

WASC 1840

Lower Jr. Washes
Archaeological Study
Essex CC FAU


**ROYAL GUNPOWDER FACTORY,
LOWER ISLAND WORKS,
WALTHAM ABBEY,
ESSEX.**


ARCHAEOLOGICAL RECORDING



Essex County Council
Planning
Field Archaeology Unit

January 1999

Written by.....
Project Officer,
Field Archaeology Unit, Essex County Council

Checked by.....
Archaeological Fieldwork Co-ordinator,
Field Archaeology Unit, Essex County Council

As part of our desire to provide a quality service, we would welcome any comments you may have on the content or the presentation of this report.

Please contact Philip Clarke, Principal Archaeologist, at the Field Archaeology Unit, Bocking Place, Courtauld Road, Braintree, Essex CM7 9BG.

Tel: 01376 331470

E Mail: Phil@eccfau.demon.co.uk

**ROYAL GUNPOWDER FACTORY
LOWER ISLAND WORKS
WALTHAM ABBEY
ESSEX**

ARCHAEOLOGICAL RECORDING

Report prepared by

D. A. G. Gadd

January 1999

©ESSEX COUNTY COUNCIL

Field Archaeology Unit
Courtauld Road
Braintree
Essex
CM7 9BG

Tel: 01376 331431
Fax: 01376 331428

CONTENTS

SUMMARY

- 1.0 INTRODUCTION
- 2.0 ARCHAEOLOGICAL BACKGROUND
 - 2.1 Site Location and Topography
 - 2.2 Historical Background
- 3.0 AIMS & OBJECTIVES
- 4.0 METHOD
- 5.0 FIELDWORK RESULTS
- 6.0 FINDS
- 7.0 CONCLUSIONS
- 8.0 ACKNOWLEDGEMENTS

Bibliography

FIGURES

- Figure 1. Location of Area of Investigation
- Figure 2. Ordinance Survey Map 1908
- Figure 3. RCHME Map (North) 1993 Survey
- Figure 4. RCHME Map (South) 1993 Survey
- Figure 5. ECC FAU Plan of Features 1-11 (North)
- Figure 6. ECC FAU Plan of Features 12-23 (South)

Appendix 1. PLATES

- Plate 1. Brimstone/Sulphur Refinery.
- Plate 2. Brimstone/Sulphur Refinery & Sulphur Dome.
- Plate 3. Mill Wheel.
- Plate 4. Incorporating Mills No. 11, Group B Mills, Acetate Store.
- Plate 5. Incorporating Mills No. 11, Group B Mills, Acetate Store.
- Plate 6. Entrance to Large Arched Brick Culvert
- Plate 7. Large Arched Brick Culvert.

Appendix 2. ESMR Sheet

**ROYAL GUNPOWDER FACTORY,
LOWER ISLAND WORKS,
WALTHAM ABBEY,
ESSEX.**

ARCHAEOLOGICAL RECORDING

SUMMARY

This report describes the results of a rapid archaeological recording of the Royal Gunpowder Factory, Lower Island Works, Waltham Abbey. Lower Island contained a purpose-built black powder factory comprising various mills for incorporation, glazing, pressing, etc. The proposed construction of a road across the site necessitated the removal of 300 – 800mm of contaminated topsoil. This revealed brick foundations, culverts, the edge of canals/leats and various moorings.

1.0 INTRODUCTION

The archaeological recording at the Royal Gunpowder Factory, Lower Island works, Waltham Abbey was carried out by the Essex County Council, Field Archaeology Unit (ECC FAU). The aim was to record the remains of the black powder factory which included incorporating mills, glazing mills and pressing mills prior to their being covered by 1000 – 3000mm of clay. Although this would preserve the remains in situ the opportunity was taken to record them whilst access was available. The project was carried out in accordance with a brief from the Archaeological Advisory Group (AAG) of Essex County Council.

2.0 ARCHAEOLOGICAL BACKGROUND

2.1 Site location and Topography

The lower island works are situated between a gated entrance at the extreme north of the site; on the south side of Highbridge Street at TL 3769 0055 and, and the point where Cobbins Brook joins the Rammey Marsh Flood Relief Channel, at TQ3763 9974. The western side of Lower Island is defined by the River Lee Navigation which joins up with the flood relief channel further down stream. The eastern side is defined by modern narrow drain.(See Fig.1)

2.2 Historical Background

The following information is taken from the Royal Commission on the Historical Monuments of England (RCHME) survey of The Royal Gunpowder Factory, Waltham Abbey, Essex 1993.

The Lower Island Works were established between 1801 and 1806 on a meander of the River Lea by-passed by a canal constructed by 1783. This is represented by the southern half of the later Lower Island site. The mills were powered by the head of water from the level of the Old River Lea, that is the lowest level on North Site, taken off from the east side of the river in a straight cut to act as a head leat. The necessary fall to what was therefore the lowest level in the factory was created by 'The Tumbling Bay' at the northern end of the canal cut, the canal being maintained at a higher level than

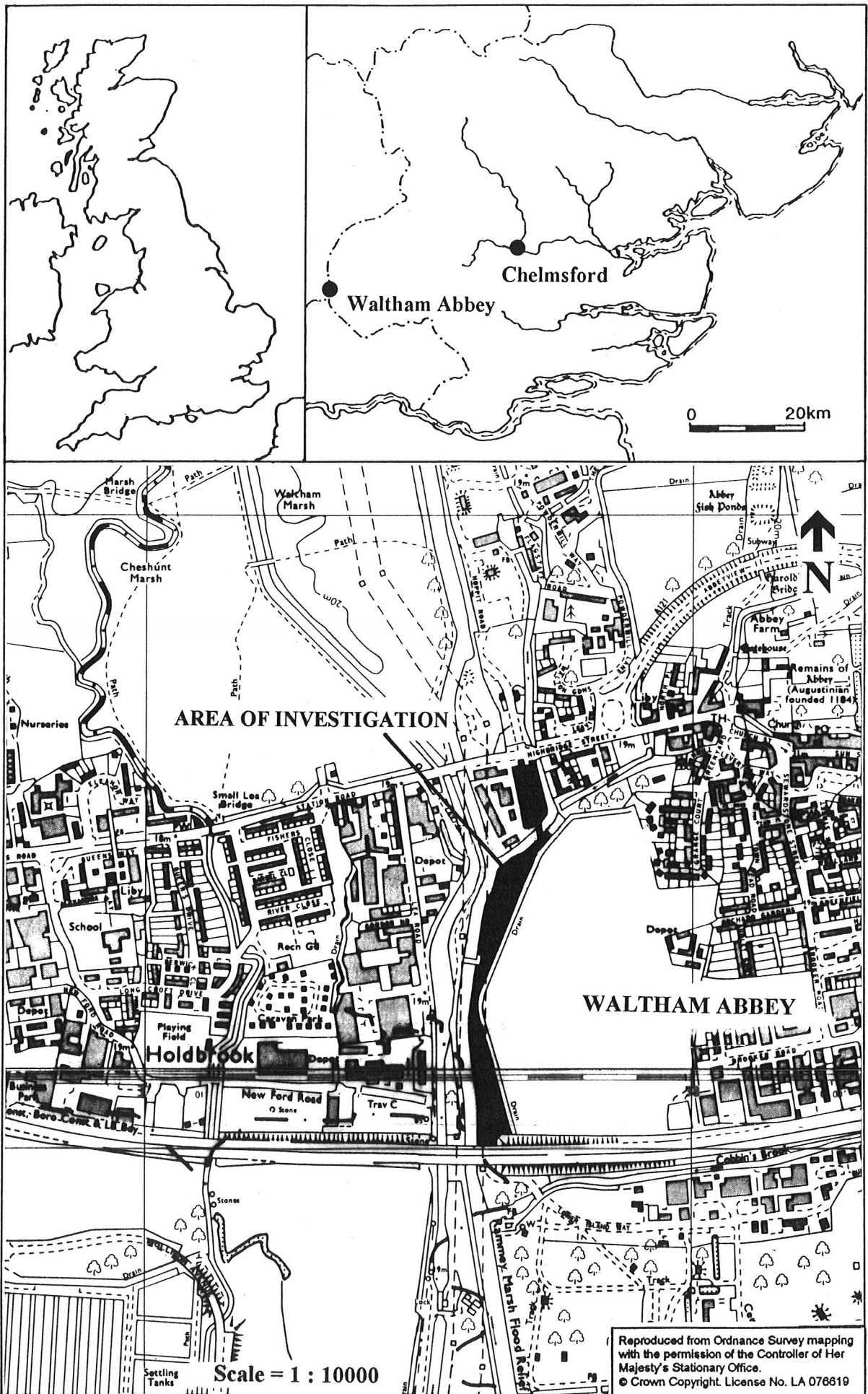


Figure 1. Location of Area of Investigation

the old river meander. The fall also located the Ramme Marsh Lock at the southern end of the canal cut, and later a lock [RCHME 350] (See Fig. 4 under M25 motorway) was placed at the southern end of the eastern head leat. Originally there were three mills with ancillary buildings [394, 395, 397, 398 and 399] (See Fig. 2) powered by the eastern head leat tipping water into the lowest stretch of the water beneath The Tumbling Bay. To these were later added two further mills [RCHME 308 and 309] (See Fig. 3) placed on the east side of the header leat. They occupied a narrow island or platform, its line roughly represented by modern track, with water from the header leat tipping into a tailrace to their east... A press house [399], initially with hand operated screw presses was replaced after 1812 with a press powered by a Bramah hydraulic pump, and on the opposite side of its northern traverse a water powered Corning and Granulating machine. To its north was an Incorporating Mill [394], also water powered, and two magazines [392 and 393](See fig.4). Through the 19th century these mills changed their function on a number of occasions, often involving a change in machinery that is not manifest in the cartographic sources... The northern half of the area, to the north of the Flood control gates, was not developed with buildings in the early 19th century except for the Brimstone refinery [375 and 376] at its north end. (RCHME 1993 p53-54)

3.0 AIMS AND OBJECTIVES

The aim was to record and provisionally identify the surviving structures which were uncovered by the removal of contaminated topsoil, prior to the construction of a slip road from the M25 motorway.

4.0 METHOD

All surviving structures were located to the OS National Grid using a "Zeiss Rec Elta 15" Electronic Data Mapper (EDM.). Low level area descriptions were given as well as photographs of readily identifiable Structures.

5.0 FIELDWORK RESULTS

ECC FAU Plan Reference	RCHME Name & Reference No	Location	Description & Comments
1	Saltpetre Store house, Store houses & Acetone Store 344-352	TL 37718 00486	No structures surviving.
2	No reference	See Fig.5	Brick Rubble Spread, May have been part of a pre 1859 road or rubble from the canal and mill head leat built in 1859
3	No reference	See Fig.5	Brick Rubble Spread, May have been part of a pre 1859 road or rubble from the canal and mill head leat built in 1859
4	No reference	See Fig.5	Brick Rubble Spread, May have been part of a pre 1859 road or rubble from the canal and mill head leat built in 1859
5	No reference	See Fig.5	Brick Rubble Spread, May have been part of a pre 1859 road or rubble from the canal and mill head leat built in 1859
6	No reference	See Fig.5	Brick Rubble Spread, May have been part of a pre 1859 road or rubble from the canal and mill head leat built in 1859

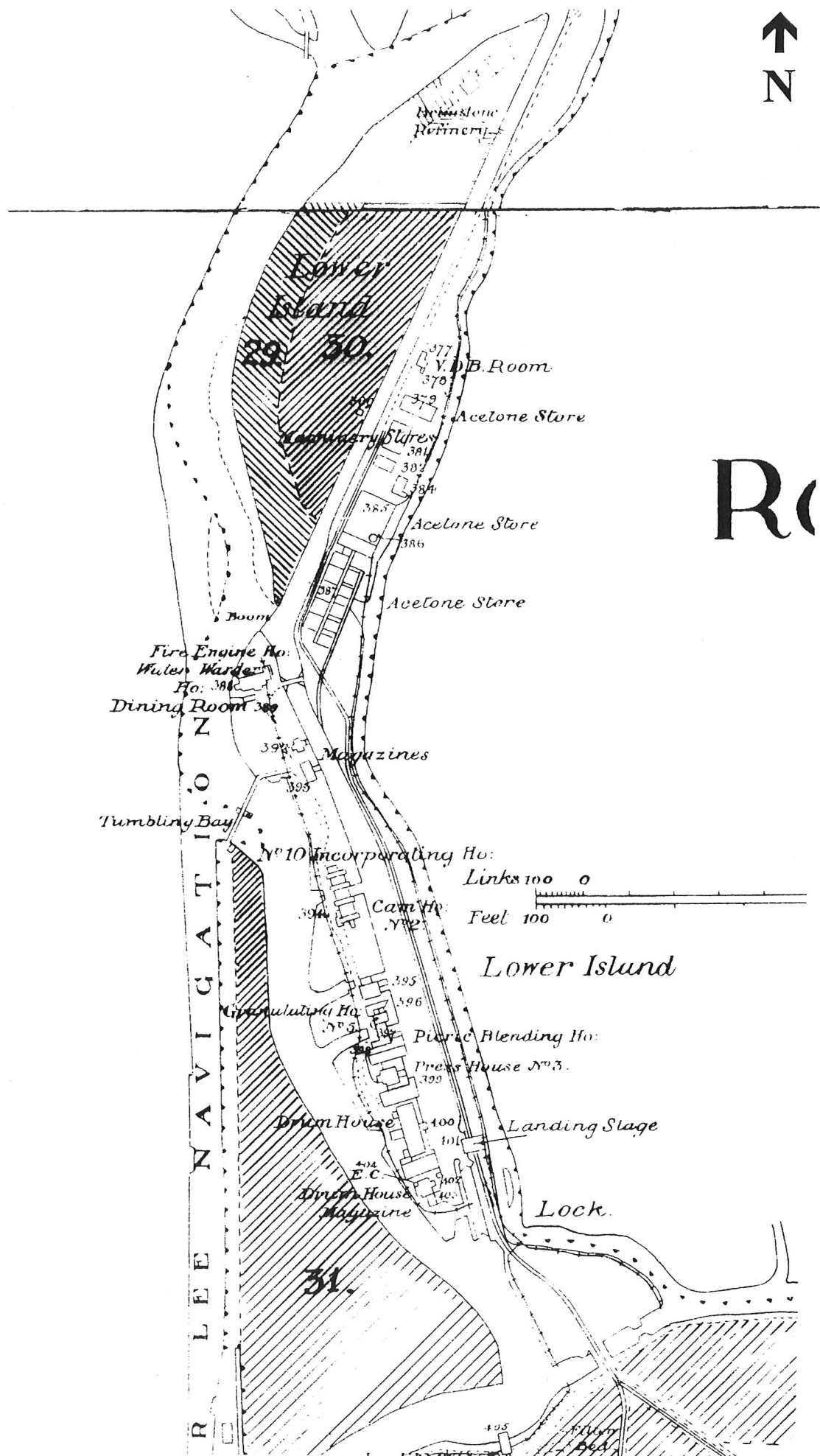


Figure 2. Ordnance Survey Map 1908

Royal Gunpowder Factory, Lower Island Works, Waltham Abbey, Essex.
Archaeological Recording

ECC FAU Plan Reference	RCHME Name & Reference No	Location	Description & Comments
7	Shifting Room 379	TL 37637 00217	Brick rubble spread
8	Machinery Store or Pulley store 381 or 382	TL 37629 00206 & TL 37624 00196	Wall Foundations and Concrete platform
9	---	See Fig. 5	Small Square Brick foundations
10	Brimstone/Sulphur Refinery and Sulphur Dome. 375, 376	TL37665 00363	Brick foundations (See Plate 1)
11	Brimstone/Sulphur Refinery and Sulphur Dome. 375, 376	TL37665 00363	Spread of Black Surfaced Bricks probably a floor. (See Plate 2) also in between 10 and 11 was a mill wheel (See Plate 3) which may have also been from this building
12	Boiler house, Acetone store. 385	TL 37617 00172	Brick foundation wall and concrete pad
13	Boiler house, Acetone store. 385	TL 37617 00172	Brick foundation wall and concrete pad
14	Incorporating Mills No.11, Group B mills, Acetone store. 387	TL 37598 00140	Brick foundations, Leats, purple discoloration (See Plates 4 & 5)
15	No reference	See Fig. 6	Rectangular brick foundation wall
16	No reference	See Fig. 6 & 2	Line of Wooden posts, some of which were joined by planks, seems to be quay type construction possibly related to the Eastern Header Canal.
17	No reference	See Fig. 6	Brick foundation walls and brick rubble spread.
18	No reference	See Fig. 6	Brick rubble spread.
19	Gunpowder Mills 308	TL 37527 00013	Brick foundation Walls
20	Incorporating Mill & Cam house No.'s 2 and 3 Cam House	TL 37608 00002	Brick foundation Walls
21	Gunpowder Mills 309	TL 37636 99980	Brick foundation walls containing rubble spread within
22	Wash up and Pump House, Gear Room, Press House / Traverse, No3 Press House. 398, 399.	TL 37625 99939 to TL 37628 99920	Considerable brick foundation walls and brick rubble spread, also surviving large arched brick culvert (See Fig.6 & Plates 6 & 7)
23	Corning House, Granulating House, Drum House. 399b	TL37635 99892	Brick foundation walls and Brick rubble spread. May be part of 398, 399.

6.0 FINDS

As instructed by the brief no finds were collected from this project.

7.0 CONCLUSIONS

The archaeological recording of this site has helped to provisionally identify 23 structural features. These all date from various phases of gunpowder production and were in use on the site from c1801, possibly right up to the construction of the M25 motorway. The recorded structures were all brick or concrete and will be covered by 1000mm – 3000mm of soil, and therefore will not be further destroyed by the construction of a sliproad for the M25 motorway.

8.0 ACKNOWLEDGEMENTS

On site recording was carried out by R. Clarke, A. Passmore and the author. RCHME Reports and Maps were supplied by A. Passmore. AAG monitoring was carried out by Shane Gould.

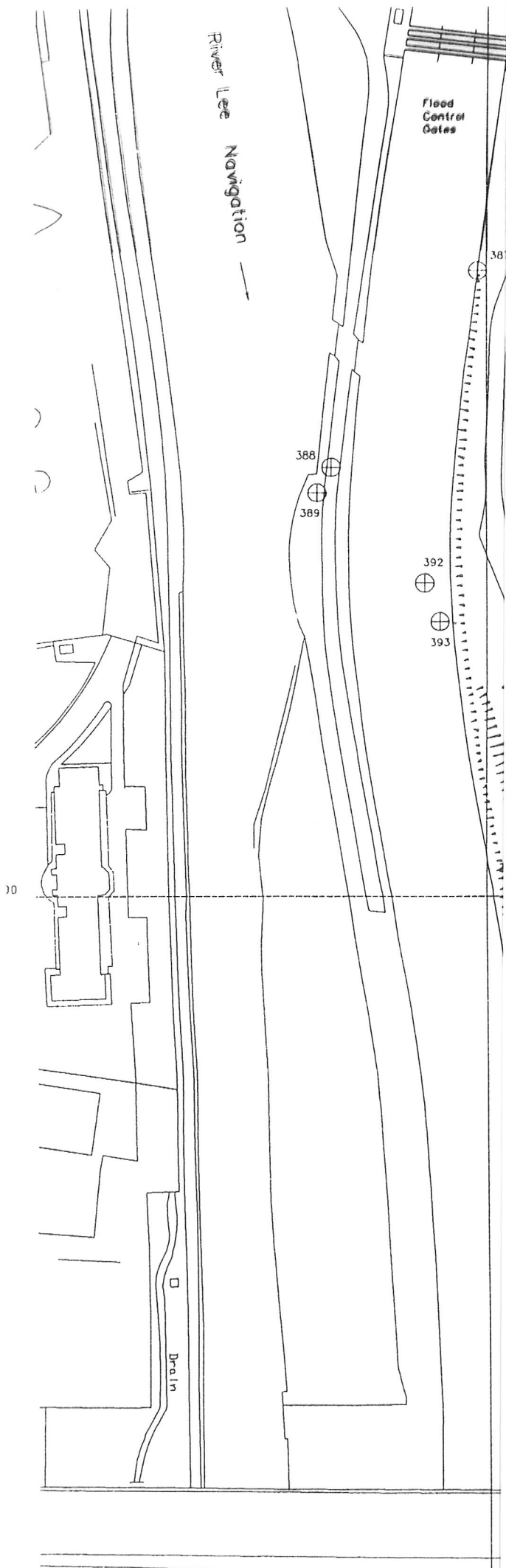
BIBLIOGRAPHY

- | | | |
|--|------|---|
| Royal Commission on the Historical
Monuments of England | 1993 | <i>The Royal Gunpowder Factory, Waltham
Abbey, Essex. An RCHME Survey</i> |
|--|------|---|

Figure 3. RCHME Map (North) 1993 Survey



4. RCHME Map (South) 1993 Survey



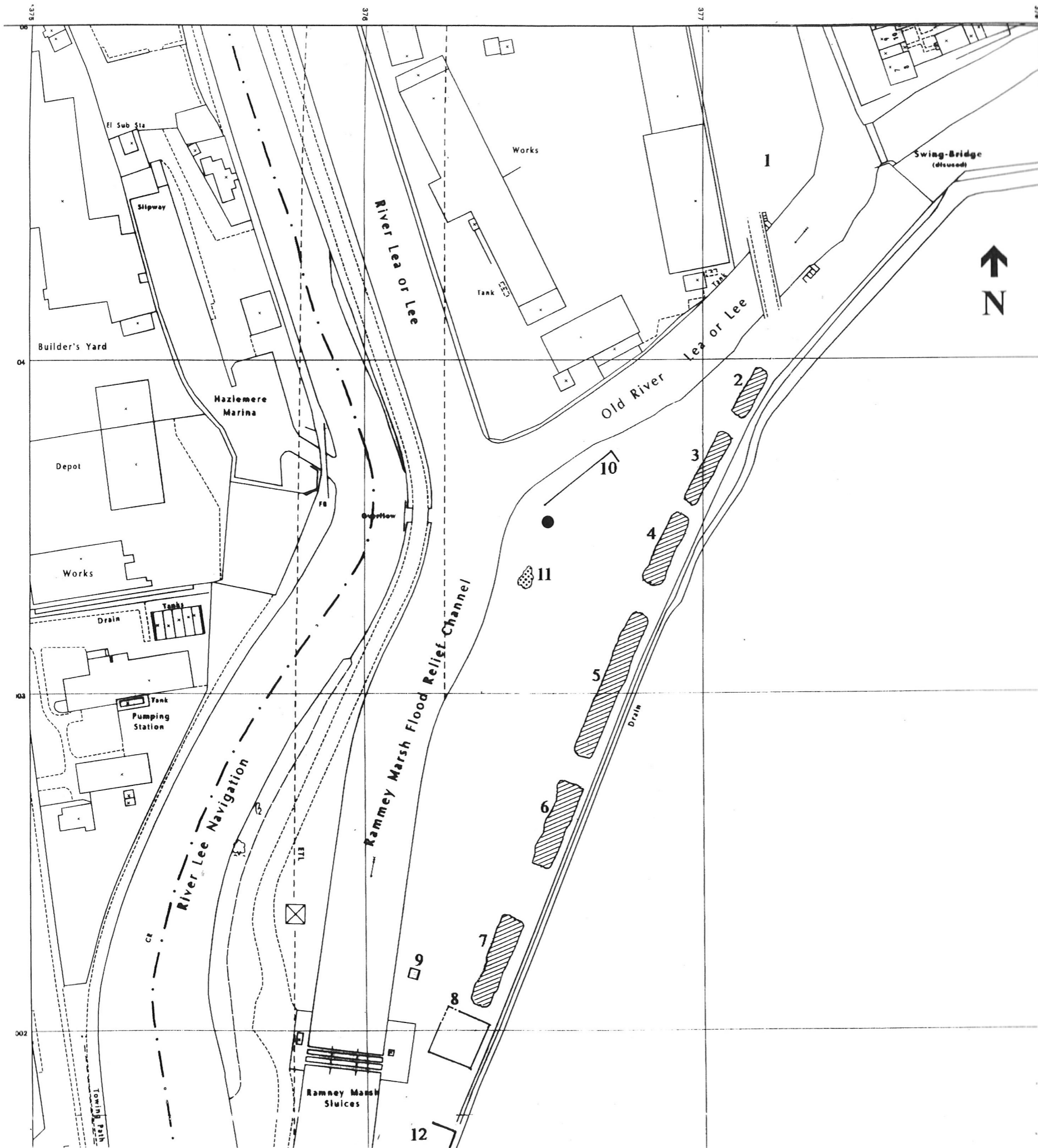


Figure 5. Plan of Recorded Features 1 – 11 (North)
(Based on RCHME 1993)





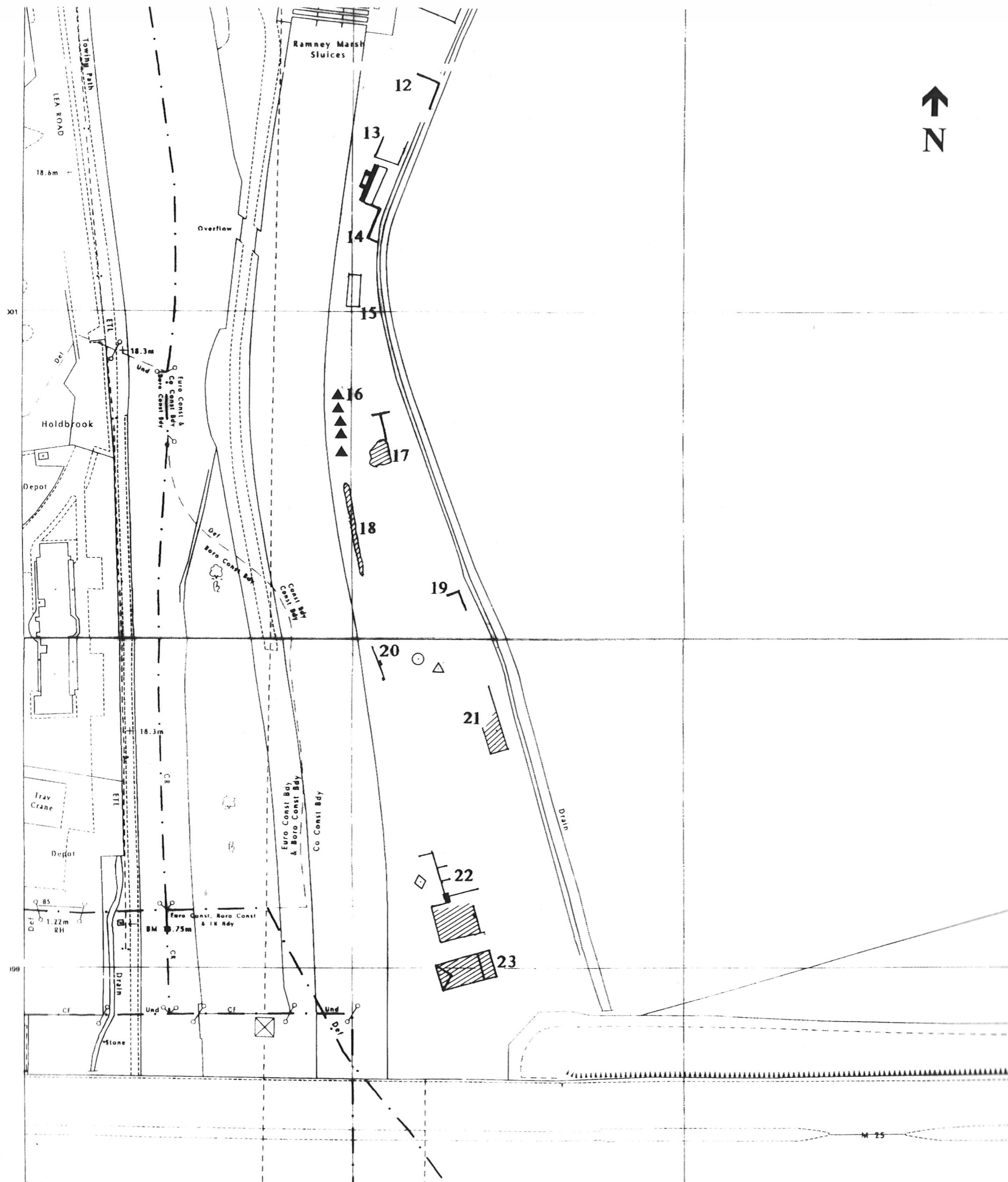






- KEY :
-  = Rubble Spread
 -  = Brick Floor Spread
 -  = Surviving Wall Foundations
 -  = Mill Stone

Figure 6. Plan of Recorded Features 12 – 23 (South)
(Based on RCHME 1993)



- KEY:
-  = Rubble Spread
 -  = Surviving Wall Foundations
 -  = Large Arched Brick Culvert
 -  = Wooden Posts.
 -  = Submerged Tank
 -  = Concrete

APPENDIX 1: Plates



Plate 1. Brimstone/Sulphur Refinery.

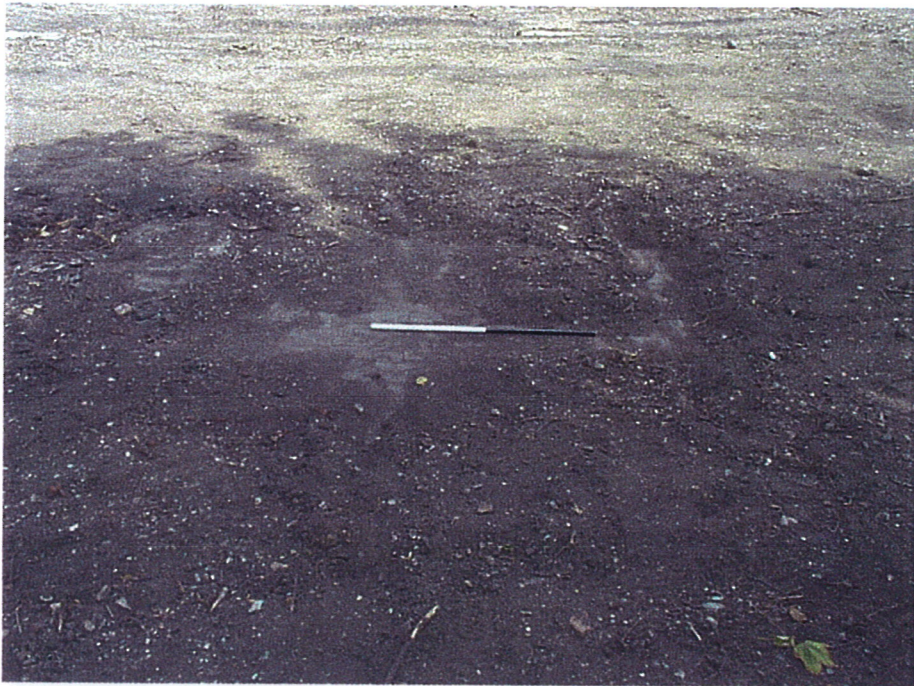


Plate 2. Brimstone/Sulphur Refinery & Sulphur Dome.



Plate 3. Mill Wheel.



Plate 4. Incorporating Mills No. 11, Group B Mills, Acetate Store.



Plate 5. Incorporating Mills No. 11, Group B Mills, Acetate Store.

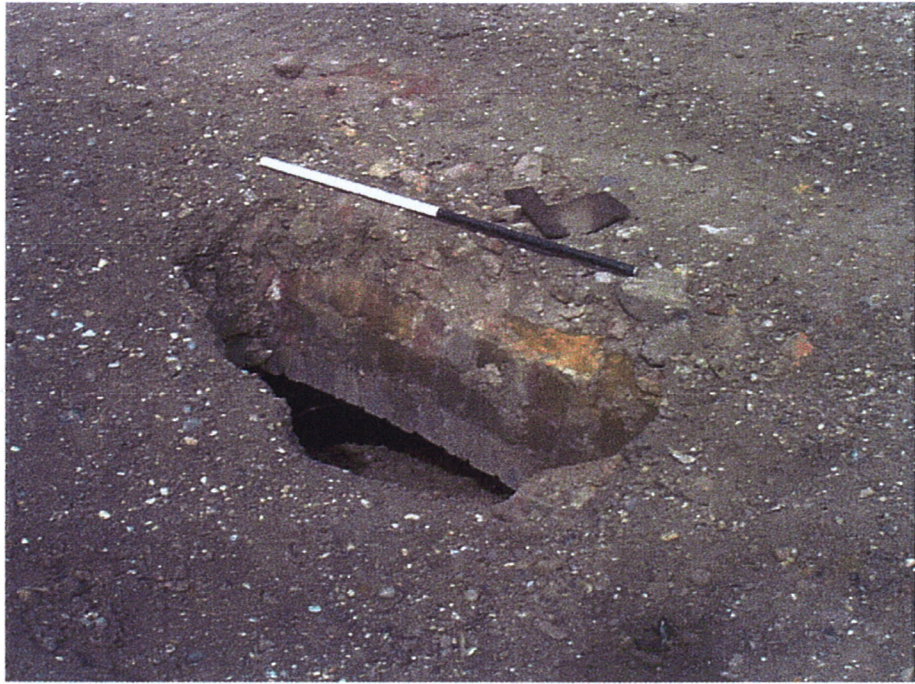


Plate 6. Large Arched Brick Culvert



Plate 7. Large Arched Brick Culvert.

APPENDIX 2: ESMR SUMMARY SHEET

Site Name/Address: Royal Gunpowder Factory, Lower Island Works, Waltham Abbey, Essex	
Parish: Waltham Abbey	District: Epping Forest
NGR: TL 37598 00140	Site Code: WASI98
Type of Work: Archaeological Recording	Site Director/Group: Daniel Gadd. Essex County Council Field Archaeology Unit
Dates of Work: 29th/30th July 1998	Size of Area Investigated: 3Hectares (approx.)
Location of Finds/Curating Museum: No finds	Funding source: PAO1
Further Seasons Anticipated?: None	Related SMR Nos.:
Final Report	
Periods Represented: Modern	
SUMMARY OF FIELDWORK RESULTS: <i>This report describes the results of a rapid archaeological recording of the Royal Gunpowder Factory, Lower Island Works, Waltham Abbey. Lower Island contained a purpose-built black powder factory comprising various mills for incorporation, glazing, pressing, etc. The proposed construction of a road across the site necessitated the removal of 300 – 800mm of contaminated topsoil. This revealed brick foundations, culverts, the edge of canals/leats and various moorings.</i>	
Previous Summaries/Reports:-	
Author of Summary: D.A.G.Gadd	Date of Summary: January