

Package 1 - Chellow Whole Site Works Package



PART A: WORKS SPECIFICATION

1. Works Quantities & Requirements

- a. The objective of this works package is the delivery of various works on multiple works sites across the Chellowater treatment works catchment.
- b. The works include:
 - i. The supply, cutting & spreading of heather brash
 - ii. Receiving delivery of initial & maintenance lime, seed & fertiliser & application by hand to bare peat areas
 - iii. The supply & construction of stone dams & coir log dams
 - iv. The supply & installation of temporary trackway at Thornton Lift Site
 - v. The construction of peat dams & re-profiling of gully systems
 - vi. The planting of sphagnum moss plug plants
 - vii. Heather cutting for diversification
 - viii. Landscaping of 65 metres of bridleway
 - ix. The marshalling of all aerial load lifting operations required for the works
- c. Location maps outlining the location of the works are provided in Part B
- d. A table is provided below summarising the type and quantity of work to be delivered at each works site:

Treatment & Unit	Works Site						Total
	Thornton	Stubden	Nab Water	Bodkin Farm	Yeoman Hill	Oxenhope Moor	
Brash (Bags)	55	12	321	25	4	240	660
Year 1 Lime, Seed & Fertiliser (bags)	55	12	321	25	4	240	660
Year 2 Lime & Fertiliser (bags)	55	12	321	25	4	240	660
Re-profiling (m)	181	146	116	249	25	0	717
Sphagnum planting (@2500 plugs per ha) (plugs)	78,250	16,000	27,200	55,000	41,750	0	218,200
Grip/Gully Blocking: Peat (Dam)	86	5	162	61	52	92	458
Grip/Gully Blocking: Coir (Dam)	17	0	0	0	0	0	17
Grip/Gully Blocking: Stone (Dam)	27	13	44	19	0	64	167
Heather Cutting (ha)	1.9	0	0	0	0	0	1.9

Bridleway Landscaping (m)	65	0	0	0	0	0	65
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2. Works Dates & Programme

- Works Commencement Date: 15/08/2022
- Works Completion Date: 31/03/2023
- Restricted dates: There may be restricted dates for aerial load lifting from Warley Reservoir Lift Site due to the sailing club activities. See further information below in Lift Site Details
- A table is provided below outlining the proposed works programme

Year	Period	Works element
1	June 2022 to July 2022	Contractor prepares/finalises HSSE & CDM documentation.
	July/August 2022 to March 2023	Supply, fly and install stone dams and coir log dams
		Machine work: Peat dams, re-profiling & path work
		Supply, fly and spread heather Brash
	Planting of sphagnum moss plugs	
March 2023	Initial lime, seed and fertiliser application (hand)	
2	March 2024	Maintenance Lime and Fertiliser (hand)

3. Materials Supply - Heather Brash

- The contractor will be required to cut & supply a total of 660 bags of Heather Brash
- The contractor will be required to cut and supply the bags of Heather Brash from the cutting sites provided by the Authority.
- Three potential cutting sites have been identified for the works:
- Thornton Moor
- Midgley Moor
- Haworth Moor
- At the time of writing the use of the Cutting Sites is subject to agreement with external stakeholders
- Details of the cutting sites can be found below in "Cutting Site Details"

4. Materials supply – Stone and Coir Logs

- The contractor will be required to supply a total of 126 tonnes of gully blocking stone and 17 coir logs for the works
- A table is provided below outlining the quantities of materials to be delivered to each lift site

Lift Site	Works Site	Works	Unit	Quantity
Thornton Reservoir Lift Site	Thornton & Nab Water	Stone	750kg stone	74
		Coir	1 coir log	17

Warley Reservoir Lift Site	Oxenhope & Nab Water	Stone	750kg stone	74
Haworth Moor Lift Site	Bodkin Farm	Stone	750kg stone	19

5. Preparation of materials for transportation to the Works Sites

- a. The Contractor is required to sort the Materials into loads for transportation to the Works Sites. It is the Contractor's responsibility to ensure that the means of sorting the Materials into loads and the transportation of loads are suitable and safe.
- b. The Contractor is responsible for supplying all Equipment (except airlifting strops) and Machinery required for the preparation and transporting of loads.

6. Marshalling of Aerial Load Lifting & material deliveries

- a. The contractor will be responsible for all marshalling of Aerial Load Lifting and material deliveries at the lift sites and works sites
- b. Please refer to the main Tender "MFF 133 2022-2025 Whole Site Works" for detailed information on marshalling requirements.

7. Spreading of Heather Brash, Installation of stone dams & coir log dams

- a. The contractor will be required to spread 657 bags of heather brash at the works sites.
- b. The contractor will be required to install & construct 167 stone dam units and 17 coir logs at the works sites.
- c. The spreading of heather brash, installation of stone dams & coir log dams will follow the standard specifications as outlined in the main Tender "MFF 133 2022-2025 Whole Site Works"

8. Re-profiling of gully systems

- a. The contractor will be required to re-profile 717 metres of gully sides.
- b. 35 metres of re-profiling will likely be required to be done by hand alongside brash spreading, due to access issues. It is not anticipated that this would take any more than 1 day for 2 workers, as the re-profiling is of small hag drip edges and not a full gully system. This specific section is outlined in the location maps.
- c. Re-profiling of gully systems will follow the standard specifications as outlined in the main Tender "MFF 133 2022-2025 Whole Site Works"

9. Planting of Sphagnum Moss

- a. The planting of sphagnum moss will follow the standard specifications as outlined in the main Tender "MFF 133 2022-2025 Whole Site Works"

10. Heather cutting for diversification

- a. Heather cutting will follow the standard specifications as outlined in the main Tender "MFF 133 2022-2025 Whole Site Works"
- b. Day rates are requested in the itemised costs, for any heather cutting work needed in addition to cutting work done as part of the heather brash supply.

11. Application of lime, seed & fertiliser

- a. The contractor will be required to take delivery of initial and maintenance lime, seed and fertiliser for the works.
- b. The contractor will be required to apply the lime, seed and fertiliser by hand to the bare peat areas at the works sites, which must occur during March only

12. Bridleway Landscaping

- a. There is a bridleway which runs across Thornton Moor named “Hambleton Lane”
- b. In areas along the bridleway, there is some erosion of peat.
- c. Landscaping work involving landscaping of vegetation, to prevent further widening of the bridleway is proposed in some locations.
- d. The authority is requesting day rates from the Tenderer to provide a 360 excavator with wide bog tracks and operator to undertake landscaping work on the bridleway.
- e. Day rates are also requested for consultation meetings to discuss the work requirements
- f. The exact specification of the work is still to be agreed with stakeholders, but it is proposed that the bridleway work could occur alongside the peat dam work on Thornton, whilst excavators are on the site.

13. Lift site information

- a. The delivery of works at Chellow will require multiple lift sites.
- b. At the time of writing the use of the Lift Sites is subject to agreement with external stakeholders
- c. Airlifting of stone & coir on to the **Thornton and Nab water** works sites is proposed to be from the **Thornton Reservoir Lift Site**.
- d. Airlifting of stone on to the **Oxenhope** work site is proposed to be from the **Warley Reservoir Lift Site**
- e. Airlifting of stone on to the **Bodkin Farm** works site is proposed to be from the **Haworth Moor Lift Site**
- f. Heather brash is proposed to be airlifted directly on to the works sites from the cutting sites. Refuelling of the helicopter during the airlifting of heather brash may be undertaken from any Lift Site.
- g. The Contractor must provide workers to marshal members of the public at the Lift Sites and Works Sites during the airlifting works and during deliveries of stone and coir logs.

14. Temporary Trackway

- a. The contractor will be required to supply & install a temporary trackway at Thornton Reservoir Lift Site, prior to stone deliveries & aerial load lifting.
- b. The contractor must remove the temporary trackway promptly as soon as airlifting work has been completed.
- c. The Trackway should provide an area that is large enough to allow access and egress to forwarding vehicles without them driving on any vegetation, and to allow storage of any Materials delivered to the Lift Site without affecting the surrounding vegetation.
- d. The Authority estimates the size of the trackway surface required to be approximately 20 metre x 20 metre (400m² total area)
- e. The Authority is requesting weekly rates from the contractor for the supply & installation of temporary trackway in the itemised costs

15. Lift Sites Details – Thornton Reservoir Lift Site

- a. **Lift Site Name:** Thornton Reservoir Lift Site
- b. **Description of location:** The proposed lift site is a field Located near to Thornton Moor Reservoir, south east of Oxenhope (see location maps)
- c. **Access Track / Road Surface:** The lift site can be accessed via a tarmac road
- d. **Access Restrictions:** TBC
- e. **Lift Site Surface:** Grass field
- f. **Trackway Required:** Yes

- g. **Storage of Materials allowed at lift site:** Yes
- h. **Helicopter refuelling permitted:** Yes
- i. **Traffic management required:** No
- j. **Livestock around Lift Site:** Unknown
- k. **Public Rights of Way / Footpaths:** The flight path when airlifting of the materials on to Thornton and Nab Water will cross a popular public footpath on Thornton moor.
- l. **Hazards Associated with Lift Site:** The Lift site is located close to public rights of way
- m. **SSSI:** No
- n. **Any other information:** The Lift Site is accessible to the public and as such, marshalling must be provided by the contractor during material deliveries and aerial load lifting. Access must be maintained for Yorkshire Water operatives and farm vehicles at all times.

16. Lift Sites Details – Warley Reservoir Lift Site

- a. **Lift Site Name:** Warley Reservoir Lift Site
- b. **Description of location:** Located near to Warley Moor Reservoir, south of Oxenhope (see location maps)
- c. **Access Track / Road Surface:** Stone track
- d. **Access Restrictions:** There may be restricted dates for material deliveries and aerial load lifting due to the sailing club activities. As such, Lift Site use for material deliveries and aerial load lifting is currently proposed for between October and March only. Helicopter re-fuelling may be possible from September onwards.
- e. **Lift Site Surface:** Stone track
- f. **Trackway Required:** No
- g. **Storage of Materials allowed at lift site:** Yes
- h. **Helicopter refuelling permitted:** Yes
- i. **Traffic management required:** No
- j. **Livestock around Lift Site:** No
- k. **Public Rights of Way / Footpaths:** None other than sailing club access
- l. **Hazards Associated with Lift Site:** The Reservoir site is accessed by Halifax sailing club regularly from July to October.
- m. **SSSI:** Yes
- n. **Any other information:** The Lift Site is accessible to the public and as such, marshalling must be provided by the contractor during material deliveries and aerial load lifting. Access must be maintained for Yorkshire Water operatives, Sailing club users and farm vehicles at all times.

17. Lift Sites Details – Haworth Moor Lift Site

- a. **Lift Site Name:** Haworth Moor Lift Site
- b. **Description of location:** The proposed lift site is located west of Oxenhope (see location maps)
- c. **Access Track / Road Surface:** Stone track
- d. **Access Restrictions:** TBC
- e. **Lift Site Surface:** Stone track
- f. **Trackway Required:** No
- g. **Storage of Materials allowed at lift site:** Yes

- h. **Helicopter refuelling permitted:** Yes
- i. **Traffic management required:** No
- j. **Livestock around Lift Site:** Unknown
- k. **Public Rights of Way / Footpaths:** There are several public footpaths across Haworth Moor which are located in close proximity to the lift site.
- l. **Hazards Associated with Lift Site:** Proximity to public rights of way
- m. **SSSI:** Yes
- n. **Any other information:** Access must be maintained for farm vehicles along the track at all times. The Lift Site is accessible to the public and as such marshalling must be provided by the contractor during material deliveries and aerial load lifting.

18. Lift Sites Details – Midgley Moor Lift Site

- a. **Lift Site Name:** Midgley Moor Lift Site
- b. **Description of location:** Midgley Moor Lift Site is located East of Hebden Bridge (see location maps)
- c. **Access Track / Road Surface:** Stone track – may be unsuitable for towing vehicles
- d. **Access Restrictions:** TBC
- e. **Lift Site Surface:** Stone track/open moor
- f. **Trackway Required:** No
- g. **Storage of Materials allowed at lift site:** Yes
- h. **Helicopter refuelling permitted:** Yes
- i. **Traffic management required:** No
- j. **Livestock around Lift Site:** Unknown
- k. **Public Rights of Way / Footpaths:** There are several public footpaths across Midgley Moor, which are located in close proximity to the lift site.
- l. **Hazards Associated with Lift Site:** Proximity to public rights of way
- m. **SSSI:** Yes
- n. **Any other information:** Access must be maintained for farm vehicles along the track at all times. The Lift Site is accessible to the public and as such marshalling must be provided by the contractor during material deliveries and aerial load lifting.

19. Works Sites information

- a. The delivery of works at Chellow will be across multiple works sites
- b. The Thornton, Nab Water, Oxenhope, Yeoman Hill and Bodkin Farm works sites are all located near the village of Oxenhope, west of Bradford
- c. Location maps are provided in Part B
- d. There is a windfarm to the south of Nab Water, this may affect airlifting flight lines.

20. Works Sites Details – All Works Sites

- a. **Works Sites Names:**
 - i. Thornton
 - ii. Nab Water
 - iii. Oxenhope
 - iv. Yeoman Hill
 - v. Bodkin Farm
- b. **Access Restrictions:** TBC
- c. **Specified Access points:** Access to the works sites on foot and for excavators is possible via several tracks/public rights of way. (see locations maps). Gate keys may be required for access.

- d. **Public Rights of Way / Footpaths:** The flight path when airlifting of the materials on to Thornton and Nab Water will cross a popular public footpath on Thornton moor.
- e. **Vehicles allowed on Works Sites:** Helicopters for aerial load lifting. Excavators for peat dam construction & ATV for re-fuelling
- f. **Hazards associated with the Works Sites:** There is a windfarm located on Ovenden Moor.
- g. **SSSI:** Yes

21. Cutting Sites Details – Thornton Moor

- a. **Cutting Site Name:** Thornton Moor
- b. **Description of location:** Located near to Thornton Moor Reservoir, south of Oxenhope (see location maps)
- c. **Access route:** Via a bridleway/public rights of way – Gate keys needed
- d. **Access Restrictions:** TBC
- e. **Storage of Materials allowed at lift site:** Yes
- f. **Livestock around Site:** Possible
- g. **Public Rights of Way / Footpaths:** Yes
- h. **Hazards:** Proximity to public rights of way
- i. **SSSI:** Yes

12. Cutting Sites Details – Midgley Moor

- a. **Cutting Site Name:** Midgley Moor
- b. **Description of location:** Midgley Moor cutting site is located East of Hebden Bridge (see location maps)
- c. **Access route:** The cutting site and moor can be access from a stone track near a farm, which is located approximately 1km east of Hebden bridge golf club – Gate keys may be needed.
- d. **Access Restrictions:** TBC
- e. **Storage of Materials allowed at lift site:** Yes
- f. **Livestock around Site:** Unknown
- g. **Public Rights of Way / Footpaths:** Yes
- h. **Hazards:** Proximity to public rights of way
- i. **SSSI:** Yes

13. Cutting Sites Details – Haworth Moor

- a. **Cutting Site Name:** Haworth Moor
- b. **Description of location:** Haworth Moor Cutting Site is located west of Oxenhope (see location maps)
- c. **Access route:** The cutting site and moor can be access from a stone track – Gate keys may be needed.
- d. **Access Restrictions:** TBC
- e. **Storage of Materials allowed at lift site:** Yes
- f. **Livestock around Site:** Unknown
- g. **Public Rights of Way / Footpaths:** Yes
- h. **Hazards:** Proximity to public rights of way
- i. **SSSI:** Yes

PART B LOCATION MAPS

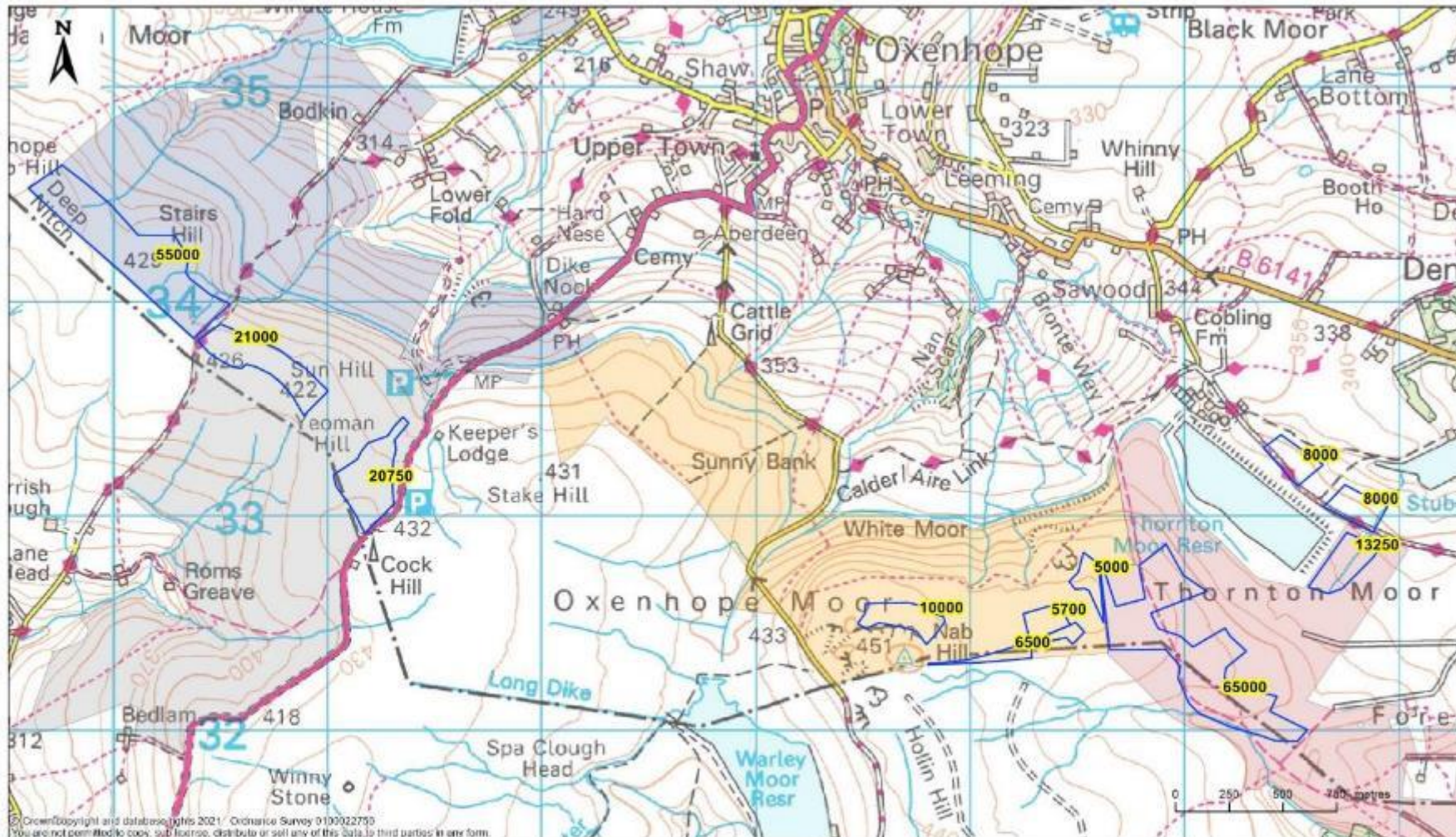


Stakeholder Database

 Bodkin Farm	 Thornton Moor
 Midgley Moor	 Yeoman Hill
 Nab Water	
 Oxenhope Moor	

Location of Chellow works sites, Thornton, Nab Water, Oxenhope, Yeoman Hill, Bodkin Farm & Midgley Moor

Date: 06 April 2022 Drawn by: Freestone Jamie



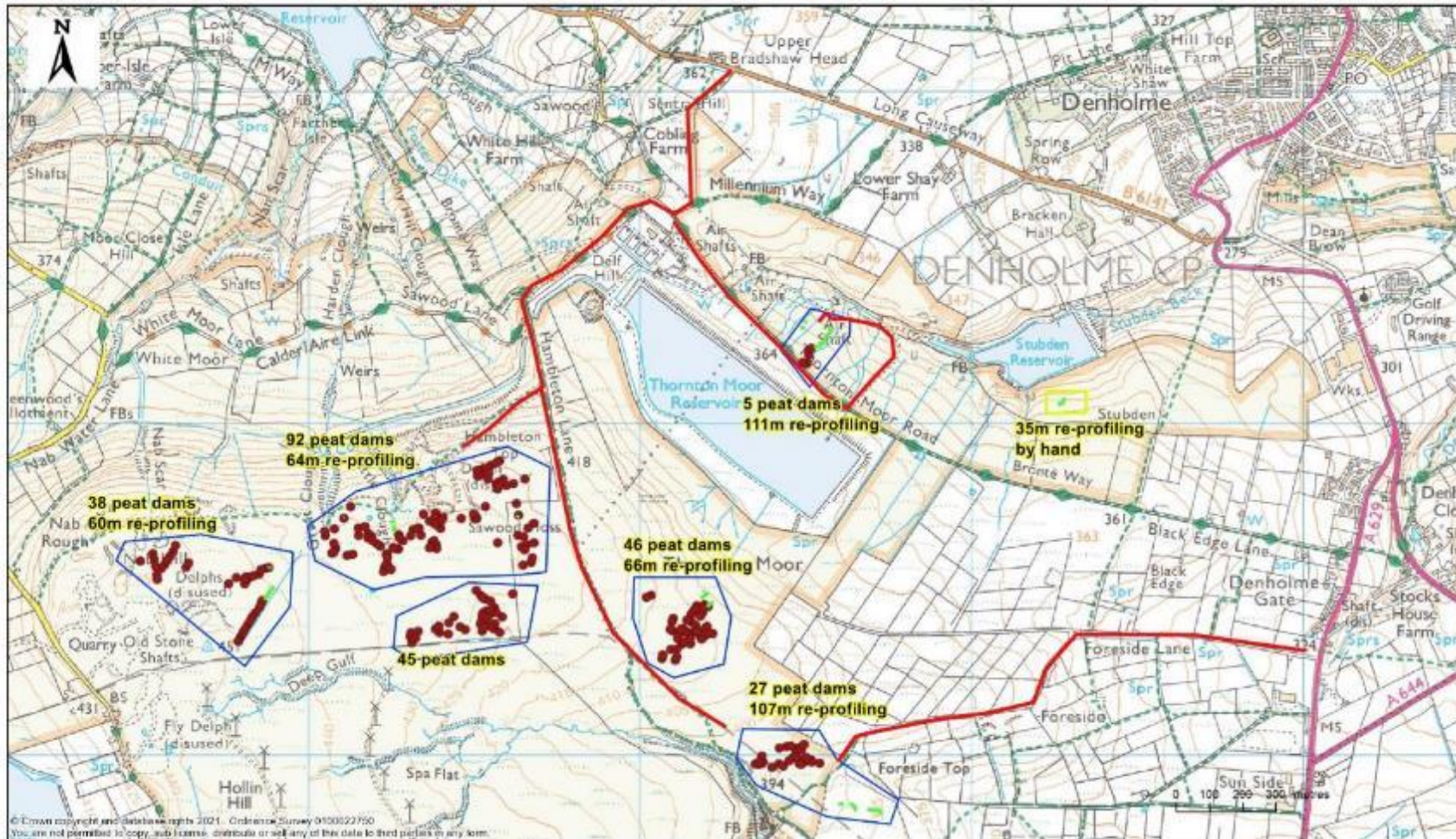
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 Chellow Sphagnum Plugs	 Thornton Moor
 Bodkin Farm	 Yeoman Hill
 Nab Water	

Stakeholder Database

Chellow Sphagnum Planting 2022-23

Date: 20 March 2022 Drawn by: Freestone Jamie



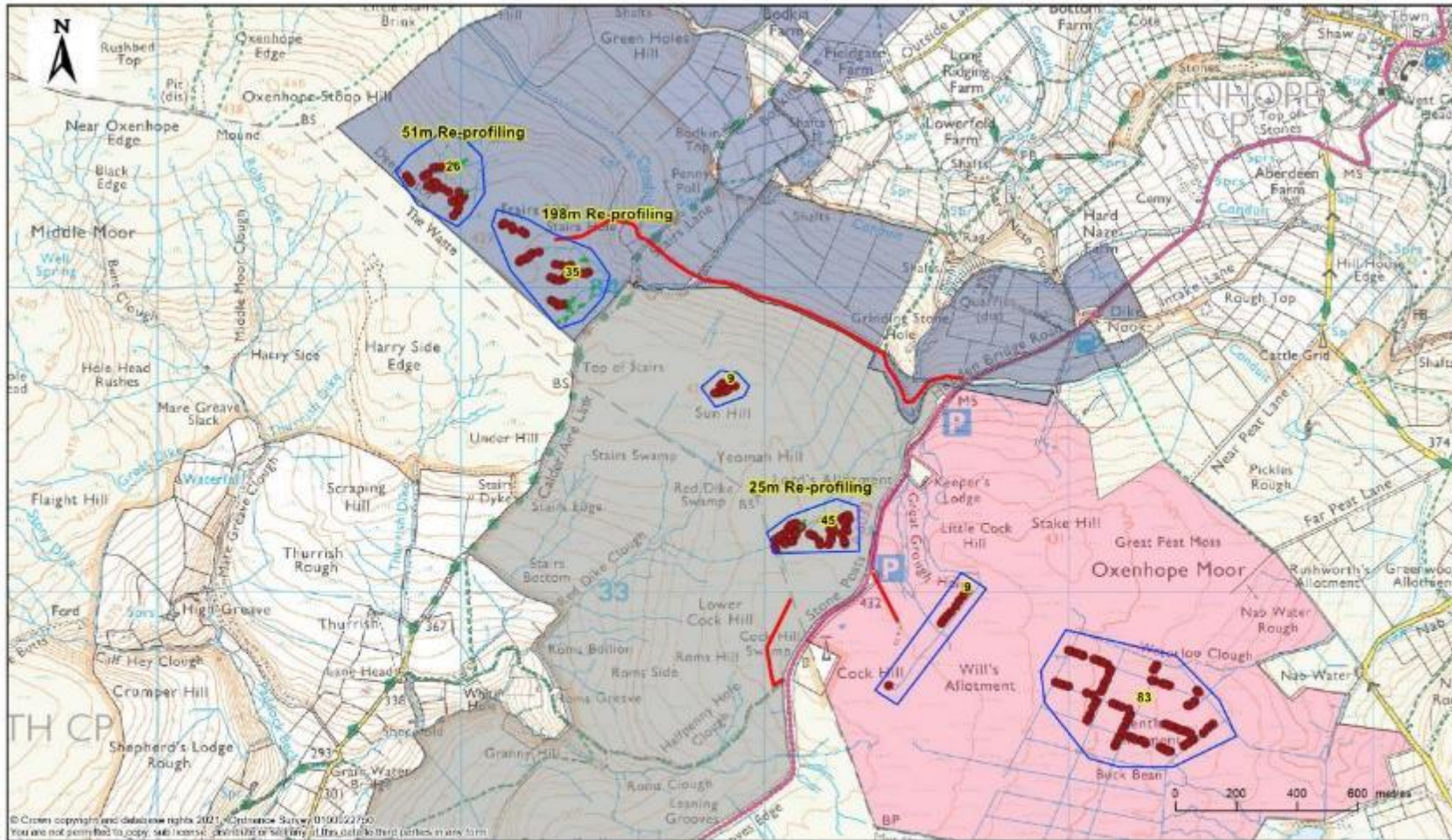
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MFFP_ScratchLayer_FREESTJ	Re-profiling
Machinery Access	Peat Dams
Peat Dam Shape	Gully Blocking, Peat
Re-profiling	



Thornton & Nab Water Peat Dams & Re-profiling 2022-23

Date: 21 March 2022 Drawn by: Freestone Jamie



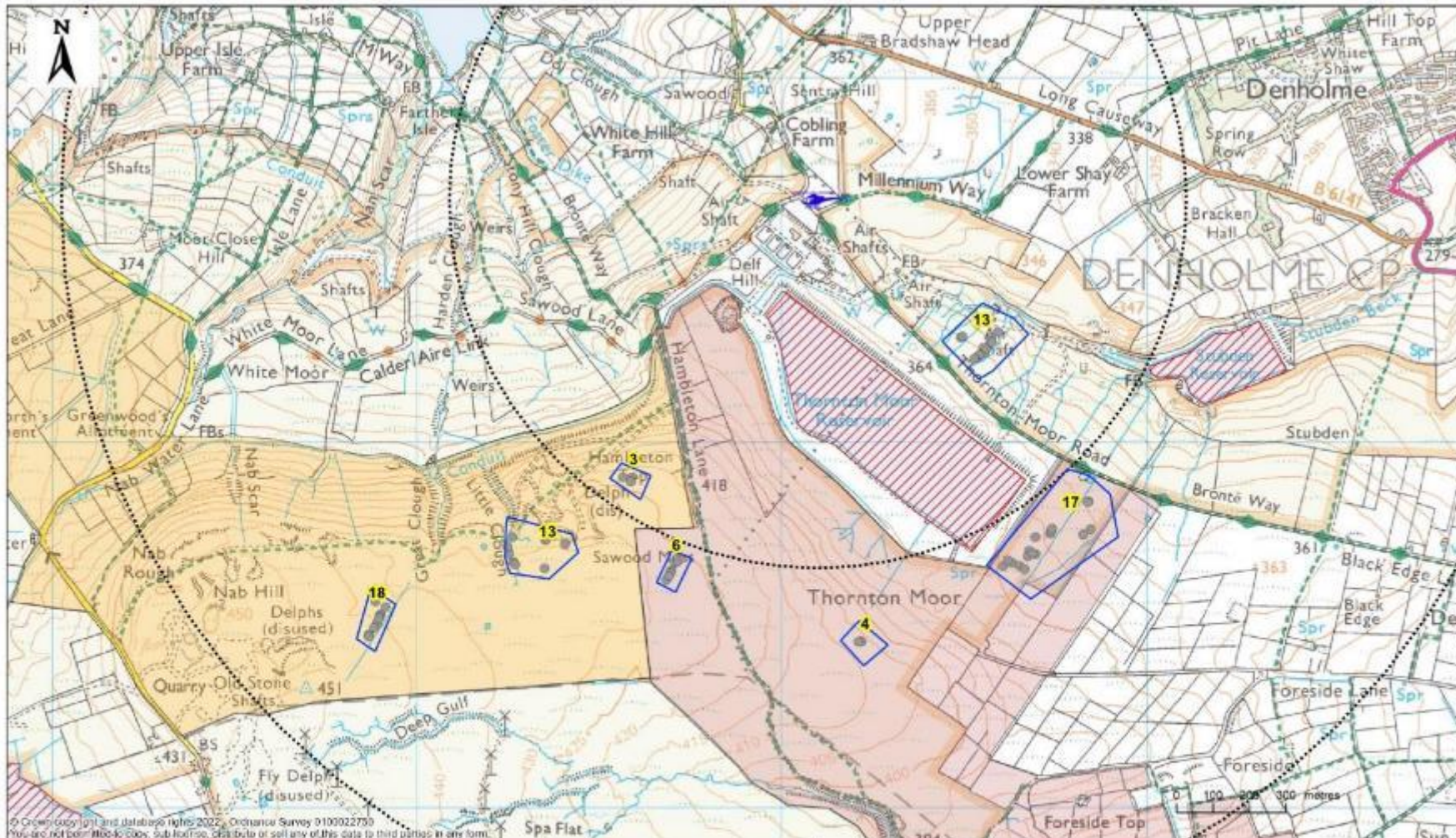
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Re-profiling	— Site access from layby	■ Yeoman Hill
— Re-profiling	■ Stakeholder Database	■ Peat Dams
□ Peat Dam Units	■ Bodkin Farm	● Gully Blocking, Peat
	■ Oxenhope Moor	
	■ Thornton Moor	



Oxenhope, Yeoman Hill & Bodkin Farm Peat Dam & Re-profiling works

Date: 22 March 2022 Drawn by: Freestone Jamie

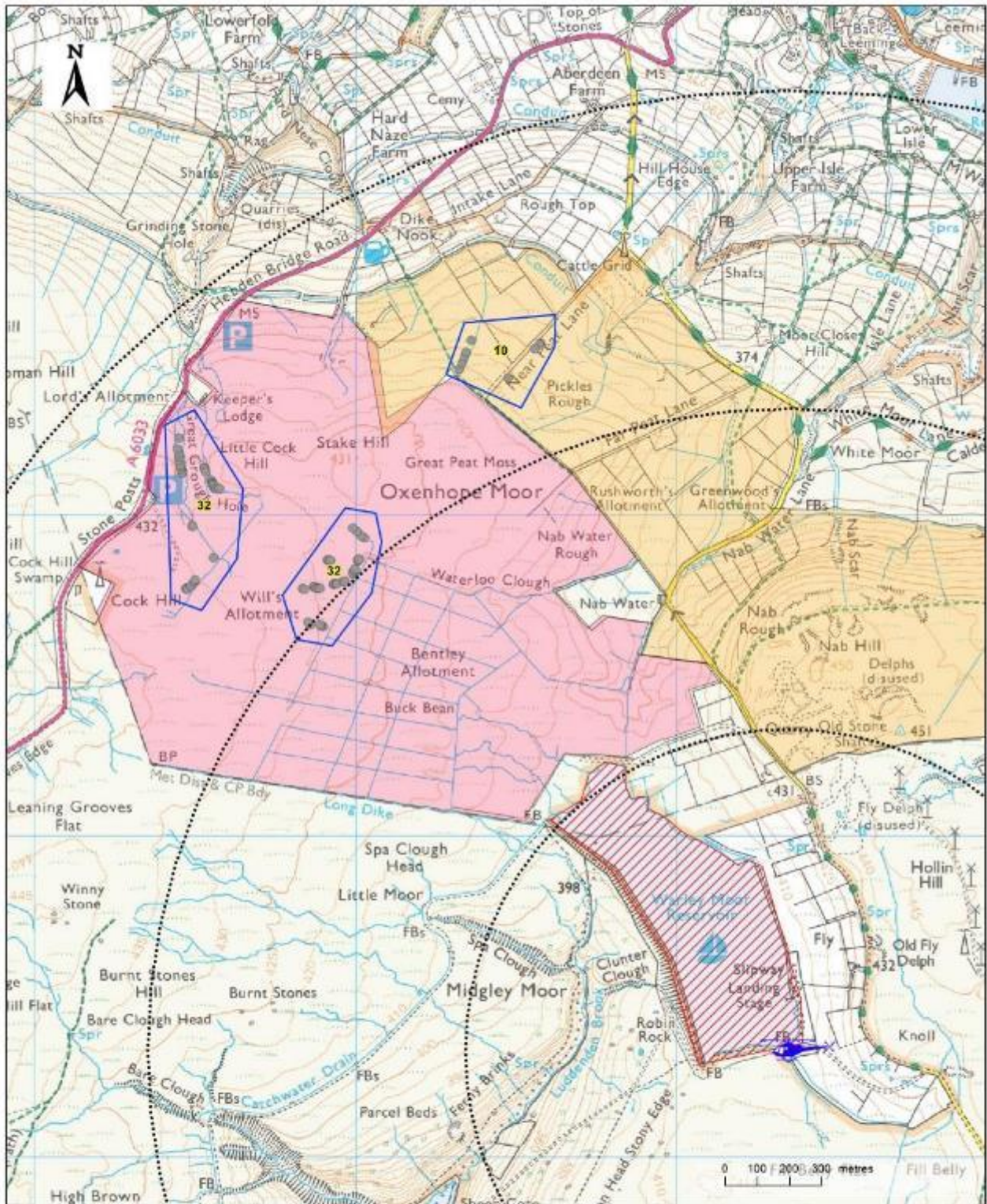


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Stone Dam Units	No overflying of reservoir	Nab Water
Stone	Thornton Reservoir Lift Site	Thornton Moor
Gully Blocking, Stone	Thornton 1km Ring Buffer	
	Stakeholder Database	

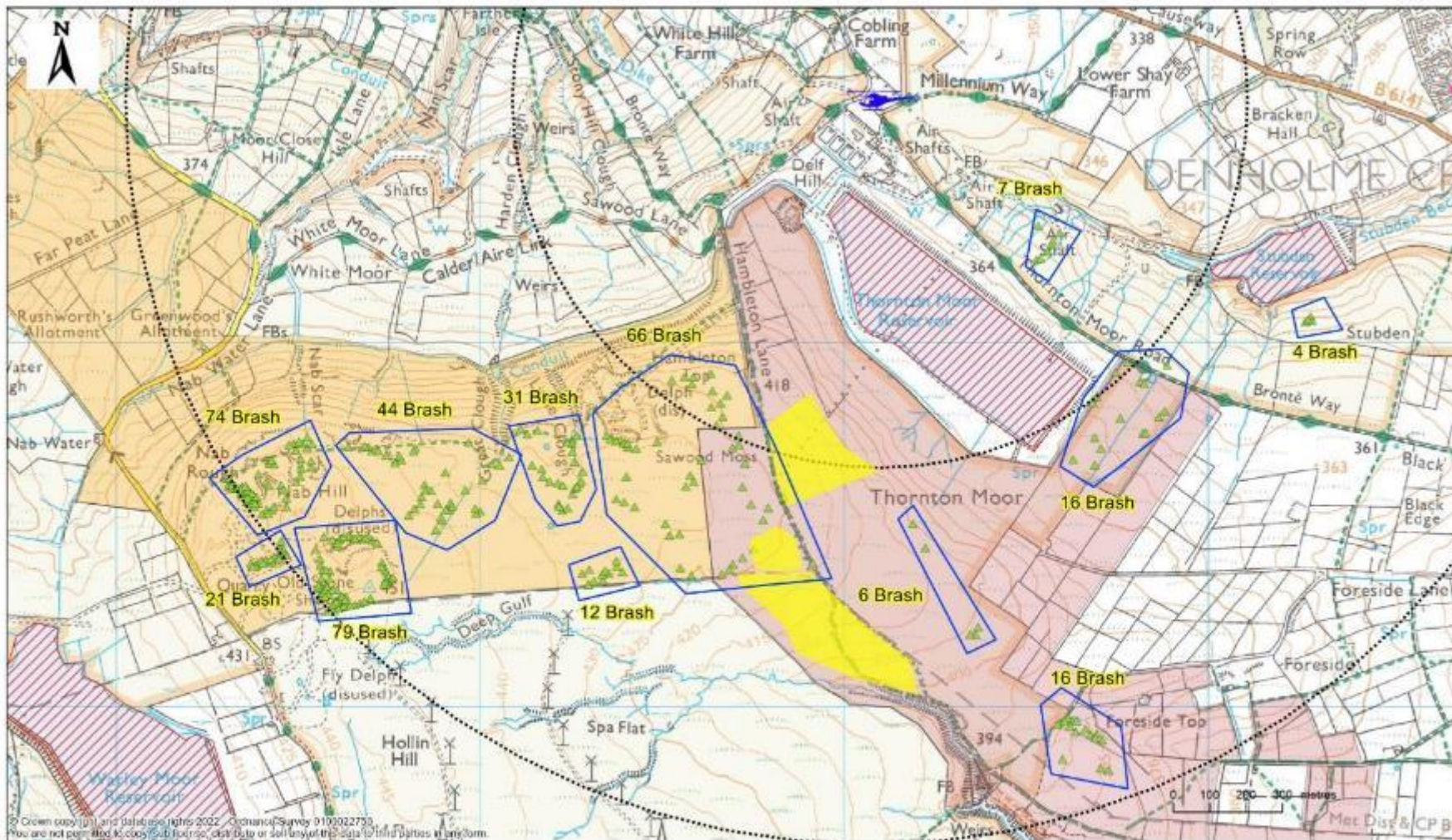
Thornton & Nab Water Stone Dams 2022-23

Date: 06 April 2022 Drawn by: Freestone Jamie



Stakeholder Database

- Stone Units
- Nab Water
- Oxenhope Moor
- Warley 1km ring buffer
- X Chellow Lift Site
- No overflying of reservoir
- Gully Blocking, Stone

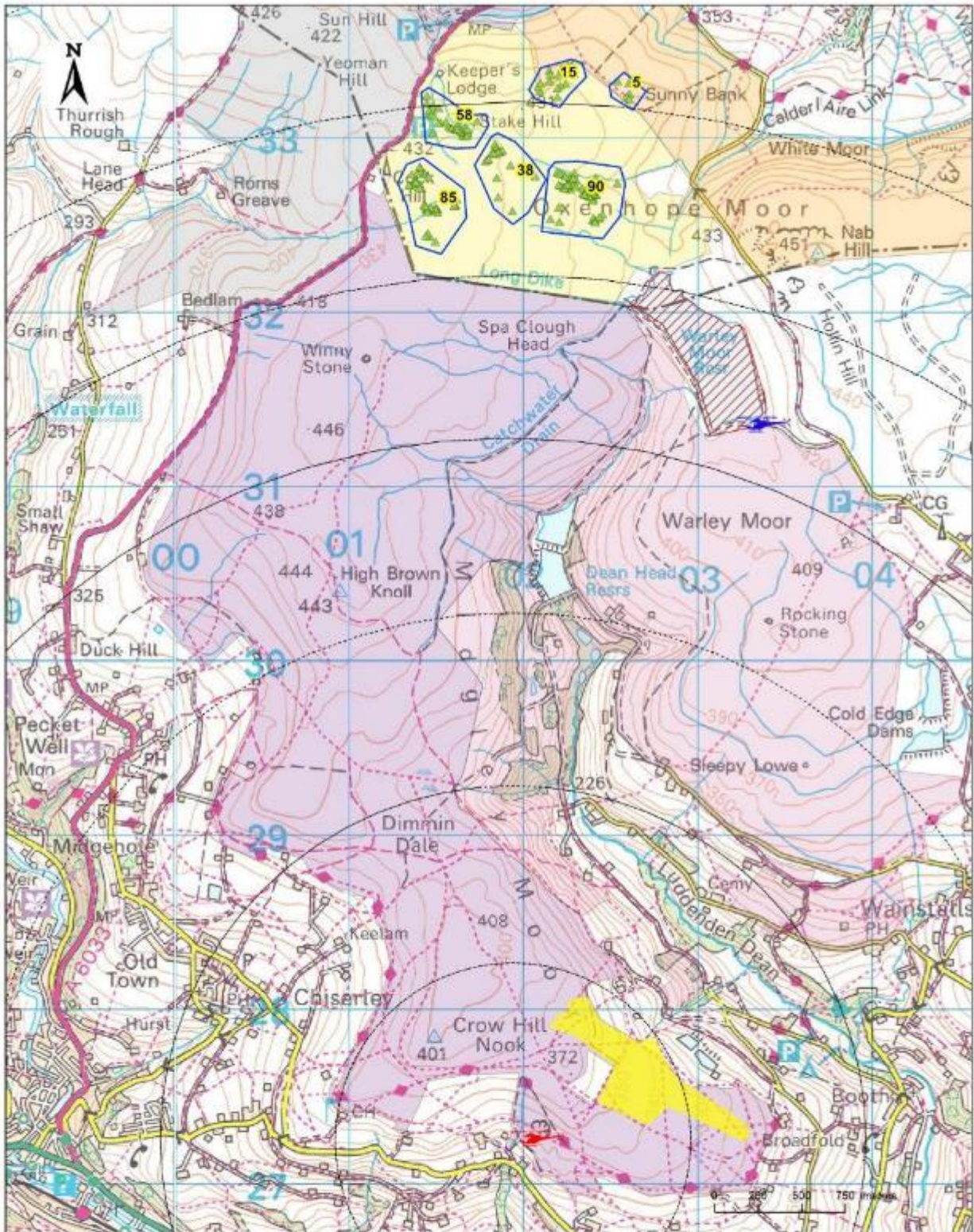


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MFFP_ScratchLayer_FREESTJ	Bags of Brash
	Thornton Reservoir Lift Site
	No overlying of reservoir
	Thornton Cutting Site
	Thornton 1km Ring Buffer
	Brash
	Nab Water
	Thornton Moor
	Stakeholder Database

Thornton & Nab Water Brash works & Thornton Cutting Site

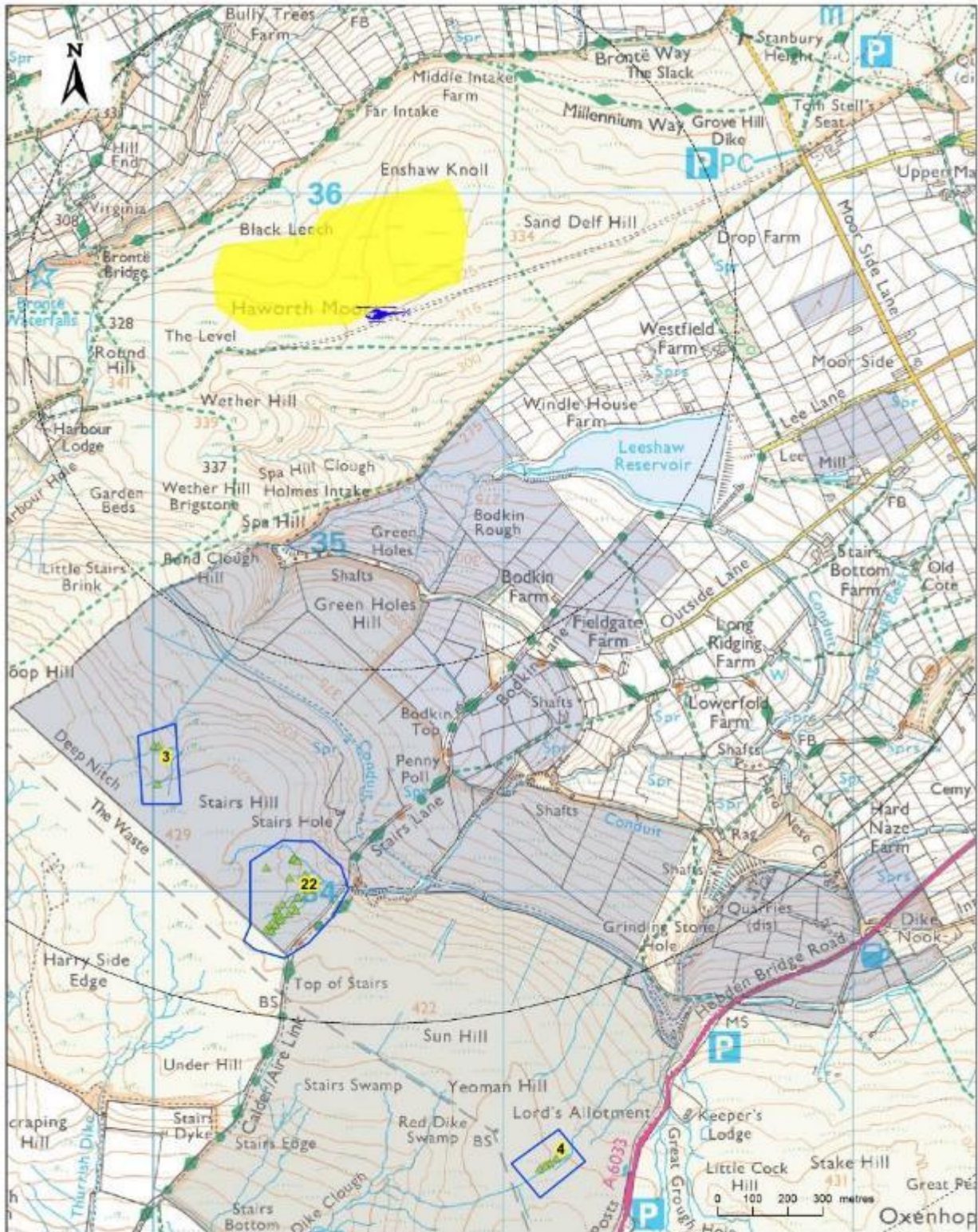
Date: 06 April 2022 Drawn by: Freestone Jamie



MFFP_ScratchLayer_FREESTJ	Cutting - Heather
Waley Reservoir Lift Site	No overflying of reservoir
Midgley Moor Lift Site	Brash
Midgley LS 1km ring buffer	Brash
Chellow Brash shape	Yorkshire Water Survey Data

Title:
Oxenhope Brash & Midgley Moor Cutting Site

Date: 06 April 2022 Drawn by: Freestone Jamie

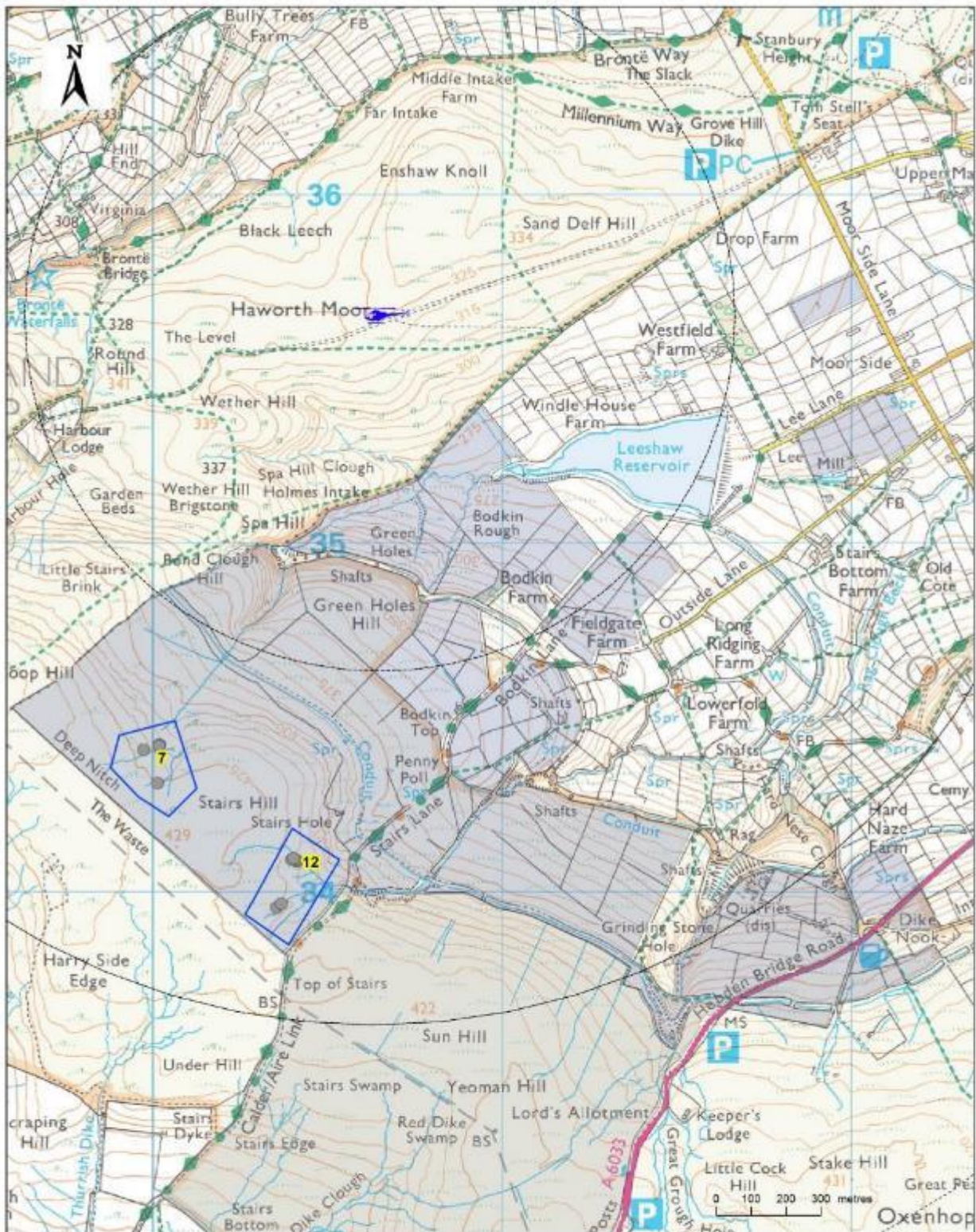


MFFP_ScratchLayer_FREESTJ	Brash
Haworth Moor Lift Site	Brash
Haworth Moor 1km Ring Buffer	Stakeholder Database
Chellow Brash shape	Bodkin Farm
Cutting - Heather	Yeoman Hill



Title:
Bodkin Farm & Yeoman Hill Heather Brash
- Haworth Moor Cutting Site & Lift Site

Date: 11 April 2022 Drawn by: Freestone Jamie



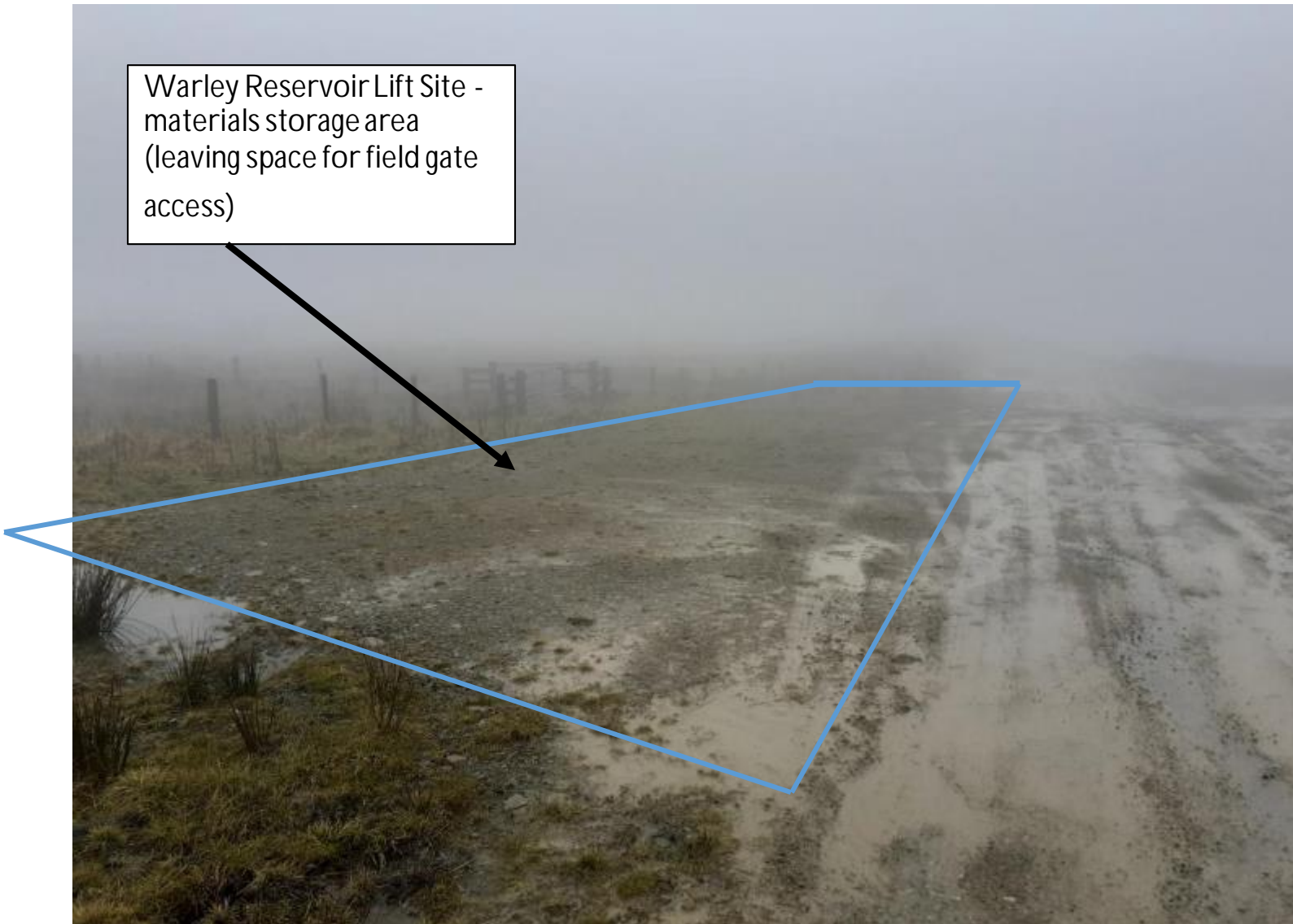
MFFP_ScratchLayer_FREESTJ	Stone
Stone Shape	Gully Blocking, Stone
Haworth Moor Lift Site	Stakeholder Database
Haworth Moor 1km Ring Buffer	Bodkin Farm
Cutting - Heather	Yeoman Hill



Title:
Bodkin Farm Stone Dams - Haworth Moor Lift Site

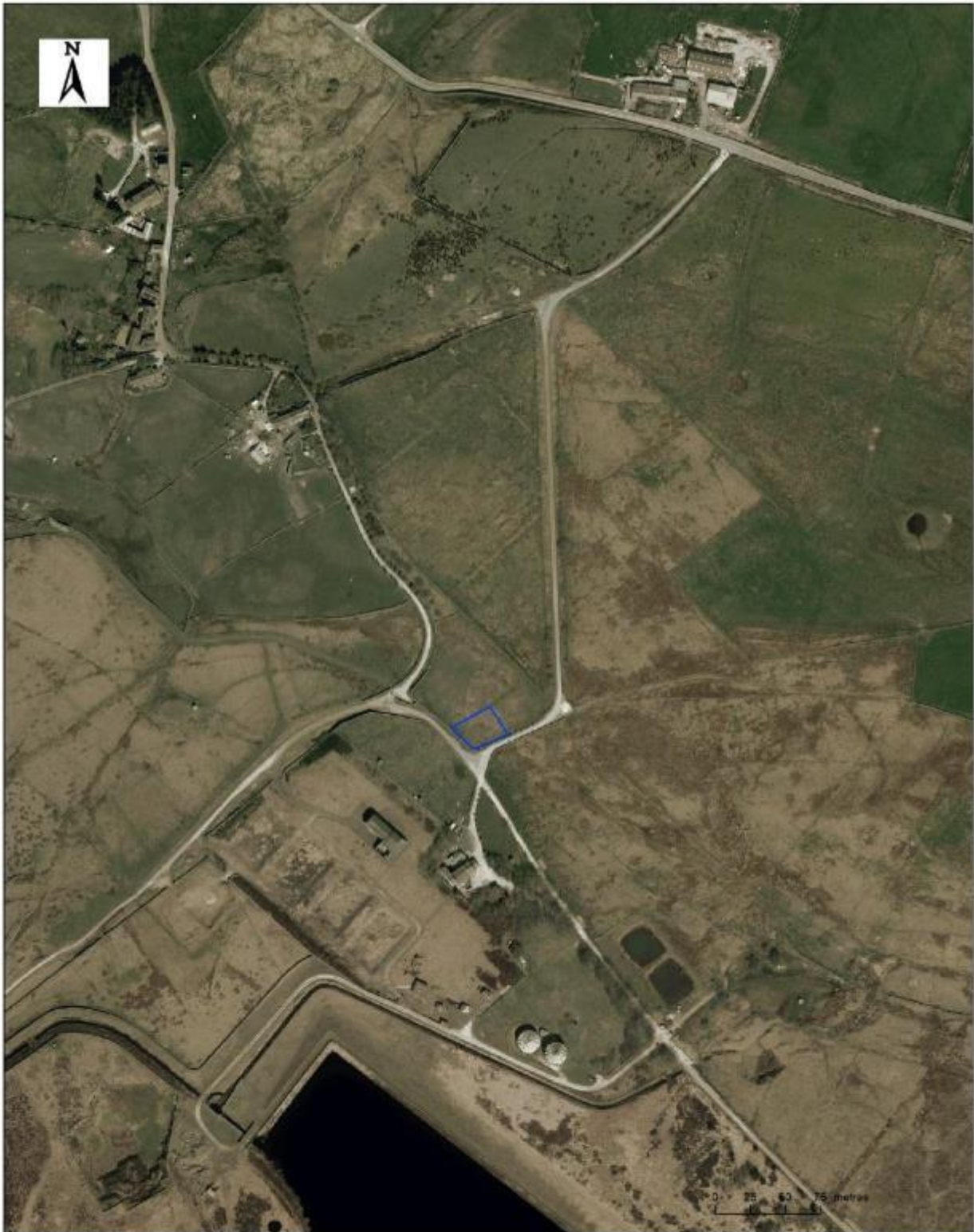
Date: 11 April 2022 Drawn by: Freestone Jamie

Warley Reservoir Lift Site -
materials storage area
(leaving space for field gate
access)



Warley Reservoir Lift Site - Helicopter Landing & Refuelling Zone (leaving space for any access needed by sailing club) – Helicopter and fuel bowser removed from site at the end of each day





MFFP_ScratchLayer_FREESTJ

Thornton Lift Site plan

Aerial Photography 12.5cm (Latest available)

Title:

Thornton Lift Site Plan

Date: 07 April 2022

Drawn by: Freestone Jamie

Thornton Reservoir Lift Site





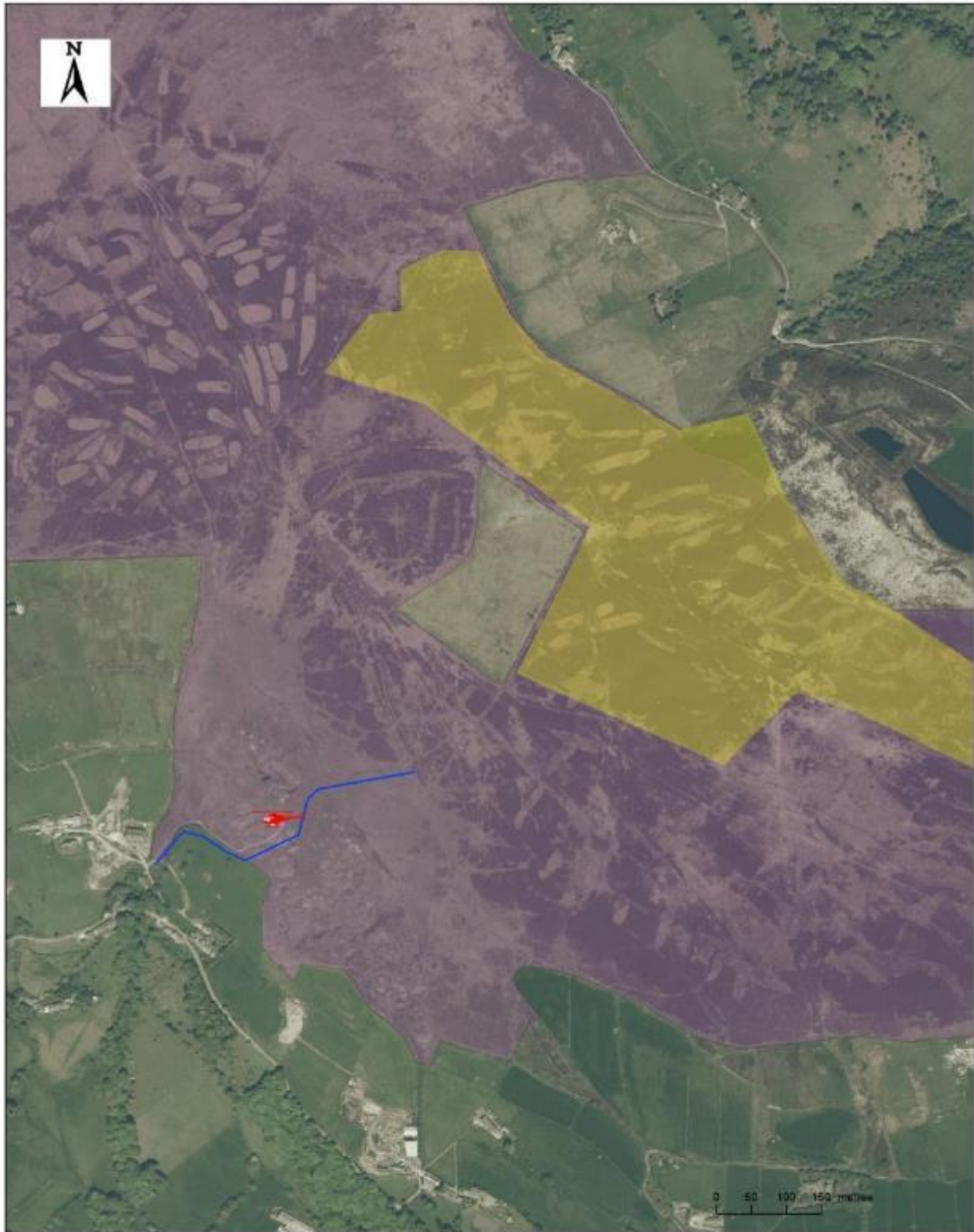
MFFP_ScratchLayer_FREESTJ

-  Cutting - Heather
-  Haworth Lift Site Plan

Stakeholder Database
Aerial Photography 12.5cm (Latest available)

Haworth Moor Lift Site Plan

Date: 11 April 2022 Drawn by: Freestone Jamie



MFFP_ScratchLayer_FREESTJ	Cutting - Heather
Midgley Moor Lift Site	Stakeholder Database
Cutting - Heather	Midgley Moor
Machinery Access Midgley Moor	Aerial Photography 12.5cm (Latest available)
Yorkshire Water Survey Data	

Title:
Midgley Moor - site access & Lift Site
Date: 11 April 2022
Drawn by: Freestone Jamie

PART C – ADDITIONAL SITE INFORMATION

Bare peat to be treated with Heather brash, lime, seed and fertiliser on the Nab Water site

The majority of the bare peat areas are located on blanket bog habitat at Nab Water and Oxenhope Moor. On Nab Water unauthorised off road vehicle use appears to have resulted in the erosion of habitat, leading to the creation of several large bare peat areas. There is also bare peat present on the northern edge of the site, near the public footpath that runs between Hambleton Top and Nab Rough. Several gully sides also feature bare peat in the middle of the site along with some other smaller patches located generally across the whole site. On Oxenhope Moor bare peat is present in the areas surrounding “Will’s Allotment” and in proximity to old drainage grips on the site.

Bare peat areas are also present on other sites within the catchment, such as on Thornton, Bodkin Farm but in much smaller quantities.

Photo 1 shows an area to the west of the Nab Water site with extensive bare peat, likely due to unauthorised off road vehicle use. Photo 2 shows an area to the north of Nab Water with bare peat present on the edge of the moorland.



Photo 1 Photo showing extensive area of bare peat on Nab Water



Photo 2 Photo Showing bare peat on the northern edge of Nab Water

Gully blocking

A large number of locations for gully blocking were identified across the Chellow catchment following site survey work. In many gully systems the peat dam blocking technique has been recommended, however stone dams and coir log dams have also been recommended across the catchment. The blocking of gully systems will encourage re-wetting of the site, as well as increasing sphagnum growth and species diversity. Stone dams have been recommended in locations where there is potential to trap eroding peat and are also proposed for use in tandem with re-profiling of steep gully sides.

Typical locations for peat dam gully blocking can be seen in Photo 3 and stone dam blocking in Photo 4



Photo 3 Photo showing a gully system proposed for blocking with peat dams



Photo 4 Photo showing gully system proposed for blocking with stone dams

Gully re-profiling

Some areas featuring eroding gully sides were identified across the Chellow Catchment. Re-profiling is recommended to stabilise and re-vegetate gully sides. This should be followed up by standard bare peat restoration where there is not enough existing vegetation to cover the slope. Photo 5 shows an example of where re-profiling is needed to remove the eroding drip edge.



Photo 5 Photo showing a steep eroding gully side requiring re-profiling

Sward diversification

Thornton Moor features some areas of heather dominated vegetation. Photo 7 provides an example of these. Some heather cutting in these areas could be undertaken along with planting of sphagnum moss to encourage greater species diversity. The cut heather could then be placed into bags and used to help restore areas of bare peat across the catchment.



Photo 6 Photo showing heather dominated area on Thornton