

AAH consultants

Middle Marsh Road, Holbeach St Marks

LANDSCAPE MITIGATION FOR PROPOSED SOLAR FARM

May 2023



1.0 Site context

1.1 Introduction

This document has been prepared by AAH Planning Consultants to accompany a planning application (the Application) for a proposed 48 MW solar development (The Development) on 80 hectares of arable land to the east of Middle Marsh Road and south of Holbeach St Marks (The Site).

The document aims to provide more detail on the design process on the layout and , how, as part of an iterative process, the layout has responded to the findings of the Landscape and Visual Appraisal (LVA) produced by AAH in September 2022 as part of the submission and provides more information on the landscape mitigation proposed.

1.2 The Site

Key elements of the Site are:

1. The Site consists of open fields currently in arable use.
2. It has few existing landscape features. Field boundaries are defined by drainage ditches and there are no hedgerows and only a handful of isolated trees within or bordering the Site.
3. It borders Middle Marsh Road for approximately 530m at its north-western corner
4. It is crossed by overhead electric lines and pylons which are highly visible in the landscape.

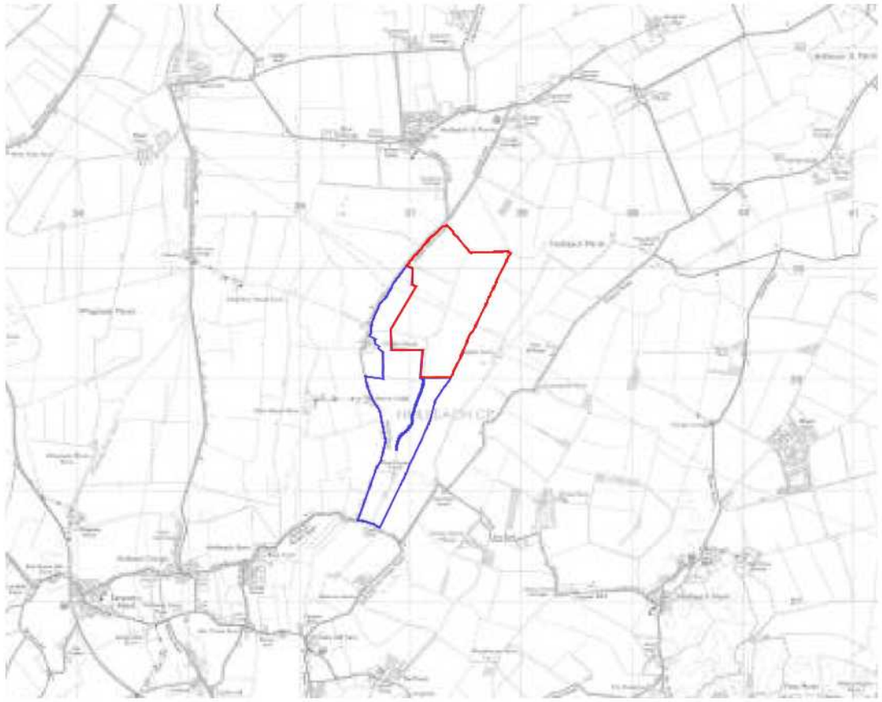


Fig 1. Site location (red line is the application boundary, blue line is the ownership boundary).



Fig 3. Shelterbelts of trees contrast strikingly with the flat open fields which continue to the horizon.



Fig 4. There are some established hedgerows present in the surrounding landscape, often bordering the local lanes.



Fig 2. View across Site from Middle Marsh Road. Field margins are narrow and do not offer much in the way of biodiversity or wildlife habitat.

2.0 Landscape masterplan

2.1 Key Design Elements

The layout of the Site has been carried out as part of an iterative process, primarily guided by findings of the AAH LVA, but also from feedback at consultations and coordination with other disciplines, such as highways, ecology and flood risk.

The development is accompanied by a landscape scheme which aims to mitigate adverse effects on landscape character and visual amenity and aims to contribute to biodiversity and local wildlife habitat while keeping in mind the return to arable farming following the eventual decommissioning of the project. The key elements that have guided the layout and mitigation are as follows:

1. **Set-back from Middle Marsh Road**: The AAH LVA identifies that the most sensitive views would be from Middle Marsh Road to the west of the Site, so in response development has been well set-back from the road, and subsequently from residential dwellings along the western carriageway.

   Along the northern section of Middle Marsh Road a hedgerow with specimen trees is located some 60-70m to away from potential receptors and will provide foreground vegetation to soften and screen views. Further south, opposite the dwellings, development is set back further from the road by a minimum of 180m, and an 8m wide planting belt with a layered mix of shrubs and trees is proposed along the western development edge to provide a consistent line of vegetation along the perimeter of the Site.

2. **Perimeter planting**: Landscape infrastructure around the perimeters of the Site is proposed, which will soften and screen the built form, ensuring that the Site respects its setting. Tree and shrub planting and hedgerows with trees will soften the key perimeters of the development.

3. **Woodland copses**: At key locations deeper blocks of trees that are evident within the wider landscape character area, will provide additional screening and wildlife habitat. These will be in keeping with those woodland blocks currently found in the wider area.

4. **Extensive wildflower seeding and scrub for maximum biodiversity benefits**

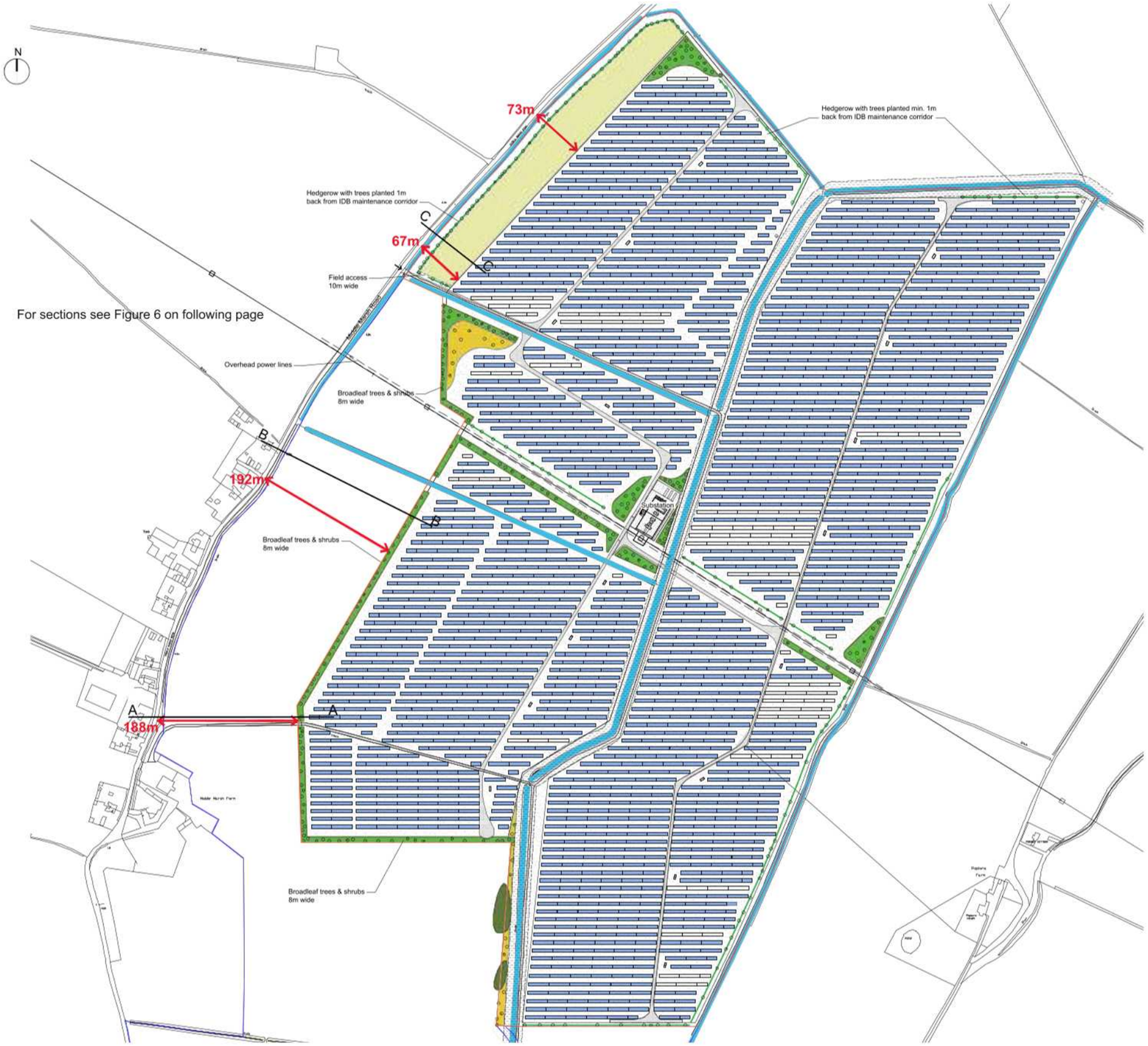




Fig 5. Site Masterplan, including planting proposals

3.0 Landscape Sections

3.1 Sections along western Site boundary and Middle Marsh Road illustrating set back distances and planting (at approximately 15 years establishment)

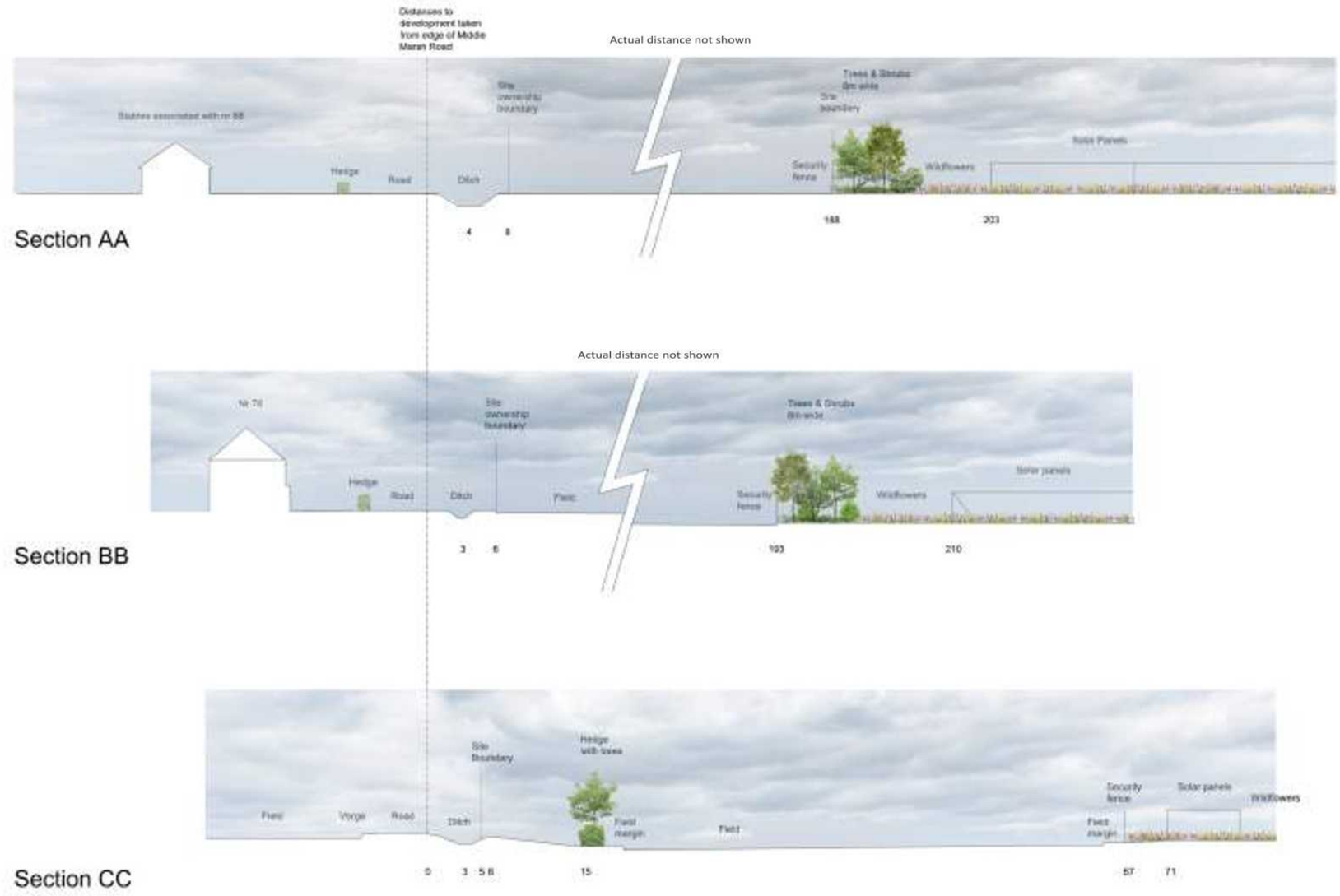


Fig 6. Sections through western boundary. Refer to Figure 5 (Section 2.0) for section locations.



Fig 7. Wildflower seeding could provide for seasonal grazing.



Fig 8. Tree and shrub planting will be a key aspect of the development.



Fig 9. Pollinators will be provided for via bio-diverse wildflower seeding across the whole site.



Fig 10. Native shrubs and trees that benefit pollinators will be prioritised.



Fig 11. Woodland areas will break up the wildflower meadow and provide windbreaks and visual screening.

4.0 Landscape mitigation

4.1 Tree planting





Fig 12. Tree Planting is to be a key element of the landscape mitigation and will form part of all the other landscape types.

Tree planting will primarily consist of linear shelterbelt planting (generally 8m wide planting areas) and woodland copses at key locations.

Tree planting will largely be used along the western edge of the Development as well as centrally within it, where it will provide screening to the substation.

Aims and functions of the planting:

- Visually soften, screen, integrate and reduce the scale of the solar farm seen from key locations – principally Middle Marsh Road;
- Provide windbreak benefiting the surrounding agricultural productivity, and protecting the more vulnerable plant species and other wildlife;
- Provide wildlife corridors and connect fragmented habitats nearby;
- Contribute to clean air and water.

A mix of species to achieve these aims could include the following:

Shrub Layer:

- Hawthorn - Crataegus monogyna
- Blackthorn - Prunus spinosa
- Guelder Rose - Viburnum opulus
- Dogwood - Cornus sanguinea
- Dog Rose - Rosa canina
- Field Rose - Rosa arvenis
- Box - Buxus sempervirens
- Yew - Taxus baccata (ungrazed areas only)

Small Trees:

- Elder - Sambucus nigra
- Goat Willow - *Salix caprea*
- *Hazel - Corylus avellana*
- Rowan - *Sorbus aucuparia*
- Apple - Malus species.
- Crab Apple - *Malus sylvestris*
- Plum - Prunus domestica
- Pear - Pyrus communis

Larger Trees:

(to be located appropriately away from field ditches and / or overhead cables)

- *Oak - Quercus robur*
- *Ash - Fraxinus excelsior*
- *Alder - Alnus glutinosa*
- *Wild Cherry - Prunus avium*
- *Field Maple - Acer campestre*
- *White Willow - Salix alba*
- *Grey Willow - Salix cinerea*
- *Common Osier - Salix viminalis*

In addition, the inclusion of fruit trees would provide aesthetic variety, and contribute to ecological benefits and local food production. Tree species could for example include:
Prunus avium 'Lupins', Malus domestica 'Allington Pippin' , 'Brown's Seedling' and Prunus domestica 'Ingalls Grimaldby Greengage'.

A mixture of feathered whips and transplants should be planted, with a limited number of Standard and Heavy Standard trees at focal points to give early planting structure. All planting stock should be grown locally where possible.


Common Osier
Salix viminalis


Goat Willow
Salix caprea


Bay Willow
Salix pentandra


White Willow
Salix alba


Elder
Sambucus nigra


Hawthorn
Crataegus monogyna


Hazel
Corylus avellana


Rowan
Sorbus aucuparia


Alder
Alnus glutinosa


Field Maple
Acer campestre


Crab Apple
Malus sylvestris


Silver Birch
Betula pendula


Sweet Cherry
Prunus avium Lapins


Lincolnshire Apple
Malus 'Allington Pippin'


Lincolnshire Apple
Malus 'Browns Seedling'


Lincolnshire Greengage
'Ingalls Grimaldby Greengage'


English Oak
Quercus robur


Common Box
Buxus sempervirens


Common Yew
Taxus baccata

Fig 13. Tree species images

4.2 Hedgerows

Native hedgerows will define the Site boundaries and provide visual containment to the Development. Clear stem specimen trees will be planted within them to reflect the nearby local character and provide increased shelter once established. The hedgerows will also be laid out to provide fruit-rich native woody species to enhance foraging opportunities for wildlife in the hedge network. Hedgerows should be maintained at a suitable height and consist of a suitable mix of native-species, planted as feathered whips in a double staggered row, to include the following potential species:

2.5% Dog Rose – *Rosa canina*
5% Dogwood – *Cornus sanguinea*
10% Hazel – *Corylus avellana*
60% Hawthorn – *Crataegus monogyna*
10% Field Maple – *Acer campestre*
2.5% Holly – *Ilex aquifolium*
10% Guelder Rose – *Viburnum opulus*

Underplanting**:** Areas around and under trees and hedgerows should be improved with a suitable woodland/shade tolerant wildflower and meadow grass mix. An example mix may be: Emorsgate EW1 Woodland Mixture mix (or similar), including:

Alliaria petiolata, Allium ursinum,Betonica officinalis,

Stachys officinalis, Digitalis purpurea, Filipendula ulmaria,

Galium album - Galium mollugo,Geum urbanum,

Hyacinthoides non-scripta, Hypericum hirsutum,

Primula vulgaris, Prunella vulgaris, Silene dioica,

Silene flos-cuculi - Lychnis flos-cuculi, Stachys sylvatica,

Teucrium scorodonia.



Fig 14. Field boundary hedgerow



Dog Rose
Rosa canina



Dogwood
Cornus sanguinea



Hazel
Corylus avellana



Hawthorn
Crataegus monogyna



Holly
Ilex aquifolium



Field Maple
Acer campestre



Guelder Rose
Viburnum opulus

Fig 15. Hedgerow species images

4.3 Scrub

Scrub areas will provide valuable wildlife benefits and are likely to include the following species subject to the advice of an ecologist:

Hawthorn – *Crataegus monogyna*
Blackthorn – *Prunus spinosa*
Apple - Malus species
Cherry - Prunus domestica
Crab Apple - *Malus sylvestris*
Willow sp.
Gorse - Ulex europeus

The ground vegetation would be predominantly grasses and wildflowers. An example mix may be: Cotswold Grass Seeds Pollen & Nectar Mix Grass & Legume Margin (or similar), details of which can be found at: https://www.cotswoldseeds.com/products/465/pollen-and-nectar-mix-grass-and-legume-margin



Fig 16. Example of scrub with around 50% cover of woody species.



Fig 17. A more open area with mature hawthorn.



Fig 18. Woody plants with thorns provide excellent cover for birds.



Fig 19. Willow flowering in early spring.

4.4 Wildflowers

Wildflower grassland will provide valuable wildlife benefits across the site and could be focused on grazing for sheep or geese around the panels using a suitable mix such as: https://www.cotswoldseeds.com/products/1904/solar-park-long-term-grazing-mixture, or it could be a more bio-diverse wildflower mix for pollinators. In any case it will need to be in line with the soil type(s) and conditions and an ecologist will need to be consulted to confirm the final mixes to be used.



Fig 20. White Clover.



Fig 21. Red Fescue.



Fig 22. Cocksfoot.

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Quality Assurance – Approval Status					
Issue	**Date**	**Prepared by**	**Checked by**	**Approved by**	**Notes**
1	11/05/2023	TF	OB	OB	Initial Draft For Comment
2	19/05/2023	TF	OB	OB	Minor amendments
3	14/08/2023	TF	OB	OB	Plan updated
Project Number: 21-18-LM					

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