

RSPB Higham Marshes Habitat Enhancement Project



Water Vole (Rob Budgen, 2016)

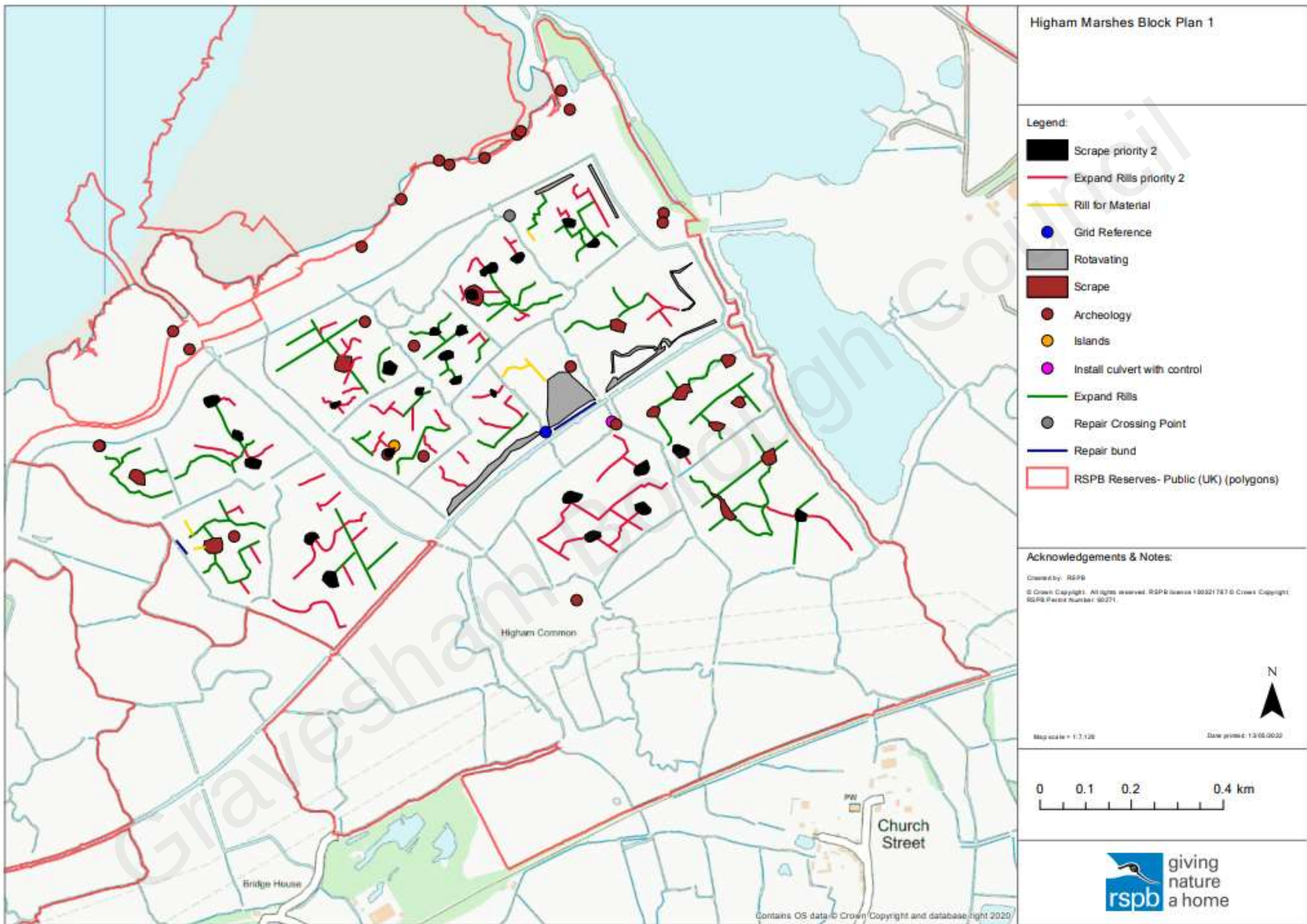
Design Specification
Planning Application Proposal Supporting Documentation
Author: Will Tofts

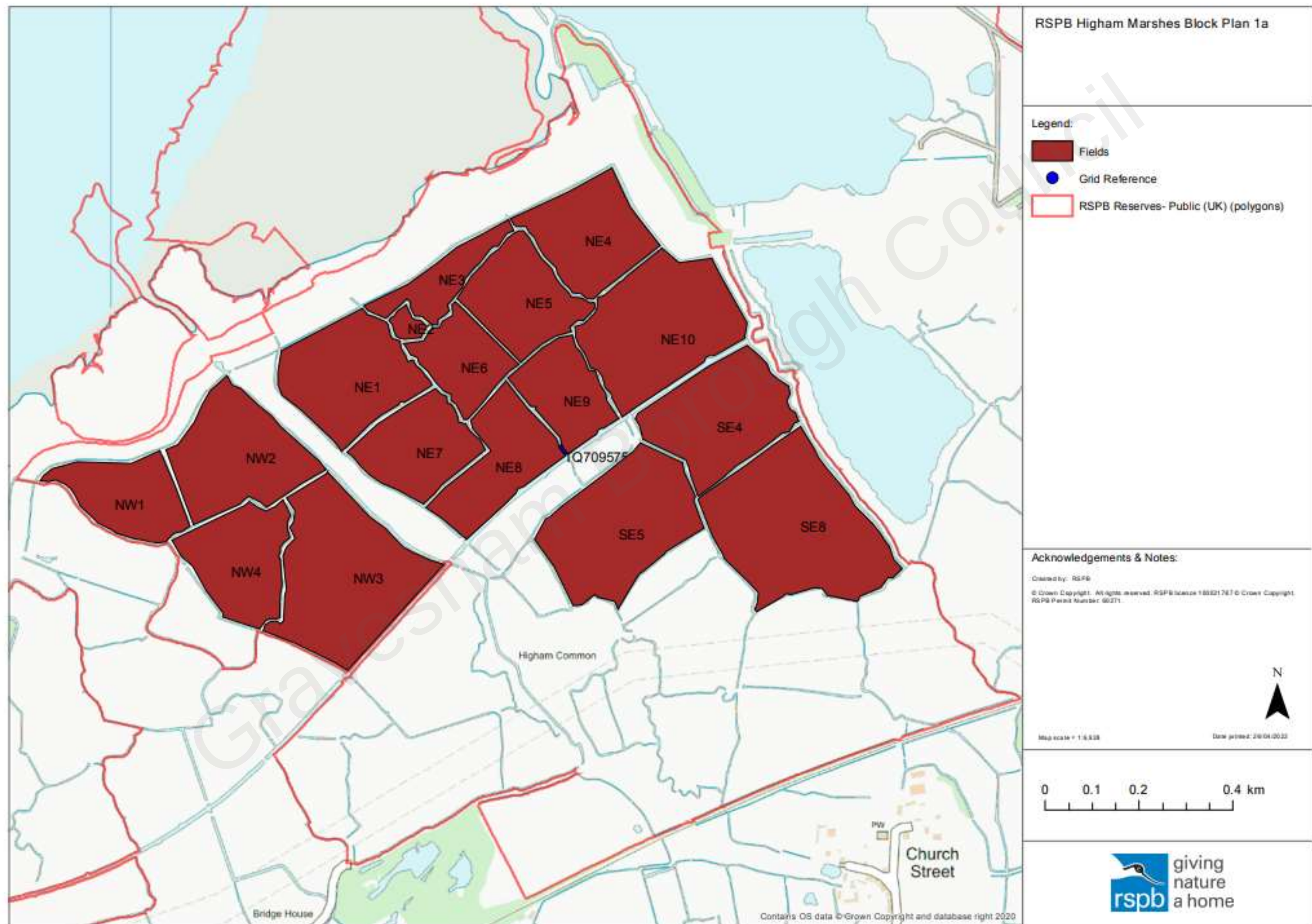
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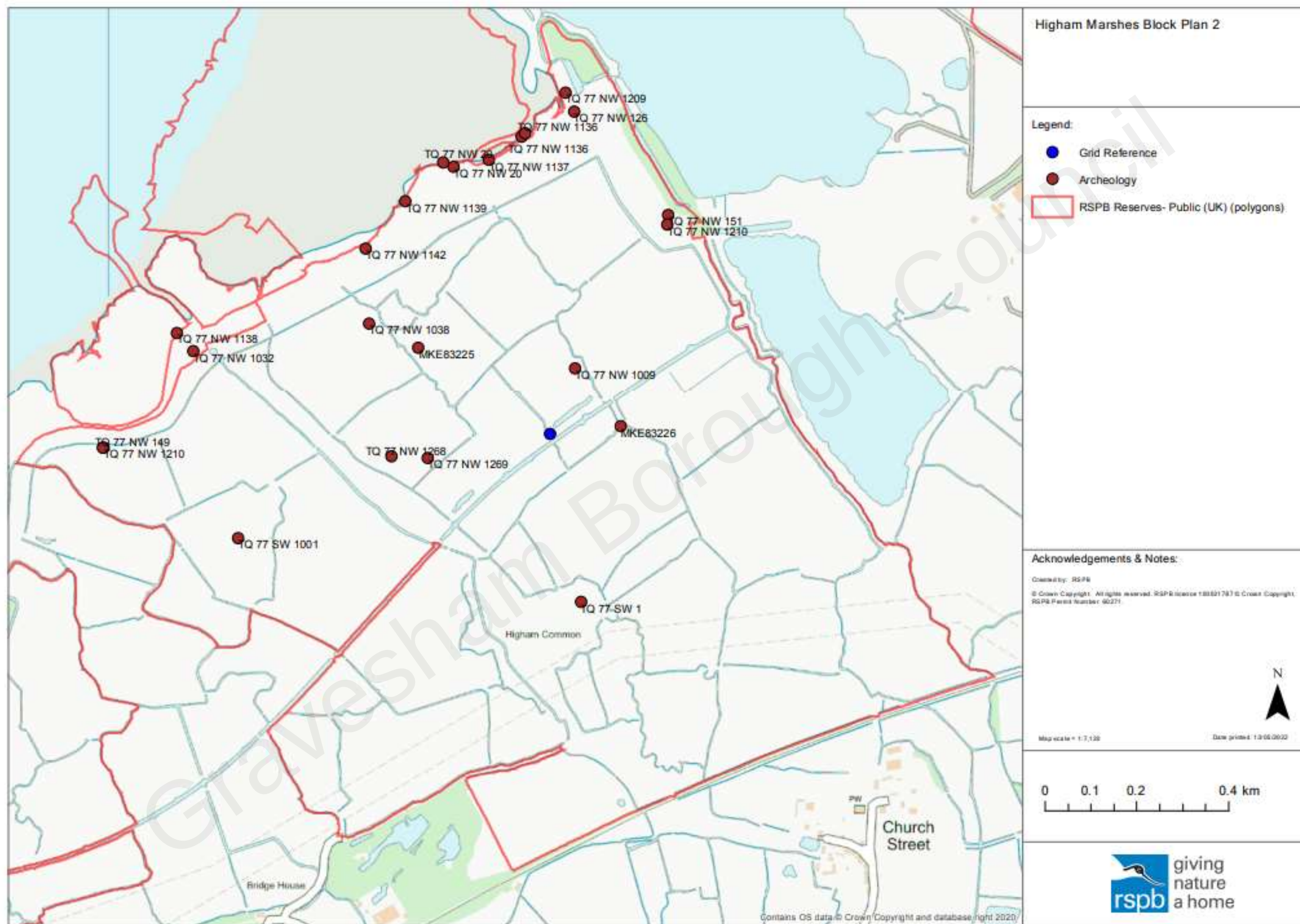
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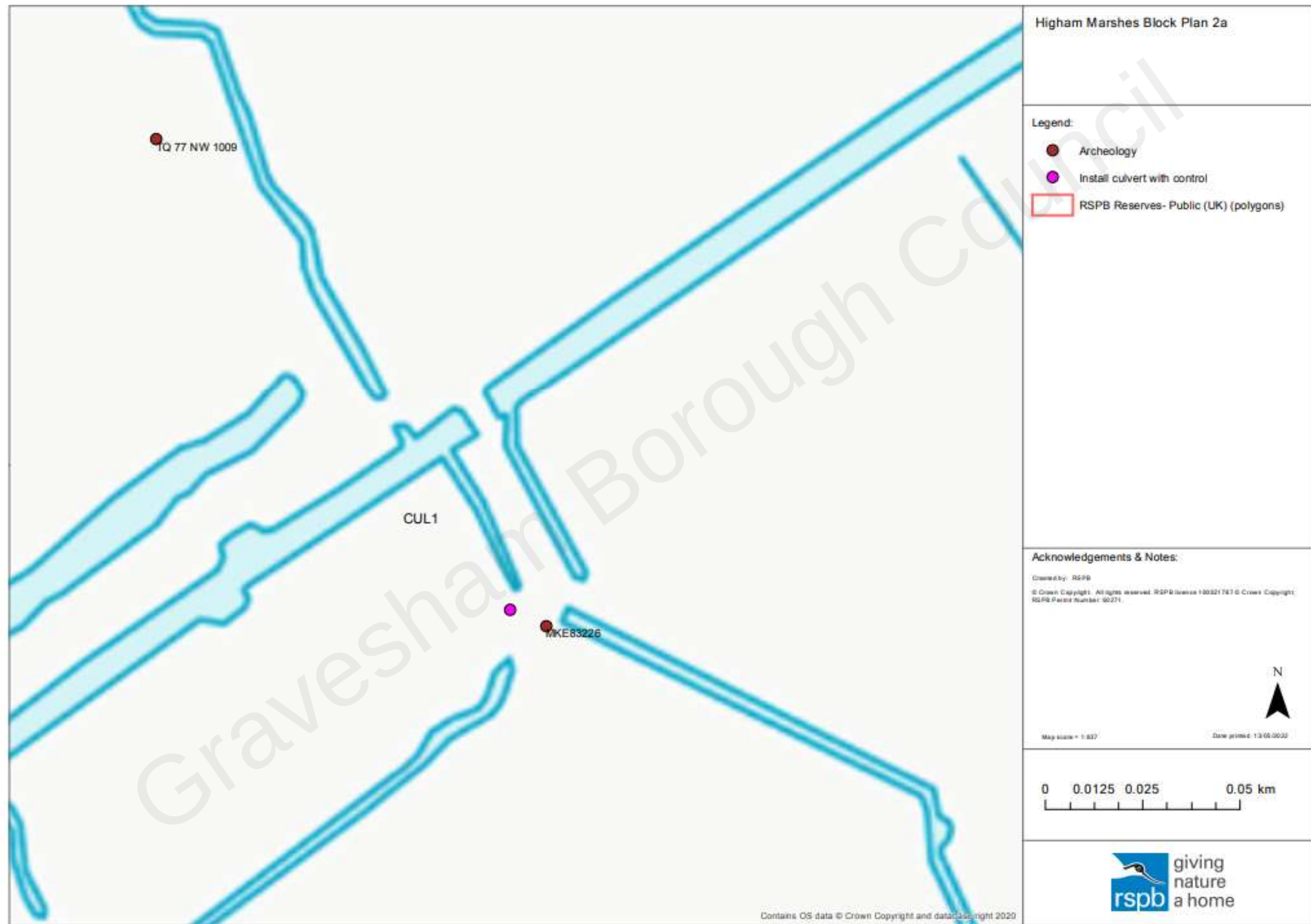
1. Block plans

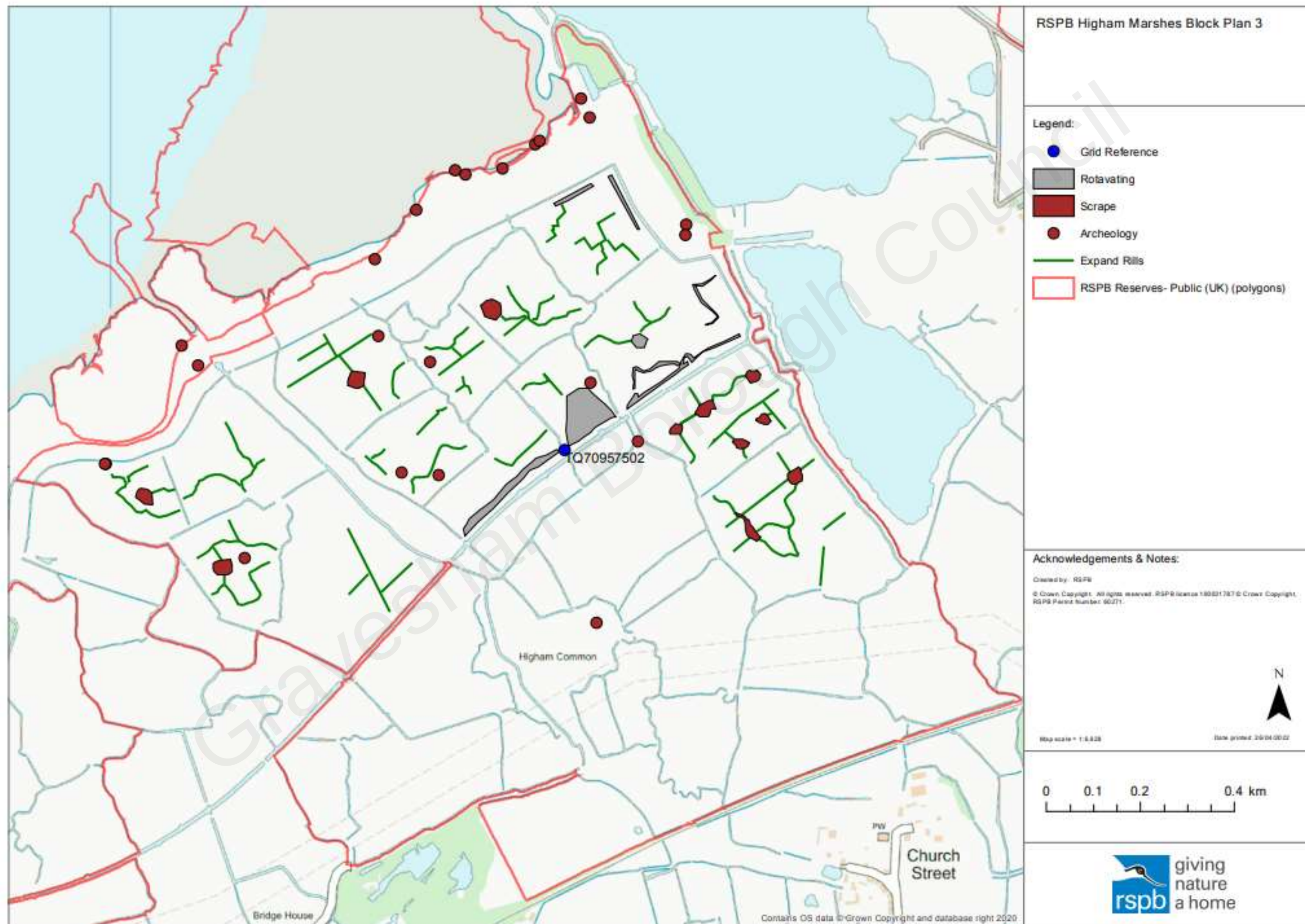
Gravesham Borough Council

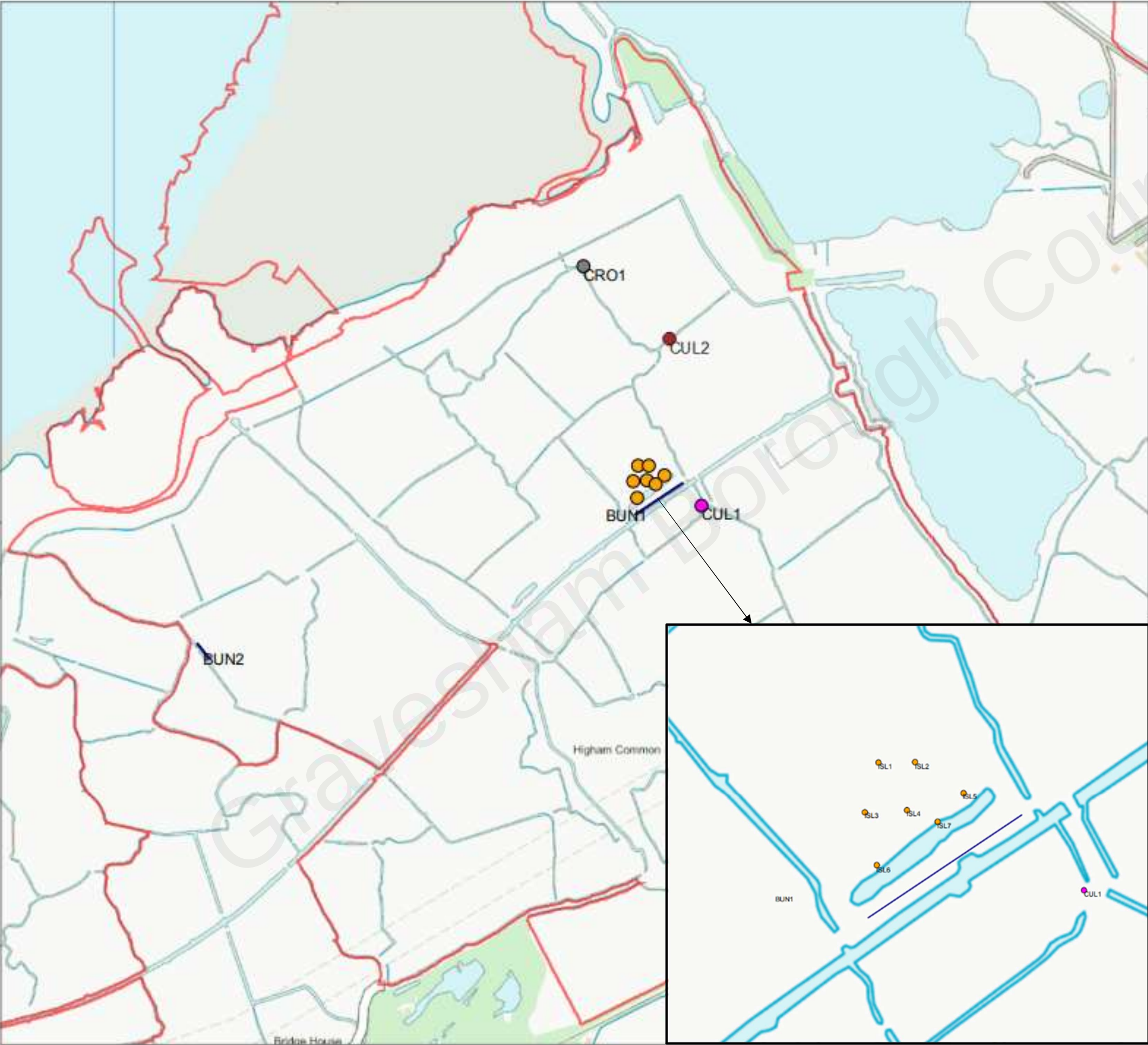












RSPB Higham Marshes Block Plan 4

Legend:

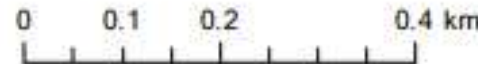
- Islands
- Install culvert with control
- Repair Crossing Point
- Repair bund
- RSPB Reserves- Public (UK) (polygons)
- Install Culvert

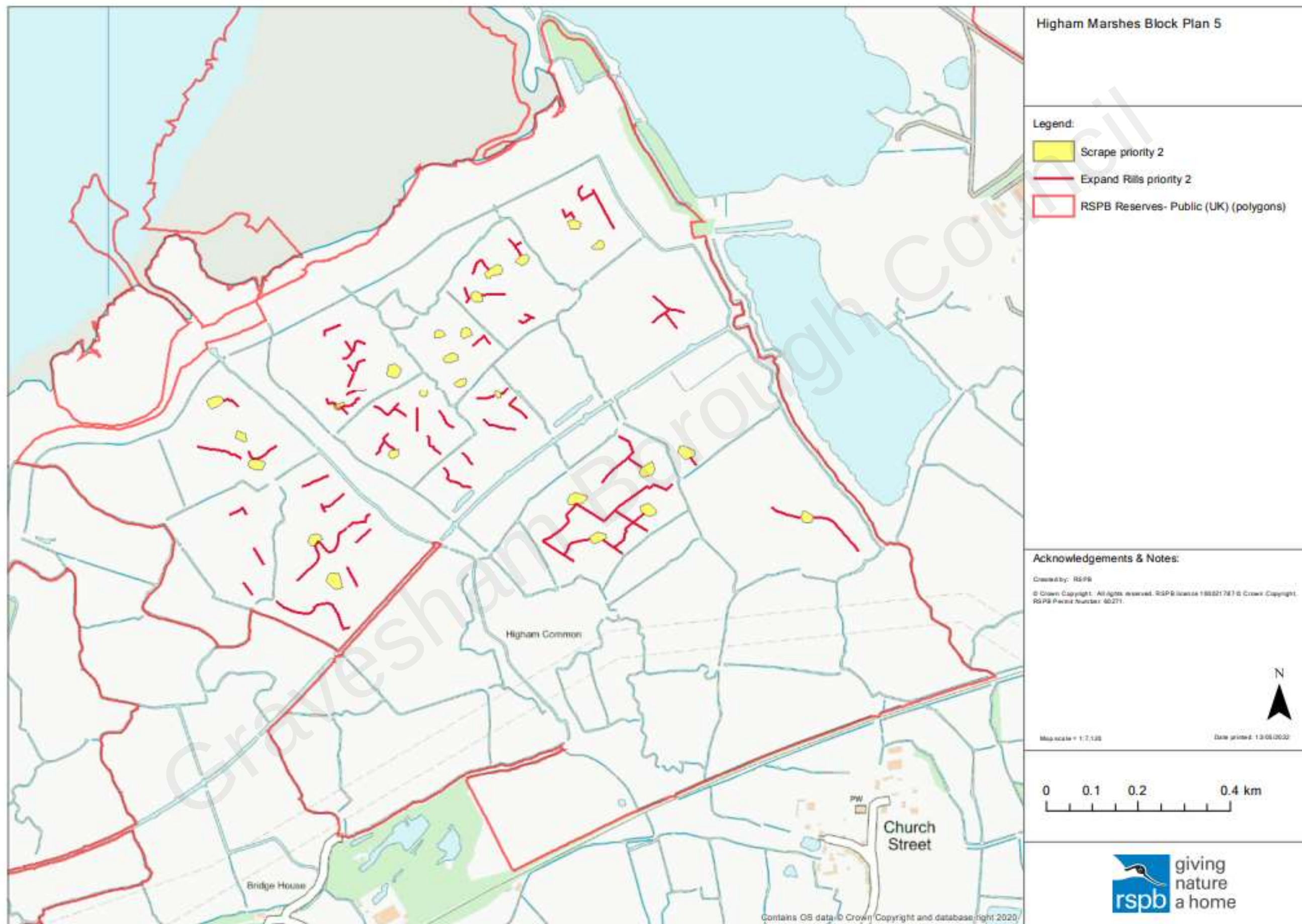
Acknowledgements & Notes:

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Map scale = 1:5,000

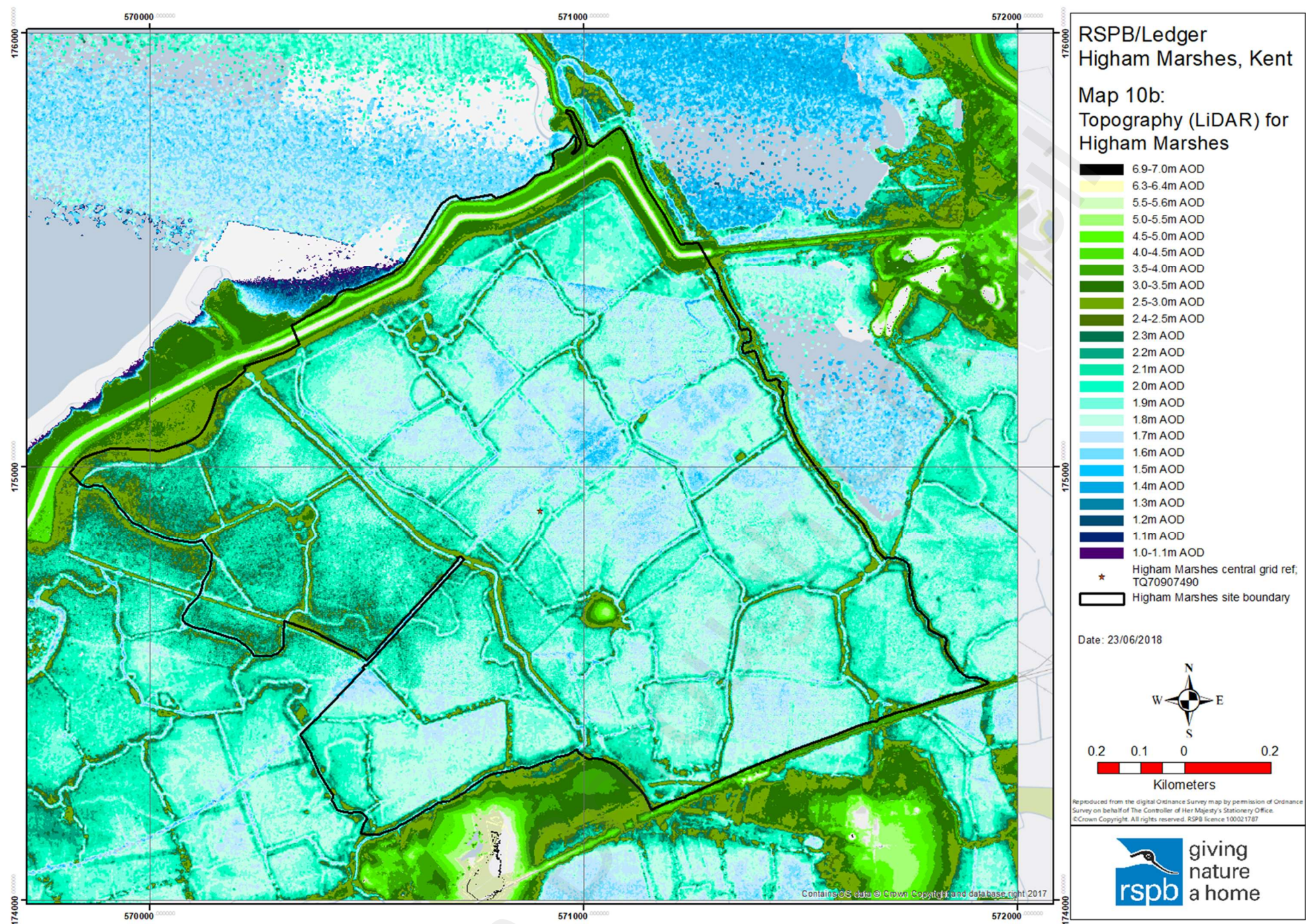
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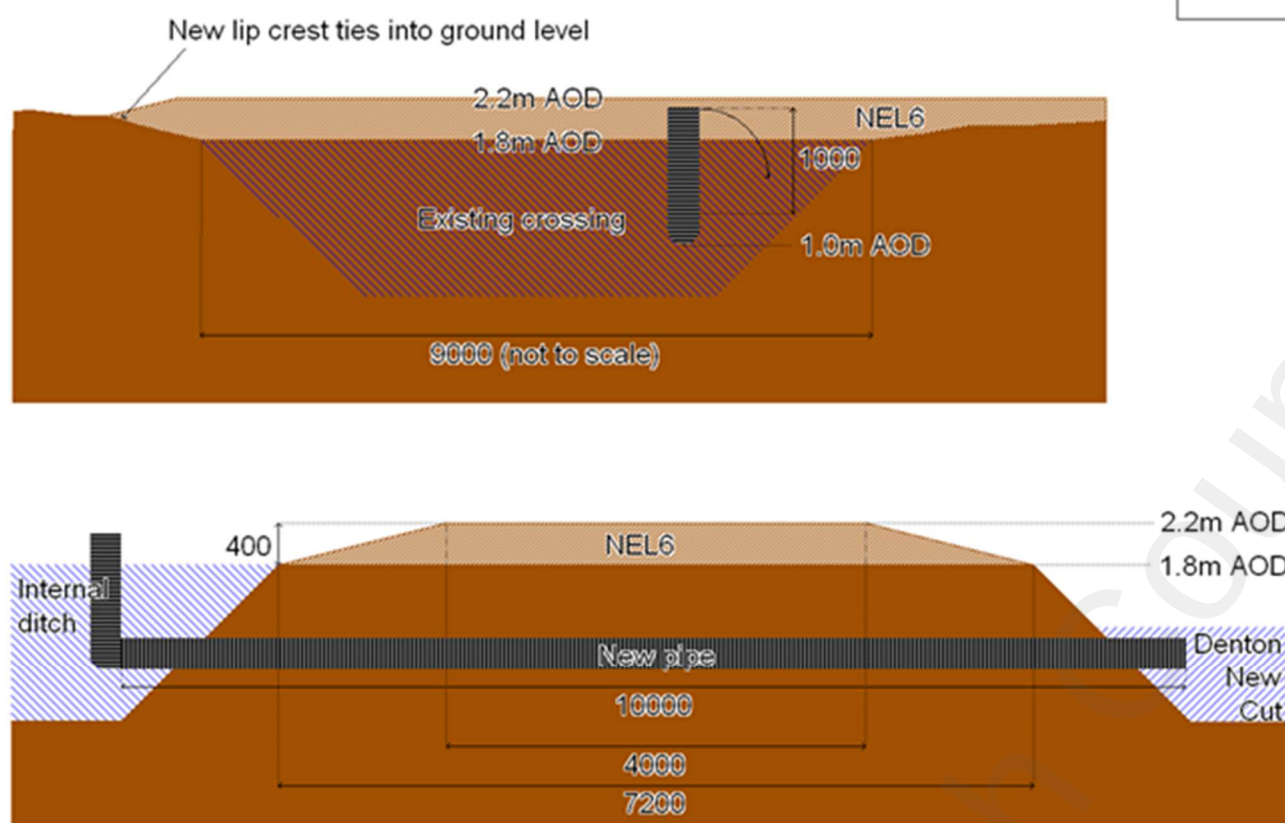
Gravesham Borough Council

2. Habitat design plans

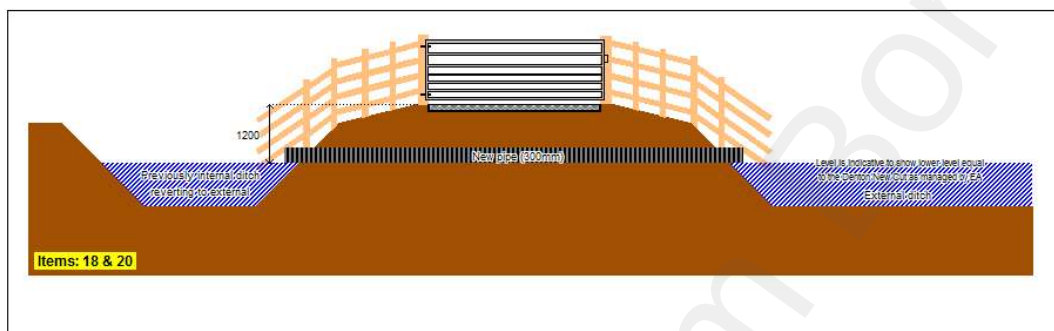


3. Drawings

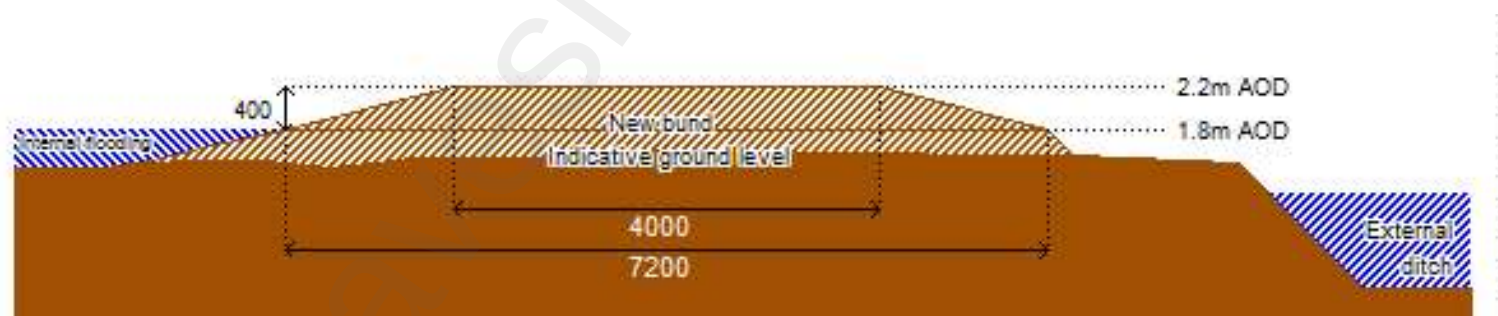
3.1 CUL1



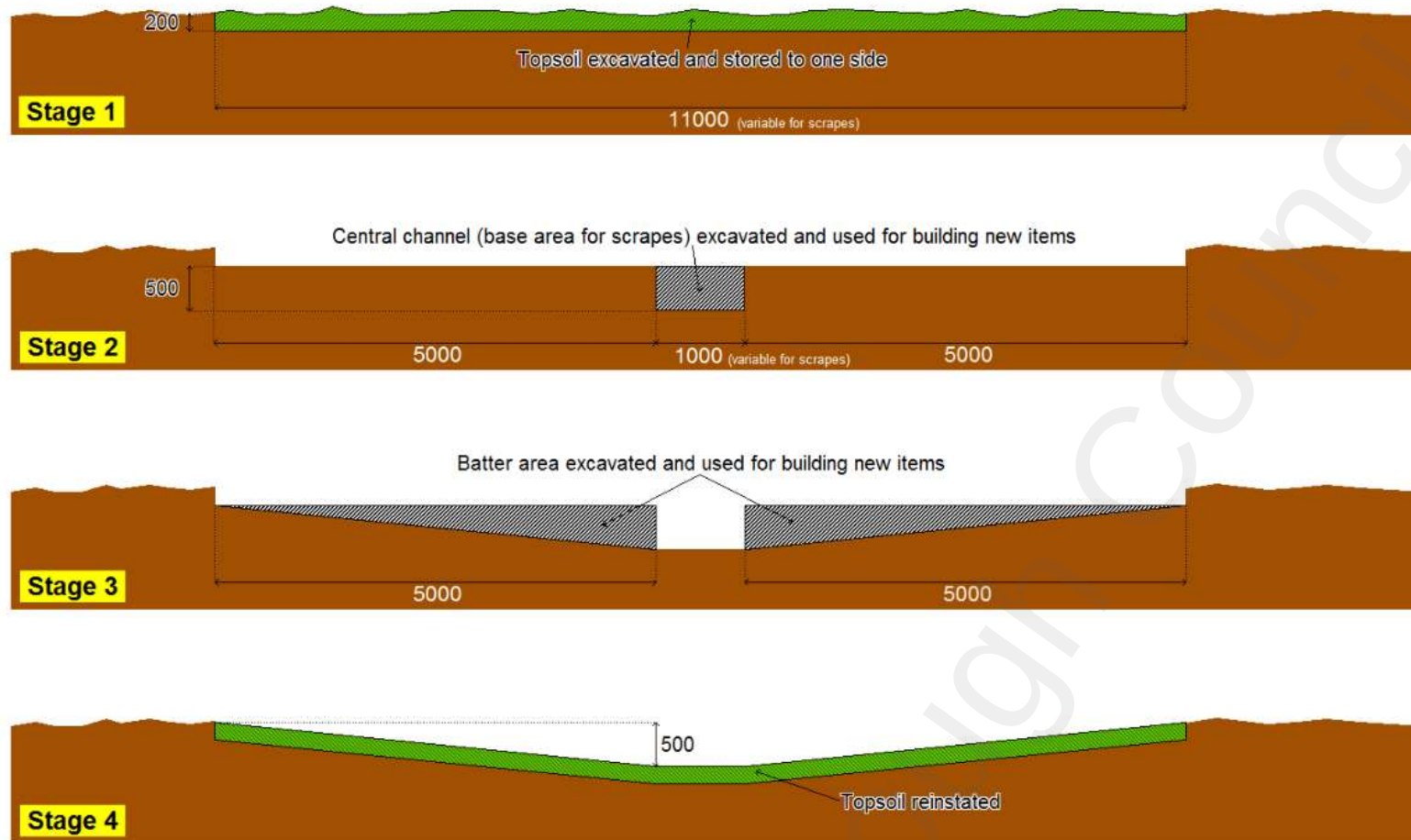
3.2 CUL2



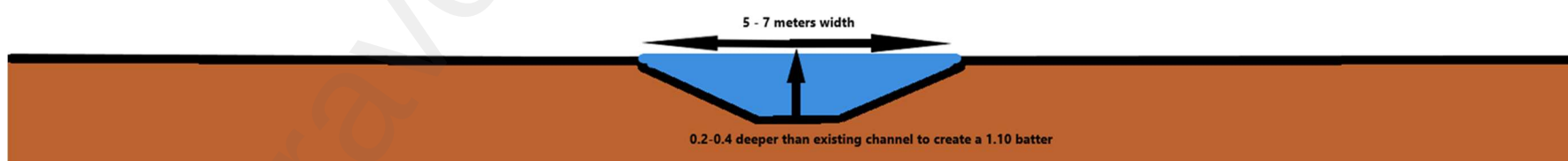
3.3 BUN1 & BUN2



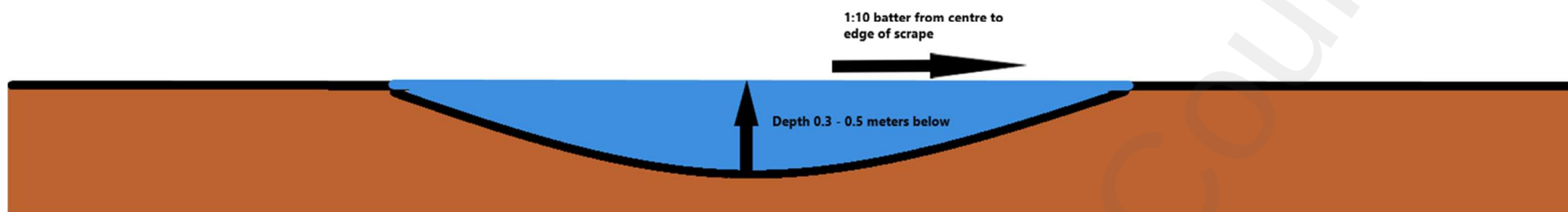
3.4 RIL 2 - Rills for material – Created by 360



3.5 Expanded Rills – created by soil spreader.



3.6 Scrapes – Created by soil spreader



4. Schedule of works

Cooling Marshes																								
Item details								Earth moving			Stone						Pipework							
Prior ity																								
C	Field no.	Item ref no.	Description	Crest/ base height	Category	Drawing X- section Ref	Quantity	Total length (m)	Total volume material required (m3)	Total volume material created (m3)	Clean stone length (m)	Total volume Clean stone required (m3)	Geotextile required (m2)	Type 3 limestone (m2)	Total volume Type 3 limestone required (m3)	Geotextile required (m2)	Pipe length 200mm (m)	Pipe length 200mm (m) vertical	Pipe length 200mm (m) total	90o bend 200mm total	45o bend 200mm total	15o bend 200mm total	Pipe length 600mm (m)	
1	NE1	RIL	CUT - New rills 440m - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at ends is as per the sides. Joined to ditch at 1.4AOD SCRAPE – 0.1ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill + scrape																			
2	NE1	RIL	CUT - New rills 400m - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at ends is as per the sides. Joined to ditch at 1.4AOD SCRAPE – 0.12ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill + Scrape																			
1	NE4	RIL	CUT - New rills 465m - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides. SCRAPE – 0.15ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill + Scrape																			
2	NE4	RIL	CUT - New rills 250m - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides. SCRAPE – 0.9ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill + Scrape																			
1	NE4	CUL2	PIPE- Install 10m x 300mm diameter pipe. Pipe invert set at 0.8m AOD. Excavate a trench, install pipe, and backfill to the height of 2.6 AOD levelled off with adjacent bunding. COMPACTION - Tracking-in is sufficient. DRESSING - Install a geotextile layer and 10m long x 3.5m wide x 150mm deep clean stone dressing over the crossing. GATES & FENCING - Reinstall gate & new wing-sets on completion of groundworks.		Culvert/Pipework												7							
1	NE4	RIL	CUT - New rills 100m x 1m wide central channel to 0.5 m from the prevailing ground level with a batter of 1:10. Circular batter at the end is as per the sides. ARISINGS - Use arisings for all local fill of dam DA1 and PLUs		Rill to win material																			
1	NE4	ROT	Rotavate - 0.2 ha of scrapes/borrow pits.		Rotovate																			
1	NE4	CRO1	Remove – Re-fit concrete pipes Fill – material won from RIL to 2.2AOD. COMPACTION - Tracking-in is sufficient. DRESSING - Install a geotextile layer and 10m long x 3.5m wide x 150mm deep clean stone dressing over the crossing.		Crossing point																			
1	NE5	RIL	CUT - New rills 581m - 0.2-0.4m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing		Rill + scrape																			

			ground levels. Circular batter at west end is as per the sides. Joined to the ditch at 1.4AOD SCRAPE – 0.4 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.																				
2	NE5	RIL	CUT - New rills 280m - 0.2-0.4m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at west end is as per the sides. Joined to the ditch at 1.4AOD SCRAPE – 0.18 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill + scrape																		
1	NE6	RIL	CUT - New rills 450m - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides.		Rill																		
2	NE6	RIL	CUT - New rills 60m - 0.2-0.4m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at west end is as per the sides. Joined to the ditch at 1.4AOD SCRAPE – 0.15 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill + scrape																		
1	NE7	RIL	CUT - New rills 330m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at west end is as per the sides SCRAPE – 0.25 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill + scrape																		
2	NE7	RIL	CUT - New rills 360m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at west end is as per the sides SCRAPE – 0.06 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill and Scrape																		
1	NE8	RIL	CUT - New rills 145m x 1m wide central channel to 0.3- 0.5 m from the prevailing ground level with a batter of 1:10. Circular batter at the end is as per the sides. ARISINGS - Use arisings for all local fill of dam DA2 and PLUs		Rill																		
2	NE8	RIL	CUT - New rills 148m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at west end is as per the sides SCRAPE – 0.4 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill and Scrape																		
1	NE8	ROT	Rotavate - 0.4 ha of scrapes		Rotovate																		
1	NE9	RIL	CUT - New rills 150m – cut central channel 0.5m deeper than existing channel, 10 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at west end is as per the sides		Rill + scrape																		

			SCRAPE - 0.25ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1:10 batter. Material – to be used for BUN1																				
1	NE9	RIL	CUT - New rills 27m x 1m wide central channel to 0.5 m from the prevailing ground level with a batter of 1:10. Circular batter at the end is as per the sides. ARISINGS - Use arisings for all local fill of dam DA2 and PLUs		RIL																		
1	NE9	BUN1	FILL – 110-meter Low bund made from site-won material. Crest height of 2.4m AOD. Batter of 1:1. Topsoil removed to provide secure water-retaining key between existing clay layer and new materials. CORE - Part of the fill should be a minimum 2m wide core of the best quality site-won clay to form a hydrologically impermeable barrier. KEY - Ensure that a minimum of 2m width of topsoil is stripped along the length of this feature to allow the new clay core and existing clay subsoil to combine and form a water-retaining barrier. The topsoil from this strip forms part of the fill for the bund outside of the clay core. COMPACTION - Tracking-in is sufficient.		Bund																		
1	NE9	ROT	Rotavate - 0.8 ha of scrapes		Rotovate																		
1	NE9	ISL	FILL – Create 8 new 'islands' 3 islands at -100mm lower than peak winter water levels, ISL4, ISL6 and ISL 7 crest at 1.6AOD. 3 island at 100mm higher than peak winter water levels. ISL1, ISL2 and ISL8 at 1.8AOD 2 islands at 200mm higher than peak winter water levels at 1.9AOD Batter is 1:10. COMPACTION - Tracking-in is sufficient. Material – won from		Islands																		
1	NE10	RIL	CUT - New rills 300m - 0.2-0.4m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at west end is as per the sides SCRAPE – 0.1. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1:10 batter.		Rill + scrape																		
2	NE10	RIL	CUT - New rills 300m - 0.2-0.4m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at west end is as per the sides SCRAPE – 0.1. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1:10 batter.		Rill and Scrape																		
1	NE10	RIL	CUT - New rills 120m x 1m wide central channel to 0.5 m from the prevailing ground level with a batter of 1:10. Circular batter at the end is as per the sides. ARISINGS - Use arisings for all local fill of dam DA2 and PLUs		RIL																		
1	NE10	ROT	Rotavate - 0.4 ha of scrapes and existing rills		Rotovate																		
1	SE4	RIL	CUT - New rills 900m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides SCRAPEs – 1.2 ha in total over. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1:10 batter.		Rill + scrape																		

2	SE4	RIL	CUT - New rills 50m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides SCRAPES – 0.05 ha in total over. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill and Scrape																		
1	SE4	RIL	CUT - New rills 100m x 1m wide central channel to 0.5 m from the prevailing ground level with a batter of 1:10. Circular batter at the end is as per the sides. ARISINGS - Use arisings for all local fill of dam DA2 and PLUs		Rill																		
1	SE5	CUL1	PIPE- Install 20m x 200mm diameter pipe, 0.5m 90 degree upstand on south side. Pipe invert set at 0.8m AOD. Excavate a trench, install pipe, and backfill to the height of 2.4 AOD levelled off with adjacent bunding. COMPACTION - Tracking-in is sufficient.		Culvert																		
2	SE5		CUT - New rills 970m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides SCRAPES – 0.25 ha in total over. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill and Scrape																		
1	SE8		CUT - New rills 600m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides SCRAPE – 0.3 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill & Scrape																		
1	NW1		CUT - New rills 400m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides SCRAPE – 0.1 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill																		
1	NW2		CUT - New rills 500m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides		Rill																		
2	NW2		CUT - New rills 200m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides Scrape - - 0.2 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill and Scrape																		
1	NW3		CUT - New rills 380m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides SCRAPE – 0.12 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill and Scrape																		
2	NW3		CUT - New rills 630m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides SCRAPE – 0.15 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter.		Rill																		

1	NW4	RIL	CUT - New rills 400m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides SCRAPE – 0.12 ha. To a depth of 0.3 – 0.5m deeper than existing depth. Finish with 1.10 batter		Rill and Scrape																			
2	NW4	RIL	CUT - New rills 150m - - 0.3-0.5m deeper than existing channel, 5 - 7 m wide channel batter of 1:10 both sides from edge of central channel to prevailing ground levels. Circular batter at end is as per the sides		Rill																			
1	NW4	RIL	CUT - New rills 65m x 1m wide central channel to 0.5 m from the prevailing ground level with a batter of 1:10. Circular batter at the end is as per the sides. ARISINGS - Use arisings for all local fill of dam BUN2		Rill and Scrape																			

Appendix 1: Soil Spreader



