





















STEP A: Initial Setup

1. Create a folder called "Original Customization Files" in the following location on your computer:

C:\BKey\Analysis

 Original Customization Files	8/18/2016 9:11 AM	File folder	
 CUSFLBM.STD	8/18/2016 9:15 AM	STD File	1 KB
 CUSGEN.STD	8/18/2016 9:15 AM	STD File	4 KB
 CUSLRFD.STD	8/18/2016 9:15 AM	STD File	1 KB
 CUSPSC.STD	8/18/2016 9:15 AM	STD File	1 KB
 CUSRC.STD	8/18/2016 9:15 AM	STD File	1 KB
 CUSSS.STD	8/18/2016 9:15 AM	STD File	1 KB
 custmb_lr.std	8/18/2016 9:15 AM	STD File	1 KB
 CUSTOM.BLK	8/1/2008 8:02 PM	BLK File	4 KB
 CUSTOMTR.BLK	8/1/2008 8:02 PM	BLK File	3 KB
 CUSTRS.STD	8/18/2016 9:15 AM	STD File	1 KB
 errmsg.sav	4/17/2015 6:44 PM	SAV File	39 KB
 error_msg.csv	4/17/2015 6:44 PM	Microsoft Excel C...	34 KB
 RATECHK.DAT	8/11/2016 9:00 AM	DAT File	3 KB
 RATECHK.SAV	8/1/2008 8:05 PM	SAV File	2 KB
 repfil.SAV	8/1/2008 8:05 PM	SAV File	1 KB
 SECTION_BAR.csv	4/11/2012 2:47 AM	Microsoft Excel C...	113 KB
 section_psc.csv	7/5/2012 6:54 PM	Microsoft Excel C...	27 KB
 TRKLIB.DAT	8/11/2016 9:00 AM	DAT File	1 KB
 TRKLIB.SAV	1/25/2016 3:07 PM	SAV File	1 KB
 TRKLIB_LONG.DAT	8/11/2016 9:00 AM	DAT File	1 KB
 TRKLIB_LONG.SAV	8/11/2016 9:00 AM	SAV File	1 KB
 VEHICLE.BLK	7/11/2012 5:34 PM	BLK File	8 KB
























2. Move the highlighted files from "C:\BKey\Analysis" to the newly created folder "Original Customization Files"

3. Open Zip File “NJDOT Specific LARS Customization Files.zip” from our webpage and insert NJDOT Specific LARS Customization Files in C:\BKey\Analysis

The screenshot shows a Windows Explorer window with the address bar set to 'Local > Microsoft > Windows > Temporary Internet Files > Content.IE5 > NXQN7EXL > LARSCustomization.zip'. The left sidebar shows the 'Organize' tab with 'Extract all files' selected. The main pane displays a list of files extracted from the zip file. A red box highlights the following files:

Name	Date modified	Type	Size
CUSFLBM.STD	7/2/2014 6:20 PM	STD File	1 KB
CUSGEN.STD	7/2/2014 6:20 PM	STD File	4 KB
CUSLRFD.STD	7/2/2014 6:20 PM	STD File	1 KB
CUSPSC.STD	7/2/2014 6:20 PM	STD File	1 KB
CUSRC.STD	7/2/2014 6:20 PM	STD File	1 KB
cusss.std	7/2/2014 6:20 PM	STD File	1 KB
CUSTOMB_LR.STD	7/2/2014 6:20 PM	STD File	1 KB
CUSTRS.STD	7/2/2014 6:20 PM	STD File	1 KB

The status bar at the bottom indicates '8 items selected', 'Compressed size: (multiple values)', 'Size: 5.02 KB', 'Ratio: (multiple values)', and 'Type: STD File'. A red arrow points to the 'Extract all files' button in the top right corner of the window.

 Original Customization Files	8/18/2016 9:39 AM	File folder	
 CUSFLBM.STD	8/18/2016 9:48 AM	STD File	1 KB
 CUSGEN.STD	8/18/2016 9:48 AM	STD File	4 KB
 CUSLRFD.STD	8/18/2016 9:48 AM	STD File	1 KB
 CUSPSC.STD	8/18/2016 9:48 AM	STD File	1 KB
 CUSRC.STD	8/18/2016 9:48 AM	STD File	1 KB
 cusss.std	8/18/2016 9:48 AM	STD File	1 KB
 CUSTMB_LR.STD	8/18/2016 9:48 AM	STD File	1 KB
 CUSTOM.BLK	8/1/2008 8:02 PM	BLK File	4 KB
 CUSTOMTR.BLK	8/1/2008 8:02 PM	BLK File	3 KB
 CUSTRS.STD	8/18/2016 9:48 AM	STD File	1 KB
 errmsg.sav	4/17/2015 6:44 PM	SAV File	39 KB
 error_msg.csv	4/17/2015 6:44 PM	Microsoft Excel C...	34 KB
 RATECHK.DAT	8/11/2016 9:00 AM	DAT File	3 KB
 RATECHK.SAV	8/1/2008 8:05 PM	SAV File	2 KB
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 TRKLIB.DAT	8/11/2016 9:00 AM	DAT File	1 KB
 TRKLIB.SAV	1/25/2016 3:07 PM	SAV File	1 KB
 TRKLIB_LONG.DAT	8/11/2016 9:00 AM	DAT File	1 KB
 TRKLIB_LONG.SAV	8/11/2016 9:00 AM	SAV File	1 KB
 VEHICLE.BLK	7/11/2012 5:34 PM	BLK File	8 KB

STEP B: VERIFY

1. This is how NJDOT Customization for LARS Bridge Load Rating Software should look.
 - a. Tab – General

The screenshot shows the 'Analysis Customization' dialog box with the 'General' tab selected. The dialog has a title bar with a close button. Inside, there are tabs for 'General', 'SS', 'RC', 'PSC', 'Timber', 'Flr Beam', 'Truss', and 'LRFR - General'. The 'General' tab contains the following settings:

- % of Yield Stress (ASD): Operating Posting
- Default Operating Vehicle:
- Post Rating:
- Input Live Load Distribution Factor:
- LARS Extract Fails on Non-Default CPs:
- Transfer File Information: ☒ Use Defaults
 - FileName:
 - Output Path:
 - Output Path Preview:
- Truck Library Path:

At the bottom of the dialog are 'OK' and 'Cancel' buttons.

b. Tab – SS

Analysis Customization

General

SS

RC

PSC

Timber

Flr Beam

Truss

LRFR - General

Partially Braced Member Check

YES

Per the AASHTO Spec. Section 10.48.4.1 (LFD) and Table 10.32.1A (ASD), always compute the value of C_b based on the values of M_1 and M_2 (YES), or always use a value for C_b of 1.0 (conservative) (NO)

Serviceability Analysis

YES

Use $.8F_yS$ for non-composite sections in composite members

Allowable Bending Stress

Up to Yr	F_y	Inventory	Operating	Posting
1905	26000.0	14500.0	19500.0	19500.0
1936	30000.0	16500.0	22500.0	22500.0
1963	33000.0	18000.0	24500.0	24500.0
2050	36000.0	20000.0	27000.0	27000.0

Add

Modify

Delete

Allowable Shear Stress

Up to Yr	F_y	Inventory	Operating	Posting
1905	26000.0	8500.0	11500.0	11500.0
1936	30000.0	9500.0	13500.0	13500.0
1963	33000.0	11000.0	15000.0	15000.0
2050	36000.0	12000.0	16000.0	16000.0

Add

Modify

Delete

Compact flag

NO

Always qualify members as braced non compact when $F_y < 33\text{ksi}$

Fb Flag

NO

Allow input F_b to override computed F_b for ASD section capacity computation

LFD CSC Tension

NO

Allow LFD CSC tension flange capacity to always be based on yield not stresses

LFD CSC Plastic

YES

Allow LFD CSC plastic moment capacity for compact sections

OK

Cancel

c. Tab – RC

1964 was added to
incorporate 36 ksi
steel

Analysis Customization

General | SS | **RC** | PSC | Timber | Flr Beam | Truss | LRFR - General

Yield Bending Stress - Reinforcing Steel

Up to Yr	Fy	Inventory	Operating	Posting
1954	33000.0	18000.0	25000.0	25000.0
1964	36000.0	20000.0	27000.0	27000.0
1965	40000.0	20000.0	28000.0	28000.0
1970	50000.0	20000.0	32500.0	32500.0
2050	60000.0	24000.0	36000.0	36000.0

Allowable Bending Stress - Reinforced Concrete

Up to Yr	f'c	Inventory	Operating	Posting
1959	2500.0	1000.0	1375.0	1375.0
2050	3000.0	1200.0	1650.0	1650.0

Yield Shear Stress - Shear Reinforcing Steel

Up to Yr	Fy	Inventory	Operating	Posting
1954	33000.0	18000.0	25000.0	25000.0
1964	36000.0	20000.0	27000.0	27000.0
1965	40000.0	20000.0	28000.0	28000.0
1970	50000.0	20000.0	32500.0	32500.0
2050	60000.0	24000.0	36000.0	36000.0

Allowable Shear Stress - Reinforced Concrete

Up to Yr	f'c	Inventory	Operating	Posting
1959	2500.0	1000.0	1375.0	1375.0
2050	3000.0	1200.0	1650.0	1650.0

Ignore shear rating when no stirups are present

Always ignore shear rating

Check shear directly at supports

Move critical shear locations to match concentrated loads within d regions

OK Cancel

d. Tab – PSC

If prestressed reinforcement is bonded, use 3.0. Otherwise use 0.0

Change to "Yes" for a Live Load Continuous bridge

Analysis Customization

General | SS | RC | PSC | Timber | Flr Beam | Truss | LRFR - General

f'c Beam	5000.	f'c Slab	3500.
f's	248000.	Eg / Es	1.250
Factor for 9.15.2.2 allowable tension		3.0000	* sqrt(f'c)
Relative humidity for loss calculation		70.	
Use prestressing steel in transformed section		NO	
Use low tendon limit qualification		YES	
For Composite Prestressed Concrete, use composite contribution for SDL - n=3n (Default - n=1.0)		YES	
Use elastic, ultimate moment and low tendon qualifications when calculating inventory moment. Otherwise, ultimate moment and low tendon will be used.		YES	
Use dead load only when calculating the concrete stress at the centroid of the prestressing steel.		YES	
Ignore shear rating when no stirrups are present		NO	
Ignore elastic analysis (Manual for Bridge Evaluation 6B.5.3.3)		NO	
Always ignore shear rating		NO	
Always ignore Vs max		NO	
Use S(n=n) for computing negative bending elastic stresses		NO	
Use AASHTO 1979 shear specifications		NO	
Use same ASD/LFD shear capacity for positive and negative shear		NO	
Check shear directly at supports		YES	
Move critical shear locations to match concentrated loads within d regions		YES	

OK Cancel

e. Tab – Timber

Analysis Customization

General | SS | RC | PSC | Timber | Flr Beam | Truss | LRFR - General

Allowable Bending Stress

Up to Yr	Fb	Inventory	Operating	Posting
<div></div>				
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

Add
Modify
Delete

Allowable Shear Stress

Up to Yr	Fv	Inventory	Operating	Posting
<div></div>				
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

Add
Modify
Delete

OK Cancel

f. **Tab – Flr Beam**

Analysis Customization

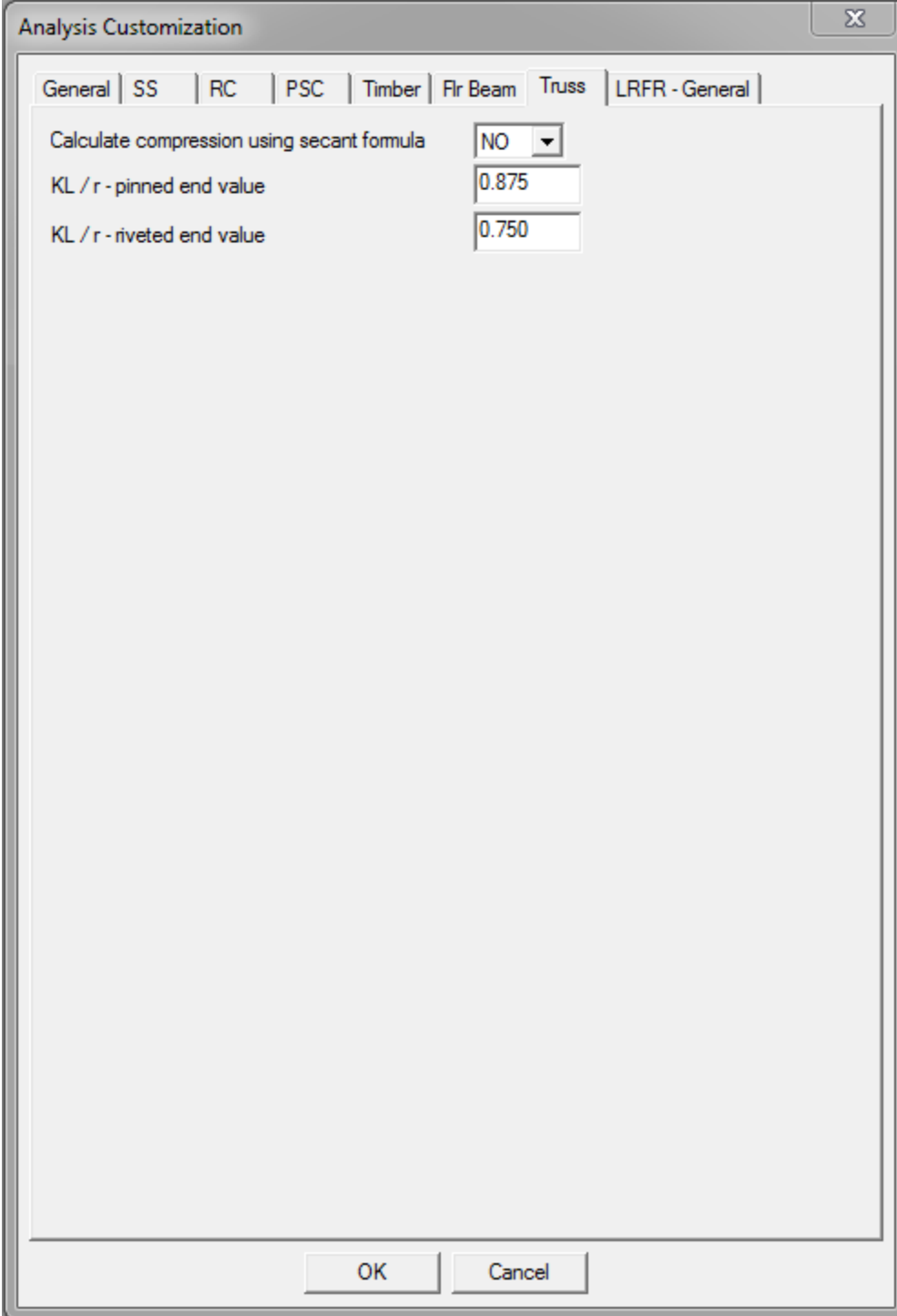
General | SS | RC | PSC | Timber | **Flr Beam** | Truss | LRFR - General

Min. roadway width for two lanes (feet) 18.000

Curb Distance 'A' (inches) 18.000

OK Cancel

g. Tab – Truss



The image shows a software dialog box titled "Analysis Customization" with a close button (X) in the top right corner. The dialog has several tabs: "General", "SS", "RC", "PSC", "Timber", "Flr Beam", "Truss", and "LRFR - General". The "Truss" tab is currently selected. Inside the dialog, there are three settings:

- "Calculate compression using secant formula" is set to "NO" via a dropdown menu.
- "KL / r - pinned end value" is set to "0.875" in a text input field.
- "KL / r - riveted end value" is set to "0.750" in a text input field.

At the bottom of the dialog, there are "OK" and "Cancel" buttons.

Tab	Calculate compression using secant formula	KL / r - pinned end value	KL / r - riveted end value
General			
SS			
RC			
PSC			
Timber			
Flr Beam			
Truss	NO	0.875	0.750
LRFR - General			

h. Tab – LRFR – General

Analysis Customization

General | SS | RC | PSC | Timber | Flr Beam | Truss | LRFR - General

Condition Factor	1.000
System Factor	1.000
Average Daily Traffic Total	0.
Ydc Strength Limit State	1.250
Ydw Strength Limit State	1.250
YII Strength Limit State - Inventory	1.750
YII Strength Limit State - Operating	1.350
YII Strength I Limit State	0.000
YII Strength II Limit State	0.000
Ydc Service Limit State	1.000
Ydw Service Limit State	1.000
YII Service II Limit State - Inventory	1.000
YII Service II Limit State - Legal	1.300
YII Service III Limit State - Inventory	0.800
Ydc Fatigue Limit State	0.000
Ydw Fatigue Limit State	0.000
YII Fatigue Limit State	0.750

OK Cancel

Describe the ADTT
in the Description/
General Bridge
Information