AASHTOWare BrDR 7.5.0 Steel Tutorial STL3 – Steel Splice Design Review and Rating

BrDR Tutorial

Topics Covered

- Steel splice data entry
- Splice schematic
- Splice analysis options
- LRFD analysis and results
- LRFR analysis and rating
- Using AASHTO LRFD Bridge Design Specifications, 9th Edition.
- Using Manual for Bridge Evaluation, 3rd Edition with 2023 interims.

This example describes entering a steel girder splice into BrDR and analyzing it for both LRFD and LRFR.

Steel splice data entry

Open bridge **BID3** – **TrainingBridge3** from the sample database in the **Bridge Explorer**. The partially expanded **Bridge Workspace** tree is shown below.

Workspace -	_ □	×
Bridge Components		
 TrainingBridge3 Components LRFD 1994 AASHTO LRFD Specifications Class A (US) Grade 60 Epoxy I Grade 50W Diaphragm Definitions Lateral Bracing Definitions SUPERSTRUCTURE DEFINITIONS Superstructure Definitions Impact/Dynamic Load Allowance Impact/Dynamic Load Allowance Impact/Dynamic Load S Shear Connector Definitions Stiffener Definitions MEMBERS MEMBERS MEMBERS SUPERSTRUCTURES Three Span Bridge (E) (C) SUPERSTRUCTURES SUPERSTRUCTURE ALTERNATIVES SUPERSTRUCTURE ALTERNATIVES SUPERSTRUCTURE ALTERNATIVES 	rLine)	

Bridge Materials - Connectors

To create a new bolt material, in the **Components** tab of the **Bridge Workspace**, expand the **Connectors** node, click on **Bolt**, and select **New** from the **Manage** group of the **WORKSPACE** ribbon (or right mouse click on **Bolt** and select **New**). The window shown below will open.



Enter the data as shown below and click the Compute from library... button.

Name:	Field Splice	e Bolt							
escription:	ASTM A32	5							
ibrary designation:	AASHTO M	164 (US	5) ~			🗸 Bo	lt threads	s excluded from shear	plane
olt diameter:	0.875	i	in			Hole di	iameter:	0.9375 in	
Connection ty	/pe	Hole	size		Load direction	Surface class	Ho	ole type	
🔘 Slip-criti	cal	0	Standard		Any direction	Class A		Punched full size	
Bearing			Oversize		Transverse	🔘 Class B	C	Drilled full size	
						Charles		Cubaurahad and an	
			Short slot		Parallel			Subpunched and re-	amed to s
Grip length:	in		Short slot Long slot		Parallel	Class C Class D		Subpunched and re	amed to
Grip length:	in		Short slot Long slot		LFD	Class D		Subpunched and re	amed to
Grip length: ASD Allowable sh	in near stress:	23.75	Short slot Long slot ksi		LFD	Class D Class D	ksi	Suppunched and re	amed to :
Grip length: ASD Allowable sh Nominal slip	in near stress: o resistance:	23.75	Long slot ksi ksi		LFD Allowable shear stress: Design slip resistance:	Class C Class D	ksi ksi	Suppunched and re	amed to
Grip length: ASD Allowable sh Nominal slip LRFD	in near stress: o resistance:	23.75	Long slot ksi ksi		LFD Allowable shear stress: Design slip resistance:	Class D Class D	ksi ksi	Suppunched and re	
Grip length: ASD Allowable sh Nominal slip LRFD Minimum te	in near stress: o resistance: nsile strengt	23.75 23	Long slot ksi ksi 120	ksi	LFD Allowable shear stress: Design slip resistance: Kh: 1 Ks:	 Class D Class D 43 32 0.5 	ksi ksi		amed to :
Grip length: ASD Allowable sh Nominal slip LRFD Minimum te Required ter	in near stress: o resistance: nsile strengti nsion, Pt:	23.75 23 h, Fub:	Short slot Long slot ksi ksi 120 39	ksi	LFD Allowable shear stress Design slip resistance: Kh: 1 Ks:	 Class D Class D 43 32 0.5 	ksi	Compute from library	
Grip length: ASD Allowable sh Nominal slip LRFD Minimum te Required ter	in near stress: p resistance: nsile strengt nsion, Pt:	23.75 23	Short slot Long slot ksi ksi 120 39	ksi kip	LFD Allowable shear stress: Design slip resistance: Kh: 1 Ks:	 Class D Class D 43 32 0.5 	ksi	Compute from library	
Grip length: ASD Allowable sh Nominal slip LRFD Minimum te Required ter	in near stress: o resistance: nsile strengt nsion, Pt:	23.75 23 h, Fub:	Short slot Long slot ksi ksi 39	ksi	LFD Allowable shear stress: Design slip resistance: Kh: 1 Ks:	 Class D Class D 43 32 0.5 	ksi	Compute from library	

Click **OK** to apply the data and close the window.

Splice Location

Returning to the **Bridge** tab of the **Bridge Workspace**, expand the **Exterior Girder** member, **Composite Plate Girder** member alternative and select the **Splice Locations** node. Click on the **New** button from the **Manage** group of the **WORKSPACE** ribbon (or right click and select **Open** from the menu) to open the **New Splice Location** window as shown below.



The drop down menu for **Distance** contains the locations of girder section change points (flanges and webs) that were described in the **Girder Profile** window. One of these values can be selected, or a location value can be manually entered. For this example, select 98' from the drop down.

🗛 New S	plice Location					×			
Support number: 1									
⊖ Le	eft 💿 Right								
Distance:	0 ~	ft							
	40.0000								
	98.0000	[OK		Cancel				
	124.0000	[•]							
	154.0000								
	182.0000								
	273.0000								
	301.0000								
	331.0000								
	357.0000								
	415.0000								

Click **OK** to open the **Splice Location** window as shown below.

Splice Location – Girder

Enter the splice gap information as shown below and check the **Filler plate extended** checkbox, which will be disabled if the girder plate sizes don't vary on either side of the splice. The **Apply location** button updates the displayed girder plate sizes if the location changes.

A Splice Location	-		×
Support number: 2 Since: 42.00 ft Apply location			
Cluder top marge bottom marge tree CL Splice 0.8750" x 16.000" 1.0000" x 18.000" 0.4375" x 69.000" 0.5000" x 69.000" Gap Sta And 1.6250" x 18.000" 1.2500"			
Left cover plates Right cover plates			
ν.			
ОК Арр	ly	Cance	2

Splice Location – Top flange



Navigate to the **Top flange** tab of this window and enter the data as shown below.

Splice Location – Bottom flange



Navigate to the **Bottom flange** tab of this window and enter the data as shown below.

Splice Location – Web

Navigate to the **Web** tab of this window and enter the data as shown below.

A Splice Location					×
Support number: 2 V Direction Careford Control Contro	Distance: 42.00 ft Apply	location			
N1 spa at P1 N2 spa. at G2 W2 W2 W2 W2 W2 W2 W2 W2 W2 W	Bolt definition: Field Splice Vertical edge distance: 1.5000 Horizontal edge distance: 1.5000 Plate material: Grade 50W Plate thickness: 0.4375 Edge type Image: Splice transmission of the synthesis of the synthesyntemateris of the synthesynthesis of the syntemateris of the synth	Bolt in in in in in in in in			
			OK Apply	Canc	el

Click **OK** to apply the data and close the window.

Splice – Right click menu

	Open
þ	Сору
þ	Сору То
×	Delete
~	Analyze
ø	View Summary Report
Q	View Detailed Report
â۲	Schematic
÷	General Preferences
×	Close Bridge Workspace

Copy – copy and then paste the splice to another member alternative.

Copy To... - opens a window allowing the user to pick 1 or more member alternatives to copy to.

Splice Locations – Right click menu

o ³⁰	Expand Branch
P	Collapse Branch
	New
þ	Copy All
~	Analyze
P	View Summary Report
Q	View Detailed Report
8	General Preferences
×	Close Bridge Workspace

Copy All... - opens a window allowing the user to pick one or more member alternatives to copy all the splices in the member alternative to.

Splice - Schematic

Select the splice **Span 1 – 98.000000** in the **Bridge Worksapce** tree and click on the **Schematic** button from the **Manage** group of the **WORKSPACE** ribbon (or right click and select **Schematic** from the menu) as shown below.



The following schematic is displayed.



Splice Analysis Options

Analyze a single splice.

Select a **Splice Location** in the **Bridge Workspace** tree and click the **Analyze** button from the **Analysis** group of the **DESIGN/RATE** ribbon. The girder DL and LL analysis will run. Specification checks will be performed at points required for the splice location, the splice itself, and stress calculations at adjacent brace points. For LRFR or LFR, the spec checks will include the splice rating articles.

Analyze a girder that contains a splice.

LRFD Design Review.

Select Generate at section change points under LRFD in the Control options tab of the Member Alternative Description window for a member alternative to have spec checking occur at the splice location. Splice specification articles will be processed in addition to the regular steel girder specification articles.

LRFR/LFR Rating

Select **Generate at section change points** under **LRFR** and **LFR** to have specification checking occur at the splice location. Splice specification articles will be processed in addition to the regular steel specification girder articles. Also select **Include splices in rating** to have the splice rating articles processed as well.

Select only **Include splices in rating** to have the splice specification articles and splice rating specification articles processed at the splice locations in addition to the regular steel girder specification articles.

(See the image below for **Member Alternative Description – Control options** settings)



LRFD Design Review

To perform an LRFD design review, select the **Analysis Settings** button on the **Analysis** group of the **DESIGN/RATE** ribbon. The window shown below opens.

Bridge Worl	kspace - TrainingBridge3	ANALYSIS	REPORTS	?	-	×
BRIDGE WORKSPACE	VORKSPACE TOOLS VIEW	DESIGN/RATE	REPORTING			^
Analysis Settings Analysis Analysis Analysis	Tabular Specification Engine Results Check Detail Outputs Check Detail	esults Save Graph Results				

Click the **Open Template button** and select the **HL 93 Design Review** to be used in the design review and click **Open**.

Open Template					
Templates	Description	Analysis	Owner	Public / Private	
HL 93 Design Review	HL 93 Design Review	LRFD		Public	-
HS 20 LFD Rating	HS 20 LFD Rating	LFR		Public	
LRFR Design Load Rating	LRFR Design Load Rating	LRFR		Public	
LRFR Legal Load Rating	LRFR Legal Load Rating	LRFR		Public	
Delete				Open	Cancel



The Analysis Settings window will be populated as shown below.

Click **OK** to apply the data and close the window.

Specification Check Detail

Select the splice **Span 1 – 98.00** in the **Bridge Workspace** tree and click the **Analyze** button on the **Analysis** group of the **DESIGN/RATE** ribbon to perform the rating. This will begin an analysis and specification check of the points required for the splice, the splice location (98.00 ft) itself and typically the brace points on the left and right side of the splice location (84.00 ft and 112.00 ft).



The specification checks for the splice can be viewed by clicking the **Specification Check Detail** button from the **Results** group of the **DESIGN/RATE** ribbon.



Double click on the 6.13.6.1.3b Flexural Members – Flange Splices article for Stage 3 at Span 1 – 98.00 ft.

A Specification C	hecks for Splice	98.00	- 56 of 128		- 🗆	Х
		Artic	es			
		All a	urticles 🗸			
Broportion	Conorato	Form	at			
Properties	Generate	Bulle	et list 🗸			
Specification filter		Rep	port			
🔺 🚞 Superstructu	ure Component		Specification reference Limit State	Flex. Sense	Pass/Fail	
🕨 🚞 Stage 1		- 11	✓ 6.13.2.9 Bearing Resistance at Bolt Holes	N/A	Passed	
Stage 2		- 11	NA 6.13.3.2.4 Fillet Welded Connections	N/A	Not Applicable	
🔺 🚞 Stage 3		- 11	6.13.4 Splice Block Shear Rupture Resistance	N/A	General Comp.	
4 🚞 Com	posite Plate Gird	ler	6.13.5.2 Flange Splice Plate Tension	N/A	General Comp.	
🚞 Sp	pan 1 - 0.00 ft.	- 11	📔 6.13.5.3 Shear	N/A	General Comp.	
🚞 Sp	pan 1 - 14.00 ft.	- 11	✓ 6.13.6.1.3a General	N/A	Passed	
📃 Sp	pan 1 - 28.00 ft.	- 11	X 6.13.6.1.3b Flexural Members - Flange Splices	N/A	Failed	
Sp Sp	pan 1 - 42.00 ft.		X 6.13.6.1.3c Flexural Members - Web Splices	N/A	Failed	
	pan 1 - 56.00 ft.		6.13.6.1.4 Fillers	N/A	General Comp.	
	pan I - 70.00 ft.		× 6.6.1.2.2 Design Criteria	N/A	Failed	
	pan 1 - 64.00 ft.	n i	APPD6.1 Plastic Moment	N/A	General Comp.	
	pan 1 - 98.00 ft.		APPD6.2 Yield Moment	N/A	General Comp.	
	pan 1 - 112.00 ft		APPD6.3.1 In the Elastic Range (Dc)	N/A	General Comp.	
	nan 1 - 140.00 ft		APPD6.3.2 Depth of the Web in Compression at Plastic Moment	N/A	General Comp.	
i Sr	pan 2 - 14.25 ft.		Steel Elastic Section Properties	N/A	General Comp.	
in Sp	pan 2 - 28.50 ft.	•	Unbraced Length Calculations	N/A	General Comp.	ļ

Review the splice specification article. Article 6.13.6.1.3b fails for the bottom flange splice plates.

Spec Che	eck Detail for 6.13.6	.1.3b Flexura	I Members -	Flange Splices									-		>
ot Oute	er Splice Plate	2													
Aσ =	7.88 in^2														
An =	5.41 in^2														
Ae =	6.38 in^2														
Sg =	23.63 in^3														
Sn =	16.08 in^3														
Ip =	1368.13 in^4														
						Viold			Enceture		P	logic Shoom			
imit	Load	Tn				TIEIG	Design		riacture .	Design	D	TOCK SHEat	Design	Page	
State	Comb	Tension	P	М1	f	F-allow	Ratio	f	F-allow	Ratio	f	F-allow	Ratio	Fail	
			(kip)	(kip-ft)	(ksi)	(ksi)		(ksi)	(ksi)		(ksi)	(ksi)			
															-
STR-I	1	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-I	1	No	455.9	0.0	57.89	47.50	0.82							Fail	
STR-I	2	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-I	2	No	455.9	0.0	57.89	47.50	0.82							Fail	
STR-I	3	res	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fall	
STR-1	. 3	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-III	1	Vez	400.9	0.0	57.09	47.50	0.82	04.21	56.00	0.67	57.09	52.04	0.90	Fail	
STR-III	2	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-III	2	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-III	3	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-III	3	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-V	1	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-V	1	No	455.9	0.0	57.89	47.50	0.82							Fail	
STR-V	2	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
STR-V	2	No	455.9	0.0	57.89	47.50	0.82							Fail	-
STR-V	3	Yes	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	Fail	
DIK-V	3	ies	455.9	0.0	57.89	47.50	0.82	84.21	56.00	0.67	57.89	52.04	0.90	rall	•
														OK	

Splice Location											_		×
upport number: 2 V	Direction Left Right	Distance: 42		ft	Apply Ic	catior	1						
Girder lop flange Bott			Polt	definition	Field Sr	dice R	olt						
. [D1]	N1 sna at P1 D2		D1	1.75	in	F1.	15	in					
		103	D2:	1.75		E2.	1.5	in					
ġ ↓	• <u>TE1</u>	ND and at C1	N1	1.5	Ξ.	F3-	1.5	in					
	•	VIZ Spa. at G1	P1.	3	in	F4:	1.5	in					
	+	Z·-·-	D3:	15		2	1.5						
lj1 ● ;1	•	N2 spa. at G1	N2:	2	Ξ								
121 •	● ‡ E1	ID3	G1:	2.75	in								
		-											
	nner Plates		_	Outer plate					Inner plate				
	E2	I		Plate mater	ial: Gra	de 50\	N	~	Plate materia	I: Grade 50W		\sim	
		ĴE3	ſ	Thickness:	0.5		in		Thickness:	0.5625 in	٦		
	•			Length:	30.	75	in		Length:	30.75 in	_		
CL Web	•	‡ E4		Width:	18		in		Width:	8.5 in			
	•	\$ E4		Edge ty	pe				Edge type				
B 🛛	•	7		O Sh	eared (R	olled or gas	cut	O She	ared Rolled o	r gas cut		
	_	ŢE3											
CL Splice													
									ĺ	OK	Apply	Canc	el

Revise the bottom flange splice plate as follows in the **Splice location** window.

Rerun the LRFD design review on the splice plate. Once the analysis is complete, open the same specification article and review the results. Take note of the change in design ratios as shown below.

📲 Spec Ch	eck Detail for 6.13.6	.1.3b Flexura	I Members -	Flange Splices									-		×
Bot Out	er Splice Plate														
λ <i>α</i> -	9 00 in^2														
An =	6.19 in^2														
Ae =	7.29 in^2														
Sg =	27.00 in^3														
Sn =	18.37 in^3														
lp =	1368.13 in^4														
						Yield -			Fracture		E	lock Shear			
Limit	Load	In					Design			Design			Design	Pass/	
State	Comb	Tension	P	ML	f	F-allow	Ratio	f	F-allow	Ratio	f	F-allow	Ratio	Fail	
			(kip)	(kip-ft)	(ksi)	(ksi)		(ksi)	(ksi)		(ksi)	(ksi)			-
STR-I	1	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
STR-I	1	No	455.9	0.0	50.66	47.50	0.94							Fail	
STR-I	2	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
STR-I	2	No	455.9	0.0	50.66	47.50	0.94							Fail	
STR-I	3	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
STR-I	3	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
SIR-II.		ies	455.9	0.0	50.66	47.50	0.94	/3.68	56.00	0.76	50.66	52.04	1.03	Fall	
STR-II.		Vez	400.9	0.0	50.66	47.50	0.94	73.69	56.00	0.76	50.66	52.04	1.03	Fail	
STR-II	r 2	Yes	455.9	0.0	50.66	47 50	0.94	73 68	56.00	0.76	50.66	52.04	1 03	Fail	
STR-II	ī 3	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
STR-II	I 3	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
STR-V	1	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
STR-V	1	No	455.9	0.0	50.66	47.50	0.94							Fail	
STR-V	2	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
STR-V	2	No	455.9	0.0	50.66	47.50	0.94							Fail	
STR-V	3	Yes	455.9	0.0	50.66	47.50	0.94	73.68	56.00	0.76	50.66	52.04	1.03	Fail	
DIR-V	3	ies	405.9	0.0	30.00	47.50	0.94	/3.68	50.00	0.76	20.00	52.04	1.03	rall	
														OK	

LRFR Analysis

Splices can be rated for either LRFR or LFR. To perform an **LRFR** rating, select the **Analysis Settings** button on the **Analysis** group of the **DESIGN/RATE** ribbon. The window shown below opens.

Bridge Wo	orkspace - TrainingBridge3	ANALYSIS	REPORTS	?	-	×
BRIDGE WORKSPACE	WORKSPACE TOOLS VIEW	DESIGN/RATE	REPORTING			^
a 🖅 🗄		2 🖪				
Settings Events	Results Check Detail Outputs Gra	oph Results				
Analysis	Results					

Click the **Open Template button** and select the template **LRFR Design Load Rating** and click **Open**.

Templates	Description	Analysis	Owner	Public / Private	
HL 93 Design Review	HL 93 Design Review	LRFD		Public	
HS 20 LFD Rating	HS 20 LFD Rating	LFR		Public	
LRFR Design Load Rating	LRFR Design Load Rating	LRFR		Public	
LRFR Legal Load Rating	LRFR Legal Load Rating	LRFR		Public	

Analysis Settings				_		×	
Design review O Rating	Rating metho	od:	LRFR	~			
alysis type: Line Girder	~						
ne / Impact loading type: As Requested	 Apply prefere 	Apply preference setting: None <					
Vehicles Output Engine Description							
Traffic direction: Both directions		Refresh	Temporary vehicles	Advanced			
Vehicle selection	Veh	nicle summary					
	Add to >> Remove from <<	Hating vehicl □-LRFR □-Desig □-Desig □-Desig □-In- □-O □-O □-O □-O □-O □-Fa □-Fa □-Re Sp Permi	es n load rating ventory HL-93 (US) perating HL-93 (US) tigue)			

The **Analysis Settings** window will be updated as shown below.

Click **OK** to apply the analysis settings and close the window.

Tabular Results

Select the splice **Span 1 – 98.00** in the **Bridge Workspace** tree and click the **Analyze** button on the **Analysis** group of the **DESIGN/RATE** ribbon to perform the rating.

When the rating analysis is finished, results can be reviewed by clicking the **Tabular Results** button on the **Results** group of the ribbon. The **Tabular Results** window shows the controlling rating factors at this location. For this example, some ratings are controlled by the splice, and some are controlled by the steel girder.



The window shown below will open.

Analysis Results - Splice 98.00										- 🗆	×	
	Print Print											
Report type: Display Format												
Rating Results Summary V As requested Detailed Single rating level per row V												
	Live Load	Live Load Type	Rating Method	Rating Level	Load Rating (Ton)	Rating Factor	Location (ft)	Location Span-(%)	Limit State	Impact	Lane	
	HL-93 (US)	Truck + Lane	LRFR	Inventory 36.31		1.009	98.00	1 - (70.0)	STRENGTH-I Splice Flange Moment	As Requested	As Requested	≜ k
	HL-93 (US)	Truck + Lane	LRFR	Operating	47.07	1.307	98.00	1 - (70.0)	STRENGTH-I Splice Flange Moment	As Requested	As Requested	ł
	HL-93 (US)	90%(Truck Pair + Lane)	LRFR	Inventory	3564.00	99.000	98.00	1 - (70.0)	STRENGTH-I Steel Shear	As Requested	As Requested	b
	HL-93 (US)	90%(Truck Pair + Lane)	LRFR	Operating	3564.00	99.000	98.00	1 - (70.0)	STRENGTH-I Steel Shear	As Requested	As Requested	b
	HL-93 (US) Tandem + Lane		LRFR	Inventory	42.07	1.169	98.00	1 - (70.0)	STRENGTH-I Splice Flange Moment	As Requested	As Requested	b
HL-93 (US) Tandem + Lane LRFR Opera					54.53	1.515	98.00	1 - (70.0)	STRENGTH-I Splice Flange Moment	As Requested	As Requested	Ł
	· · · · · · · · · · · · · · · · · · ·											
AAS	SHTO LRFR En	gine Version 7.5.0.3001										
Ana	lysis preferen	ce setting: None										
											Clo	se