

HILL END CHALK PIT

GREENSPACE ACTION PLAN (GAP)

2018 – 2023



Site Summary

Site Name:	Hill End Chalk Pit
Site Address:	Intersection of B651 and Hitchwood Lane SG4 7RW
Grid Ref:	TL197239
Size:	0.5ha
Ownership:	North Hertfordshire District Council
Designations:	Registered Common Land Local Wildlife Site (28/020) Regionally Important Geological Site (RIGS) Denotified SSSI

Brief

Hill End Chalk Pit is a secluded site, of interest both for its geology and for its remnant chalk grassland. The aims of this Greenspace Action Plan are to:

- Restore this valuable habitat
- Put in place a schedule of ongoing management to maintain the habitat in the longer term
- Improve signage and interpretation to raise awareness of the site

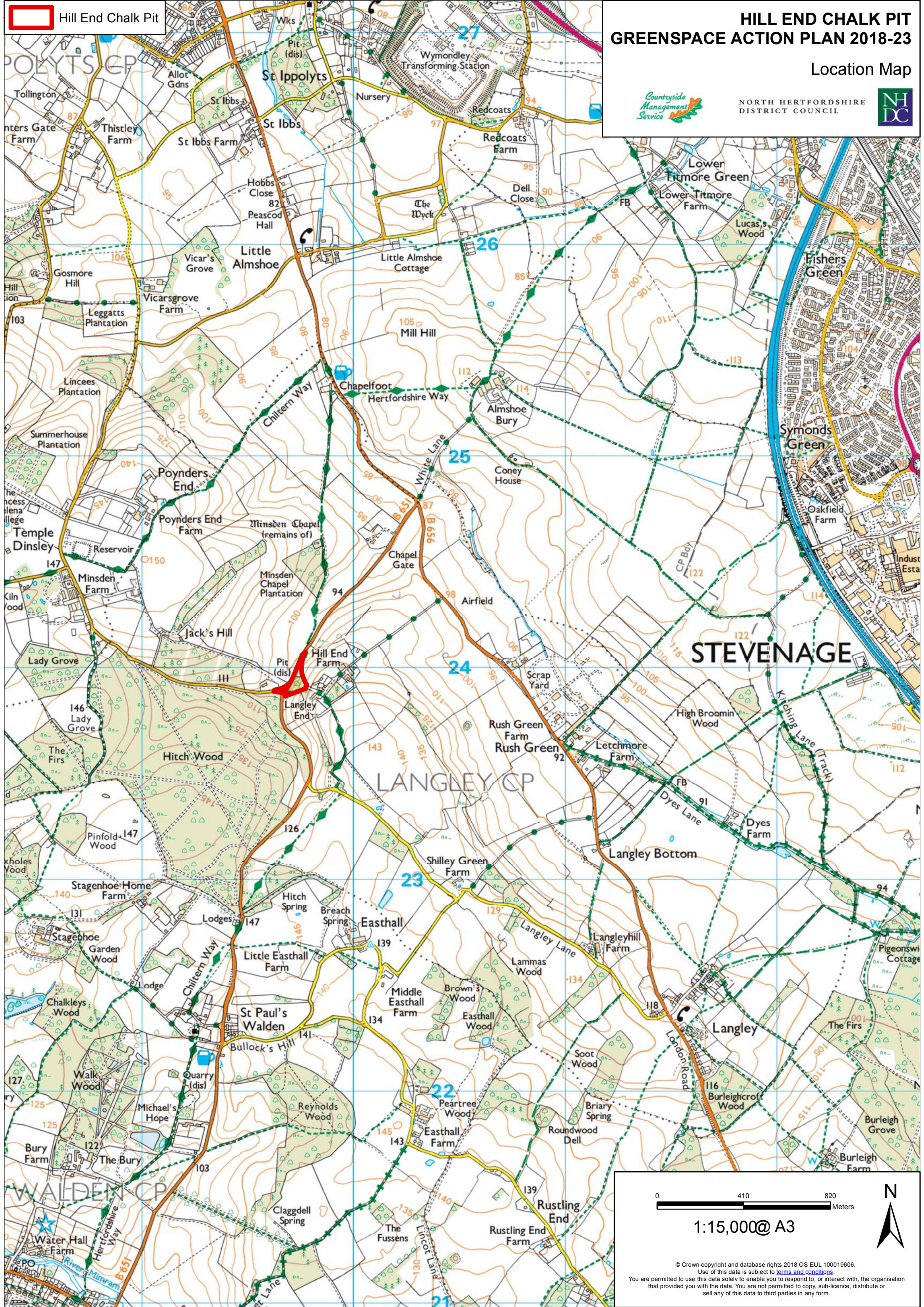
Hill End Chalk Pit

HILL END CHALK PIT GREENSPACE ACTION PLAN 2018-23

Location Map



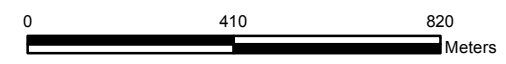
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DISTRICT COUNCIL



STEVENAGE

LANGLEY CP

WALDEN CP



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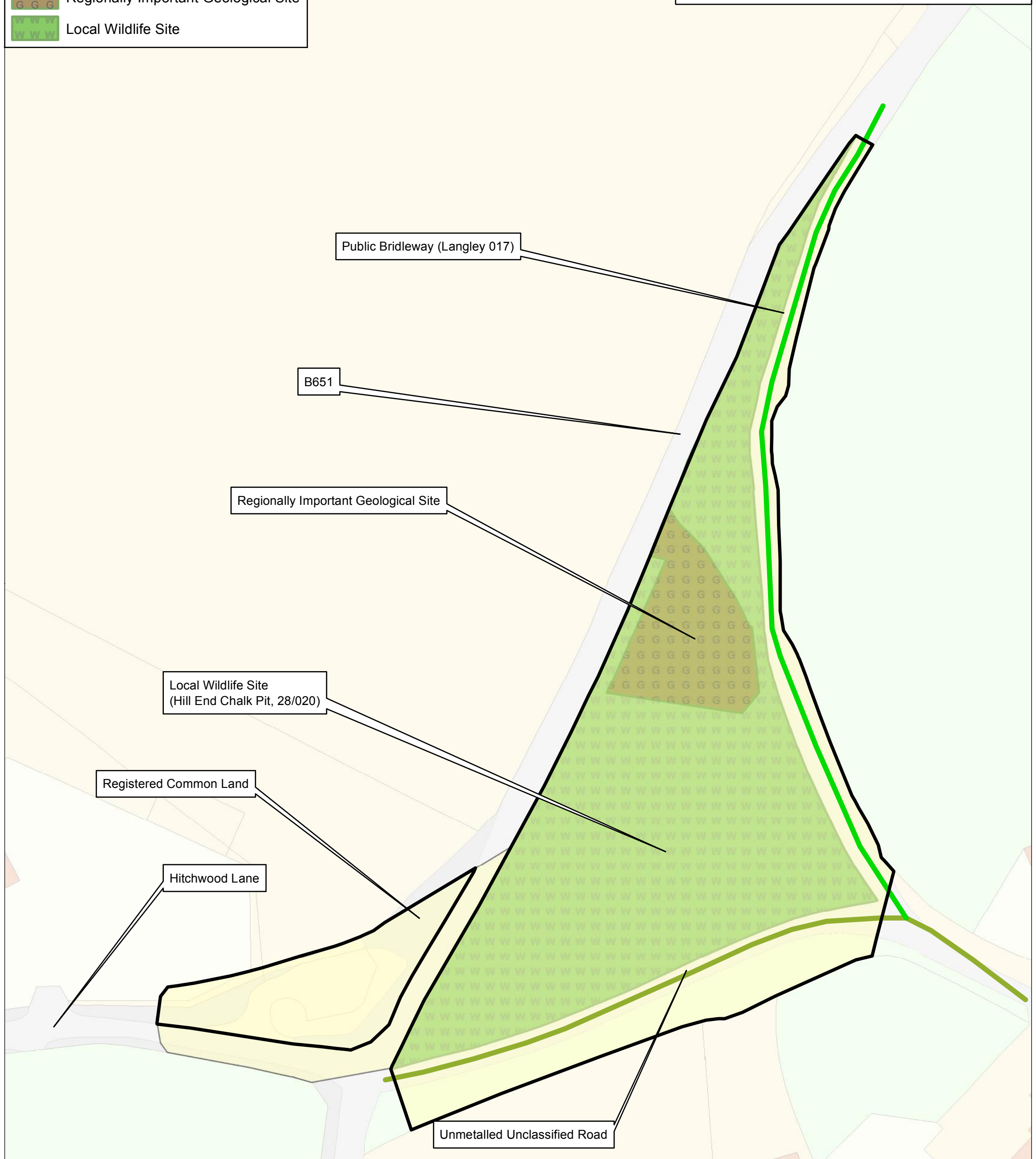
-  Site boundary
-  Bridleway
-  Unmetalled UCR
-  Common Land
-  Regionally Important Geological Site
-  Local Wildlife Site

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Constraints Map



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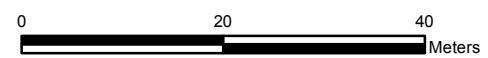
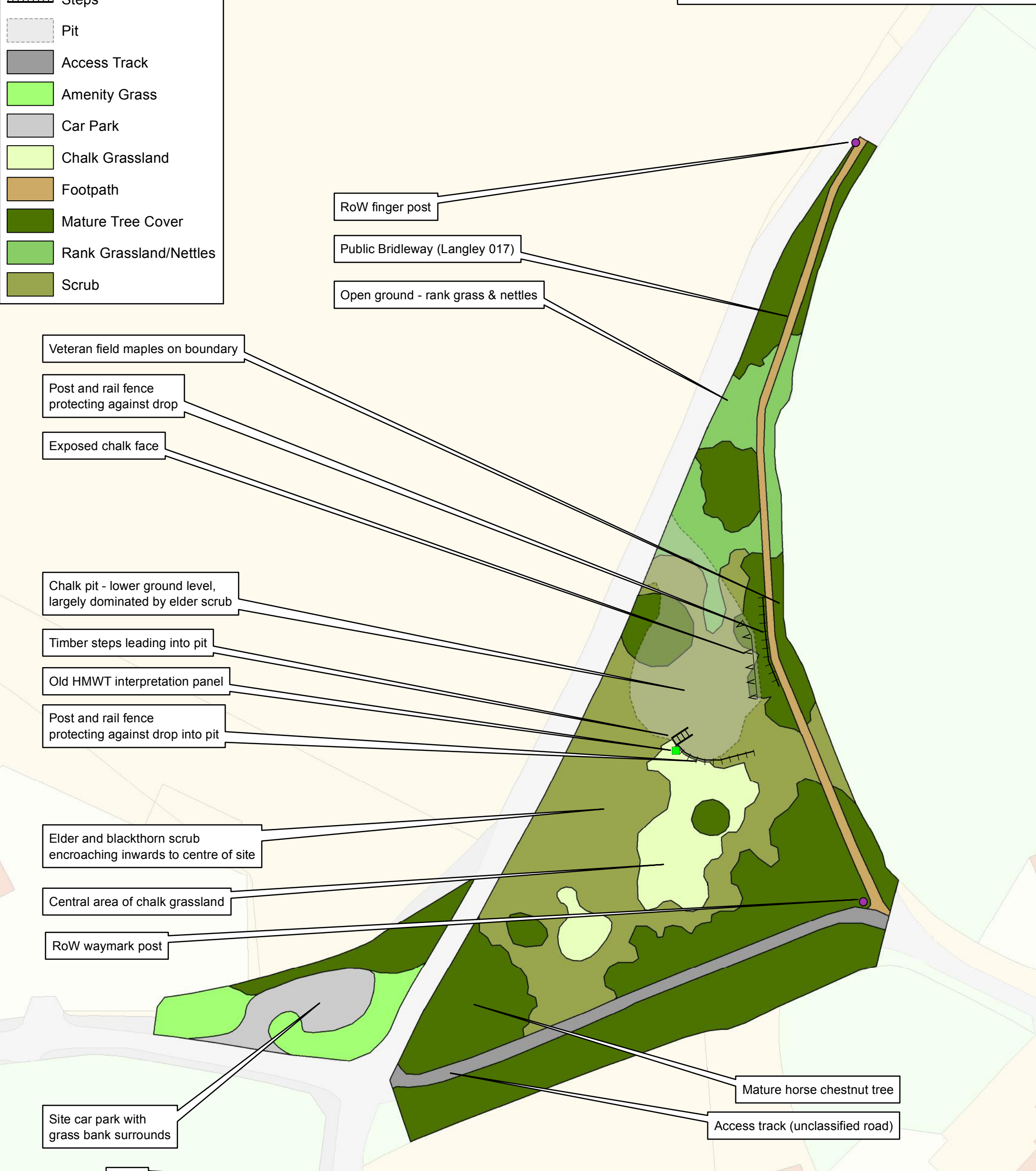
Site Description Map



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- Finger/Waymark Post
- Interpretation Panel
- △ △ △ △ Exposed chalk face
- ++++ Fence
- ▤▤▤▤ Steps
- ▭ Pit
- ▭ Access Track
- ▭ Amenity Grass
- ▭ Car Park
- ▭ Chalk Grassland
- ▭ Footpath
- ▭ Mature Tree Cover
- ▭ Rank Grassland/Nettles
- ▭ Scrub



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1. Site Description

1.1 Introduction

A small, disused chalk pit located 3km to the west of Stevenage. The B651 road passes the site; on the opposite side of the road is a car park that serves both the chalk pit and the adjacent Hitch Wood. The area owned by NHDC contains the disused pit, a small area of chalk grassland and associated scrub, with mature woodland around the peripheries.

1.2 Designations

Hill End Chalk Pit is Registered Common Land and a Local Wildlife Site due to its chalk grassland habitat. The pit itself is identified as a Regionally Important Geological Site (RIGS), a non-statutory category for the most important places for geology and geomorphology outside SSSIs. Indeed it was previously notified as a geological SSSI, from 1953 until denotification in 1987.

1.3 Geography, Landscape and Historic Environment

The site sits on an extensive chalk scarp within a sloping chalk landscape, part of a long narrow belt of land facing the Langley valley. Land use in the area is mixed, with arable land on gentler slopes and grazing and mature deciduous woodland cover on steeper ground. Hawthorn hedges enclose fields, with small sunken lanes and tracks between dropping down the valley side (see the Hertfordshire Landscape Character Assessment, Langley Scarp). Soils are fertile, lime rich, loamy and freely draining over chalk geology. The site itself is broadly west facing, on the eastern slope of a small valley.

Hill End is a small triangular area of common land, typical of the many ends and greens of Hertfordshire. These have lanes and tracks entering at each corner, and are medieval in origin. The 1881 OS map shows chalk extraction along the western edge of the green, with a broader area at the north end. The 1898 map shows this as a circular chalk pit, which by 1924 had grown into a more substantial pit with a track entering from the road.

1.4 Geology

According to 'A Geological Conservation Strategy for Hertfordshire', published by the Hertfordshire RIGS Group:

This pit is of national stratigraphic and international palaeontological importance, but has lost its original SSSI status and is now very degraded. It is the type locality of the Hitch Wood Hardground at the top of the Chalk Rock. This hardground is exceptionally fossiliferous here, and has probably yielded more fossils of all groups (notably ammonites) than any other Chalk Rock locality apart from the Kensworth Chalk Pit GCR site, Bedfordshire.

The chalk is a very pure limestone deposited in a sub-tropical sea 70-95 million years ago. Typical fossils found in the chalk include brachiopods, bivalves and sea-urchins which inhabited the

calcareous muds lying on the sea-floor. The site gives its name to the siliceous sponge genus *Hillendia*, and is the type locality of the genus. Two fossil ammonite species, *Subprionocyclus hitchinensis* and *Subprionocyclus branneri* have been described from this site after being discovered there.

1.5 Habitats & Wildlife

The primary habitat of interest at Hill End Chalk Pit is a small area of unimproved chalk grassland on a southwest-facing slope, surrounded and being invaded by scrub (pictured on the front page). The site is very rich in flowering plants and nutrient poor. Plants recorded include common twayblade (*Neottia ovata*), wild basil (*Clinopodium vulgare*), wild parsnip (*Pastinaca sativa*), knapweed (*Centaurea nigra* agg.), perforate St John's wort (*Hypericum perforatum*), sweet violet (*Viola odorata*), agrimony (*Agrimonia eupatoria*), hedge bedstraw (*Galium mollugo*), wild marjoram (*Origanum vulgare*), burnet saxifrage (*Pimpinella saxifraga*), common bent (*Agrostis capillaris*) and red fescue (*Festuca rubra*).



Exposed chalk face in pit, steps leading into pit and common twayblade

Due to a lack of management in recent years, the grassland is losing ground to the surrounding invading scrub. Scrub species include buckthorn (*Rhamnus cathartica*), field maple (*Acer campestre*), and spindle (*Euonymus europaeus*). The pit itself is dominated by elder scrub, with nettles during the summer months.

Mature trees occupy the eastern portions of the site, including horse chestnut and field maple. There are two notable field maples along the bridleway, old coppice stools displaying veteran characteristics. Prolific honeysuckle occupies the transition between woodland and chalk scrub.

The pit contains the biggest colony of the snail *Azeca goodalli* known in the county. This species occurs locally amongst moss, herbage and ground litter in woodlands, hedgerows and scrub, usually though not always on calcareous soils, and it prefers light shade. Frequent butterflies include the common blue, orange-tip and gatekeeper. Many species of bird and mammal flourish on the site, and all three species of woodpecker frequent the area.

1.6 Access, Facilities and Infrastructure

The car parking area, which also serves Hitch Wood and is often busy, is in reasonably good condition albeit with some minor potholes. It is surrounded by grass banks that are mown regularly. There is no signage at present here to inform visitors of the site.

An unmetalled unclassified road leads up the south side of the site towards the cluster of houses up hill to the east. There is no formalised access leading from this track into the pit, rather a couple of worn paths leading through the scrub towards the pit.

The open edges of the pit are fenced with post & rail fencing for safety. An HMWT interpretation panel is installed next to a flight of timber steps that lead into the pit. There is some maintenance required on the steps and fencing.

A Public Bridleway (Langley 017) runs along the site's eastern edge, from the B651 at the site's northernmost tip to the access track.

1.7 Community, Management and Events

A group of local residents has an interest in the site and is keen to provide voluntary support. The Hertfordshire Geological Society has also had involvement in the site in the past, and its members will be interested in practical tasks or supporting educational activities.

2. Management Prescriptions

2.1 Vegetation management – year 1

The priority for the site is to 'reset' the extent of the scrub through one-off works in the first year of the plan. This will protect the surviving area of chalk grassland, and allow for the restoration of this grassland in areas which have been recently colonised by scrub. Carrying out this work in one winter will make future management much more straightforward, and eliminate the need for indefinite annual scrub clearance by volunteers. Areas for initial scrub clearance are marked on the year 1 action plan map. Retained scrub should have a wavy edge to maximise the interface between scrub and grassland.

Scrub clearance should be achieved in two ways. In the grassland south of the chalk pit, contractors should be employed to use an excavator to knock over and uproot all the scrub encroaching on the chalk grassland. If possible, the material should be burnt on site, gathering all material in one location within the cleared area. Constraints in relation to the use of an excavator or burning are the presence of overhead line anchors into the scrub on the site, and an overhead line across the site.

In an experimental 5m x 5m plot within the cleared area, around 5cm of topsoil should be scraped off the surface. This plot should be monitored in year 2 to assess whether characteristic chalk grassland plants return more successfully here compared to the remainder of the cleared area. If the experimental plot is successful, further plots should be created.

Work by contractors should include the removal of 4-5 scrubby trees within the chalk pit itself. These should be felled and stumps removed to make subsequent maintenance significantly easier. Access to the chalk pit from the road will require some clearance of shrubs and dead wood and will create an obvious track where none currently exists. Once this contract and the work noted in 2.6 have been completed, materials from the scrub clearance should be used to construct a vehicle barrier along the road side at the entrance to the pit.

A CMS volunteer group should also be engaged to work on the site in the first year of the plan. Their work would include clearing elder and other scrub from within the pit itself, to reveal the chalk workings and expose the main chalk face. All arisings not used to construct a barrier should be stacked in a single, accessible location. Following the task, a contractor with a chipper should be used to chip all arisings and remove from site.

2.2 Annual ongoing vegetation management

Following this scrub clearance, maintenance of the grassland will require annual summer cutting and raking of the grass, removing it to a nutrient rich sacrificial area under the trees. 5m margins around the scrub should be cut and raked once every other year to provide an overwintering refuge for invertebrates. The chalk pit itself should also be cut and raked once every other year. Winter scrub clearance may be required, but the need should be limited in the period of this plan. Scrub should be monitored and works take place if necessary. Local volunteers would also be able to carry out smaller scale vegetation removal through the summer, in order to keep access routes open.

Grazing is by far the most sustainable way to maintain biodiversity on sites such as this, preventing encroachment of scrub and reducing rough grasses to benefit wildflowers. Given the small size of the site, a small number of sheep or goats would be ideal. However, this would require a suitable local grazer to be found and the installation of fencing, ideally timber post and rail, around the perimeter. Two gated access points, from the unclassified road and the bridleway, would also be required. While this is the ideal option for long term management of the site, further assessment of feasibility is necessary.

2.3 Mature trees

The lower limbs of a large mature horse chestnut tree in the south west corner of the site should be assessed for their safety and reduced if necessary, particularly in the context of creating a more formalised access route underneath.

Existing fallen deadwood in the woodland section at the top of the slope should be retained as a contribution to overall site biodiversity. NHDC should include the site in their tree inspection schedule; a proactive visit every three years to assess for dangerous trees and take remedial action where necessary.

2.4 Access & Safety

There is currently no defined route into the centre of the site from either the southern unclassified road or the public bridleway. Overgrown vegetation along the bridleway should be cleared back to open up this route and improve accessibility, and the bridleway should then be kept clear from encroaching vegetation. Defined access points from both the bridleway and the unclassified road should be cleared, improving the welcome for visitors and making the site more obvious.

Access to the pit itself should also be improved, by lifting some of the lower tree branches over the steps, clearing scrub from all around the steps and upgrading and repairing the steps as necessary. A gate should be installed at the top of the steps.

The wooden barrier fence on the edge of the bridleway, above the main chalk face, should be extended around 15m further up the path to protect against the steep drop. Any wobbly posts should be firmed up or replaced, and vertical slats added to the lower half of the fence along its full length to make it safer for children. A caution sign at either end should be added, warning people of the drop.

Most visitors to the site will park in the car park on the other side of the B651. Whilst southbound traffic is reasonably visible, northbound traffic is far less so and this is a potentially dangerous crossing. HCC Highways should be consulted regarding the possibility of installing a "Slow" sign to alert northbound traffic. Roadside vegetation around the point where the lane opens onto the road should be cut back to improve sightlines for those crossing.

2.5 Interpretation & education

The previous HMWT interpretation panel should be replaced with a new panel, designed to the standard NHDC template. Most of the existing content can be refreshed and reused, and the sign can be installed in the same location, looking down into the pit. An additional interpretation panel should be installed at the car park, where most visitors are likely to find out about the pit, with a finger post to let people know how to access the site. Additional site signs at the entrance point from the unclassified road and along the bridleway would help visitors locate the site and advertise that it is publicly accessible.

Local residents have expressed a desire to see the pit used as a “working museum” which celebrates its geological interest. To this end, effort should be made to develop links with local schools, so that the site may be used as a local educational resource. Any visits could be supported by the Hertfordshire Geological Society, who would be able to provide guides and notes.

2.6 Geology

The geological interest of Hill End Chalk Pit is currently concealed by topsoil and vegetation. The chalk face should be opened up using an excavator, removing between 30cm and 50cm of topsoil to expose the important geological elements of the site. These are the Top Rock hardground (above the path within the pit), the Chalk Rock hardground (at the level of the path) and possibly the Caburn Marl (towards the floor of the pit). The face would be 3-5m wide, and its length would depend on the exact location of these important geological elements but might be 6-10m.

Work should take place under the supervision of the Hertfordshire Geological Society. Once opened, the face would require annual maintenance, and this could be carried out by Hertfordshire Geological Society volunteers working alongside a CMS volunteer group.

Safe access to the newly exposed geological face will need to be ensured. As well as improving the steps accessing the pit as noted above, the path leading around the pit to the face should be flattened using the excavator. A new set of wooden steps should be constructed along the side of the face to provide safe access to it.

Action Plan and Maps

One-off Actions (year 1, 2018-19)

Action	Timing	Delivery	Est. Cost	Spec. Ref	Status
Scrub clearance over grassland: excavator to uproot, stack and burn	Winter	CMS/Contractor		1	
Establish defined access routes into central grassland from close to car park	Winter	CMS/Contractor		1	
Fell trees and remove stumps inside pit	Winter	CMS/Contractor		1	
Use felled timber to prevent vehicles accessing chalk pit	Winter	CMS/Contractor		1	
Scrub clearance inside pit and around steps	Winter	CMS volunteers			
Scrub clearance along bridleway	Winter	CMS volunteers			
Create trial scrape for chalk grassland restoration	Winter	CMS volunteers		2	
Repair existing steps to upper pit	Winter	CMS volunteers			
Install gate at top of existing steps	Winter	CMS volunteers			
Carry out initial tree safety survey		NHDC			
Include in tree safety inspection schedule		NHDC			
Extend & reinforce existing timber fencing around drops	Winter	CMS volunteers			
Secure road safety signage		CMS/HCC Highways			
Cut back roadside vegetation around track opening	Winter	CMS/Contractor		1	
Design and install new interpretation panels		CMS/NHDC		3	
Install finger posts at car park, on unclassified road and on bridleway		CMS/NHDC		4	
Install NHDC entrance sign on unclassified road		CMS/NHDC			
Grazing feasibility – seek suitable local grazier		CMS/NHDC			
Develop links with local schools to use the site as an educational resource	Ongoing	Local volunteers/ HGS			
Expose new geological face in chalk pit	Winter	CMS/Contractor/ HGS		5	
Widen path from steps to geological face	Winter	CMS/Contractor		5	
Install timber steps to provide safe access to geological face	Winter	CMS volunteers			
Review outcomes and produce new Greenspace Action Plan 2023-28	Year 5	CMS/NHDC			

Annual and Regular Actions (years 1-5, 2018-23)

Action	Timing	Delivery	Est. Cost	Spec. Ref	Status
Minor vegetation works – maintain access routes	Summer	Local volunteers			
Cut and rake vegetation inside pit	Summer, years 3/5	CMS volunteers			
Cut and rake chalk grassland	Summer	CMS volunteers			
Cut and rake 5m buffer between scrub and chalk grassland	Summer, years 3/5	CMS volunteers			
Monitor scrub development and plan scrub clearance if required	Winter	CMS volunteers			
Maintain geological face	Summer	HGS/CMS volunteers			

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Year 1 Actions (2018-19)



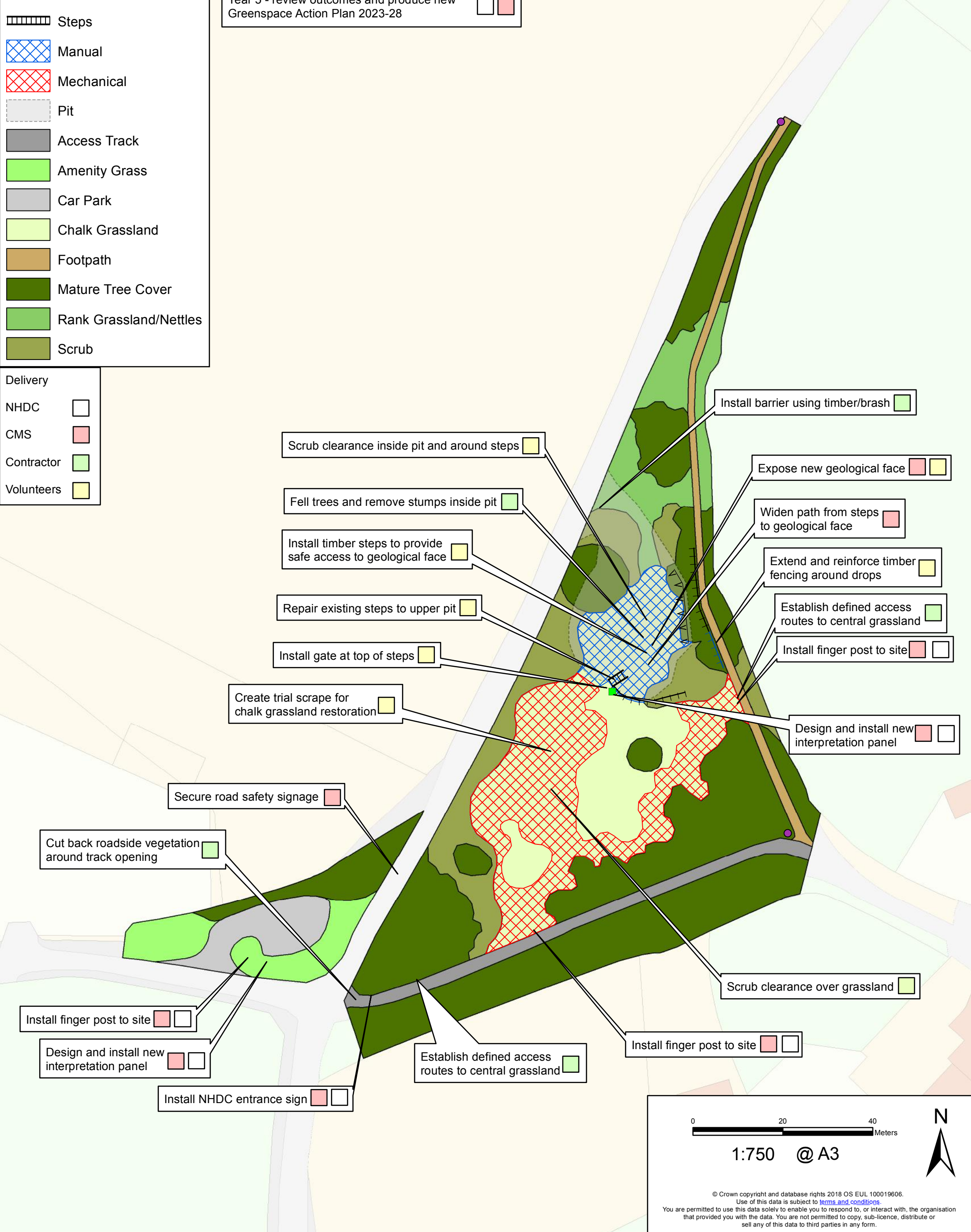
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- Finger/Waymark Post
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- △ △ △ △ Exposed chalk face
- ++++ Extended Fence
- ++++ Fence
- ▤▤▤▤ Steps
- ▤▤▤▤ Manual
- ▤▤▤▤ Mechanical
- ▭ Pit
- ▭ Access Track
- ▭ Amenity Grass
- ▭ Car Park
- ▭ Chalk Grassland
- ▭ Footpath
- ▭ Mature Tree Cover
- ▭ Rank Grassland/Nettles
- ▭ Scrub

- Carry out initial tree safety survey
- Include in tree safety inspection schedule
- Grazing feasibility - seek suitable local grazier
- Develop links with local schools to use the site as an educational resource
- Year 5 - review outcomes and produce new Greenspace Action Plan 2023-28

- Delivery
- NHDC
 - CMS
 - Contractor
 - Volunteers



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Annual and Regular Actions (2018-23)



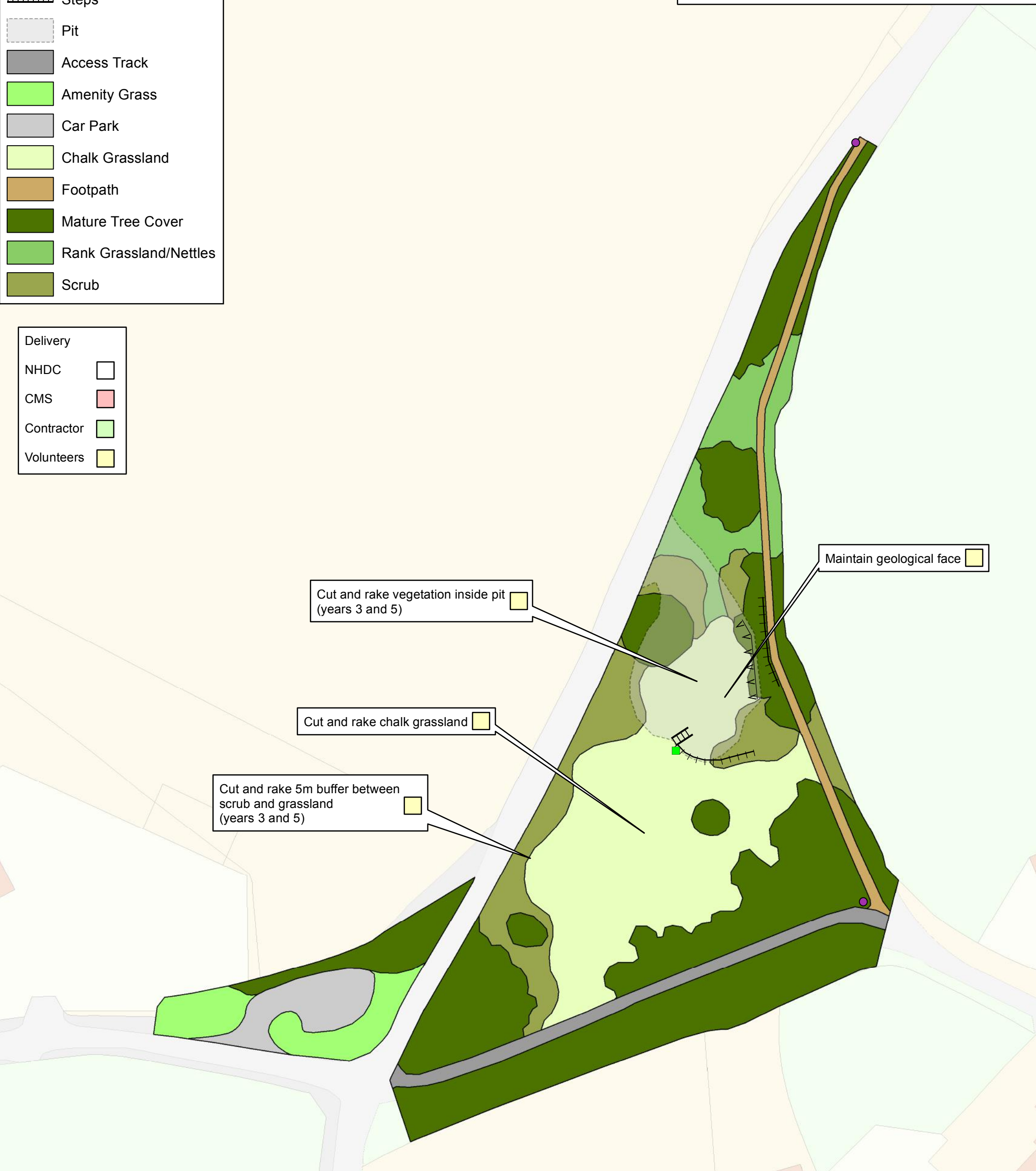
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- ▭ Scrub

- Minor vegetation works to maintain access routes ▭
- Monitor scrub development and plan scrub clearance if required ▭

- Delivery
- NHDC ▭
 - CMS ▭
 - Contractor ▭
 - Volunteers ▭



Cut and rake vegetation inside pit (years 3 and 5)

Cut and rake chalk grassland

Cut and rake 5m buffer between scrub and grassland (years 3 and 5)

Maintain geological face

0 20 40 Meters

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Specifications

1. Scrub clearance over chalk grassland
 - a. Use an excavator to uproot all scrub in the area mapped around the remnant chalk grassland, including access points from the unclassified road and the bridleway.
 - b. Retained scrub to have a wavy boundary with the restored grassland.
 - c. Fell around five trees as individually marked within the chalk pit, and remove stumps.
 - d. Establish temporary vehicular access to the chalk pit by clearing any necessary trees, shrubs or dead wood.
 - e. Once geological works are complete, construct a barrier along roadside entrance to pit using felled timber to prevent vehicular access.
 - f. Cut back roadside vegetation around entrance to unclassified road to improve visibility when crossing the road.
 - g. Stack all felled and uprooted material within the cleared area in a location agreed with the supervising officer, and burn.
2. Trial scrape for chalk grassland restoration
 - a. Mark out two similar 5m x 5m plots within the cleared area.
 - b. Scrape around 5cm of topsoil from one plot, disposing of the soil within the remaining scrub.
 - c. Leave the other plot untouched.
 - d. Monitor the plots in year 2, and if necessary in subsequent years, to assess the impact of the scrape on the regeneration of characteristic chalk grassland plants.
 - e. If the trial is successful, create additional plots around the cleared area.
3. Design and install new interpretation
 - a. Design and produce an A1 interpretation board which provides orientation for visitors and information on the geological and botanical interest of the site, and provide PDF version of the same
 - b. Design to be based around a full colour 3D hand drawn watercolour map of the site and surrounding area, showing main routes and features, accompanied by photographs and text
 - c. The design should be based on the NHDC house style.
 - d. Provide two proof stages of full colour design in hard copy and PDF format.
 - e. Supply on an angled lectern frame incorporating a GRP panel
 - f. Quantity: 1
 - g. Delivery to CMS for installation by volunteers
4. Design and install fingerposts
 - a. Supply three wooden fingerposts of green English oak, with a smooth sanded natural finish.
 - b. The dimensions of each post should be: length 1800mm x width 100mm x depth 100mm with a four-way weathered top.
 - c. The wooden fingers should be routed with the text 'Hill End Chalk Pit' on both sides, infilled with white paint appropriate for external use.
 - d. Provide a proof stage of the design prior to production.
 - e. Delivery to CMS for installation by volunteers.

5. Expose new geological face in chalk pit
 - a. Use an excavator to remove topsoil and any vegetation from an area around 3m wide by 10m long (exact area to be confirmed) on the bank of the chalk pit.
 - b. The depth of excavation should be between 30cm and 50cm.
 - c. Work should be directly supervised by the Hertfordshire Geological Society.
 - d. Material excavated to be deposited within the chalk pit, in a location agreed with the supervising officer.
 - e. Excavator also to be used to create a flatter, wider access path between the bottom of the steps and the new chalk face.