

# **A12 Chelmsford to A120 widening scheme TR010060**

## **6.3 ENVIRONMENTAL STATEMENT APPENDIX 14.6 SURFACE WATER DRAINAGE STRATEGY ANNEX A – PART 1**

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed  
Forms and Procedure) Regulations 2009

Volume 6

August 2022

## Infrastructure Planning

### Planning Act 2008

# **A12 Chelmsford to A120 widening scheme**

## **Development Consent Order 202[ ]**

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### **ENVIRONMENTAL STATEMENT**

### **APPENDIX 14.6 SURFACE WATER DRAINAGE STRATEGY**

### **ANNEX A – PART 1**

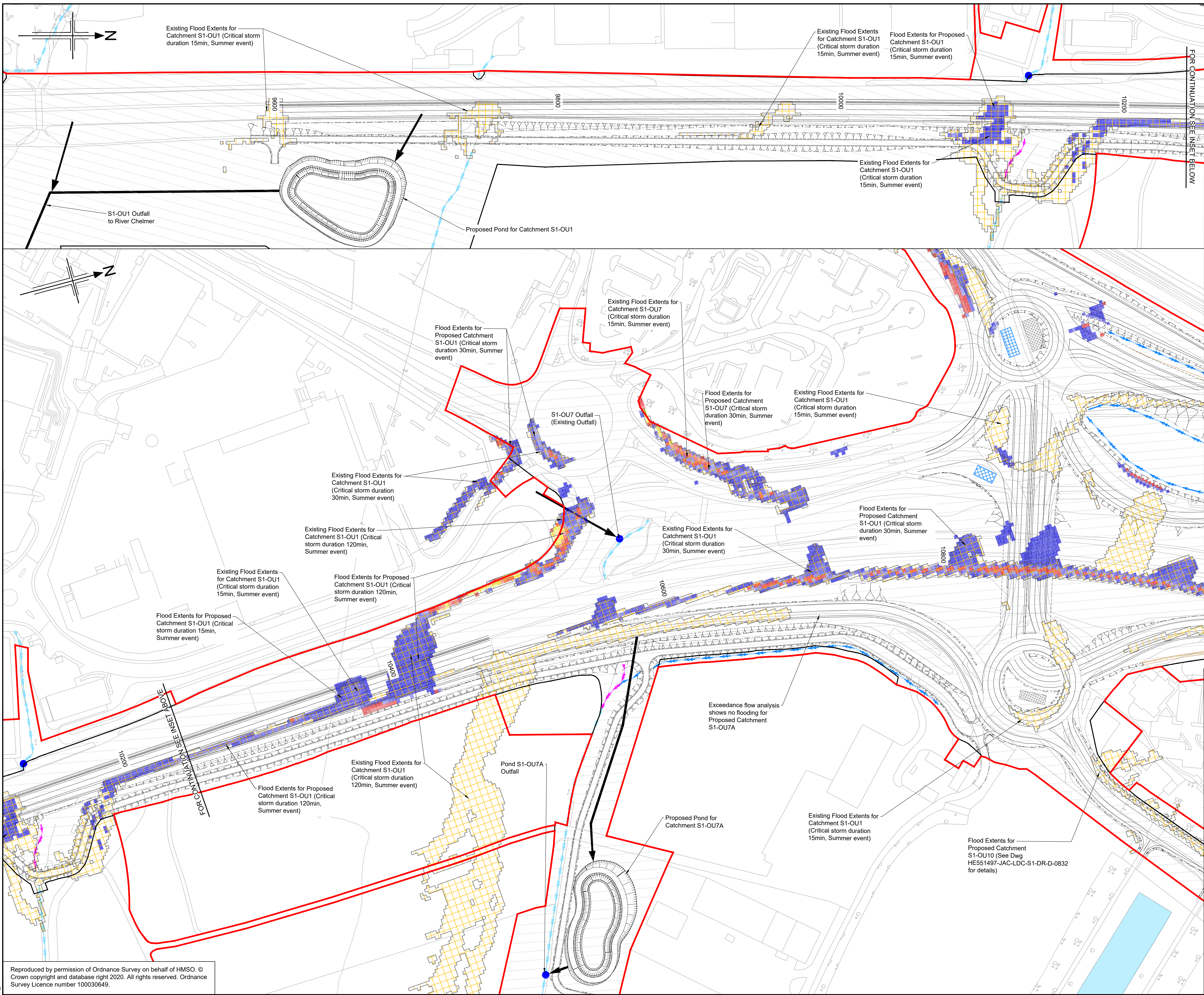
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<b>Regulation Reference</b>	Regulation 5(2)(a)
<b>Planning Inspectorate Scheme Reference</b>	TR010060
<b>Application Document Reference</b>	TR010060/APP/6.3
<b>Author</b>	A12 Project Team and National Highways

<b>Version</b>	<b>Date</b>	<b>Status of Version</b>
Rev 1	August 2022	DCO Application



C:\pwworking\jacobs\_uk\_highways\_ssa\deshpav\01555361\HE551497-JAC-LDC-S1-DR-D-0831.dwg - 7/25/2022 7:59:37 PM - A1Frame - DeshpavS



## SURFACE WATER DRAINAGE STRATEGY ANNEX A -PART 1

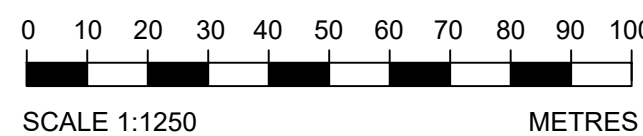
- NOTES
1. Drawing is to be printed in colour.
  2. Do not scale from this drawing, use only printed dimensions.
  3. This drawing is to be read in conjunction with the Surface Water Drainage Strategy Report documented in Appendix 14.6 of the Environmental Statement [TR010060/APP/6.3] and Drainage and Surface Water Plans [TR010060/APP/2.13], (Drawing numbers HE551497-JAC-LDC-SCHW-DR-D-0801 and 0802).
  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
  5. The flood extents shown on these plans may be subject to change as part of the design development in the detailed design stage. Any changes will require the flood exceedance assessment and flood extents to be reviewed and updated accordingly.

### LEGEND

- Order Limits
- Proposed Scheme Permanent Acquisition of Land Boundary
- Proposed Highway Drainage Outfall
- Proposed Attenuation Pond
- Proposed Attenuation Pond Access Track
- Proposed Underground Storage Units
- Indicative Outfall Route
- Proposed Swale/ Vegetated Ditch
- Pre-Earthworks Drainage (proposed ditch)
- Pre-Earthworks Drainage (existing ditch to be retained)
- Pre-Earthworks Drainage (existing ditch to be abandoned)
- Pre-Earthworks Drainage (diverted/regarded ditch)
- Pre-Earthworks Drainage (proposed filter drain)
- Pre-Earthworks Drainage (existing filter drain to be retained)
- Minor Watercourse (to be retained)
- Minor Watercourse (to be abandoned)
- Minor Watercourse (proposed diversion)
- Proposed watercourse diversion (main river)
- Existing Waterbodies/ Main River

### EXCEEDANCE FLOW ANALYSIS: 1 in 100 yr + 20%CC

- 10-100 mm Flood Depth
- 100-300 mm Flood Depth
- 300-600 mm Flood Depth
- >600 mm Flood Depth
- Existing Flooding



P01	25/07/22	FINAL FOR DCO APPLICATION	DG	AM	JT	SG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3



Project  
A12 CHELMSFORD TO A120 WIDENING SCHEME

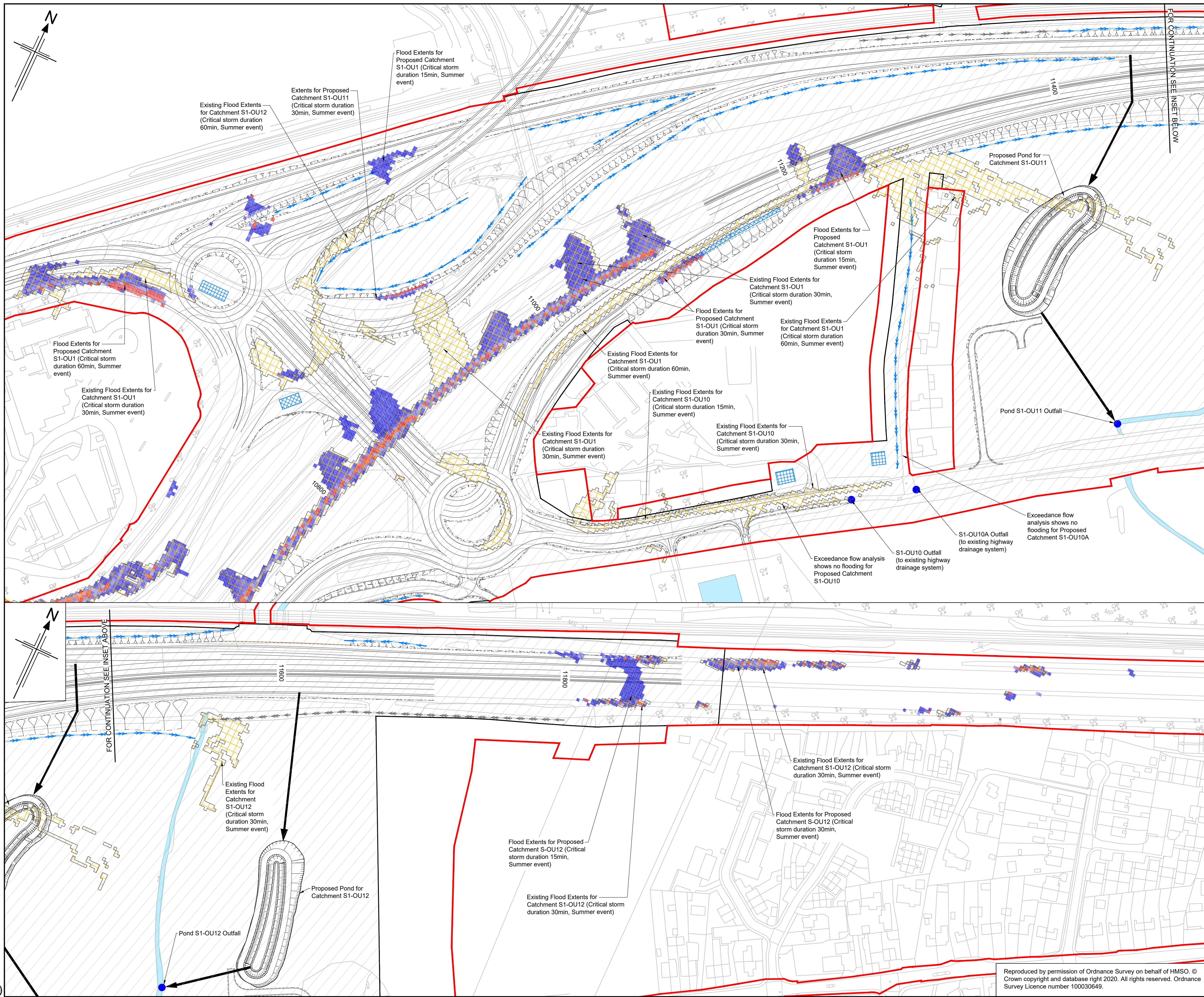
### Drawing title EXCEEDANCE FLOW ANALYSIS 100YR PLUS 20%CC EVENT PROPOSED CATCHMENTS S1-OU1, OU7 & OU7A

Regulation	REGULATION 5(2)(a)
Purpose of issue	DCO APPLICATION
State Code	Preliminary
Project Stage	PCF3
Scale at A1 (841x594mm)	1:1250
Jacobs No.	B36601D1
Client no.	HE551497
Drawing number	P01

HE551497 - S1	JAC - LDC - DR - D -0831
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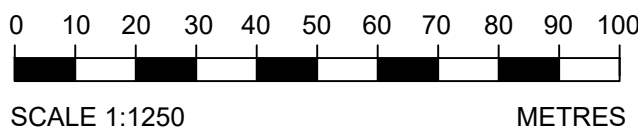
SURFACE WATER DRAINAGE STRATEGY  
ANNEX A -PART 1

- NOTES
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  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
  5. The flood extents shown on these plans may be subject to change as part of the design development in the detailed design stage. Any changes will require the flood exceedance assessment and flood extents to be reviewed and updated accordingly.
  6. No exceedance flow analysis has been undertaken for existing catchment; S1-OU10A.

- LEGEND
- Order Limits
  - Proposed Scheme Permanent Acquisition of Land Boundary
  - Proposed Highway Drainage Outfall
  - Proposed Attenuation Pond
  - Proposed Attenuation Pond Access Track
  - Proposed Underground Storage Units
  - Indicative Outfall Route
  - Proposed Swale/ Vegetated Ditch
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  - Minor Watercourse (proposed diversion)
  - Proposed watercourse diversion (main river)
  - Existing Waterbodies/ Main River

EXCEEDANCE FLOW ANALYSIS: 1 in 100 yr + 20%CC

- 10-100 mm Flood Depth
- 100-300 mm Flood Depth
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- >600 mm Flood Depth
- Existing Flooding



P01	25/07/22	FINAL FOR DCO APPLICATION	LM	AM	JT	SG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

Development Consent Order Number:			Development Consent Order Drawing Number:		
TR010060			TR010060/APP/6.3		



Project  
A12 CHELMSFORD TO A120 WIDENING SCHEME

Drawing title  
**EXCEEDANCE FLOW ANALYSIS  
100YR PLUS 20%CC EVENT  
PROPOSED CATCHMENTS  
S1-OU10, OU10A, OU11 & OU12**

Regulation	REGULATION 5(2)(a)				
Purpose of issue	DCO APPLICATION				
State Code	Preliminary				Drawing status
Project Stage	PCF3				S4
Scale at A1 (841x594mm)	1:1250				Rev
Jacobs No.	B36601D1				P01
Client no.	HE551497				

Drawing number	PIN	Originator	Volume
HE551497 -	JAC	LDC -	
S1		-DR- D -0832	

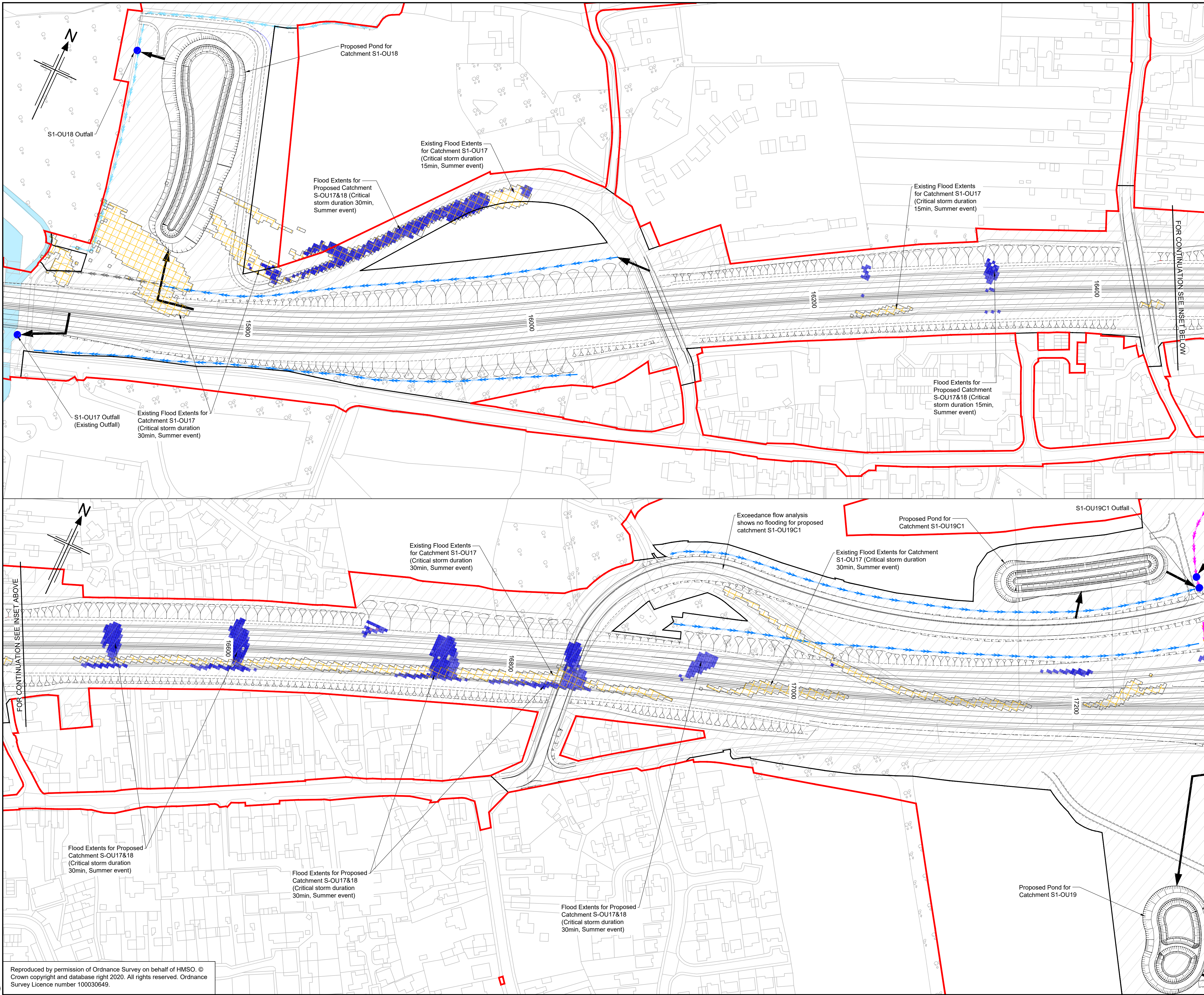
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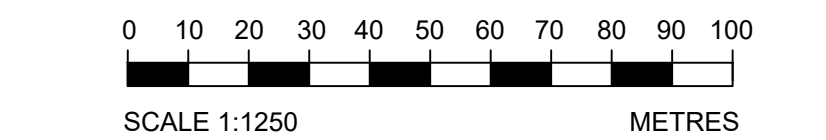


# SURFACE WATER DRAINAGE STRATEGY ANNEX A -PART 1

- NOTES
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  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
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- LEGEND
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P01	25/07/22	FINAL FOR DCO APPLICATION	RP	AM	JT	SG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3



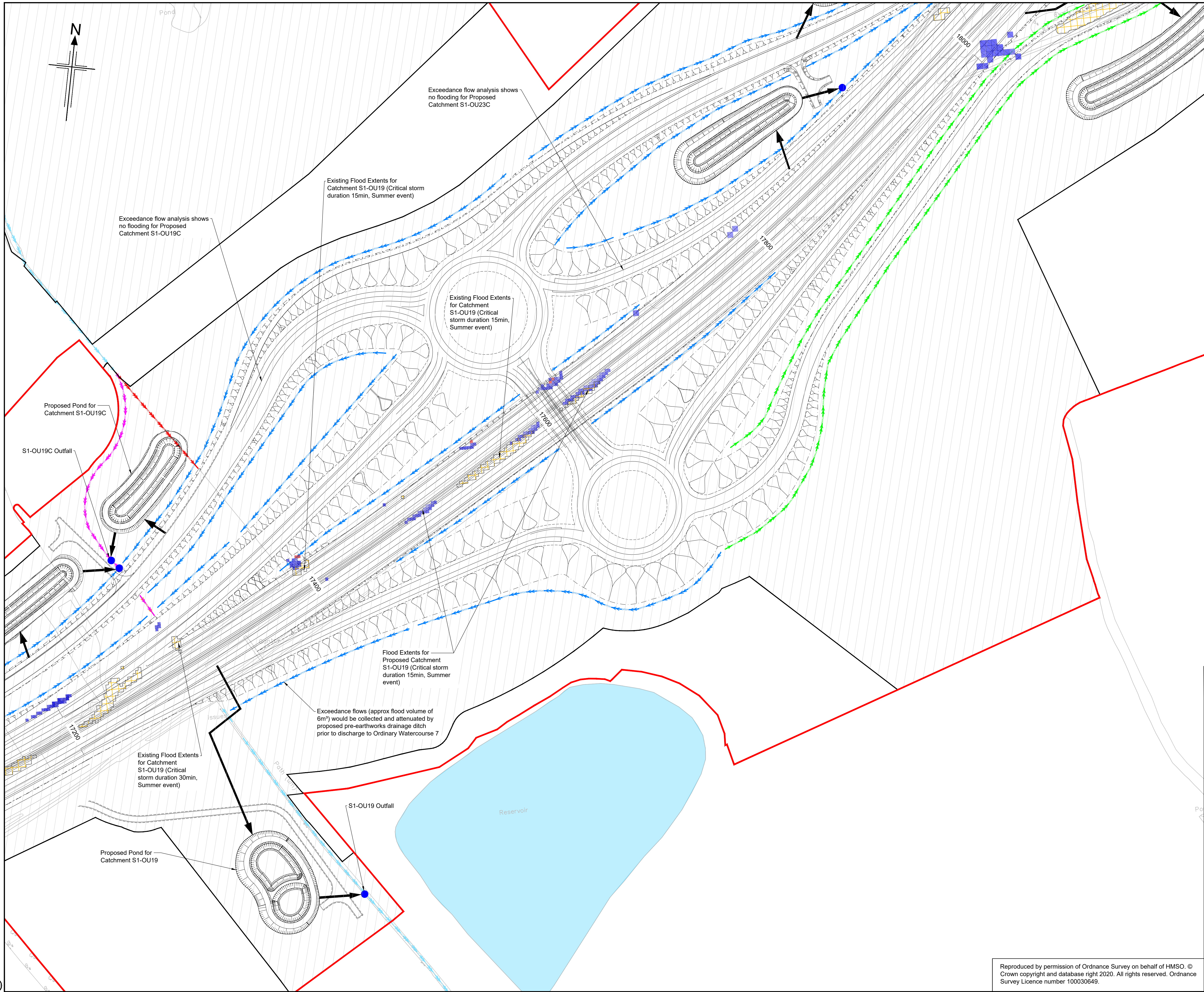
A12 CHELMSFORD TO A120 WIDENING SCHEME

Drawing title  
**EXCEEDANCE FLOW ANALYSIS  
100YR PLUS 20%CC EVENT  
PROPOSED CATCHMENTS  
S1-OU17, OU18 & OU19C1**

Regulation	REGULATION 5(2)(a)				
Purpose of issue	DCO APPLICATION				
State Code	Preliminary				Drawing status
Project Stage	PCF3				
Scale at A1 (841x594mm)	1:1250				S4
Jacobs No.	B36601D1				Rev
Client no.	HE551497				
Drawing number	PIN	Originator	Volume	Role	Number
HE551497 -		JAC	LDC -		
S1		-DR-	D -0834		



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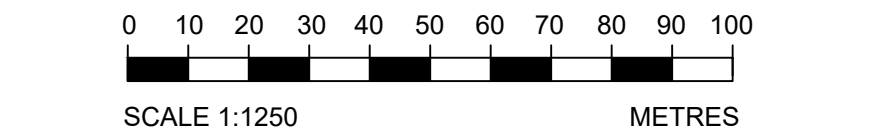


SURFACE WATER DRAINAGE STRATEGY  
ANNEX A -PART 1

- NOTES
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  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
  5. The flood extents shown on these plans may be subject to change as part of the design development in the detailed design stage. Any changes will require the flood exceedance assessment and flood extents to be reviewed and updated accordingly.

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P01	25/07/22	FINAL FOR DCO APPLICATION	RP	AM	JT	SG	
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd	

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3

Client	
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Project	A12 CHELMSFORD TO A120 WIDENING SCHEME
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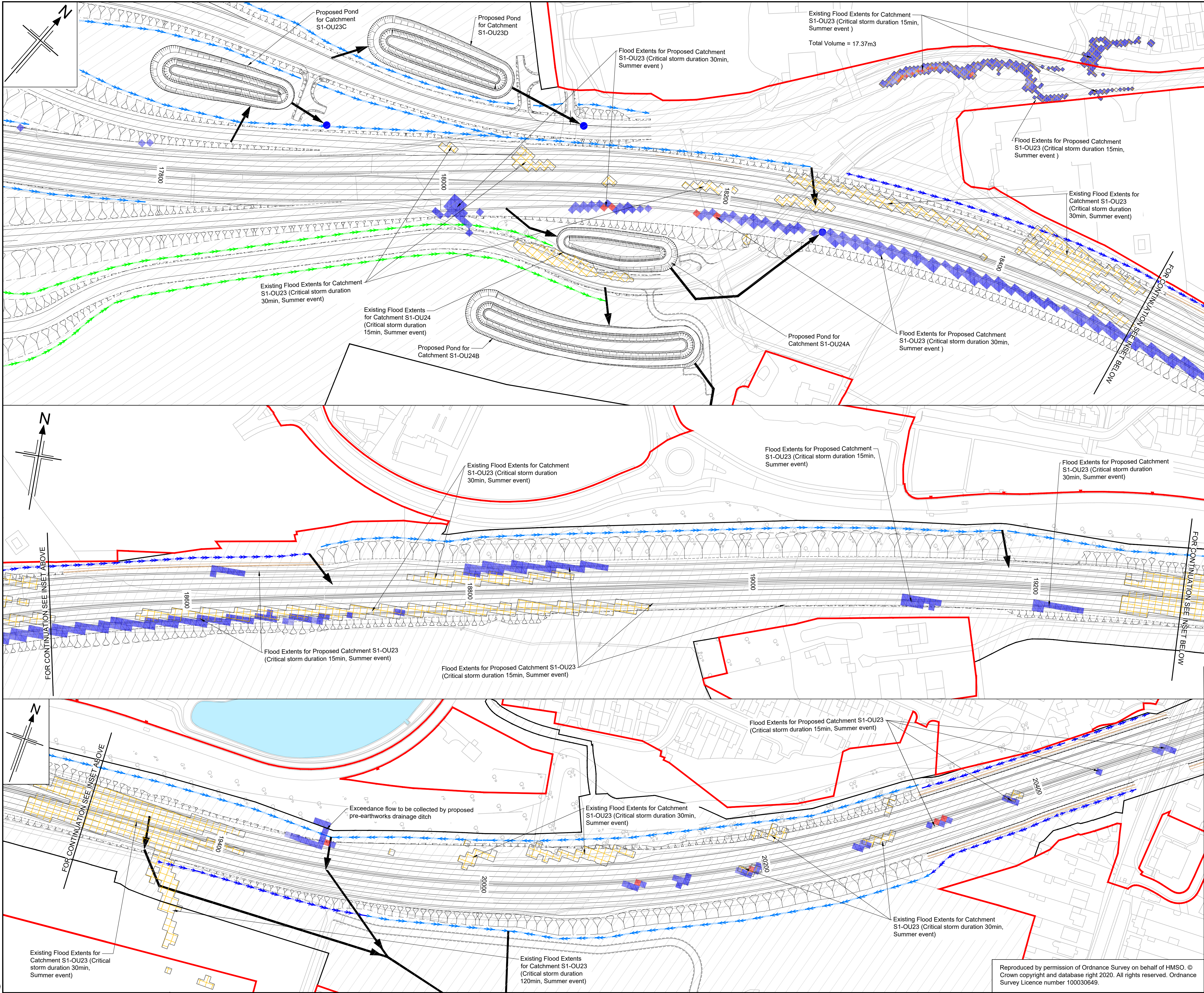
Drawing title	EXCEEDANCE FLOW ANALYSIS 100YR PLUS 20%CC EVENT PROPOSED CATCHMENTS S1-OU19, OU19C & OU23C
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Regulation	REGULATION 5(2)(a)
Purpose of issue	DCO APPLICATION
State Code	Preliminary
Project Stage	PCF 3
Scale at A1 (841x594mm)	1:1250
Jacobs No.	B36601D1
Client no.	HE551497
Drawing number	P01

PIIN	Originator	Volume
HE551497 -	JAC	- LDC-
S1	Location	-DR- D -0835

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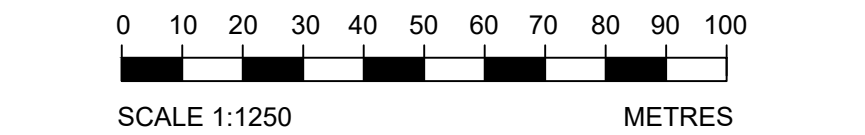


SURFACE WATER DRAINAGE STRATEGY  
ANNEX A -PART 1

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  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
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P01	25/07/22	FINAL FOR DCO APPLICATION	CT	AM	JT	SG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3



A12 CHELMSFORD TO A120 WIDENING SCHEME

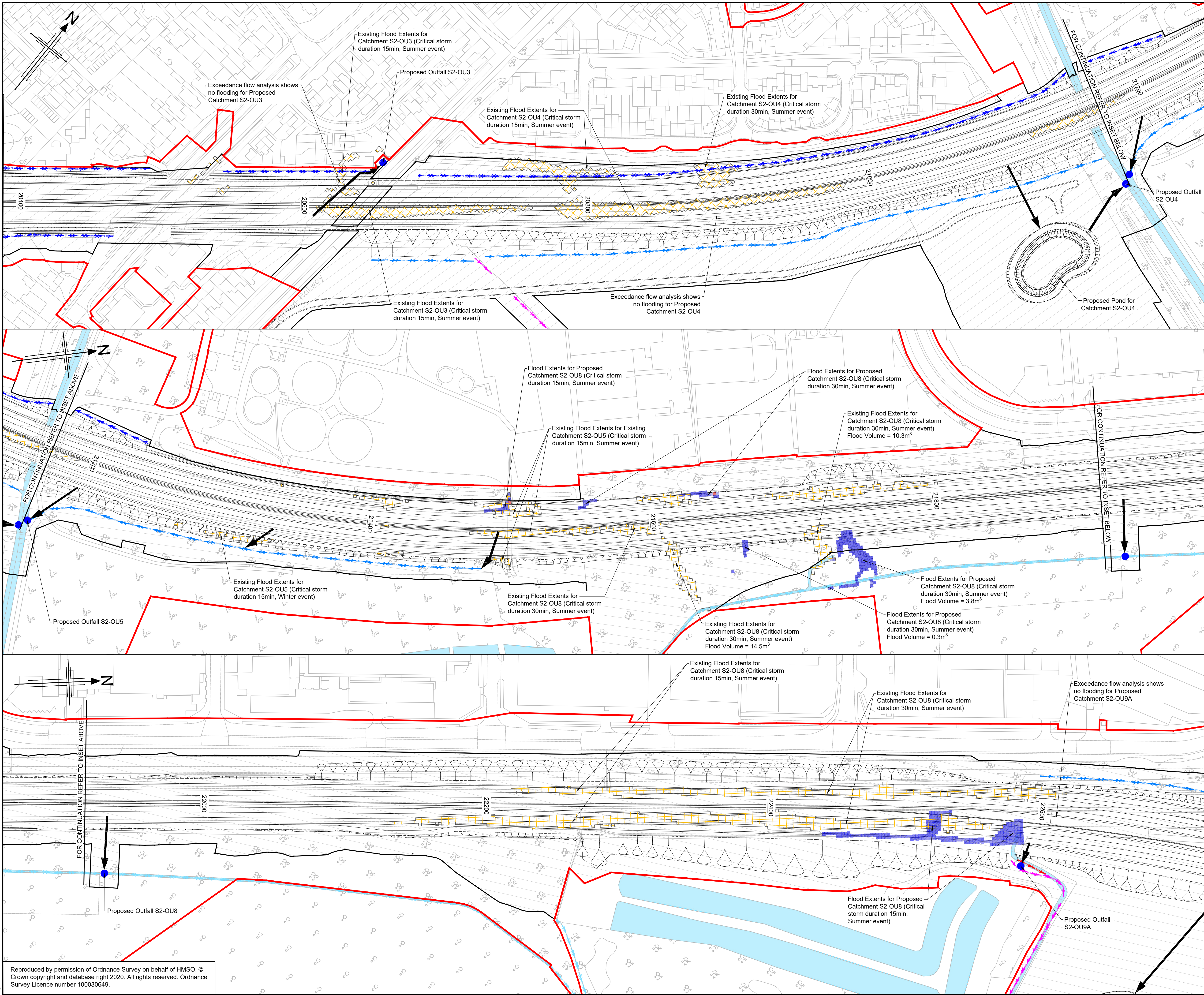
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**EXCEEDANCE FLOW ANALYSIS  
100YR PLUS 20%CC EVENT  
PROPOSED CATCHMENTS  
S1-OU23, OU23D, OU24A & OU24B**

Regulation	REGULATION 5(2)(a)
Purpose of issue	DCO APPLICATION
State Code	Preliminary
Project Stage	PCF 3
Scale at A1 (841x594mm)	1:1250
Jacobs No.	B36601D1
Client no.	HE551497
Drawing number	PIN
Originator	JAC
Volume	LDC
Location	S1
Type	-DR-
Role	D
Number	-0836

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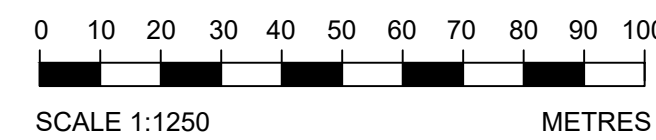
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  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
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P01	22/07/22	FINAL FOR DCO APPLICATION	AC	AM	JT	SG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3



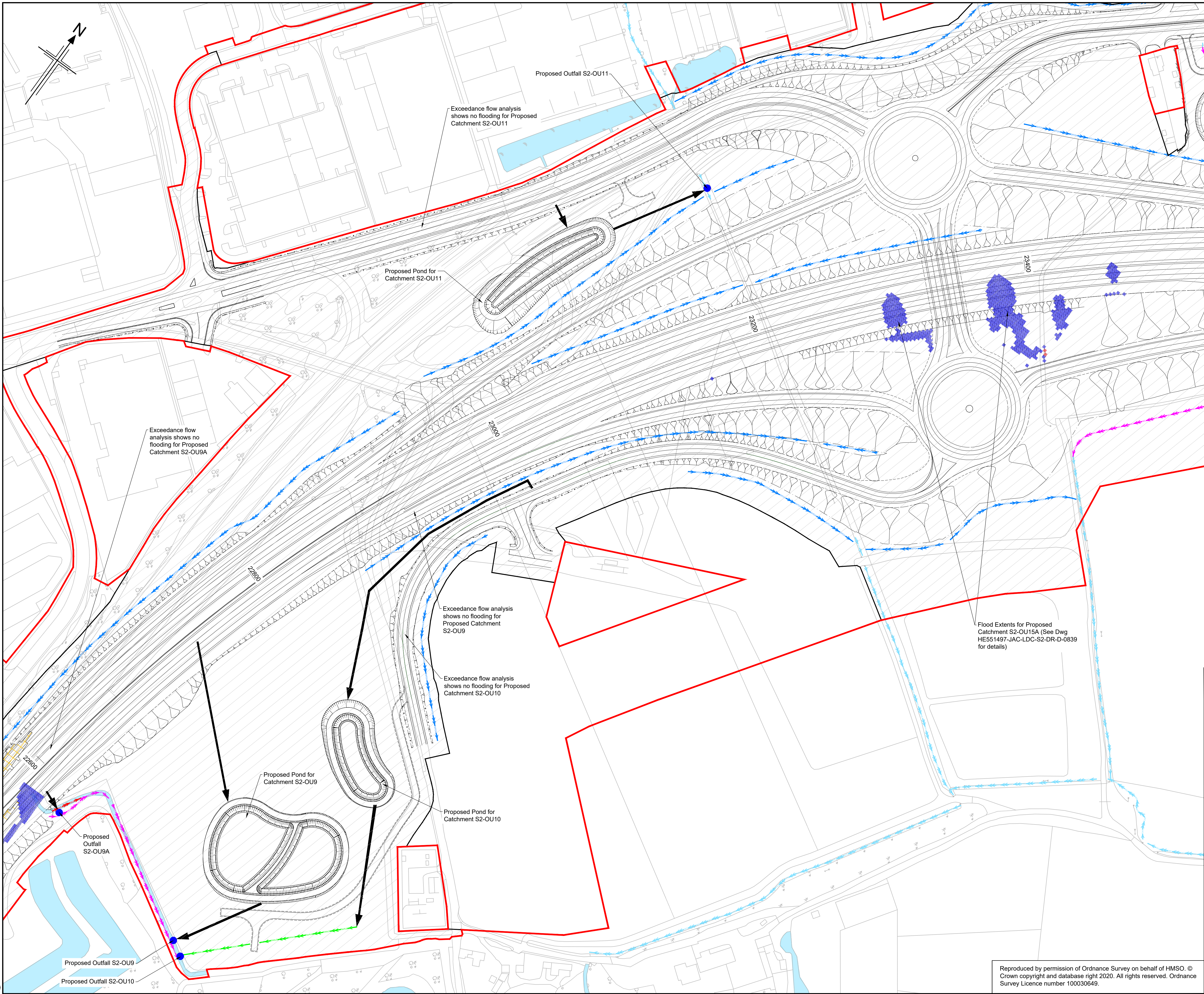
Project  
A12 CHELMSFORD TO A120 WIDENING SCHEME

Drawing title  
**EXCEEDANCE FLOW ANALYSIS  
100YR PLUS 20%CC EVENT  
PROPOSED CATCHMENTS  
S2-OU3, OU4, OU5, OU8 & OU9A**

Regulation	REGULATION 5(2)(a)
Purpose of issue	DCO APPLICATION
State Code	Preliminary
Project Stage	PCF 3
Scale at A1 (841x594mm)	1:1250
Jacobs No.	B36601D1
Client no.	HE551497
Drawing number	PIN
HE551497 - S2	Originator JAC - LDC - S2
Volume	Role   Number
-DR- D -0837	



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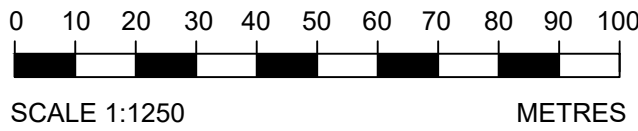
SURFACE WATER DRAINAGE STRATEGY  
ANNEX A -PART 1

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  5. The flood extents shown on these plans may be subject to change as part of the design development in the detailed design stage. Any changes will require the flood exceedance assessment and flood extents to be reviewed and updated accordingly.
  6. No exceedance flow analysis has been undertaken for existing catchments; S2-OU9, S2-OU10 and S2-OU11.

- LEGEND
- Order Limits
  - Proposed Scheme Permanent Acquisition of Land Boundary
  - Proposed Highway Drainage Outfall
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P01	22/07/22	FINAL FOR DCO APPLICATION	AC	AM	JT	SG	
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd	

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3



Project

A12 CHELMSFORD TO A120 WIDENING SCHEME

Drawing title

EXCEEDANCE FLOW ANALYSIS  
100YR PLUS 20%CC EVENT  
PROPOSED CATCHMENTS  
S2-OU9, OU10 & OU11

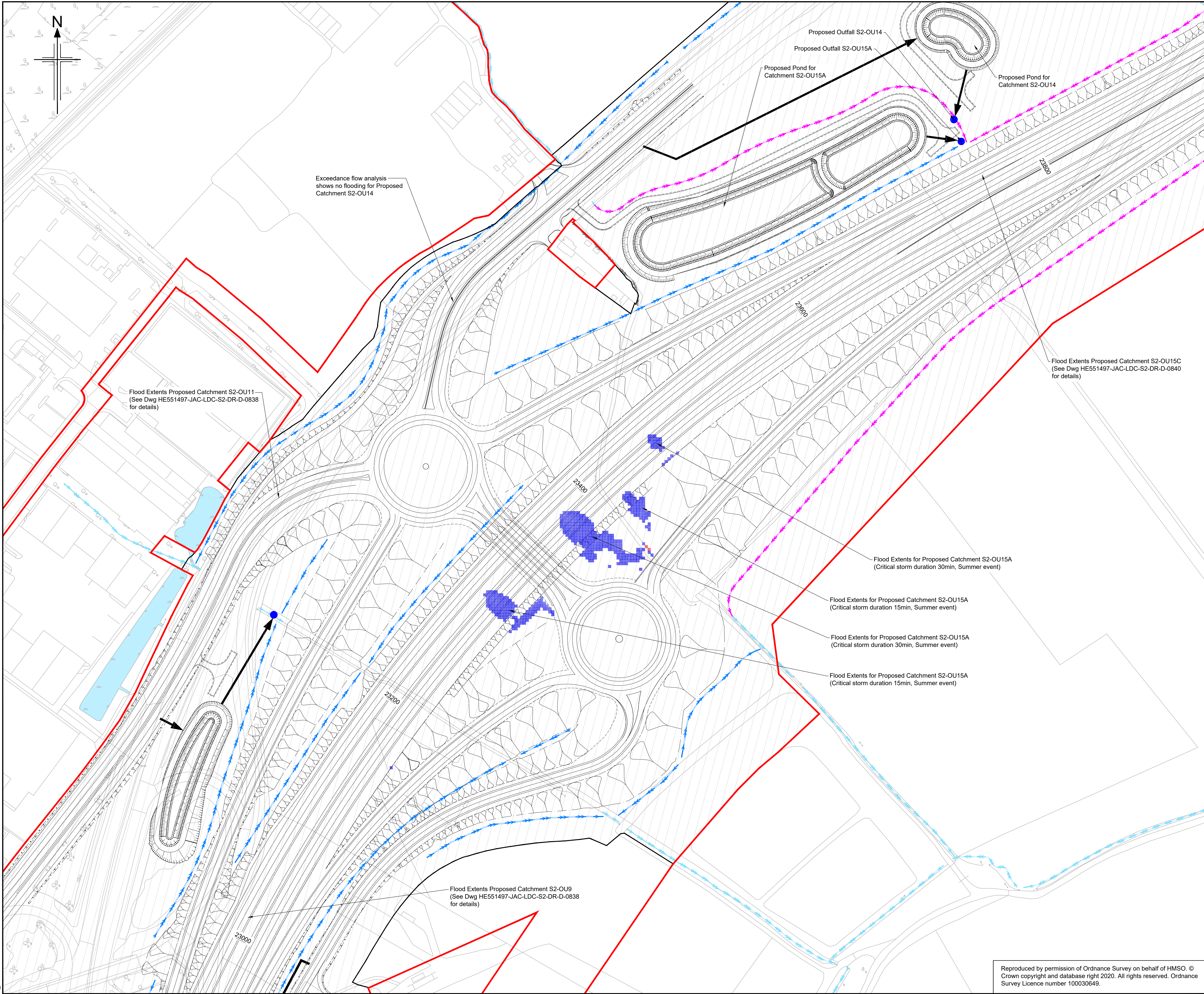
Regulation	REGULATION 5(2)(a)		
Purpose of issue	DCO APPLICATION		
State Code	Preliminary		
Project Stage	PCF 3	Drawing status	
Scale at A1 (841x594mm)	1:1250	S4	
Jacobs No.	B36601D1	Rev	P01
Client no.	HE551497		

Drawing number	PIN	Originator	Volume
HE551497 - S2	JAC	LDC -	
	Location	Type	Role   Number
		-DR-	D -0838

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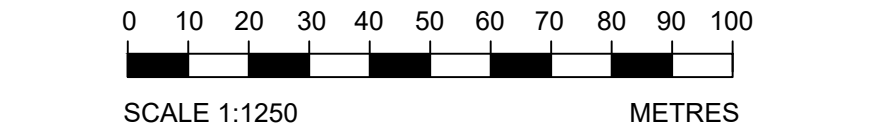


SURFACE WATER DRAINAGE STRATEGY  
ANNEX A -PART 1

- NOTES
1. Drawing is to be printed in colour.
  2. Do not scale from this drawing, use only printed dimensions.
  3. This drawing is to be read in conjunction with the Surface Water Drainage Strategy Report documented in Appendix 14.6 of the Environmental Statement [TR010060/APP/6.3] and Drainage and Surface Water Plan [TR010060/APP/2.13]. (Drawing number HE551497-JAC-LDC-SCHW-DR-D-0810).
  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
  5. The flood extents shown on these plans may be subject to change as part of the design development in the detailed design stage. Any changes will require the flood exceedance assessment and flood extents to be reviewed and updated accordingly.
  6. No exceedance flow analysis has been undertaken for existing catchments; S2-OU9, S2-OU11 and S2-OU14.

- LEGEND
- Order Limits
  - Proposed Scheme Permanent Acquisition of Land Boundary
  - Proposed Highway Drainage Outfall
  - Proposed Attenuation Pond
  - Proposed Attenuation Pond Access Track
  - Proposed Underground Storage Units
  - Indicative Outfall Route
  - Proposed Swale/ Vegetated Ditch
  - Pre-Earthworks Drainage (proposed ditch)
  - Pre-Earthworks Drainage (existing ditch to be retained)
  - Pre-Earthworks Drainage (existing ditch to be abandoned)
  - Pre-Earthworks Drainage (diverted/regarded ditch)
  - Pre-Earthworks Drainage (proposed filter drain)
  - Pre-Earthworks Drainage (existing filter drain to be retained)
  - Minor Watercourse (to be retained)
  - Minor Watercourse (to be abandoned)
  - Minor Watercourse (proposed diversion)
  - Proposed watercourse diversion (main river)
  - Existing Waterbodies/ Main River

- EXCEEDANCE FLOW ANALYSIS: 1 in 100 yr + 20%CC
- 10-100 mm Flood Depth
  - 100-300 mm Flood Depth
  - 300-600 mm Flood Depth
  - >600 mm Flood Depth
  - Existing Flooding



P01	22/07/22	FINAL FOR DCO APPLICATION	AC	AM	JT	SG	
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd	

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3

Client

Project

A12 CHELMSFORD TO A120 WIDENING SCHEME

Drawing title

EXCEEDANCE FLOW ANALYSIS  
100YR PLUS 20%CC EVENT  
PROPOSED CATCHMENTS  
S2-OU14 & OU15A

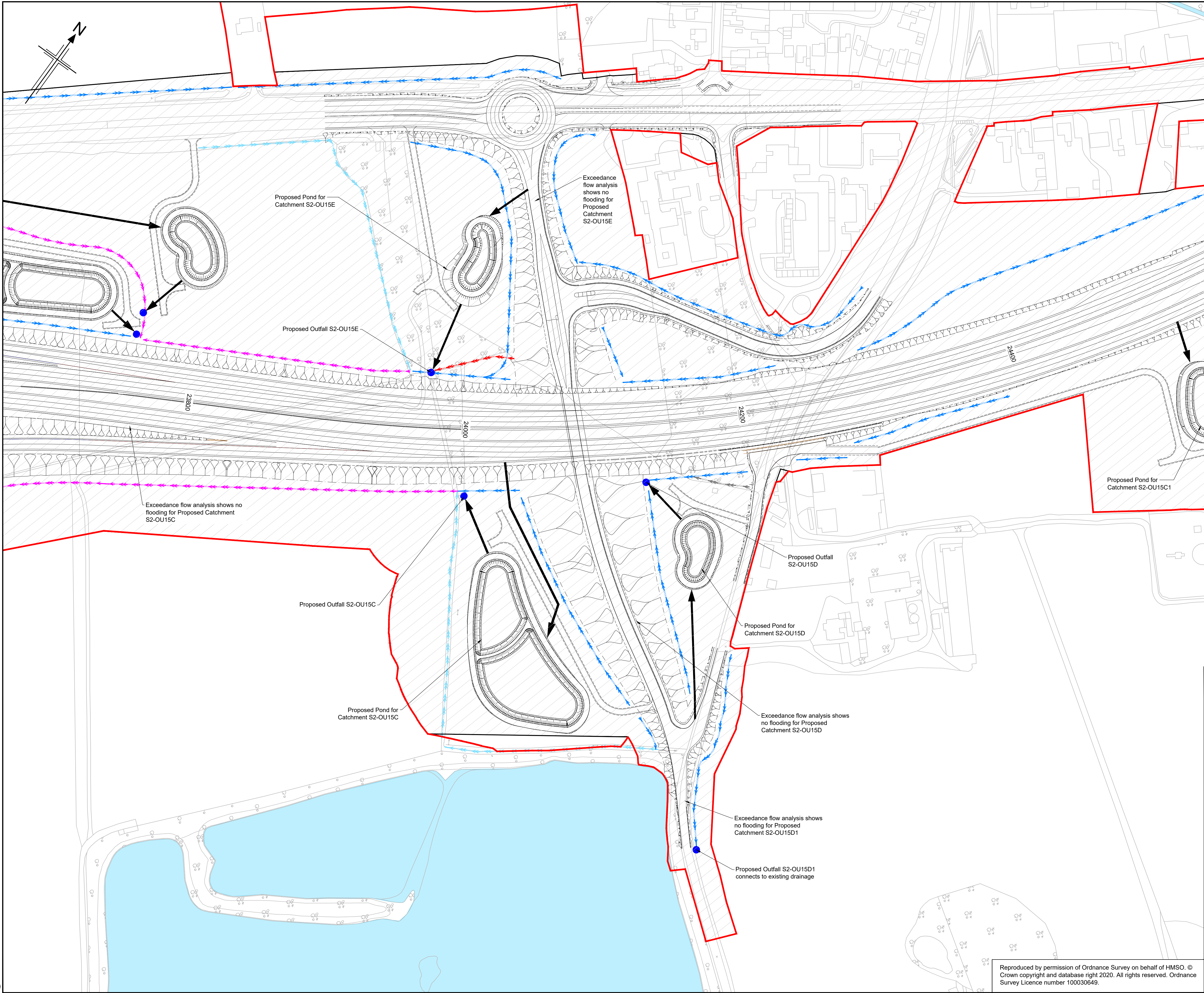
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Purpose of issue	DCO APPLICATION		
State Code	Preliminary		
Project Stage	PCF 3	Drawing status	
Scale at A1 (841x594mm)	1:1250	S4	
Jacobs No.	B36601D1	Rev	P01
Client no.	HE551497		

Drawing number	PIN	Originator	Volume
HE551497 - S2	JAC	LDC -	
	Location	Type	Role   Number
			-DR- D -0839

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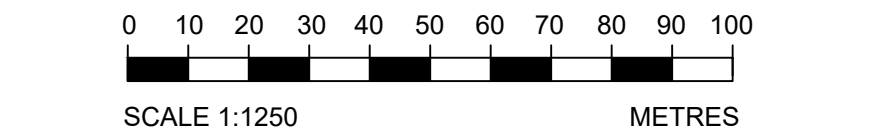


# SURFACE WATER DRAINAGE STRATEGY ANNEX A -PART 1

- NOTES
1. Drawing is to be printed in colour.
  2. Do not scale from this drawing, use only printed dimensions.
  3. This drawing is to be read in conjunction with the Surface Water Drainage Strategy Report documented in Appendix 14.6 of the Environmental Statement [TR010060/APP/6.3] and Drainage and Surface Water Plans [TR010060/APP/2.13], (Drawing numbers HE551497-JAC-LDC-SCHW-DR-D-0810 and 0811).
  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
  5. The flood extents shown on these plans may be subject to change as part of the design development in the detailed design stage. Any changes will require the flood exceedance assessment and flood extents to be reviewed and updated accordingly.
  6. No exceedance flow analysis has been undertaken for existing catchments; S2-OU15E and S2-OU15D1.
  - 7.

- LEGEND
- Order Limits
  - Proposed Scheme Permanent Acquisition of Land Boundary
  - Proposed Highway Drainage Outfall
  - Proposed Attenuation Pond
  - Proposed Attenuation Pond Access Track
  - Proposed Underground Storage Units
  - Indicative Outfall Route
  - Proposed Swale/ Vegetated Ditch
  - Pre-Earthworks Drainage (proposed ditch)
  - Pre-Earthworks Drainage (existing ditch to be retained)
  - Pre-Earthworks Drainage (existing ditch to be abandoned)
  - Pre-Earthworks Drainage (diverted/regarded ditch)
  - Pre-Earthworks Drainage (proposed filter drain)
  - Pre-Earthworks Drainage (existing filter drain to be retained)
  - Minor Watercourse (to be retained)
  - Minor Watercourse (to be abandoned)
  - Minor Watercourse (proposed diversion)
  - Proposed watercourse diversion (main river)
  - Existing Waterbodies/ Main River

- EXCEEDANCE FLOW ANALYSIS: 1 in 100 yr + 20%CC
- 10-100 mm Flood Depth
  - 100-300 mm Flood Depth
  - 300-600 mm Flood Depth
  - >600 mm Flood Depth
  - Existing Flooding



P01	22/07/22	FINAL FOR DCO APPLICATION	AC	AM	JT	SG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3



Project

A12 CHELMSFORD TO A120 WIDENING SCHEME

Drawing title

**EXCEEDANCE FLOW ANALYSIS  
100YR PLUS 20%CC EVENT  
PROPOSED CATCHMENTS  
S2-OU15C,OU15D,OU15D1&OU15E**

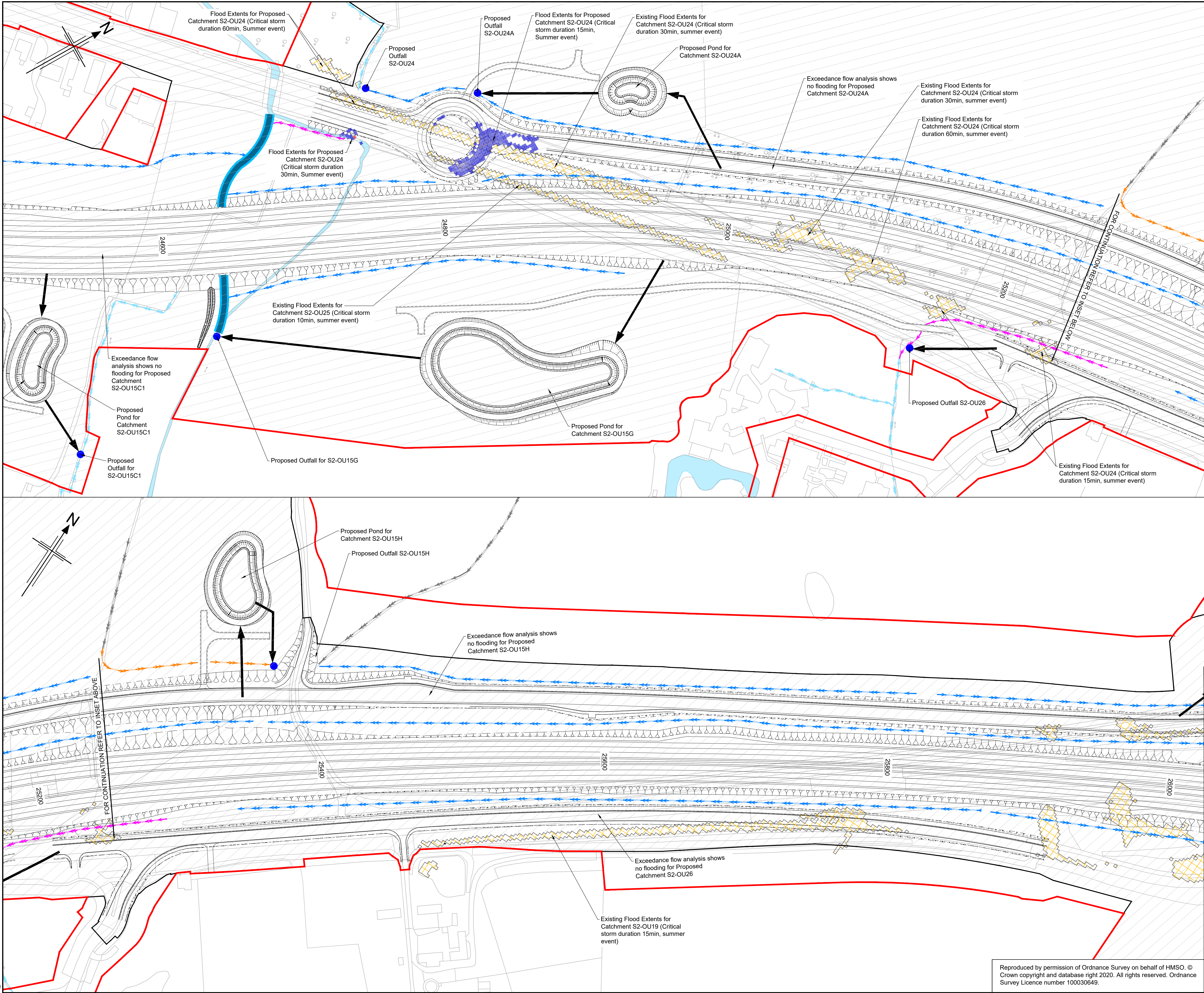
Regulation	REGULATION 5(2)(a)				
Purpose of issue	DCO APPLICATION				
State Code	Preliminary				Drawing status
Project Stage	PCF 3				S4
Scale at A1 (841x594mm)	1:1250				Rev
Jacobs No.	B36601D1				P01
Client no.	HE551497				

Drawing number	PIIN	Originator	Volume
HE551497 -	JAC	LDC -	
S2		-DR- D -0840	

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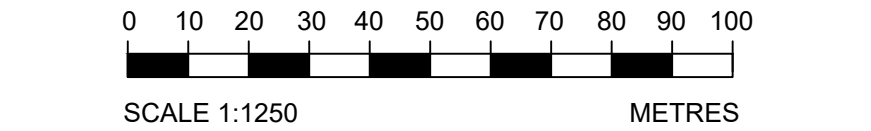


SURFACE WATER DRAINAGE STRATEGY  
ANNEX A -PART 1

- NOTES
1. Drawing is to be printed in colour.
  2. Do not scale from this drawing, use only printed dimensions.
  3. This drawing is to be read in conjunction with the Surface Water Drainage Strategy Report documented in Appendix 14.6 of the Environmental Statement [TR010060/APP/6.3] and Drainage and Surface Water Plans [TR010060/APP/2.13], (Drawing numbers HE551497-JAC-LDC-SCHW-DR-D-0810 and 0811).
  4. The flood extents shown on these plans have been developed based on the proposed drainage design solutions and flood exceedance assessment undertaken at the preliminary drainage design stage.
  5. The flood extents shown on these plans may be subject to change as part of the design development in the detailed design stage. Any changes will require the flood exceedance assessment and flood extents to be reviewed and updated accordingly.
  6. No exceedance flow analysis has been undertaken for existing catchment; S2-OU26.

- LEGEND
- Order Limits
  - Proposed Scheme Permanent Acquisition of Land Boundary
  - Proposed Highway Drainage Outfall
  - Proposed Attenuation Pond
  - Proposed Attenuation Pond Access Track
  - Proposed Underground Storage Units
  - Indicative Outfall Route
  - Proposed Swale/ Vegetated Ditch
  - Pre-Earthworks Drainage (proposed ditch)
  - Pre-Earthworks Drainage (existing ditch to be retained)
  - Pre-Earthworks Drainage (existing ditch to be abandoned)
  - Pre-Earthworks Drainage (diverted/regarded ditch)
  - Pre-Earthworks Drainage (proposed filter drain)
  - Pre-Earthworks Drainage (existing filter drain to be retained)
  - Minor Watercourse (to be retained)
  - Minor Watercourse (to be abandoned)
  - Minor Watercourse (proposed diversion)
  - Proposed watercourse diversion (main river)
  - Existing Waterbodies/ Main River

- EXCEEDANCE FLOW ANALYSIS: 1 in 100 yr + 20%CC
- 10-100 mm Flood Depth
  - 100-300 mm Flood Depth
  - 300-600 mm Flood Depth
  - >600 mm Flood Depth
  - Existing Flooding



P01	22/07/22	FINAL FOR DCO APPLICATION	AC	AM	JT	SG
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

Development Consent Order Number:	Development Consent Order Drawing Number:
TR010060	TR010060/APP/6.3



A12 CHELMSFORD TO A120 WIDENING SCHEME

Drawing title  
**EXCEEDANCE FLOW ANALYSIS  
100YR PLUS 20%CC EVENT  
PROPOSED CATCHMENTS-S2OU26  
OU15C1,OU15G,OU15H,OU24&24A**

Regulation	REGULATION 5(2)(a)				
Purpose of issue	DCO APPLICATION				
State Code	Preliminary				Drawing status
Project Stage	PCF 3				S4
Scale at A1 (841x594mm)	1:1250				Rev
Jacobs No.	B36601D1				P01
Client no.	HE551497				

Drawing number	PIN	Originator	Volume
HE551497 - S2	JAC	LDC -	
		Type	Role
		-DR-	D -0841

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