RURAL PARTNERS LIMITED
F I N E · P L A N S

Parkhouse Farm, Harbottle, Morpeth, Northumberland, NE65 7BD
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BACKGROUND STATEMENT

Land North of
Gable End Farm, Marsh Road
Gedney Marsh, Lincolnshire

Proposed
Replacement 10 million Gallon Irrigation Reservoir

Ref No. FP/2502/BS November 2025

JEPCO Ltd
Gedney Marsh
Gedney Drove End
Spalding
Lincolnshire
PE12 9PB

1. BACKGROUND

JEPCO are a well established farming company farming some 910 ha from Norfolk House Farm, Gedney Marsh.

The proposal is to increase reservoir capacity by replace the existing reservoir with a larger one and relocate the existing pond to the North to the East as shown on drwg no FP/2502/01.

With changing weather patterns there is pressure on the Environment Agency to more effectively manage the country's water resources particularly during the summer months and it is Government Policy to encourage the construction of reservoirs to store winter run off.

The guarantee of irrigation water stored in the proposed reservoir will allow the company to meet customers requirements for tighter crop quality specifications using the minimum amount of energy to produce the crop quality desired for the markets they are suppling.

A number of reservoirs have been constructed since 2012 but additional capacity is still required.

JEPCO are a well established farming company farming some 3,000 ha over a number of holdings predominately in the Holbeach / Sutton Bridge area.

Current Cropping for 2026 in the area around the proposed reservoir is as follows:-

Crop	**Area in ha's**
Wheat	28.66
Potatoes	75.11
Peas	129.96
Vegetables	18.91
ELS	20.71
	273.35

2. RESERVOIR DESIGN CRITERIA

The reservoir has been designed with reference to the following:-

Small Embankment Reservoirs; Report 161; CIRIA (Construction Industry Research and Information Association)
Floods and Reservoir Safety: an Engineering Guide; The Institution of Civil Engineers. *(F&RS)*

Freeboard Height
Design Freeboard when full is 0.75m

Fetch	0.21 km	
Average Hourly annual max wind speed	18 - 20 m/s	*Fig 3 F&RS*
Once in Ten Yearly maximum wind speed	24 - 26 m/s	*Fig 4 F&RS*
Design Wind Speed assumed	25 m /s	

Using *Fig 9. F&FS* Relationship between effective fetch, wind speed and significant wave height by interpolation

Significant Wave Height 0.3 m

Design Wave Height
Using *Table 2 F & FS* Design Wave Heights

Dam Type	Earth Fill
Crest	Grass
Downstream slope	Random grass
Design wave height factor	1.3

Design wave height = 0.3 m x 1.3
= 0.39 m
= 0.4 m

Wave Run Up
Using *Fig 10 F&FS* Ratio of run-up height to design wave height

Dam Slope	1 : 4
Slope characteristic	Smooth
By interpolation Run-up Ratio	1.4

Minimum Freeboard Allowance = 0.4 m x 1.4
= 0.56 m
= 0.6 m

3. ARCHAEOLOGY

The proposed reservoir is being constructed on the site of an existing reservoir and there is no known evidence of archaeology on the site part of which has already been worked and the remainder has been intensively cultivated over the years.

Should durinbg construction any evidence of archaeology be found then Lincolnshire County Councils Historic Environment Team will be advised.

4. PLANNING LEGALISATION

The proposed development can be dealt with under the Prior Notification Procedure for the following reasons:-

The reservoir is reasonable necessary for the purposes of agriculture
The development is being carried out on an area of land of greater than 5 ha
The area of the proposed operations exceeds 0.5 ha
No part of the development is within 25 metres of a metalled part of a trunk or classified road
No excavated material will be removed from the unit. (The spoil from the excavation will be used to construct the walls of the reservoir - see appendix i)

5. CONCLUSION

Prior Approval should be granted for the proposed reservoir so as to enable JEPCO Ltd to provide consistent yields and quality so that they can remain competitive against other growing areas in the country and assist in future proofing the business from the affects of climate change.

Simon Kenny B.Sc., I.Eng., M.I.Agr.E.
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PLANS

FP/2502/125	Site Plan
FP/2502/500	Location Plan
FP/2502/01	Plan and Typical Section of Reservoir

Appendix i

Volume Calculations based on Rectangular Reservoir with

Area of Bottom = 12,635 sq m

Area of Bottom of Proposed Reservoir = 12,665 sq m

JEPCO Redesign 10/2/2025
Client F. Parnell
Site JEPCO

CALCULATION OF RESERVOIR QUANTITIES	10,059,720	Galls
	45,726	cu m
Volume above Ground Level	5,854,961	Galls
	26,613	cu m

Description	Qty	Unit
Bottom Width of Reservoir	95.00	m
Bottom Lenght of Reservoir	130.00	m
Ratio of Side Slopes (Wet)	4.00	
Ratio of Side Slopes (Dry)	3.00	
Depth of Water	3.00	m
Freeboard	0.90	m
Depth of Excavation below existing G.L.	1.40	m
Depth of Top Soil	0.00	m
Bulk Factor for Top Soil	0.00	
Width of Bank Top	4.00	m
Height of Bank above Ground Level	2.50	m
Width at Mid Depth of Water	107.00	m
Lenght at Mid Depth of Water	142.00	m
Width at Top Water Level	119.00	m
Lenght at Top Water Level	154.00	m
Width at Top of Bank	126.20	m
Lenght at Top of Bank	161.20	m
Area of Bottom	12,350.00	sq m
Area at Mid Depth	15,194.00	sq m
Area at Top Water Level	18,326.00	sq m
Width of Liner	131.16	m
Lenght of Liner	166.16	m
Area of Liner	21,793.61	sq m
Surface Area of Excavation @ Sub-Soil level	14,995.44	sq m
Area at Mid Depth of Excavation of Sub Soil	13,641.36	sq m
Overall Width of Reservoir Top of Bank	134.20	m
Overall Lenght of Reservoir Top of Bank	169.20	m
Overall Width of Reservoir @ Sub-Soil level	149.20	m
Overall Lenght of Reservoir @ Sub-Soil level	184.20	m
Overall Area of Reservoir @ Sub-Soil level	27,482.64	

VOLUMES

Volume of Water Storage in Gallons	10,059,720	galls
Volume above Ground Level	5,854,961	galls
Volume of Sub Soil Excavated	19,113	cu m
Volume of Top Soil Strip	0	cu m
Total Volume of Excavation	19,113	cu m
Volume of Bank	18,636	cu m