

Introduction to INSPECTOWER 3

There are three sections to this introduction:

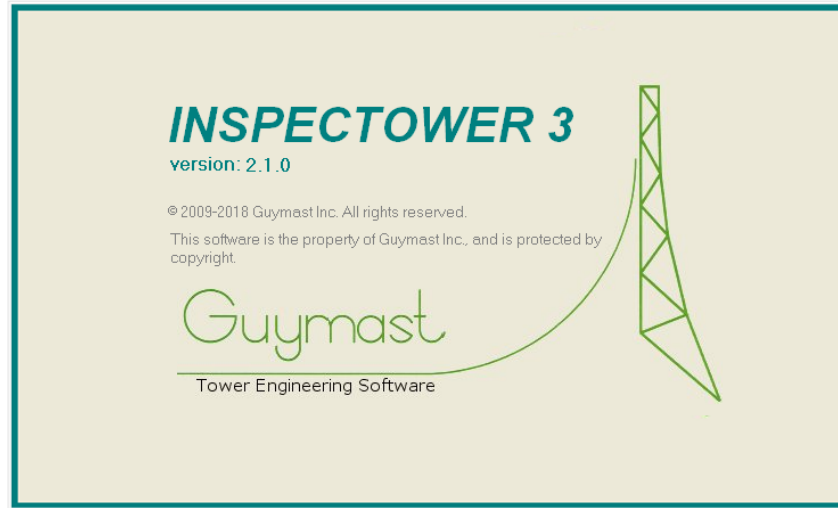
1. Navigating our Tower Software Interface;
2. Navigating the User Tower Project Data Base; and
3. Navigating INSPECTOWER 3.

1. Navigating our Tower Software Interface

Introduction to INSPECTOWER 3

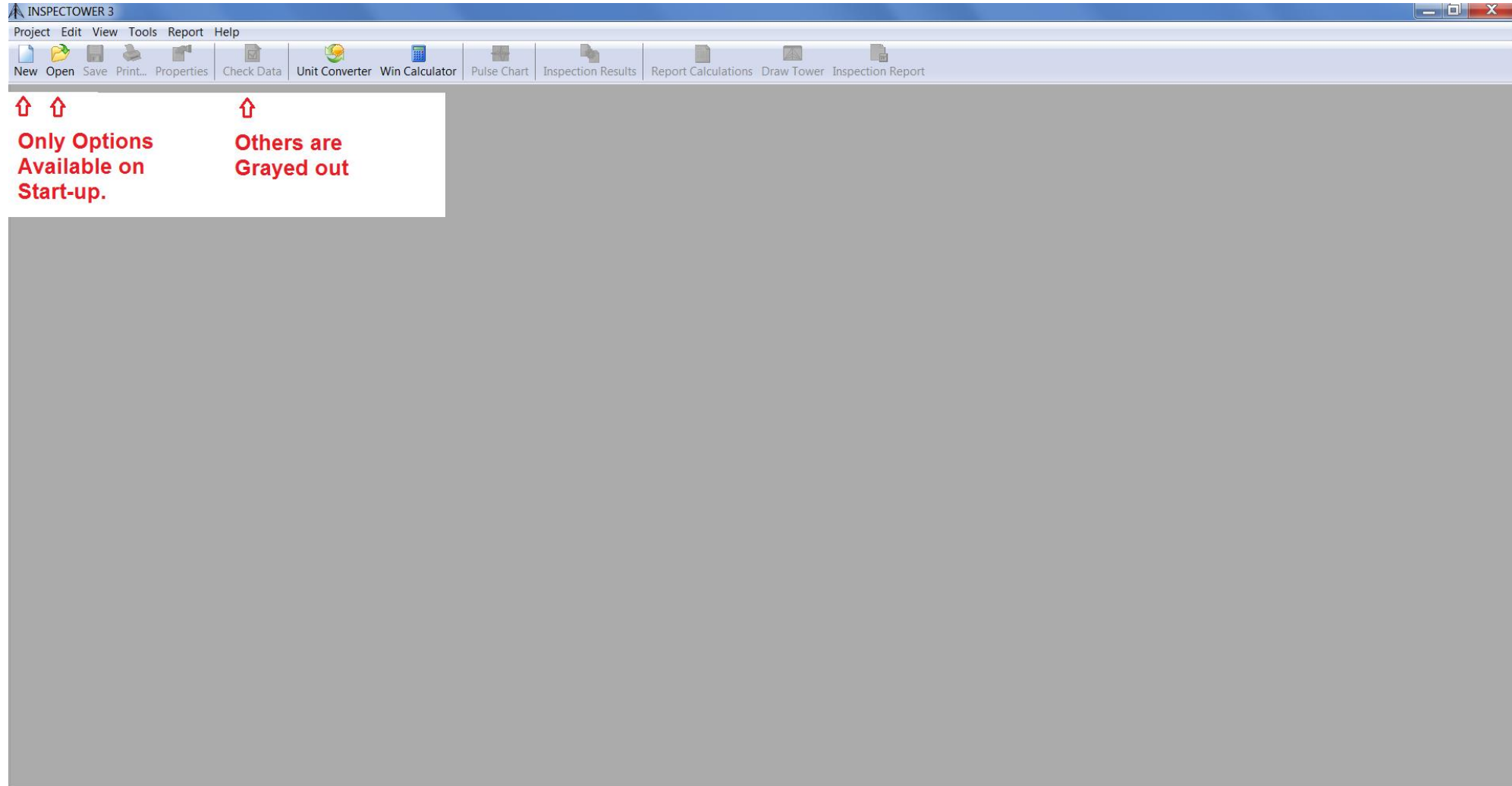
Introductory Image on Activation of INSPECTOWER 3:

Program →
Version →



Introduction to INSPECTOWER 3

The first time running INSPECTOWER 3 this screen will appear:



Subsequent times running INSPECTOWER 3 this screen will appear:

The screenshot shows the INSPECTOWER 3 application window with the 'Project and Workspace Manager' dialog box open. The 'Open' button in the main menu is highlighted with a red box. Red arrows point from text annotations to the 'Open' button, the 'Projects' list, the 'Anchor River Alaska -2' project in the table, and the 'New...' and 'Open' buttons in the dialog's footer.

Last accessed workspace is open

We use Projects because one Project may have many files

Projects

Project Name	Project Type	Tower Type	Standard
Anchor River	INSPECTOWER 3	Guyed Lattice	TIA-222-G
Anchor River Alaska	INSPECTOWER 3	Guyed Lattice	TIA-222-G
Anchor River Alaska -2	INSPECTOWER 3	Guyed Lattice	TIA-222-G

Highlighted is last accessed Project

To start where you left off click here

To open a new one here

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties **Check Data** Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING
INSPECTION INPUT
INSPECTION OUTPUT
PULSE CHART
CALCULATOR

LATTICE PANEL GEOMETRY

PANEL TYPE	NO.OF LEGS	SUB DIVIDE	..ELEVATION OF..		..FACE WIDTH AT..		TYPICAL PANEL HEIGHT	COMMENTS
			BOTTOM	TOP	BOTTOM	TOP	ft	
C	3	0	0.000	250.000	4.000	4.000	2.00	Estimated from photos and drawing

Row=1: Col=1

INSPECTOWER 3

Data check is complete

OK

Click here to continue

Checks data in all the input tables for errors



Introduction to INSPECTOWER 3

The screenshot displays the INSPECTOWER 3 software interface for a project titled "Anchor River Alaska -2". The main window shows a menu bar (Project, Edit, View, Tools, Report, Help) and a toolbar with icons for New, Open, Save, Print, Properties, Check Data, Unit Converter, Win Calculator, Pulse Chart, Inspection Results, Report Calculations, Draw Tower, and Inspection Report. The "Unit Converter" icon is highlighted with a red box. Below the toolbar, the project details are shown: Project Title: 250' Guyed Tower - Anchor River Alaska, Type: Guyed Lattice, Standard: TIA-222-G, Attachments: [icon], and a checked checkbox for Balance Guy Tensions. A tree view on the left lists categories: TOWER MAPPING, INSPECTION INPUT, INSPECTION OUTPUT, PULSE CHART, and CALCULATOR. The main workspace is titled "LATTICE PANEL GEOMETRY" and contains a table with columns for "TYPICAL PANEL HEIGHT" and "COMMENTS". The table has one row with a value of "2.00" in the height column and the comment "Estimated from photos and drawing". A "Units Converter" dialog box is open in the foreground, showing a list of categories (Angle, Area, Density, Distance, Force, Power, Pressure, Temperature, Time, Torque, Velocity, Volume, Weight) and three columns for "From" and "To" units. The "From" column is set to "degree" and the "To" column is also set to "degree". The input field is set to "1" and the result field is also set to "1". A red arrow points from the text "Utility available" to the "Unit Converter" icon in the toolbar.

Project Title: 250' Guyed Tower - Anchor River Alaska

Type: Guyed Lattice

Standard: TIA-222-G

Attachments: [icon]

Balance Guy Tensions

Utility available

LATTICE PANEL GEOMETRY

TYPICAL PANEL HEIGHT	COMMENTS
2.00	Estimated from photos and drawing

Row=1; Col=1



Introduction to INSPECTOWER 3

The screenshot displays the INSPECTOWER 3 software interface for a project titled "Anchor River Alaska -2". The main window shows a menu bar with "Project", "Edit", "View", "Tools", "Report", and "Help". Below the menu is a toolbar with icons for "New", "Open", "Save", "Print...", "Properties", "Check Data", "Unit Converter", "Win Calculator", "Pulse Chart", "Inspection Results", "Report Calculations", "Draw Tower", and "Inspection Report". The "Win Calculator" icon is highlighted with a red box, and a red arrow points from it to a floating Windows Calculator window.

The main workspace is divided into two panes. The left pane shows a tree view with the following items:

- TOWER MAPPING
- INSPECTION INPUT
- INSPECTION OUTPUT
- PULSE CHART
- CALCULATOR

The right pane displays a table titled "LATTICE PANEL GEOMETRY". The table has the following columns: PANEL TYPE, NO. OF LEGS, SUB DIVIDE, ..ELEVATION OF.. BOTTOM, ..ELEVATION OF.. TOP, ..FACE WIDTH AT.. BOTTOM, ..FACE WIDTH AT.. TOP, TYPICAL PANEL HEIGHT, and COMMENTS. The first row of data is as follows:

PANEL TYPE	NO. OF LEGS	SUB DIVIDE	..ELEVATION OF.. BOTTOM	..ELEVATION OF.. TOP	..FACE WIDTH AT.. BOTTOM	..FACE WIDTH AT.. TOP	TYPICAL PANEL HEIGHT	COMMENTS
C	3	0	0.000	250.000	4.000	4.000	2.00	Estimated from photos and drawing

At the bottom left of the main window, the status bar shows "Row=1; Col=1".



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Check Data Unit Converter Win Calculator **Pulse Chart** Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING
INSPECTION INPUT
INSPECTION OUTPUT
PULSE CHART
TENSION TEMPERATURE PULSE
CALCULATOR

The data at right is put into the table in INSPECTION OUTPUT

Input Parameters

Minimum Temperature: -20 Maximum Temperature: 20 Temperature Increment: 5 Number of Vibrations: 5

User enters these

Clicks here

INSPECTOWER 3 calculates

TEMPERATURE TENSION PULSE											COMMENTS
TEMP.	GUY AZIM	GUY ATT AZIM	GUY ELEV	UNSTRESS LENGTH	GUY TENSION	NUM OF VIBS	GUY PULSE	GUY SWING	TANGENT INTERCEPT		
C	deg	deg	ft	ft	klps		sec	sec	ft		
20.0	75.4	15.4	235.0	289.3622	2.36	5	7.56	6.80	9.19		
20.0	75.4	15.4	150.0	230.7714	1.68	5	6.19	5.57	6.16		
20.0	75.4	75.4	200.0	263.6601	3.02	5	6.88	6.19	7.60		
20.0	75.4	75.4	100.0	205.2958	2.97	5	5.45	4.91	4.78		
20.0	75.4	75.4	50.0	189.6116	2.95	5	5.07	4.56	4.14		
20.0	75.4	135.4	235.0	289.3622	2.37	5	7.55	6.79	9.16		
20.0	75.4	135.4	150.0	230.7721	1.67	5	6.21	5.59	6.19		
20.0	195.4	135.4	235.0	308.6954	2.51	5	7.82	7.04	9.84		
20.0	195.4	135.4	150.0	246.1208	1.82	5	6.34	5.71	6.47		
20.0	195.4	195.4	200.0	281.6601	3.20	5	7.12	6.41	8.16		
20.0	195.4	195.4	100.0	216.7272	3.12	5	5.60	5.04	5.04		
20.0	195.4	195.4	50.0	195.6562	3.07	5	5.12	4.61	4.21		
20.0	195.4	255.4	235.0	308.6954	2.51	5	7.81	7.03	9.81		
20.0	195.4	255.4	150.0	246.1208	1.82	5	6.34	5.71	6.47		
20.0	315.4	15.4	235.0	315.5926	2.56	5	7.91	7.12	10.07		
20.0	315.4	15.4	150.0	251.7075	1.85	5	6.41	5.77	6.62		
20.0	315.4	255.4	235.0	315.5926	2.56	5	7.91	7.12	10.07		
20.0	315.4	255.4	150.0	251.7075	1.85	5	6.41	5.77	6.62		
20.0	315.4	315.4	200.0	288.1133	3.29	5	7.19	6.47	8.31		
20.0	315.4	315.4	100.0	221.0248	3.20	5	5.64	5.07	5.11		
20.0	315.4	315.4	50.0	198.1525	3.14	5	5.13	4.62	4.23		
15.0	75.4	15.4	235.0	289.3453	2.46	5	7.41	6.67	8.83		
15.0	75.4	15.4	150.0	230.7579	1.78	5	6.02	5.42	5.83		
15.0	75.4	75.4	200.0	263.6447	3.15	5	6.73	6.06	7.29		
15.0	75.4	75.4	100.0	205.2838	3.15	5	5.30	4.77	4.51		
15.0	75.4	75.4	50.0	189.6005	3.16	5	4.90	4.41	3.86		

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River A, Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

Clicking here tells INSPECTOWER 3 to use INSPECTION INPUT to generate INSPECTION OUTPUT

TOWER VERTICALITY AND STRAIGHTNESS

REFERENCE ELEVATION	DEVIATION ALONG AXIS 1	DEVIATION ALONG AXIS 2	.....VERTICALITY..... RESULTANT DEVIATION	.....STRAIGHTNESS..... RESULTANT DEVIATION	*****
ft	in	in	in	in	COMMENTS
233.00	-1.76	-2.48	3.04	6.99	
202.00	-2.82			1.49*	0.93

MEASURED GUY TENSIONS (BALANCED)

ANCHOR LOCATION ID	GUY ELEVATION AT TOWER	GUY SIZE AND TYPE	.MEASURED AT 20°C	TENSION. ADJUSTED TO 10°C	DESIGN INITIAL TENSION	RANGE OF TENSIONS ALLOWABLE	COMMENTS
	ft		kips	kips	kips	kips	
A1	50.00	9/16" EHS	2.89	3.33	3.40	3.06 - 3.74	
A1	100.00	9/16" EHS	2.92	3.29	3.34	3.00 - 3.67	
	150.00	7/16" EHS	1.55	1.74	1.88	1.70 - 2.07	
	150.00	7/16" EHS	1.59	1.79	1.89	1.70 - 2.08	
	200.00	9/16" EHS	2.81	3.06	3.31	2.98 - 3.64	
	235.00	1/2" EHS	2.24	2.43	2.55	2.30 - 2.81	
	235.00	1/2" EHS	2.23	2.42	2.55	2.30 - 2.81	
	50.00	9/16" EHS	3.02	3.49	3.52	3.16 - 3.87	
	100.00	9/16" EHS	2.99	3.37	3.53	3.17 - 3.88	
	150.00	7/16" EHS	1.65	1.85	2.03	1.83 - 2.23	
	150.00	7/16" EHS	1.79	1.98	2.03	1.83 - 2.23	
	200.00	9/16" EHS	3.01	3.29	3.51	3.16 - 3.86	
	235.00	1/2" EHS	2.43	2.61	2.72	2.45 - 3.00	
	235.00	1/2" EHS	2.32	2.52	2.72	2.45 - 3.00	
	50.00	9/16" EHS	3.12	3.56	3.59	3.23 - 3.95	
	100.00	9/16" EHS	3.01	3.41	3.60	3.24 - 3.96	
	150.00	7/16" EHS	1.71	1.91	2.08	1.87 - 2.29	

MEASURED TURNBUCKLE GAPS

ANCHOR LOCATION ID	GUY ELEVATION AT TOWER	SHACKLE SIZE	TURNBUCKLE SIZE	GAP MEASURED	DESIRABLE RANGE	SUGGESTED ADJUSTMENT
	ft	in	in	in	in	*****
A1	50.00	-5/8	1 X 12	2-51/64*	4 - 8	-0.65
A1	100.00	-5/8	1 X 12	5-3/32	4 - 8	-1.61
A1	150.00	-1/2	-3/4 X 12	2-19/32*	4 - 8	-1.77
A1	150.00	-1/2	-3/4 X 12	4-45/64	4 - 8	-1.48
A1	200.00	-5/8	1 X 12	5-1/64	4 - 8	-1.61
A1	235.00	-9/16	-7/8 X 12	2-7/8*	4 - 8	-1.27
A1	235.00	-9/16	-7/8 X 12	3-23/64*	4 - 8	-1.44
A2	50.00	-5/8	1 X 12	5-47/64	4 - 8	1.06
A2	100.00	-5/8	1 X 12	4-33/64	4 - 8	1.40
A2	150.00	-1/2	-3/4 X 12	2-13/32*	4 - 8	0.51



Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software interface. The menu bar includes Project, Edit, View, Tools, Report, and Help. The toolbar contains icons for New, Open, Save, Print..., Properties, Check Data, Unit Converter, Win Calculator, Pulse Chart, Inspection Results, Report Calculations, Draw Tower, and Inspection Report. The 'Report Calculations' icon is highlighted with a red box and a red arrow pointing to a Notepad window. A red text overlay says 'Click on this to have INSPECTOWER 3 generate printout from the CALCULATOR'. The Notepad window displays the following table:

[5_12] MAST ALIGNMENT by TRANSIT (part 1)

TOWER SHAPE	LINE 1 AZIMUTH	ELEV. ft	FACE WIDTH in	LEG WIDTH in	DIRECT LINE 1	INVERSE LINE 1	DIRECT LINE 2	INVERSE LINE 2
3	75.40	233.00	48.00	4.00	-0.27	-0.27	-0.48	-0.48
3	75.40	202.00	48.00	4.00	-0.59	-0.59	-0.16	-0.16
3	75.40	147.00	48.00	4.00	-0.76	-0.76	-0.11	-0.11
3	75.40	100.00	48.00	4.00	-0.25	-0.25	-0.25	-0.25
3	75.40	50.00	48.00	4.00	-0.23	-0.23	-0.02	-0.02
3	75.40	15.00	48.00	4.00	0.00	0.00	0.00	0.00

* 3 - Triangular
4 - Square

[5_12] MAST ALIGNMENT by TRANSIT (part 2)



Introduction to INSPECTOWER 3

The screenshot displays the INSPECTOWER 3 software interface for a project titled "Anchor River Alaska -2". The main window is divided into three panes:

- Left Pane:** A tree view showing project components: TOWER MAPPING, INSPECTION INPUT, INSPECTION OUTPUT (highlighted in blue), PULSE CHART, and CALCULATOR.
- Middle Pane:** A "Profile View" showing a vertical tower structure with guy wires extending to the ground. The tower is marked with elevation points (e.g., 250.0', 125.0', 25.0'). A table below the tower lists "INTERNAL LEST" with columns for "ID" and "TYPE".
- Right Pane:** A "Plan View" showing a top-down view of the tower's triangular structure. It includes a "KEY PROFILE" inset and labels such as "Plan - 1 El 235.50' Fw - 4.00'" and "Plan - 5 El 150.00' Fw - 4.00'".

Red arrows and boxes highlight key features: the "Draw Tower" button in the top toolbar, the "Tower Drawing Tool (F9)" window, and the "Profile View" and "Plan View" tabs. A red text box at the top right states: "Drawing Tool generates profile and plan drawings from the data entered in TOWER MAPPING".

At the bottom of the software window, there is a logo for "Weisman Consultants Inc." with the text: "Since 1980 1110 Finch Avenue West, Suite 814, Downsview, Ontario M3J 2T2 towers@weisman-consultants.com Tel: (416) 738-7483 Fax: (416) 738-4872".



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report (Ctrl + F9)

This generates the inspection report in Word format where one can cut & paste.

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA 222 4/30/2018

Global Link telecom

Project Information

Project Title: 250' Guyed Tower - Anchor River A;laska
 Tower Date Built: unknown
 Tower Date Last Modified: unknown
 Client: Global Link telecom
 Tower Owner: Global Link Telecom
 Site Location: Anchor River, Alaska
 Tower Manufacturer: Advance Industries
 Tower Installer: N/A
 Inspector Comment:

Global Link telecom 4/30/2018

Calculated Values

Tabular

Table 1 Tower Verticality and Straightness

Reference Elevation	Deviation along Axis 1	Deviation along Axis 2	Verticality		Straightness	
			Resultant Deviation	Allowable Resultant Deviation	Resultant Deviation between Elevations	Allowable Deviation between Elevations
ft	in	in	in	in	in	in
233.00	-1.76	-2.48	3.04	6.99	1.49*	0.93
202.00	-2.82	-1.43	3.16	6.06	0.70	1.65
147.00	-3.52	-1.43	3.80	4.41	2.12*	1.41
100.00	-1.40	-1.42	2.00	3.00	1.11	1.50
50.00	-1.07	-0.36	1.13	1.50	1.13*	1.05

Global Link telecom 4/30/2018

Table 3 Measured Guy Tensions (Balanced)

Anchor Location ID	Guy Elevation at Tower	Guy Size and Type	Measured Tension at 20°C	Measured Tension adjusted to 10°C	Design Initial Tension at 10°C	Range of Tensions Allowable
	ft		kips	kips	kips	kips
A3	235.00	1/2" EHS	2.43	2.62	2.79	2.51 - 3.07
	235.00	1/2" EHS	2.51	2.71	2.79	2.51 - 3.07
A2	235.00	1/2" EHS	2.32	2.52	2.72	2.45 - 3.00
	235.00	1/2" EHS	2.43	2.61	2.72	2.45 - 3.00
			2.42	2.55	2.55	2.30 - 2.81

Graphic

Guys to 315.4' Anchor

Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software window titled "INSPECTOWER 3 - [Anchor River Alaska -2]". The menu bar includes Project, Edit, View, Tools, Report, and Help. The Project menu is open, showing options like New..., Open..., Close, Close All, Workspaces..., Save, Save As..., Save as Self-Supporting Tower Project..., Change Standard..., Change Polar to Offset, Print..., Properties, Send..., and Exit. The main toolbar contains icons for Converter, Win Calculator, Pulse Chart, Inspection Results, Report Calculations, Draw Tower, and Inspection Report. Below the toolbar, the "Type: Guyed Lattice" and "Standard: TIA-222-G" are circled in red. The "Attachments:" button is also circled in red. The "Balance Guy Tensions" checkbox is checked and circled in red. Red arrows point from the "Save As..." menu item to the text "Saves a copy of Project with a new name - easiest way to create a new project with small changes." and from the "Save as Self-Supporting Tower Project..." menu item to "Change from a guyed tower to a self supporting tower using the same data." and from the "Change Standard..." menu item to "Change to a different standard without reentering data." and from the "Change Polar to Offset" menu item to "Location of appurtenances switched from Polar coordinates w.r.t. centre of tower to Offsets w.r.t. a given face and a given leg." and from the "Properties" menu item to "Title block information, tower rotation, and notes." and from the "Send..." menu item to "Generate an e-mail containing all the files for the current Project." and from the "Attachments:" button to "Link photos & other documemnts to this Project" and from the "Balance Guy Tensions" checkbox to "If checked, INSPECTOWER 3 will use the analysis module to balance the guy tensions." The status bar at the bottom left shows "Row=1; Col=1".

Typical Windows Functions

Link photos & other documemnts to this Project

If checked, INSPECTOWER 3 will use the analysis module to balance the guy tensions.

Saves a copy of Project with a new name - easiest way to create a new project with small changes.

Change from a guyed tower to a self supporting tower using the same data.

Change to a different standard without reentering data.

Location of appurtenances switched from Polar coordinates w.r.t. centre of tower to Offsets w.r.t. a given face and a given leg.

Title block information, tower rotation, and notes.

Generate an e-mail containing all the files for the current Project.



Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software interface. The 'Edit' menu is open, listing various row editing functions. A table titled 'LATTICE PANEL GEOMETRY' is displayed with columns for PANEL TYPE, NO. OF LEGS, SUB DIVIDE, ELEVATION OF BOTTOM and TOP, FACE WIDTH AT BOTTOM and TOP, and TYPICAL PANEL HEIGHT. A red arrow points to the table header, and another points to a specific row. A context menu is open over the row, and a mouse cursor icon is shown with a red arrow pointing to it. A red text box explains that editing rows is done the same way as right-clicking on a mouse. A 'COMMENTS' column contains the text 'Estimated from photos and drawing'.

Table →

→ **One row**

For editing rows in tables, the same as right click on a mouse.

PANEL TYPE	NO. OF LEGS	SUB DIVIDE	..ELEVATION OF.. BOTTOM	..FACE WIDTH AT.. TOP	..FACE WIDTH AT.. BOTTOM	TYPICAL PANEL HEIGHT	COMMENTS
C	3	0	0.000	250.000	4.000	4.000	2.00 Estimated from photos and drawing



Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software interface for a project titled "Anchor River Alaska -2". The "View" menu is open, showing options like "Split Table View" and "None". The main window displays a table titled "LATTICE PANEL GEOMETRY" with the following data:

PANEL TYPE	NO.OF LEGS	SUB DIVIDE	..ELEVATION OF.. BOTTOM	..ELEVATION OF.. TOP	..FACE WIDTH AT.. BOTTOM	..FACE WIDTH AT.. TOP	TYPICAL PANEL HEIGHT	COMMENTS
			ft	ft	ft	ft	ft	
C	3	0	0.000	250.000	4.000	4.000	2.00	Estimated from photos and drawing

Other interface elements include a toolbar with icons for Unit Converter, Win Calculator, Pulse Chart, Inspection Results, Report Calculations, Draw Tower, and Inspection Report. A sidebar on the left shows a tree view of project components like "TOWER STRUCTURE", "LATTICE MAST GEOMETRY", and "MATERIAL TYPES". A red text label "Screen utility" is overlaid on the interface.

Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software interface. The 'Tools' menu is open, highlighting 'Generate Guy Geometry'. A red box highlights this menu item, with a red arrow pointing to the 'TRANSIT READINGS' table. Another red box highlights the first three columns of the table: 'ELEV SIGHTED ABOVE TOWER.BASE ft', 'VERT. ANGLE TO ELEV SIGHTED deg', and 'FRACTION.OF.LEG APPARENT.DISPLACEMENT ...WITH.TELESCOPE... DIRECT INVERTED'. A red arrow points from the text 'INSPECTOWER 3 will use data from columns 2 and 3 in TRANSIT READINGS to calculate Guy Geometry' to these columns. The table contains 28 rows of data for towers A1, A2, and A3.

As in the Toolbar above.

INSPECTOWER 3 will use data from columns 2 and 3 in TRANSIT READINGS to calculate Guy Geometry.

TRANSIT LOC ID	ELEV SIGHTED ABOVE TOWER.BASE ft	VERT. ANGLE TO ELEV SIGHTED deg	FRACTION.OF.LEG APPARENT.DISPLACEMENT ...WITH.TELESCOPE...		FACE WIDTH ft	COMMENTS
			DIRECT	INVERTED		
A1	233.00	0.00	-0.24	-0.30	4.00	
A1	202.00	0.00	-0.56	-0.62	4.00	
A1	147.00	0.00	-0.74	-0.78	4.00	
A1	100.00	0.00	-0.24	-0.26	4.00	
A1	50.00	0.00	-0.23	-0.24	4.00	
A1	15.00	0.00	0.00	0.00	4.00	
A2	233.00	0.00	-0.45	-0.51	4.00	
A2	202.00	0.00	-0.13	-0.18	4.00	
A2	147.00	0.00	-0.09	-0.13	4.00	
A2	100.00	0.00	-0.24	-0.26	4.00	
A2	50.00	0.00	-0.01	-0.02	4.00	
A2	15.00	0.00	0.00	0.00	4.00	
A3	233.00	0.00	0.78	0.72	4.00	
A3	202.00	0.00	0.78	0.72	4.00	
A3	147.00	0.00	0.89	0.86	4.00	
A3	100.00	0.00	0.51	0.49	4.00	
A3	50.00	0.00	0.26	0.25	4.00	
A3	15.00	0.00	0.00	0.00	4.00	



Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software interface. The 'Tools' menu is open, highlighting 'Populate Data', which has a sub-menu with 'Add Data' and 'Replace Data'. Red arrows point from these options to the data table. The table is titled '[5_5] GUY PULSE FROM KNOWN TENSION AT BOTTOM' and contains columns for GUY LINE, ELEV, LENGTH, RADIUS, WEIGHT, NUM. OF VIBR, TENSION AT BOT, GUY PULSE, and COMMENTS. The data table is as follows:

GUY LINE	ELEV ft	LENGTH ft	RADIUS ft	WEIGHT plf	NUM. OF VIBR	TENSION AT BOT kips	GUY PULSE sec	COMMENTS
75.4	50.00	191.99	188.39	0.67		3.50	0.000	
195.4	50.00	197.97	188.01	0.67		3.50	0.000	
315.4	50.00	200.44	187.44	0.67		3.50	0.000	
75.4	100.00	207.51	188.39	0.67		3.50	0.000	
195.4	100.00	218.84	188.01	0.67		3.50	0.000	
315.4	100.00	223.10	187.44	0.67		3.50	0.000	
75.4	150.00	232.94	188.39	0.39		2.00	0.000	
195.4	150.00	248.18	188.01	0.39		2.00	0.000	
315.4	150.00	253.72	187.44	0.39		2.00	0.000	
75.4	150.00	232.94	188.39	0.39		2.00	0.000	
195.4	150.00	248.18	188.01	0.39		2.00	0.000	
315.4	150.00	253.72	187.44	0.39		2.00	0.000	
75.4	200.00	265.44	188.39	0.67		3.50	0.000	
195.4	200.00	283.36	188.01	0.67		3.50	0.000	
315.4	200.00	289.78	187.44	0.67		3.50	0.000	
75.4	235.00	291.16	188.39	0.52		2.70	0.000	
195.4	235.00	310.41	188.01	0.52		2.70	0.000	
315.4	235.00	317.28	187.44	0.52		2.70	0.000	
75.4	235.00	291.16	188.39	0.52		2.70	0.000	
195.4	235.00	310.41	188.01	0.52		2.70	0.000	
315.4	235.00	317.28	187.44	0.52		2.70	0.000	
75.4	50.00	191.99	188.39	0.67		3.50	0.000	
195.4	50.00	197.97	188.01	0.67		3.50	0.000	
315.4	50.00	200.44	187.44	0.67		3.50	0.000	
75.4	100.00	207.51	188.39	0.67		3.50	0.000	
195.4	100.00	218.84	188.01	0.67		3.50	0.000	
315.4	100.00	223.10	187.44	0.67		3.50	0.000	
75.4	150.00	232.94	188.39	0.39		2.00	0.000	
195.4	150.00	248.18	188.01	0.39		2.00	0.000	

Annotations in red text and arrows:

- 'Populate Data' is highlighted in the Tools menu.
- 'Add Data' and 'Replace Data' are highlighted in the sub-menu.
- 'Copy what is missing.' points to the 'Add Data' option.
- 'Replace what is there.' points to the 'Replace Data' option.
- 'Takes data from TOWER MAPPING and FIELD MEASUREMENTS and inserts it into tables of the CALCULATOR.' points to the 'CALCULATOR' folder in the left tree view.

Introduction to INSPECTOWER 3

The screenshot displays the INSPECTOWER 3 software interface with several windows open. The main window shows the 'Tools' menu, which includes options like 'Check Data', 'Unit Converter', 'Generate Guy Geometry', 'Populate Data', 'Databases', 'Text Editor...', and 'Export to TsTower'. The 'Databases' sub-menu is expanded, showing 'Tx-Line', 'Guy', and 'Structural Shapes'. Red arrows point from the 'Databases' menu to the 'Guy' and 'Structural Shapes' sub-menus, with a red text box stating 'Special composite guys added by the user'.

The 'Guy Database Editor' window is open, showing a table of guy types and their properties. Red text 'Standard Bridge Strand guys' is placed next to rows 13 through 20. A red arrow points from the 'Special composite guys added by the user' text to rows 1 through 12. A red text box 'contain this' is also present near the top of the table.

Guy Type	Diameter (in)	Breaking Strength (kip)	Weight/ Unit Length (plf)	X-Section Area (in ²)	Elastic Modulus (ksi)	Thermal Exp. Coeff (/C°)
1	ALSE	0.3850	16.0000	0.2620	0.1164	18000
2	ALSI	0.4460	16.0000	0.3720	0.1164	18000
3	ALSIB	0.6360	16.0000	2.3460	0.1164	15000
4	ALSII	2.1000	16.0000	2.9530	0.1164	15000
5	ALST	0.2420	6.0000	0.1040	0.0460	18000
6	ALSTB	0.4780	6.0000	2.0410	0.0460	15000
7	ALSTI	2.0440	6.0000	2.5550	0.0460	1000
8	ALTI	0.2190	2.8000	0.0490	0.0238	15000
9	ALTT	0.1740	2.8000	0.0440	0.0238	15000
10	AWSE	0.3850	15.9300	0.2620	0.0908	23000
11	BS	0.1875	4.7000	0.0790	0.0210	21000
12	BS	0.2700	7.5000	0.1290	0.0380	21000
13	BS	0.3750	13.0000	0.2220	0.0590	21000
14	BS	0.5000	16.0000	0.2700	0.0840	21000
15	BS	0.6250	22.5000	0.3880	0.1150	21000
16	BS	0.7500	30.0000	0.5250	0.1500	20000
17	BS	0.8750	38.0000	0.6650	0.1900	20000
18	BS	1.0000	48.0000	0.8190	0.2340	20000
19	BS	1.1250	58.0000	0.9940	0.2840	19000
20	BS	1.2500	68.0000	1.1800	0.3380	19000

The 'TX-Line Database Editor' window shows a table of transmission lines:

Name	Type	Nominal Size	Weight/ Unit Length (plf)	Shape (0-Round, 1-Rect.)
1	AH	0.1	0.0200	0
2	AH	0.125	0.0300	0
3	HS1RP-50A	0.25	0.0630	0
4	AH	0.27	0.0600	0
5	AH	0.3125	0.0700	0
6	RG6	0.332	0.0700	0
7	AH	0.36	0.1000	0
8	HS2RP-50	0.375	0.1600	0
9	AH	0.41	0.1500	0

The 'Structural Shapes Database Editor' window shows a table of structural shapes:

Shape Name	Height (in)	Width (in)	Thickness (in)	Flange Thickness (in)
1	L2x2x1/8	2	2	0.125
2	L2x2x3/16	2	2	0.1875
3	L2x2x1/4	2	2	0.25
4	L2x2x5/16	2	2	0.3125
5	L2x2x3/8	2	2	0.375
6	L2-1/2x2x3/16	2.5	2	0.1875
7	L2-1/2x2x1/4	2.5	2	0.25
8	L2-1/2x2x5/16	2.5	2	0.3125
9	L2-1/2x2x3/8	2.5	2	0.375



Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software interface. The 'Tools' menu is open, highlighting 'Text Editor...'. An 'Editor' dialog box is open, showing 'notepad.exe' as the selected editor. The main window displays a table titled 'LATTICE PANEL GEOMETRY' with columns for ELEVATION OF, FACE WIDTH AT, and TYPICAL PANEL HEIGHT. The table has two rows of data. A red arrow points from the 'Text Editor...' menu item to the 'Editor' dialog box, and another red arrow points from the dialog box to the 'CALCULATOR' section in the left sidebar.

E	.. ELEVATION OF ..		.. FACE WIDTH AT ..		TYPICAL PANEL HEIGHT	COMMENTS
	BOTTOM	TOP	BOTTOM	TOP		
0	0.000	250.000	4.000	4.000	2.00	Estimated from photos and drawing

**Choose any Editor available on your computer.
This will be used for viewing text files like those reporting calculations in the CALCULATOR.**



Introduction to INSPECTOWER 3

The screenshot displays the INSPECTOWER 3 software interface with the 'Tools' menu open and the 'Export to TsTower' option selected. A dialog box indicates the export process is underway. A file explorer window shows the output file 'Anchor River Alaska -2.tsg' in the support folder. A text editor window displays the resulting TsTower data file content.

Export to TsTower

Exporting to TsTower input format.
This process can take a few minutes ...

INSPECTOWER 3
The GUYMASTER project was succesfully exported.
OK

Opens the folder containing the file.

Prepares data file in specified format.

```
Anchor River Alaska -2.tsg - Boxer Text Editor - [C:\Users\simon\Documents\Work\Software\INSPECTOWER 3]
File Edit Block Search Jump Paragraph Tools Project Configure View Window Help
w Open Save Preview Print Undo Redo Cut Copy Paste Find Next Mate Replace Go to Re-

TsTower-Guyed Mast
5.3.2
*PROJECT DATA
Anchor River Alaska -2
N/A

Anchor River, Alaska
0
GUYMASTER

*TOWER DATA
76.20093`76.20093`0.6096074`1.219215`1.219215`3`Triangular`!
*SECTIONS DATA
5`New Section`6.7056827545166`26.8227252960205`33.52840805053
6`New Section`6.70568084716797`33.5284080505371`40.2340888977
7`New Section`6.70568084716797`40.2340888977051`46.9397697448
8`New Section`6.70568084716797`46.939769744873`53.64545059204
9`New Section`6.70568084716797`53.645450592041`60.35113143920
10`New Section`6.70568466186523`60.351131439209`67.0568161010
11`New Section`6.70568084716797`67.0568161010742`73.762496948
12`New Section`2.43843078613281`73.7624969482422`76.200927734
*PANELS DATA
1`1`Inverted Single`(None)`False`0`0`0.609607398509979`0.6096
1`2`Inverted Single`(None)`False`0`0`0.609607398509979`1.2192
1`3`Inverted Single`(None)`False`0`0`0.609607398509979`1.8288
```



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools **Report** Help

Inspection Document
Calculations Ctrl+F7 Settings... Inspection Results Report Calculations Draw Tower Inspection
Draw Tower F9
Tower Drawing Information...

Project Title: 250' Guyed Tower

TOWER MAPPING
 INSPECTION INPUT
 INSPECTION OUTPUT
 PULSE CHART
 CALCULATOR

Generate report as Word document.

INSPECTOWER 3

Project data was changed. Do you wish to generate a new Inspection report?

Recalculate

Yes No

Global Link telecom 5/1/2018

Project Information

Project Title: 250' Guyed Tower - Anchor River A,Alaska
 Tower Date Built: unknown
 Tower Date Last Modified: unknown
 Client: Global Link telecom
 Tower Owner: Global Link Telecom
 Site Location: Anchor River, Alaska
 Tower Manufacturer: Advance Industries
 Tower Installer: N/A
 Inspector Comment:

Guyed Tower - Anchor River A,Alaska Page 1 of 16

Global Link telecom 5/1/2018

Data Input

Transit Location

Transit Location ID	Distance from Instrument to Anchor			Horizontal Angle to Tower Leg degrees	Direction
	Back ft	Down ft	Side ft		
A1	0.00	0.00	0.00	255.4	Corner
A2	0.00	0.00	0.00	15.4	Corner
A3	0.00	0.00	0.00	135.4	Corner

Transit Readings

Transit Location ID	Elevation Sighted above Tower Base ft	Vertical Angle to Elevation Sighted degrees	Fraction of Leg Apparent Displacement With Telescope		Face Width ft
			Direct	Inverted	
A1	233.00	0.00	-0.24	-0.30	4.00
A1	202.00	0.00	-0.56	-0.62	4.00
A1	147.00	0.00	-0.74	-0.78	4.00
A1	100.00	0.00	-0.24	-0.26	4.00
A1	50.00	0.00	-0.23	-0.24	4.00
A1	15.00	0.00	0.00	0.00	4.00
A2	233.00	0.00	-0.45	-0.51	4.00
A2	202.00	0.00	-0.13	-0.18	4.00
A2	147.00	0.00	-0.09	-0.13	4.00
A2	100.00	0.00	-0.24	-0.26	4.00
A2	50.00	0.00	-0.01	-0.02	4.00
A2	15.00	0.00	0.00	0.00	4.00
A3	233.00	0.00	0.78	0.72	4.00
A3	202.00	0.00	0.78	0.72	4.00
A3	147.00	0.00	0.89	0.86	4.00
A3	100.00	0.00	0.51	0.49	4.00
A3	50.00	0.00	0.26	0.25	4.00
A3	15.00	0.00	0.00	0.00	4.00

Calculated Values

Table 1 Tower Verticality and Straightness

Reference Elevation	Deviation along Axis 1	Deviation along Axis 2	Verticality		Straightness	
			Resultant Deviation	Allowable Resultant Deviation	Resultant Deviation between Elevations	Allowable Deviation between Elevations
ft	in	in	in	in	in	in
233.00	-1.76	-2.48	3.04	6.99		
202.00	-2.82	-1.43	3.16	6.06	1.49*	
147.00	-3.52	-1.43	3.80	4.41	0.70	
100.00	-1.40	-1.42	2.00	3.00	2.12*	
50.00	-1.07	-0.36	1.13	1.50	1.11	
15.00	0.00	0.00	0.00	0.45	1.13*	
0.00	0.00	0.00	0.00	0.00	0.00	

* outside allowable range

Global Link telecom 5/1/2018

Table 3 Measured Guy Tensions (Balanced)

Anchor Location ID	Guy Elevation at Tower	Guy Size and Type	Measured Tension at 20°C	Measured Tension adjusted to 10°C	Design Initial Tension at 10°C	Range of Tensions Allowable
						kips
	ft		kips	kips	kips	kips
A3	235.00	1/2" EHS	2.43	2.62	2.79	2.51 - 3.07
	235.00	1/2" EHS	2.51	2.71	2.79	2.51 - 3.07
A2	235.00	1/2" EHS	2.32	2.52	2.72	2.45 - 3.00
	235.00	1/2" EHS	2.43	2.61	2.72	2.45 - 3.00
A1	235.00	1/2" EHS	2.23	2.42	2.55	2.30 - 2.81
	235.00	1/2" EHS	2.43	2.61	2.72	2.30 - 2.81

Table 5 Measured Turnbuckle Gaps

Anchor Location ID	Guy Elevation at Tower	Shackle Size	Turnbuckle Size	Gap Measured	Desirable Range	Suggested Adjustment
						in
	ft	in	in	in	in	in
A3	235.0	9/16	7/8 x 12	5-17/32	4 - 8	0.41
	235.0	9/16	7/8 x 12	5-3/16	4 - 8	-0.11
A2	235.0	9/16	7/8 x 12	4-23/64	4 - 8	0.41
	235.0	9/16	7/8 x 12	4-3/4	4 - 8	0.93
A1	235.0	9/16	7/8 x 12	3-23/64*	4 - 8	-1.44
	235.0	9/16	7/8 x 12	2-7/8*	4 - 8	-1.27

Row=1; Col=1



Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software interface. The 'Report' menu is open, and the 'Settings...' option is selected. A 'Report Settings' dialog box is displayed in the foreground, showing a list of report tables to be included in the report. The 'Select Tables Report' section contains the following items:

- TOWER VERTICALITY AND STRAIGHTNESS
- TOWER TWIST
- MEASURED GUY TENSIONS
- MEASURED GUY TENSIONS - AVERAGE BY GUY LEVEL
- MEASURED TURNBUCKLE GAP

Below the list are up and down arrow buttons. At the bottom of the dialog are 'OK' and 'Cancel' buttons. In the background, a table is visible with the following data:

FACE WIDTH AT..	TYPICAL		
FTOM	TOP	PANEL	
ft	ft	HEIGHT	COMMENTS
4.000	4.000	2.00	Estimated from photos and drawing

These tables will be included in the INSPECTOWER 3 Word document report, along with specified pictures and drawings.



Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 software interface. The 'Report' menu is open, highlighting the 'Calculations' option. A red box is drawn around 'Calculations' and 'Ctrl+F7'. A red arrow points from this box to a Notepad window titled 'PrintPrj - Notepad'. The Notepad window contains the following text:

```
INSPECTOWER 3 v2.0.1 (c)2011 Guymast Inc.
Tel:(416)736-7453 Fax:(416)736-4372 Web:www.guymast.com
Processed under license at: on: May 01, 2018 at: 16:31:50
Guymast Inc.
Project: 250' Guyed Tower - Anchor River A;laska (Anchor River Alaska -2)

[5_1] GUY TENSION AT BOTTOM FROM AVERAGE GUY TENSION
```

GUY LINE	ELEV ft	GUY LENGTH ft	GUY RADIUS ft	GUY WEIGHT plf	AVERAGE GUY TENSION kips	GUY TENSION AT.BOT kips
75.4	50.00	191.99	188.39	0.67		
195.4	50.00	197.97	188.01	0.67		
315.4	50.00	200.44	187.44	0.67		
75.4	100.00	207.51	188.39	0.67		
195.4	100.00	218.84	188.01	0.67		
315.4	100.00	223.10	187.44	0.67		
75.4	150.00	232.94	188.39	0.39		

Text file opens in editor preset under Tools>Text Editor



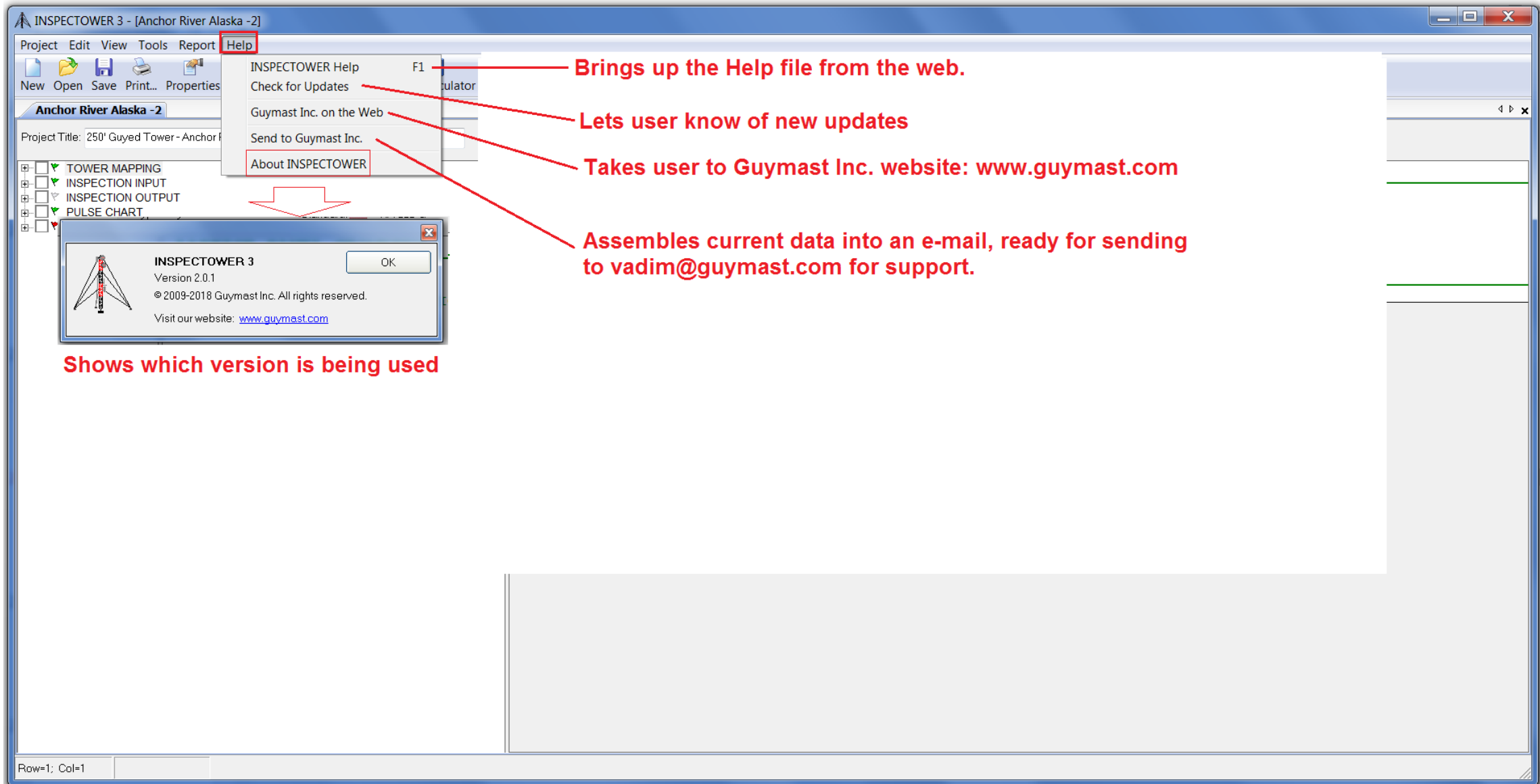
Introduction to INSPECTOWER 3

The screenshot displays the INSPECTOWER 3 software interface. The 'Report' menu is open, showing options like 'Inspection', 'Calculations', and 'Draw Tower'. The 'Tower Drawing Information' dialog box is open, allowing for input of project details. A red box highlights the 'Tower Drawing Information...' option in the 'Report' menu, and a red arrow points to the dialog box. A red text box explains that this feature allows for the input of useful drawing labels and notes, similar to Project>Properties.

Allows the input of useful drawing labels and notes, similar to Project>Properties

AT..	TYPICAL	COMMENTS
TOP	PANEL	
ft	HEIGHT	
4.000	2.00	Estimated from photos and drawing

Introduction to INSPECTOWER 3



2. Navigating the User Tower Project Data Base

We developed a project data base to save us time and trouble in handling our own projects.

It turned out to be so useful and convenient that we decided to make it part of the interface we offer our users.

Introduction to INSPECTOWER 3

The screenshot shows the INSPECTOWER 3 application window. The menu bar includes Project, Edit, View, Tools, Report, and Help. The toolbar contains icons for New, Open, Save, Print..., Properties, Check Data, Unit Converter, Win Calculator, Pulse Chart, Inspection Results, Report Calculations, Draw Tower, and Inspection Report. The main workspace displays project details: Project Title, Match, Type: Guyed Lattice, Standard: TIA-222-G, Attachments, and Balance Guy Tensions. A 'Project and Workspace Manager' dialog box is open, showing a tree view of project groups (Support, Projects, Canada, USA, UAE) and a table for project details. The table has columns for Project Name, Project Type, Tower Type, and Standard. A 'Project name' text box is highlighted in the table. The dialog box also includes buttons for Sub Group, Main Group, Workspace, Send..., New..., Open, Load..., Import..., Export..., and Close. A 'COMMENTS' section on the right contains the text 'Estimated from photos and drawing'.

Project name

Automatically opens

The files we receive from our software clients go into this group, which contains Sub Groups with client names.

We also organize some of our work by geography.

Our own consulting projects go under this Main Group.

These are the Main Groups into which our data is divided. It is convenient for our work. The user will choose his own.

COMMENTS
Estimated from photos and drawing

Introduction to INSPECTOWER 3

Project and Workspace Manager

Current Workspace: Support\Globe Link Telecom\Globe Link Telecom
Viewing Workspace: Support\Globe Link Telecom\File associated with WORKSPACE

Projects

INSPECTOWER GUYSMASTER

Project Name	Project Type	Tower Type	Standard
--------------	--------------	------------	----------

Support clients are Sub Groups

Sub Group Main Group Workspace

Send... New... Open

Load... Import... Export...

Close



Introduction to INSPECTOWER 3

Project and Workspace Manager

Current Workspace: Support\Globe Link Telecom\Globe Link Telecom
Viewing Workspace: Projects\Enbreier\TCI 527-3\Final analysis\Analysis

Projects

INSPECTOWER GUYMASTER

Project Name	Project Type	Tower Type	Standard
--------------	--------------	------------	----------

Main Groups and Sub Groups are arbitrary user defined markers for navigating the data base of projects.

Each Workspace is linked to an MS folder of that name, which had been defined before it is linked to the Group

This Workspace is open, allowing work on the data in it. Only one can be open at a time.

Sub Group Main Group + Workspace

Send... New... Open

Load... Import... Export...

Close

WARNING! Not viewing current workspace! All currently open projects will be closed if either Open Project or New Project are selected.



Introduction to INSPECTOWER 3

Project and Workspace Manager

Current Workspace: Support\Globe Link Telecom\Globe Link Telecom
Viewing Workspace: Support\Globe Link Telecom\Globe Link Telecom

Projects

INSPECTOWER GUYMASTER

Project Name	Project Type	Tower Type	Standard
Anchor River	INSPECTOWER 3	Guyed Lattice	TIA-222-G
Anchor River Alaska	INSPECTOWER 3	Guyed Lattice	TIA-222-G
Anchor River Alaska -2	INSPECTOWER 3	Guyed Lattice	TIA-222-G

These three projects are in this open Workspace.

These two are closed. ALL OTHERS ARE CLOSED

The highlighted project is the active one in this Workspace. The project was opened using

Groups are created using these three bars or by a right click over the Group from which it is to "hang".

Groups and Workspaces may be dragged and dropped as needed

Buttons: Sub Group, Main Group, Workspace, Send..., New..., Open, Load..., Import..., Export..., Close



Introduction to INSPECTOWER 3

3. Navigating INSPECTOWER 3.

Introduction to INSPECTOWER 3

Project and Workspace Manager

Current Workspace: Support\Globe Link Telecom\Globe Link Telecom
Viewing Workspace: Support\Globe Link Telecom\Globe Link Telecom

Projects

Project Name	Project Type	Tower Type	Standard
Anchor River	INSPECTOWER 3	Guyed Lattice	TIA-222-G
Anchor River Alaska	INSPECTOWER 3	Guyed Lattice	TIA-222-G
Anchor River Alaska -2	INSPECTOWER 3	Guyed Lattice	TIA-222-G

Select Standard

Standard

TIA-222-H CAN/CSA-S37-13 AU 3995:1994 IS 875

TIA-222-G CAN/CSA-S37-01

TIA/EIA-222-F

OK Cancel

Project and Workspace Manager buttons: Send..., **New...**, Open, Load..., Import..., Export..., Close

Prepares to open a new Project by having the user choose a standard

May do the same from the Open command.

Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2 **Attach relevant drawings, PDFs, photos**

Project Title: 250' Guyed Tower - Anchor River A\laska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions **Balance guy forces.**

TOWER MAPPING **Main operational points**

INSPECTION INPUT

INSPECTION OUTPUT

PULSE CHART

CALCULATOR

TOWER MAPPING **Input of tower characteristics from field measurements or drawings.**

Click to open tables for data input

INSPECTION INPUT **Input of field measurements required for plumb and tension, etc.**

INSPECTION OUTPUT **Once inspection calculations have been executed, open tables containing results**

PULSE CHART **Once the Pulse Chart function has been executed view the results here:**

For each temperature specified:

1. Unstressed length of each guy cable
2. Guy tension
3. Seconds for the number of pulses
4. Seconds for the number of swings
5. Tangent intercept

CALCULATOR **All the functions of INSPECTOWER 2 (for back compatibility)**

LATTICE PANEL GEOMETRY


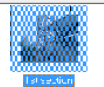

Face Width: Center-To-Center **How Face Width was defined and measured**
 Out-To-Out

PANEL TYPE	NO. OF LEGS	SUB DIVIDE	.. ELEVATION OF ..		.. FACE WIDTH AT ..		TYPICAL PANEL HEIGHT	COMMENTS
			BOTTOM	TOP	BOTTOM	TOP	ft	
C	3	0	0.000	250.000	4.000	4.000	2.00	Estimated from photos and drawing

Opens in the first table of MAPPING

Illustration has been attached. Click, Click to open.

Project Attachments

File Explorer

File Categories:

- Inspection
- Structural Members
- Join sections
- Airline
- Transmission Lines
- Construction Logging
- Ladders
- Mapping
- Construction and Anti-Corrosion Treatment
- Pulse Charts
- Ground Guy Hardware
- Guying
- Joints Hardware
- Other

OK Cancel



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE MAST MATERIALS
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
 - APPURTENANCES
 - LADDER GEOMETRY
 - TRANSMISSION LINE CLUSTERS
 - TRANSMISSION LINES
 - LINEAR PROJECTED AREA
 - DISCRETE APPURTENANCES
 - DISCRETE PROJECTED AREA
 - MICROWAVE PARABOLIC ANTENNAS
 - ANTENNAS
 - PASSIVE REFLECTORS
 - SHROUDS
 - DESCRIPTION OF OUTRIGGER
- GUY INFORMATION
 - GUY GEOMETRY
 - GUY GEOMETRY CALCULATED
- INSPECTION INPUT
- INSPECTION OUTPUT
- PULSE CHART
- CALCULATOR

LATTICE PANEL GEOMETRY

Face Width: Center-To-Center Out-To-Out

PANEL TYPE	NO. OF LEGS	SUB DIVIDE	..ELEVATION OF..		..FACE WIDTH AT..		TYPICAL PANEL HEIGHT	COMMENTS
			BOTTOM	TOP	BOTTOM	TOP		
C	3	0	0.000	250.000	4.000	4.000	2.00	Estimated from photos and drawing

Elevation Range over which these values are constant: taper of tower face
panel height
panel type
no. of legs
sub divides

Number of legs: 3, 4

Number of subdivides: 0, 1, 2

Panel Height

Face Width

Row=1; Col=1

Describes everything that makes up the tower: geometry and materials.

Describes everything that is put on the tower, including: mounts, antennas, ladders, feeders, etc.

Describes the guys and guy geometry

Number of subdivides

Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE PANEL GEOMETRY
 - PLAN BRACING**
 - LATTICE MAST MATERIALS
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
- APPURTENANCES
 - LADDER GEOMETRY
 - TRANSMISSION LINE CLUSTERS
 - TRANSMISSION LINES
 - LINEAR PROJECTED AREA
 - DISCRETE APPURTENANCES
 - DISCRETE PROJECTED AREA
 - MICROWAVE PARABOLIC ANTENNAS
 - ANTENNAS
 - PASSIVE REFLECTORS
 - SHROUDS
 - DESCRIPTION OF OUTRIGGER
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PLAN BRACING To create the geometry of the plan bracing very quickly if it is different from that automatically generated for certain panels

at horizontal (top of panel)

from a node on the horizontal (on face) down or up to a node on a diagonal on the face

TYPE	ELEV	WIDTH	HEIGHT	...MATERIAL TYPES..	VERTICAL	COMMENTS
	ft	ft	ft	1 2 3 4 5	ON FACE	
		a	a			

If No. of Legs = 3

Plan Bracing Types

$a = FW \div 2$ $a = FW \div 4$

If No. of Legs = 4

Plan Bracing Types

$a = FW \div 3$ $a = FW \div 4$ $a = FW \div 4$ $a = FW \div 6$

Default Plan Bracing

Default Plan Bracing

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

LATTICE MAST MATERIALS Assigns material types to tower components (Legs, diagonals, horizontals, etc.)

BOTTOM ELEV ft	TOP ELEV ft	LEGS	DIAGS	HORIZ	INTER BRACING	SUB DIAGS	SUB HORIZ	GUSSET	COMMENTS
0.000	248.000	1	2	0	0	0	0	0	Gessed from profile
248.000	250.000	2	2	2	0	0	0	0	

Zero means the element does not exist in the panels making up the portion of the tower in the referenced elevation range, although this type of panel may, in general, have such an element.

MATERIAL TYPES

TYPE OF SHAPE	TYPE NO	NO OF ELEM.	ORIENT % deg	HEIGHT in	WIDTH in	.THICKNESS. WEB in	.THICKNESS. FLANGE in	IRREGULARITY .PROJECTION. % OF ORIENT AREA deg	COMMENTS
L	1	1	0.0	4.00	4.00	0.250	0.250	0.00	4" angle legs
L	2	1	0.0	1.50	1.50	0.188	0.188	0.00	1-1/2" angle bracing
L	3	1	0.0	2.50	2.50	0.188	0.188	0.00	2-1/2" angle for stabilizer

Very useful for future interpretation

Cross-section of material (in this case angle)

X - Tables essential for performing calculations of tension adjustments, alignment, straightness, plumb, pulse chart, and preparing report.

Row=1; Col=1



Introduction to INSPECTOWER 3



INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska

RHS or PIPE or TUBE with O.D. and t.  $V = H \neq O.D.$; or STD or XS or XXS or SCH40, etc. with nominal diameter \Rightarrow  $V = H \neq O.D.$

MATERIAL TYPES

Clockwise rotation of section -ve ROLL

O.D.v = V, O.D.h = H

SOLID ROUND or SR or S.R. or ROUND

H need not equal V

TYPE OF SHAPE TYPE NO OF ORIENT HEIGHT WIDTH .THICKNESS. IRREGULARITY .PROJECTION. % OF ORIENT AREA

NO ELEM. & deg in in in in

User Specified

only used for drag Cd

COMMENTS

TYPE OF SHAPE	TYPE NO	NO OF ELEM.	ORIENT & deg	HEIGHT in	WIDTH in	.THICKNESS. in	IRREGULARITY	.PROJECTION.	% OF ORIENT AREA	COMMENTS
L	1	1	0.0	4.00	4.00	0.250	0.250	0.00	0.0	4" angle legs
L	2	1	0.0	1.50	1.50	0.188	0.188	0.00	0.0	1-1/2" angle bracing
L	3	1	0.0	2.50	2.50	0.188	0.188	0.00	0.0	2-1/2" angle for stabilizer

For use 2

L or ANGLE

Shape Name	Height	Width	Thickness	Flange Thi...
L8x4x9/16	8	4	0.5625	0
L8x4x3/4	8	4	0.75	0
L8x4x1	8	4	1	0
L8x6x7/16	8	6	0.4375	0
L8x6x1/2	8	6	0.5	0
L8x6x3/4	8	6	0.75	0
L8x6x5/8	8	6	0.625	0
L8x6x3/4	8	6	0.75	0
L8x6x7/8	8	6	0.875	0
L8x6x1	8	6	1	0
L8x8x1/2	8	8	0.5	0
L8x8x9/16	8	8	0.5625	0
L8x8x5/8	8	8	0.625	0
L8x8x3/4	8	8	0.75	0
L8x8x7/8	8	8	0.875	0

C or CHANNEL

Shape Name	Height	Width	Thickness	Flange Thi...
C9x20	9	2.648	0.448	0.413
C9x15	9	2.485	0.285	0.413
C9x13.4	9	2.433	0.233	0.413
MC9x25.4	9	3.5	0.45	0.55
MC9x23.9	9	3.45	0.4	0.55
C8x18.75	8	2.527	0.487	0.39
C8x13.75	8	2.343	0.303	0.39
C8x11.5	8	2.26	0.22	0.39
MC8x22.8	8	3.502	0.427	0.525
MC8x21.4	8	3.45	0.375	0.525
MC8x20	8	3.025	0.4	0.5
MC8x18.7	8	2.978	0.353	0.5
MC8x8.5	8	1.874	0.179	0.311
C7x12.25	7	2.194	0.314	0.366
C7x9.8	7	2.09	0.21	0.366

Drop down data base tables:

Shape Name	Height	Width	Thickness	Flange Thi...
HSS9.625x0.188	9.625	9.625	0.174	0
HSS9.625x0.25	9.625	9.625	0.233	0
HSS9.625x0.312	9.625	9.625	0.291	0
HSS9.625x0.375	9.625	9.625	0.349	0
HSS9.625x0.5	9.625	9.625	0.465	0
HSS8.75x0.188	8.75	8.75	0.174	0
HSS8.75x0.25	8.75	8.75	0.233	0
HSS8.75x0.312	8.75	8.75	0.291	0
HSS8.75x0.375	8.75	8.75	0.349	0
HSS8.75x0.5	8.75	8.75	0.465	0
PIPE8x0.322	8.625	8.625	0.322	0
PIPE8x0.5	8.625	8.625	0.5	0
PIPE8x0.875	8.625	8.625	0.875	0
HSS8.625x0.188	8.625	8.625	0.174	0
HSS8.625x0.25	8.625	8.625	0.233	0

Typical

The wind sees $V \times \text{Length}$; H & t complete the area, perimeter (for ICE), and weight.



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

MATERIAL PROPERTIES

MATERIAL TYPE NO.	ELASTIC MODULUS ksi	UNIT WEIGHT pcf	.. STRENGTH .. Fu ksi	.. STRENGTH .. Fy ksi	THERMAL COEFFICIENT /deg	COMMENTS
1	29000.0	500.0	45.0	36.0	0.00000650	Need something - best guess
2	29000.0	500.0	45.0	36.0	0.00000650	
3	29000.0	500.0	45.0	36.0	0.00000650	

Match the list in MATERIAL TYPES

Weight of elements and structure

Used for resistance calculations

Used for adjusting guy tensions due to temperature change

Determines deflections, deformations, and, therefore, member forces.

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE PANEL GEOMETRY
 - PLAN BRACING
 - LATTICE MAST MATERIALS
 - COMPONENTS & CONNECTIONS** (OPTIONAL)
 - TOWER COMPONENTS
 - MEMBERS CONNECTIONS
 - BOLTS
 - BOLT GROUPS
 - BOLT LINES
 - WELDS
 - WELD GROUPS
 - WELD LINES
 - LAP SPLICE
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
 - APPURTENANCES
 - LADDER GEOMETRY
 - TRANSMISSION LINE CLUSTERS
 - TRANSMISSION LINES
 - LINEAR PROJECTED AREA
 - DISCRETE APPURTENANCES
 - DISCRETE PROJECTED AREA
 - MICROWAVE PARABOLIC ANTENNAS
 - ANTENNAS
 - PASSIVE REFLECTORS
 - SHROUDS
 - DESCRIPTION OF OUTRIGGER
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TOWER COMPONENTS These are only used when the user wishes to get the most accurate resistance calculations and to get the most accurate mapping of the tower.

COMP. ID	MATER. TYPE	LENGTH	LENGTH	FLANGE	...CONNECTIONS...	STITCH	..SPLICES...	COMMENTS
ID	TYPE	OFFSET	ft	V/H	START MID END	SPACING	START END	
						in		

Total
Distance from centreline of leg along the element to the nearest end.

Bolt or weld group ID
Detail at cross over of members.

Lap splice ID
Bolt spacing along the member, typically for back to back angles

Indicates which of the flanges (for angles) connects to the other member "V" or "H" to match what there is for these in MATERIAL TYPES.

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE PANEL GEOMETRY
 - PLAN BRACING
 - LATTICE MAST MATERIALS
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 - WELD GROUPS
 - WELD LINES
 - LAP SPLICE
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
 - APPURTENANCES
 - LADDER GEOMETRY
 - TRANSMISSION LINE CLUSTERS
 - TRANSMISSION LINES
 - LINEAR PROJECTED AREA
 - DISCRETE APPURTENANCES
 - DISCRETE PROJECTED AREA
 - MICROWAVE PARABOLIC ANTENNAS
 - ANTENNAS
 - PASSIVE REFLECTORS
 - SHROUDS
 - DESCRIPTION OF OUTRIGGER
 - GUY INFORMATION
 - GUY GEOMETRY
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- INSPECTION INPUT
- INSPECTION OUTPUT
- PULSE CHART
- CALCULATOR

BOLT GROUPS

GROUP ID	BOLT LINE ID	.LOCATION. GAGE LINE	.HOLE SIZE. END IN	.HOLE SIZE. ACROSS IN	COMMENTS
		in	in	in	

As many lines as needed to locate all the bolts under the same ID

BOLT LINES

LINE ID	NO OF BOLTS	SPACING C/C	.BOLT SIZE. DIA	STRENGTH Fub	COMMENTS
		in	in	ksi	

To calculate resistance



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

WELD GROUPS

WELD GROUP ID	WELD LINE ID	GAGE DIST	END DIST	ROTATION	LENGTH	...SIDE... NEAR FAR	AROUND	COMMENTS
in	in	in	in	deg	in			

WELD LINES

WELD LINE ID	TYPE *	SIZE	...INTERMITTENT... LENGTH	PITCH	UNIT STRENGTH	COMMENTS
in		in	in	in	ksi	

WELD TYPES

- * - FIL - FILLET
- PLU - PLUG
- SQU - SQUARE
- VEE - VEE
- BEV - BEVEL
- CP - COMPLETE PENETRATION

WELD TYPES

- FILLET
- PLUG OR SLOT
- SQUARE
- V
- BEVEL
- COMPLETE PENETRATION

OPTIONAL

For calculating resistance

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report


Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions


LATTICE ELEMENTS

As in LATTICE MAST GEOMETRY					As in LATTICE MAST MATERIALS			COMMENTS
TYPE NO	PANEL TYPE	NO.OF LEGS	ORIENTATION deg	PANEL HEIGHT ft	FACE WIDTH ft	...MATERIALS... LEG	DIAG. HORIZ.	

↑ User defined for reference in LATTICE MAST MATERIALS for definition of the overall tower.



→ Lattice Element used for legs of Pi-Rod SS Towers.



→ Lattice Elements used in legs and bracing of a 500' SS Tower by Central Tower.

Row=1; Col=1

Introduction to INSPECTOWER 3

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

BOTTOM ELEV	TOP ELEV	LEG COMP	FACE SHEAR	LEG TENS	COMMENTS
ft	ft	kip	kip	kip	

Only used in the analysis software: GUYMASTER to which user may refer.

Row=1; Col=1

Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE MAST MATERIALS
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
 - APPURTENANCES
 - LADDER GEOMETRY**
 - TRANSMISSION LINE CLUSTERS
 - TRANSMISSION LINES
 - LINEAR PROJECTED AREA
 - DISCRETE APPURTENANCES
 - DISCRETE PROJECTED AREA
 - MICROWAVE PARABOLIC ANTENNAS
 - ANTENNAS
 - PASSIVE REFLECTORS
 - SHROUDS
 - DESCRIPTION OF OUTRIGGER
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LADDER GEOMETRY OFFSET ← This is the better way

Elevation range

GROUP	ELEV.	...SIZE...	POSITION.....			ORIENT	...MATERIALS..	
	ft	in	in	FACE	LEG			RAIL RUNG SAFETY	
				AZI OFFSET	AZI OFFSET		& deg	RAIL	
				deg	ft	deg	ft		

It is possible to have as many ladders as necessary.

Need two lines for every GROUP to be defined

Defined by user.

As in LATTICE MAST MATERIALS

Orientation

Face Azi

Centre of ladder

- Leg offset

Leg Azi

Azimuth of this line is the ladder orientation.

+ Face offset

Rung

Rail

N

Safety Rail

STEP

WIDTH

LADDER GEOMETRY The old way

...ELEV.OF...		...SIZE...		.....POSITION.....				ORIENT	...MATERIALS..	
BOTTOM	TOP	WIDTH	STEP	..BOTTOM..	..TOP (#)..	DIST	AZI	DIST	AZI	RAIL RUNG SAFETY
				* ft	deg	ft	deg	& deg		RAIL

Centreline of Ladder

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TRANSMISSION LINE CLUSTERS

CLUSTER ID	TYPE OF LINE	CIRCULAR		RECTANGULAR		COMMENTS
		# OF LINES	RADIUS	# OF LINES	C/C SPACING	
		8	in	5	in	
				3	in	

User defined

From Data Base or user defined

Reference Point

Name	Type	Nominal Size	Vertical (in)	Horizontal (in)	Unit Length (ft)	Slings (Planned / Draw)
1	AH	0.4	0.1000	0.1000	0.0200	0
2	AH	0.125	0.1250	0.1250	0.0300	0
3	HS118-60A	0.25	0.2500	0.2500	0.0300	0
4	AH	0.27	0.2700	0.2700	0.0300	0
5	AH	0.3125	0.3125	0.3125	0.0700	0
6	HW	0.332	0.3320	0.3320	0.0700	0
7	AH	0.36	0.3600	0.3600	0.1000	0
8	HS210-60	0.375	0.4150	0.4150	0.1000	0
9	AH	0.41	0.4100	0.4100	0.1500	0
10	HJ1-60	0.5	0.5800	0.5800	0.2500	0
11	HJ1.5-60	0.625	0.8750	0.8750	0.4000	0
12	AH	0.75	0.7500	0.7500	0.9000	0
13	HJ3-60	0.875	1.1100	1.1100	0.5400	0
14	AH	1.297	1.2970	1.2970	1.0800	0
15	HJ7-60A	1.625	1.9800	1.9800	1.0400	0
16	AH	2.5	2.5000	2.5000	1.2200	0
17	HJ8-60B	3.	3.0100	3.0100	1.7800	0
18	HJ11-60	4.	4.0000	4.0000	2.5000	0
19	HJ9-60	6.	5.2000	5.2000	3.3000	0
20	WC109	1.09	1.0900	1.0900	1.2000	0

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

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TRANSMISSION LINES OFFSET

GROUP TYPE OF LINE	ELEV. ft	NO. LNS	POSITION		ORIENT & deg	C/C SPACE	COMMENTS
			FACE AZI	LEG AZI			
Tx-Line Type	From	4					Two lines per line or cluster called up.
or Cluster ID	To						

Assigned by user ↑ From data base or defined by user ↑

Orientation

Face Azi

Elyptical Waveguide

Single

Leg Azi

Leg offset

Face offset

Group

Orientation is the azimuth of this line.

Rectangular Cluster

Circular Cluster

Cluster Orientation

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

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LINEAR PROJECTED AREA

APPURTENANCE ID	FLAT/ ROUND	...WIDTH...		WEIGHT	...CaAa.....		ICE THICKNESS	COMMENTS
		FRONT	SIDE	plf	FRONT	SIDE	in	
		in	in		ft.sq/ft			

This part has no impact on Inspections or plum and tension. It is only here for compatibility with GUYMASTER and other analysis tools.

Row=1; Col=1

Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE MAST MATERIALS
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
- APPURTENANCES
 - LADDER GEOMETRY OFFSET
 - TRANSMISSION LINE CLUSTERS
 - TRANSMISSION LINES OFFSET
 - LINEAR PROJECTED AREA
 - DISCRETE APPURTENANCES OFFSET**
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 - PASSIVE REFLECTORS OFFSET
 - SHROUDS
 - DESCRIPTION OF OUTRIGGER
- GUY INFORMATION
 - GUY GEOMETRY
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- INSPECTION OUTPUT
- PULSE CHART
- CALCULATOR

DISCRETE APPURTENANCES OFFSET Position by End Point

ELEV	TYPE OF MATERIAL	LENGTH	POSITION			ORIENTATION			GROUP ID	
			FACE	LEG		HORIZ	VERT	ROLL		
ft		ft	AZI	OFFSET	AZI	OFFSET	deg	deg	deg	
			°	ft	deg	ft		deg	deg	deg

DISCRETE APPURTENANCES OFFSET Position by Centre Point

ELEV	TYPE OF MATERIAL	LENGTH	POSITION			ORIENTATION			GR	
			FACE	LEG		HORIZ	VERT	ROLL		
ft		ft	AZI	OFFSET	AZI	OFFSET	deg	deg	deg	
			°	ft	deg	ft		deg	deg	deg

This table is used to input all appurtenances such as: antenna mounts, antennas, platforms, etc.

It is used for MAPPING and is not required for plum and tension.

Drop down for selecting

Rotation about axis of element

All elements that belong together and are to be treated as a unit have the same GROUP ID

+ve face offset for B

+ve face offset for A

-ve leg offset for B

-ve leg offset for A

Zero leg offset for A (for position by end point)

-ve leg offset for A (for position by centre point)

Orientation for A (Vertical Orientation zero)

Orientation for B (Horizontal orientation 0) (Vertical Orientation 90)

Orientation for A (Vertical Orientation zero)



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE MAST MATERIALS
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
- APPURTENANCES
 - LADDER GEOMETRY OFFSET
 - TRANSMISSION LINE CLUSTERS
 - TRANSMISSION LINES OFFSET
 - LINEAR PROJECTED AREA
 - DISCRETE APPURTENANCES OFFSET
 - DISCRETE PROJECTED AREA**
 - MICROWAVE PARABOLIC ANTENNAS OFFSET
 - ANTENNAS OFFSET
 - PASSIVE REFLECTORS OFFSET
 - SHROUDS
 - DESCRIPTION OF OUTRIGGER
- GUY INFORMATION
 - GUY GEOMETRY
 - GUY GEOMETRY CALCULATED
- INSPECTION INPUT
- INSPECTION OUTPUT
- PULSE CHART
- CALCULATOR

DISCRETE PROJECTED AREA

ANTENNA ID	FLAT/ROUND	LENGTH ft	WEIGHT lb	....CaAa..... FRONT ft.sq	ICE THICKNESS in	ELEVATION OFFSET ft	COMMENTS
<p>This part has no impact on Inspections or plum and tension. It is only here for compatibility with GUYMASTER and other analysis tools.</p>							

Row=1; Col=1

Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

MICROWAVE PARABOLIC ANTENNAS OFFSET

TYPE	ELEV ft	.....ANTENNA.....		.....POSITION.....				SHIELDING PERMITTED percent	COMMENTS
		AZIMUTH deg	SIZE ft	FACE AZI deg	OFFSET ft	LEG AZI deg	OFFSET ft		
HP									

Only used for analysis, so can be 0

+ve face offset

-ve leg offset

HP Dish

Centre back of dish

The screenshot shows the INSPECTOWER 3 software interface. On the left is a tree view of project components, with 'MICROWAVE PARABOLIC ANTENNAS OFFSET' selected. The main window displays a table for antenna offsets. A diagram below the table illustrates a parabolic dish antenna with a horizontal plane (HP) and various offset dimensions: '+ve face offset' (red arrow pointing up from the dish face), '-ve leg offset' (red arrow pointing down from the dish leg), 'HP Dish' (green arrow pointing to the dish), and 'Centre back of dish' (green arrow pointing to the back of the dish). A green callout box points to the 'SHIELDING PERMITTED' column with the text 'Only used for analysis, so can be 0'. A red arrow points to the 'MICROWAVE PARABOLIC ANTENNAS OFFSET' entry in the table.



Introduction to INSPECTOWER 3

The screenshot displays the INSPECTOWER 3 software interface for a project titled "Anchor River Alaska -2". The main window shows a table of antenna data with columns for ELEV, ANTENNA NAME, POSITION (FACE, LEG, AZI OFFSET, AZI, OFFSET), and ORIENTATION (HORIZ, VERT, ROLL). A red box highlights the "ANTENNAS OFFSET" section, with a note: "Antennas taken from data base." Below the table, a window titled "SRL 210 C_4" is open, showing a list of antenna groups and names. A red box highlights the "Sinclair" group. To the right, a diagram of a tower structure is shown with a red box around the antenna position, labeled "PHOTO or PDF" and "GUYMASTER representation used in analysis:". A smaller window below the diagram shows a "Centre of antenna placed at ELEV." with a green arrow pointing to the antenna position.

ANTENNAS OFFSET Antennas taken from data base.

ELEV	ANTENNA NAME	FACE	LEG	AZI	OFFSET	AZI	OFFSET	HORIZ	VERT	ROLL	COMMENTS
ft		deg	ft	deg	ft	deg	ft	deg	deg	deg	

PHOTO or PDF

GUYMASTER representation used in analysis:

Centre of antenna placed at ELEV.



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

PASSIVE REFLECTORS OFFSET

.....DESCRIPTION.....			POSITION.....				ORIENTATION		WEIGHT	COMMENTS
ELEV	TYPE	HEIGHT	WIDTH	FACE	LEG	AZI	TILT				
ft	*	ft	ft	deg	ft	deg	deg	kip			

* E - Elliptical
R - Rectangular

The diagram illustrates the geometry of a tower and a passive reflector. The tower is shown as a vertical structure with a lattice top. The passive reflector is a rectangular structure. Key parameters and offsets are labeled: ELEV (elevation), HEIGHT, WIDTH, Tilt (angle of the tower top), AZI (azimuth), and offsets: -ve leg offset (distance from tower center to reflector center), +ve face offset (distance from tower face to reflector face), and a vertical offset from the tower top to the reflector center.



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

SHROUDS

..ELEVATION OF..	TYPE OF	NO. OF	OUTSIDE	THICK-	ORIENTATION	DRAG	
BOTTOM	TOP	MATERIAL	DIAMETER	NESS	deg	FACTOR	COMMENTS
ft	ft	SDES	in	in			

May be circular or polygonal. Circular = 0

For analysis only. Can be 1.0

MATERIAL TYPES

ELEVATION

PLAN

SHROUD

TOWER

THICKNESS

Antennas hidden by shroud

OUTSIDE DIAMETER

ELEVATION TOP

ELEVATION BOTTOM

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

DESCRIPTION OF OUTRIGGER

GUY ELEV	CONNECTION.TO.THE.MAST		OUTRIGGER.MATERIAL		COMMENTS
	UPPER.ELEV	LOWER.ELEV	UPPER	LOWER	
ft	ft	ft			
150.00	150.00	146.00	3	3	Lower Stabilizer
235.00	236.00	232.00	3	3	Upper Tsabilizer

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

GUY GEOMETRY This table is prepared by the user. It is also possible to have INSPECTOWER 3 calculate guy height and radius based on vertical angle measurements in the TRANSIT READINGS table. That has to be done through the Tools drop down menu under "Generate Guy Geometry" option and "Apply"-ed to transfer values into the GUY GEOMETRY table, which is then used for calculations.

ELEV	GUY AZI	GUY TYPE	DIAMETER	HEIGHT	RADIUS	MAST ATTACH RADIUS	ATTACH AZI	INITIAL TENSION	COMMENTS
ft	deg	*	in	ft	ft	ft	deg	kip	
50.0	75	EHS	0.563	37.0	188.4	2.320	75	3.500	
50.0	195	EHS	0.563	62.0	188.0	2.320	195	3.500	
50.0	215	EHS	0.563	71.0	187.4	2.320	215	2.500	

This approach allows the user to override the calculated values based on his better knowledge of the correct values.



Introduction to INSPECTOWER 3

The data in this table is not entered by the user, but calculated by INSPECTOWER 3 and placed here. It is especially helpful when MAPPING the tower.

Generate Guy Geometry

GUY GEOMETRY CALCULATED Calculated on the basis of vertical angular measurements taken to known elevations. It is executed from the Tools drop down & results are stored in this table. If the user wishes to apply these, he can have them transferred into the GUY GEOMETRY table. COMMENTS

ELEV	GUY AZI	GUY TYPE	DIAMETER	HEIGHT	RADIUS	MAST ATTACH RADIUS	ATTACH AZI	INITIAL TENSION
ft	deg		in	ft	ft	ft	deg	kip

TRANSIT READINGS

TRANSIT LOC ID	ELEV SIGHTED ABOVE TOWER BASE	VERT. ANGLE TO ELEV SIGHTED	FRACTION OF LEG APPARENT DISPLACEMENT WITH TELESCOPE...		FACE WIDTH
	ft	deg	DIRECT	INVERTED	
A1	233.00	0.00	-0.24	-0.30	4.00
A1	202.00	0.00	-0.56	-0.62	4.00
A1	147.00	0.00	-0.74	-0.78	4.00
A1	100.00	0.00	-0.24	-0.26	4.00
A1	50.00	0.00	-0.23	-0.24	4.00
A1	15.00	0.00	0.00	0.00	4.00
A2	233.00	0.00	-0.45	-0.51	4.00
A2	202.00	0.00	-0.13	-0.18	4.00
A2	147.00	0.00	-0.09	-0.13	4.00
A2	100.00	0.00	-0.24	-0.26	4.00
A2	50.00	0.00	-0.01	-0.02	4.00
A2	15.00	0.00	0.00	0.00	4.00
A3	233.00	0.00	0.78	0.72	4.00
A3	202.00	0.00	0.78	0.72	4.00
A3	147.00	0.00	0.89	0.86	4.00
A3	100.00	0.00	0.51	0.49	4.00
A3	50.00	0.00	0.26	0.25	4.00
A3	15.00	0.00	0.00	0.00	4.00

Based on when Vert Angle is not zero.



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING
INSPECTION INPUT
FIELD MEASUREMENTS
TRANSIT LOCATION
TRANSIT READINGS
GUY ASSEMBLIES
GUY TENSION (DIRECT READING)
INSPECTION OUTPUT
PULSE CHART
CALCULATOR

TRANSIT LOCATION

TRANSIT LOC ID	DISTANCE . FROM . INSTRUMENT . TO . ANCHOR BACK ft	DOWN ft	SIDE in	HORIZ ANGLE . TO TOWER . LEG deg	DIRECTION	COMMENTS
A1	0.00	0.00	0.00	255.40	0	
A2	0.00	0.00	0.00	15.40	0	
A3	0.00	0.00	0.00	135.40	0	

This data will allow INSPECTOWER 3 to adjust the guy radius and height of anchor from the instrument height that will be calculated using some of the transit readings.

Horizontal angle for the leg will allow the spatial location of A2 and guy azimuth.

Direction gives INSPECTOWER 3 the correction for anchor radius from leg or face to tower centre.

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE MAST MATERIALS
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
- APPURTENANCES
- GUY INFORMATION
- INSPECTION INPUT
- FIELD MEASUREMENTS
- TRANSIT LOCATION
- GUY ASSEMBLIES
- GUY TENSION(DIRECT READING)
- INSPECTION OUTPUT
- PULSE CHART
- CALCULATOR

TRANSIT READINGS

TRANSIT LOC ID	ELEV SIGHTED ABOVE TOWER.BASE ft	VERT. ANGLE TO ELEV SIGHTED deg	FRACTION.OF.LEG APPARENT.DISPLACEMENT WITH.TELESCOPE...		FACE WIDTH ft
			DIRECT	INVERTED	
A1	233.00	0.00	-0.24	-0.30	4.00
A1	202.00	0.00	-0.56	-0.62	4.00
A1	147.00	0.00	-0.74	-0.78	4.00
A1	100.00	0.00		0.26	4.00
A1	50.00	0.00		0.24	4.00
A1	15.00	0.00		0.00	4.00
A2	233.00	0.00		0.51	4.00
A2	202.00	0.00		0.18	4.00
A2	147.00	0.00		0.13	4.00
A2	100.00	0.00		0.26	4.00
A2	50.00	0.00		0.02	4.00
A2	15.00	0.00		0.00	4.00
	233.00	0.00		0.72	4.00
	202.00	0.00		0.72	4.00
	147.00	0.00		0.86	4.00
	100.00	0.00	0.51	0.49	4.00
	50.00	0.00	0.26	0.25	4.00
	15.00	0.00	0.00	0.00	4.00

PLUMB

AT ELEVs +

AT BASE

BACK DOWN A1

Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River A;laska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

TOWER MAPPING

- TOWER STRUCTURE
 - LATTICE MAST GEOMETRY
 - LATTICE MAST MATERIALS
 - MATERIAL TYPES
 - MATERIAL PROPERTIES
 - LATTICE ELEMENTS
 - FACTORED LEG AND FACE SHEAR RESISTANCE
- APPURTENANCES
- GUY INFORMATION
- INSPECTION INPUT
- FIELD MEASUREMENTS
 - TRANSIT LOCATION
 - TRANSIT READINGS
 - GUY ASSEMBLIES**
 - GUY TENSION(DIRECT READING)
- INSPECTION OUTPUT
- PULSE CHART
- CALCULATOR

GUY ASSEMBLIES

Aside from distinguishing between strand and rope, no way of knowing just by looking at it.

ANCHOR LOC ID	GUY AZI deg	GUY ELEV ft	TR	Key SIZE in	TYPE	THIMBLE SIZE in	SHACKLE SIZE in	... TURNBUCKLE SIZE in	LENGTH in	Key GAP in	COMMENTS	
A1	75.4	50.00	N	0.56	EHS		0.63	0.63	1.00	12.00	2.79	This is a listing of all the guys and hardware at the anchor that the inspector observed and measured on this inspection visit.
A1	75.4	100.00	N	0.56	EHS		0.63	0.63	1.00	12.00	5.10	
A1	75.4	150.00	L	0.44	EHS		0.50	0.50	0.75	12.00	2.59	
A1	75.4	150.00	R	0.44	EHS		0.50	0.50	0.75	12.00	4.71	Comparison with this list recorded during the previous inspection or with the drawings should indicate whether anything has changed. For example, if the GAPS (last column) do not match, the guys must have been adjusted.
A1	75.4	200.00	N	0.56	EHS		0.63	0.63	1.00	12.00	5.02	
A1	75.4	235.00	L	0.50	EHS		0.56	0.56	0.88	12.00	2.88	
A1	75.4	235.00	R	0.50	EHS		0.56	0.56	0.88	12.00	3.36	If the crew adjusted the turnbuckles in the wrong direction and found that the tower alignment and tensions are actually worse than they were before adjustment, they can simply bring the GAPS back to these starting values and make the adjustments again.
A2	195.4	50.00	N	0.56	EHS		0.63	0.63	1.00	12.00	5.73	
A2	195.4	100.00	N	0.56	EHS		0.63	0.63	1.00	12.00	4.51	
A2	195.4	150.00	L	0.44	EHS		0.50	0.50	0.75	12.00	2.40	
A2	195.4	150.00	R	0.44	EHS		0.50	0.50	0.75	12.00	5.72	
A2	195.4	200.00	N	0.56	EHS		0.63	0.63	1.00	12.00	5.44	
A2	195.4	235.00	L	0.50	EHS		0.56	0.56	0.88	12.00	4.75	
A2	195.4	235.00	R	0.50	EHS		0.56	0.56	0.88	12.00	4.36	
A3	315.4	50.00	N	0.56	EHS		0.63	0.63	1.00	12.00	2.69	
A3	315.4	100.00	N	0.56	EHS		0.63	0.63	1.00	12.00	2.64	
A3	315.4	150.00	L	0.44	EHS		0.50	0.50	0.75	12.00	3.75	
A3	315.4	150.00	R	0.44	EHS		0.50	0.50	0.75	12.00	3.93	
A3	315.4	200.00	N	0.56	EHS		0.63	0.63	1.00	12.00	4.47	
A3	315.4	200.00	N	0.56	EHS		0.63	0.63	1.00	12.00	4.47	
A3	315.4	235.00	L	0.50	EHS		0.56	0.56	0.88	12.00	5.18	
A3	315.4	235.00	R	0.50	EHS		0.56	0.56	0.88	12.00	5.53	

Row=1; Col=1



Introduction to INSPECTOWER 3

INSPECTOWER 3 - [Anchor River Alaska -2]

Project Edit View Tools Report Help

New Open Save Print... Properties Undo Redo Check Data Unit Converter Win Calculator Pulse Chart Inspection Results Report Calculations Draw Tower Inspection Report

Anchor River Alaska -2

Project Title: 250' Guyed Tower - Anchor River Alaska Type: Guyed Lattice Standard: TIA-222-G Attachments: Balance Guy Tensions

GUY TENSION (DIRECT READING)

ANCHOR LOC ID	GUY ELEV ft	TR	DIRECT .READING OF .TENSION kips	TEMPERATURE deg	COMMENTS
A1	50.00 N		2.91	20.00	Assumed
A1	100.00 N		3.00	20.00	Tension manipulated to give variability
A1	150.00 L		1.63	20.00	
A1	150.00 R		1.62	20.00	
A1	200.00 N		2.97	20.00	
A1	235.00 L		2.40		
A1	235.00 R		2.31		
A2	50.00 N		3.00		
A2	100.00 N		2.99		
A2	150.00 L		1.67		
A2	150.00 R		1.78		
A2	200.00 N		2.99		
A2	235.00 L		2.40		
A2	235.00 R		2.23		
A3	50.00 N		3.10		
A3	100.00 N		2.96		
A3	150.00 L		1.66		
A3	150.00 R		1.87		
A3	200.00 N		2.89		
A3	235.00 L		2.45		
A3	235.00 R		2.44		

Right click gives these options

- Swing
- Pulse
- Tangent Intercept
- Direct Reading

This data was an adjustment of the clients data to show him how it should work.

Smart-Guy in-line actual guy tension measurement. When the pin turns freely, the tension is going through the Smart-Guy rods, which have the sensors.

Compact instrument that can be used close to the ground, where it is more convenient and safer to work.

www.smart-guy.biz

or

