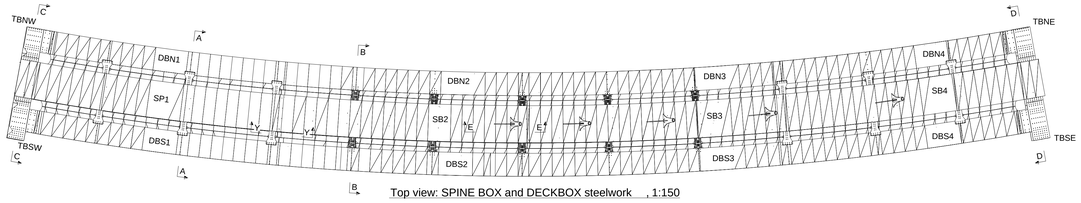
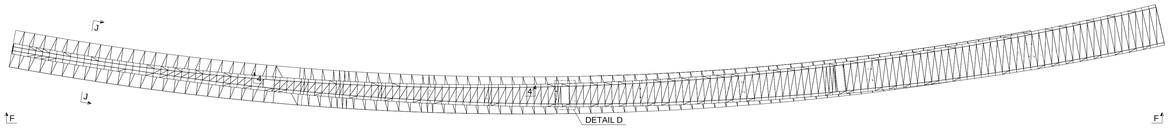
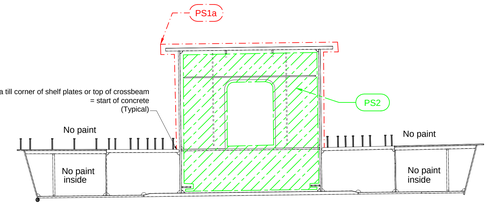


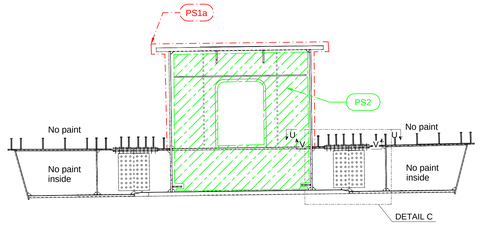
Top view: SPINE BOX and DECKBOX steelwork , 1:150



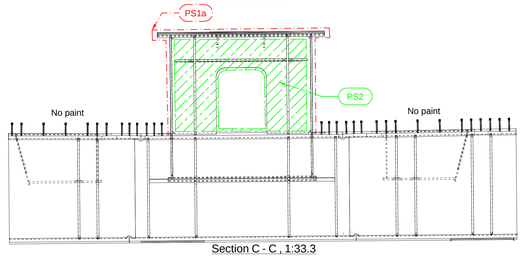
Top view: SPINE TRUSS TOP CHORDS , 1:150



Section A - A , 1:33.3



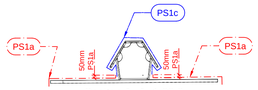
Section B - B , 1:33.3



Section C - C , 1:33.3

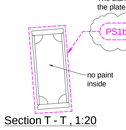
Section G - G , 1:33.3

The threaded holes M16 (fxing points for scaffold) are to be filled with a carbon steel Allen Key headed blanking plugs (M16x25 DIN 913, ISO 4026) with threads coated in grease of PTFE tape.
The blanking plugs shall be flush with the surface of the plate and receive the full top chord protective system



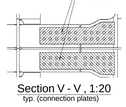
Section J - J , 1:33.3

Section S - S , 1:20



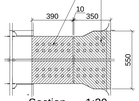
Section T - T , 1:20

Connection plates to be shot blasted Sa2,5. Both surfaces has to be protected against corrosion and dust to ensure full friction of contact surfaces for 10.9 tension bolts connection on site.



Section V - V , 1:20
typ. (connection plates)

Connection surfaces to be shot blasted Sa2,5. Both surfaces has to be protected against corrosion and dust to ensure full friction of contact surfaces for 10.9 tension bolts connection on site.

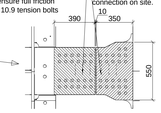


Section - , 1:20
typ. (connection surfaces)

Connection plates to be shot blasted Sa2,5. Both surfaces has to be protected against corrosion and dust to ensure full friction of contact surfaces for 10.9 tension bolts connection on site.

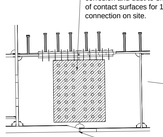
Section U - U , 1:20
typ. (connection plates)

Connection surfaces to be shot blasted Sa2,5. Both surfaces has to be protected against corrosion and dust to ensure full friction of contact surfaces for 10.9 tension bolts connection on site.



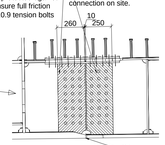
Section - , 1:20
typ. (connection surfaces)

Connection plates to be shot blasted Sa2,5. Both surfaces has to be protected against corrosion and dust to ensure full friction of contact surfaces for 10.9 tension bolts connection on site.

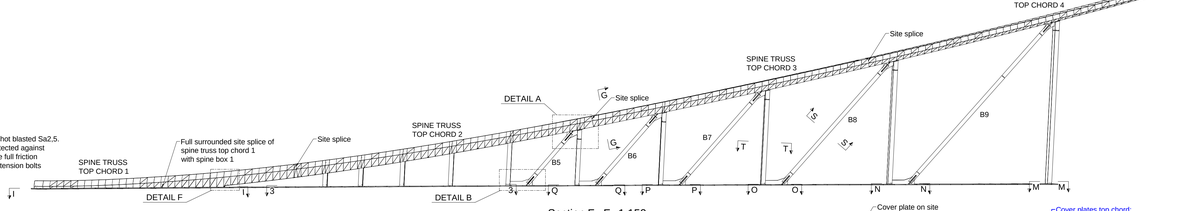


Detail C , 1:20
typ. (connection plates)

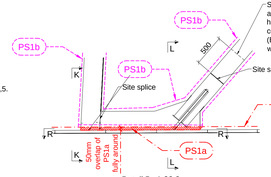
Connection surfaces to be shot blasted Sa2,5. Both surfaces has to be protected against corrosion and dust to ensure full friction of contact surfaces for 10.9 tension bolts connection on site.



Detail , 1:20
typ. (connection surfaces)



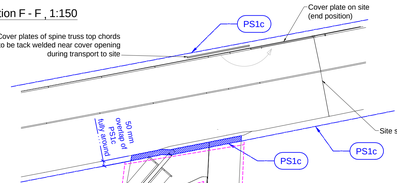
Section F - F , 1:150



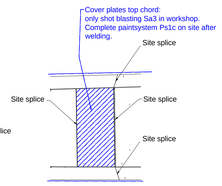
Start first layer of PS1b in workshop, after site welding the 500mm has to be finished with complete paintingsystem.
(Both ends of diagonals in workshop withdrawn with 500mm of paint.)

Detail B , 1:33.3
(Typical)

Cover plates of spine truss top chords are to be tack welded near cover opening during transport to site

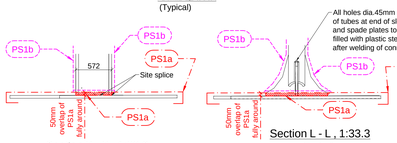


Cover plate on site (end position)



Cover plates top chord:
only shot blasting Sa3 in workshop.
Complete paintsystem Ps1c on site after welding.

Detail D , 1:33.3
(Typical)



Section K - K , 1:33.3
(Typical, for strut 1 till 10)

All holes dia.45mm of tubes at end of slot for gusset and spade plates to be filled with plastic steel putty after welding of connection

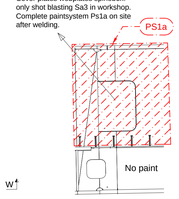
Section L - L , 1:33.3
(Typical)

All holes dia.45mm of tubes at end of slot for gusset and spade plates to be filled with plastic steel puttyafter welding of connection

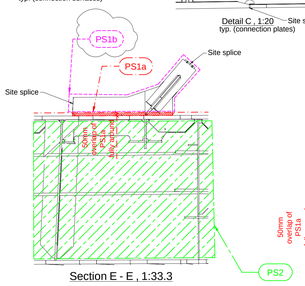
Start first layer of PS1b in workshop, after site welding the 500mm has to be finished with complete paintingsystem.
(Both ends of diagonals in workshop withdrawn with 500mm of paint.)

Detail A , 1:20
(Typical)

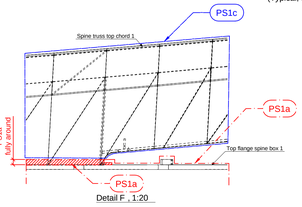
Cover plates webplates spinebox: only shot blasting Sa3 in workshop. Complete paintsystem Ps1a on site after welding.



Section Y - Y , 1:33.3

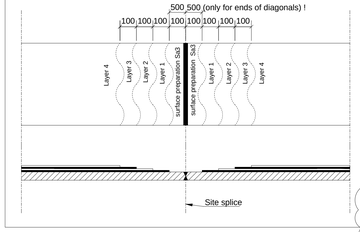


Section E - E , 1:33.3



Detail F , 1:20

Layercoatings of longitudinal and transversal sitesplices



Surface preparation preparation grade — **Sa 3 EXC 3 - P2**

Ps1 - type II

Surface preparation: Sa 3

Layer	Product Description	Colour	Dry Film thickness (µm)
1	sigma EP 111	eggshell	75
2	Sigma EP 112	dark grey	150
3	Sigma EP 112	light grey	150
4	Sigmadur 520	see below*	50
			425

the minimum total dry film thickness of the paint system shall not be less than the minimum value given: 425µm

*	***Walkway***	***Ral 7024***	***=PS1a***
*	***Connector plates - vertical & horizontal members(struts & diagonals, gusset and spade plates)***	***Ral 9006***	***=PS1b***
*	***Top Chord:***	***Ral 9003***	***=PS1c***

**** Layer 4 (endcoating) will be added at technical film thickness in workshop***
On site the endcoating layer 4 will be finished with a paintingroller

Ps2 - internal surfaces of spine box girder

Surface preparation: Sa 2,5

Layer	Product Description	Colour	Dry Film thickness (µm)
1	sigma EP 111*	eggshell	75
			75

* No requirements

(All internal surfaces of the spine box girder are to recieve a paint with light colour to improve visibility)

Repair system
Surface preparation: Sa2,5-St 3

Layer	Product Description	Colour	Dry Film thickness (µm)
1	Sigmacover 690	Alu	75
2	Sigma EP 112*	dark grey	150
3	Sigma EP 112*	light grey	150
4	Sigmadur 520*	see below*	50
			425

* repairs can also be executed by brush/roller

*	***Walkway***	***Ral 7024***
*	***Connector plates - vertical & horizontal members(struts & diagonals, gusset and spade plates)***	***Ral 9006***
*	***Top Chord:***	***Ral 9003***

General notes:

(unless indicated otherwise)

1 - Steel quality to be weathering grade S355

All bridge spine box en deck box (grade S355 according to BS EN 10025):
- S355J0W+N : thickness = 35 mm
- S355J2W+N : thickness > 35 = 50 mm
- S355K2W+N : thickness > 50 = 60 mm
- Through thickness Z - quality:
  Z25 for gusset and spade plates of Spine Truss Diagonal
  Z35 for Spine Box top flange, web and bearing plates.
  Z35 for Trimmer beam top flange and web

All Top Chord and vertical struts, Lifting lug or temporary fixing cleats that remain permanent (grade S355 according to BS EN 10025-2):
- S355J0+N : thickness = 35 mm
- S355J2+N : thickness > 35 = 50 mm
- S355K2+N : thickness > 50 = 60 mm

All Diagonal bracings to be grade S355J2H to BS EN 10210

2 - Shear studs :
- Type SD1 S235J2+C450, Ø19mm x 175mm according to BS EN 13918 u.n.o.

3 - Welds
- All welds are to be continuous and form a continuous seal
- All welds are indicated. Seams not to be welded are stated explicitly
- When no specific detail is to be used, welds are indicated by throat size (a =...)
- Grinding direction: see grinding drawing C12768-VTB-SBR-GB-DR-W-3003
- See welding catalogues C12768-VTB-SBR-GB-DR-W-3004/3005
- Welded splices to be ground flush to provide uniform finish surface.
- Weld surface may need roughening to provide adequate key to protective coating to adhere properly.

4 - Bolted assemblies :

10.9 Bolts according to BS EN 14399-10 and BS EN 1090 (TCB)
weathering grade s10t in accordance to following specification:
HRC Bolt according to BS EN 14399-10
HRD Nut according to BS EN 14399-10
Washer according to BS EN 14399-6
Bolts to be tightened with HRC method

5 - Execution class :

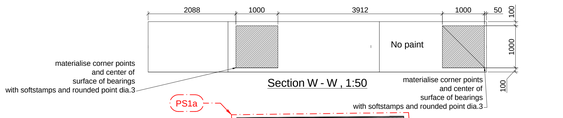
EXC 3 for entire steelconstruction of Gateway Bridge , with additional requirements as specified by Series 1800

6 - Annotations :
- Measures are in mm

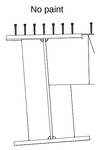
7 - C.O.G.:
- Center of gravity
- Weight is indicated for each assembled girder

8 - Corrosion protection :
- See drawing C12768-VTB-SBR-GB-DR-W-3002

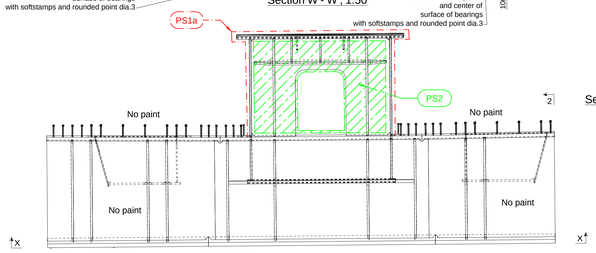
9 - Overlength :
- See drawing C12768-VTB-SBR-GB-DR-W-3001



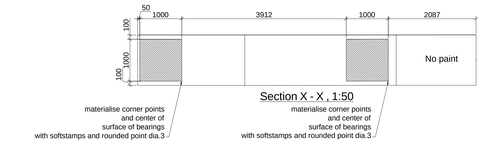
Section W - W , 1:50



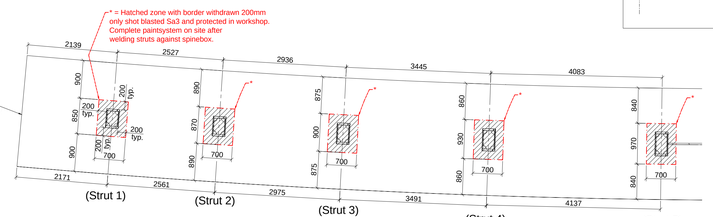
Section 2 - 2 , 1:33.3



Section D - D , 1:33.3



Section X - X , 1:50

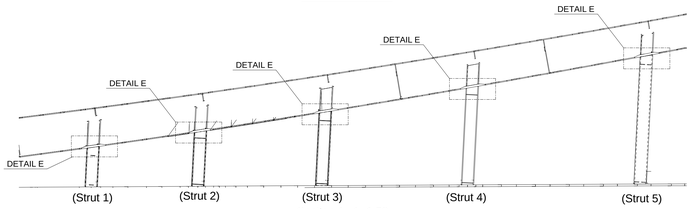


Section 3 - 3 , 1:50

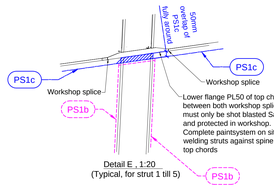
Preparation of steelwork:

Shot blasting in workshop:
- Painted inner surfaces Sa2,5
- Painted outer surfaces Sa3
- Weathering steel surfaces Sa2,5
and 10.9 bolts contact surfaces.

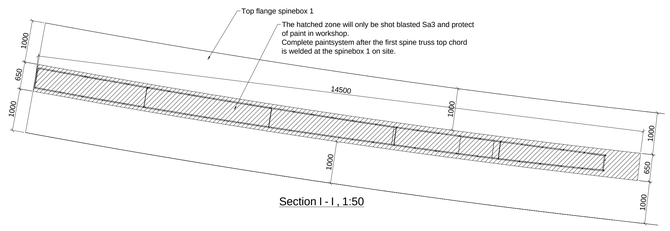
Shot blasting on site:
- Painted surfaces Sa2,5
- Weathering steel surfaces Sa2,5
and 10.9 bolts contact surfaces.



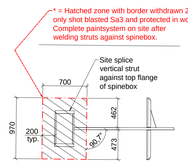
Section 4 - 4 , 1:50



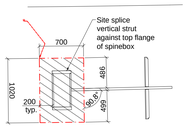
Detail E , 1:20
(Typical, for strut 1 till 5)



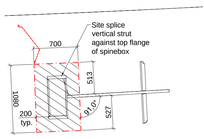
Section I - I , 1:50



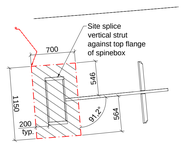
Section R - R , 1:33.3
(Strut 5)



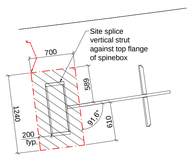
Section Q - Q , 1:33.3
(Strut 6)



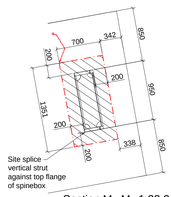
Section P - P , 1:33.3
(Strut 7)



Section O - O , 1:33.3
(Strut 8)



Section N - N , 1:33.3
(Strut 9)



Section M - M , 1:33.3
(Strut 10)

Iss	Description	By	Chkd/Appd	Date
P02	FOR CONSTUCTION APPROVAL	BDR	SMA	25.04.2019
P01	FOR CONSTUCTION APPROVAL	BDR	SMA	28.03.2019

FOR CONSTRUCTION APPROVAL — S4

London Luton Airport Ltd
A Luton Council company

London Luton Airport Limited
Luton Borough Council

London Luton Airport Operations Limited
Airport Way, Luton LU2 9LY

Sheet Size:	Scale:	Drawn By:	Approved By:
A0	As indicated	BDR	SMA

Project Name:
Luton DART Project

Contract Name:
C12768 - Luton Direct Air to Rail Transit

Drawing Title:
Corrosion protection
GENERAL DRAWING

Drawing No.: C12768 -VTB -SBR-GB-DR-W-3002

Rev: P02

Tekla Structures