

A2 Bean and Ebbsfleet Junction Improvements

Environmental Assessment Report (EAR)

Volume 2

Figures

Contents:

PART 1

- 1.1 Location Plan
- 2.1 Scheme Option Layout - Bean Junction Option 3
- 2.2 Scheme Option Layout - Bean Junction Option 4b
- 2.3 Scheme Option Layout - Bean Junction Option 5
- 2.4 Scheme Option Layout- Ebbsfleet Junction Option 1b
- 4.1 Cumulative Assessment
- 5.1 Statutory and Non-Statutory Wildlife Sites
- 5.2 Phase 1 Habitat Survey Map

PART 2

- 5.3 Ecological Constraints Map
- 6.1 Environmental Designations
- 6.2 Access Land and Public Rights of Way
- 6.3 Topography Map
- 6.4 National Character areas

6.5 Regional Landscape Character Areas

6.6 Local Landscape Character Areas

PART 3

6.7 Zone of Theoretical Visibility

6.8 Potential Viewpoint Location

6.9 Photosheets 2x

7.1 Air Quality Baseline

PART 4

7.2 Bean Option 3 Study Area

7.3 Bean Option 4b Study Area

7.4 Bean Option 5 Study Area

8.1 Noise Important Areas within the Study Area

9.1 Statutory and Non-Statutory Cultural Heritage Assets at Bean Option 3

9.2 Statutory and Non-Statutory Cultural Heritage Assets at Bean Option 4b

9.3 Statutory and Non-Statutory Cultural Heritage Assets at Bean Option 5

9.4 Statutory and Non-Statutory Cultural Heritage Assets at Ebbsfleet Option 1b

PART 5

10.1 Superficial deposits Geology plan

10.2 Solid Geology plan

10.3 Superficial Aquifer designations

10.4 Bedrock Aquifer designations

10.5 Source Protection Zones

10.6 Aquifer Vulnerability

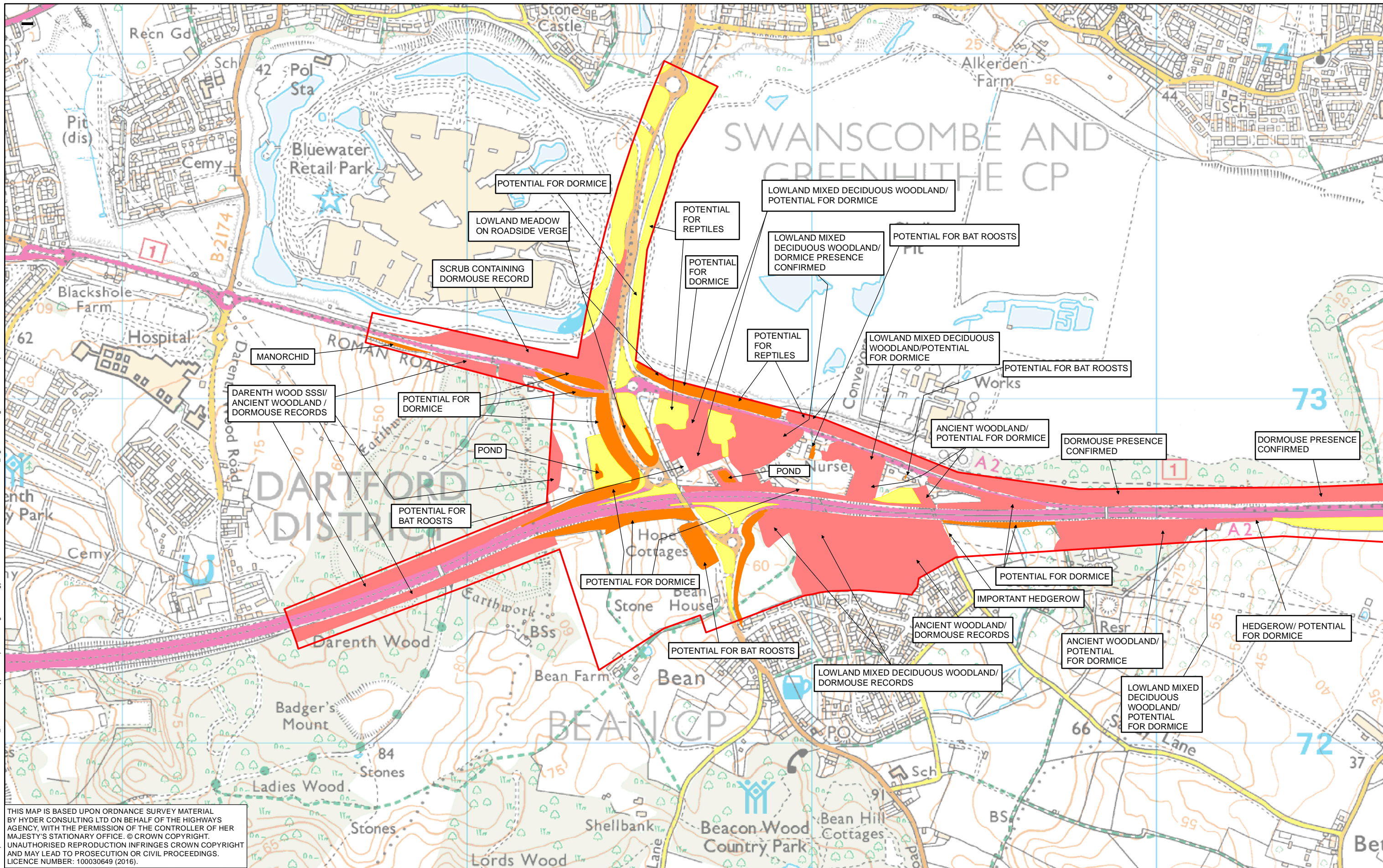
10.7 Contaminative Land Uses

PART 6

10.8 Surface water features

10.9 Existing Drainage

- 11.1 Study Area
- 11.2 Community Facilities
- 11.3 Residential Properties
- 11.4 Commercial Properties - Bean
- 11.5 Commercial Properties - Ebbsfleet
- 11.6 Public Rights of Way
- 11.7 Development Land
- 11.8 Agricultural Land



THIS MAP IS BASED UPON ORDNANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).

0	0.25	0.5	Kilometers		
P02	02/09/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Apprv'd

KEY		
[Red outline]	SCHEME LIMIT	
[Yellow]	LOW CONSTRAINT	
[Orange]	MEDIUM CONSTRAINT	
[Red]	HIGH CONSTRAINT	

highways england

Halcrow Hyder Joint Venture
 Burdorp Park
 Swindon, SN4 0QD
 Tel. +44(0)1793 812479

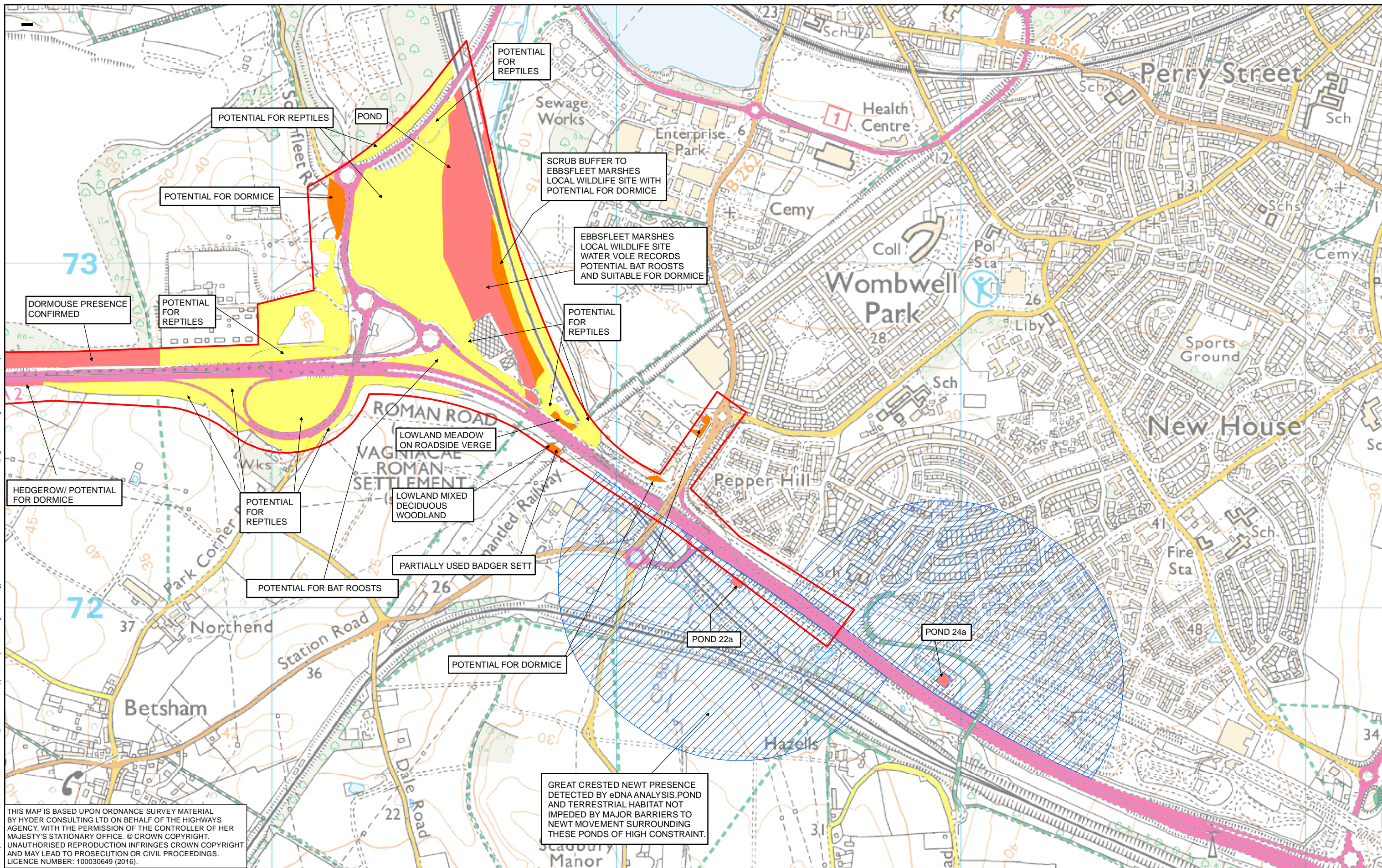
Project: A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS

Drawing title: **FIGURE 5.3 ECOLOGICAL CONSTRAINTS MAP SHEET 1 OF 2**

Status	FINAL	Revision	P02
Scale	1:10,000	Date	02/09/2016
Drawn By	SD		
Checked By	GS		
Approved By	NM		
Project No.	HA543917	Originator	HHJV
Original Size			A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0009		

Path: I:\GIS\A2 Bean to Ebbsfleet\PCF2 Options\A2 Bean to Ebbsfleet Environmental Appraisal Report - GIS Figures\Ecology and Nature Conservation\03-UA006811-02 Figure 5.3 Ecological Constraints Map.mxd

Path: I:\GIS\A2 Bean to Ebbsfleet PCF2 Options\A2 Bean to Ebbsfleet Environmental Appraisal Report - GIS Figures\Ecology and Nature Conservation\03-UA006811-02 Figure 5.3 Ecological Constraints Map.mxd



THIS MAP IS BASED UPON ORDNANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).

GREAT CRESTED NEWT PRESENCE DETECTED BY eDNA ANALYSIS. POND AND TERRESTRIAL HABITAT NOT IMPEDED BY MAJOR BARRIERS TO NEWT MOVEMENT SURROUNDING THESE PONDS OF HIGH CONSTRAINT.

0 0.25 0.5 Kilometers					
P02	02/09/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Apprv'd

KEY	SCHEME LIMIT	500M BUFFER AROUND HIGH CONSTRAINT POND
	LOW CONSTRAINT	
	MEDIUM CONSTRAINT	
	HIGH CONSTRAINT	

highways england

Halcrow Hyder Joint Venture

Burdorpe Park
Swindon, SN4 0QD
Tel. +44(0)1793 812479

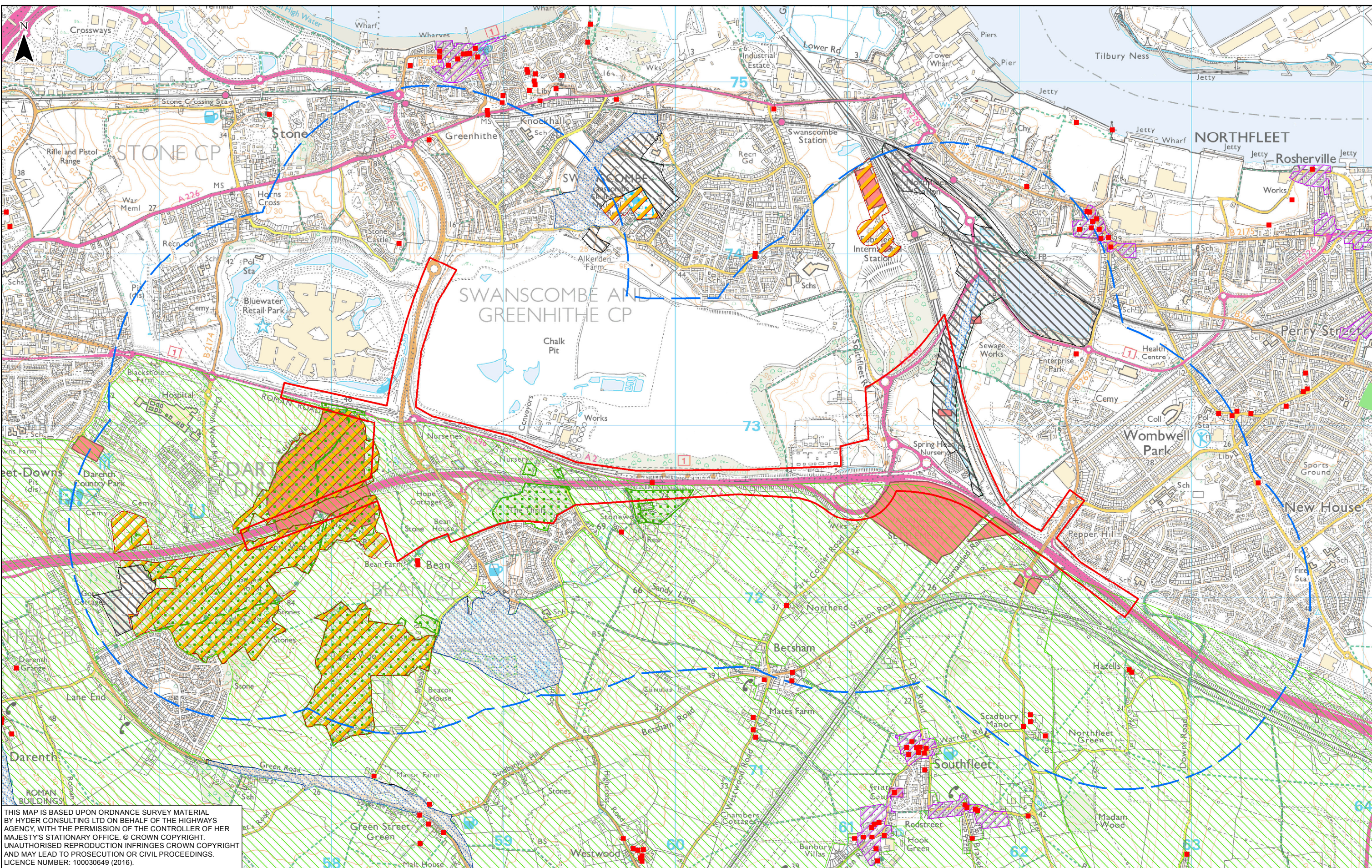
Halcrow **Hyder**

Project: A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS

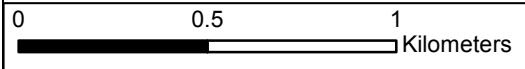
Drawing title: **FIGURE 5.3 ECOLOGICAL CONSTRAINTS MAP SHEET 2 OF 2**

Status	FINAL	Revision	P02
Scale	1:10,000	Date	02/09/2016
Drawn By	SD		
Checked By	GS		
Approved By	NM		
Project No.	HA543917	Originator	HHJV
Original Size			A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0009		

Path: \\hc-uk-mu-fs-01\MU_Proj\GIS\A2_Bean to Ebbsfleet_PCF2_Options\A2_Bean to Ebbsfleet_Environmental Appraisal Report - GIS Figures\A2_Bean to Ebbsfleet_Environmental Designations.mxd



THIS MAP IS BASED UPON ORDNANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).



KEY	
	LISTED BUILDING
	SCHEME LIMIT
	STUDY AREA, 1000M OFFSET
	SINC (SITES OF IMPORTANCE NATIONAL CONSERVATION)
	LOCAL WILDLIFE SITE (LWS)
	CONSERVATION AREA
	GREEN BELT
	PARKS AND GARDENS
	SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
	NATIONAL NATURE RESERVE (NNR)
	ANCIENT WOODLAND
	SCHEDULED MONUMENT

highways
england

Halcrow Hyder Joint Venture
Burdrop Park
Swindon, SN4 0DD
Tel. +44(0)1793 812479

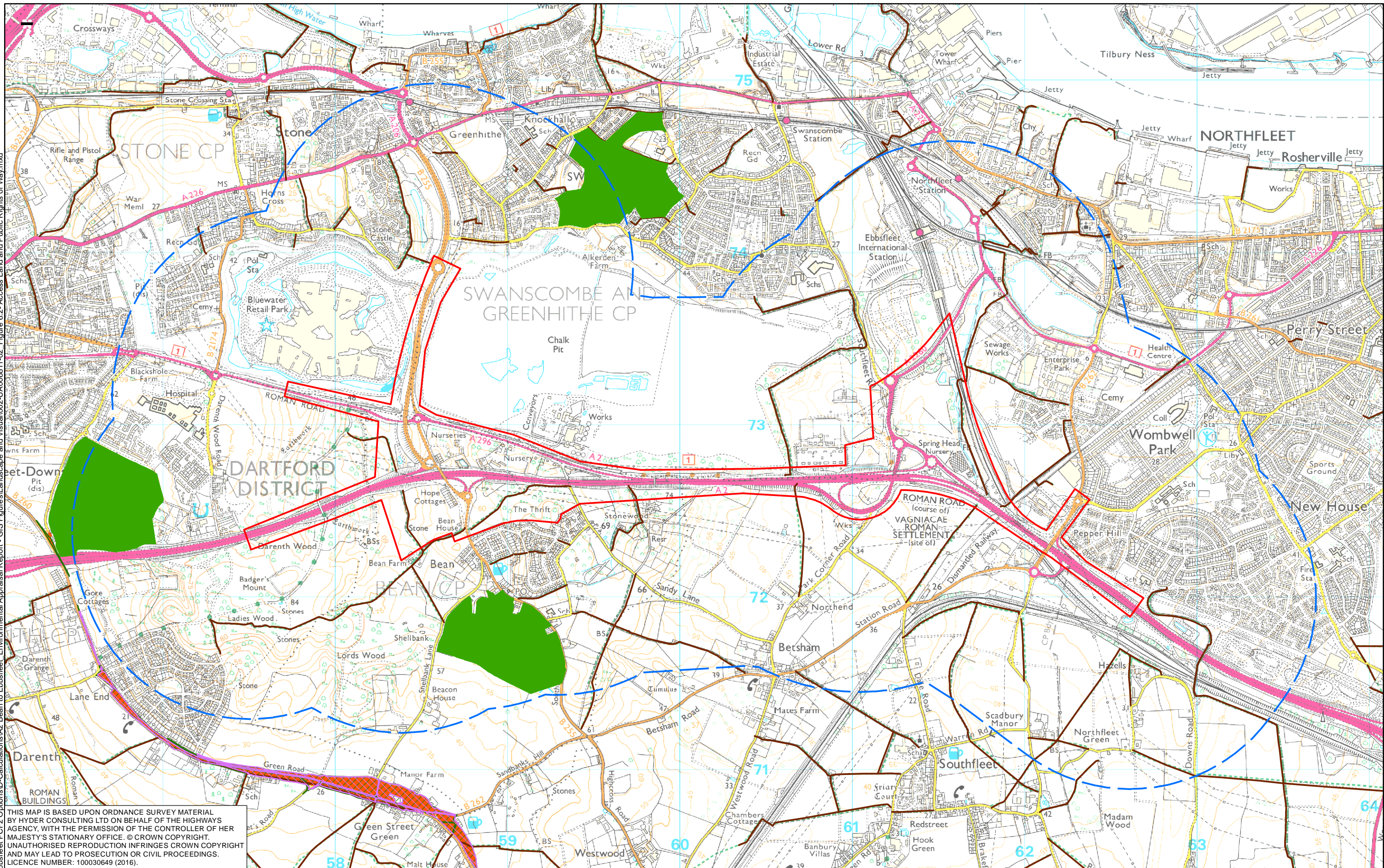
Project: **A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS**

Drawing title: **FIGURE 6.1 ENVIRONMENTAL DESIGNATIONS**

Status	FINAL	Revision	P02
Scale	1:20,000	Date	23/11/2016
Drawn By	SD		
Checked By	GS		
Approved By	NM		
Project No.	HA543917	Originator	HHJV
Original Size			A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0010		

Rev	Rev. Date	Purpose of revision	Drawn	Checked	Appr'd
P02	23/11/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM

Path: K:\GIS\A2 Bean to Ebbsfleet PC2 Options\Calculations\A2 Bean to Ebbsfleet Environmental Appraisal Report - GIS Figures\Access Land and Public Rights of Way.mxd



THIS MAP IS BASED UPON ORDNANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).

0 0.5 1 Kilometers					
P02	02/09/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Apprv'd

SCHEME LIMIT	SECTION 15 LAND
STUDY AREA, 1000M OFFSET	COUNTRY PARK
PUBLIC RIGHTS OF WAY	CONCLUSIVE OPEN COUNTRY
ACCESS LAND INCLUDING REGISTERED COMMON LAND	

highways
england

Halcrow Hyder Joint Venture

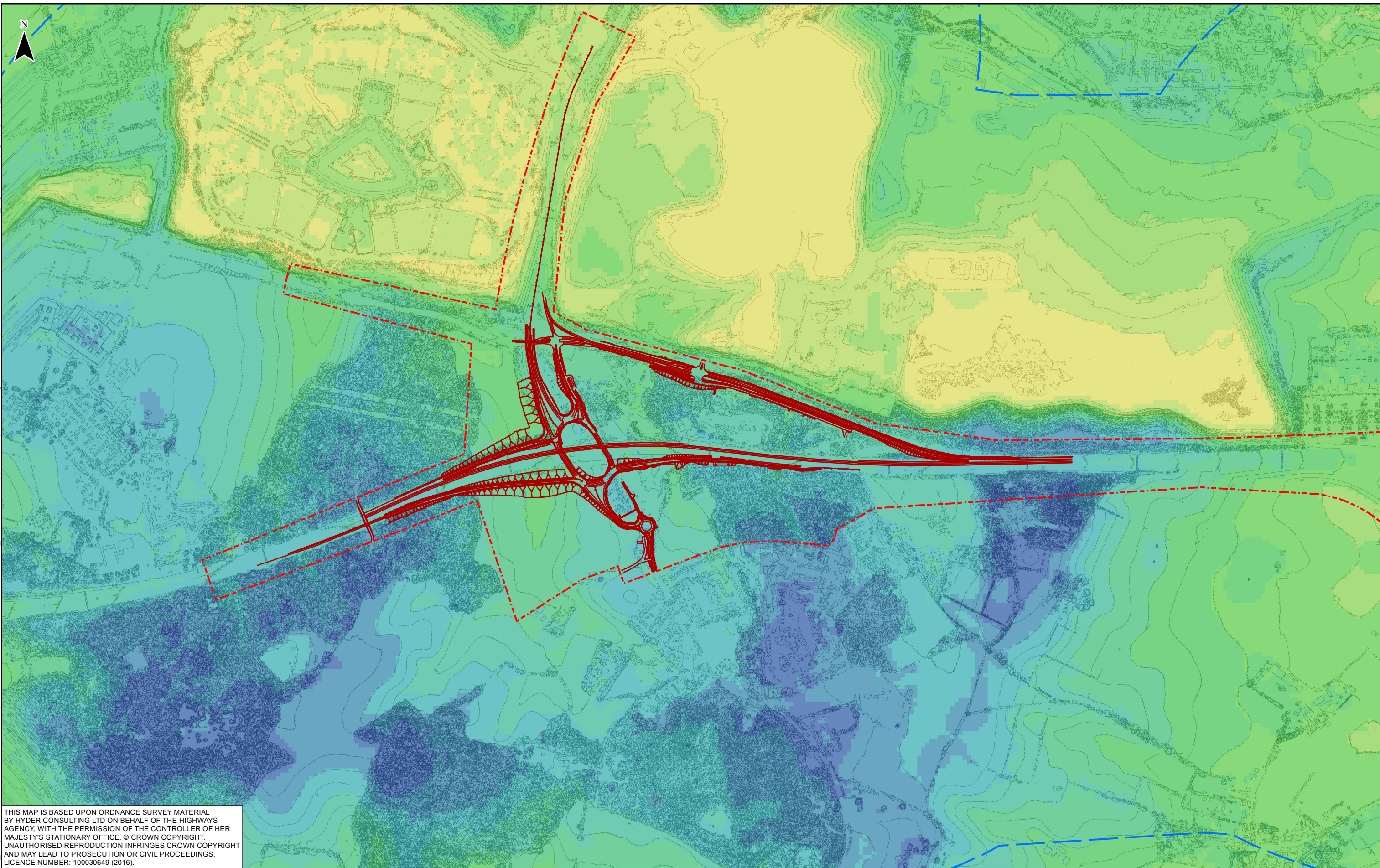
Burdens Park
Swindon, SN4 0QD
Tel. +44(0)1793 812479

Halcrow **Hyder**

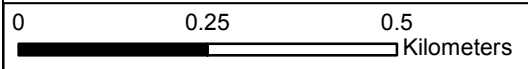
Project: A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS

Drawing title: **FIGURE 6.2 ACCESS LAND AND PUBLIC RIGHTS OF WAY**

Status	FINAL	Revision	P02
Scale	1:20,000	Date	02/09/2016
Drawn By	SD		
Checked By	GS		
Approved By	NM		
Project No.	HA543917	Originator	HHJV
Original Size			A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0011		



THIS MAP IS BASED UPON ORDNANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).



P02	16/11/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Apprv'd

KEY	
	SCHEME LIMIT
	STUDY AREA, 1000M OFFSET
	BEAN OPTION 3
	CONTOUR 5M

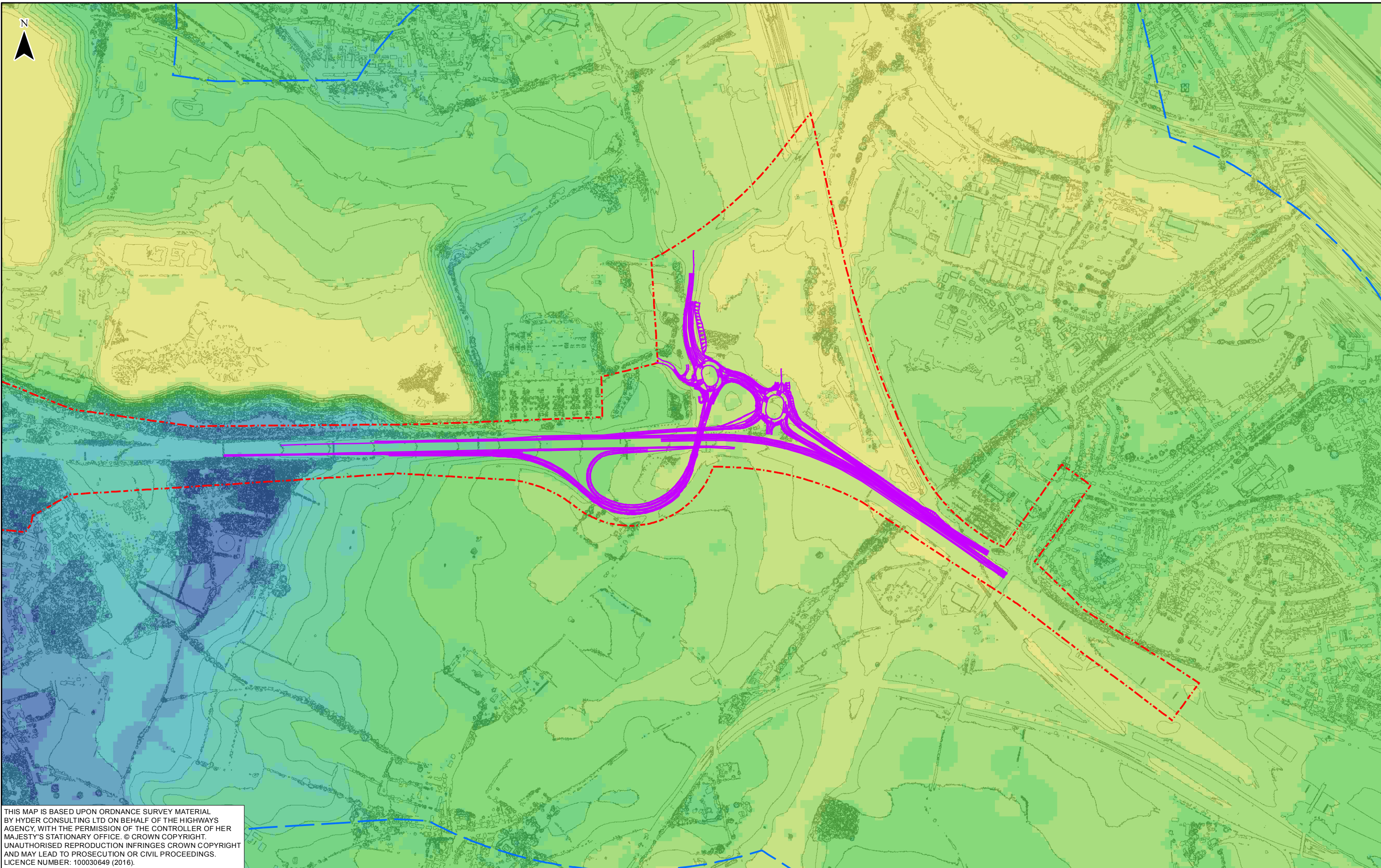
Height (m)
0 - 10
10 - 20
20 - 30
30 - 40
40 - 50
50 - 60
60 - 70
70 - 80
80 - 90
90 - 110

highways england
 Halcrow Hyder Joint Venture
 Burdserg Park
 Swindon, SN4 0QD
 Tel. +44(0)1793 812479

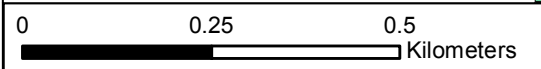
Project	A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS
Drawing title	FIGURE 6.3 TOPOGRAPHY MAP BEAN OPTION 3

Status	FINAL	Revision	P02
Scale	1:10,000	Date	16/11/2016
Drawn By	SD		
Checked By	GS		
Approved By	NM		
Project No.	HA543917	Originator	HHJV
Original Size			A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0012		

Path: K:\GIS\A2 Bean to Ebbsfleet PCF2 Options\Calculations\A2 Bean to Ebbsfleet Environmental Appraisal Report - GIS Figures\Landscape and Visual\003-U\A006811-02_Figure 6.3-Topography Map_East.mxd



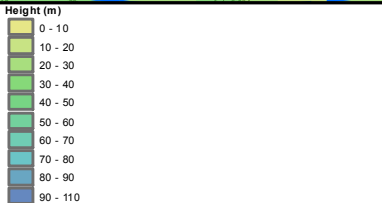
THIS MAP IS BASED UPON ORDNANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).



P02	16/11/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM
Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Apprv'd

KEY

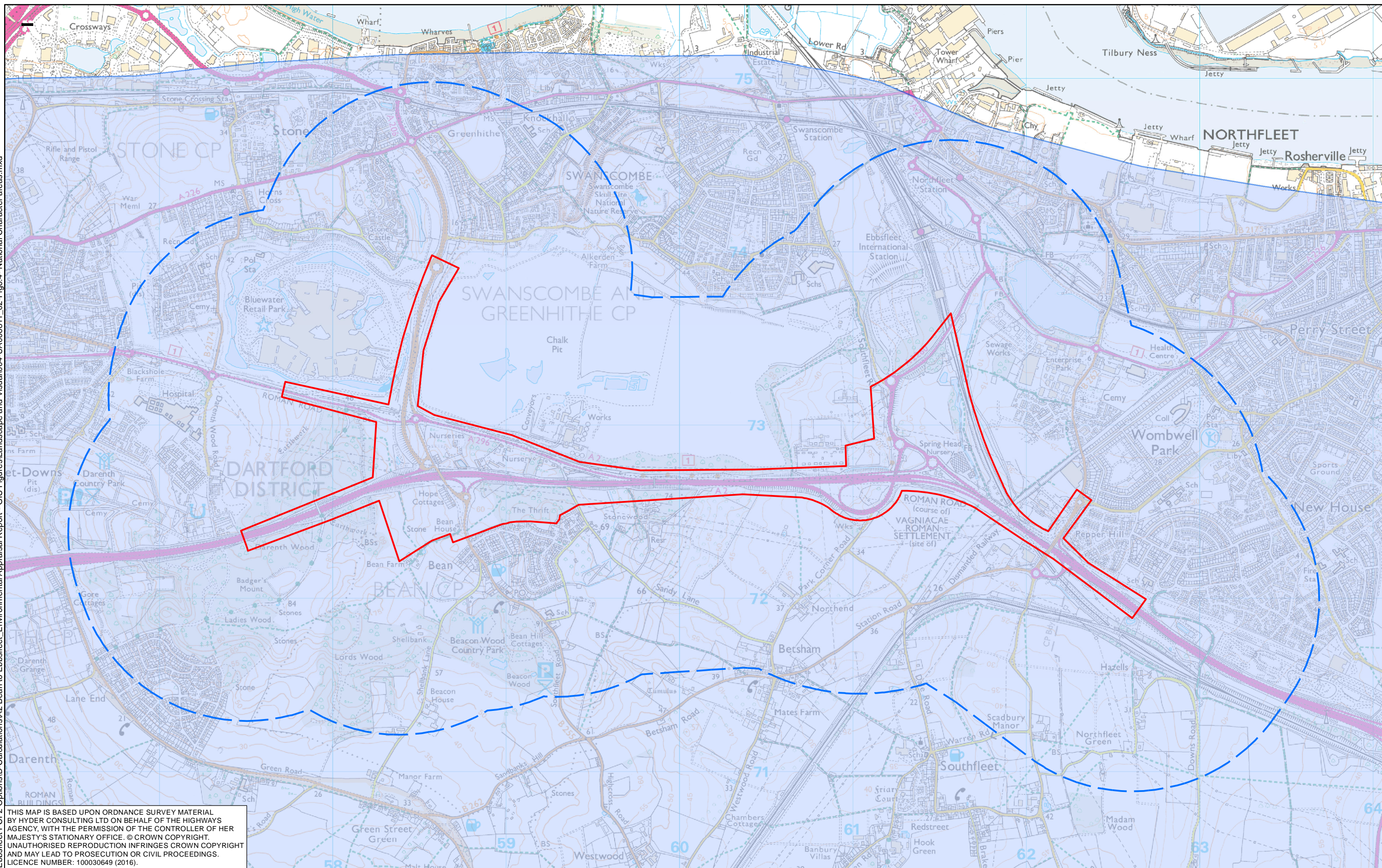
- SCHEME LIMIT
- STUDY AREA, 1000M OFFSET
- EBBSFLEET OPTION 1b
- CONTOUR 5M



Halcrow Hyder Joint Venture
 Burdrosop Park
 Swindon, SN4 0DD
 Tel. +44(0)1793 812479

Project	A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS		
Drawing title	FIGURE 6.3 TOPOGRAPHY MAP EBBSFLEET OPTION 1b		

Status	FINAL	Revision	P02
Scale	1:10,000	Date	16/11/2016
Drawn By	SD	Checked By	GS
Approved By	NM	Project No.	HA543917
Originator	HHJV	Original Size	A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0012		



THIS MAP IS BASED UPON ORDNANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).

0 0.5 1 Kilometers					
P02	02/09/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Apprv'd

	SCHEME LIMIT
	STUDY AREA, 1000M OFFSET
	NCA 113

highways
england

Halcrow Hyder Joint Venture

Burdorpe Park
Swindon, SN4 0QD
Tel. +44(0)1793 812479

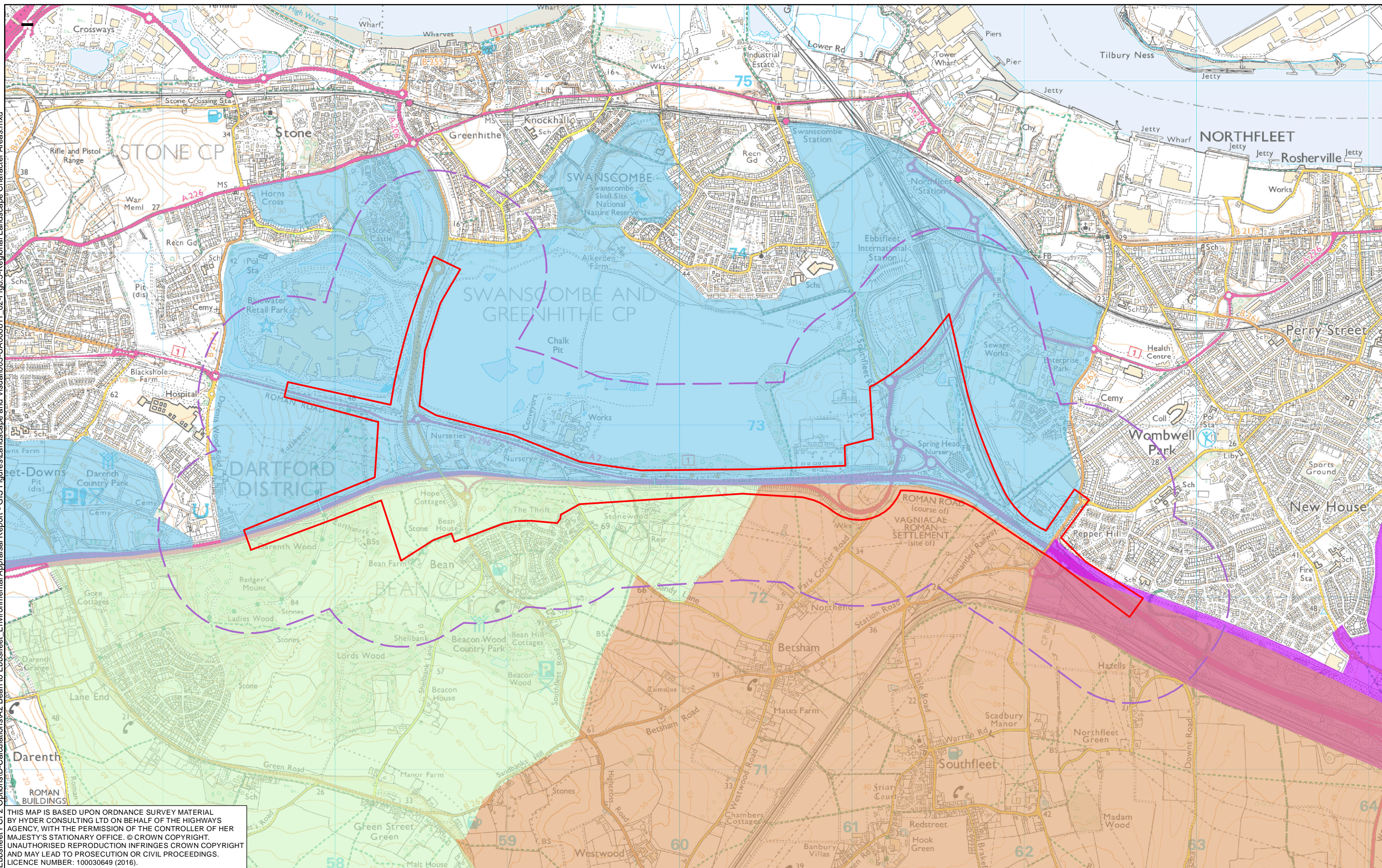
Halcrow **Hyder**

Project: A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS

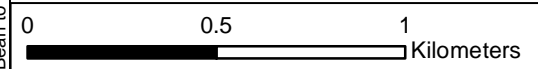
Drawing title: **FIGURE 6.4 NATIONAL CHARACTER AREAS**

Status	FINAL	Revision	P02
Scale	1:20,000	Date	02/09/2016
Drawn By	SD		
Checked By	GS		
Approved By	NM		
Project No.	HA543917	Originator	HHJV
Original Size			A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0013		

Path: K:\GIS\A2 Bean to Ebbsfleet PC\F2 Options\Calculations\A2 Bean to Ebbsfleet Environmental Appraisal Report - GIS Figures\Landscape and Visual\005-UA006811_02-Fig.6.5-Regional Landscape Character Areas.mxd



THIS MAP IS BASED UPON ORDNANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).



Rev	Rev. Date	Purpose of revision	Drawn	Checked	Apprv'd
P02	02/09/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM

KEY	DESCRIPTION
	SCHEME LIMIT
	STUDY AREA, 500M OFFSET
	DARENTH VALLEY
	DARTFORD AND GRAVESEND FRINGES
	SOUTHFLEET ARABLE LANDS
	GRAVESEND SOUTHERN FRINGES

highways
england

Halcrow Hyder Joint Venture
Burdosop Park
Swindon, SN4 0QD
Tel. +44(0)1793 812479

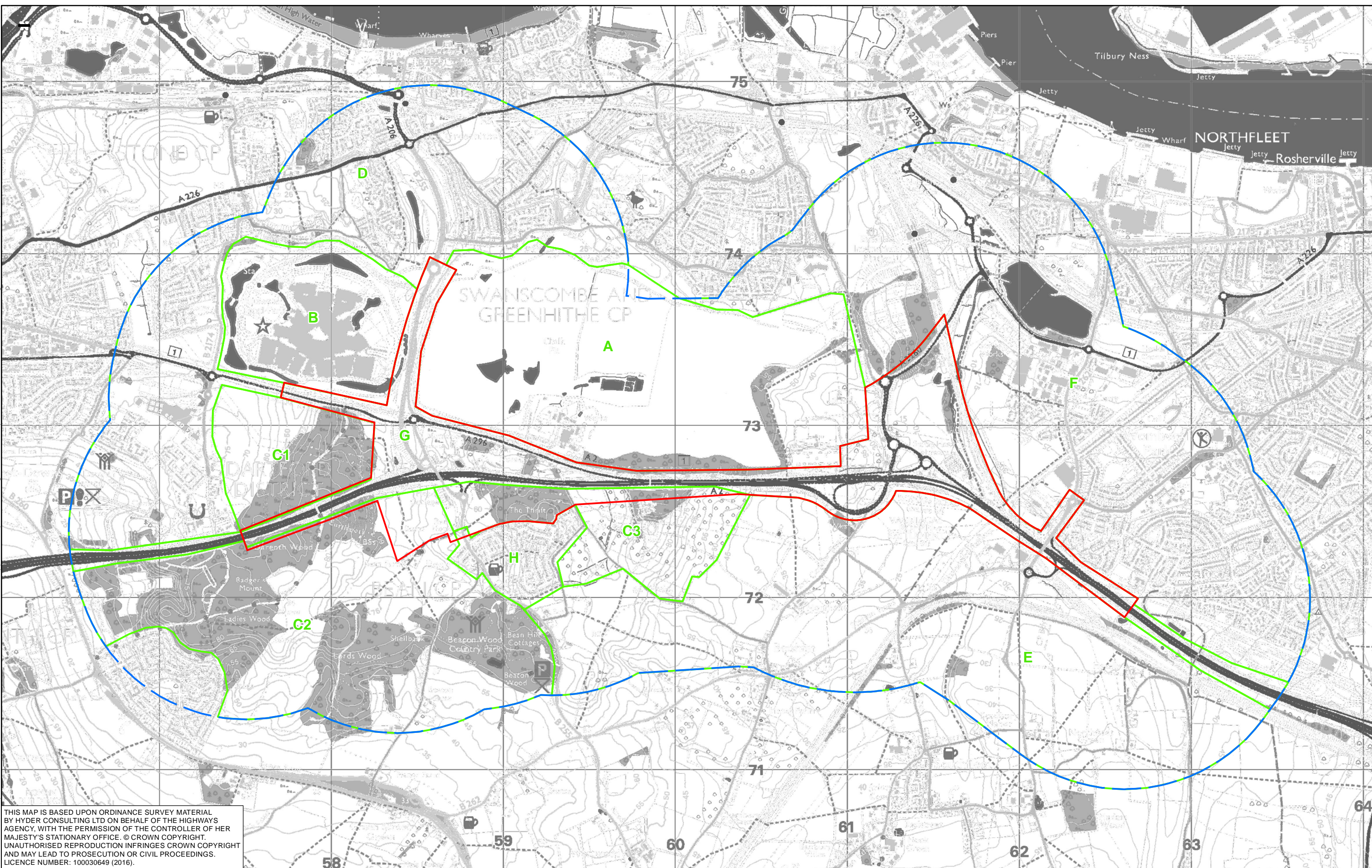
Halcrow **Hyder**

Project: A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS

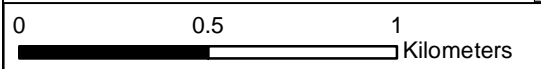
Drawing title: **FIGURE 6.5 REGIONAL LANDSCAPE CHARACTER AREAS**

Status	FINAL	Revision	P02
Scale	1:20,000	Date	02/09/2016
Drawn By	SD		
Checked By	GS		
Approved By	NM		
Project No.	HA543917	Originator	HHJV
Original Size			A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0014		

Path: K:\GIS\A2 Bean to Ebbsfleet_PC\F2 Options\D-Calculations\A2 Bean to Ebbsfleet_Environmental Appraisal Report - GIS Figures\Landscape and Visual\006-UA006811_02-Fig6.6-Local Landscape Character Areas.mxd



THIS MAP IS BASED UPON ORDINANCE SURVEY MATERIAL BY HYDER CONSULTING LTD ON BEHALF OF THE HIGHWAYS AGENCY, WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. LICENCE NUMBER: 100030649 (2016).



Rev	Rev. Date	Purpose of revision	Drawn	Checked	Apprv'd
P02	02/09/2016	FINAL	SD	GS	NM
P01	25/08/2016	FINAL DRAFT FOR APPROVAL	SD	GS	NM

KEY	
	SCHEME LIMIT
	STUDY AREA, 1000M OFFSET
	LOCAL LANDSCAPE CHARACTER AREAS

highways
england

Halcrow Hyder Joint Venture
Burdens Park
Swindon, SN4 0QD
Tel. +44(0)1793 812479

Project: A2 BEAN AND EBBSFLEET JUNCTION IMPROVEMENTS

Drawing title: **FIGURE 6.6 LOCAL LANDSCAPE CHARACTER AREAS**

Status	FINAL	Revision	P02
Scale	1:20,000	Date	02/09/2016
Drawn By	SD	Checked By	GS
Approved By	NM	Project No.	HA543917
Originator	HHJV	Original Size	A3
Drawing number	HA543917-HHJV-EGN-ZZZZ-GIS-EN-0015		