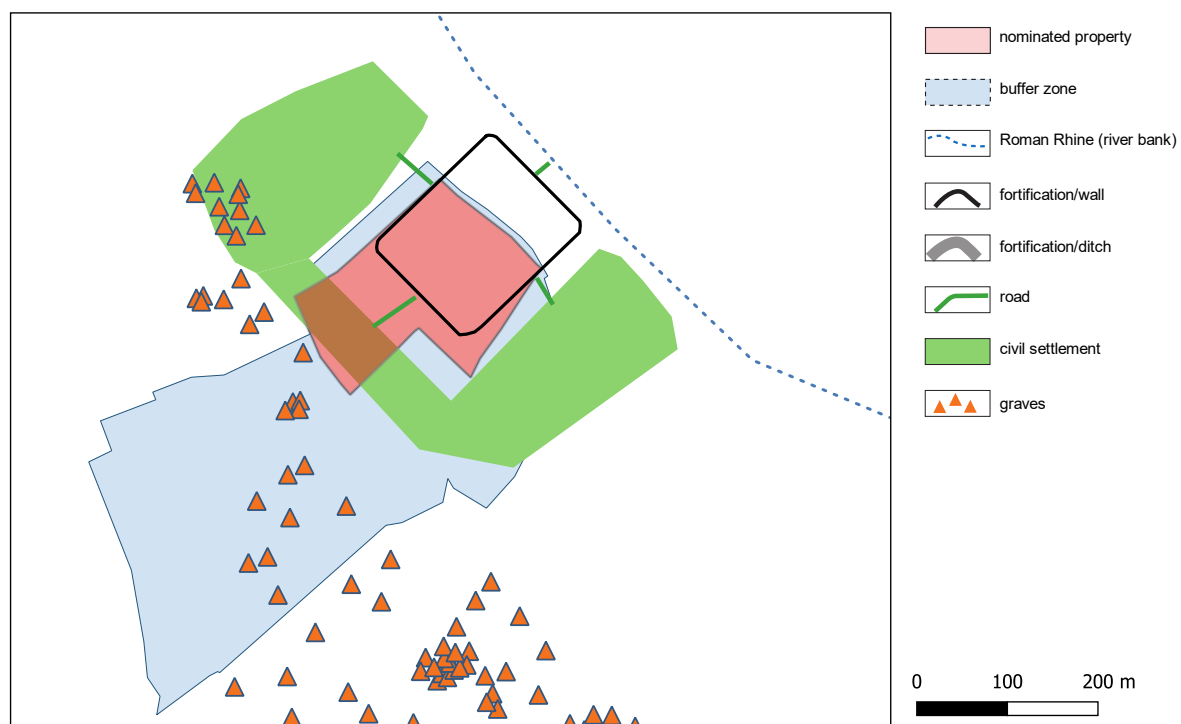


Fig. 212







Fig. 213

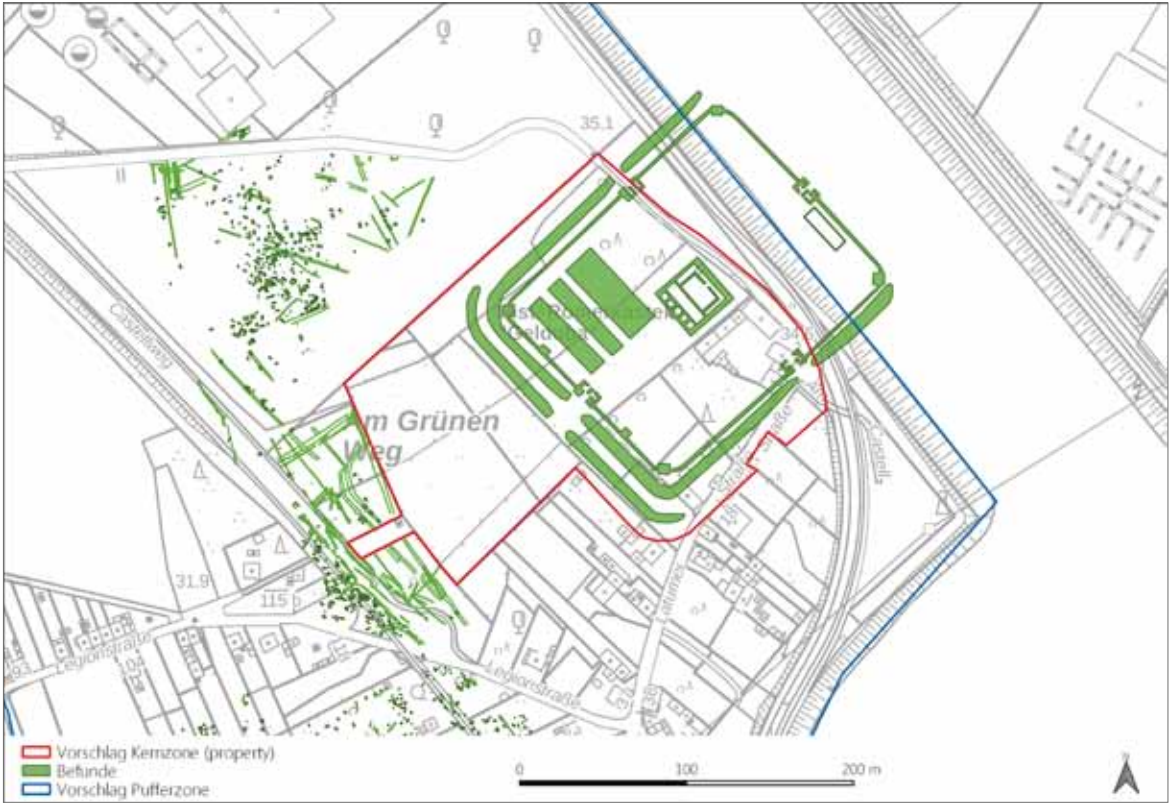
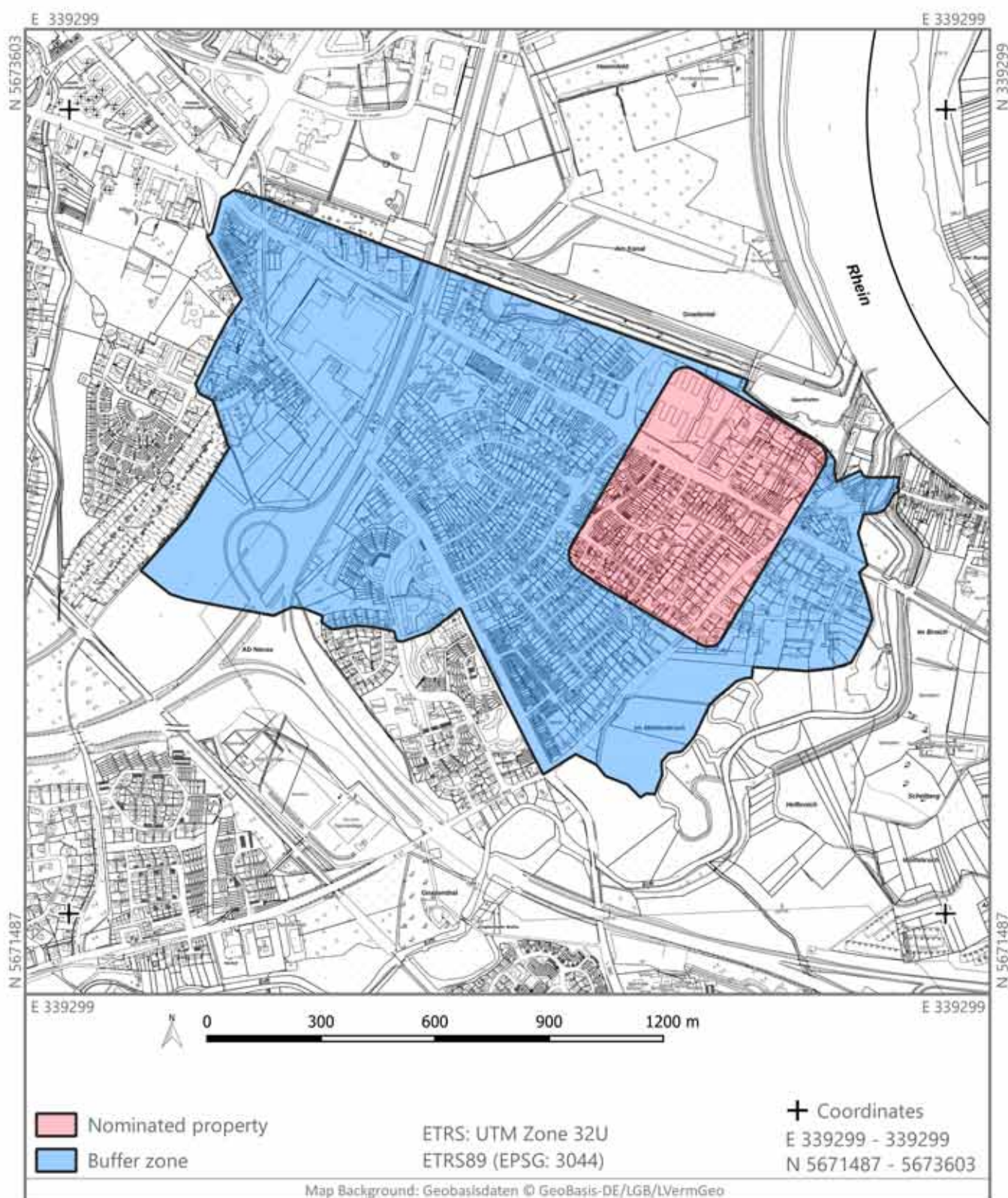


Fig. 214





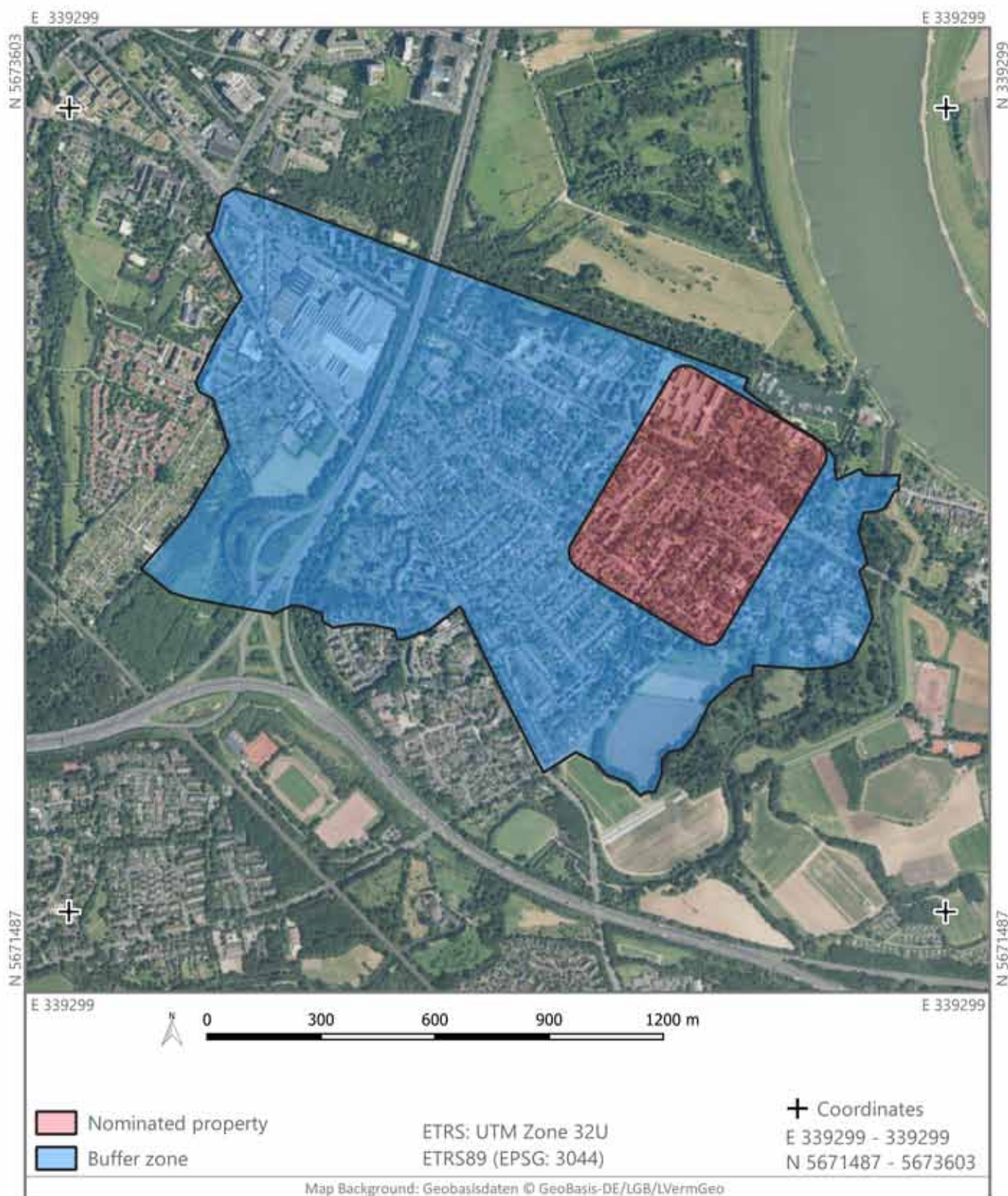
## 33 - Neuss-Koenenlager







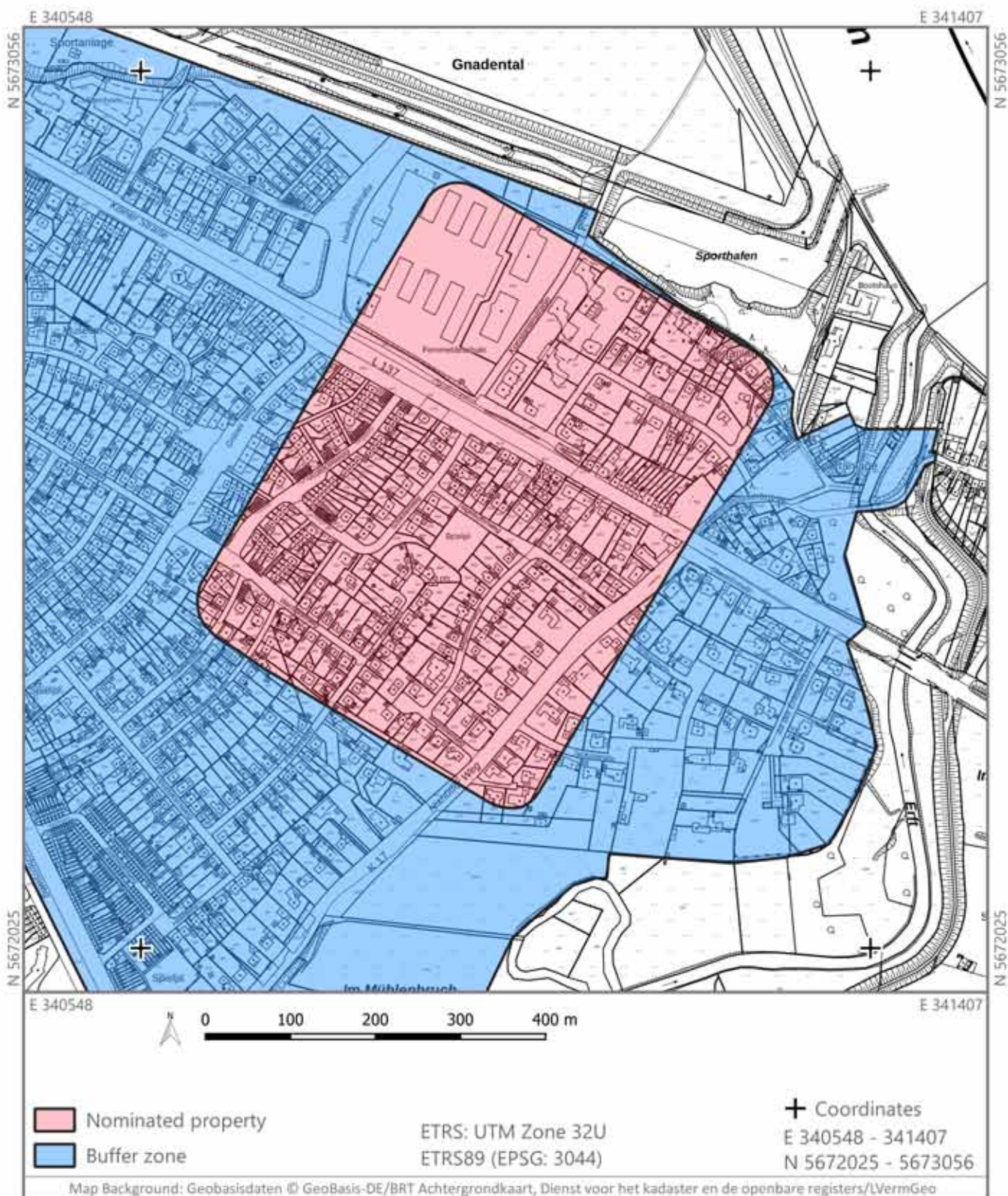
## 33 - Neuss-Koenenlager







## 33 - Neuss-Koenenlager





## COMPONENT PART 33 NEUSS-KOENENLAGER

Legionary fortress, auxiliary fort

Id	State Party	Federal state	Municipality	Coordinates central point
33	Germany	North Rhine-Westphalia	Neuss	E 6°43'26" N 51°10'55"

	Area in ha	Ownership
Component part	28.51	Public, private
Buffer zone	141.13	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Neuss)	

### Brief description

The legionary fortress is located on a flood-free terrace. East of the fortress the river Erft flowed into the Rhine which, in antiquity, ran directly north of the legionary fortress. In Roman times, the Rhine ran quite straight from southeast to northwest for a distance of 6 km between Neuss and the Reckberg, creating a strategically suitable location.

The fortress was built in AD 43 by *legio XVI Gallica*. It measures 570 × 420 m, so with an area of 24 ha it is a relatively large fortress, with space for auxiliary troops as well as legionaries. The Kölner Straße (*via principalis*) provides a cross-section through the layout of the legionary fortress, including the southern facades of the central staff building (*principia*), the bath (*balineum*) as well as the barracks of the 1<sup>st</sup> cohort and additional troops. North of it are the barracks for a cavalry unit (*ala*), which was integrated into the legionary fortress. The fortress was destroyed during the Batavian uprising the fortress was destroyed and then rebuilt by *legio VI*. It was abandoned around 100.

From the middle of the 2<sup>nd</sup> to the 4<sup>th</sup> century AD there was an auxiliary fort in the central area of the former legionary fortress with a size of about 3 ha. It encloses the area of the former *principia* and maintains the same orientation. The cavalry unit *ala Afrorum* was stationed here. A gravestone from a *signifer* (standard bearer) has been preserved.

### Attributes and values

The legionary fortress is located at a strategically important position in the angle between the Rhine and mouth of the river Erft. The Erft was used for transport and exchange with the western hinterland of the province.

Novaesium is a very typical example of one of the earliest legionary fortresses built in the characteristic 'playing card' shape (rectangular with rounded corners). It therefore represents an important point in the development from polygonal to rectangular legionary fortresses. Since the early excavations the site has been known internationally as a typical example of this distinctive and characteristic layout.

The replacement of the legionary fortress by the fort contributes to understanding of strategic changes in troop dispositions at sites along the frontier of the Roman Empire.

### Integrity

Wholeness	Very good. The ground plan of the legionary fortress is well known and entirely included within the nominated property.
Intactness	Good. The excavations in the late 19 <sup>th</sup> century were carried out using very narrow trenches, leaving much of the area of the legionary fortress untouched. Excavations demonstrate good preservation of archaeological features over the several phases of the site.
Exposure to threats	Minor. Any future building projects in the area need to comply with the regulations of the monument protection law.

### Authenticity

Form and design	Very good. The ground plan of the legionary fortress is well known and entirely included within the nominated property.
Materials and substance	Good. The excavations in the late 19 <sup>th</sup> century were carried out using very narrow trenches, leaving much of the area of the legionary fortress untouched. Excavations demonstrate good preservation of archaeological features over the several phases of the site.
Location and setting	Minor. Any future building projects in the area need to comply with the regulations of the monument protection law.

### Buffer zone

The buffer zone includes associated elements. To the east, the mouth of the Erft is included; a Roman bridge existed in this area but since this bridge cannot be reliably located, it cannot be integrated into the property. The buffer zone also includes remains of civil settlements, of which sporadic parts are known, and fragmentary remains of early camps west of the Koenenlager.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential development/ construction	Minor	Damage to archaeological remains will be prevented or minimised in accordance with the monument protection law .

### Presentation

A historical tour north of the Kölner Straße takes in casts of monuments (stone tablets, gravestones, etc.) and the area of the fortress. Signposts on the road mark the points where one enters or leaves the fortress. Finds are exhibited in the Clemens-Sels-Museum.

### Community involvement

None.

### Ancient sources

The legionary fortress of *Novaesium* in its latest phase ('Koenenlager') is mentioned in written sources for the year AD 69 as the base of the 16<sup>th</sup> Legion (Tac. Hist. 4,26). In the year 358, *Novaesium* was still an important strategic base, according to the Late Roman historian Ammianus Marcellinus (Amm. Marc. 18,2). The site is listed also as *Novaesium* in the Tabula Peutingeriana (Segm. II.5), a medieval copy of a Roman road map and in the *Itinerarium Antonini Augusti* (255,2 and 370,5), a Roman register of stations and distances along roads.

### Further details

#### Main building phases

legionary fortress: 43–c. 100 (stone)  
auxiliary fort: c. 100–300 (stone)

#### Main research activities

1887–1900 excavations

#### Garrisons

legio XX Valeria victrix: c. 30–40  
legio XVI Gallica: c. 40–69  
legio VI victrix: 70–100  
ala Afrorum: 2<sup>nd</sup> and 3<sup>rd</sup> century AD

#### Literature

Koenen 1904; Chantraine et al. 1984; Gechter 2007; Bödecker 2011; Pause 2016.

Fig. 215 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 216 Early drawing of a section of a Roman aquaeduct in the fortress of Neuss by Constantin Koenen from the beginning of modern archaeology.

Fig. 217 Constantin Koenen was one of the pioneers of Roman archaeology in the Rhineland and the first to conduct scientific excavations on the site of the legionary fortress of Neuss-Koenenlager (*Novaesium*).

Fig. 218 Neuss-Koenenlager (*Novaesium*) features the most complete ground plan of a legionary fortress known today. After its abandonment in c. AD 100, the site of the fortress was occupied by a cavalry.

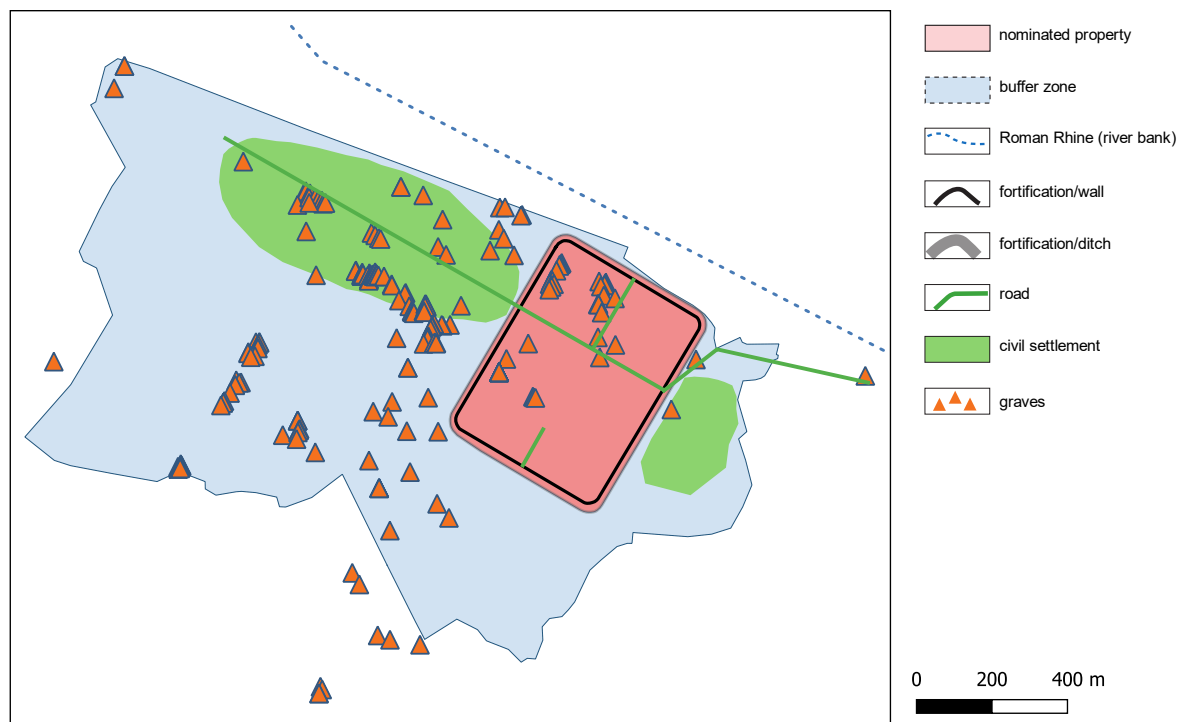


Fig. 215

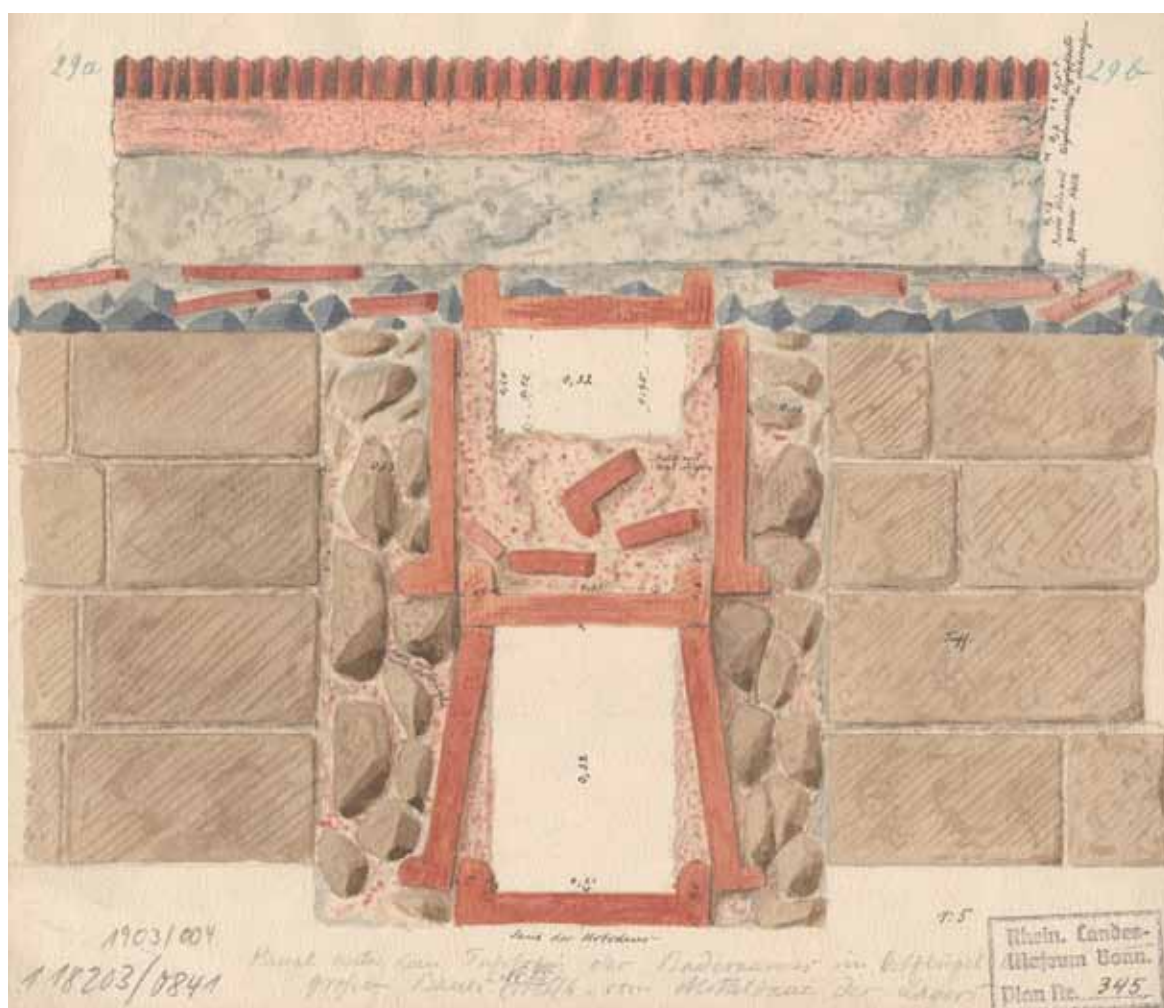


Fig. 216





Fig. 217

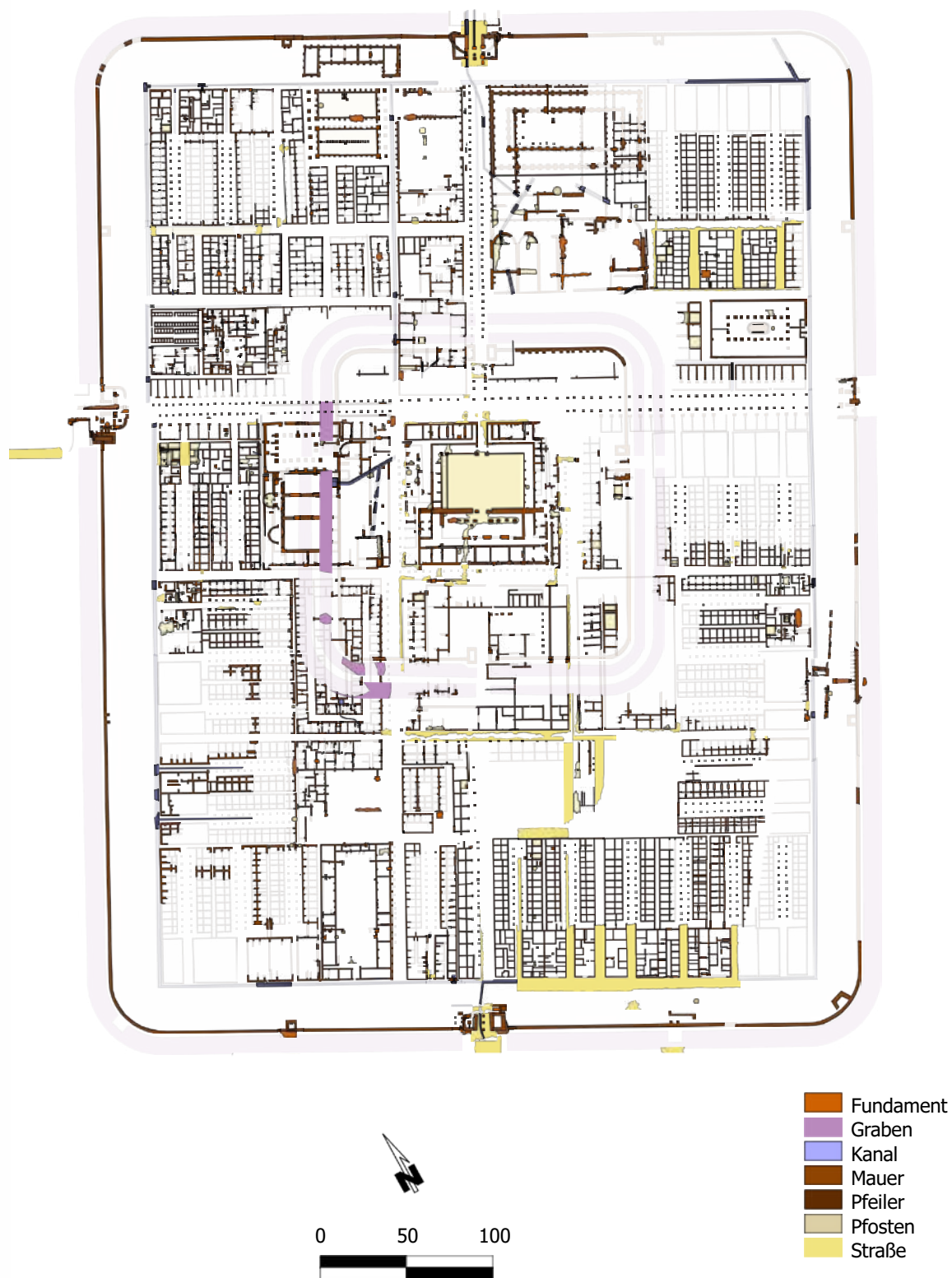


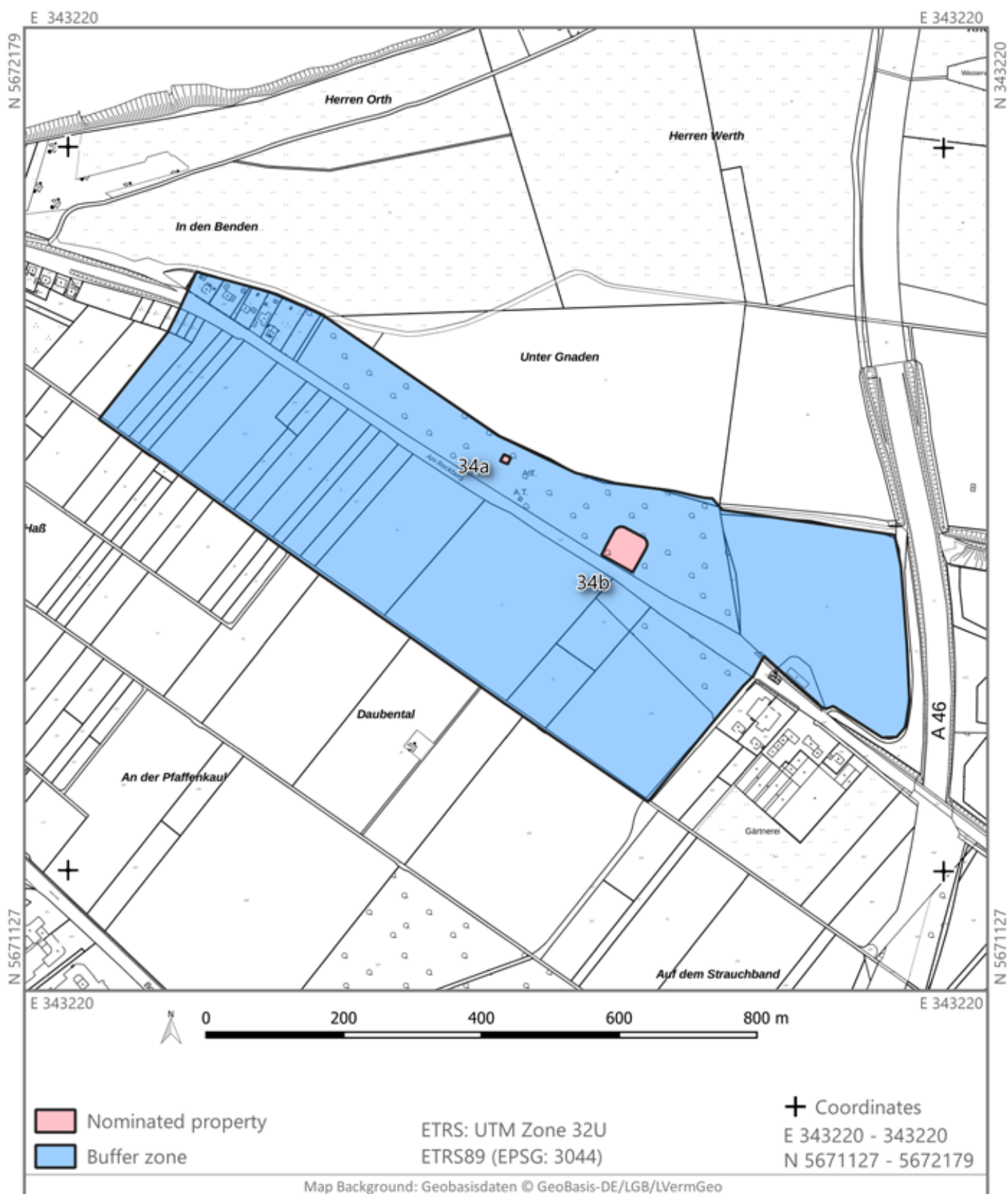
Fig. 218







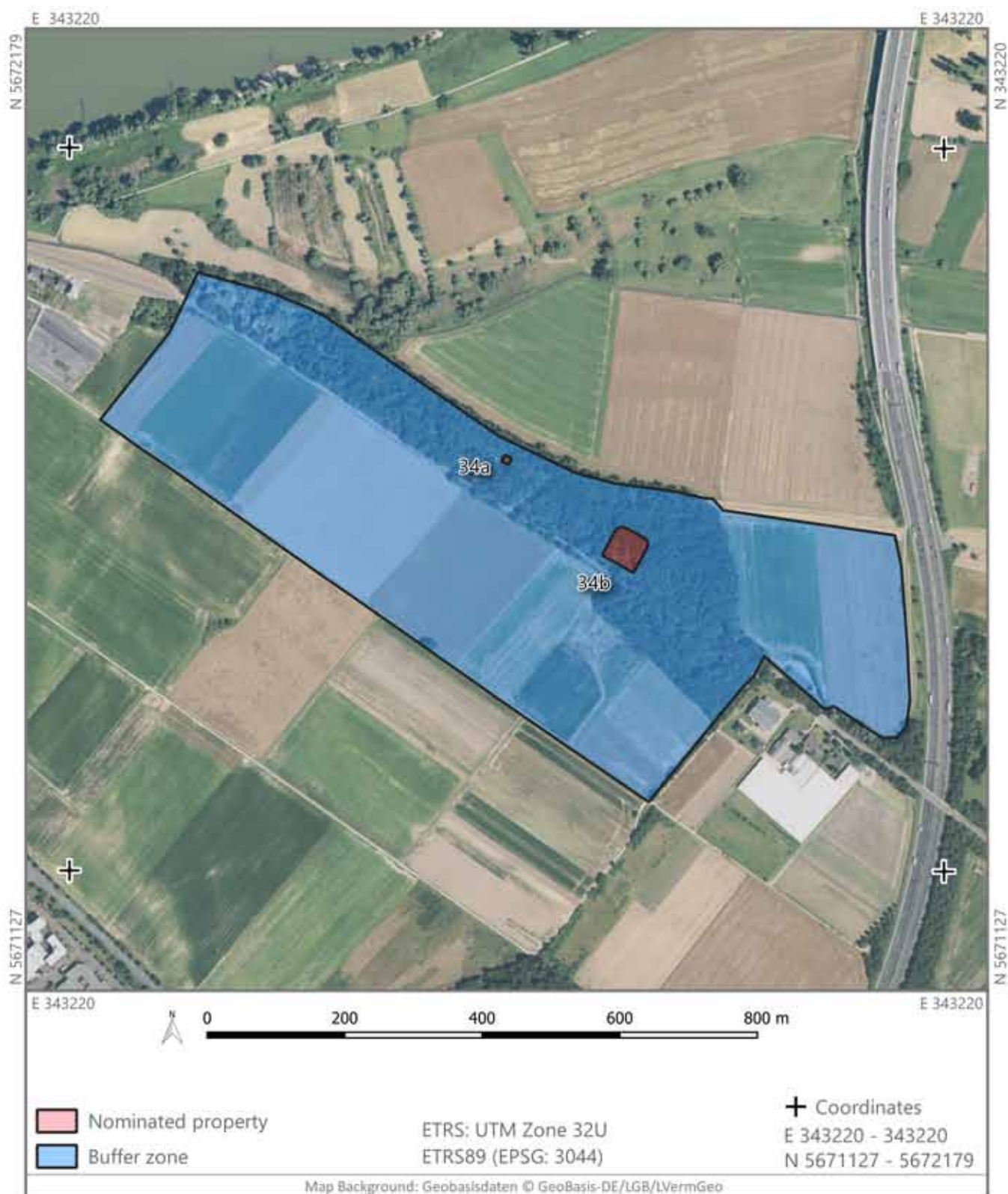
## 34 - Neuss-Reckberg







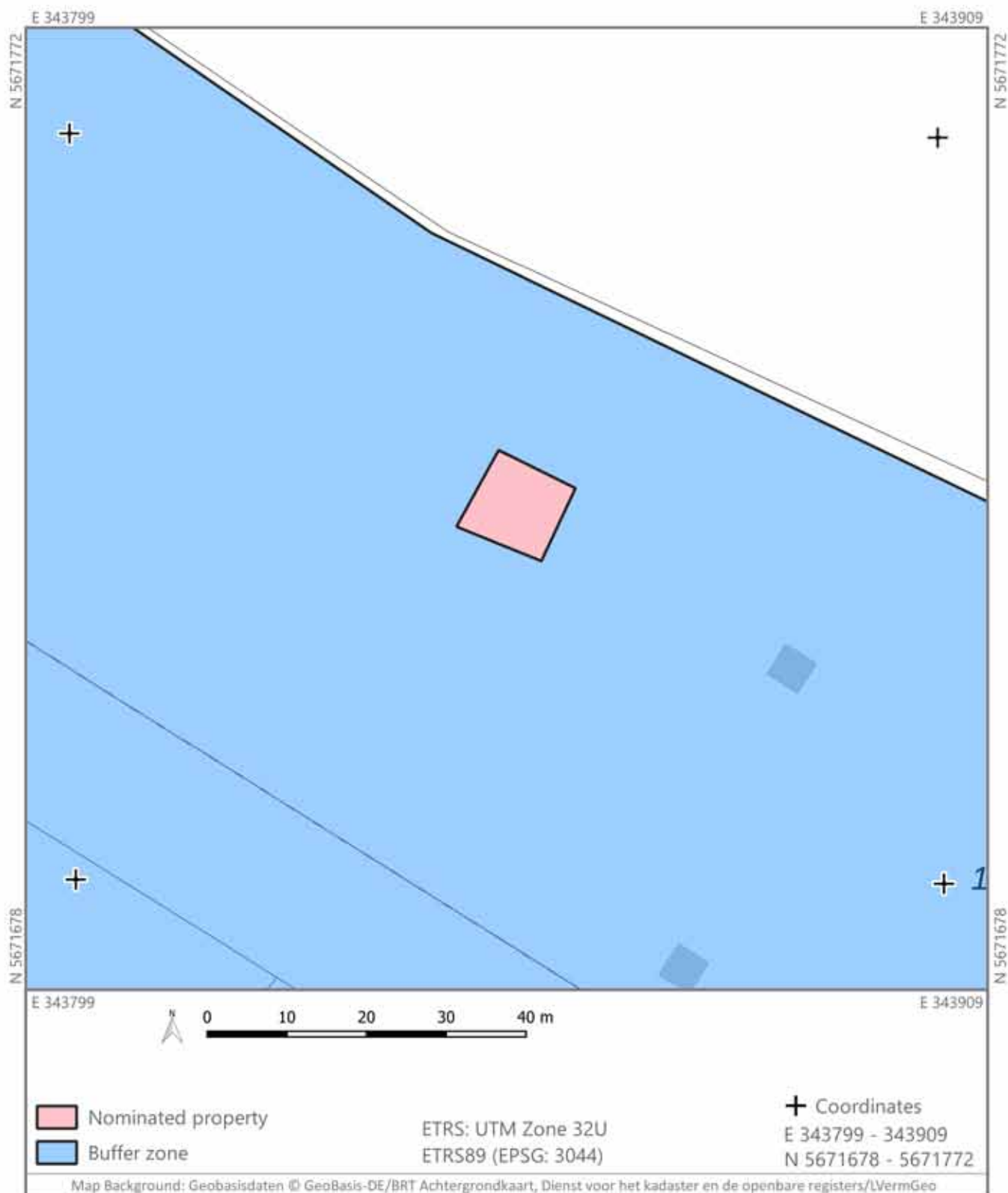
## 34 - Neuss-Reckberg





34a - Wachtturm

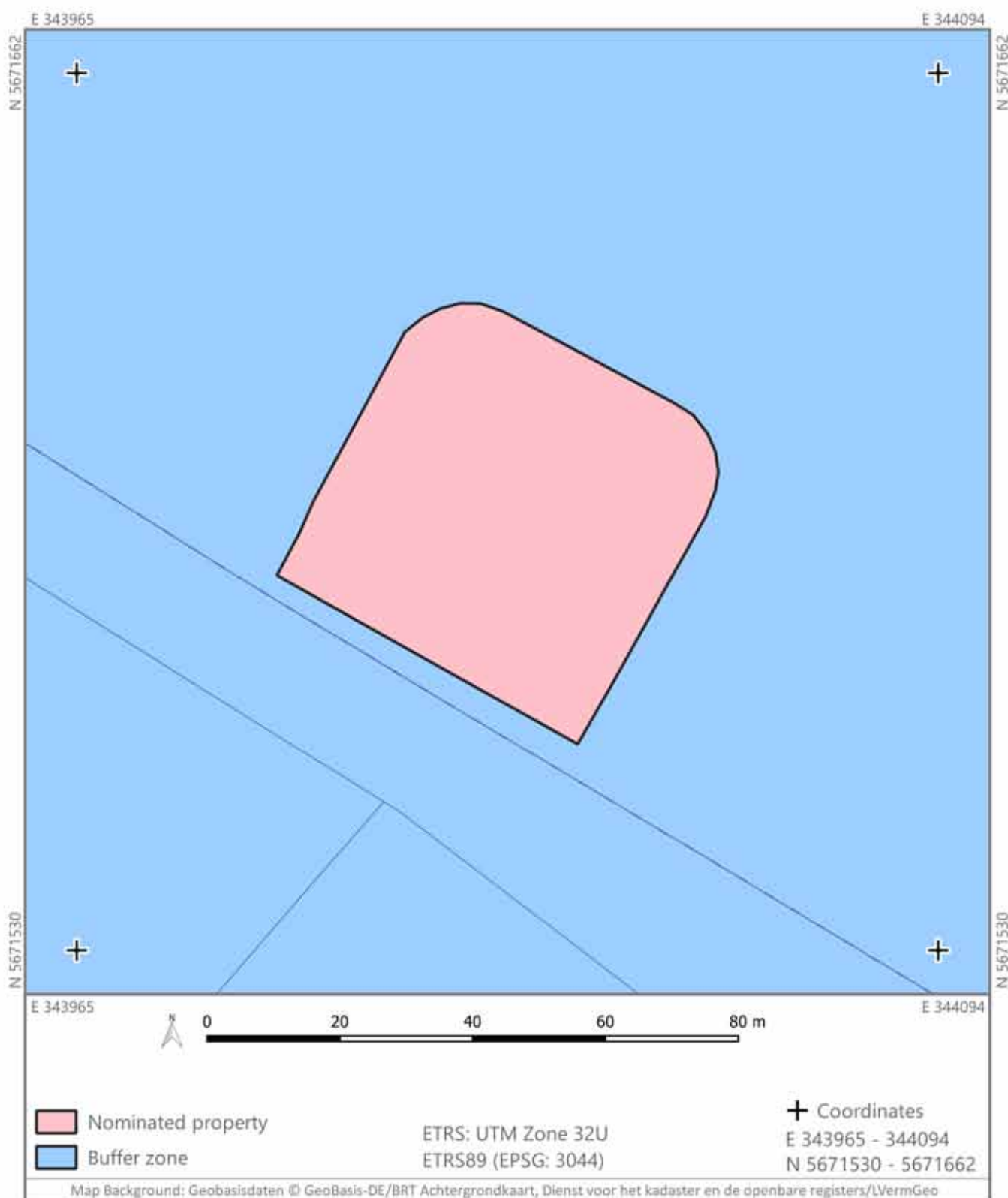
## 34 - Neuss-Reckberg





34b - Kleinkastell

## 34 - Neuss-Reckberg



## CLUSTER 34 NEUSS-RECKBERG

Fortlet, watchtower

Id	State Party	Federal state	Municipality
34	Germany	North Rhine-Westphalia	Neuss

### Brief description

Both elements are located at the strategically important junction of the Roman course of the Rhine with the Limes road south of Neuss-Koenenlager (*Novaesium*) ▶ 33 on the Reckberg, a dune on the Niederterrasse. The fortlet measures 34.5 × 33 m. It was first erected as an earth-and-timber construction and later expanded in stone with a 3 m wide gate integrated into the 2.2 m wide stone wall. The small fort is protected by a double V-shaped ditch.

200 m northwest of the fort, Koenen uncovered the foundations, made of Liedberger sandstone, of a watchtower. They measure 5 × 5 m. It is not known whether the tower was surrounded by a palisade and a ditch like those along the Upper German-Raetian Limes or by two ditches like the watchtower of Utrecht-Groot Zandveld ▶ 9.

Both elements existed from the beginning of the 2<sup>nd</sup> until the middle of the 3<sup>rd</sup> century AD.

### Attributes and values

The combination of a small fort and a watchtower is rare along the Lower German Limes. The well-preserved example in Neuss is a good example of the importance of this combination at specific points: from a hilltop above the Rhine, a small unit can very effectively monitor traffic on land and water. The Limes road runs south of the two buildings, while to the north the site offers an open view over the Rhine landscape.

### Integrity

Wholeness	Very good. The ensemble of fortlet and watchtower is fully included in the property.
Intactness	Good. Excavations have demonstrated that the substance are well preserved.
Exposure to threats	Minimal. The elements are located in uncultivated woods and are well protected.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. The physical substance of the surviving Roman remains is still intact.
Location and setting	Affected. The strategic position is no longer legible in the forest.



### Buffer zone

The buffer zone connects the two elements and includes a section of the Limes road (today Am Reckberg). Stone rubble known at a site on the other side of the road may be the remains of an associated *mansio* (rest station). This is included in the buffer zone.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Forestry	Minimal	Sustainable forestry with minimal ground disturbance in accordance with Federal Forestry Act, Federal Soil Conservation Law and Monument Protection Law of North Rhine-Westphalia is planned.

### Presentation

A reconstructed watchtower is located ex situ.

A modern column inspired by a Roman milestone is located next to the modern road, on the course of the Limes road.

### Community involvement

None.

### Ancient sources

Not mentioned in written sources.

### Further details

#### Main building phase

Beginning 2<sup>nd</sup> – middle of 3<sup>rd</sup> century AD (stone)

#### Main research activities

1885 excavations

#### Garrisons

unknown

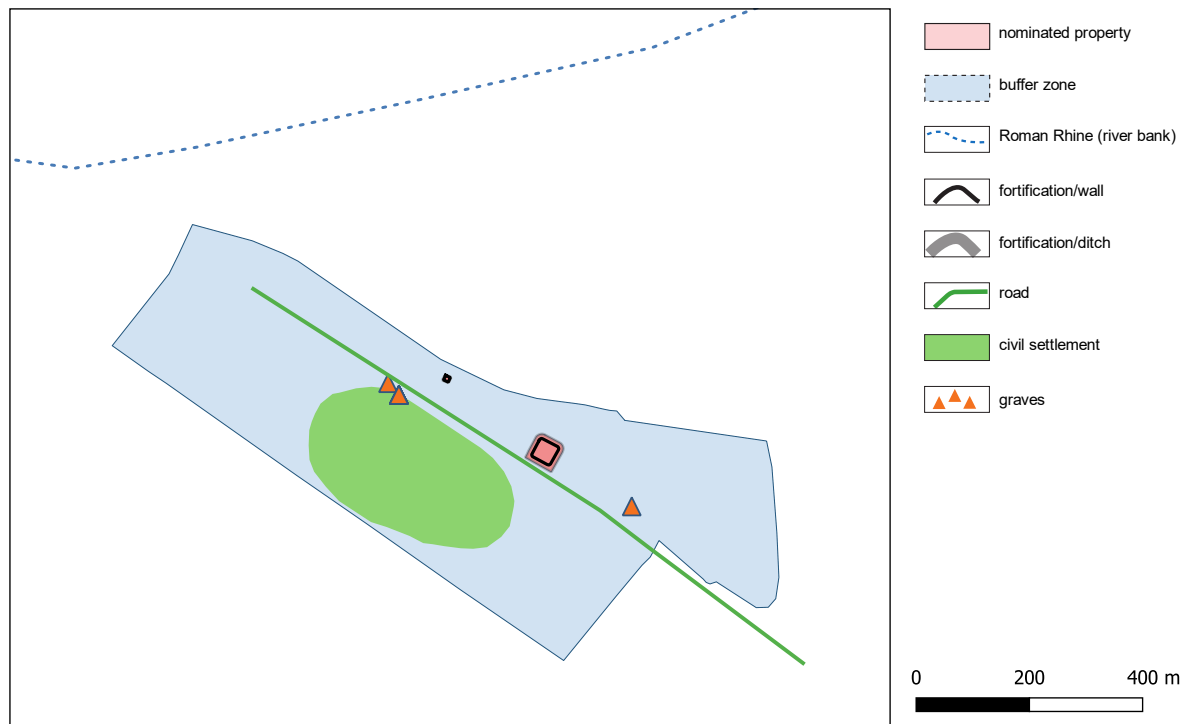
#### Literature

Koenen 1895; Koenen 1904, 128–130; Kaiser 1994.

Fig. 219 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 220 Plan of the fortlet at Neuss-Reckberg.

Fig. 219



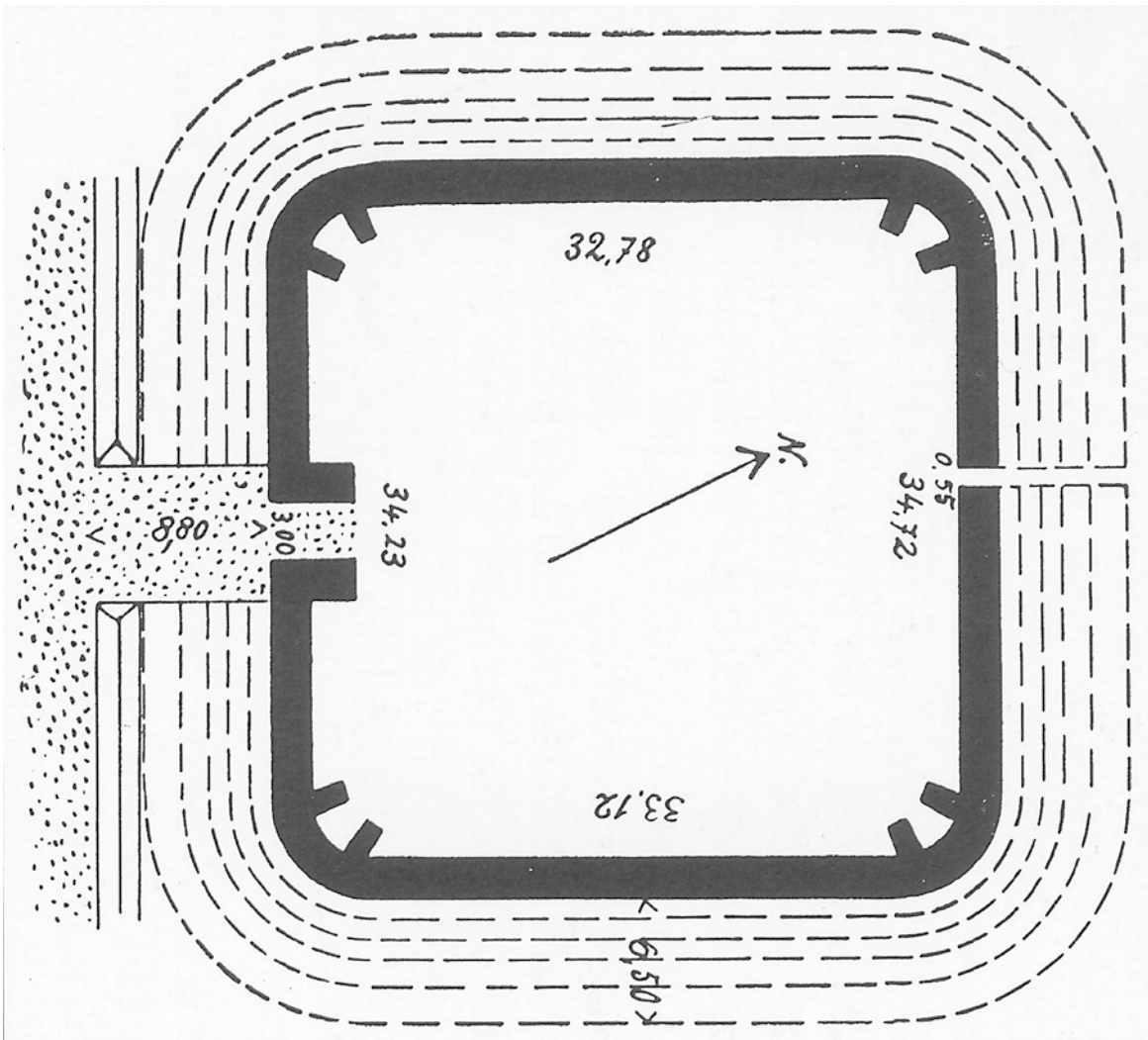


Fig. 220

## COMPONENT PART 34A

### NEUSS-RECKBERG | WACHTTUM

Watchtower

Id	State Party	Federal state	Municipality	Coordinates central point
34a	Germany	North Rhine-Westphalia	Neuss	E 6°45'58" N 51°10'34"

	Area in ha	Ownership
Component part	0.01	Public, private
Buffer zone	37.83	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Neuss)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Suedliche Rheinaue zwischen Grimlinghausen und Uedesheim')	

### Brief description

200 m northwest of the fort, Koenen uncovered the foundations, made of Liedberger sandstone, of a watchtower. They measure 5 × 5 m. It is not known whether the tower was surrounded by a palisade and a ditch like those along the Upper German-Raetian Limes or with two ditches like the watchtower at Utrecht-Groot Zandveld ►9.

### Attributes and values

The attributes and values are common to all component parts belonging to this cluster. See the text for the cluster.

### Integrity

Wholeness	Very good. The watchtower is fully included in the property.
Intactness	Good. Excavations have demonstrated that the remains are well preserved.
Exposure to threats	Minimal. The element is located in uncultivated woods and is well protected.



### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. The physical substance of the surviving Roman remains is intact.
Location and setting	Affected. The strategic position is no longer legible in the forest.

### Buffer zone

The buffer zone connects the two elements and includes a section of the Limes road (today Am Reckberg). Stone rubble known at a site on the other side of the road may be the remains of an associated *mansio* (rest station). This is included in the buffer zone.

### Relevant factors affecting the property and risk management

See the text for the cluster.

### Presentation

See the text for the cluster.

### Community involvement

None

### Ancient sources

Not mentioned in written sources.

### Further details

#### Main building phase

Beginning 2<sup>nd</sup> – middle of 3<sup>rd</sup> century AD (stone)

#### Main research activities

1885 excavations

#### Literature

Koenen 1895; Koenen 1904, 128–130; Kaiser 1994.

### COMPONENT PART 34B NEUSS-RECKBERG | KLEINKASTELL

Fortlet

Id	State Party	Federal state	Municipality	Coordinates central point
34b	Germany	North Rhine-Westphalia	Neuss	E 6°46'8" N 51°10'26"

	Area in ha	Ownership
Component part	0.27	Public, private
Buffer zone	37.83	

#### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1993
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018)	
	Land-use plan (Flächennutzungsplan Neuss)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Suedliche Rheinaue zwischen Grimlinghausen und Uedesheim')	

#### Brief description

The fortlet measures 34.5 × 33 m. It was first built as an earth-and-timber construction and later expanded in stone with a 3 m wide gate integrated into the 2.2 m wide stone wall. The small fort is protected by a double V-shaped ditch.

#### Attributes and values

The attributes and values are common to all component parts belonging to this cluster. See the text for the cluster.

#### Integrity

Wholeness	Very good. The fortlet is fully included in the property.
Intactness	Good. Excavations have demonstrated that the remains are well preserved.
Exposure to threats	Minimal. The element is located in uncultivated woods and is well protected.

## Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. The physical substance of the surviving Roman remains is intact.
Location and setting	Affected. The strategic position is no longer legible in the forest.

## Buffer zone

The buffer zone connects the two elements and includes a section of the Limes road (today Am Reckberg). Stone rubble known at a site on the other side of the road may be the remains of an associated *mansio* (rest station). This is included in the buffer zone.

## Relevant factors affecting the property and risk management

See the text for the cluster.

## Presentation

See the text for the cluster.

## Community involvement

None

## Ancient sources

Not mentioned in written sources.

## Further details

### Main building phase

Beginning 2<sup>nd</sup> – middle of 3<sup>rd</sup> century AD (stone)

### Main research activities

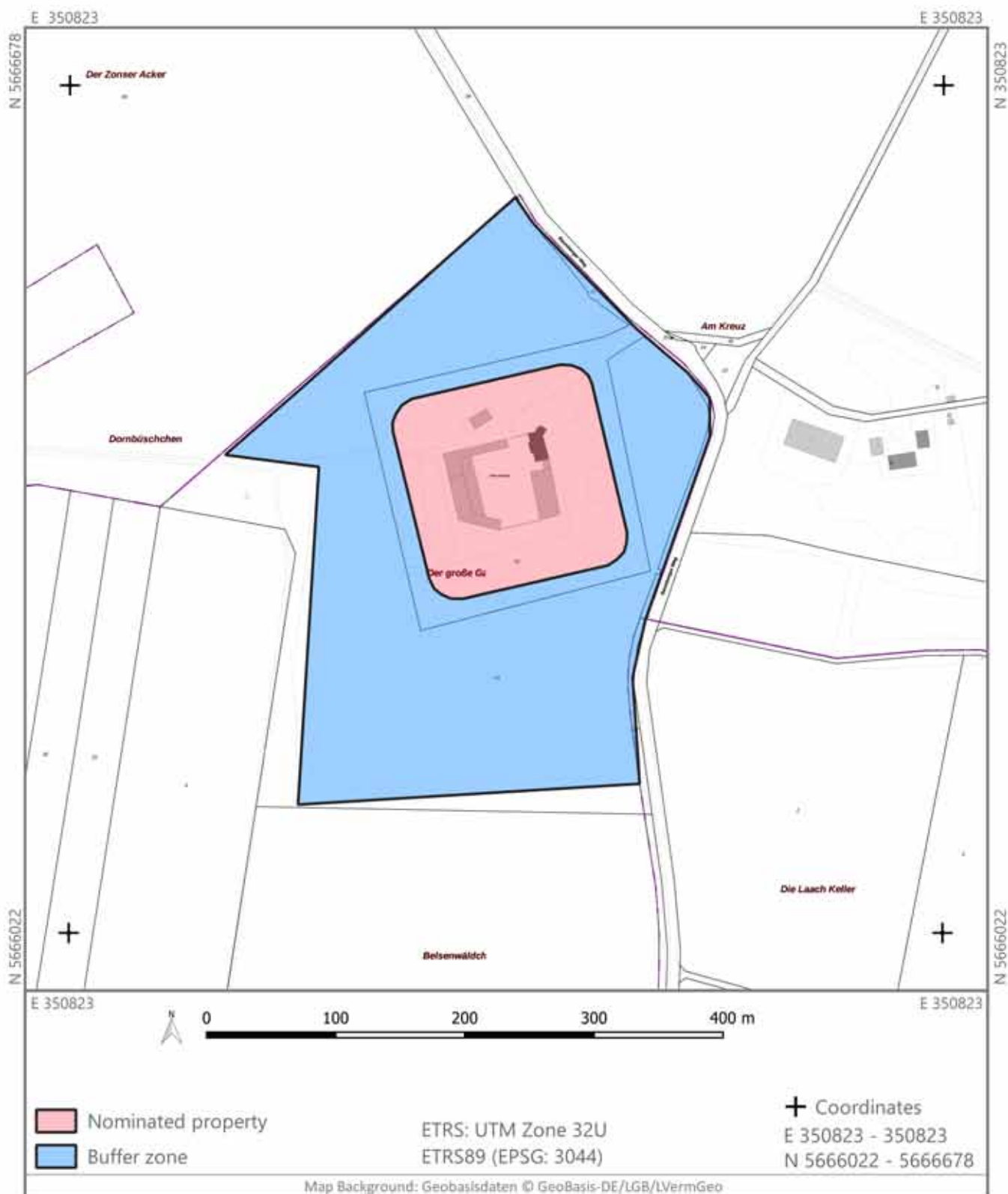
1885 excavations

### Literature

Koenen 1895; Koenen 1904, 128–130; Kaiser 1994.



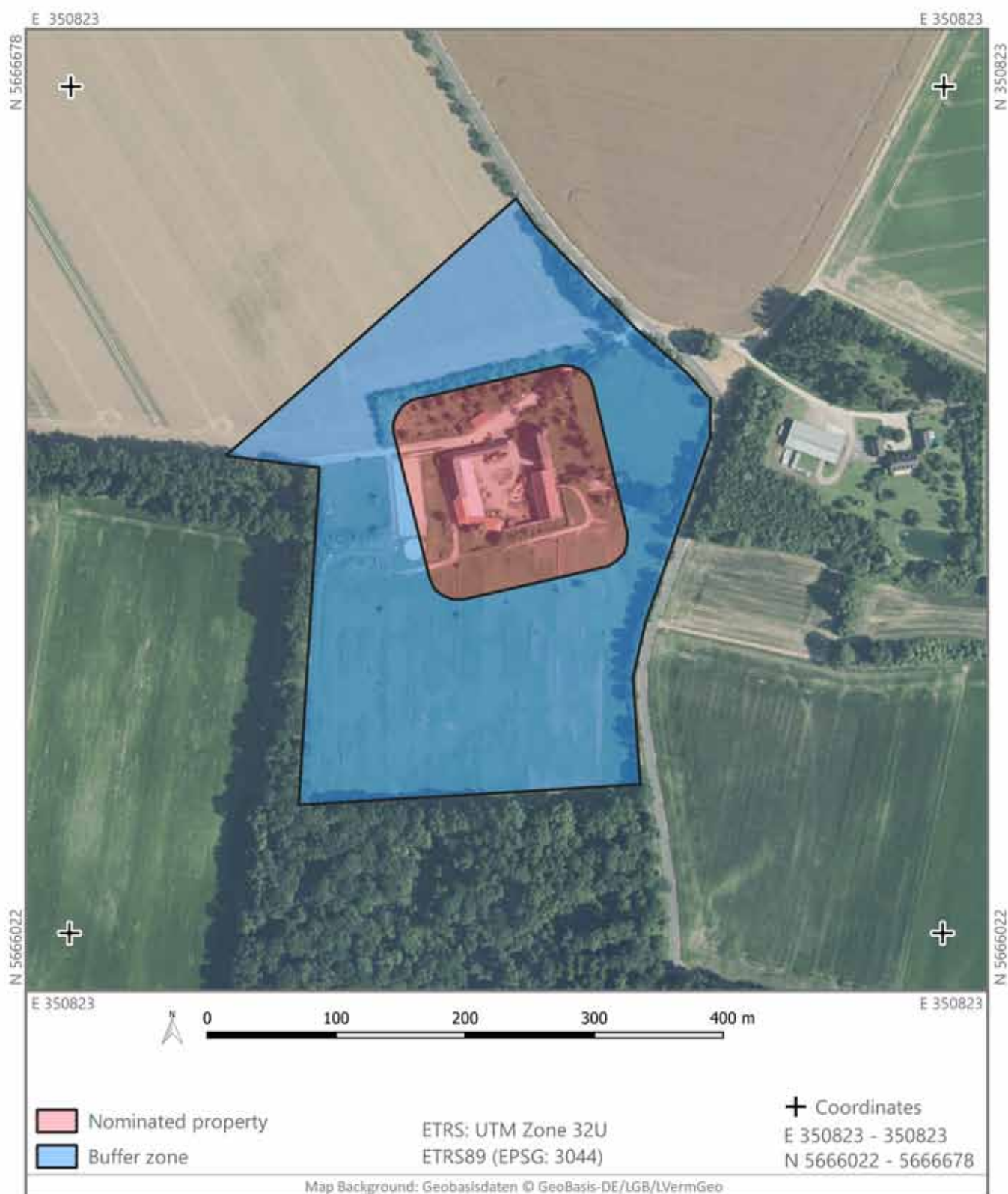
## 35 - Monheim-Haus Bürgel





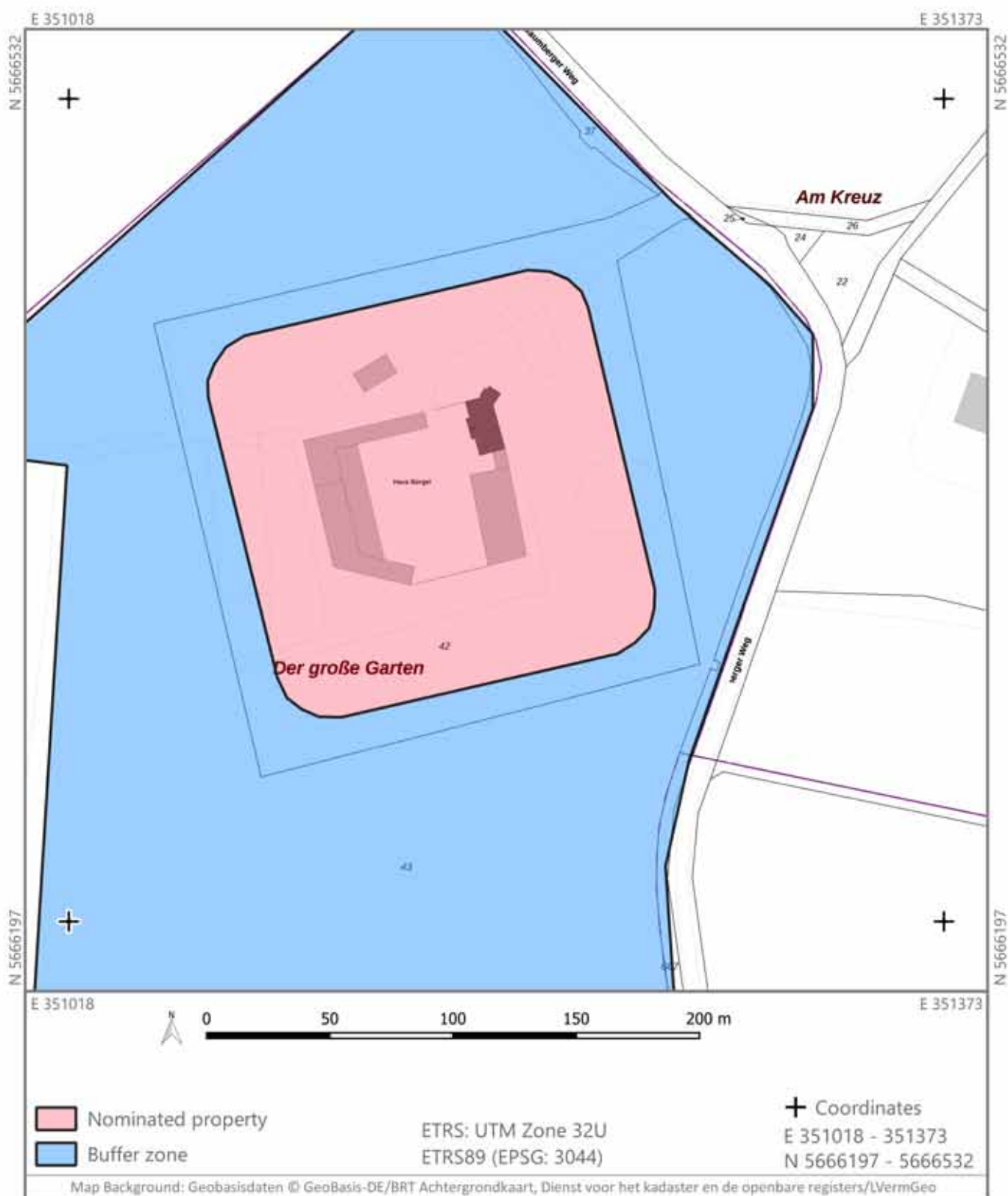


## 35 - Monheim-Haus Bürgel





## 35 - Monheim-Haus Bürgel



## COMPONENT PART 35 MONHEIM-HAUS BÜRGEL

Late Roman fort

Id	State Party	Federal state	Municipality	Coordinates central point
35	Germany	North Rhine-Westphalia	Monheim am Rhein	E 6°52'23" N 51°7'44"

	Area in ha	Ownership
Component part	2.48	Public, other
Buffer zone	8.61	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1987
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Monheim am Rhein) Agglomerationskonzept Köln/Bonn Landscape protection area (Landschaftsschutzgebiet 'Urdenbacher Altrhein')	

### Brief description

The Late Roman fort was relocated to the right bank of the Rhine as a result of a shift in the course of the river in the 14<sup>th</sup> century. In Roman times the course of the river formed a loop that extended far into the area now on the right bank of the Rhine.

Large parts of the Late Roman fort are still preserved up to 4 m high in the medieval castle complex and the Early Modern country estate.

The 64 × 64 m fort was built in the Constantinian period. It was constructed using massive cast brickwork, divided by horizontal brick lines. The brickwork visible today is the inner part of what was originally a 2.4 m thick wall, with four projecting corner towers and eight interval towers. Torsion weapons could be operated from platforms on the corner towers. Gates, with a passage width of 3.6 m, were located in the east and west walls.

The interior buildings of the fort were built directly onto the fortified wall. They were built partly in stone and partly in timber. A bathhouse was located in the south-eastern corner, extending at least 8 m into the inner courtyard. The remaining area was probably open.

### Attributes and values

Haus Bürgel is a very important example of the development and design of forts in Late Roman times. The design concept of the much larger fort in Köln-Deutz ► 38 was implemented here at a reduced scale and was part of the Late Roman fortification strategy of the Emperor Constantine.

Even though the fort today lies on the other side of the Rhine, the Rhine loop which it controlled is still clearly recognisable in the landscape.

### Integrity

Wholeness	Very good. The layout of the fort is almost completely preserved. The south-western corner tower was washed away during the flood of 1374.
Intactness	Very good. In several places the walls are preserved up to four metres high.
Exposure to threats	Minimal. Due to integration of the site into a museum and its location in a nature reserve, the site is not exposed to any danger.

### Authenticity

Form and design	Unaffected. The design of the fort is still present in the later buildings.
Materials and substance	Unaffected. Parts of the fortification walls are preserved up to four metres high.
Location and setting	Fair. After the shift in the course of the Rhine in medieval times, the site of Haus Bürgel is today located on the right bank of the Rhine.

### Buffer zone

The buffer zone is intended to protect the view from the site of the fort. Several graves have been found in the area east of the fort and are included in the buffer zone.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(iv) Visitors	Minimal	So far no damage has been caused by visitors and no damage is expected.
(iii) Flood	Minimal	Flooding appears generally not to be a threat to buried archaeology. The walls of Haus Bürgel have never been damaged by floods.



## Presentation

Remnants of the original walls are preserved up to 4 m high in the walls of a later estate and clearly visible. The ancient wall fabric can easily be distinguished from fabric of more recent periods, made of different materials and built on the Roman wall. The whole complex is included in a museum with a well-established permanent exhibition.

## Community involvement

Public presentation of the site is supported by volunteers from the 'Urdenbacher Kämpe – Haus Bürgel e.V.' association.

## Ancient sources

Not mentioned in written sources.

## Further Details

### Main building phase

Early 4<sup>th</sup>–5<sup>th</sup> century AD

### Main research activities

1953, 1959 excavations  
1992–1995 excavations  
2002–2004 excavations

### Garrisons

unknown

### Literature

Haberey 1957; Bürschel/Gechter 1994; Fischer 2000; Gechter 2005.

Fig. 221 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 222 Outer wall of the Roman fort of Monheim-Haus Bürgel preserved in the wall of the Medieval manor.

Fig. 223 Upstanding remains and marked out parts of one of the defensive Roman towers.

Fig. 224 Museum at Monheim-Haus Bürgel with remains of the Roman wall.

Fig. 225 Late Roman wine service from Monheim-Haus Bürgel.

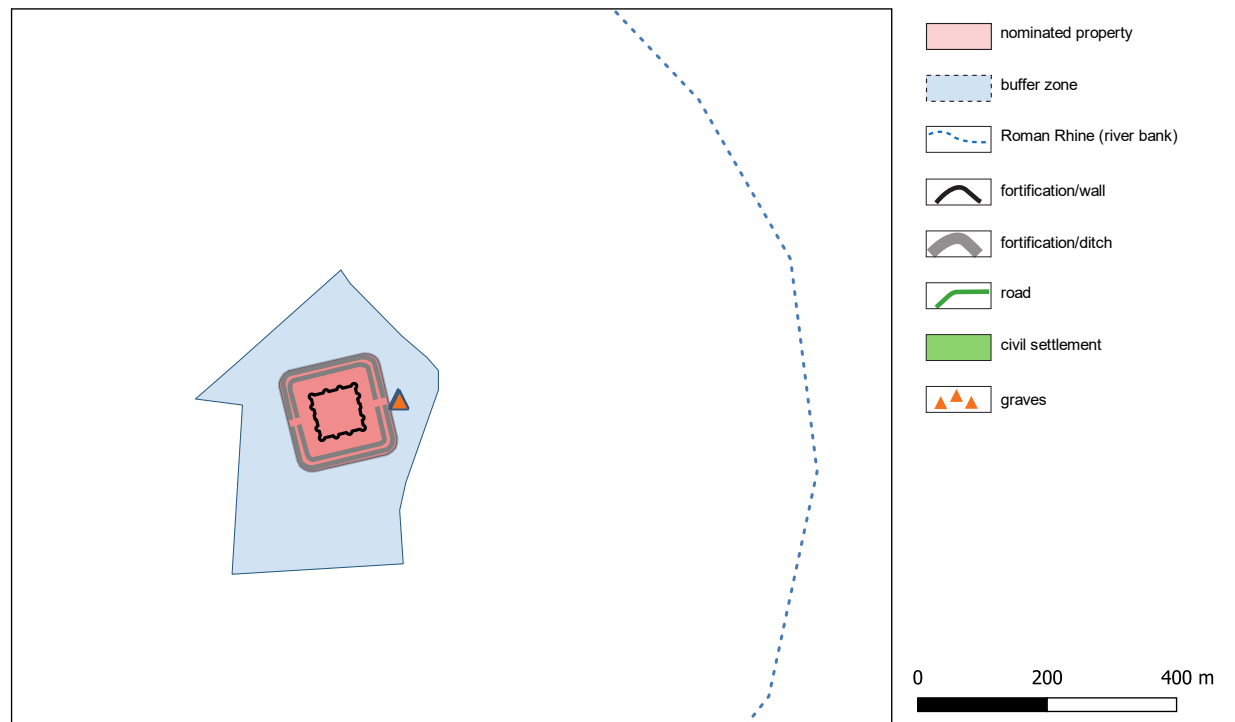


Fig. 221



Fig. 222



Fig. 223



Fig. 224

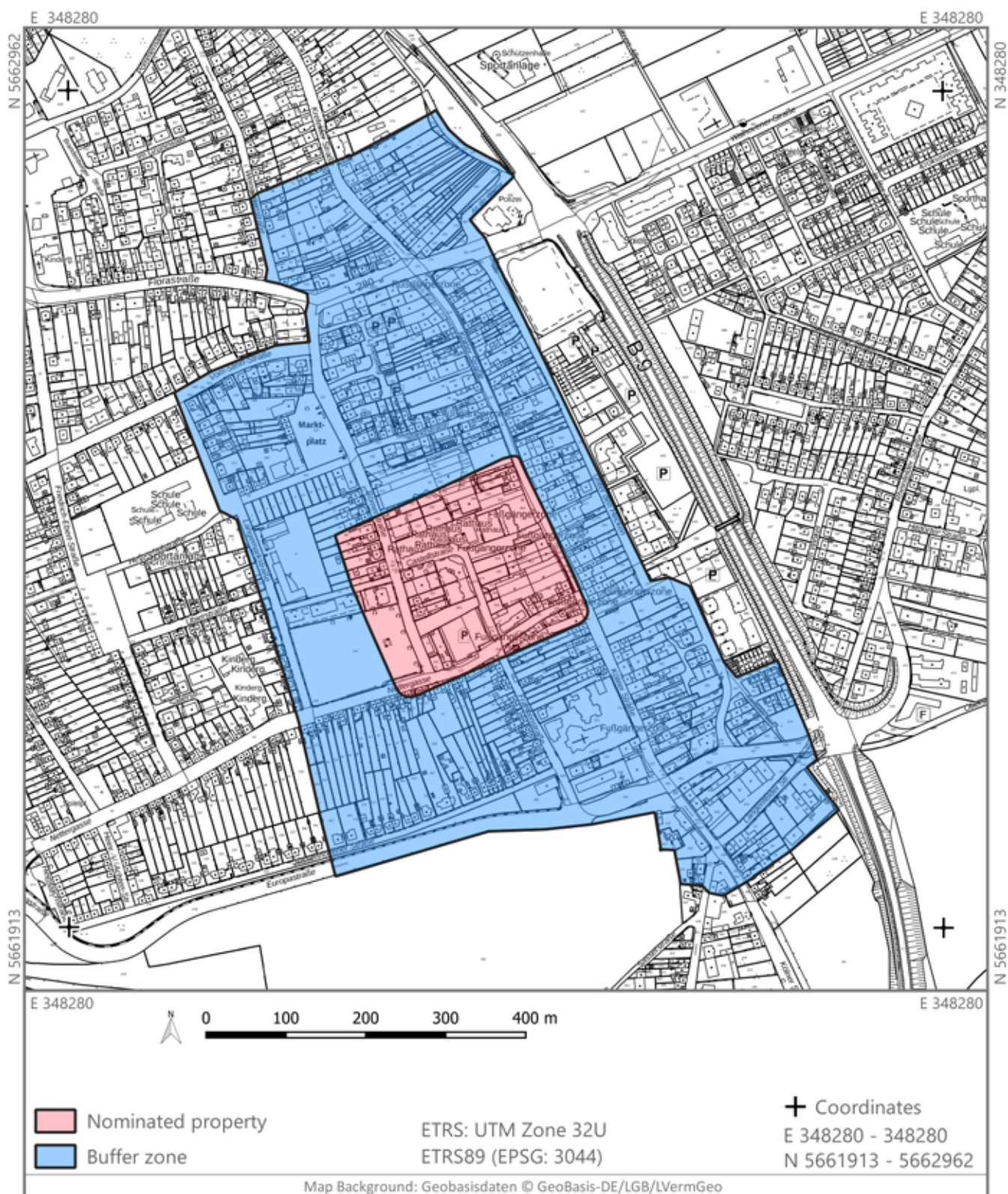


Fig. 225





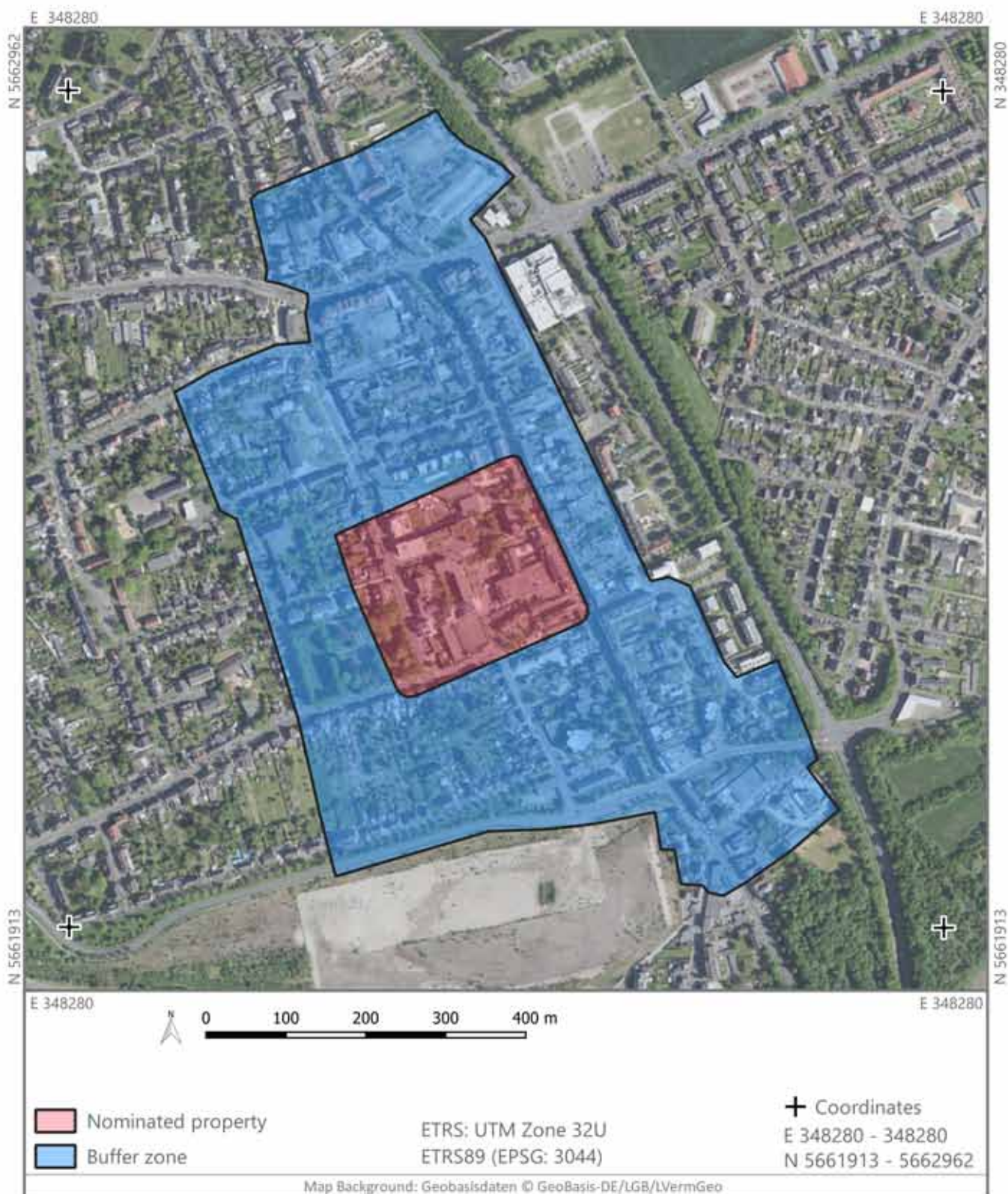
## 36 - Dormagen







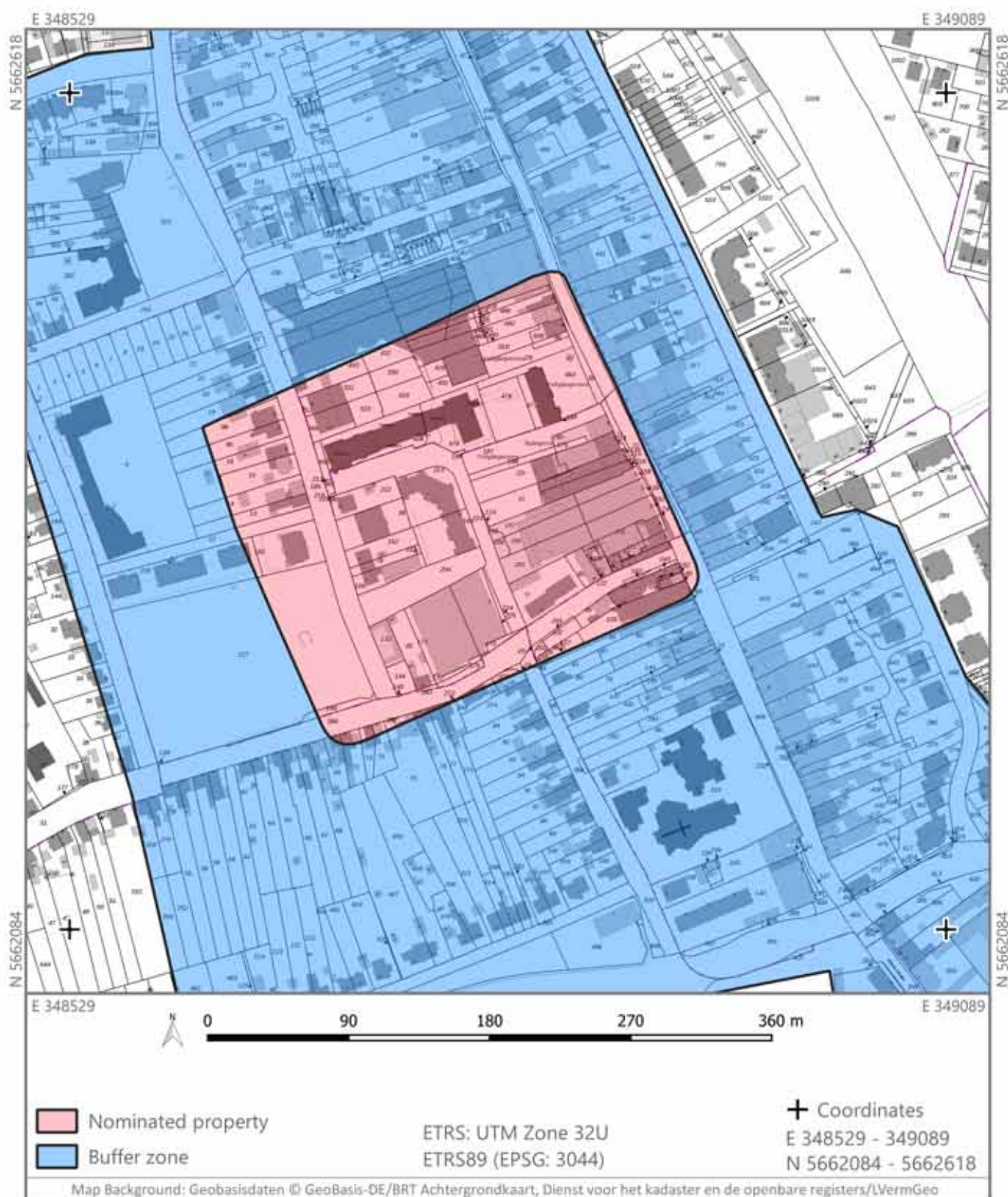
## 36 - Dormagen







## 36 - Dormagen



## COMPONENT PART 36 DORMAGEN

Auxiliary fort, *burgus*

Id	State Party	Federal state	Municipality	Coordinates central point
36	Germany	North Rhine-Westphalia	Dormagen	E 6°50'24" N 51°5'35"

	Area in ha	Ownership
Component part	5.81	Public, private
Buffer zone	35.42	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1986
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Düsseldorf, 2018) Land-use plan (Flächennutzungsplan Dormagen) Agglomerationskonzept Köln/Bonn	

### Brief description

The fort is situated on a flood-free terrace. In Roman times it was located directly by the Rhine; today the river runs about 1 km east from the fort.

The fort was built of wood in the 80s of the 1<sup>st</sup> century AD and re-built in stone around AD 150. It covers an area of 3.3 ha. Numerous excavations make it easy to reconstruct the interior structure of the fort. Around the centrally located *principia* in the rear area, there are long barracks in which soldiers and horses were accommodated together in adjacent rooms. It has been calculated that there were 500 soldiers and horses inside the fort. In the front part of the fort there is a workshop, a storage building and the commander's quarters as well as more barracks.

Following the burning of the fort in AD 161, the north corner continued in sporadic use until the end of the 3<sup>rd</sup>/beginning of the 4<sup>th</sup> century AD, when a reduced fortlet or *burgus* was built in this area, using the former fort wall. It was in use until AD 430. Several roads still follow the orientation of the Roman fort today.

### Attributes and values

In Roman times the fort was located directly beside the river, but the ancient course is now silted up. *Durnomagus* is an important element for understanding long term military development. Stabling of horses in the barracks was demonstrated archaeologically here for the first time from evidence of urine pits. This discovery is fundamental interpreting all cavalry forts. The fact that a cavalry unit was located directly on the river makes it clear that cavalry as well as the fleet was involved in controlling the border. This applies to other cavalry forts along the Lower German Limes.

The construction of a reduced fort in the Late Roman period in one corner of the middle Roman fort is important for understanding the military history of the Lower German Limes. This remodelling serves as a good example of the development of military installations from the early and middle Roman to the Late Roman periods.

### Integrity

Wholeness	Very good. The complete fort with its typical layout is known and included in the property.
Intactness	Fair. The excavations, which were very fruitful in terms of improving our understanding of the site, led to the destruction of some of the features. Destructive interventions for research purposes will be minimal in future.
Exposure to threats	Minor. Any future building projects in the area need to comply with the regulations of the national protection law.

### Authenticity

Form and design	Unaffected. The ground plan is well known and not subsequently altered. Some roads still follow the Roman alignments.
Materials and substance	Fair. The physical substance of the attested remains is fully authentic. Parts of walls are still preserved underground.
Location and setting	Affected. Due to later building development and the change in the course of the Rhine, the original riverside location is no longer legible in the landscape.

### Buffer zone

The buffer zone includes the vicus of which fragments only are known.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential/commercial development	Minor	Damage to archaeological remains will be prevented or minimised in accordance with the monument protection law.



### Presentation

The course of the eastern fort wall and the southern gate are marked in the pavement in the inner city area. Some of the finds are displayed in exhibition cases in the town hall; the exhibition is currently being revised.

### Community involvement

The private association 'Geschichtsverein Dormagen e.V.' has a long tradition of supporting public interpretation of the Roman history of Dormagen.

### Ancient sources

The site is listed as *Durnomagus* in the *Itinerarium Antonini Augusti* (254,5), a Roman register of stations and distances along roads.

### Further Details

#### Main building phases

80–161 (stone)

End of 3<sup>rd</sup>–4<sup>th</sup> century AD (stone)

#### Main research activities

1963–1977 excavations

#### Garrisons

ala Noricorum: c. 83/85–160

#### Literature

Müller 1979; Gechter/Willer 1996; Gechter 2001; Becker 2007; Grohmann 2009.

Fig. 226 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 227 Roman cavalry mask and its reconstruction.

Fig. 228 Plan of the fort of Dormagen.

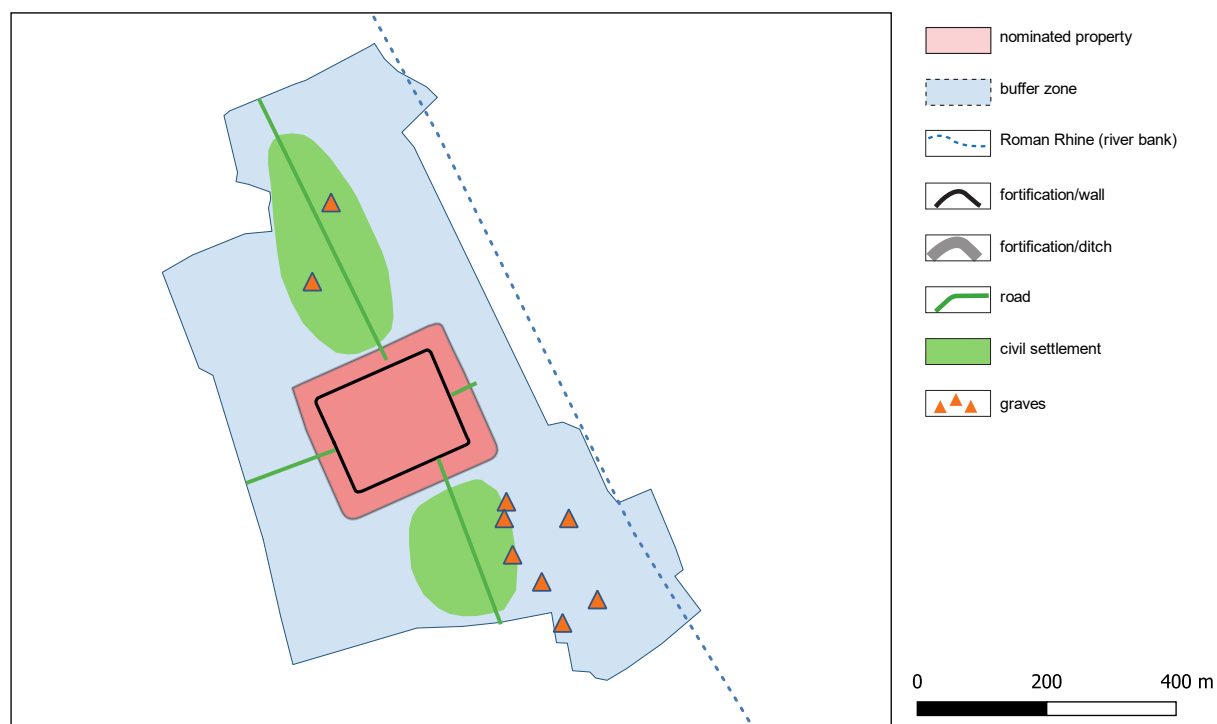


Fig. 226



Fig. 227

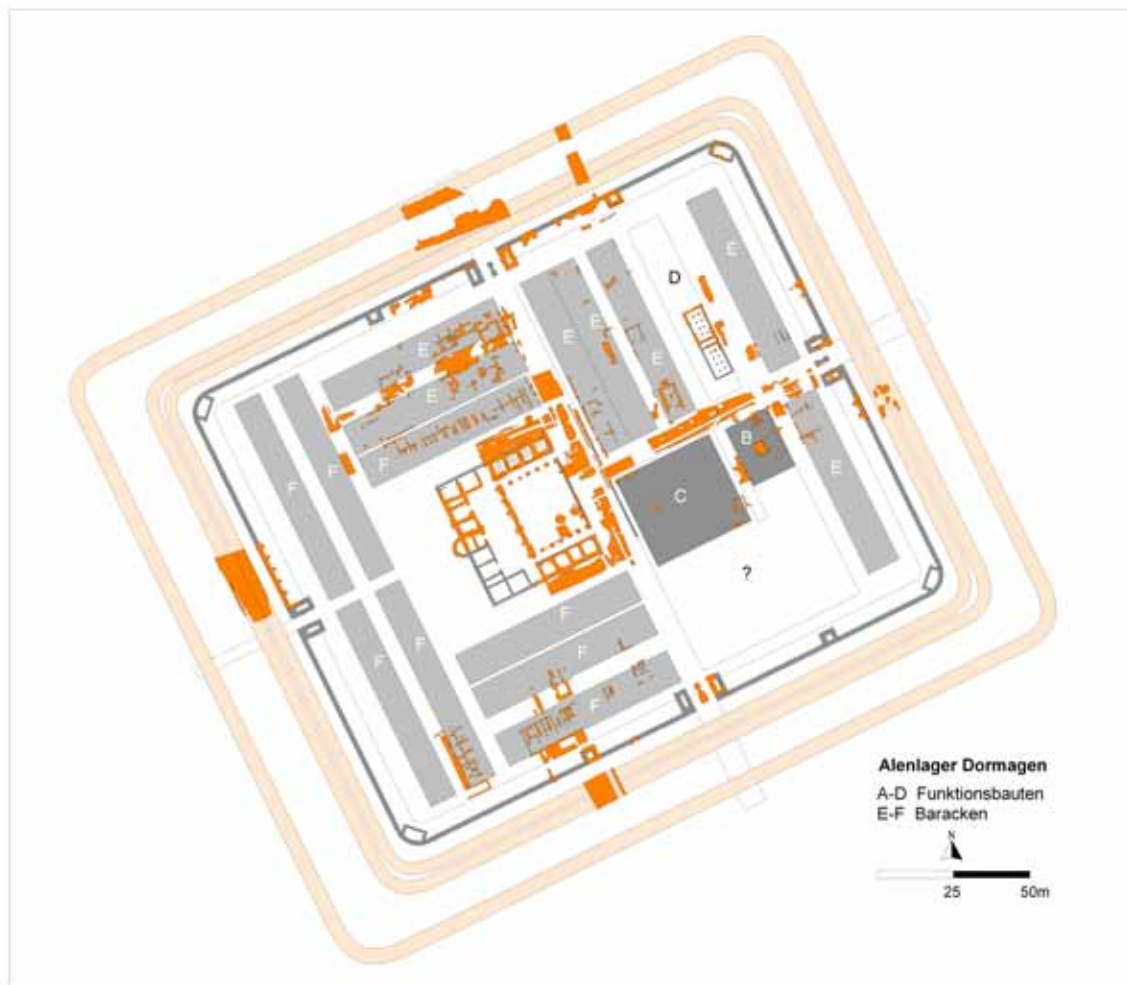
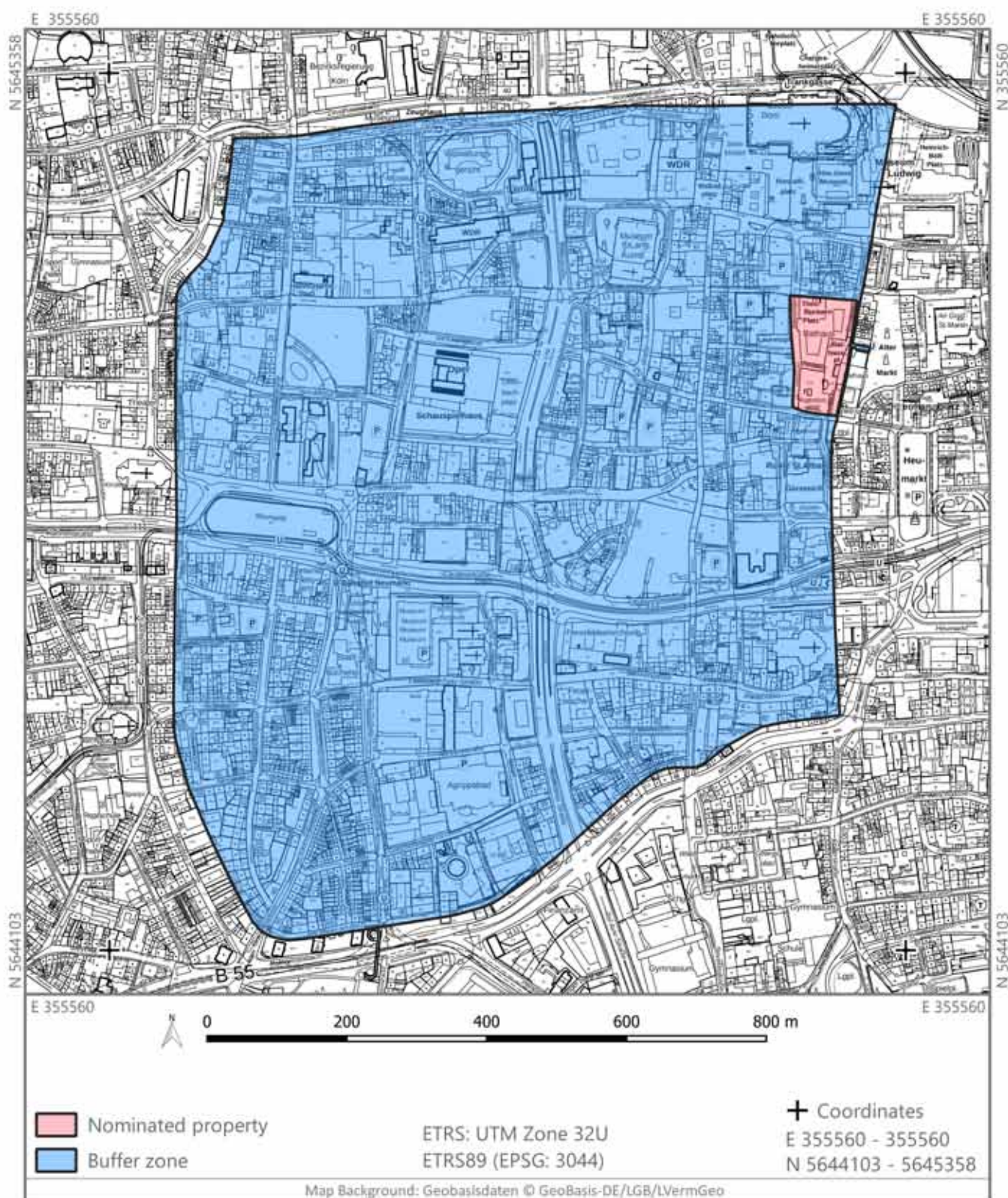


Fig. 228





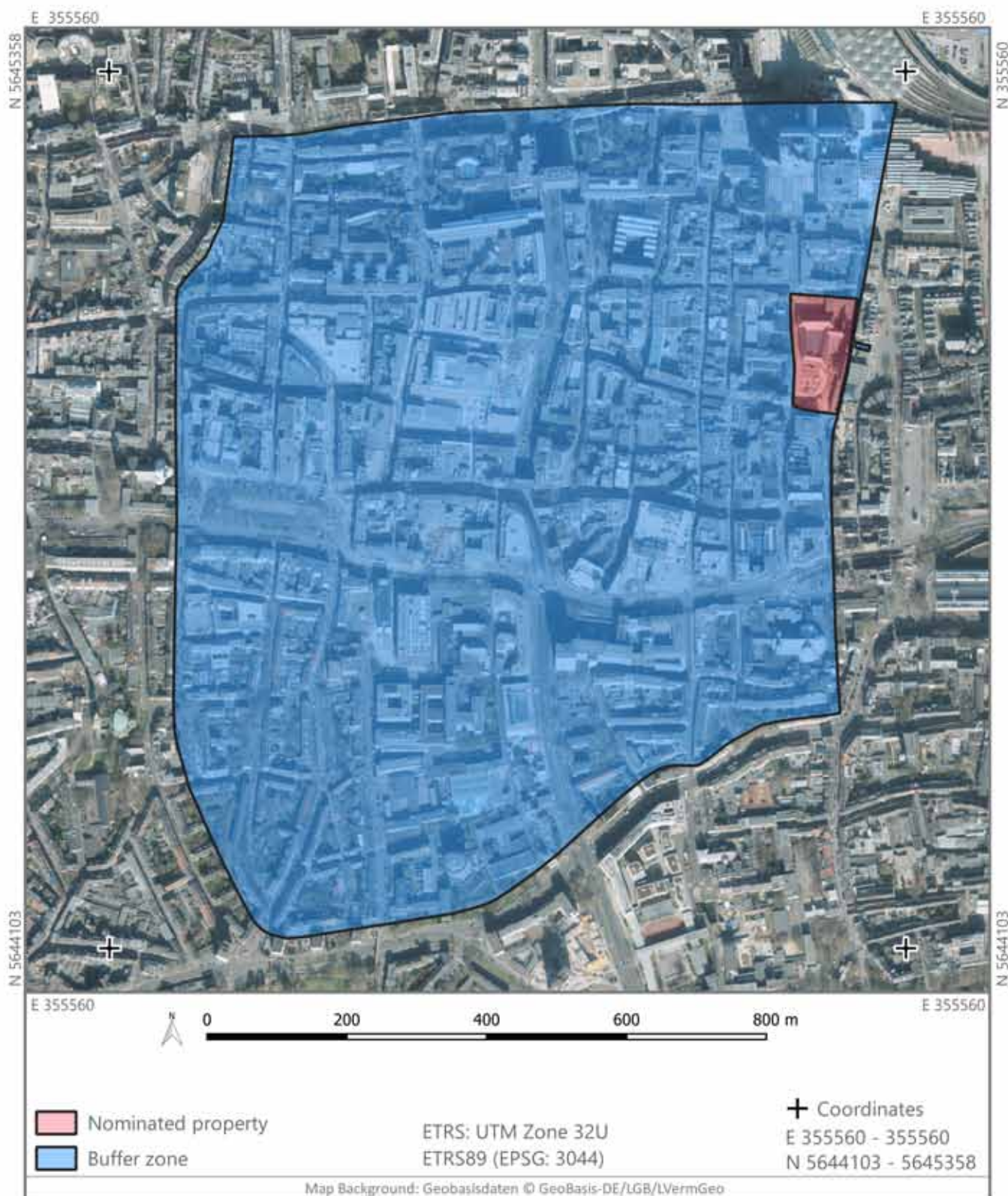
## 37 - Köln-Praetorium







## 37 - Köln-Praetorium







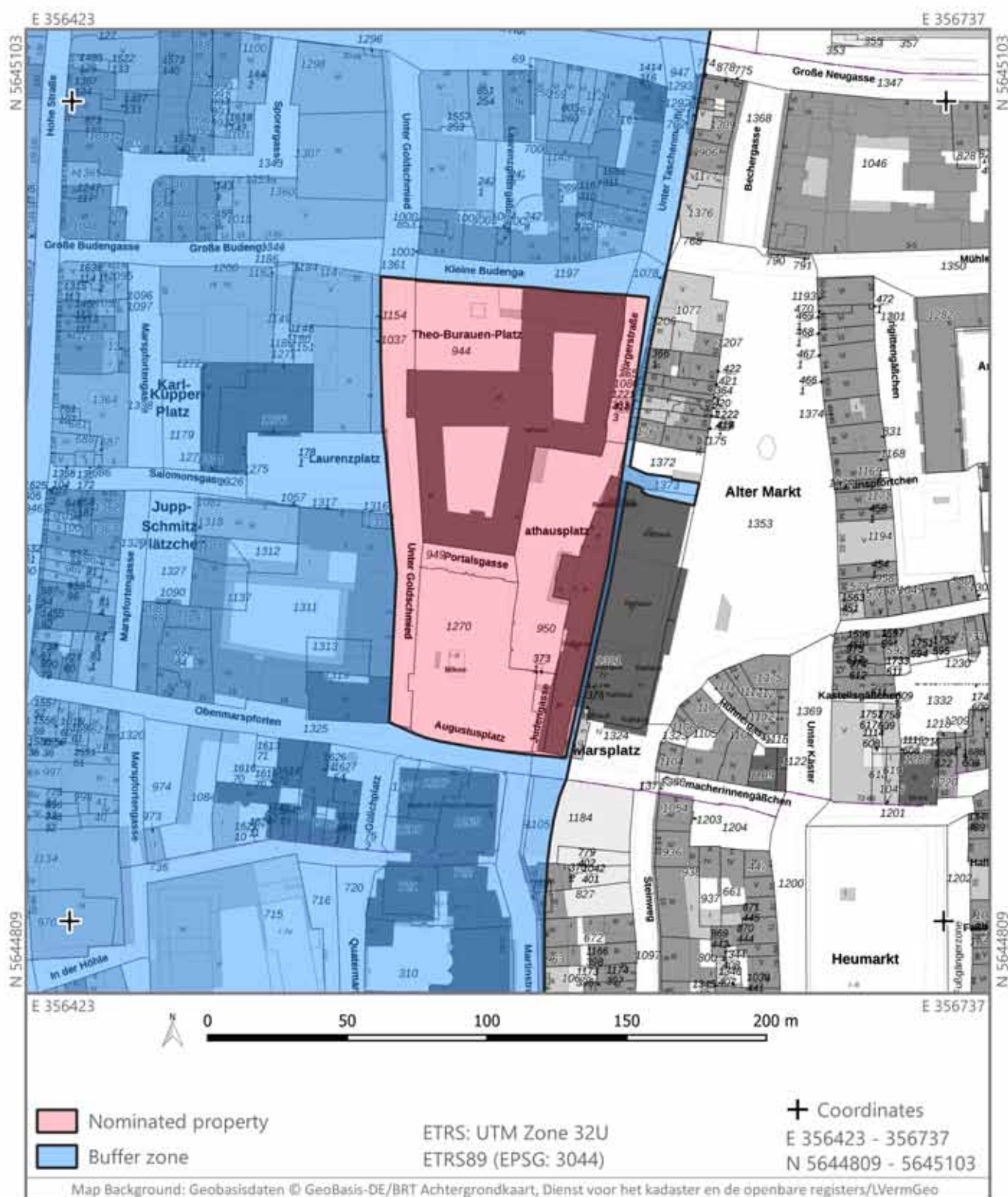
Den Haag

Nijmegen

37

Bonn

## 37 - Köln-Praetorium



## COMPONENT PART 37 KÖLN-PRAETORIUM

Palace of the Roman governor

Id	State Party	Federal state	Municipality	Coordinates central point
37	Germany	North Rhine-Westphalia	Cologne	E 6°57'32" N 50°56'17"

	Area in ha	Ownership
Component part	1.32	Public
Buffer zone	97.66	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1986
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Köln, Teilabschnitt Region Köln, 2018)	
	Agglomerationskonzept Köln/Bonn	

### Brief description

The palace was situated in a prominent, elevated position on the eastern edge of the city plateau, overlooking the city wall and the river. The whole complex occupied two *insulae* (blocks); an area of about 150 (N–S) × 60 m has been extensively excavated. The remains of four main building phases were found, one overlying the other, resulting in a warren of walls not easy to distinguish; many of the main phases showed secondary alterations whilst in use. A key observation was that the main (eastern) front of the complex was moved progressively closer to the city wall.

The first phase dates to the very beginning of the 1<sup>st</sup> century. In the late 1<sup>st</sup> century, massive north-south walls and a first version of an aula were constructed in the southern part of the complex. In this phase the main building was characterised by an eastern façade with two big apses. Around the mid-180s, the whole complex of 90 × 25 m was rebuilt under the governor Didius Iulianus, later Emperor of the imperium for a short period. A new, bigger *aula* with an apse at the eastern end was included in the complex. The last palace (constructed after the middle of the 4<sup>th</sup> century AD) was characterised by a 90 m long façade with porches or pavilions at both ends and a central, octagonal, tower over 20 m high and more than 15 m in diameter. The interior was characterised by large, hall-like rooms, whereas the adjoining part to the west comprised smaller rooms arranged around an open courtyard.

The abandonment of the palace continues to be discussed by scholars; some think it was never completely finished, others think there is evidence that it was still in use, at least partly, during the Frankish period and that it was finally destroyed in the second half of the 8<sup>th</sup> century AD.

### Attributes and values

The palace was the command centre for all military units stationed in Lower Germany, at least from the time of Tiberius onwards. It is thought to be the largest building yet known along the Rhine and, as a result of the extensive preservation of stone foundations, is clearly the best researched building of its kind in the Roman Empire.

The name *praetorium* for Roman governors' palaces was attested first in Cologne from several inscriptions, and was subsequently applied to all other buildings of this type. The various palaces that existed on the site over the centuries (four main and around ten secondary building phases) can often be connected with the names of particular governors and military commanders (e.g. Germanicus) known from other sources (literary, inscriptions etc.).

The ground plans offer an opportunity for a rare perspective on how Roman provincial administration (military and civilian) worked in practice and how the representatives of (the Emperor in) Rome lived, far away from the Empire's capital. For more than 99 % of the population, the consular governor was the highest-ranking Roman person they might ever meet in their lifetime.

### Integrity

Wholeness	Very good. Large parts of the palace area are known and most of it is preserved under a modern construction that will be part of the new 'MiQua' museum.
Intactness	Very good. Extensive in-situ preservation of upstanding stone foundations belonging to multiple building phases. It can be assumed that further remains of the complex are preserved underground, especially in the western area.
Exposure to threats	Minimal. The whole property is owned by the city of Cologne and a museum incorporating most of the area is under construction. The remaining parts are not subject alteration in the foreseeable future.

### Authenticity

Form and design	Unaffected. The nominated property of the palace complex is even larger than the known area and covers more or less the extent of two whole <i>insulae</i> . The ground plan for each of the four main phases is well known. The full extent of the buildings will be experienced once the enlarged underground museum has reopened.
Materials and substance	Unaffected. Very extensive amounts of the original stone construction remain, with well-preserved archaeological layers located at different points across the nominated property.
Location and setting	Affected. The Roman harbour on the Rhine lies under the Alter Markt of the modern city; this allows the difference in height between the river and the flood-free city plateau to be appreciated.



### Buffer zone

For several reasons, the buffer zone contains the complete walled area of the CCAA. First, the governor's palace was part of a highly impressive line of public and private buildings that covered the easternmost strip of the city. Second, it was, together with the *forum*, one of the most important focal points of the city as a whole. Third, it includes hitherto unknown parts of the Praetorium complex. Fourth, the prominent position of the former palace on the eastern edge of the city plateau is most apparent from the small added area to the east.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential development	Minimal	Besides the new on-site museum that incorporates the remains of the palace, the only other buildings within the property are the old and new parts of the city hall. No further urban development is expected on the (municipal) grounds around them.
(iv) Visitors	Minimal	The security service inside the museum is responsible for protection of the preserved remains of the walls from visitors.

### Presentation

An underground museum was established in the late 1950s, making the remains of the north-eastern part of the palace accessible for visitors. It consisted of an exhibition room and a large vaulted area of ruins with a footbridge running through it. The Praetorium exhibition was closed down in 2019 for construction of the new 'MiQua' museum. The entire exhibition concept will be revised and significantly expanded over the next few years. The remains offer multiple opportunities for detailed 3D-computer reconstruction.

### Community involvement

The 'MiQua-Freunde' ('Friends of MiQua'), a privately run, registered society founded in 2017, supports the museum by collecting donations, applying for grants, helping to purchase or restore exhibits and funding publications and lectures.

### Ancient sources

After several indirect references (e. g. presence of Roman commanders or members of the Imperial house in Cologne), the first unequivocal mention of the Praetorium is to be found in Suetonius' biography of the short-lived Emperor Vitellius, who was proclaimed Emperor while residing in the CCAA (Sueton, Vitellius 8). Another direct reference ('regia') is made by Ammianus Marcellinus, writing about the usurpation of Silvanus in the mid-4<sup>th</sup> century AD (Amm. 15, 5).

The continuing use of the palace by Frankish kings after the end of the Roman era can also be evidenced through early medieval sources, e.g. the story of St. Gallus of Clermont, who had to flee to the palace ('aula regia') after setting fire to a pagan temple (Gregory of Tours, Vitae Patrum 6,2).

### Further Details

#### Main building phases

- 1 Beginning of 1<sup>st</sup> century AD (stone)
- 2 End of 1<sup>st</sup> century AD (stone)
- 3 c. 185 (stone)
- 4 Mid-4<sup>th</sup> century AD (stone)

#### Main research activities

1561; 1953; 1955/56, 1964, 1967/68, 1971, 1998, 2007–2018: excavations

#### Garrisons

Governor's guard, military staff

#### Literature

Doppelfeld 1956; Eschbaumer 1999; Precht 1973; Precht 2008; Schäfer 2014; Schreiber 2012; Ullmann 2003. Hinzen et. al. 2013; Otten/Twiehaus 2018.

Fig. 229 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone of Köln-Praetorium and Köln-Deutz.

Fig. 230 Artist's impression of the Praetorium on top of the preserved remains.

Fig. 231 Digital visualisation of the remains of the Praetorium.

Fig. 232 Plan of the Praetorium. Blue: late Roman period, red: city wall of the CCAA.

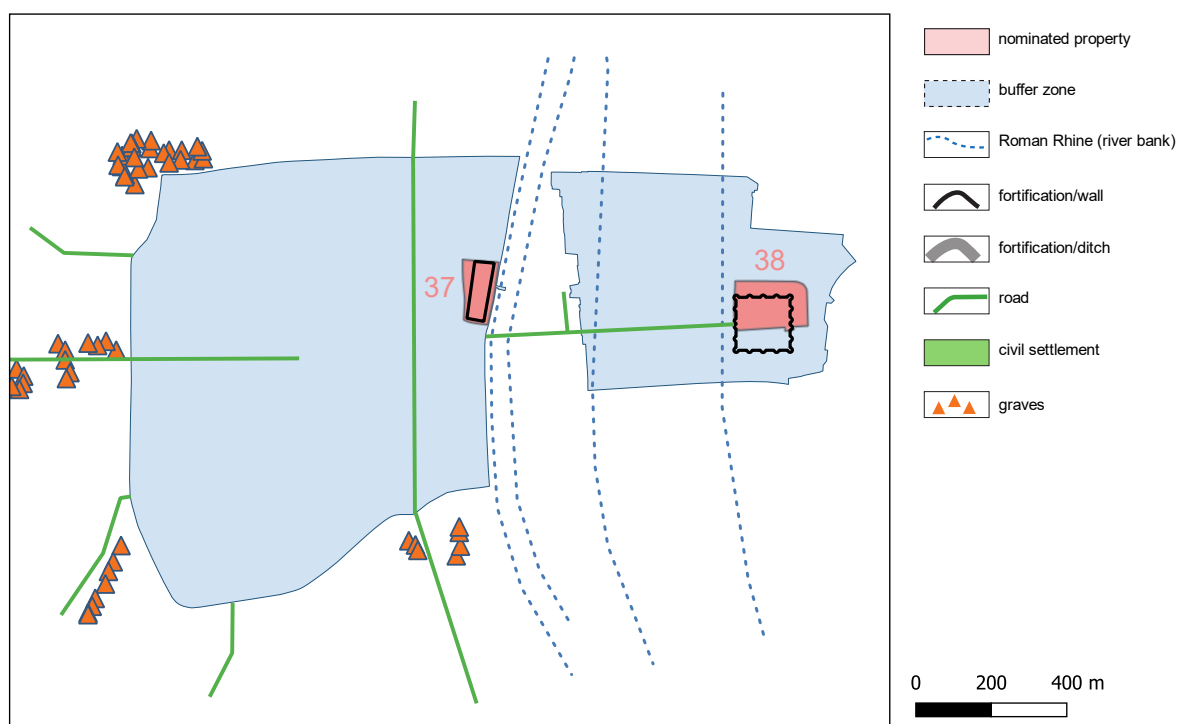


Fig. 229



Fig. 230

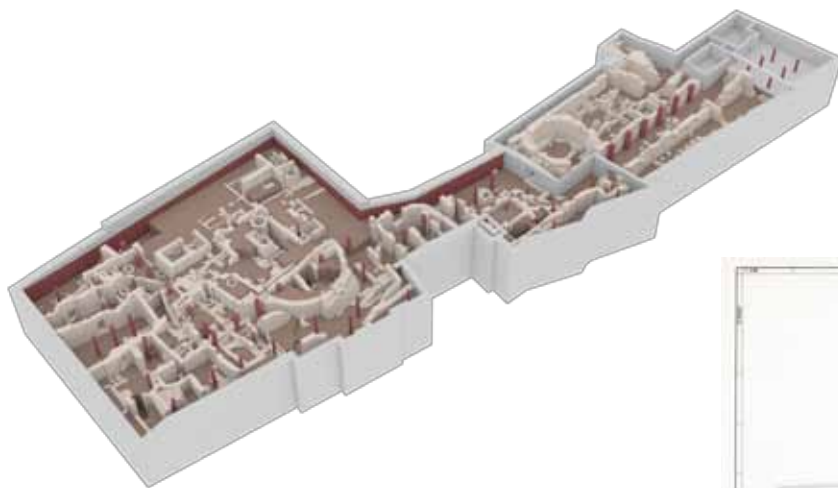


Fig. 231

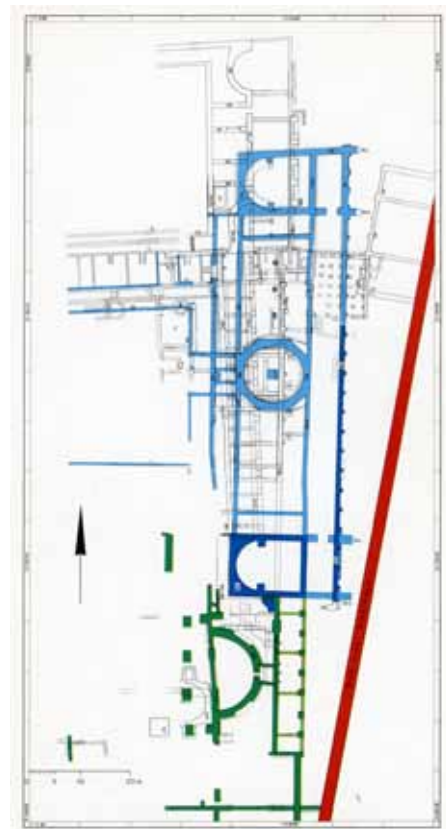
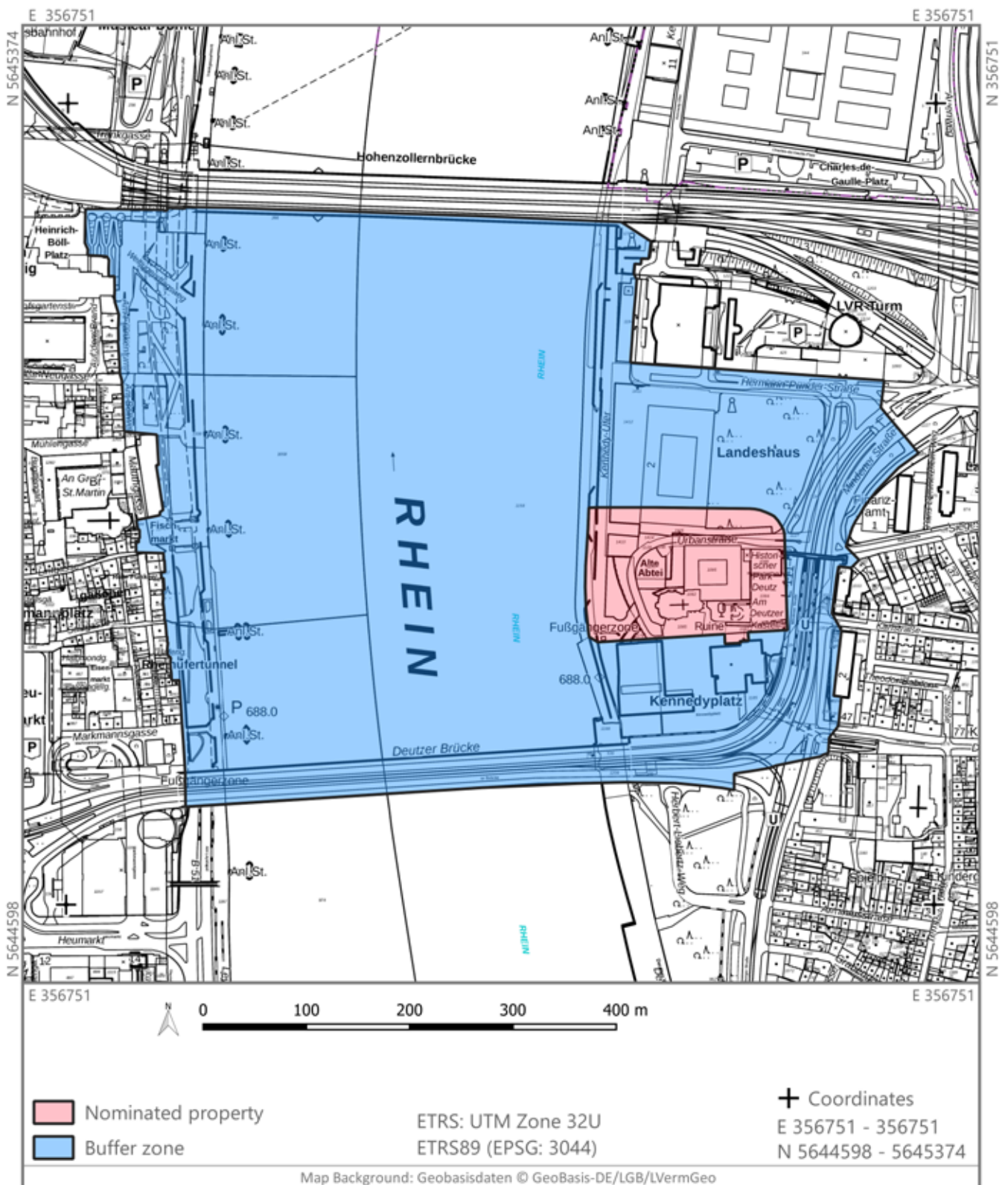


Fig. 232



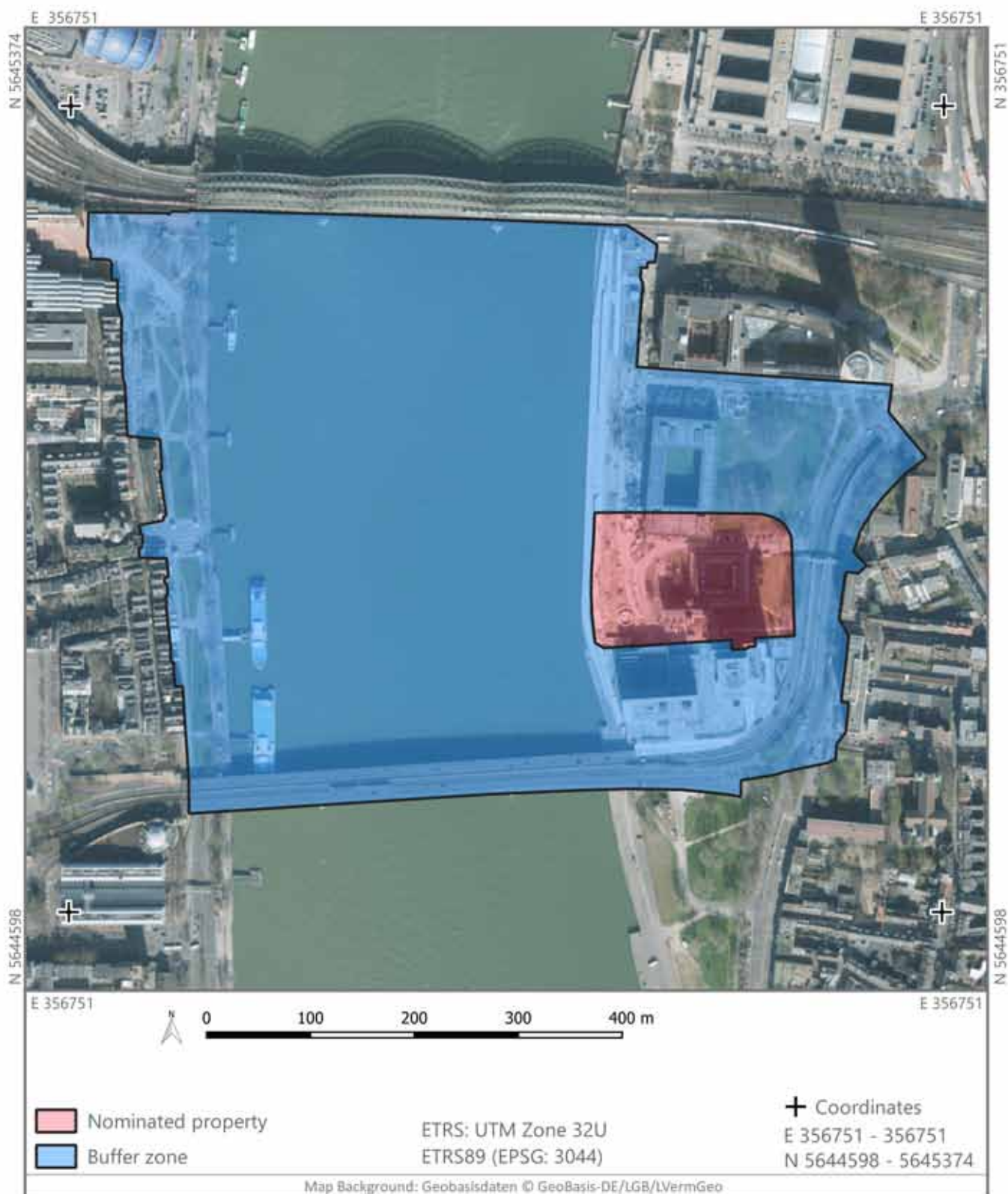
## 38 - Köln-Deutz





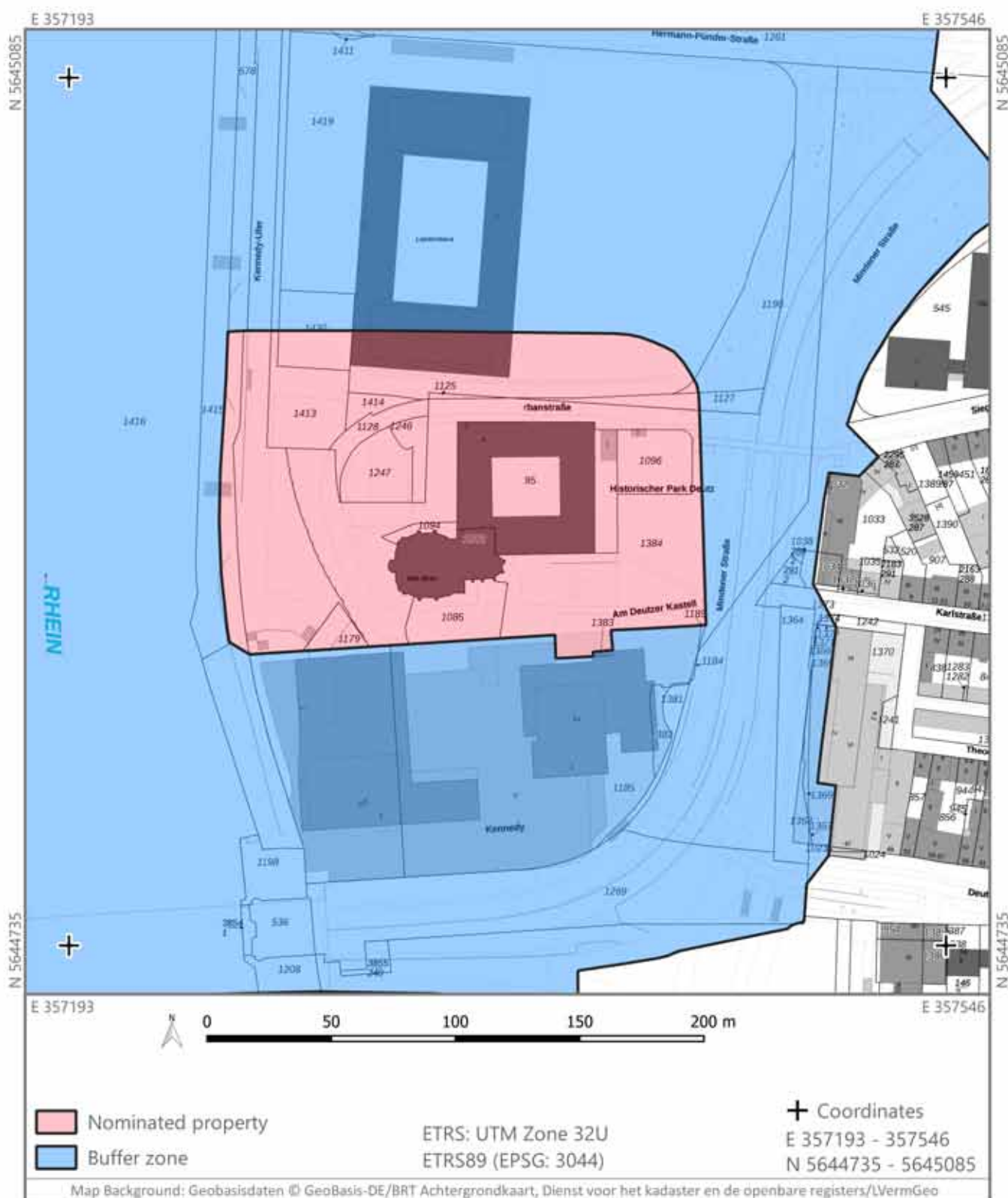


## 38 - Köln-Deutz





## 38 - Köln-Deutz



## COMPONENT PART 38 KÖLN-DEUTZ

Late Roman fort and river bridgehead

Id	State Party	Federal state	Municipality	Coordinates central point
38	Germany	North Rhine-Westphalia	Cologne	E 6°58'12" N 50°56'17"

	Area in ha	Ownership
Component part	2.39	Public, private, other
Buffer zone	32.61	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1991
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Köln, Teilabschnitt Region Köln, 2018) Agglomerationskonzept Köln/Bonn	

### Brief description

The bridgehead fort of Deutz played an important part in Emperor Constantine the Great's building programme to reinforce the defensive line along the river frontier. It was located east of the Rhine, directly on the bank of the river. It was connected with the *Colonia Claudia Ara Agrippinensium* by a bridge over 400 m long. The fort was surrounded by a ditch on three sides (12 m wide, 3 m deep) and formed a square with sides of 148 × 148 m (more than 2 ha). The curtain wall was 3.3 m thick, a minimum of 8 m high and had 14 round towers that protruded much more on the exterior than the interior faces. There were two double-towered gates to the west and east, the fort being divided in two halves by the *via praetoria* connecting them. The interior was completely taken up by 16 rectangular, north-south oriented barracks (58 × 11.5 m), constructed with stone foundations carrying timber-framed walls. The four middle barracks had porticoes on their narrow sides opening onto the centre of the fort; in one of them, close to the southern defences, a bathhouse was located. Around the barracks were gravelled roads with wooden sewers beneath. In the current state of research, Divitia is one of the few examples of a Late Roman fort where the interior layout is fully understood.

According to epigraphic evidence and written sources, the fort was built between 309/10 and; the garrison consisted of about 800–1,000 soldiers. Based on the finds, the fort continued to be used by Frankish *foederati* under Roman command until the middle of the 5<sup>th</sup> century AD.

### Attributes and values

The Deutz fort is the only military installation of Lower Germany (*Germania inferior/Germania secunda*) that was built on the 'Germanic' side of the Rhine. It is a typical element of a building programme launched under Emperor Constantine I to protect the border more strongly against Frankish attacks, and of the Late Roman defence strategy to advance into Germanic territory. The building of the fort was also the reason for the first construction of the first river bridge in Cologne and served as a guard post for it and the Colonia. The remains of this massive fort with its unique interior layout and many other construction details is – along with the contemporary, but smaller Haus Bürgel ► 35 – the best example of Late Roman military architecture in the Province and beyond. Due to the long history of research since the 19<sup>th</sup> century, with many excavations in different parts of the fort and the resulting large number of finds, Deutz illustrates vividly the last phase of military occupation along the Rhine (cf. Viatorinus inscription). Literary and numismatic sources inform us about the construction phase and the inauguration in the presence of the Emperor.

The transition period and afterlife of the site can also be studied through a combination of written and archaeological sources. A Merovingian/Carolingian church was built over the former centre of the fort and formed the nucleus for the later development of Deutz, while the defences remained intact until removal of the last traces in the 13<sup>th</sup> century.

### Integrity

Wholeness	Fair. More than half of the fort is included in the property; although parts of the central and northern sectors have been excavated and/or built over, the remaining parts deserve nomination because they represent an unparalleled complex.
Intactness	Good. Large parts of the nominated property (defences and interior) are expected to be in situ because either no or only non-intensive excavations have been carried out. Some stretches of the wall are still largely intact (upstanding) and integrated into the foundations of the former abbey building.
Exposure to threats	Minor. After the construction of new flood defence works and the laying out of the 'Rheinboulevard' pedestrian area, no further construction work is expected within the nominated property. Establishment of the historical park provides additional protection for the fort area.

### Authenticity

Form and design	Unaffected. The ground plan is well known and has not been altered. Some streets in the area still follow the Roman alignments.
Materials and substance	Fair. The physical substance of the attested remains is fully authentic. Significant parts of walls are preserved underground.
Location and setting	Unaffected. The setting directly on the bank of the river is the same as in the Roman Period and can easily be appreciated.



### Buffer zone

The buffer zone comprises the whole area of the fort but extends much further, especially to the north and west, where it includes the first buildings on the left side of the river. It protects the view of the fort with St Heribert's church as a landmark in the centre and allows the north-eastern corner to be traced through inclusion of the abbey building. The only fragmentarily known remains of the bridge are also included, reflecting the strong connection between fort and city.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential development	Minor	After the completion of the 'Rheinboulevard' pedestrian area and the 'Historical park Deutz', no further urban development is expected in the foreseeable future. Damage to the archaeological remains will be prevented or minimised in accordance with the Heritage Protection Act.
(iii) Flooding	Minor	The property is located inside the 'one-hundred-year-flood' zone, but about 90 % of it has recently (2012) been further secured through a new flood protection scheme. The westernmost part is also not susceptible to destruction by flooding because of the solid design of the river bank.

### Presentation

Some parts of the western wall (gate, NW corner tower) are included in the 'Rheinboulevard'; a few layers of the eastern gate have been reconstructed. Extensive parts of the north-western and central parts of the fort are marked out on the ground; the independent voluntary society has provided interpretation panels at particular points of interest. The remains of the defences in the cellar of the abbey can be viewed by appointment; the rest of the area is freely accessible.

### Community involvement

The 'Förderverein Historischer Park Deutz' ('Society for the promotion of the historical park Deutz'), a privately organised, registered association founded in 2011, is responsible for realising and maintaining the historical park and for promoting it through publications, lectures, guided tours and installation of information panels.

### Ancient sources

The main written source for the Köln-Deutz fort is a panegyric (celebratory speech) delivered by an anonymous speaker in honour of the Emperor Constantine I in AD 310. He speaks about the ongoing construction of a bridge over the Rhine in Cologne following a defeat of the (Germanic) Franks on the right bank of the river (Paneg. lat. VI, 11.13). Common sense dictates that this took place in connection with the building of the Deutz fort as a bridgehead. Together with the surviving text of the fort's building inscription (CIL XIII 8502), that tells of its inauguration in AD 315 in the presence of the Emperor, it can be concluded that fort and bridge were constructed between AD 309/10 and 315.

### Further Details

#### Main building phase

1 309/310–315 (stone)

#### Main research activities

1879–1882; 1927–1938; 1967; 1976–1979;  
2010–2015 excavations

#### Garrisons

Unknown Late Roman unit

#### Literature

Wolf 1882; Fremersdorf 1954; Precht 1975; Neu 1980; Precht 1987; Gechter 1989; Carroll-Spillecke 1993; Carroll 1998; Dodt et al. 2016; Dodt/Schäfer 2018, 824–831.

Fig. 233 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone of Köln-Praetorium and Köln-Deutz.

Fig. 234 Interval tower of *Divitia*, preserved and accessible in a modern cellar.

Fig. 235 East gate of *Divitia*. The original remains of the wall are conserved by modern covering.

Fig. 236 Plan of *Divitia*.

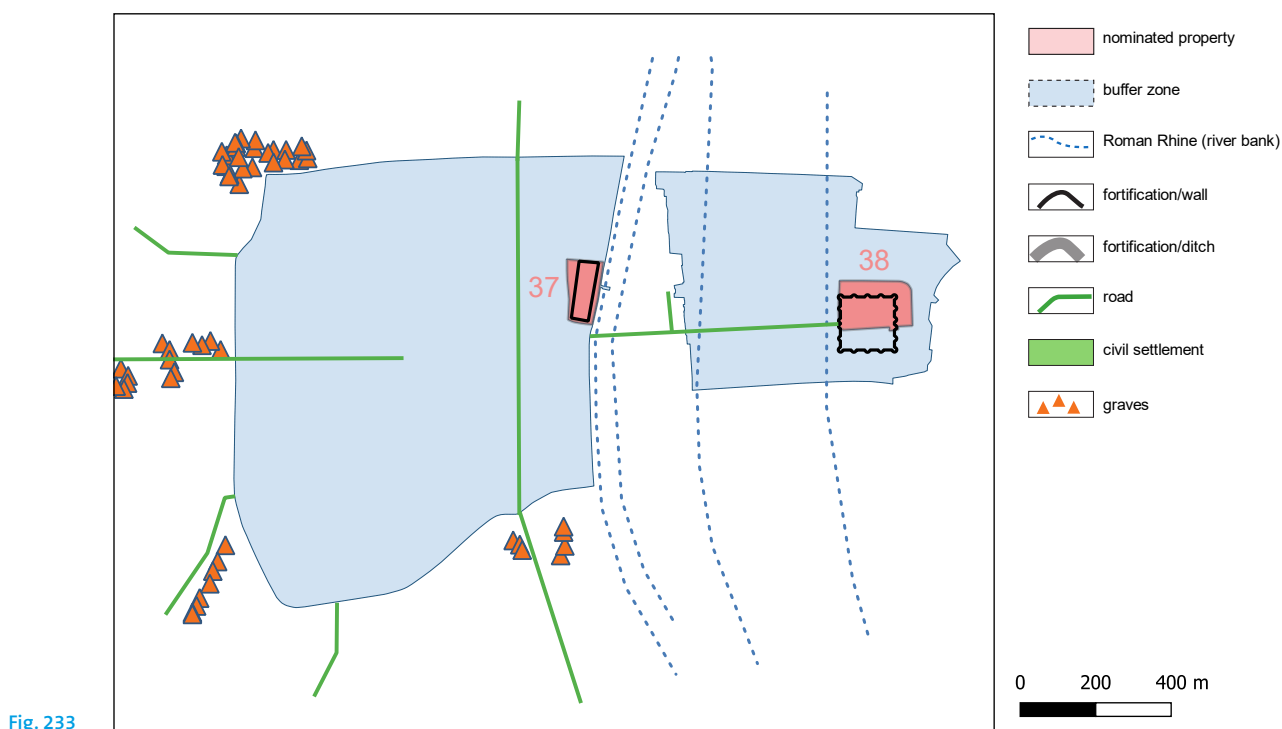


Fig. 233



Fig. 234



Fig. 235



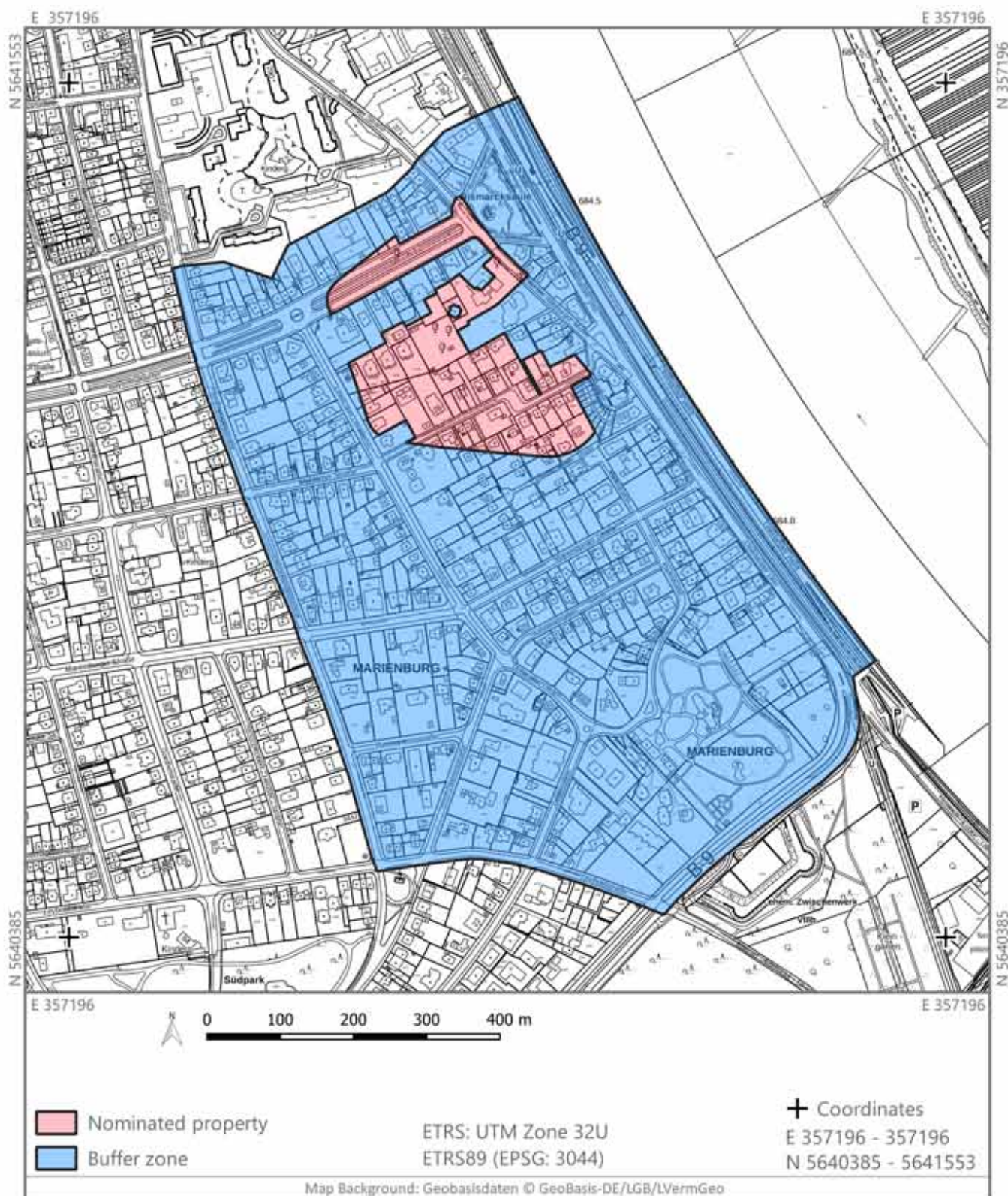
Fig. 236







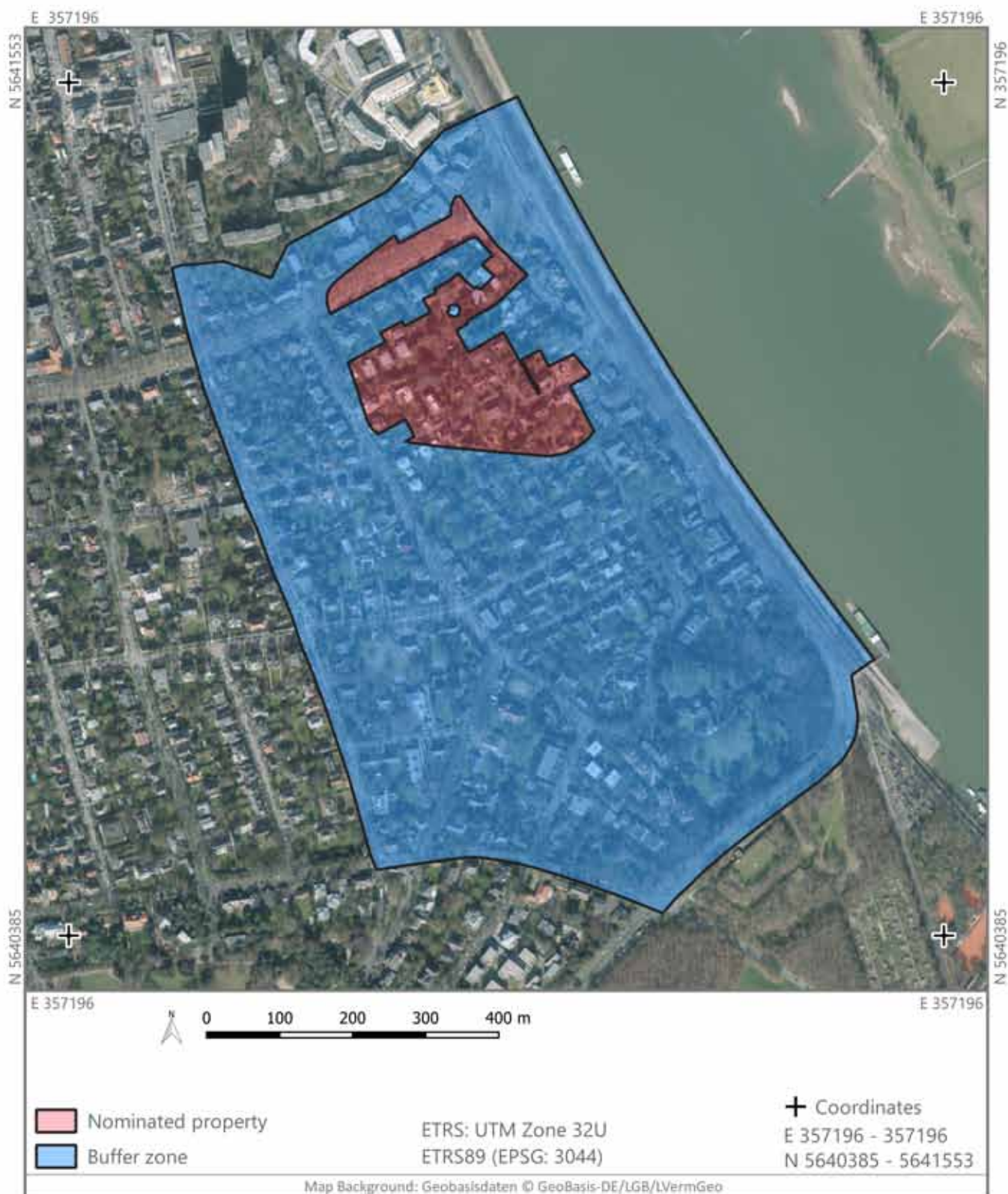
## 39 - Köln-Alteburg







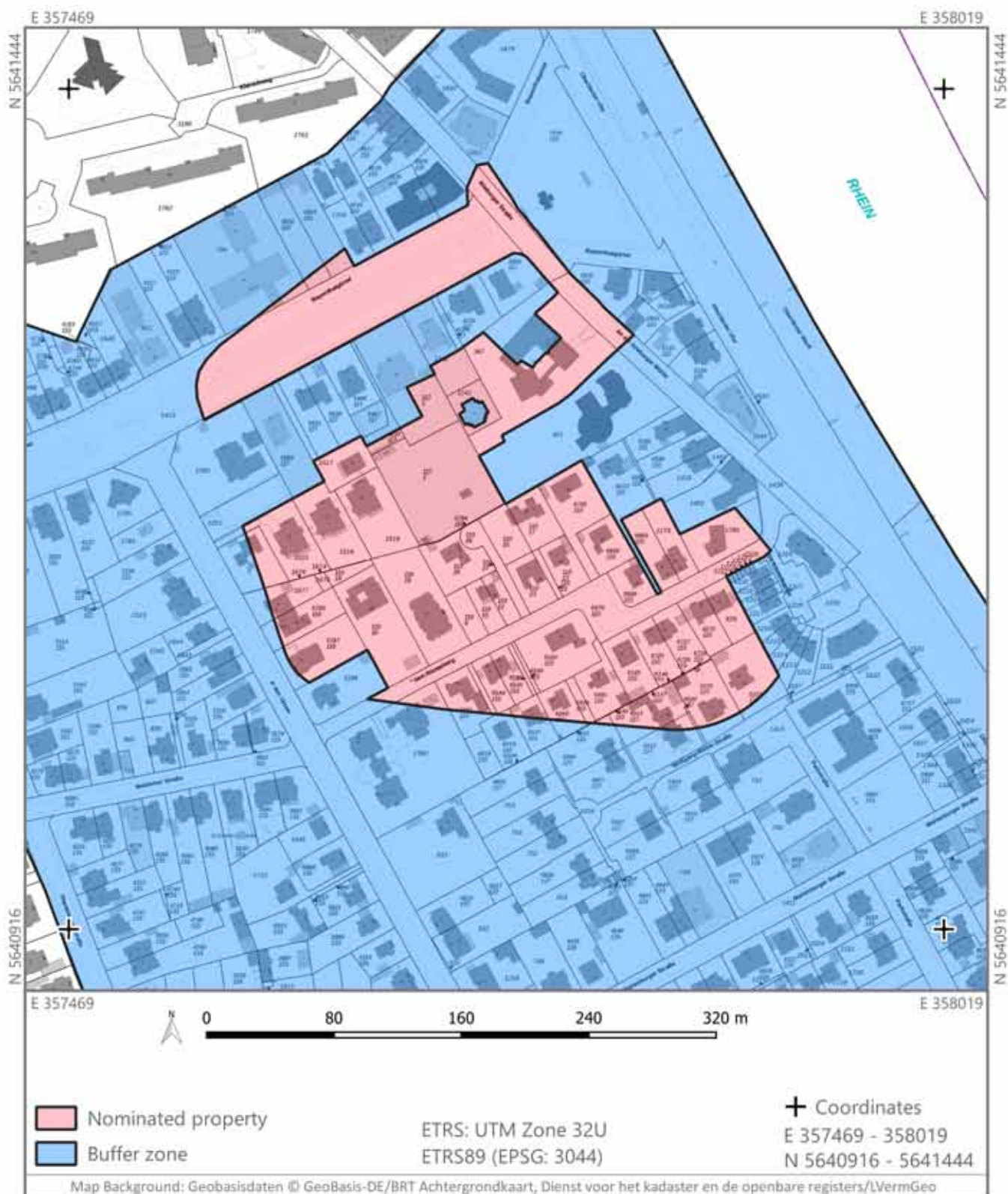
## 39 - Köln-Alteburg







## 39 - Köln-Alteburg





## COMPONENT PART 39 KÖLN-ALTEBURG

Fleet base (fort)

Id	State Party	Federal state	Municipality	Coordinates central point
39	Germany	North Rhine-Westphalia	Cologne	E 6°58'37" N 50°54'18"

	Area in ha	Ownership
Component part	6.03	Public, private
Buffer zone	55.43	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1986
Other laws and instruments	Regional plan (Regionalplan Bezirksregierung Köln, Teilabschnitt Region Köln, 2018)	
	Agglomerationskonzept Köln/Bonn	

### Brief description

The fort was located about 3 km south of the CCAA on a flood-free natural plateau directly on the bank of the river Rhine. The river has the same course today. The fleet base was an irregular pentagon in shape, surrounded by a single ditch. Gates are attested for the northern, western and southern sides; a fourth gate is very likely on the eastern side (probable harbour) but has not so far been confirmed. In its first phase (c. AD 10), the fort had a turf-and-timber rampart that was replaced by a stone wall about 0.8 m wide in the late 1<sup>st</sup> century AD. A very unusual feature is the complete absence of interval towers on both turf-and-timber and stone defenses. The stone fort was a little larger than its predecessor on its western side, but the overall shape was retained; the maximum dimensions were 362 m (NW–SE) resp. 258 m (W–E), covering an area of c. 7.3 ha.

Most of the interior buildings known so far are east-west orientated barracks with an inner layout that is different from other fortifications, be it legionary or auxiliary. This presumably indicates a different and particular organisation of the auxiliary forces of the Roman fleet. In the first phase the barracks were constructed in wood, replaced later by timber-framed outer walls on stone foundations. Between the barracks were gravelled roads. In the centre of the fort, at the crossing of the two main roads, a headquarters building (*principia*) has been detected just recently by geophysical survey. It seems to have been rebuilt in stone as early as the reign of Nero (AD 54–68) – a feature that normally is to be found only in legionary fortresses. Around 85, the whole fort was rebuilt in stone.

Representing a paradigm change in the military defence strategy along the Rhine border, the Alteburg fort was built to accommodate over 1,000 soldiers, both fleet and combat forces. The main gate (*porta praetoria*) opened to the river, underlining the monumental aspect of the fleet base. The fort was in use for more than 200 years with nine building phases, reflecting the long-term development of the Roman army. Its abandonment in the 3<sup>rd</sup> century AD reflects the major reorganisation of the Roman army in crisis.

### Attributes and values

The 'Alteburg' fort, headquarters of the *classis Germanica*, was the only one in the Province of Lower Germany that was built specifically for the fleet. Its important strategic and tactical role for a broad range of services along the Rhine makes the site a major keypoint for understanding a Roman river frontier. The fleet, commanded by one of the highest ranking Roman equestrian officers, represented an important element in securing the Empire's border against the Germanic peoples.

Because of the long history of research, beginning in the late 19<sup>th</sup> century, the 'Alteburg' is one of the best known naval bases in the Roman Empire. Some features (form of gates, missing interval towers, interior layout of the barracks etc.) are very rarely found at other contemporary auxiliary forts. The remarkable number of finds available for investigation reveals similarities (e.g. military equipment) and differences (e.g. production of sails) in the daily lives of fleet soldiers and soldiers of other auxiliary units. The names surviving in inscriptions on tombstones and sacrificial altars show that specialised marine personnel (e.g. helmsmen, navigators) were recruited from the eastern Mediterranean (Greece, Egypt) and formed part of the mixed population of Roman Cologne.

The very early beginnings of military occupation of the site (AD 10 or soon afterwards) make it one of the earliest along the Lower Rhine.

### Integrity

Wholeness	Good. A significant part of the fort with its special layout is known and included in the property.
Intactness	Good. Due to the location of the fort in an exclusive residential area with larger gardens than average, a considerable proportion of the features of the fort is preserved underground. During excavation, the thickness of the archaeological layers often amounted to over two metres.
Exposure to threats	Minor. Not only most of the area of the fort, but also many of the villas themselves are Scheduled Monuments and thus protected against extensive alterations. In recent years, some small-scale building interventions were reported to and supervised by the municipal heritage preservation authority.

### Authenticity

Form and design	Unaffected. The ground plan is well known and has not been altered. The borders of the property reflect the complete outer shape of the fort.
Materials and substance	Fair. The physical substance of the attested remains is fully authentic. Excavations have shown that traces of the timber fort are preserved as soil features, superimposed by in-situ remains of stone foundations of the later phase.
Location and setting	Fair. The course of the Rhine is the same as in the Roman period and can be seen from the east side of the fort. The setting on top of a flood-free terrace can be appreciated easily by following the modern street An der Alteburger Mühle which runs along the terrace foot.

**Buffer zone**

The buffer zone comprises the whole area of the fort but extends far beyond this, especially to the west and south, to include the fragmentarily known parts of the civilian settlement, cemeteries and the projected harbour area. A prominent hilltop feature to the south (today the location of the 'Marienburg' mansion) has not so far revealed any finds or structures, but it seems unlikely that it was not used by the Romans in any way.

**Relevant factors affecting the property and risk management**

Factor	Intensity	Description and protective measures
(i) Residential development	Minor	Damage to the archaeological remains will be prevented or minimised in accordance with the Heritage Protection Act.

**Presentation**

None

**Community involvement**

None

**Ancient sources**

No direct written sources known. Several members of the fleet attested by funerary inscriptions (CIL XIII 8321–8323, 12047; AE 1956, 249).

### Further Details

#### Main building phases

- 1 c. 10–60 (timber)
- 2 c. 60–85 (timber and stone)
- 3 c. 85–second half of 3<sup>rd</sup> century AD (stone)

#### Main research activities

- 1870–1899; 1905–1908; 1927/28; 1983/84;  
1995–1998: excavations  
2016: geophysical survey

#### Garrisons

1–3 classis Germanica

#### Literature

Wolf 1889; Lehner 1906; Hanel 1999; Carroll/Fischer 1999; Höckmann/Peschel/Hornig 2002; Fischer/Hanel 2003; Dürkop et al. 2003; Hanel 2006; Dürkop/Eschbaumer 2007; Thomas 2009; Krämer 2015; Leistner 2016; Schäfer/Wagner 2018.

Fig. 237 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 238 Results of ground-penetrating radar revealing the parts of the headquarters building of the fleet base at Köln-Alteburg.

Fig. 239 Excavation of a part of the barracks in the fleet base at Köln-Alteburg.

Fig. 240 Gravestone of one Horus from Alexandria in Egypt who served in the Rhine fleet ('EX CLASSE').

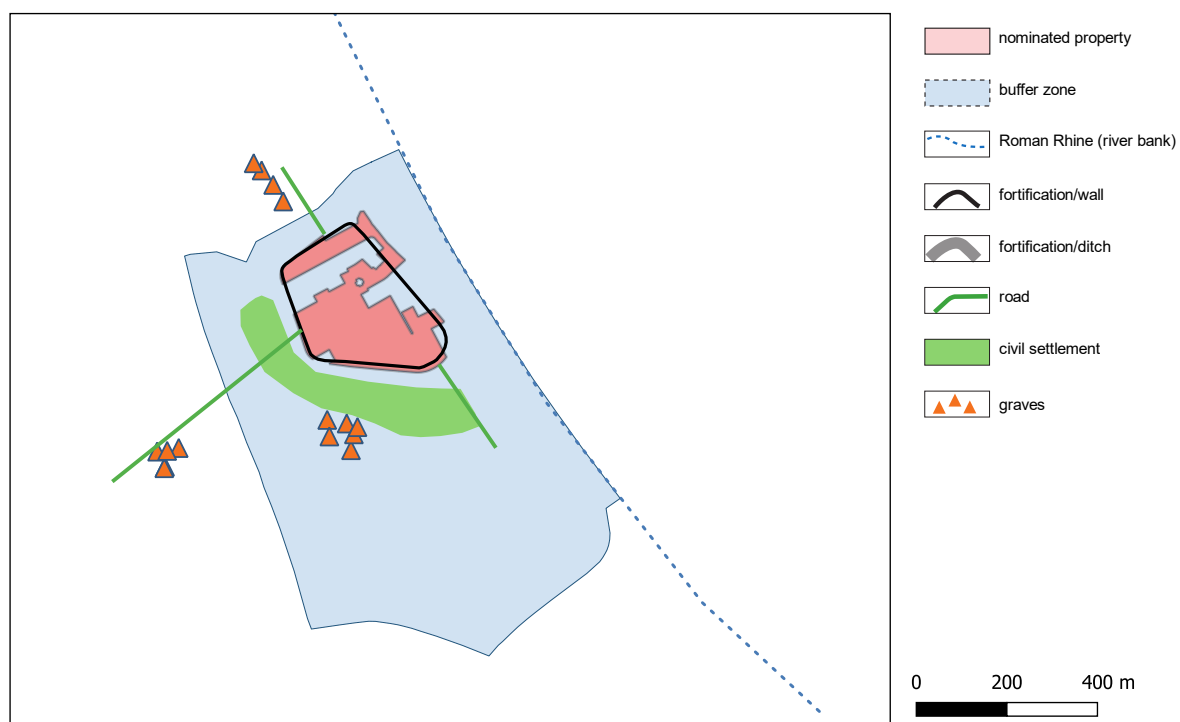


Fig. 237





Fig. 238



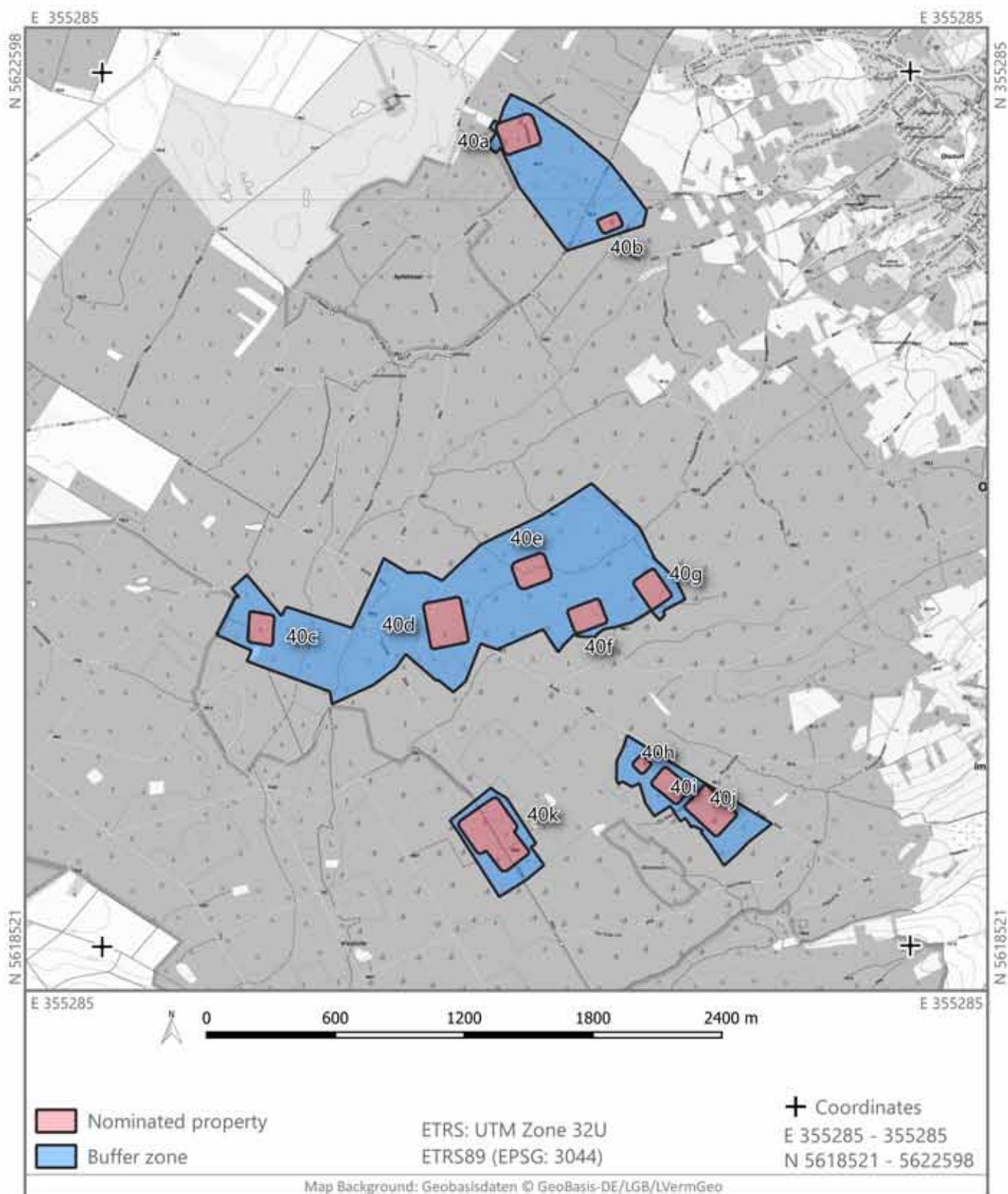
Fig. 239



Fig. 240



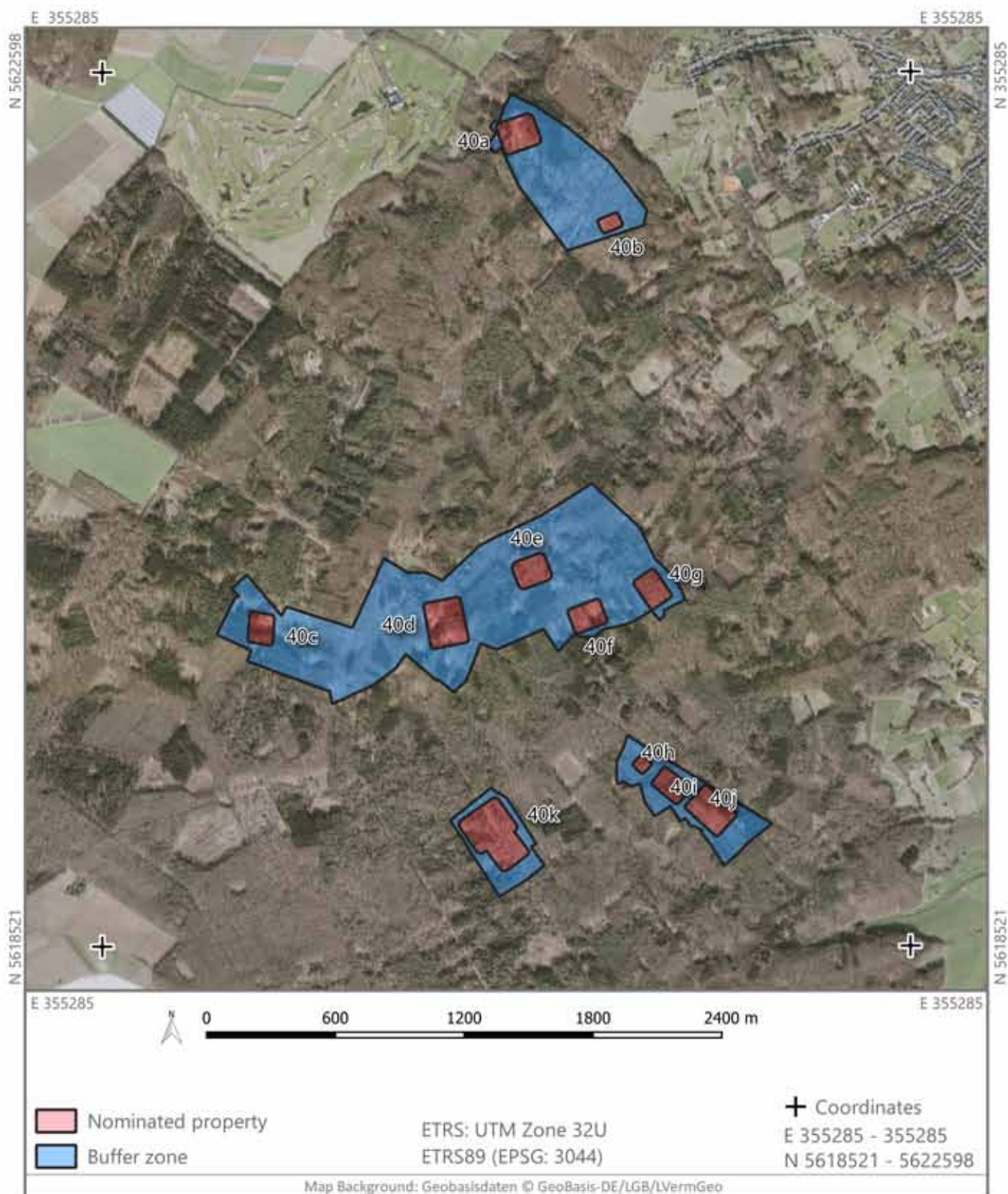
## 40 - Kottenforst Nord







## 40 - Kottenforst Nord

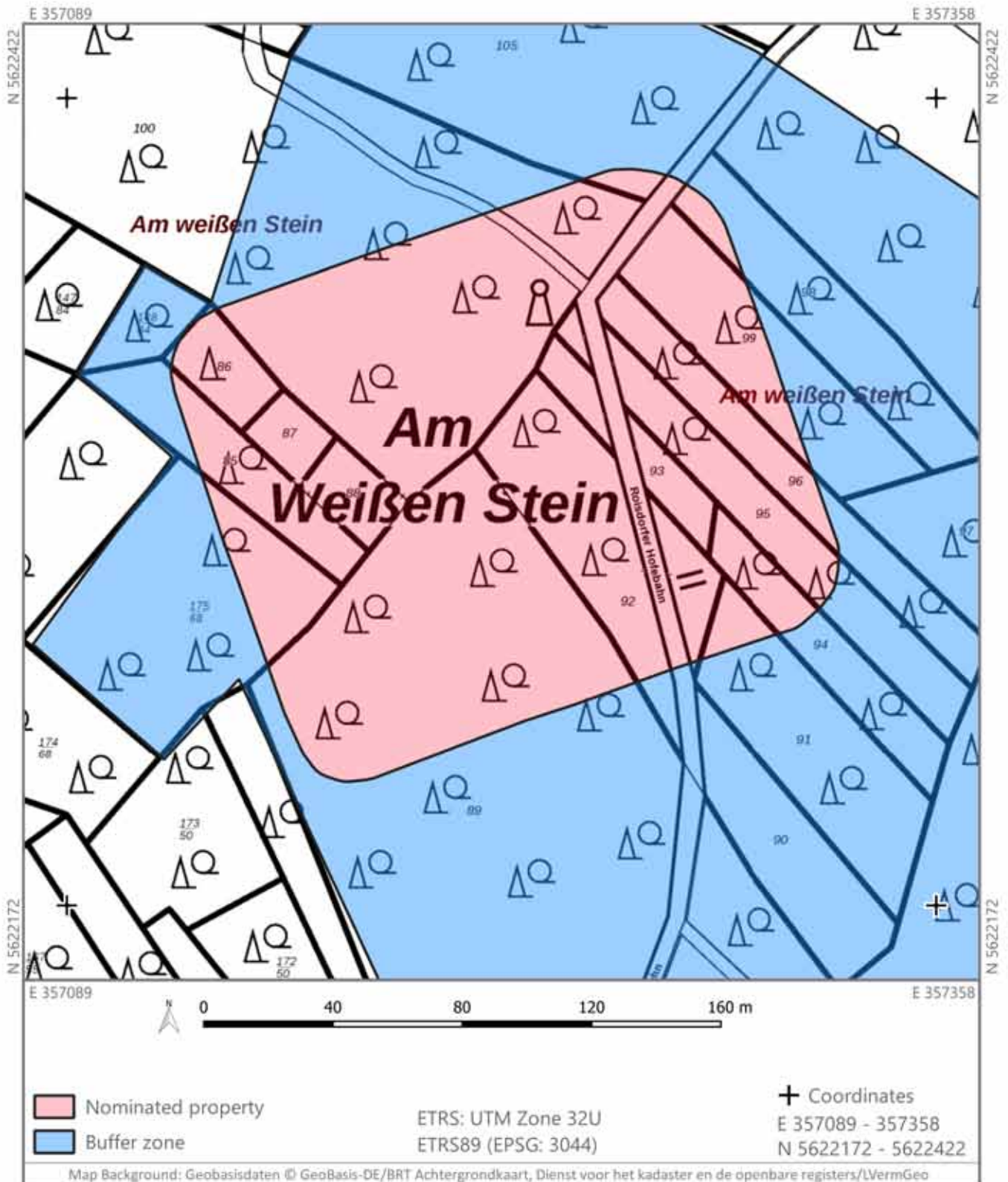






40a - Am Weißen Stein 1

## 40 - Kottenforst Nord

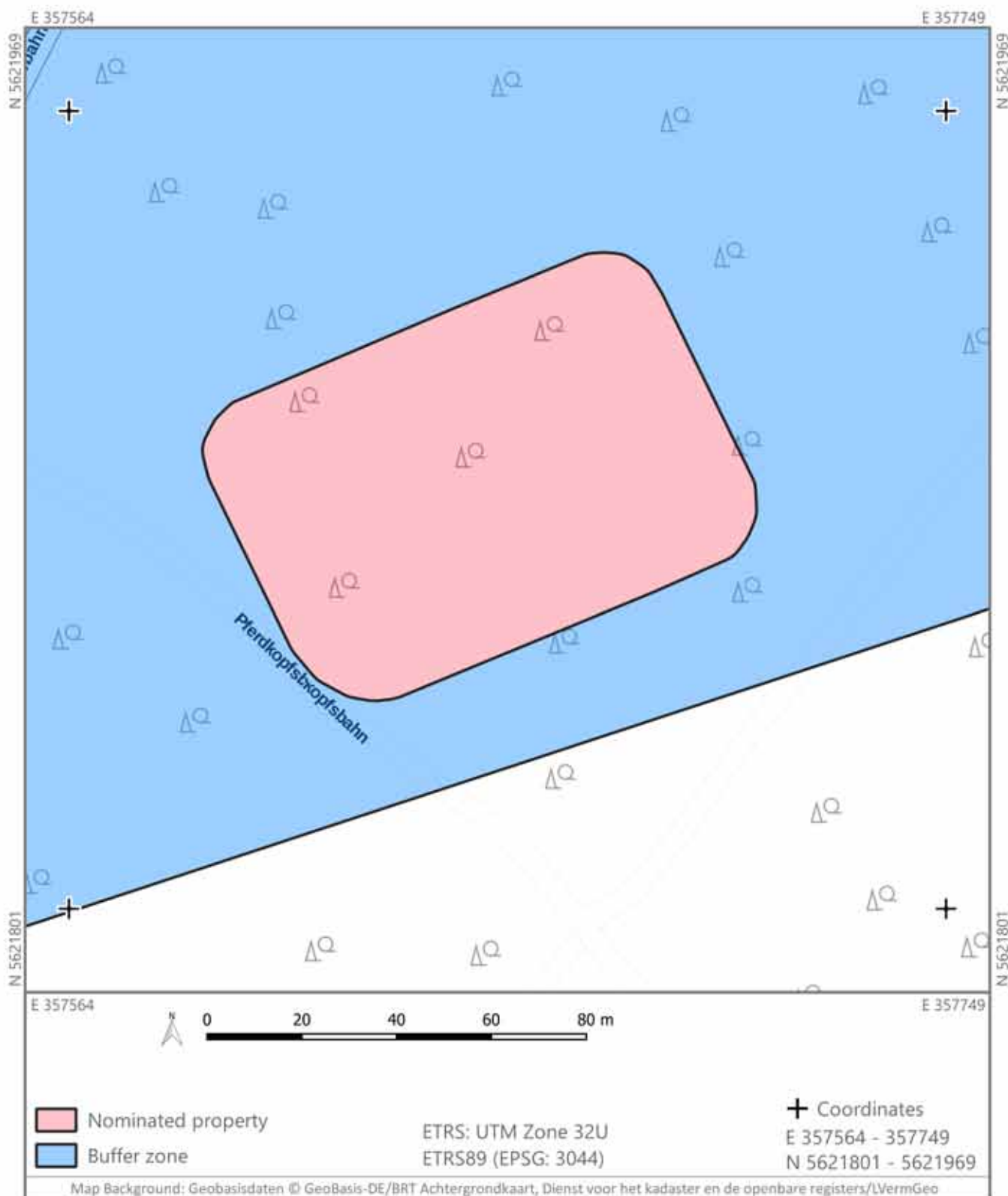






40b - Am Weißen Stein 2

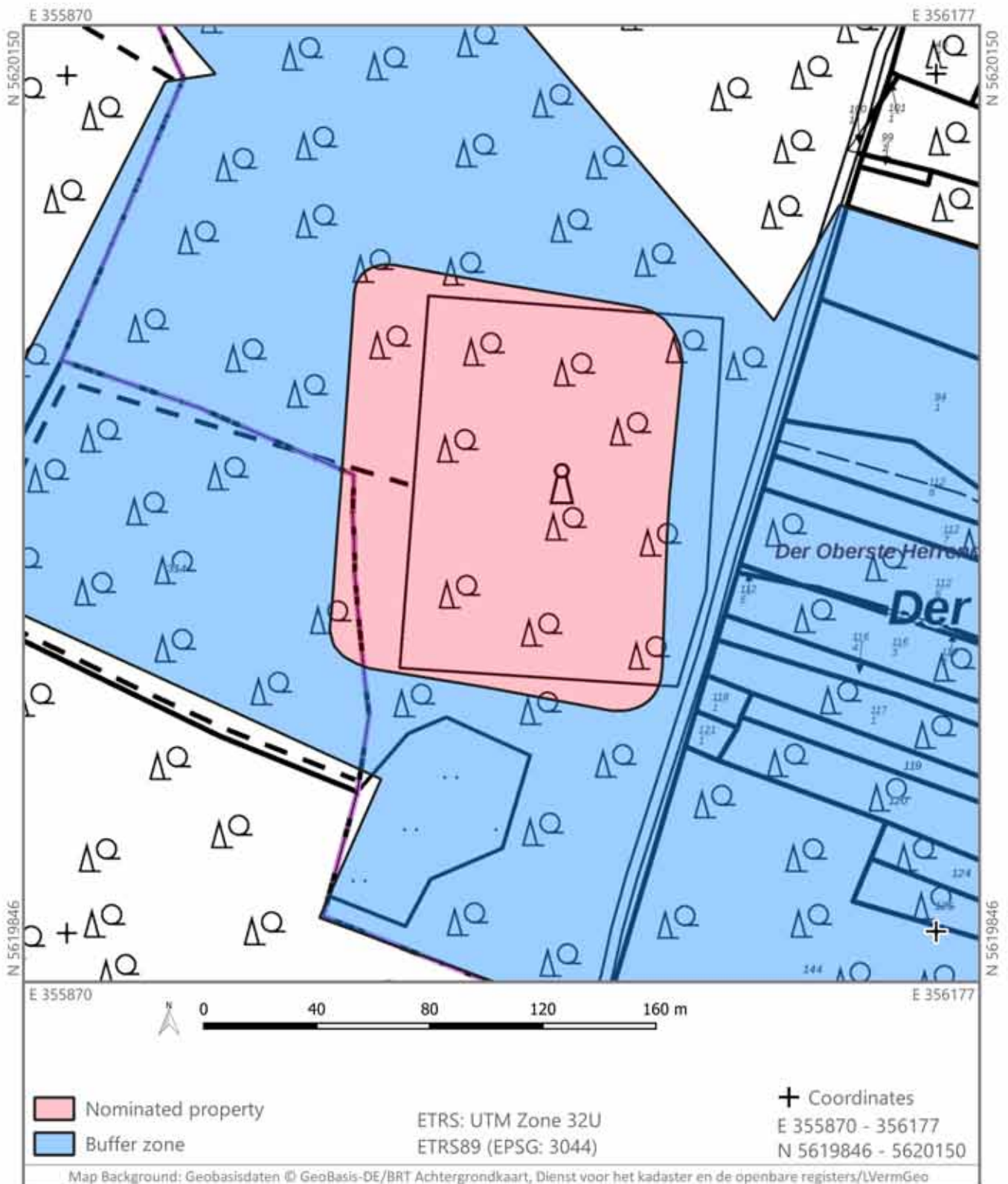
## 40 - Kottenforst Nord





40c - Domhecken 5

## 40 - Kottenforst Nord

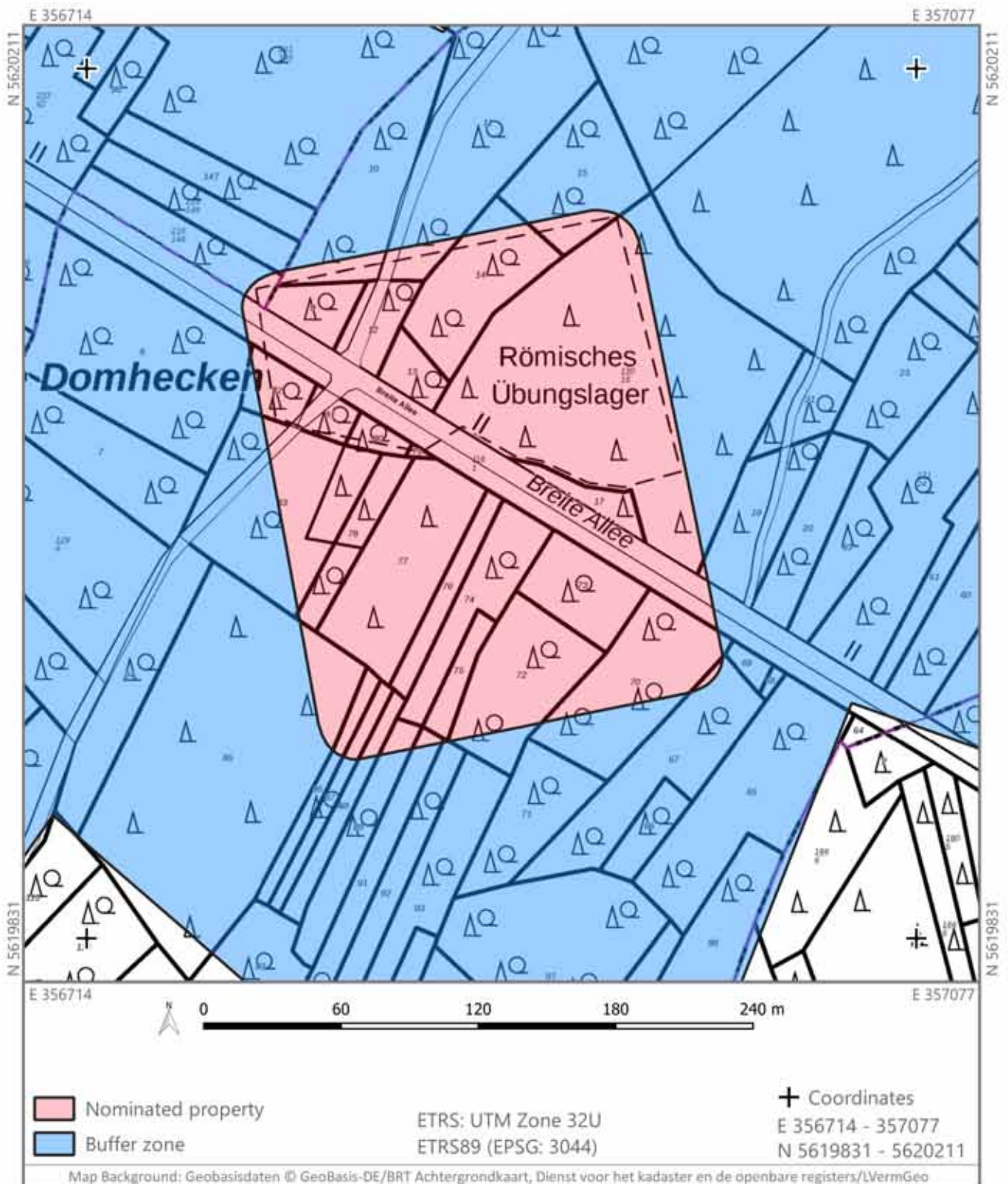






40d - Domhecken 1

## 40 - Kottenforst Nord

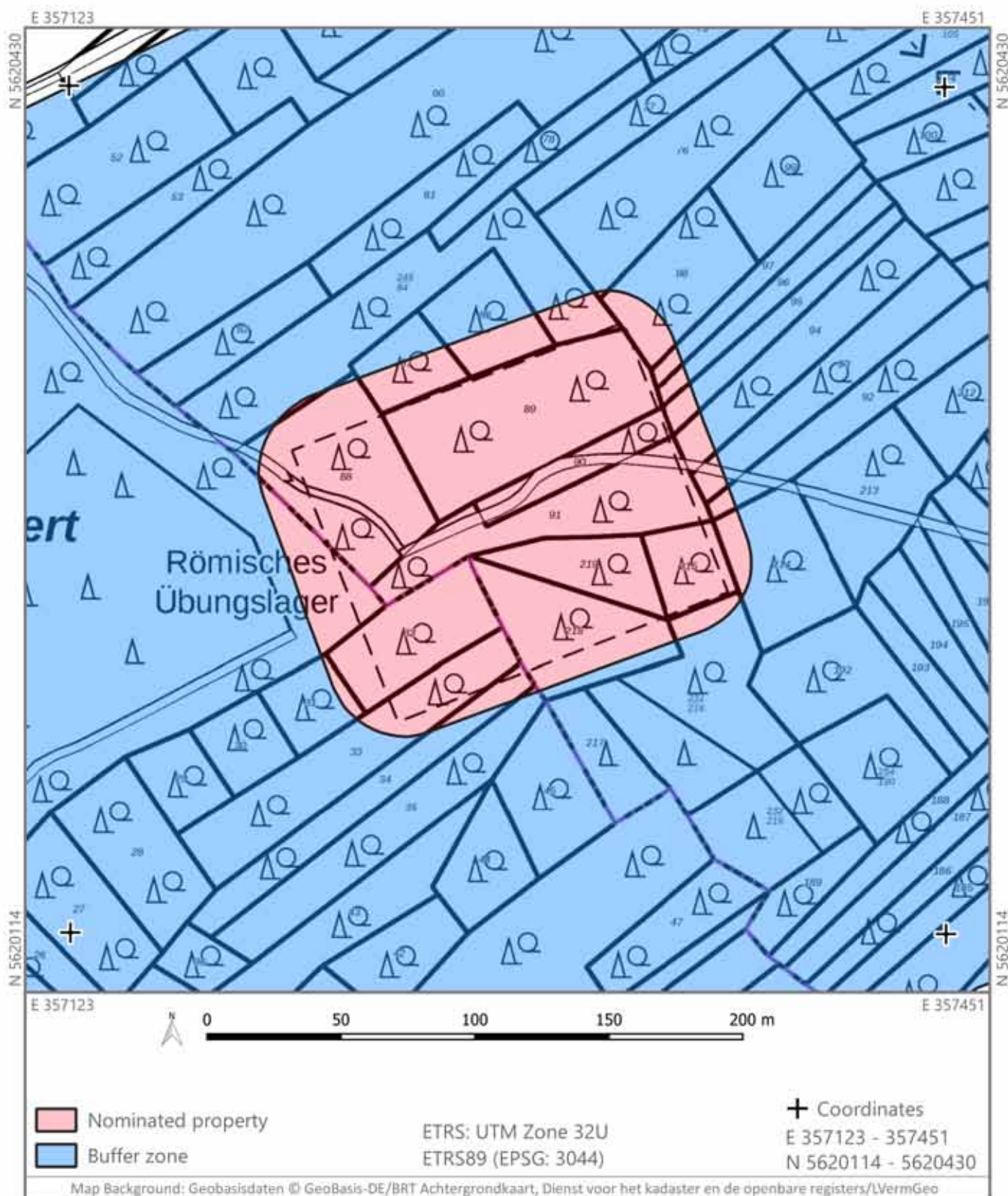






40e - Domhecken 2

## 40 - Kottenforst Nord

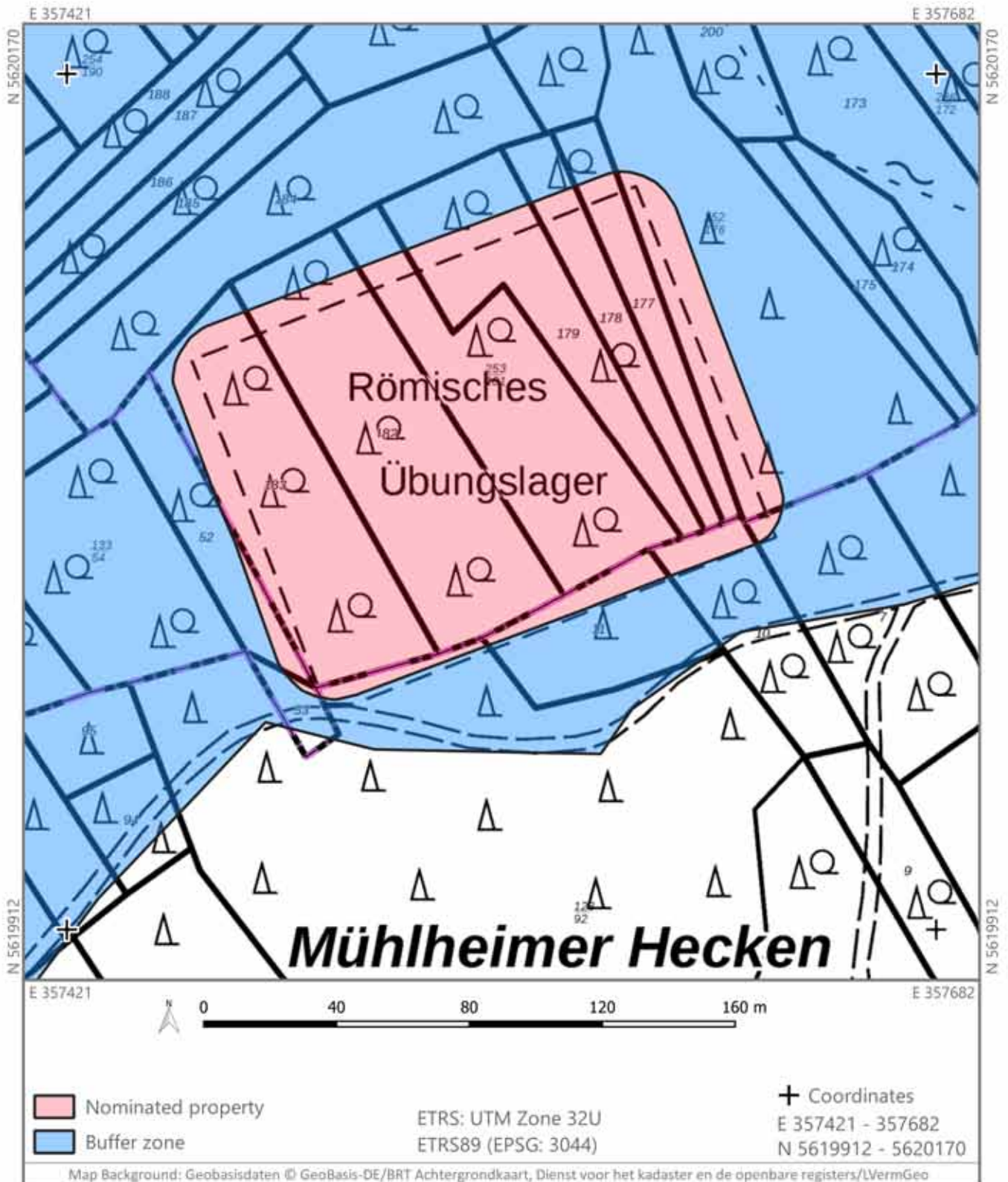






40f - Domhecken 3

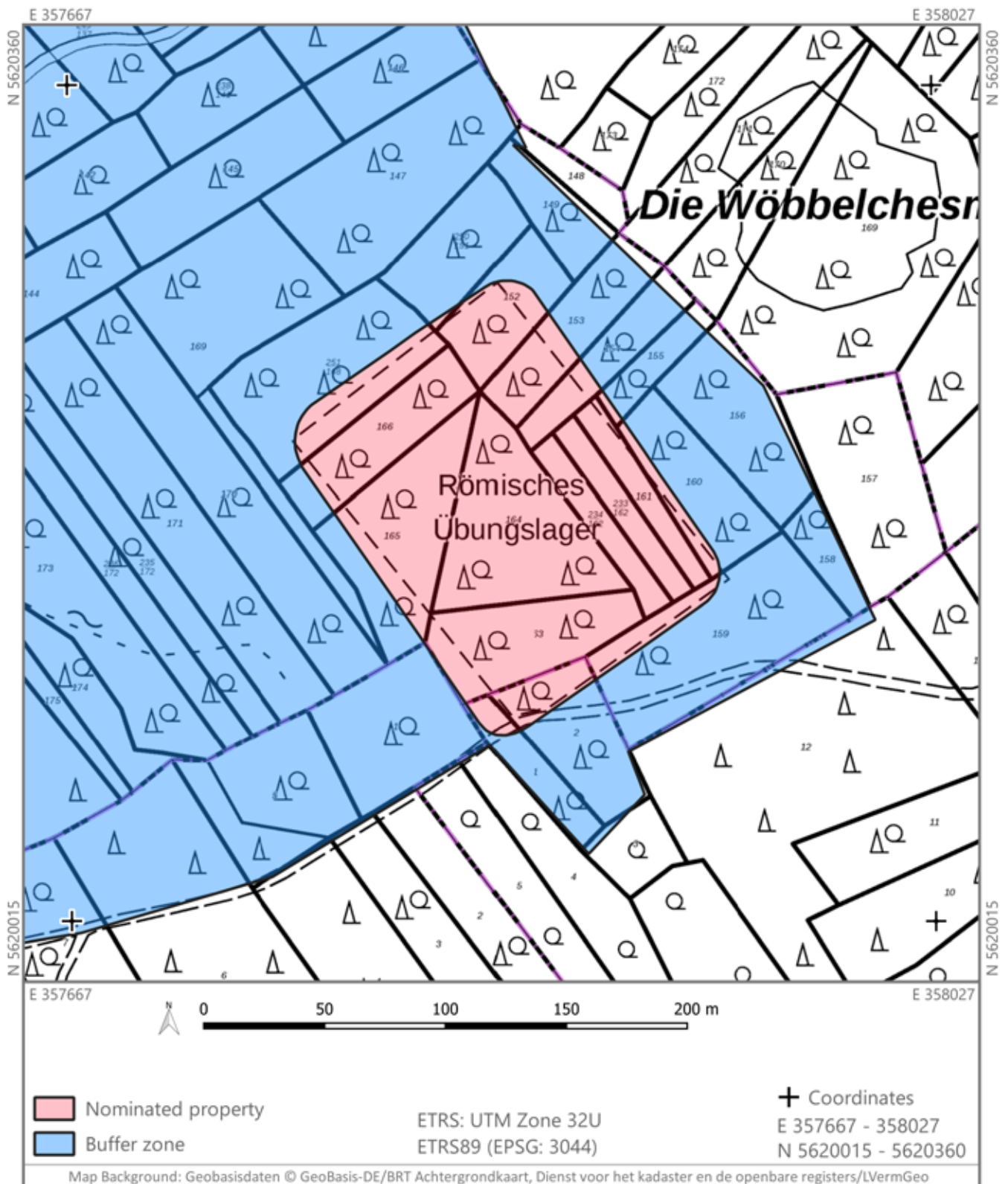
## 40 - Kottenforst Nord





40g - Domhecken 4

## 40 - Kottenforst Nord

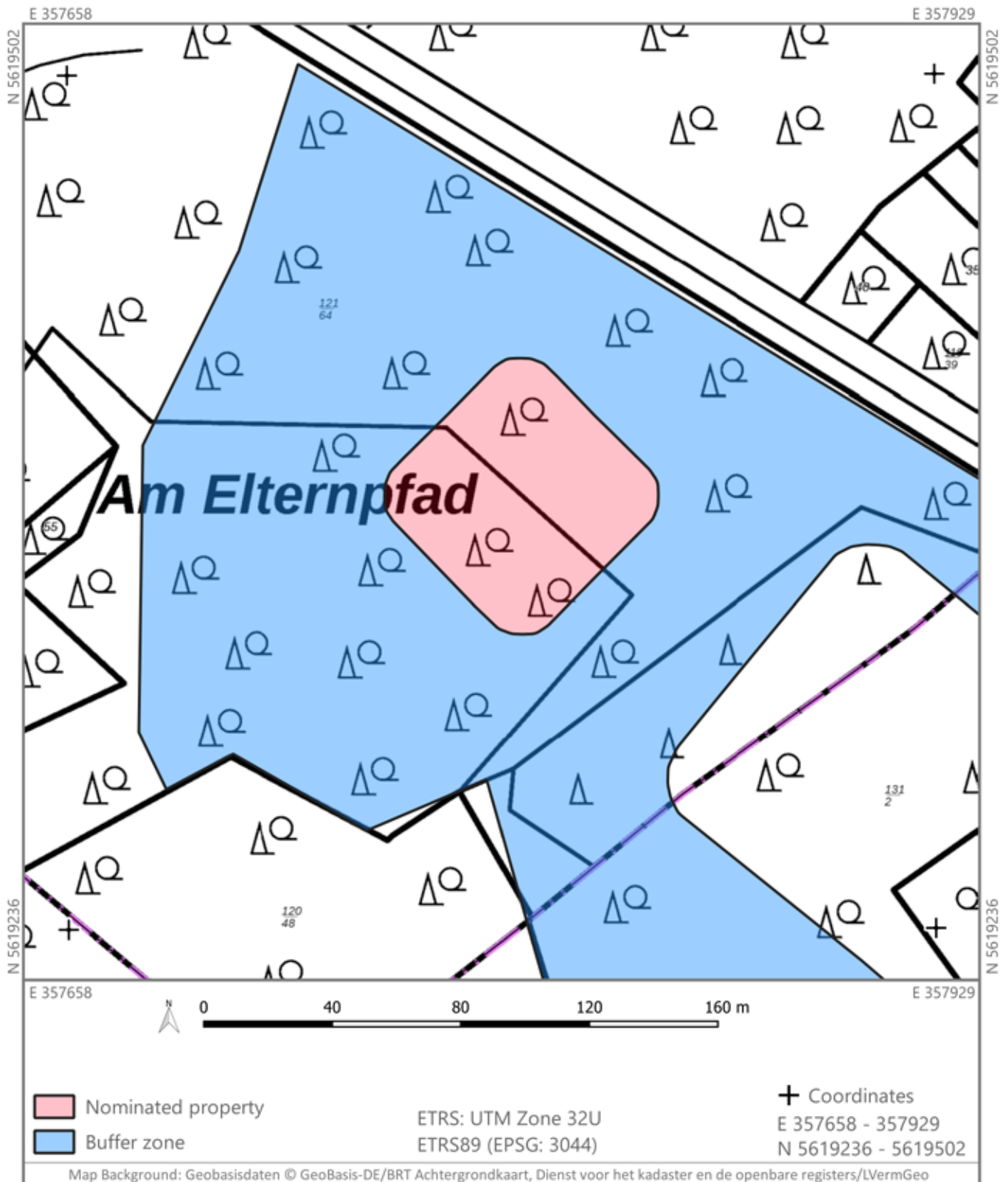






40h - Dürrenbruch 3

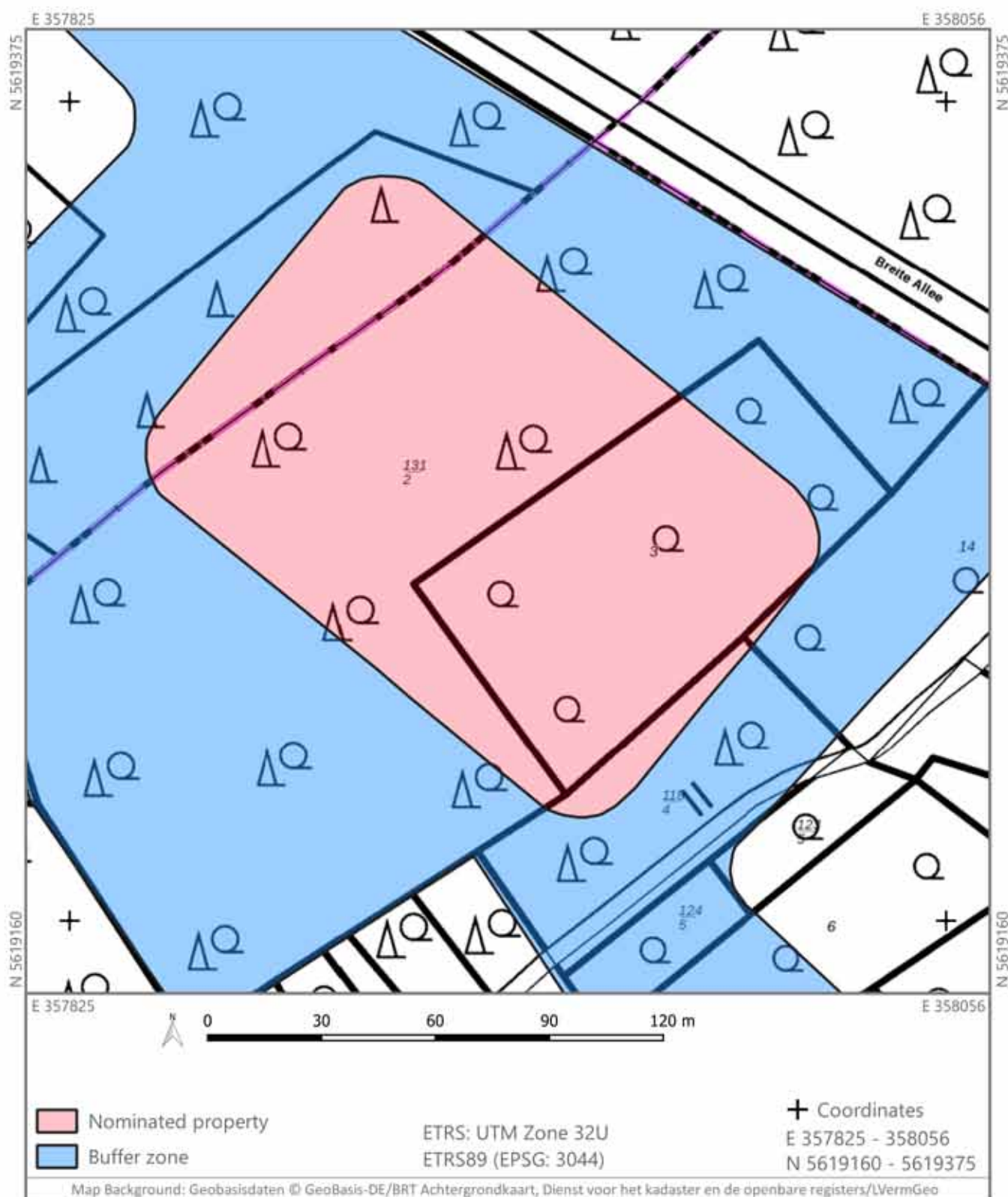
## 40 - Kottenforst Nord





40i - Dürrenbruch 2

## 40 - Kottenforst Nord





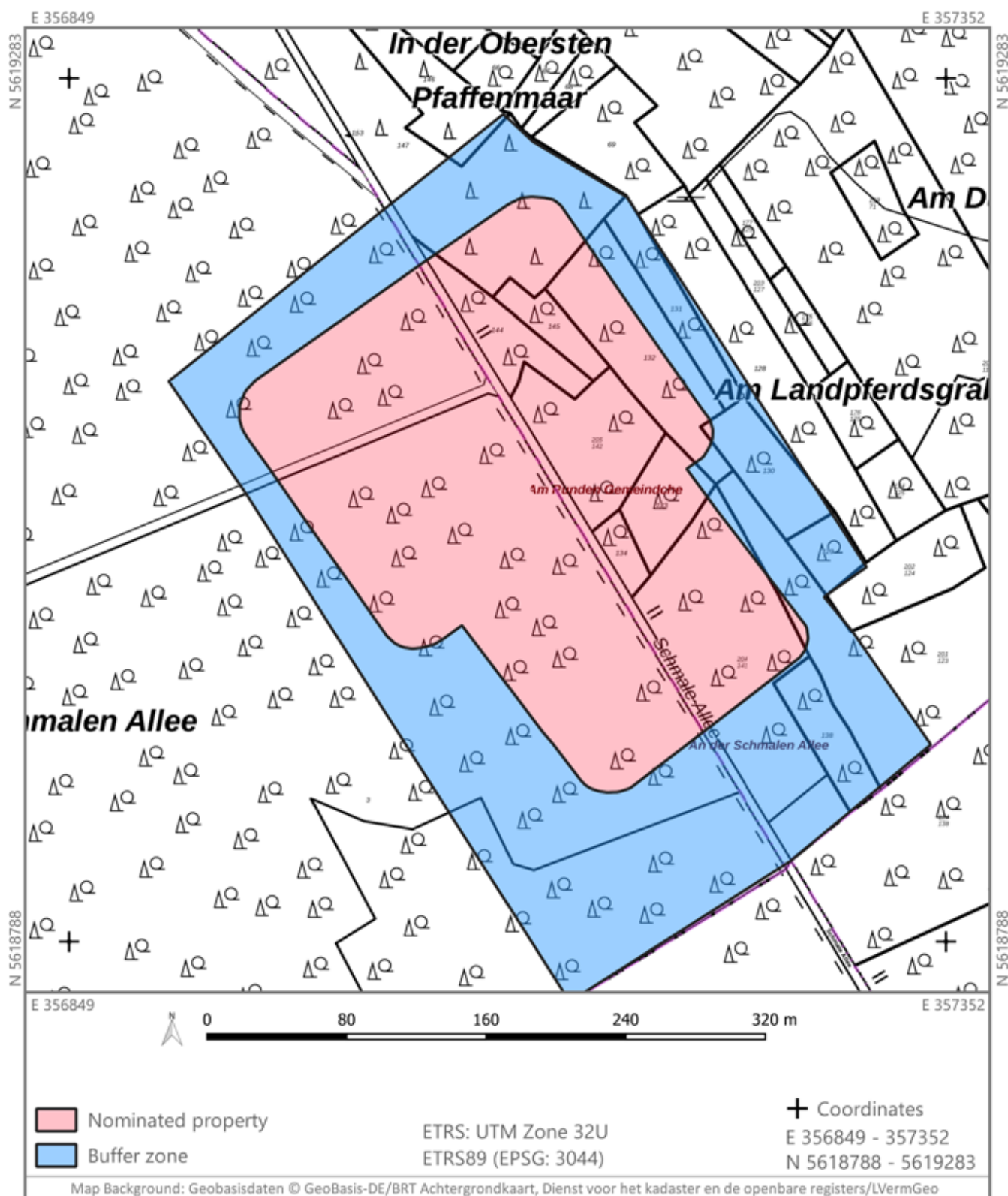
## 40 - Kottenforst Nord





40k - Pfaffenmaar 1 and 2

## 40 - Kottenforst Nord



## CLUSTER 40 KOTTENFORST NORD

Temporary camps

Id	State Party	Federal state	Municipality
40	Germany	North Rhine-Westphalia	Bornheim; Alfter; Swistal

### Brief description

A manoeuvring area of the Bonn Legion is located in the hinterland of Bonn, on the high plains of the Velle in the northern Kottenforst. 12 temporary camps with a size of 0.5–1.9 ha form a cluster. Orientated partly in rows or with the same orientation, they relate to each other. There is no overlap between them. The defences of the camps consist of an earthen rampart, typical for Roman marching camps. These earthen ramparts were constructed using turves (lat. *caespites*) stacked to form a wall. The gates are without exception in the form of *claviculae* (literally keys). This special method of fortification is easily legible in the field today.

### Attributes and values

This ensemble is one of the best-preserved manoeuvring areas in the Roman Empire. The walls of the 12 training camps are preserved up to 0.5 m high. The preserved ramparts of the camps are rare but excellent examples of manoeuvring and training activities in the vicinity of a legionary fortress and thus an important element for understanding the footprint of a frontier.

This activity has very early descriptions by Roman authors; for example, that Hadrian let the soldiers practice in Germania, as if a war was coming.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The ramparts of the camps are well preserved up to 0.5 m high.
Exposure to threats	Minimal. The camps are located in forest designated as a protected landscape area.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Unaffected. Very good preservation of ramparts and ditches (fills).
Location and setting	Affected. The camps were originally laid out in an open landscape and are under forest today.

### Buffer zone

Four buffer zones encompass groups of two to five camps.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Forestry	Minimal	Sustainable forestry with minimal ground disturbance in accordance with Federal Forestry Act, Federal Soil Conservation Law and Monument Protection Law of North Rhine-Westphalia is planned.

### Presentation

The ramparts of the training camps are preserved above ground. Some of them are easily accessible via forest paths.

### Community involvement

None.

### Ancient sources

Not mentioned in written sources.

### Further Details

#### Main building phase

1<sup>st</sup>–2<sup>nd</sup> century AD

#### Main research activities

since 2008 airborne laserscanning

#### Garrisons

legionaries from Bonn

#### Literature

Bödecker 2012a; Bödecker 2012b; Jones 2012.

Fig. 241 Multi-hillshading of airborne laserscan data of the cluster of camps in the Kottenforst (northern part).

Fig. 242 Plans of the cluster of camps in the Kottenforst (northern part).

Fig. 243 Comparison of the plans demonstrating similarities in the internal order of the clusters of camps in the Kottenforst (northern part)



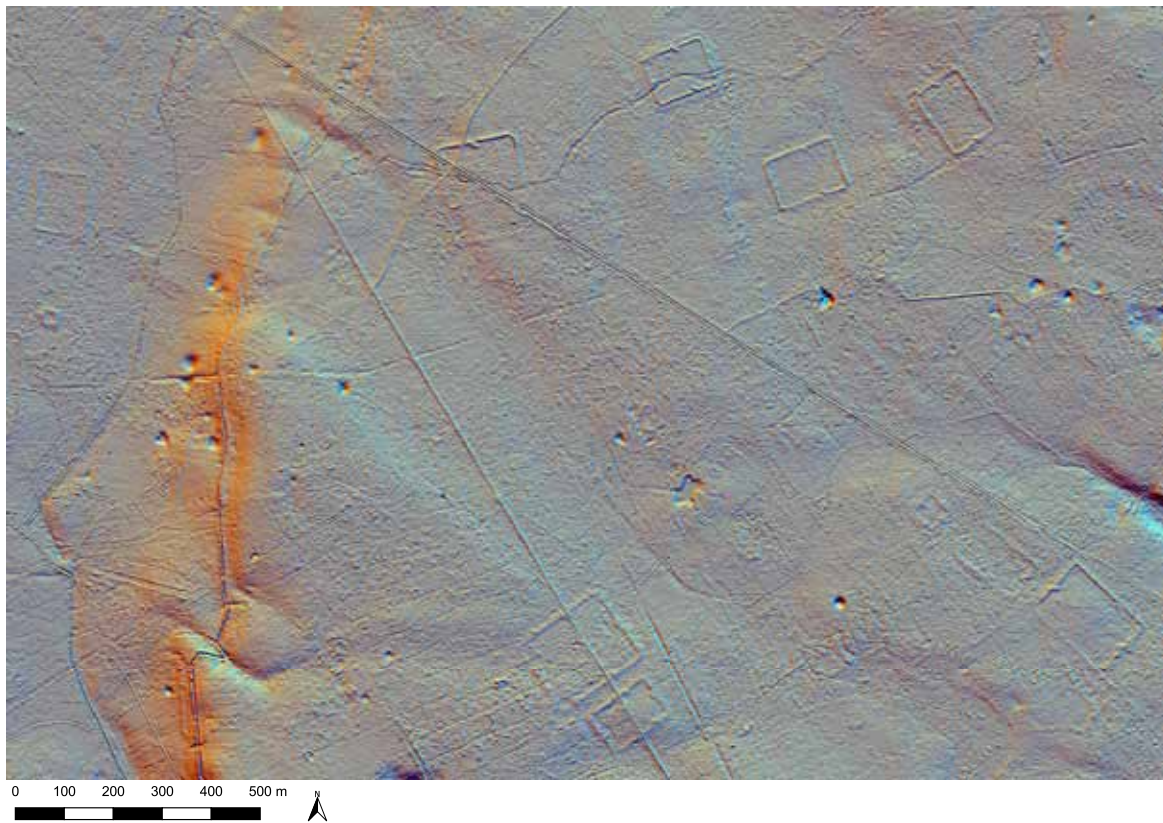


Fig. 241

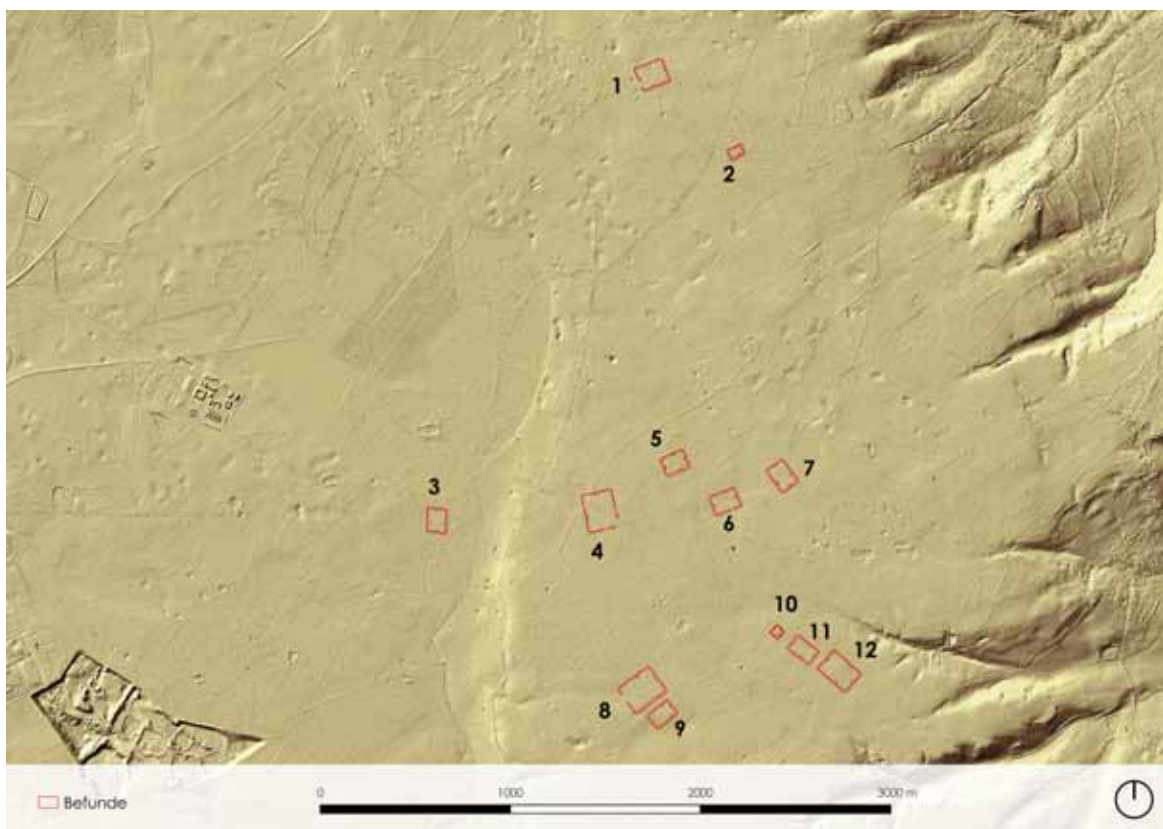


Fig. 242

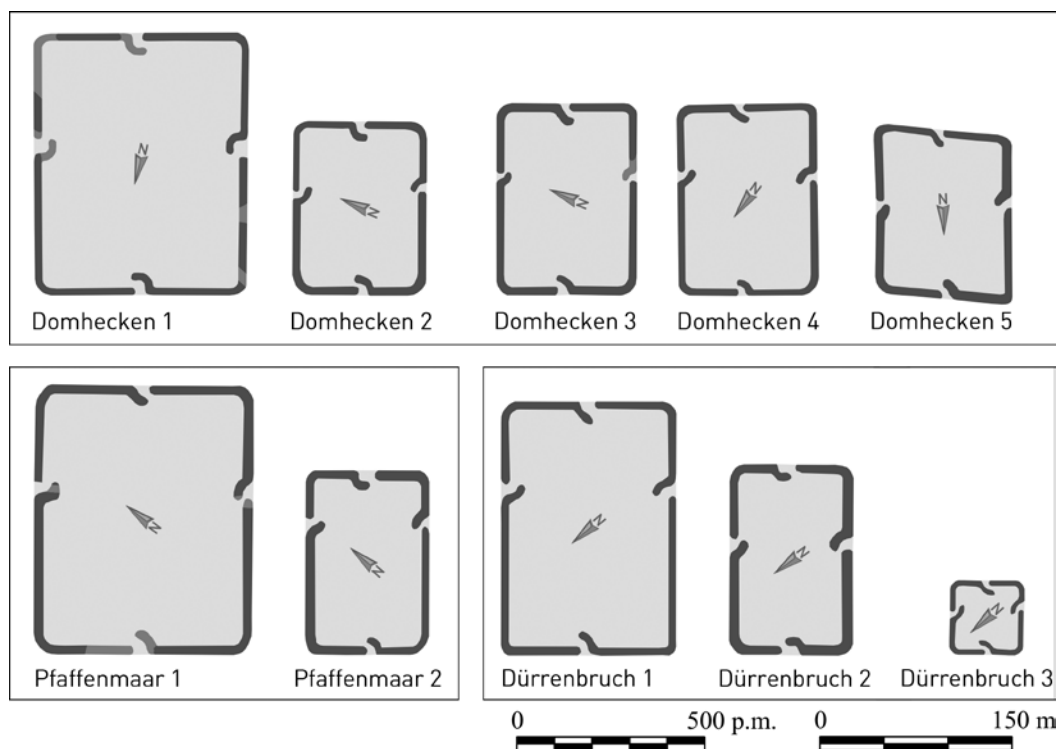


Fig. 243



## COMPONENT PART 40A

### KOTTENFORST NORD | AM WEISSEN STEIN 1

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
40a	Germany	North Rhine-Westphalia	Bornheim	E 6°58'37" N 50°44'6"

	Area in ha	Ownership
Component part	2.68	Private, public
Buffer zone	122.69	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'LP Bornheim')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40B

### KOTTENFORST NORD | AM WEISSEN STEIN 2

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
40b	Germany	North Rhine-Westphalia	Alfter	E 6°58'59" N 50°43'52"

	Area in ha	Ownership
Component part	0.72	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013) Agglomerationskonzept Köln/Bonn	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis)	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40C KOTTENFORST NORD | DOMHECKEN 5

Temporary camp

Id	State Party	Province	Municipality	Coordinates central point
40c	Germany	North Rhine-Westphalia	Alfter; Swisttal	E 6°57'40" N 50°42'50"

	Area in ha	Ownership
Component part	1.65	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40D

### KOTTENFORST NORD | DOMHECKEN 1

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
40d	Germany	North Rhine-Westphalia	Alfter	E 6°58'23" N 50°42'50"

	Area in ha	Ownership
Component part	3.79	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40E KOTTENFORST NORD | DOMHECKEN 2

Temporary camp

Id	State Party	Province	Municipality	Coordinates central point
40e	Germany	North Rhine-Westphalia	Alfter	E 6°58'41" N 50°43'1"

	Area in ha	Ownership
Component part	2.11	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40F KOTTENFORST NORD | DOMHECKEN 3

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
40f	Germany	North Rhine-Westphalia	Alfter	E 6°58'55" N 50°42'54"

	Area in ha	Ownership
Component part	1.9	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40G

### KOTTENFORST NORD | DOMHECKEN 4

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
40g	Germany	North Rhine-Westphalia	Alfter	E 6°59'10" N 50°42'58"

	Area in ha	Ownership
Component part	1.9	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40H KOTTENFORST NORD | DÜRRENBRUCH 3

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
40h	Germany	North Rhine-Westphalia	Alfter	E 6°59'10" N 50°42'32"

	Area in ha	Ownership
Component part	0.45	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40i KOTTENFORST NORD | DÜRRENBRUCH 2

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
40i	Germany	North Rhine-Westphalia	Alfter	E 6°59'17" N 50°42'29"

	Area in ha	Ownership
Component part	1.68	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40J KOTTENFORST NORD | DÜRRENBRUCH 1

Temporary camp

No	State Party	Federal state	Municipality	Coordinates central point
40j	Germany	North Rhine-Westphalia	Alfter	E 6°59'28" N 50°42'25"

	Area in ha	Ownership
Component part	3.05	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

None

**Further Details**

See the text for the cluster.

## COMPONENT PART 40K KOTTENFORST NORD | PFAFFENMAAR 1 AND 2

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
40k	Germany	North Rhine-Westphalia	Alfter	E 6°58'34" N 50°42'22"

	Area in ha	Ownership
Component part	6.04	Private, public
Buffer zone	122.69 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'In den Gemeinden Alfter und Wachtberg im Rhein-Sieg-Kreis')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of two exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

The ramparts of the camps are preserved above ground. Some of them are easily accessible via forest paths.

**Community involvement**

None

**Ancient sources**

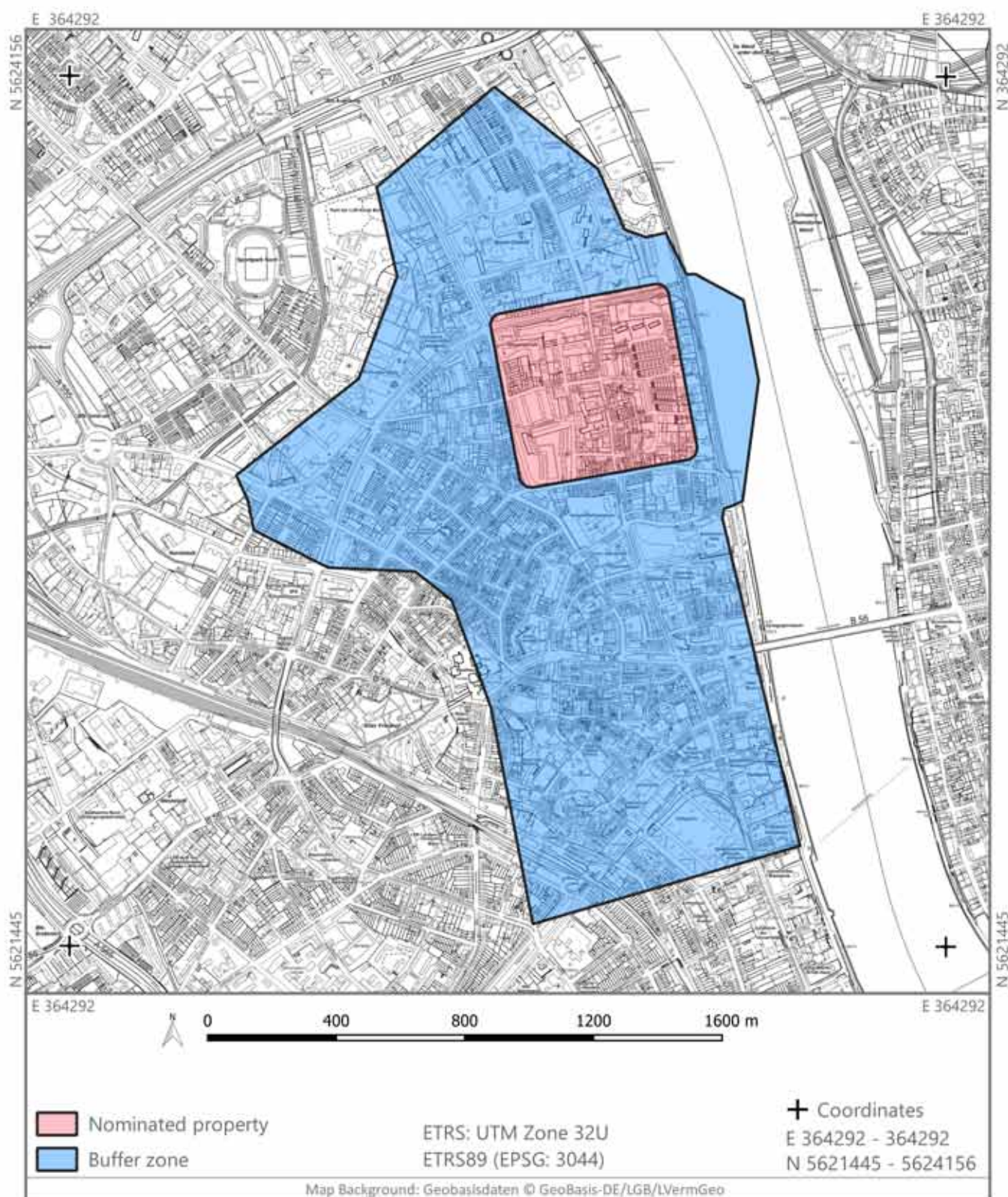
None

**Further Details**

See the text for the cluster.



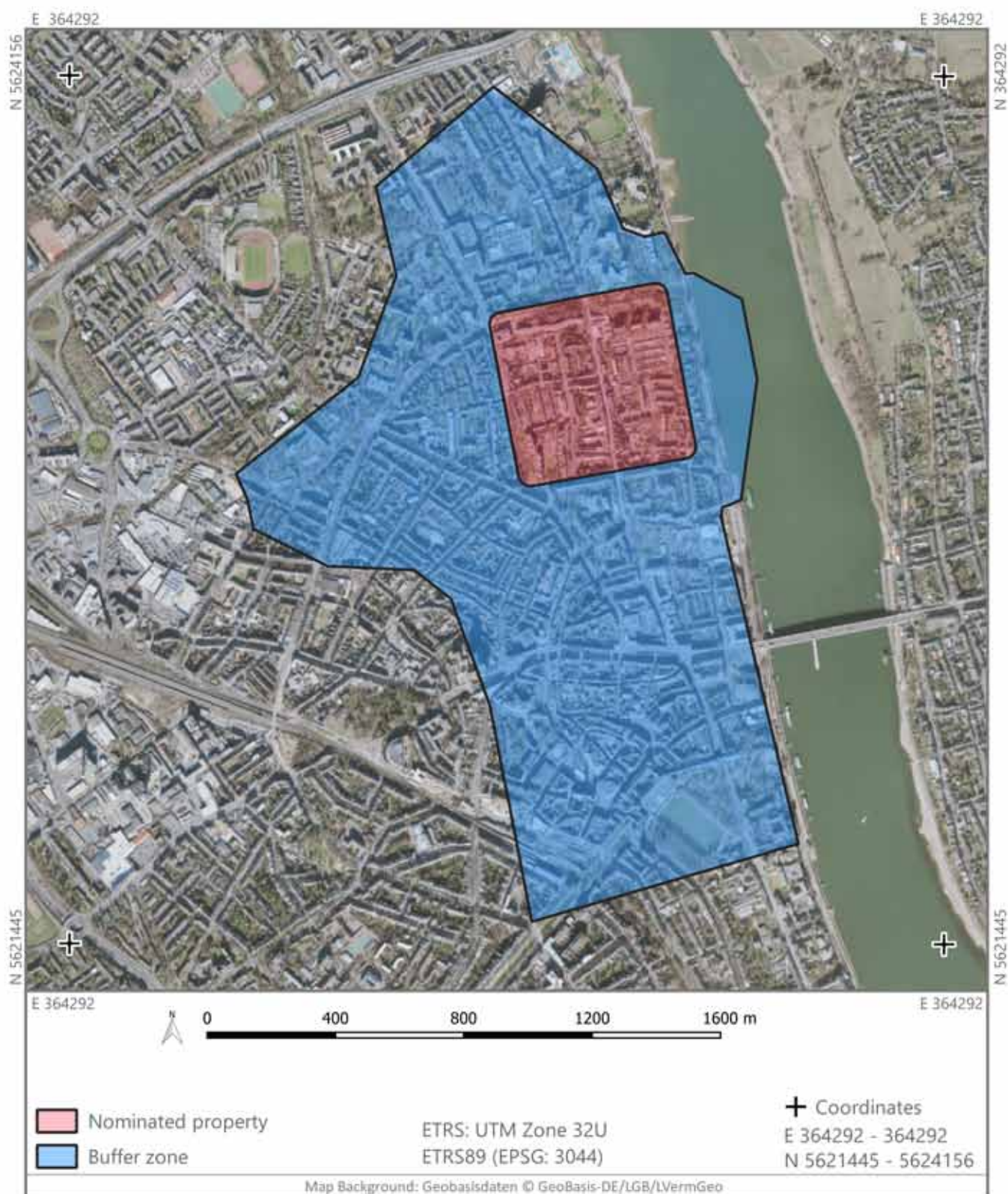
## 41 - Bonn







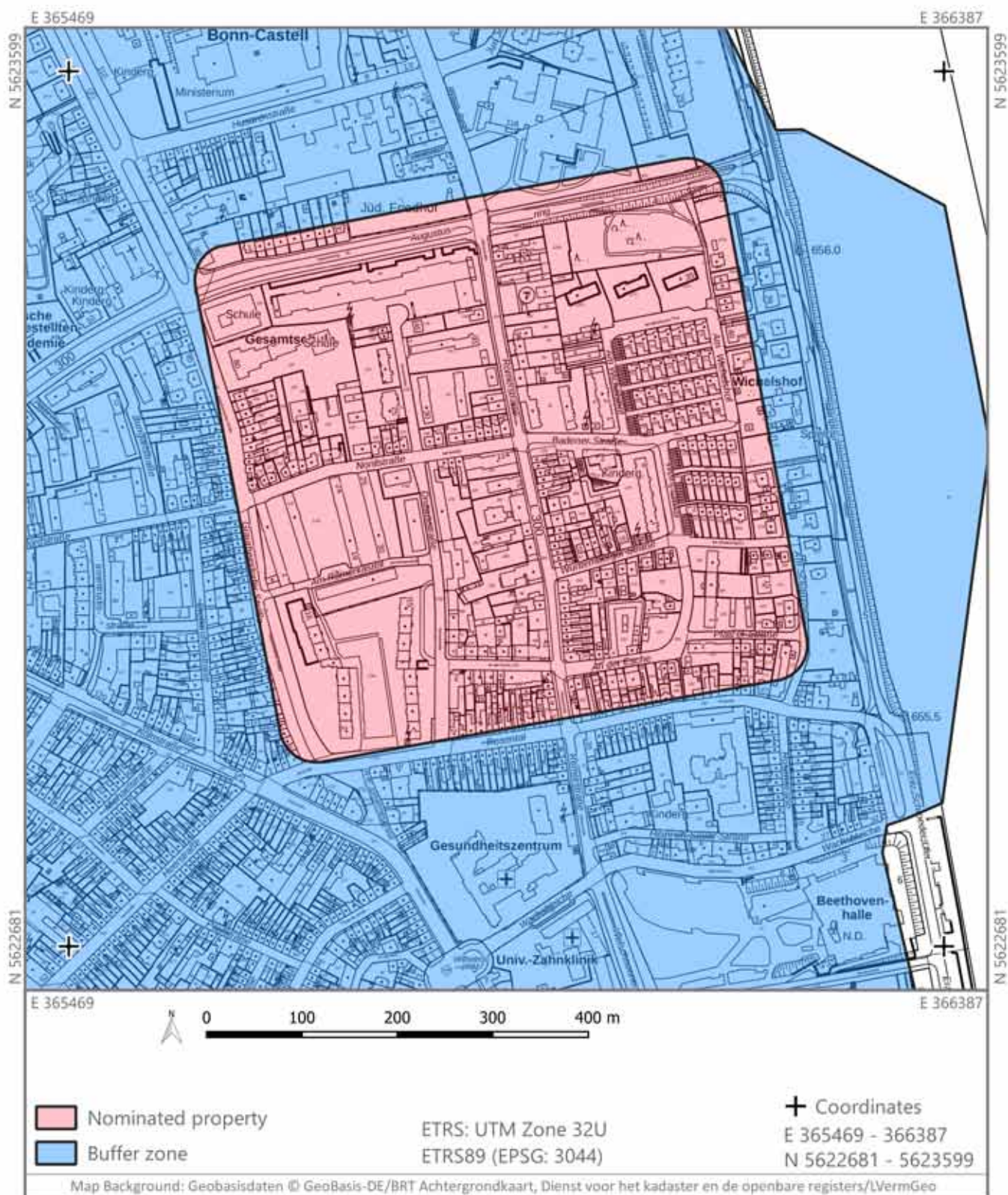
## 41 - Bonn







## 41 - Bonn





## COMPONENT PART 41 BONN

Legionary fortress

Id	State Party	Federal state	Municipality	Coordinates central point
41	Germany	North Rhine-Westphalia	Bonn	E 7°6'0" N 50°44'42"

	Area in ha	Ownership
Component part	31.01	Public, private
Buffer zone	210.98	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1990
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Flächennutzungsplan Bonn)	
	Agglomerationskonzept Köln/Bonn	
	Partly landscape protection area (Landschaftsschutzgebiet 'Rheinufer')	

### Brief description

The *Bonna* legionary fortress, which existed for about 400 years, is located directly beside the Rhine in a flood-free area. To the west, the plateau was bounded by a small river, the Gumme.

The almost square legionary fortress was built by *legio I (Germanica)* around AD 35 under the Emperor Tiberius. At 27.8 hectares it is one of the largest within the Roman Empire. After *legio XXI rapax*, *legio I Minervia* was based here as the main legion from AD 83 for more than 200 years. In the eastern part of the fortress were large storage buildings (*horrea*). They were conveniently located close to a gate which provided access to the riverbank, where goods were delivered via the Rhine.

In Late Antiquity, the wall of the legionary fortress was reinforced and widened to 2.5 m and an 11–13 m wide ditch was built. The garrison was reduced at this time. Nonetheless, the size of the Bonn legionary fortress remained unchanged throughout its life.

### Attributes and values

The legionary fortress of Bonn illustrates the longevity of the Lower German Limes. It existed from at least the 30s AD to the beginning of the 5<sup>th</sup> century AD, illustrating all the successive stages of Roman military development. It was situated at a bottleneck between the Middle Rhine Valley and the lower plains of the Rhineland and opposite the mouth of the river Sieg, making the location of high strategic importance in the river landscape.

With an area of 27.8 ha, it was one of the largest legionary fortresses in the Roman Empire. The *legio I Minervia*, stationed mainly here, was one of the most prestigious legions in the Empire. The later Emperor Hadrian was the legate of *legio I Minervia* when the legion was sent to the second Dacian war.

### Integrity

Wholeness	Very good. The total extent of the legionary fortress is very well known and completely included in the property.
Intactness	Good. Despite modern development, the majority (approx. 83 %) of the area of the fortress is well preserved with features intact.
Exposure to threats	Minor. Any future building projects in the area need to comply with the regulations of the national protection law.

### Authenticity

Form and design	Unaffected. The Roman street pattern still characterises the layout of the city today.
Materials and substance	Fair. The features are often in very good condition due to being deeply buried and to not being built over until the 19 <sup>th</sup> and 20 <sup>th</sup> century.
Location and setting	Fair. On the east side of the legionary fortress, the location on a plateau directly by the Rhine can still be appreciated. The Roman street pattern still characterises the layout of the city today.

### Buffer zone

Various information panels and monuments (reconstructed Roman crane, casts of gravestones) are located in the area of the legionary fortress. The site of Roman barracks is identified in the 'Didinkirica' park by a bronze model of the legionary fortress.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential development/construction	Minor	Damage to archaeological remains will be prevented or minimised in accordance with the monument protection law.

## Presentation

Various information panels and monuments (reconstructed Roman crane, casts of gravestones) are located in the area of the legionary fortress. The site of Roman barracks is identified in the 'Didinkirica' park by a bronze model of the legionary fortress.

## Community involvement

None

## Ancient sources

The name of *Bonna* is first mentioned in written sources for the year AD 69 as the base of the *legio I* (Tac. Hist. 4,19) and as the site of a major battle between Roman forces and the insurgent Batavian auxiliary units as the latter passed the legionary fortress on their way north.

The site is listed also as Bonna in the *Tabula Peutingeriana* (Segm. III.11), a medieval copy of a Roman road map and also in the *Itinerarium Antonini Augusti* (254,3 and 370,7), a Roman register of stations and distances along roads.

In AD 358, Bonna was still a strategically important base, according to the Late Roman historian Ammianus Marcellinus (Amm. Marc. 18,2).

## Further Details

### Main building phases

- 1 c. 35–70 (wood)
- 2 c. 70–c. 300 (stone)
- 3 c. 300–c. 430 (stone)

### Main research activities

- 1818–1819 first discovery and excavations
- 1903–1905 excavations
- 1958/59 excavations
- 2013–2014 excavations

### Garrisons

- legio I (Germanica): c. 35–70
- legio XXI rapax: 70–83
- legio I Minervia: 83–295 or later

### Literature

Gechter 1989; van Rey 2001; Gechter 2005; Morscheiser-Niebergall 2014; Hofmann/Jordan 2015; Bödecker et al. 2017a.

Fig. 244 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 245 Plan of the legionary fortress of Bonn. In red: modern-day cellars and underground parking.

Fig. 246 Artist's impression of the roman legionary fortress at Bonn. Looking south.

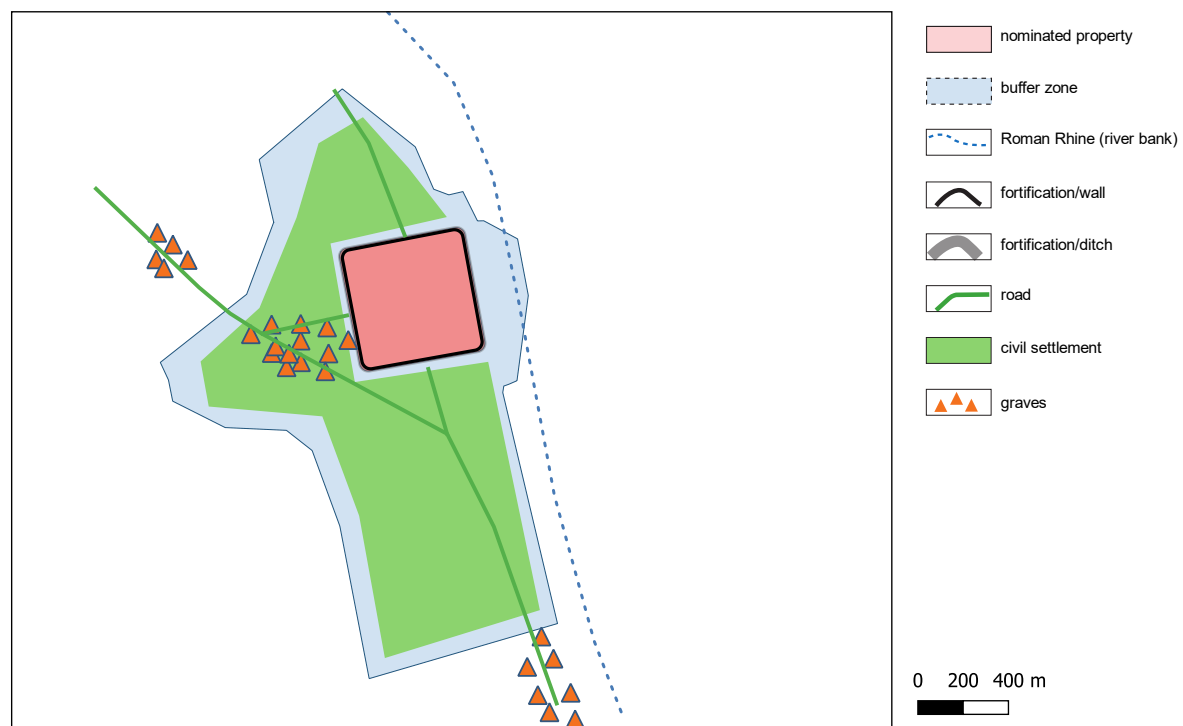


Fig. 244



Fig. 245

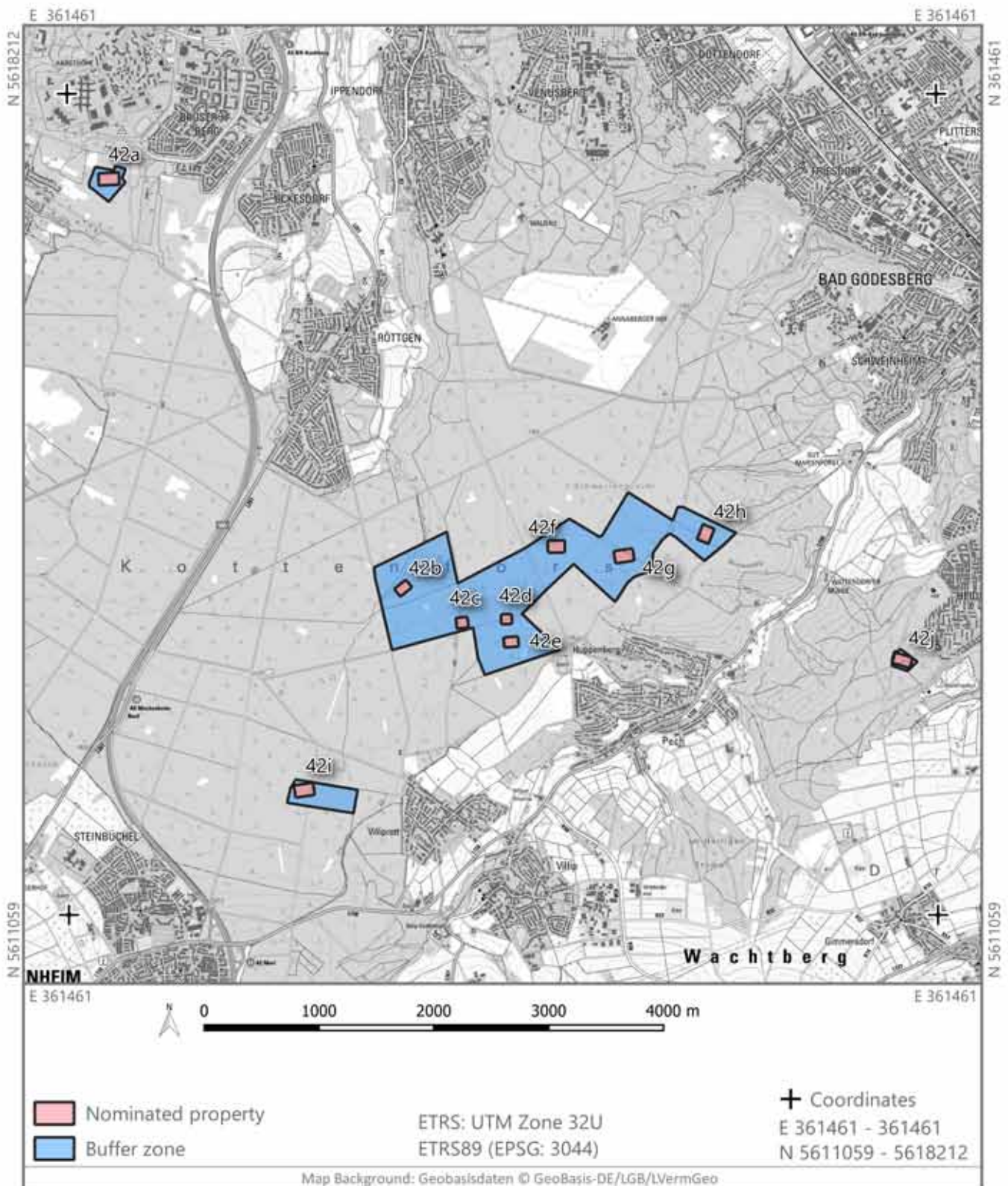




Fig. 246



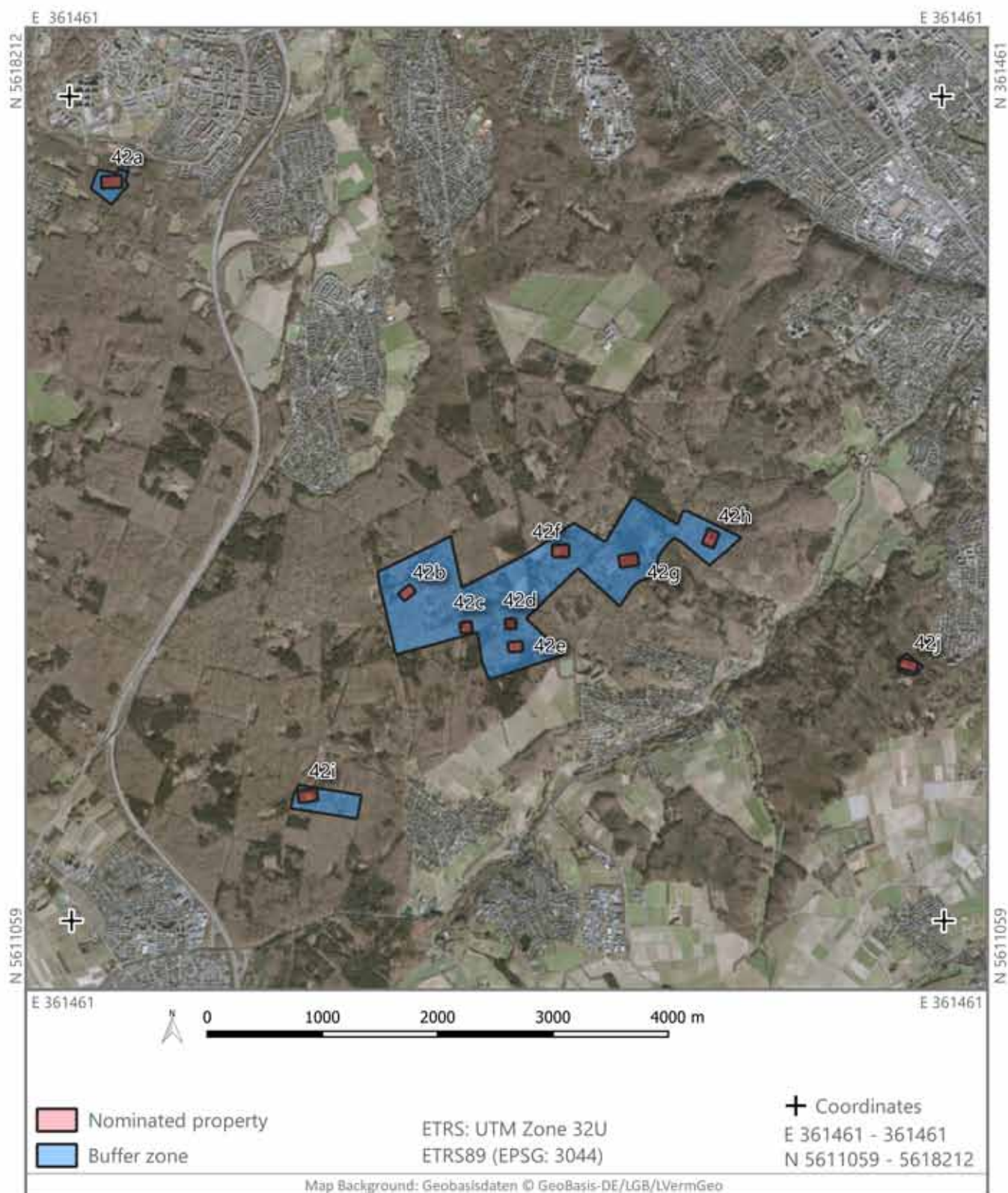
## 42 - Kottenforst Süd





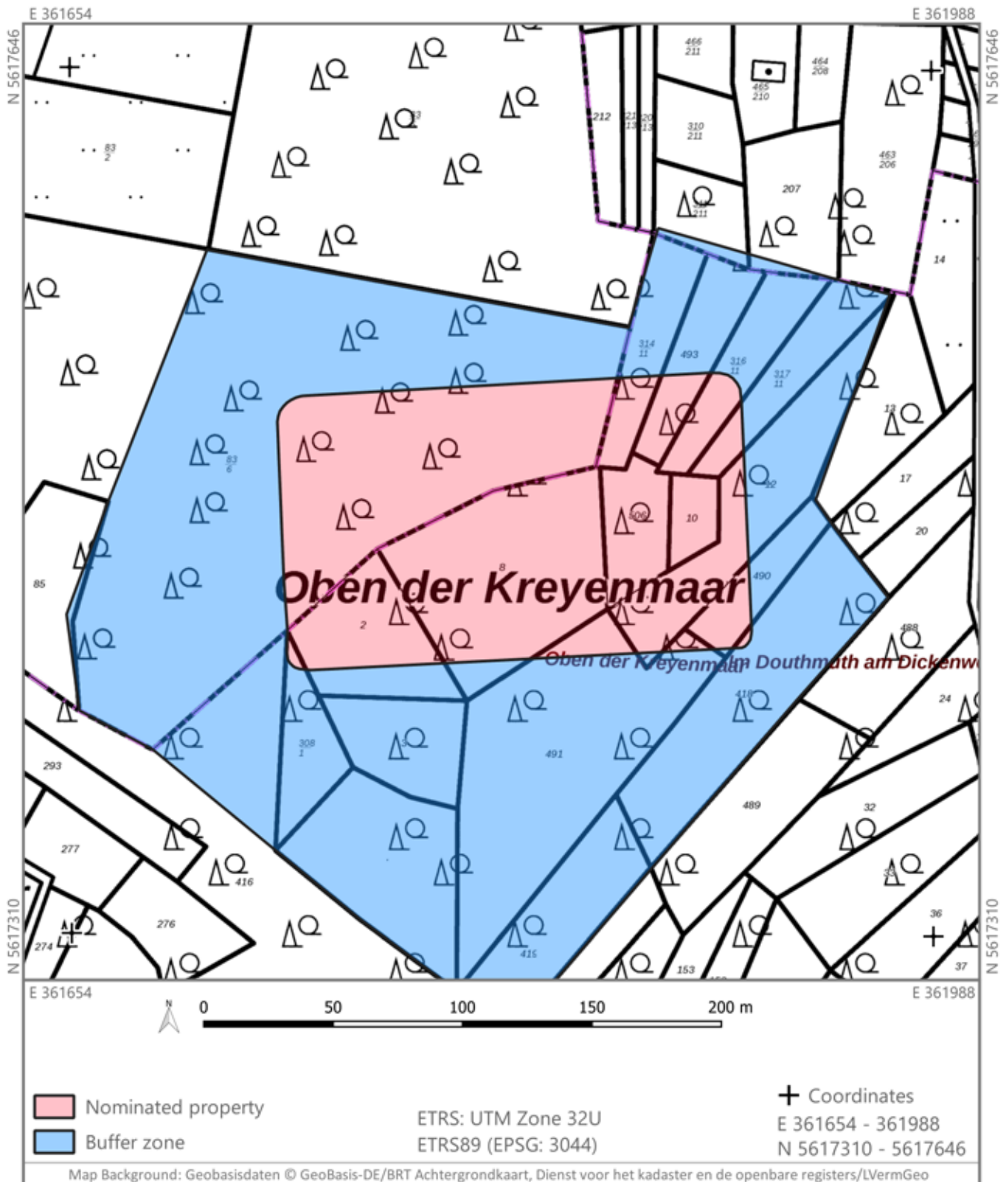


## 42 - Kottenforst Süd





42a - Oben der Krayenmaar

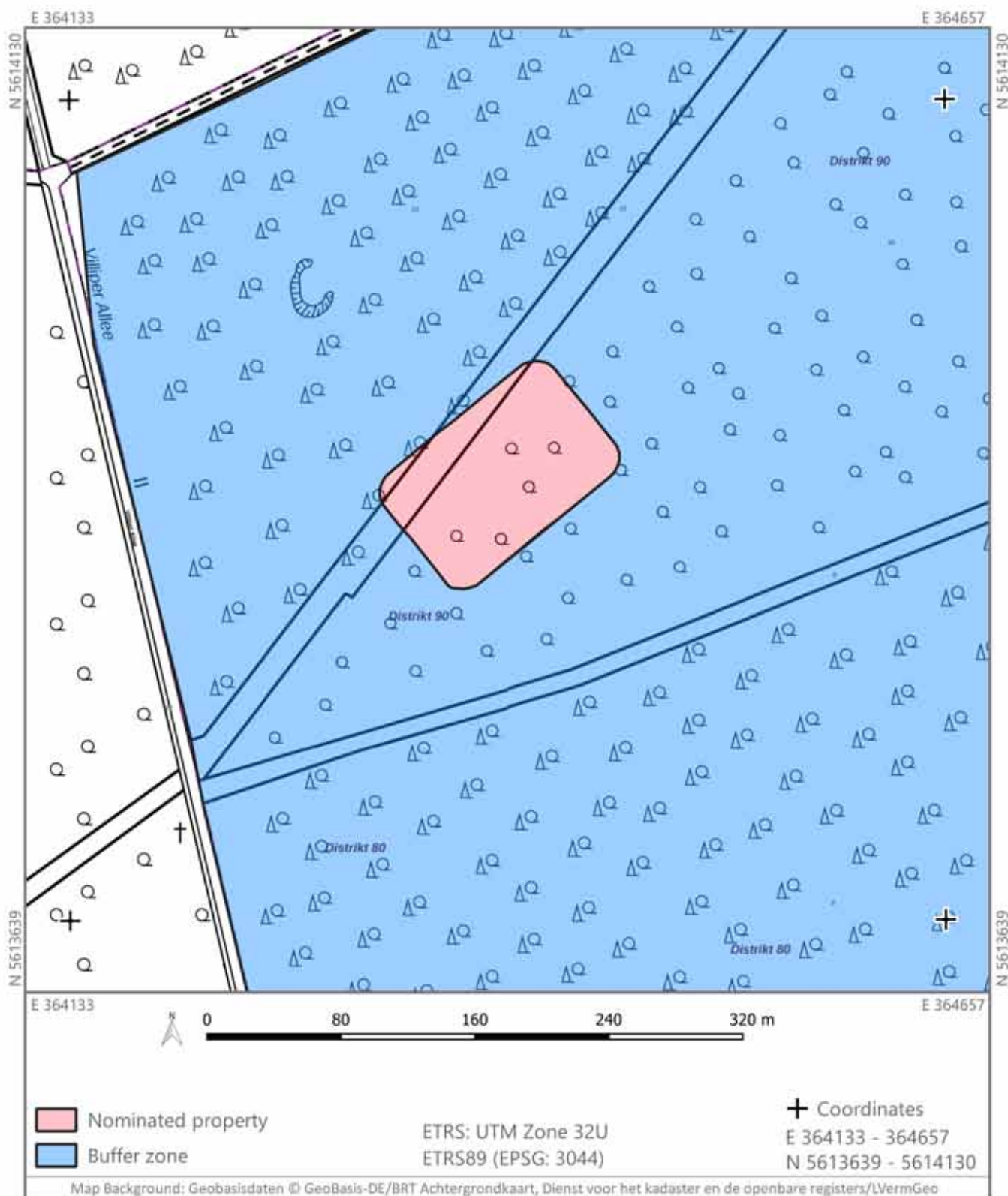
**42 - Kottenforst Süd**





42b - Villiper Bach

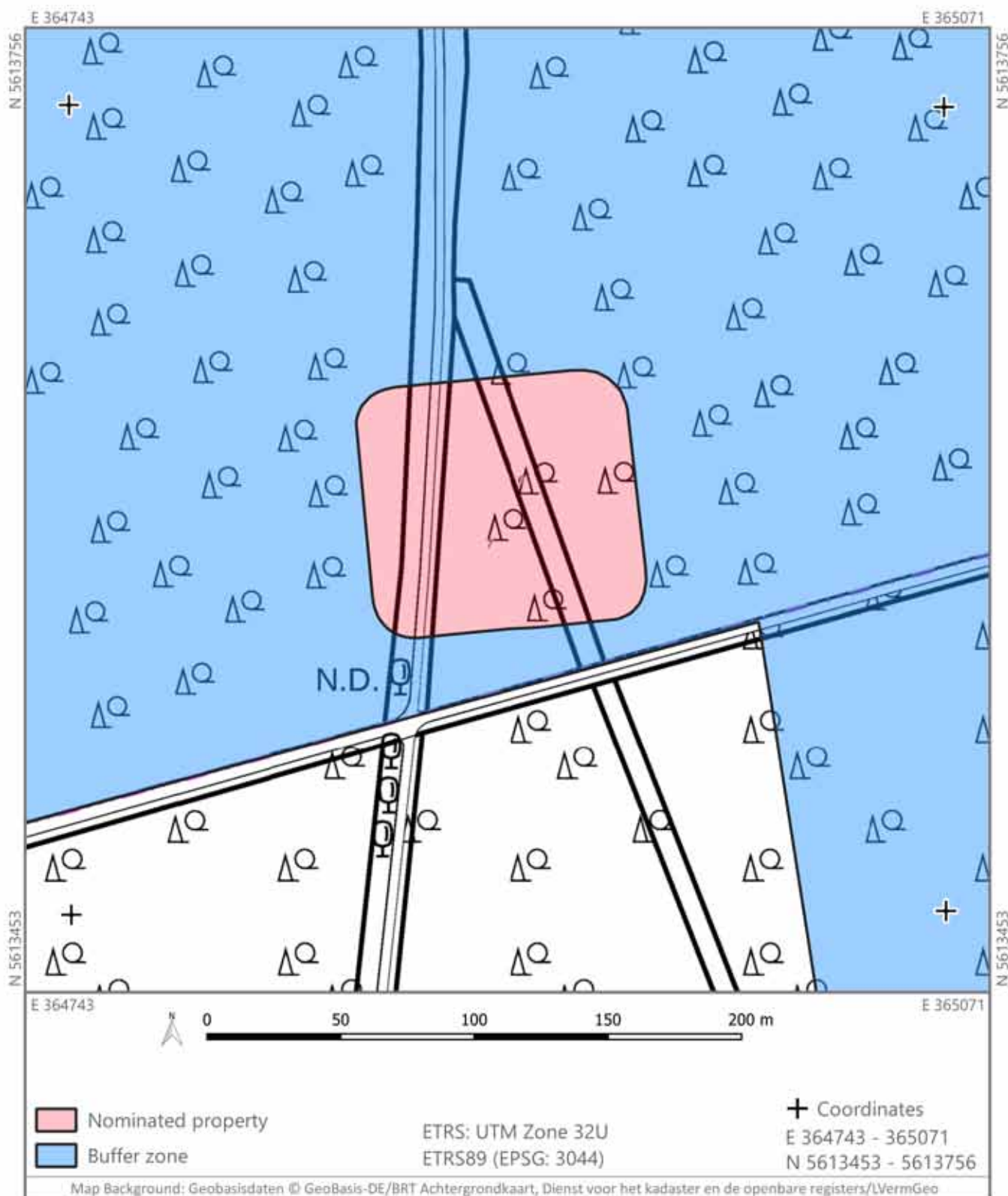
## 42 - Kottenforst Süd





42c - Professorenweg 1

## 42 - Kottenforst Süd

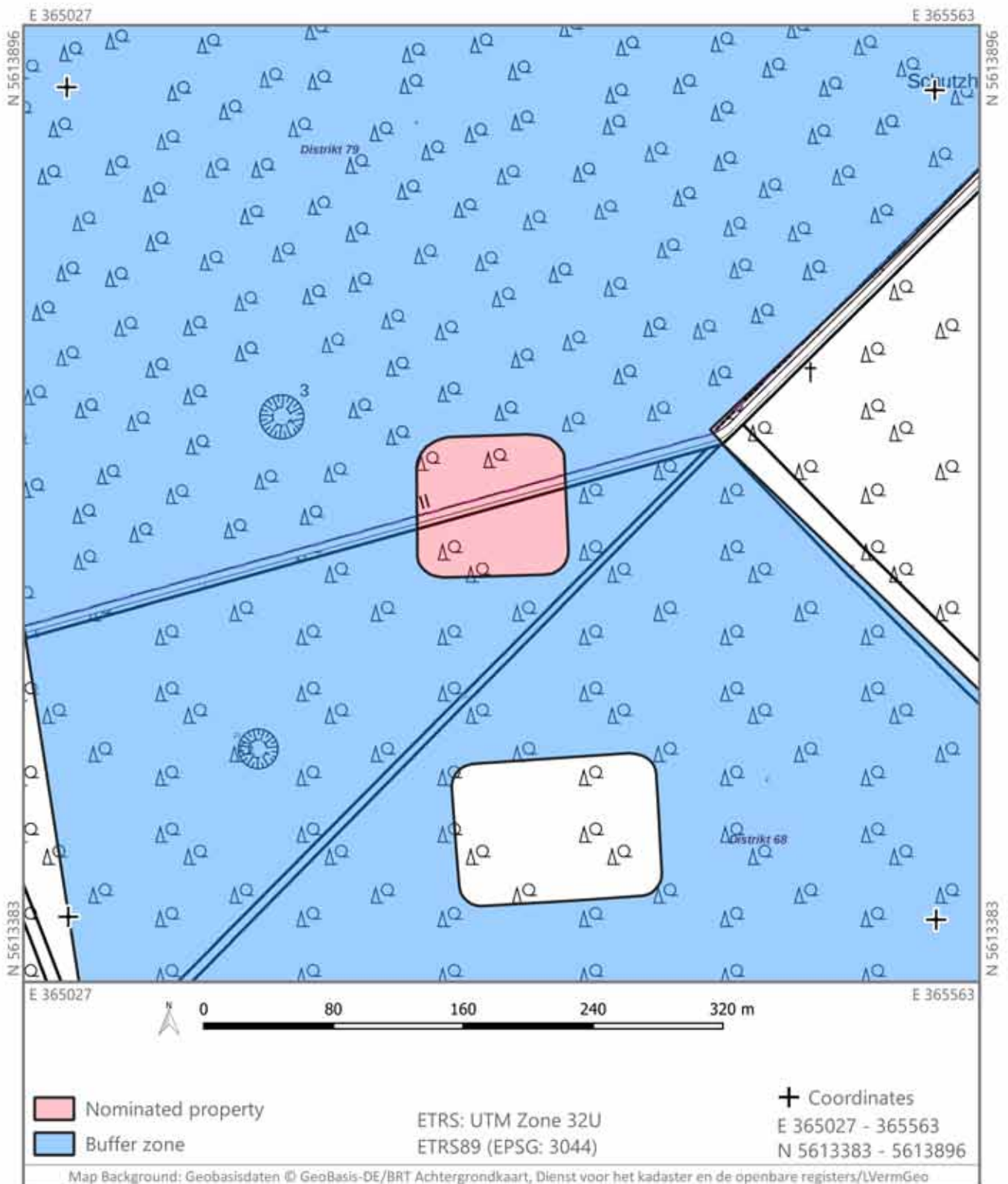






42d - Professorenweg 2

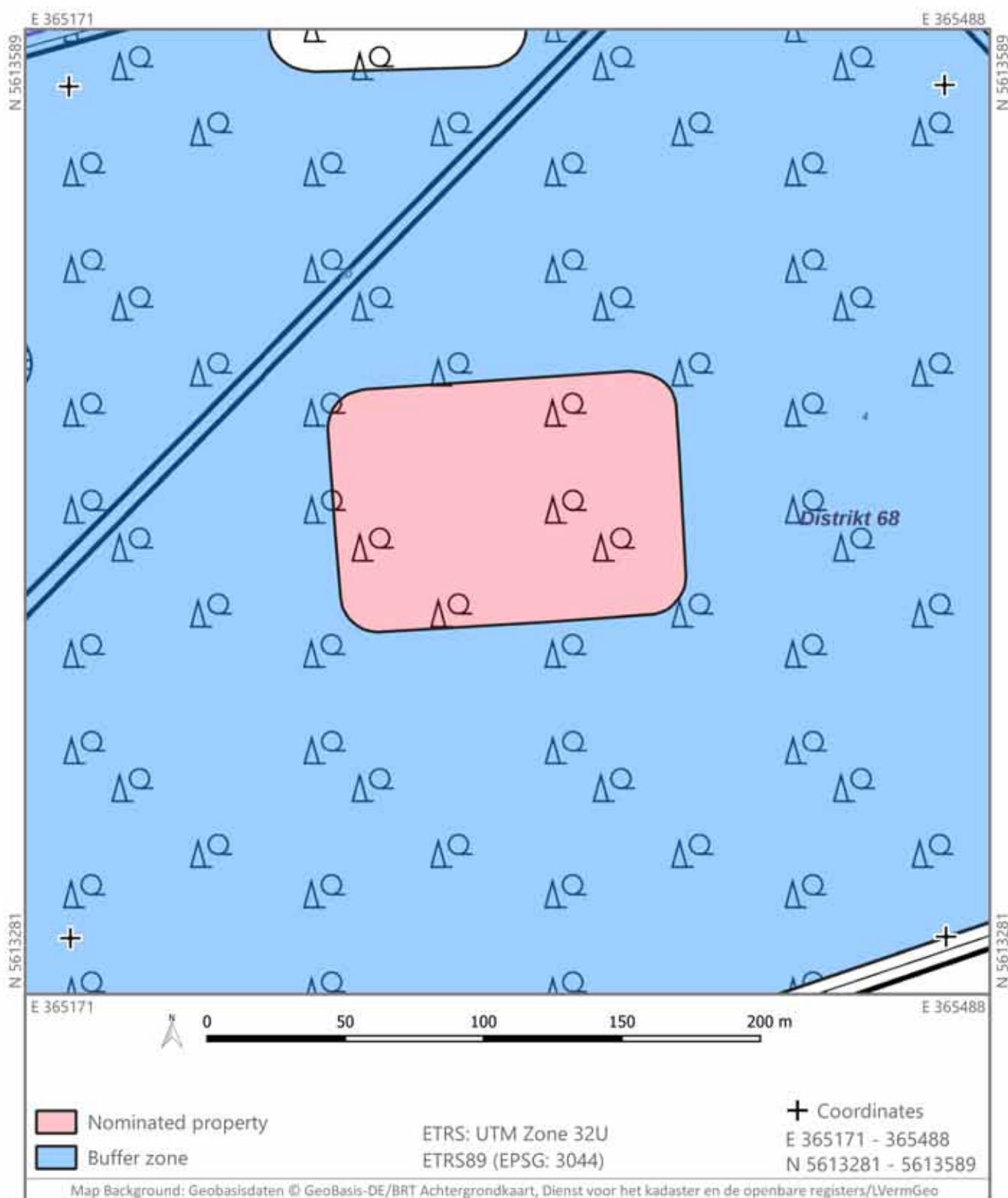
## 42 - Kottenforst Süd





42e - Riesenweg

## 42 - Kottenforst Süd

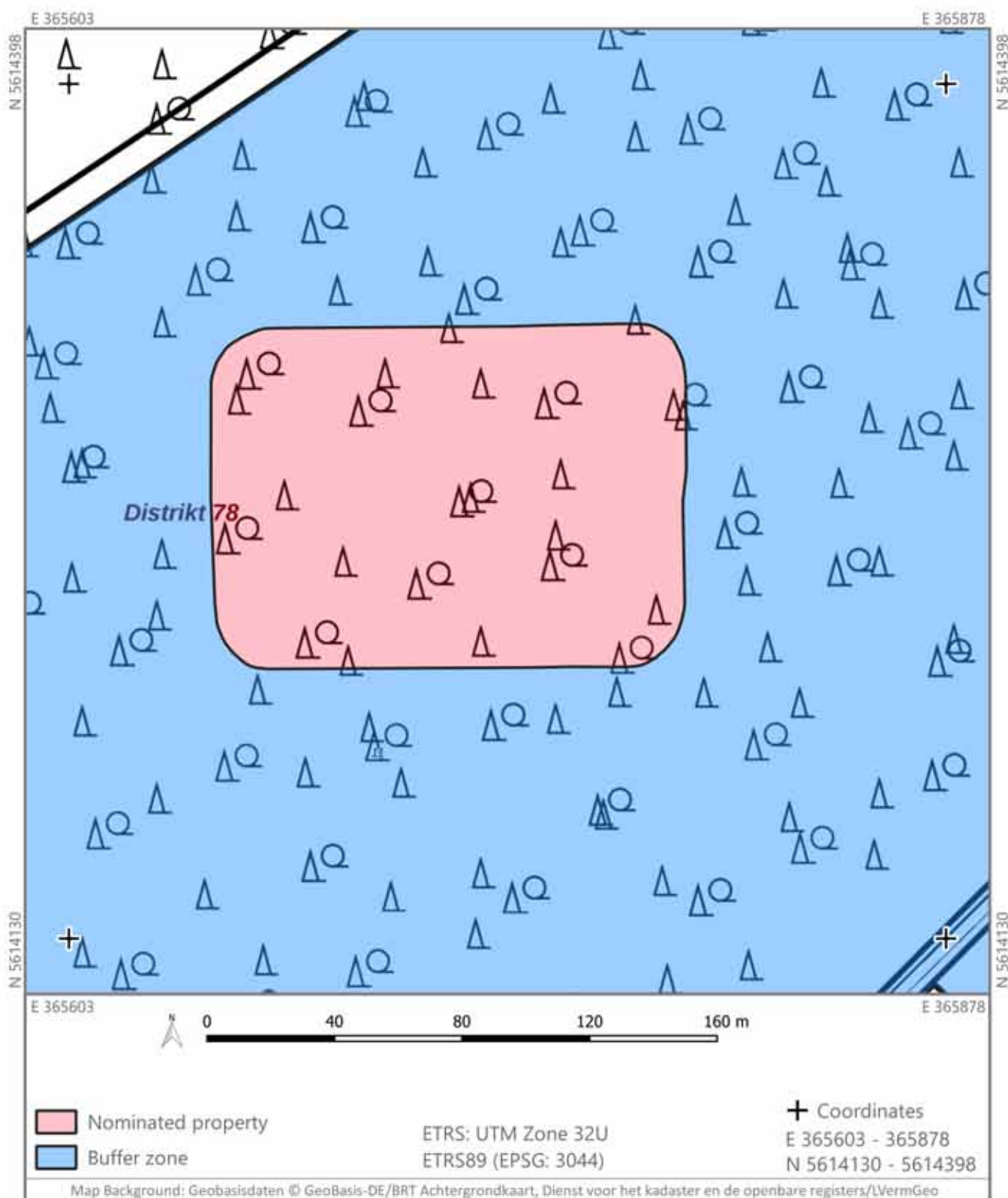






42f - Wattendorfer Allee 2

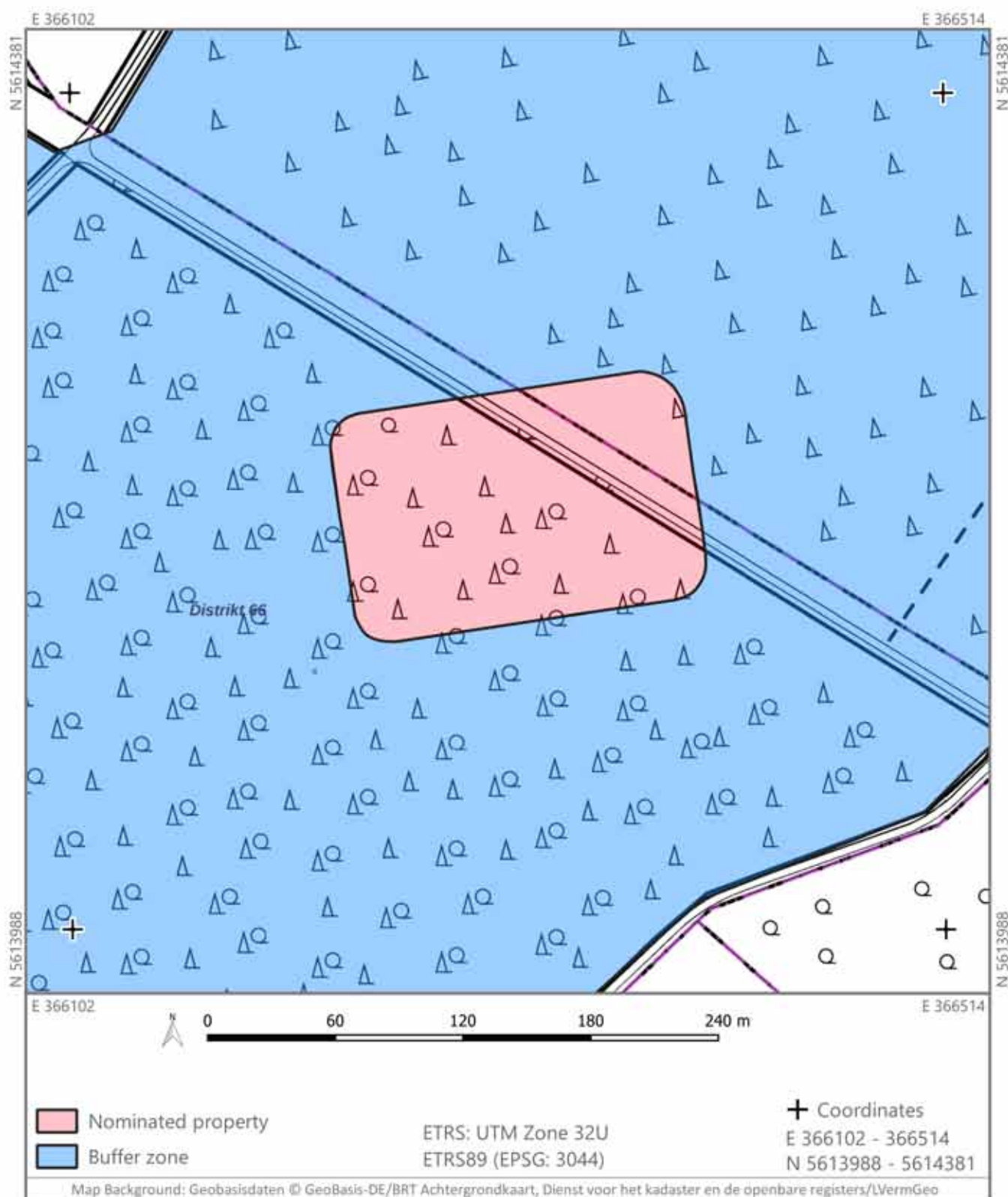
## 42 - Kottenforst Süd





42g - Wattendorfer Allee 1

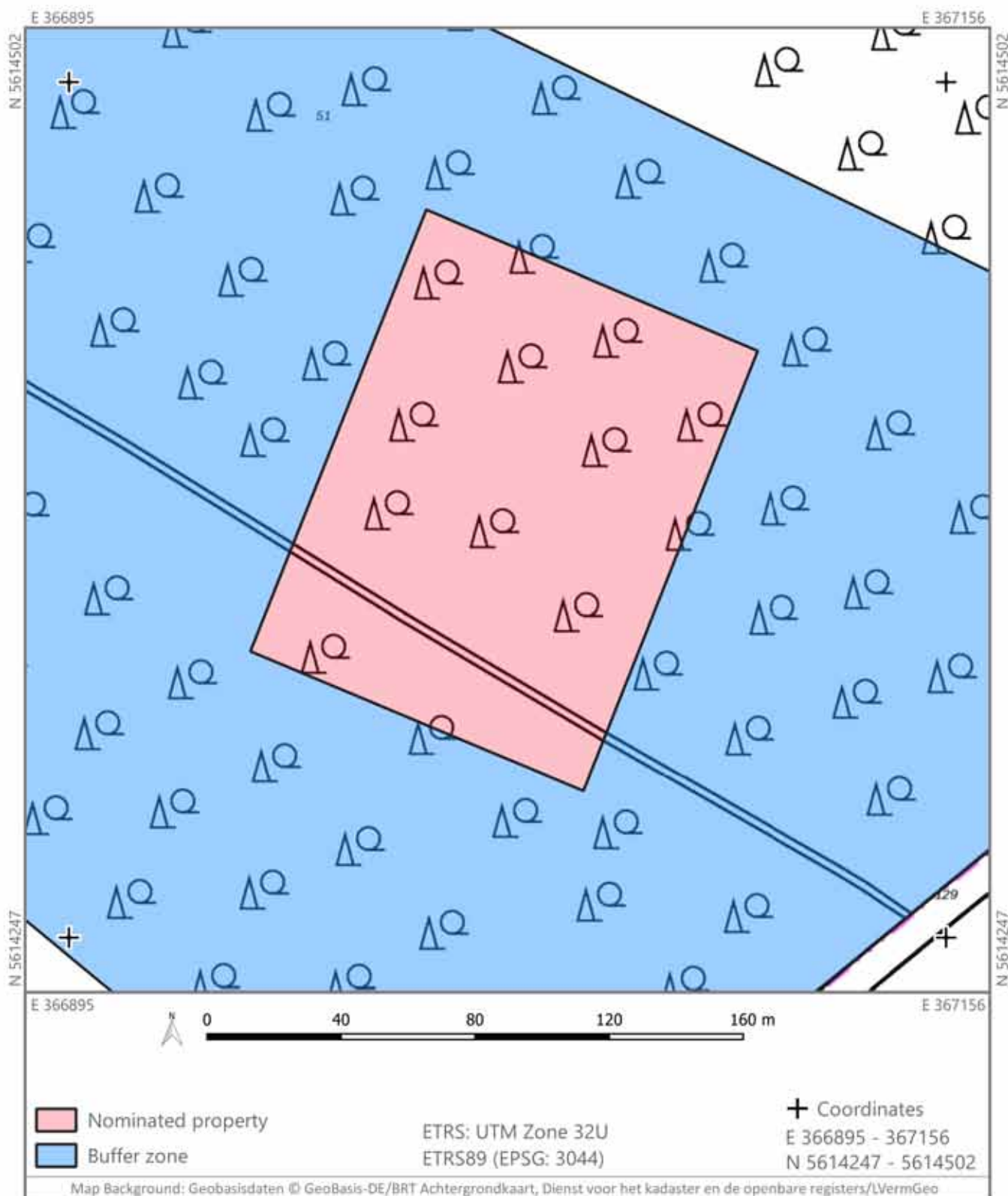
## 42 - Kottenforst Süd





42h - Bellerbuschallee

## 42 - Kottenforst Süd

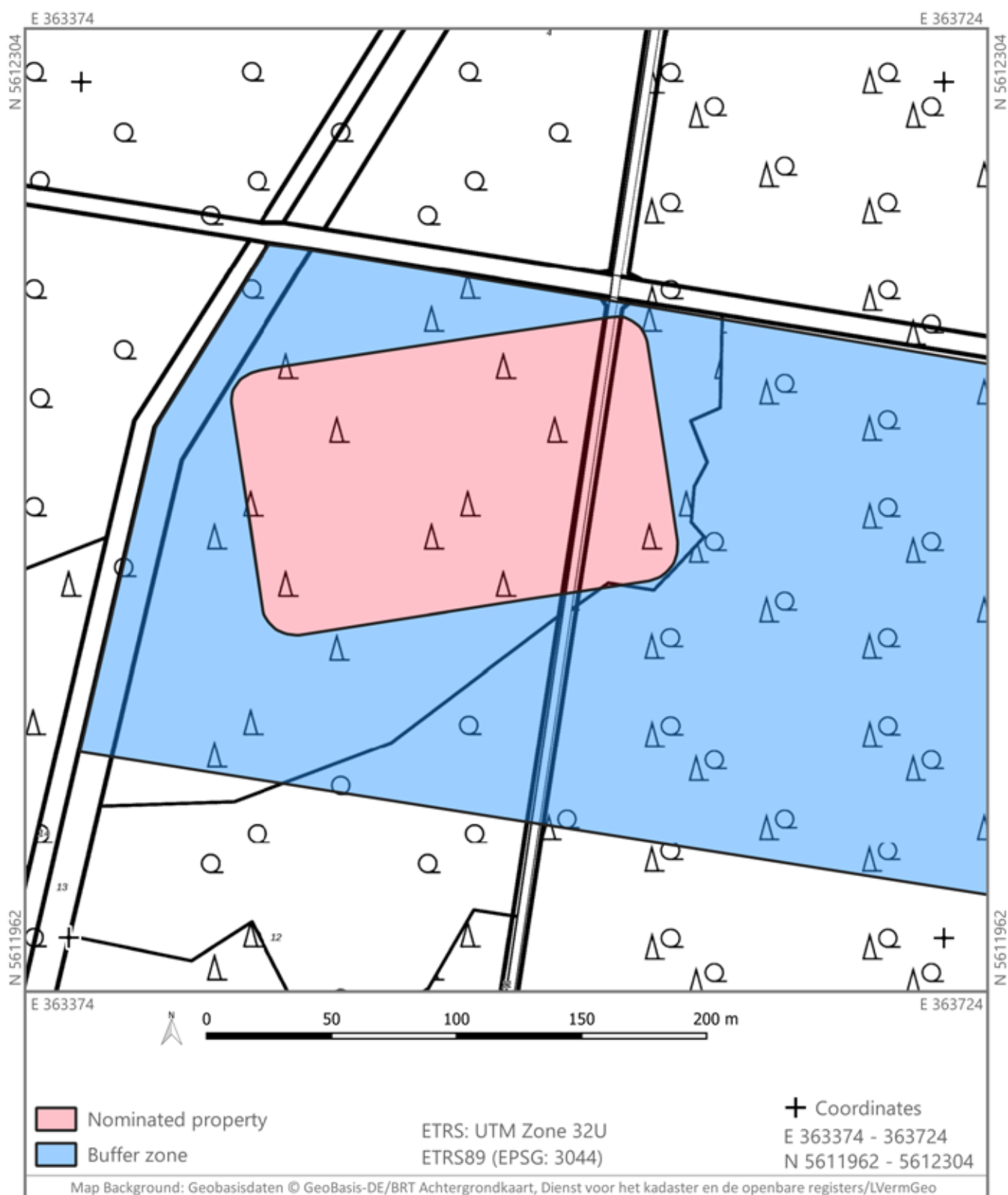






42i - Villiprot

## 42 - Kottenforst Süd

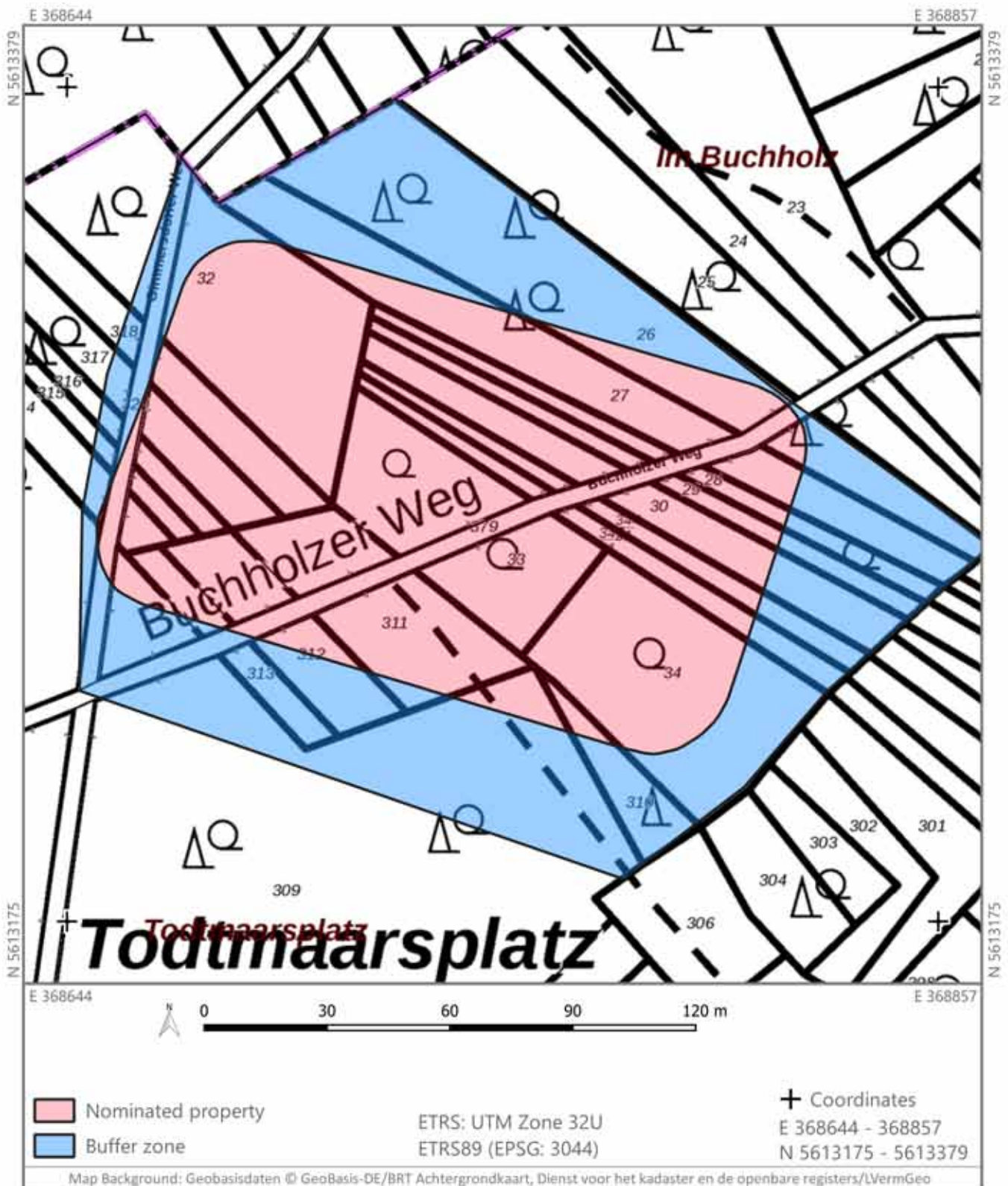






42j - Heiderhof

## 42 - Kottenforst Süd



## CLUSTER 42 KOTTENFORST SÜD

Temporary camps

Id	State Party	Federal state	Municipality
42	Germany	North Rhine-Westphalia	Bonn

### Brief description

A manoeuvring area of the Bonn Legion lies in the hinterland of Bonn, on the high plains of the Ville in the northern Kottenforst. 10 temporary camps 0.5–1.9 ha in size form a cluster. Oriented partly in rows or with the same orientation, they relate to each other. They do not overlap. The defences of the camps consist of an earthen rampart, typical for Roman marching camps. These earthen ramparts were constructed using turves (lat. *caespites*) stacked to form a wall. The gates are without exception in the form of *claviculae* (literally keys). This special method of fortification is easily legible in the field today.

### Attributes and values

This ensemble is one of the best preserved manoeuvring areas in the Roman Empire. The ramparts of the 10 temporary camps are preserved up to 0.5 m high. The preserved ramparts of the camps are rare but excellent examples of manoeuvring and training activities in the vicinity of a legionary fortress and thus an important element for understanding the military footprint of a frontier.

This activity has very early descriptions by Roman authors; for example, that Hadrian let the soldiers practice in Germania, as if a war was coming.

### Integrity

Wholeness	Very good. The entire cluster is preserved.
Intactness	Very good. The ramparts of the camps are well preserved up to 0.5 m high.
Exposure to threats	Minimal. The camps are located in forest designated as a protected landscape area.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Unaffected. Very good preservation of ramparts and ditches (fills).
Location and setting	Affected. The camps were originally laid out in an open landscape and are under forest today.

### Buffer zone

Four buffer zones encompass a group of seven camps and three single camps.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Forestry	Minimal	Sustainable forestry with minimal ground disturbance in accordance with Federal Forestry Act, Federal Soil Conservation Law and Monument Protection Law of North Rhine-Westphalia is intended.

### Presentation

The ramparts of the training camps are preserved above ground. Some of them are easily accessible via forest paths.

### Community involvement

None.

### Ancient sources

Not mentioned in written sources.

### Further Details

#### Main building phases

1<sup>st</sup>–2<sup>nd</sup> century AD

#### Main research activities

since 2008 airborne laserscanning

#### Garrisons

legionaries from Bonn

#### Literature

Bödecker 2012a; Bödecker 2012b.

Fig. 247 3D-view of airborne laserscan data of the camp at Heiderhof, Kottenforst (southern part); ► 42j.

Fig. 248 Hillshaded digital terrain model of two of the camps in the Kottenforst (southern part); ► 40f–g.



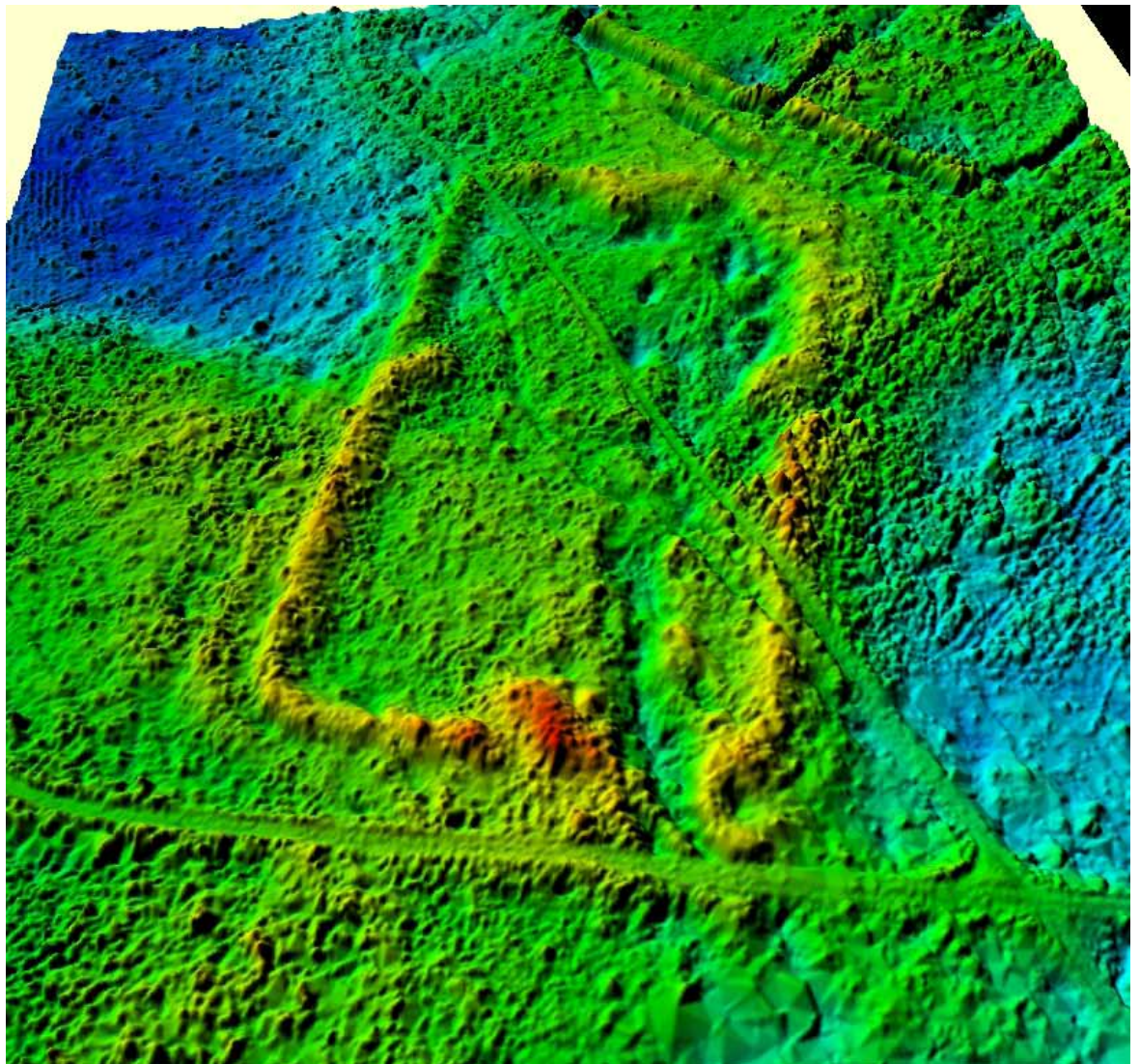
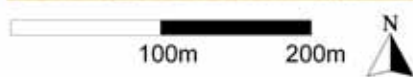


Fig. 247

Fig. 248







## COMPONENT PART 42A

### KOTTENFORST SÜD | OBEN DER KRAYERMAAR

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42a	Germany	North Rhine-Westphalia	Bonn	E 7°2'38" N 50°41'35"

	Area in ha	Ownership
Component part	1.9	Private, public
Buffer zone	190.94 (shared)	

#### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985 Nr: BN 012
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg')	

#### Brief description

For a general description see the text concerning the cluster.

#### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

#### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses the nearest area around the camp.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further Details**

See the text for the cluster.

## COMPONENT PART 42B KOTTENFORST SÜD | VILLIPER BACH

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42b	Germany	North Rhine-Westphalia	Bonn	E 7°4'52" N 50°39'40"

	Area in ha	Ownership
Component part	1.09	Private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Exp. 2020
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg') Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of seven exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further Details**

See the text for the cluster.

## COMPONENT PART 42C

### KOTTENFORST SÜD | PROFESSORENWEG 1

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42c	Germany	North Rhine-Westphalia	Bonn	E 7°5'20" N 50°39'32"

	Area in ha	Ownership
Component part	0.94	private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg') Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of seven exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 42D KOTTENFORST SÜD | PROFESSORENWEG 2

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42d	Germany	North Rhine-Westphalia	Bonn	E 7°5'38" N 50°39'32"

	Area in ha	Ownership
Component part	0.77	Private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg') Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of seven exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 42E KOTTENFORST SÜD | RIESENWEG

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42e	Germany	North Rhine-Westphalia	Bonn	E 7°5'42" N 50°39'25"

	Area in ha	Ownership
Component part	1.09	Private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg') Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of seven exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 42F KOTTENFORST SÜD | WATTENDORFER ALLEE 2

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42f	Germany	North Rhine-Westphalia	Bonn	E 7°6'0" N 50°39'54"

	Area in ha	Ownership
Component part	1.56	Private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg') Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of seven exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 42G

### KOTTENFORST SÜD | WATTENDORFER ALLEE 1

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42g	Germany	North Rhine-Westphalia	Bonn	E 7°6'29" N 50°39'50"

	Area in ha	Ownership
Component part	1.79	Private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg')	
	Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of seven exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 42H KOTTENFORST SÜD | BELLERBUSCHALLEE

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42h	Germany	North Rhine-Westphalia	Bonn	E 7°7'5" N 50°39'58"

	Area in ha	Ownership
Component part	1.52	Private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg')	
	Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses a group of seven exercise camps which belong together.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 42i KOTTENFORST SÜD | VILLIPROT

Temporary camp

Id	State Party	Federal state	Municipality	Coordinates central point
42i	Germany	North Rhine-Westphalia	Bonn	E 7°4'12" N 50°38'42"

	Area in ha	Ownership
Component part	1.78	Private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg') Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.

**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses the nearest area around the camp.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

Not mentioned in written sources.

**Further details**

See the text for the cluster.

## COMPONENT PART 42J KOTTENFORST SÜD | HEIDERHOF

Temporary camp

Id	State Party	Federal State	Municipality	Coordinates central point
42j	Germany	North Rhine-Westphalia	Bonn	E 7°8'35" N 50°39'25"

	Area in ha	Ownership
Component part	1.46	Private, public
Buffer zone	190.94 (shared)	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Kottenforst der Stadt Bonn, 2013)	
	Agglomerationskonzept Köln/Bonn	
	Landscape protection area (Landschaftsschutzgebiet 'Hardtberg') Nature Reserve (Naturschutzgebiet 'Kottenforst')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Waldreservat Kottenforst')	

### Brief description

For a general description see the text concerning the cluster.

### Attributes and values

The attributes and values are common to both component parts belonging to this cluster. See the text concerning the cluster.

### Integrity

Wholeness	Very good. The perimeter of the camp is fully preserved.
Intactness	Very good. The rampart of the camp is well preserved.
Exposure to threats	Minimal. The camp is located in forest designated as a landscape protection area.



**Authenticity**

See the text for the cluster.

**Buffer zone**

The buffer zone encloses the nearest area around the camp.

**Relevant factors affecting the property and risk management**

See the text for the cluster.

**Presentation**

See the text for the cluster.

**Community involvement**

None

**Ancient sources**

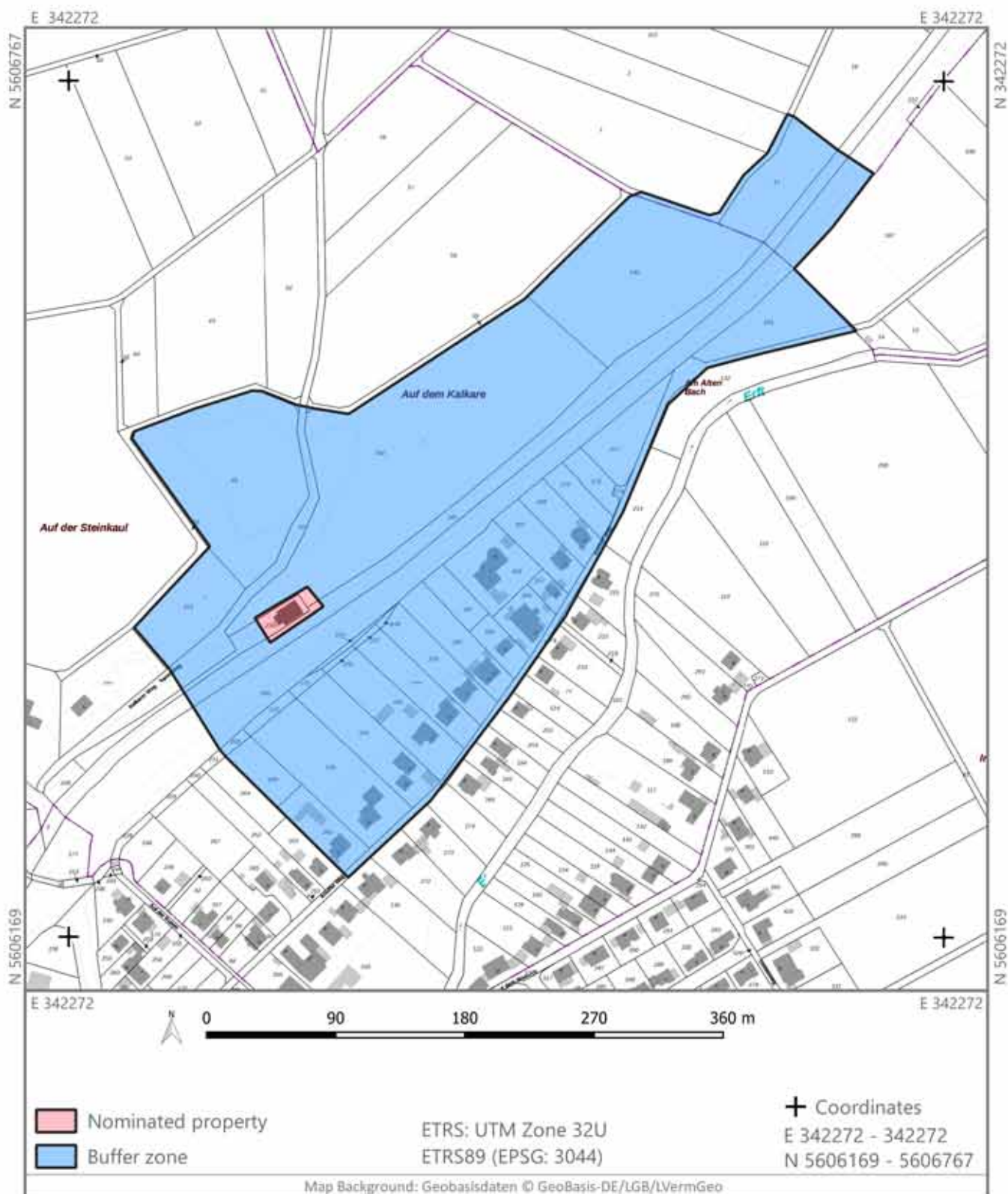
Not mentioned in written sources.

**Further details**

See the text for the cluster.

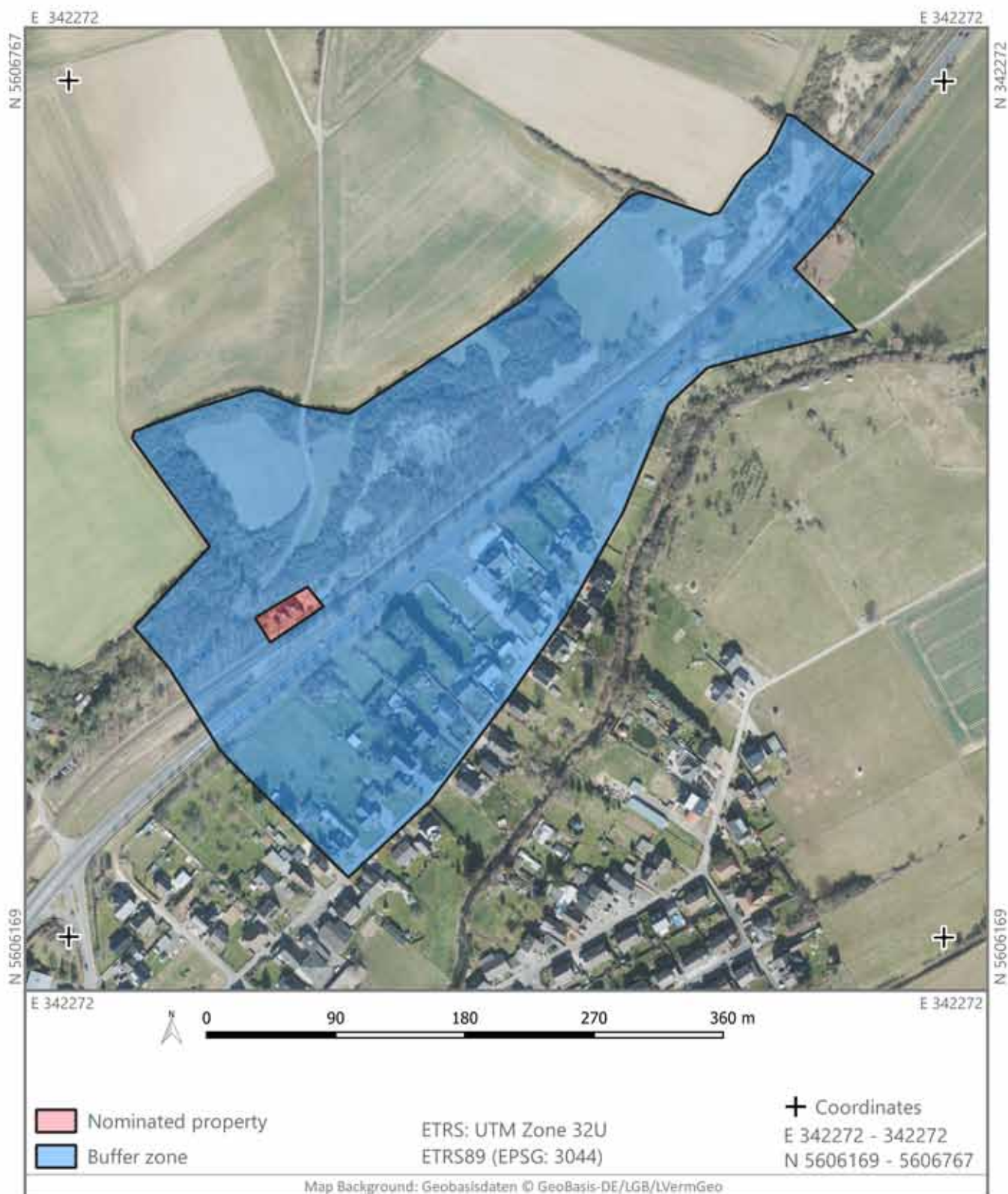


## 43 - Iversheim





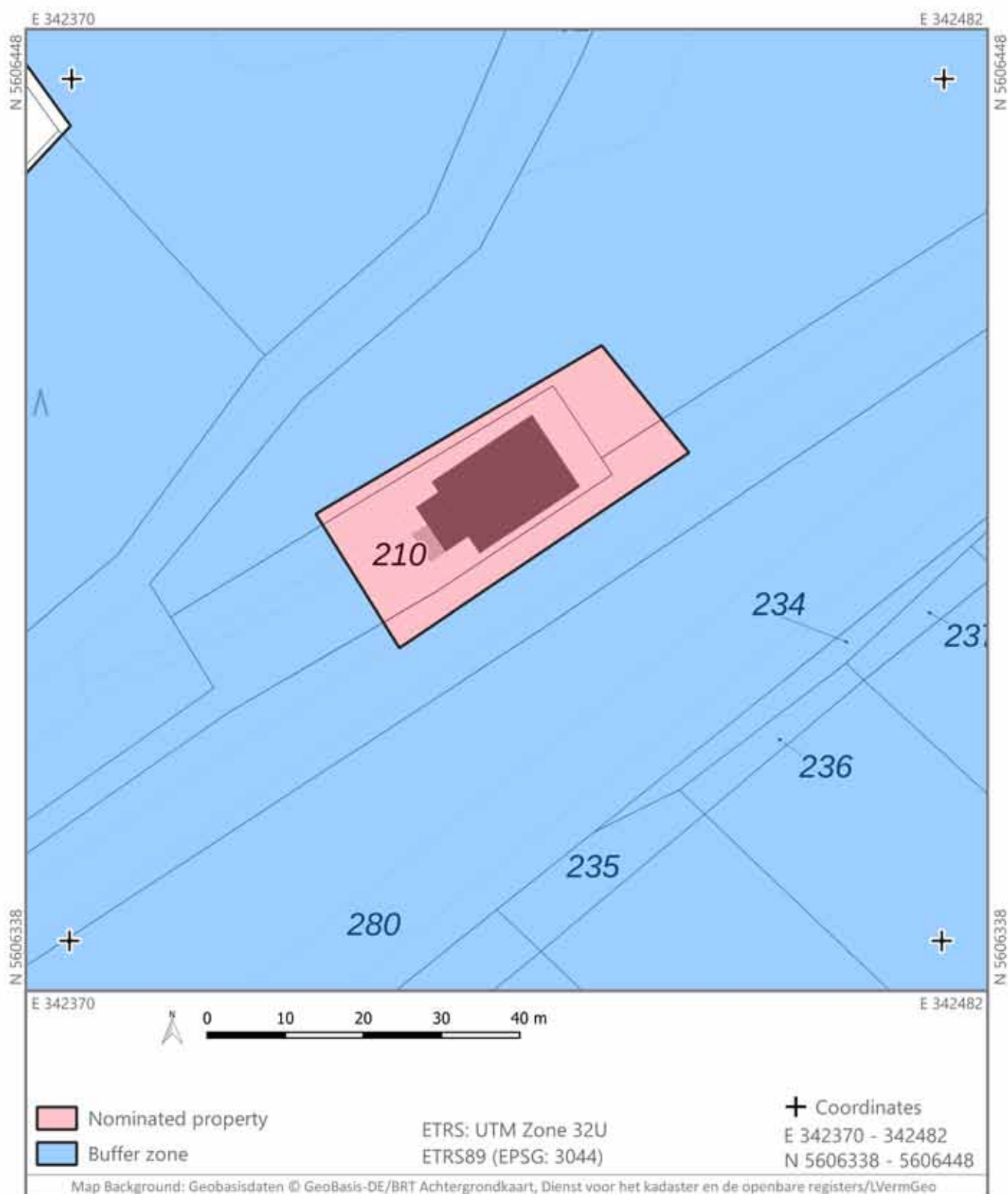
## 43 - Iversheim







## 43 - Iversheim





## COMPONENT PART 43 IVERSHEIM

Lime kilns

Id	State Party	Federal State	Municipality	Coordinates central point
43	Germany	North Rhine-Westphalia	Bad Münstereifel	E 6°46'26" N 50°35'17"

	Area in ha	Ownership
Component part	0.08	Public
Buffer zone	10.72	

### Protection

National law	Monument protection law of North Rhine-Westphalia (DSchG NRW)	Designated 1985
Other laws and instruments	Regional plan (Regionalplan Regierungsbezirk Köln, Fachbeitrag Kulturlandschaft, 2014)	
	Land-use plan (Landschaftsplan Bad Münstereifel)	
	Nature Reserve (Naturschutzgebiet 'Eschweiler Tal und Kalkkuppen')	
	Habitats directive (Flora-Fauna-Habitat-Gebiet 'Eschweiler Tal und Kalkkuppen')	

### Brief description

The nominated property is located on the northern edge of the Sötenicher Kalkmulde. These limestone deposits are the most northerly in the Rhineland that were known in Roman times, on the left bank of the Rhine.

Six lime kilns are located in a large hall with dimensions of approx. 30 × 6 m. Four to five of the kilns were in use during different periods and produced up to 200 tons of quicklime per month, used for the construction of large buildings and other structures in the province of *Germania inferior*. The industrial installation was probably used from at least the 1<sup>st</sup> to the end of the 3<sup>rd</sup> century AD. and underwent several modifications and reconstructions. The complex is also unusual in that it comprises not only the kilns and the industrial hall, but also associated structures for the accommodation of soldiers and the storage of material. The decisive factors for the location were not only the occurrence of limestone, but also the availability of fire wood and access to water. Transport of the finished products was probably via the river Erft into the Rhineland.

### Attributes and values

The complex of lime kilns and associated structures forms the most complete suite of military production facilities currently known in the Roman Empire. Their operation is attested from the 1<sup>st</sup> to the late 3<sup>rd</sup> century AD. The presence of a vexillation (detachment) of lime production specialists from the 30<sup>th</sup> legion at Xanten, more than 100 km away, demonstrates the importance of the site for construction work along the whole of the Lower German Limes.

Along with the brickworks of Berg en Dal-De Holdeurn ►18, this complex represents a very important aspect of military production and supply, demonstrating that the army was self-supporting in the production of building materials.

### Integrity

Wholeness	Very good. The nominated property is the auxiliary fort. The walls of the fort are preserved intact. There are a few areas of crumbling masonry. The interior is largely intact. The fort walls form the limit of the nominated property.
Intactness	Good. Excavations show that the features are well preserved.
Exposure to threats	Minor. The area is built over. It is, however, a designated protected monument.

### Authenticity

Form and design	Unaffected. The site was abandoned and not reused after the Roman period, so the form and design are fully authentic.
Materials and substance	Fair. One of the kilns, rebuilt for a lime-burning experiment, comprises a mixture of Roman construction, modern re-use of Roman construction material and modern construction material. The other kilns and walls are authentic.
Location and setting	Fair. The reasons for the location on the slope above the river Erft, with lime quarries nearby and easily accessible, are easy to understand. The modern road below the kilns is on the line of a former Roman road.

### Buffer zone

The buffer zone encloses all features associated with the kilns of the 30<sup>th</sup> Legion, including features south of the railway line. The buffer zone also includes the kilns of the 1<sup>st</sup> Legion, located further north and unexcavated, and the Erft Valley, where further buildings associated with the kilns are located. The quarries, which continued in use after antiquity, are also located within the buffer zone.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Visitors	Low	So far no damage has been caused by visitors and no damage is expected.

### Presentation

Three of the kilns are preserved in a protective building where a small exhibition explains how they operated. Lime slaking demonstrations are provided.

### Community involvement

The private association 'Dorfverschönerungsverein Iversheim e.V.' manages the site. Volunteer members provide access and guided tours throughout the year.

### Ancient sources

Not mentioned in written sources, but rich epigraphic evidence.

### Further Details

#### Main building phase

- 1 c. 1<sup>st</sup> century AD
- 2 2<sup>nd</sup>–3<sup>rd</sup> century AD?
- 3 3<sup>rd</sup> century AD?

#### Main research activities

1966–1968 excavations

#### Garrisons

legio XXX Ulpia victrix (vexillation) 224–240  
legio III Cyrenaica (vexillation) c. 240

#### Literature

Alföldy 1968; Sölter 1970; Clauss 1976; Wagner 2006; Berger 2019.

Fig. 249 Protective building and museum of the Roman lime kilns at Iversheim.

Fig. 250 One of the Roman lime kilns at Iversheim

Fig. 251 Plan of the limes kilns at Iversheim.



Fig. 249



Fig. 250

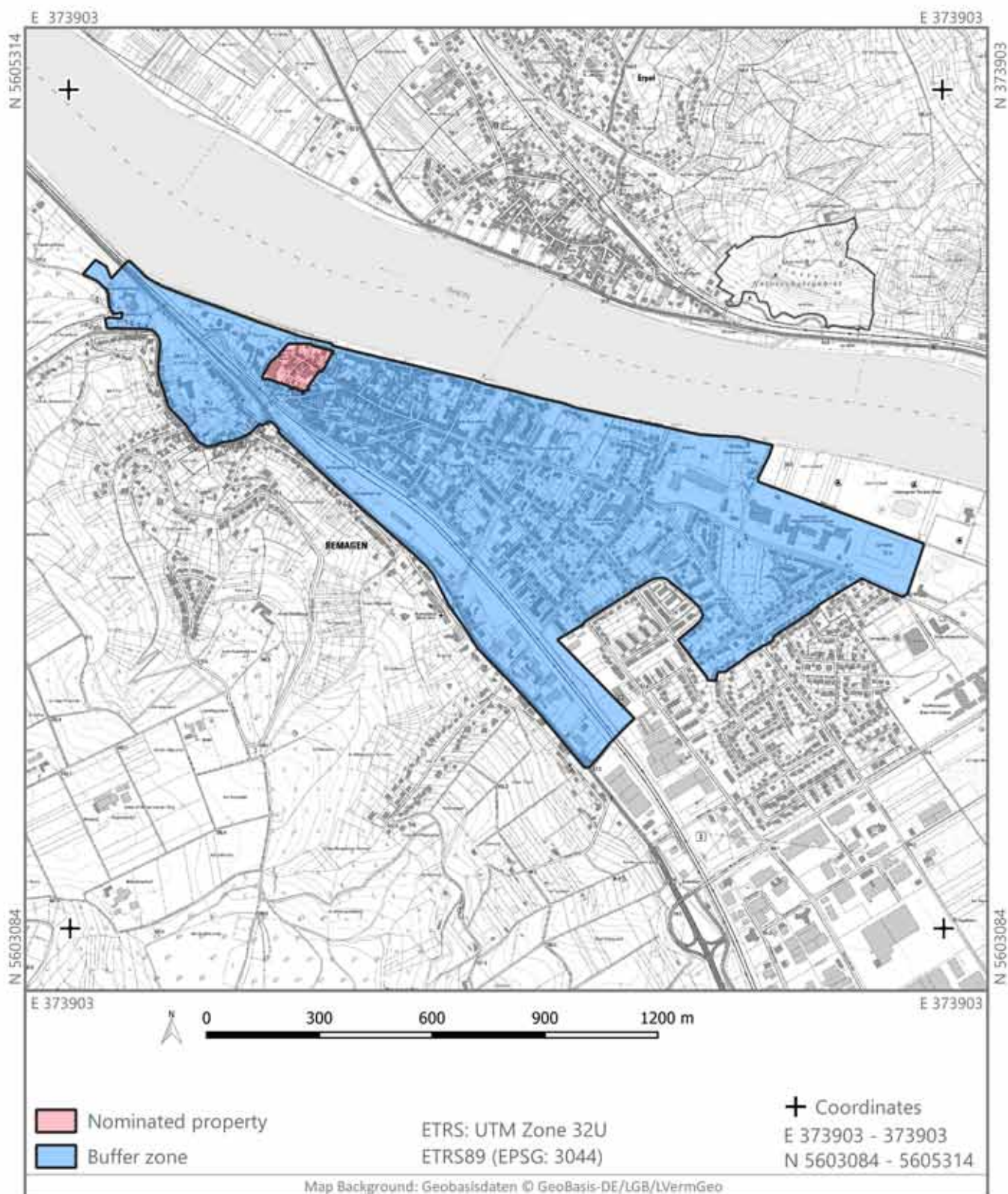




Fig. 251



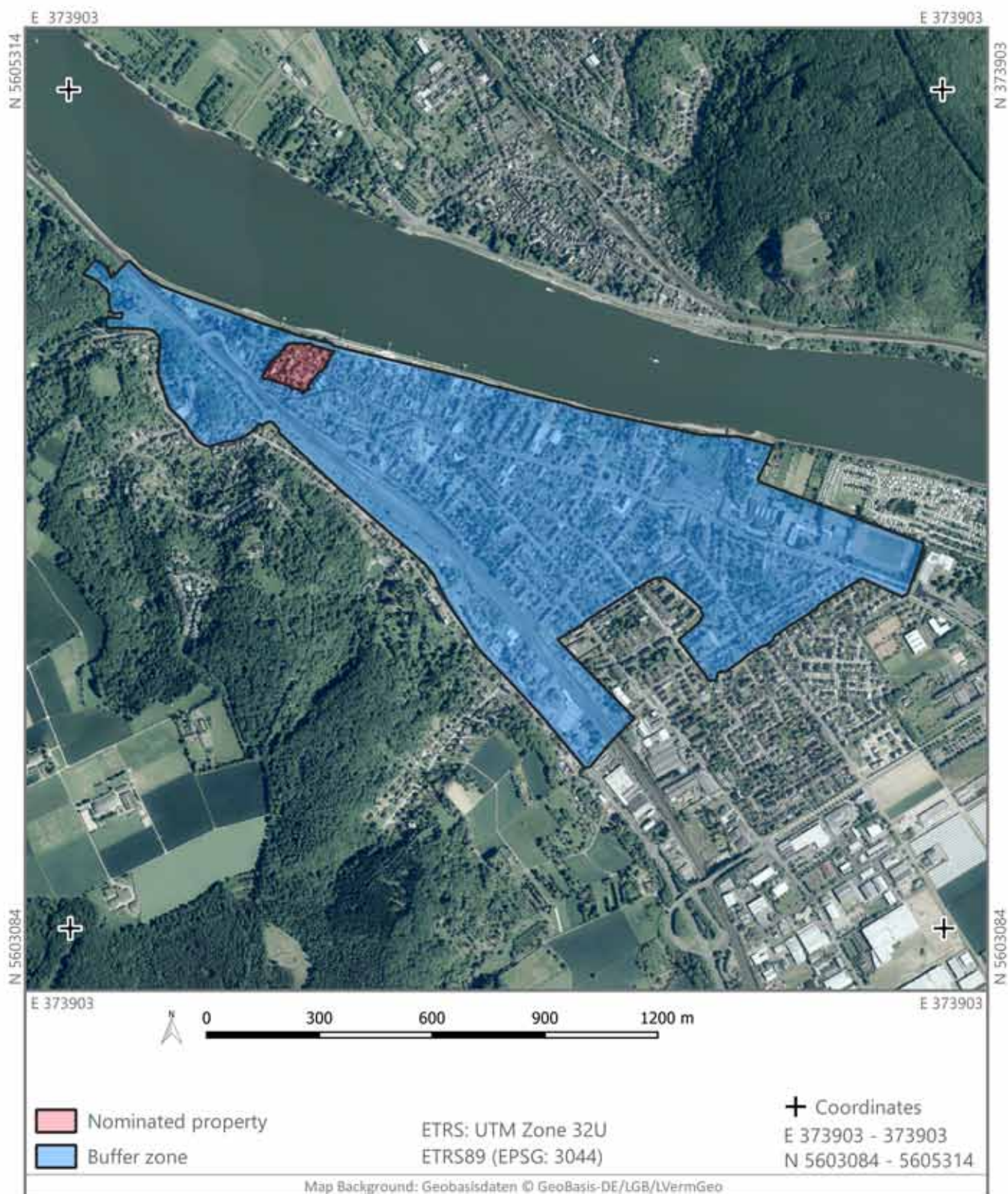
## 44 - Remagen







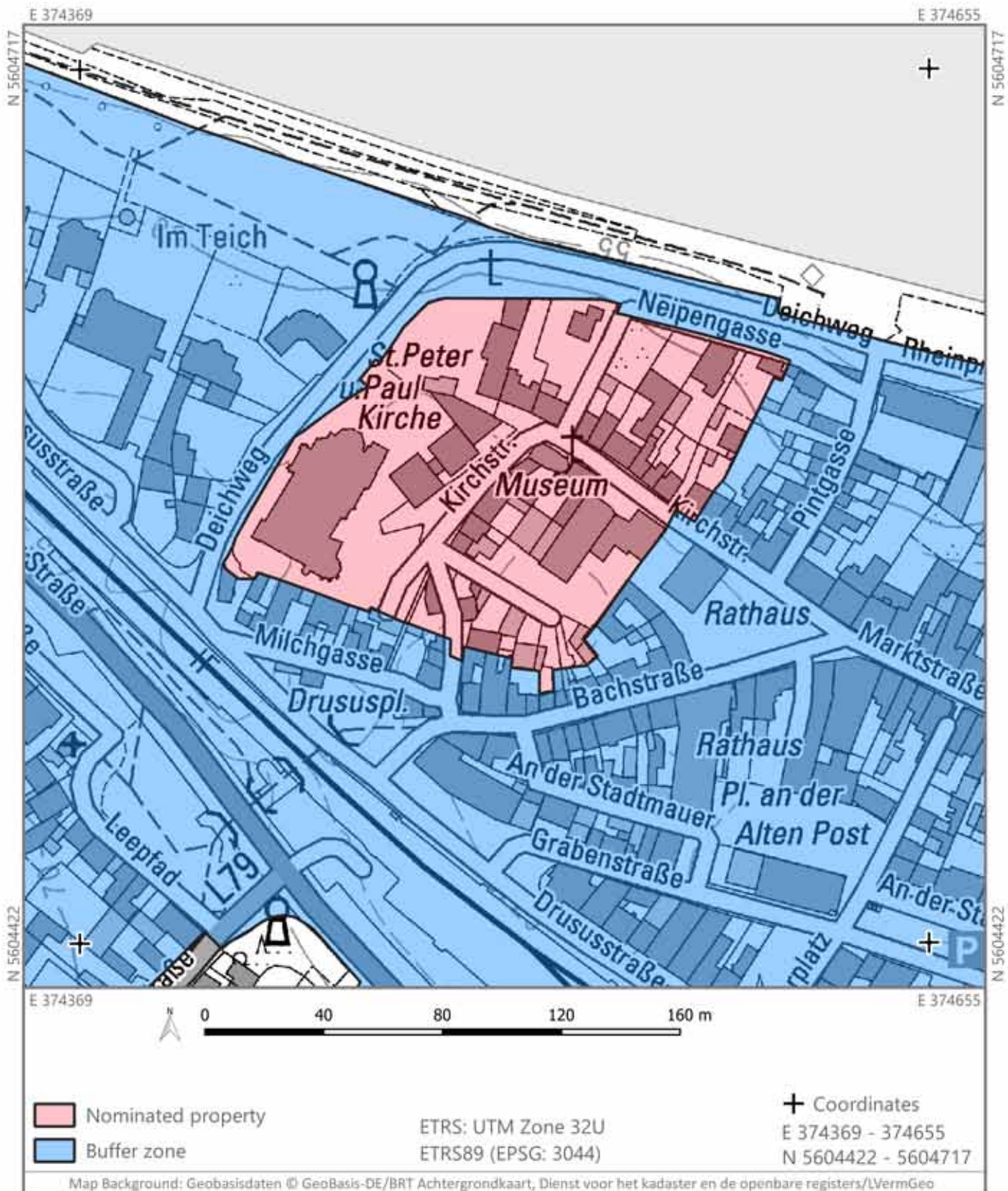
## 44 - Remagen







## 44 - Remagen





## COMPONENT PART 44 REMAGEN

Auxiliary fort

Id	State Party	Federal state	Municipality	Coordinates central point
44	Germany	Rhineland-Palatinate	Remagen	E 7°13'41" N 50°34'48"

	Area in ha	Ownership
Component part	1.47	Public, private
Buffer zone	94.8	

### Protection

National law	Grabungsschutzgebiet according § 22 Denkmalschutzgesetz Rheinland-Pfalz	Designated 2006
Other laws and instruments	-	

### Brief description

At the centre of the complex is an auxiliary fort dating back to the time of Augustus (Phase 1). An earth-and timber-fort with an encompassing ditch was built in the time of Tiberius-Claudius (Phase 2). The fort was destroyed in AD 69. during the Batavian Revolt, but immediately rebuilt in stone to the same plan as before (Phase 3). A further reconstruction, or rather a strengthening, of the fort took place between AD 270/280. and the Constantinian period (Phase 4). The Late Antique walls were constructed on the existing walls of the stone fort. The fortifications of the early and middle Empire (Phases 2 and 3) were integrated into the later defences and continued to be used into Late Antiquity.

### Attributes and values

A continuous military presence in Remagen can be demonstrated from the time of Augustus into the middle of the 5<sup>th</sup> century AD. The fort was well placed to restrict and monitor movement due to its position on the military road between Cologne and Bonn, and its location on a level area at the end of a valley, between the Rhine and the Middle Fluvial Terrace . A special feature of the site is the modification and re-use in Late Antiquity of the early and middle Empire period fortifications.

### Integrity

Wholeness	Very good. The nominated property is the auxiliary fort. The walls of the fort are preserved intact. There are a few areas of crumbling masonry. The interior is largely intact. The fort walls form the limit of the nominated property.
Intactness	Good. Excavations show that the features are well preserved.
Exposure to threats	Minor. The area is built over. It is, however, a designated protected monument.

### Authenticity

Form and design	Unaffected. The layout of the fort and the lines of the ancient roads are still identifiable in the plan of the modern town.
Materials and substance	Fair. The foundations of the defences, as well as the interior of the fort, are well preserved. Minor disturbance has been caused by 19 <sup>th</sup> century cellar construction. The posts of the wooden defences from Phase 1 are preserved due to waterlogged conditions.
Location and setting	Fair. The position by the river, and the control that the fort was able to exert, can still be appreciated today. The course of the Rhine has not changed substantially since Antiquity.

### Buffer zone

The fort of Remagen is part of a much larger military complex which included the Limes road, a civil settlement, cemeteries and quays along the Rhine. The extent of this complex can be estimated from small excavations, the mapping of archaeological finds, and observations during building projects, but the precise identification of the full area of buried archaeology is not possible in most cases. The vicus extended over a large area to the south-east, orientated along a road which ran from Bonn through Remagen to Koblenz. The fort also lay on the Limes road, which ran from Italy over the Great St Bernard Pass and along the Rhine all the way to the North Sea. The vicus existed in the Augustan period and expanded during the Flavian period. In the area around the Anna-Monastery and during excavations at the 'Stadtpalais' in 2017, a number of graves from the Augustan period were discovered. These graves lay underneath structures associated with the vicus. A number of cemeteries lined the roads leading out of the vicus to the east, south-east and west. The cemeteries were in use from the time of Augustus into Late Antiquity, continuing into the Merovingian Period.

### Relevant factors affecting the property and risk management

Factor	Intensity	Description and protective measures
(i) Residential development/construction	Minor	Damage to archaeological remains will be prevented or minimised in accordance with the monument protection law.

## Presentation

Remains of the walls of the Late Roman fort are visible in the south-west corner of the church of St Peter and Paul, and behind the town hall. In the cellar of the 'Alten Jugendheims' (the old youth centre) there are remains of the hypocaust which served the praetorium of the auxiliary fort. Finds and the foundations of an arcade from the 2<sup>nd</sup> century AD. are displayed in the Roman Museum. The history of Roman Remagen is part of the town's sightseeing walk for tourists. Information boards are located at various points along the walk.

## Community involvement

Not applicable.

## Ancient sources

The site is listed as *Rigomagus* in the *Tabula Peutingeriana* (Segm. III.1), a medieval copy of a Roman road map. According to the Late Roman historian Ammianus Marcellinus, at *Rigomagus* only the fort of Remagen and a tower south of Cologne survived the Germanic invasion of AD 356 (Amm. Marc. 16,3).

## Further Details

### Main building phase(s)

- 1 Augustan period (timber)
- 2 Tiberio-Claudian period–69/70 (timber)
- 3 Flavian (stone)
- 4 End of the 3<sup>rd</sup>/beginning of the 4<sup>th</sup> century AD (stone)

### Main research activities

excavations since the 19<sup>th</sup> century  
2001, 2010: scientific evaluation of the finds and contexts

### Garrisons

cohors VIII Breucorum: Tiberio-Claudian period – 69/70  
cohors I Tracorum (equitata?): Tiberio-Claudian period – 69/70  
cohors II Varcianorum equitata civium Romanorum: Vespasian period  
cohors I Raetorum: Vespasian period – end of the 1<sup>st</sup> century AD  
cohors I Flavia (Hispanorum equitata pia fidelis): first half of the 2<sup>nd</sup> century AD – c. 250

### Literature

Henrich 2018; Thiry 2011a; Thiry 2011b; Friedrich 2010a; Friedrich 2010b; Mucke et al. 2006; Friedrich 2001.

Fig. 252 Overview of the elements of the archaeological complex, with projection of the nominated property and buffer zone.

Fig. 253 Plan of the excavated areas at Remagen.

Fig. 254 Photo of Early Roman timber revetment at the river bank at fort of Remagen.

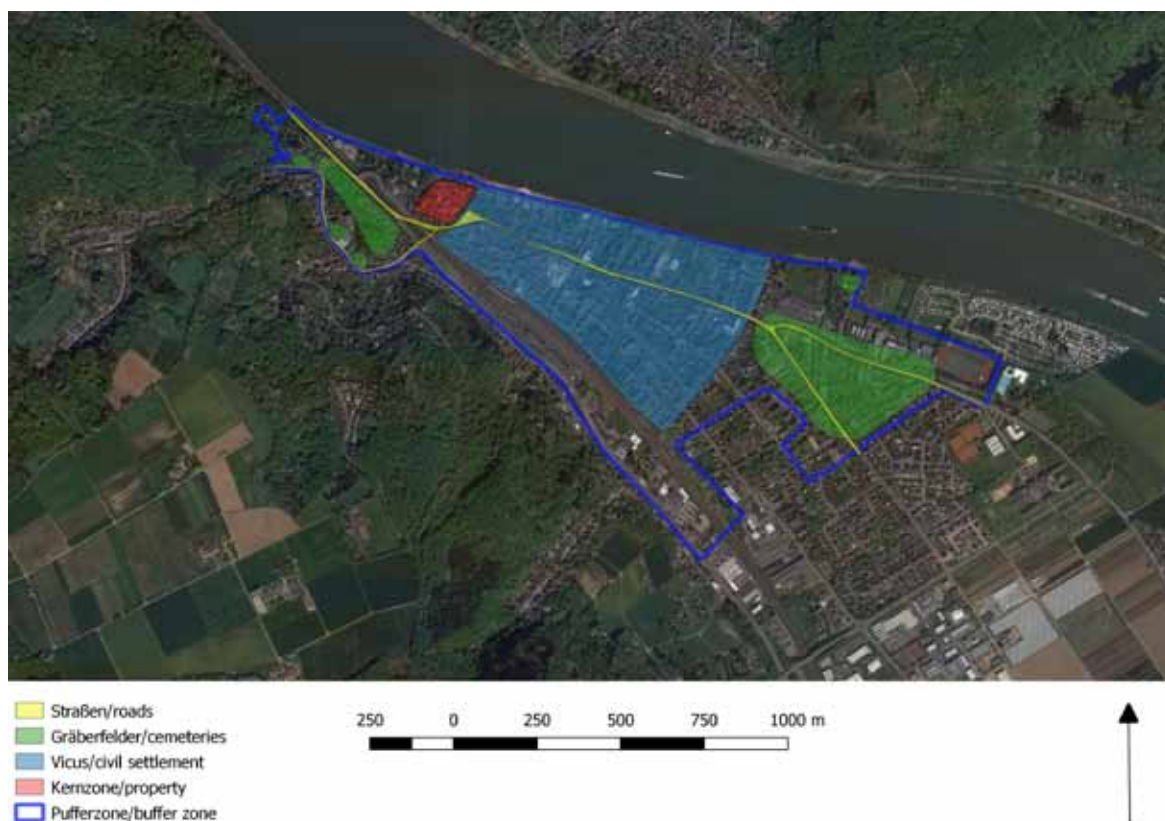


Fig. 252



Fig. 253





Fig. 254

