



# PEANUT calculations

*Here to help you save time to tackle other endeavors!*

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**BY THE WAY HERE'S PEANUT**

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**DIRECTIONS FOR THE VERTICAL ANGLE TRANSIT SAGGING METHOD SAG PROGRAM**

TO ALL USERS,

We would like to thank you for your purchase and use of this program and the other programs in this series. We have set a goal at Peanut Calculations to save the person in charge of these job tasks in the field time. Because we know your time is valuable and if your like me there's not enough of it. With a few values entered from the sag charts, names, job name, company names, date, and temperatures all the calculations and reports are ready to print. A lot of the job, personnel names, company names and P.O. numbers only have to be entered once at the beginning of a project. If you have any questions or ideas about something you would like to see in this program or others please leave us a message at [support@peanutcalculations.com](mailto:support@peanutcalculations.com) or e-mail me at [norman@peanutcalculations.com](mailto:norman@peanutcalculations.com). We are here to support and help you with these programs and your ideas to make your job easier. But please remember these programs have copy rights so please use for your benefit but don't give unauthorized copies to others. If there is anyway we can support or help please contact us.

THANK YOU  
NORMAN S. JAYJOHN  
PRESIDENT OF PEANUT CALCULATIONS

**PLEASE KEEP ONE COPY OF EACH PROGRAM IN A FILE TO MAKE A COPY FOR EACH PROJECT WORKED.**

Disclaimer,

Please double check your input data and finished data to make sure program is working correctly. Peanut Calculations excepts no liability for miss information from our programs.

SHEET 1

DATA INPUT & SAG SHEET

With this sheet you enter known data in the yellow highlighted cells and the program does the calculations and report for you. The known data is, who's line, job name, contractor or crew name, P.O. or job number, who the sagger are and the high and low temperatures and sag in feet for the high and low temperatures for the span or spans you have chose to sag in from the engineers sag chart. Enter the line section being sagged, the span being sagged, the span length, ruling span length, sag chart number, and finally the ambient temperature at the time of sag. The sag calculations are complete and with a few more data items entered for each sag location you are using, your sag report will be complete.

sag chart 11 of 31  
ruling span 2,480.77

sample conductor sag chart from project engineer

Structure Number	Span Length Ahead (ft)	Temperature									
		(-20)F	(-10)F	0 F	10 F	20 F	30 F	40 F	50 F	60 F	70 F
		Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)
153	1887.00	83.09	83.64	84.20	84.75	85.31	85.86	86.42	86.97	87.53	88.08
154	2721.60	172.84	173.99	175.15	176.30	177.46	178.61	179.77	180.92	182.08	183.23
155	2234.00	116.46	117.24	118.02	118.79	119.57	120.35	121.13	121.90	122.68	123.46
156	1815.20	76.89	77.40	77.92	78.43	78.94	79.46	79.97	80.48	81.00	81.51
157	3187.60	237.10	238.68	240.27	241.85	243.43	245.02	246.60	248.18	249.77	251.35
158	2122.80	105.15	105.85	106.55	107.26	107.96	108.66	109.36	110.07	110.77	111.47
Tension	(lbs)	5860.32	5823.41	5786.49	5749.58	5712.67	5675.75	5638.84	5601.93	5565.01	5528.10

figure 1 --

sag chart 11 of 31  
ruling span 2,480.77

sample shield wire sag chart from project engineer

Structure Number	Span Length Ahead (ft)	Temperature									
		(-20)F	(-10)F	0 F	10 F	20 F	30 F	40 F	50 F	60 F	70 F
		Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)	Sag in (ft)
153	1887.00	64.11	64.58	65.05	65.53	66.00	66.47	66.94	67.42	67.89	68.36
154	2721.60	133.36	134.34	135.32	136.30	137.28	138.27	139.25	140.23	141.21	142.19
155	2234.00	89.85	90.51	91.17	91.84	92.50	93.16	93.82	94.49	95.15	95.81
156	1815.20	59.32	59.76	60.19	60.63	61.07	61.50	61.94	62.38	62.81	63.25
157	3187.60	182.94	184.29	185.63	186.98	188.33	189.67	191.02	192.37	193.71	195.06
158	2122.80	81.13	81.62	82.10	82.59	83.08	83.56	84.05	84.54	85.02	85.51
Tension	(lbs)	1874.56	1861.62	1848.68	1835.74	1822.80	1809.86	1796.92	1783.98	1771.04	1758.10

figure 2 --

DATA INPUT & SAG SHEET

1. Press the DATA INPUT & SAG tab at the bottom of the program to activate the sheet. Then enter names, job number, sag section structure numbers, weather conditions, ruling span length and sag chart number in yellow highlighted area's. Example used in figure 3

WHO'S LINE	GEORGIA POWER COMPANY		JOB NAME	McGraw FORD TO CRESTVIEW 500 KV LINE		figure 3
DATE	12/22/2007					
CONTRACTOR	WILSON CONSTRUCTION		JOB # or P.O-----	P7891		
WHO'S SAGGING	1	NORMAN JAYJOHN	AMBIENT TEMPERATURE-----			
	2	KENNETH MITCHAM				
	3	JACK LYONS				
LINE SECTION TO BE SAGGED: -----STRUCTURE-----			153	TO STRUCTURE-----	159	WEATHER-- cold/windy
1. SAG SPAN-----				SPAN LENGTH-----		
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-----				HIGH TEMPERATURE USED FROM SAG CHART-----		
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-----				LOW TEMPERATURE USED FROM SAG CHART-----		
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR-----				answer		
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-----						
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-----						
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE-----				answer		
2. SAG SPAN-----				SPAN LENGTH-----		
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-----						
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-----						
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR-----				answer		
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-----						
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-----						
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE-----				answer		
				RULING SPAN LENGTH-----		2480.77
				SAG CHART NUMBER-----		11 of 31

Figure 3 was shortened one sag location to save space, the third one on the data input page works the same as the other two.

2. After you finish with data above, look at your sag chart and enter the high temperature and the low temperature listed on the chart and enter temperatures in the proper yellow highlighted cells. This program will work with any temperature range given on the sag charts. The total temperature range works fine as long as the engineers sag chart follows a linear progression. If his chart doesn't you will have to use a smaller range. Like 20 to 40 degrees. You will have to check and see if this program is following the sag chart. When you enter 70 degrees and -20 degrees with this sample sag chart, you can check any published sag in feet from the chart. Like -10, 0, 10, 20, 30, 40, or 50 degrees. Check your sag chart the same way.

example temperature range from figures 1 & 2-----

Temperature										
(-20)F	(-10)F	0 F	10 F	20 F	30 F	40 F	50 F	60 F	70 F	

from figure 3-----

HIGH TEMPERATURE USED FROM SAG CHART-----	70
LOW TEMPERATURE USED FROM SAG CHART-----	-20

3. The next step we will work on is entering the sag span, span length, conductor sag in feet for the high and low temperature on the sag chart, and shield wire sag in feet for the high and low temperature on the sag chart.

Chosen sag spans and sag in feet for high and low temperatures in red.

figure 1 --

sag chart 11 of 31  
ruling span 2,480.77

sample conductor sag chart from project engineer

Structure Number	Span Length Ahead (ft)	Temperature									
		(-20)F	(-10)F	0 F	10 F	20 F	30 F	40 F	50 F	60 F	70 F
153	1887.00	83.09	83.64	84.20	84.75	85.31	85.86	86.42	86.97	87.53	88.08
154	2721.60	172.84	173.99	175.15	176.30	177.46	178.61	179.77	180.92	182.08	183.23
155	2234.00	116.46	117.24	118.02	118.79	119.57	120.35	121.13	121.90	122.68	123.46
156	1815.20	76.89	77.40	77.92	78.43	78.94	79.46	79.97	80.48	81.00	81.51
157	3187.60	237.10	238.68	240.27	241.85	243.43	245.02	246.60	248.18	249.77	251.35
158	2122.80	105.15	105.85	106.55	107.26	107.96	108.66	109.36	110.07	110.77	111.47
Tension	(lbs)	5860.32	5823.41	5786.49	5749.58	5712.67	5675.75	5638.84	5601.93	5565.01	5528.10

low temperature high temperature

Chosen sag spans and sag in feet for high and low temperatures in red.

figure 2 --

sag chart 11 of 31  
ruling span 2,480.77

sample shield wire sag chart from project engineer

Structure Number	Span Length Ahead (ft)	Temperature									
		(-20)F	(-10)F	0 F	10 F	20 F	30 F	40 F	50 F	60 F	70 F
153	1887.00	64.11	64.58	65.05	65.53	66.00	66.47	66.94	67.42	67.89	68.36
154	2721.60	133.36	134.34	135.32	136.30	137.28	138.27	139.25	140.23	141.21	142.19
155	2234.00	89.85	90.51	91.17	91.84	92.50	93.16	93.82	94.49	95.15	95.81
156	1815.20	59.32	59.76	60.19	60.63	61.07	61.50	61.94	62.38	62.81	63.25
157	3187.60	182.94	184.29	185.63	186.98	188.33	189.67	191.02	192.37	193.71	195.06
158	2122.80	81.13	81.62	82.10	82.59	83.08	83.56	84.05	84.54	85.02	85.51
Tension	(lbs)	1874.56	1861.62	1848.68	1835.74	1822.80	1809.86	1796.92	1783.98	1771.04	1758.10

low temperature high temperature

If the engineer has you adding or subtracting sag corrections you need to add or subtract from the sag in feet from your sag chart before you enter them in the DATA INPUT & SAG sheet.

Data Input & Sag sheet with sag data entered from sag charts.

				HIGH TEMPERATURE USED FROM SAG CHART-----	70				
1. SAG SPAN-----	154-155	SPAN LENGTH-----	2721.60	LOW TEMPERATURE USED FROM SAG CHART-----	-20				
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-----				183.23	answer				
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-----				172.84					
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR-----									
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART---				142.19	answer				
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART---				133.36					
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE-----									
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>RULING SPAN LENGTH-----</td> <td>2480.77</td> </tr> <tr> <td>SAG CHART NUMBER-----</td> <td>11 of 31</td> </tr> </table> <p style="text-align: center;">figure 3 with data entered</p>						RULING SPAN LENGTH-----	2480.77	SAG CHART NUMBER-----	11 of 31
RULING SPAN LENGTH-----	2480.77								
SAG CHART NUMBER-----	11 of 31								
2. SAG SPAN----- 157-158 SPAN LENGTH----- 3187.60									
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-----				251.35	answer				
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-----				237.10					
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR-----									
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART---				195.06	answer				
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART---				182.94					
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE-----									

4. The last step for this page is to input the ambient temperature and the program will do all the calculations for you.

Now on the data input & sag sheet, enter the ambient temperature at this time.

AMBIENT TEMPERATURE-----	-12	figure 4
--------------------------	-----	----------

If temperature at time of sag is -12 F enter here on the data input & sag sheet.

**A. YOU HAVE TO CLICK OUTSIDE THE LAST CELL DATA WAS ENTERED IN FOR IT TO TAKE AFFECT AND WORK.**

**B. You have to stay within the sag charts temperature range or your answers will zero their selves as a safety factor. This forces you the user to stay within the engineers issued charts and alleviates any errors in what is wanted by the engineer. Try it by using values used here, 70 for high and -20 for low then enter -21 degrees or 71 degrees in the ambient temperature and all sag values turn to zero. This program will work on any temperature range. What ever temperatures in Fahrenheit the issued sag chart is using.**

There is no need to print this page. All the figures you should need for this program are on the sag report.

WHO'S LINE	GEORGIA POWER COMPANY		JOB NAME	McGraw FORD TO CRESTVIEW 500 KV LINE		figure 3
DATE	12/22/2007					
CONTRACTOR	WILSON CONSTRUCTION		JOB # or P.O-----	P7891		complete and answered
WHO'S SAGGING	1	NORMAN JAYJOHN				
	2	KENNETH MITCHAM		AMBIENT TEMPERATURE-----		-12
	3	JACK LYONS				
LINE SECTION TO BE SAGGED: -----STRUCTURE-----			153	TO STRUCTURE-----	159	WEATHER-- cold/windy
			HIGH TEMPERATURE USED FROM SAG CHART-----		70	
1. SAG SPAN-----	154-155	SPAN LENGTH-----	2721.60	LOW TEMPERATURE USED FROM SAG CHART-----		-20
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-----			183.23			
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-----			172.84		RULING SPAN LENGTH----- 2480.77	
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR-----			173.76		SAG CHART NUMBER----- 11 of 31	
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART--			142.19		answer	
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART--			133.36			
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE-----			134.14		answer	
2. SAG SPAN-----			157-158	SPAN LENGTH-----	3187.60	
CONDUCTOR SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART-----			251.35			
CONDUCTOR SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART-----			237.10			
ACTUAL SAG IN FEET NEEDED FOR CONDUCTOR-----			238.37		answer	
SHIELD WIRE SAG IN FEET FOR THE HIGH TEMPERATURE FROM CHART--			195.06			
SHIELD WIRE SAG IN FEET FOR THE LOW TEMPERATURE FROM CHART--			182.94			
ACTUAL SAG IN FEET NEEDED FOR SHIELD WIRE-----			184.02		answer	

Figure 3 was shortened one sag location to save space, the third one on the data input page works the same as the other two.



SHEET 2

SAG LOCATIONS & SAG ANGLES

1. By inputting a little more data for each sag span in the Sag Locations & Sag Angles sheet the program will be able to calculate for your vertical angles in decimal degrees and have your sag report ready to print. The data you will have to input are instrument structure, elevation difference, instrument distance below the conductor and instrument distance below the shield wire. This sheet and the Data Input & Sag sheet allow you to input data for up to three spans or any combination for the three spans, including conductor only or shield wire only. The data you see complete on this page are transposed from the Data Input & Sag page and are only here for your information when inputting data on this sheet.

Sag Location & Sag Angles sheet without input data. Notice all angle and sag data zero without this data

SAG POINT 1 FROM PAGE 1								
SAG SPAN-	154-155	SPAN LENGTH---	2721.60	INSTRUMENT AT STRUCTURE-----		CONDUCTOR INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---		
SAGGER---	NORMAN JAYJOHN	ELEVATION DIFFERENCE + OR - -----				SHIELD WIRE INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---		
ALL ANGLES / ANSWERS ARE IN DECIMAL DEGREES AND MUST BE CONVERTED TO DEGREES, MINUTES, AND SECONDS							ACTUAL AMBIENT TEMPERATURE-----	-12
CONDUCTOR SAG IN FEET AT ACTUAL AMBIENT TEMPERATURE-----			0.00	SHIELD WIRE SAG IN FEET FOR ACTUAL AMBIENT TEMPERATURE-----			0.00	
VERTICAL ANGLE NEEDED FOR THE CONDUCTOR IN DECIMAL DEGREE'S-				0.0000000000	VERTICAL ANGLE NEEDED FOR THE SHIELD WIRE IN DECIMAL DEGREE'S----			
				0.0000000000				
SAG POINT 2 FROM PAGE 1								
SAG SPAN-	157-158	SPAN LENGTH---	3187.60	INSTRUMENT AT STRUCTURE-----		CONDUCTOR INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---		
SAGGER---	JACK LYONS	ELEVATION DIFFERENCE + OR - -----				SHIELD WIRE INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---		
ALL ANGLES / ANSWERS ARE IN DECIMAL DEGREES AND MUST BE CONVERTED TO DEGREES, MINUTES, AND SECONDS							ACTUAL AMBIENT TEMPERATURE-----	-12
CONDUCTOR SAG IN FEET AT ACTUAL AMBIENT TEMPERATURE-----			0.00	SHIELD WIRE SAG IN FEET FOR ACTUAL AMBIENT TEMPERATURE-----			0.00	
VERTICAL ANGLE NEEDED FOR THE CONDUCTOR IN DECIMAL DEGREE'S-				0.0000000000	VERTICAL ANGLE NEEDED FOR THE SHIELD WIRE IN DECIMAL DEGREE'S----			
				0.0000000000				
SAG POINT 3 FROM PAGE 1								
SAG SPAN-	0	SPAN LENGTH---	0.00	INSTRUMENT AT STRUCTURE-----		CONDUCTOR INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---		
SAGGER---	KENNETH MITCHAM	ELEVATION DIFFERENCE + OR - -----				SHIELD WIRE INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---		
ALL ANGLES / ANSWERS ARE IN DECIMAL DEGREES AND MUST BE CONVERTED TO DEGREES, MINUTES, AND SECONDS							ACTUAL AMBIENT TEMPERATURE-----	-12
CONDUCTOR SAG IN FEET AT ACTUAL AMBIENT TEMPERATURE-----			0.00	SHIELD WIRE SAG IN FEET FOR ACTUAL AMBIENT TEMPERATURE-----			0.00	
VERTICAL ANGLE NEEDED FOR THE CONDUCTOR IN DECIMAL DEGREE'S-				0.0000000000	VERTICAL ANGLE NEEDED FOR THE SHIELD WIRE IN DECIMAL DEGREE'S----			
				0.0000000000				

smaller than actual size

figure 5

**All angle answers in this program are in decimal degrees and must be converted on a calculator to degrees, minutes, and seconds. Some easy ways to do this with a calculator later in these directions.**

2. Sag Locations & Sag Angles with data inputted. With all the data entered in this sheet the program calculates the vertical angle you need to turn your transit. All positive angles you turn up from level and a zero starting point. Negative angles are turned down from level and zero.

Sag Location & Sag Angles sheet with input data giving you sag and vertical angles. Notice all angle and sag data zero without this data

SAG POINT 1 FROM PAGE 1							
SAG SPAN-	154-155	SPAN LENGTH---	2721.60	INSTRUMENT AT STRUCTURE-----	154	CONDUCTOR INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---	150.00
SAGGER---	NORMAN JAYJOHN	ELEVATION DIFFERENCE + OR - -----			75	SHIELD WIRE INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---	185.00
ALL ANGLES / ANSWERS ARE IN DECIMAL DEGREES AND MUST BE CONVERTED TO DEGREES, MINUTES, AND SECONDS						ACTUAL AMBIENT TEMPERATURE-----	-12
CONDUCTOR SAG IN FEET AT ACTUAL AMBIENT TEMPERATURE-----			173.76	SHIELD WIRE SAG IN FEET FOR ACTUAL AMBIENT TEMPERATURE-----		134.14	
VERTICAL ANGLE NEEDED FOR THE CONDUCTOR IN DECIMAL DEGREE'S-			0.5415809637	VERTICAL ANGLE NEEDED FOR THE SHIELD WIRE IN DECIMAL DEGREE'S-----		3.5439226479	
SAG POINT 2 FROM PAGE 1							
SAG SPAN-	157-158	SPAN LENGTH---	3187.60	INSTRUMENT AT STRUCTURE-----	157	CONDUCTOR INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---	160.00
SAGGER---	JACK LYONS	ELEVATION DIFFERENCE + OR - -----			100	SHIELD WIRE INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---	195.00
ALL ANGLES / ANSWERS ARE IN DECIMAL DEGREES AND MUST BE CONVERTED TO DEGREES, MINUTES, AND SECONDS						ACTUAL AMBIENT TEMPERATURE-----	-12
CONDUCTOR SAG IN FEET AT ACTUAL AMBIENT TEMPERATURE-----			238.37	SHIELD WIRE SAG IN FEET FOR ACTUAL AMBIENT TEMPERATURE-----		184.02	
VERTICAL ANGLE NEEDED FOR THE CONDUCTOR IN DECIMAL DEGREE'S-			-1.2993705185	VERTICAL ANGLE NEEDED FOR THE SHIELD WIRE IN DECIMAL DEGREE'S-----		2.1854939436	
SAG POINT 3 FROM PAGE 1							
SAG SPAN-	0	SPAN LENGTH---	0.00	INSTRUMENT AT STRUCTURE-----		CONDUCTOR INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---	
SAGGER---	KENNETH MITCHAM	ELEVATION DIFFERENCE + OR - -----				SHIELD WIRE INSTRUMENT DISTANCE BELOW BOTTOM OF WIRE GROOVE IN BLOCK---	
ALL ANGLES / ANSWERS ARE IN DECIMAL DEGREES AND MUST BE CONVERTED TO DEGREES, MINUTES, AND SECONDS						ACTUAL AMBIENT TEMPERATURE-----	-12
CONDUCTOR SAG IN FEET AT ACTUAL AMBIENT TEMPERATURE-----			0.00	SHIELD WIRE SAG IN FEET FOR ACTUAL AMBIENT TEMPERATURE-----		0.00	
VERTICAL ANGLE NEEDED FOR THE CONDUCTOR IN DECIMAL DEGREE'S-			0.0000000000	VERTICAL ANGLE NEEDED FOR THE SHIELD WIRE IN DECIMAL DEGREE'S-----		0.0000000000	

smaller than actual size

figure 5

3. Notice no sag or angle data for Sag Point 3, this is happening because no data was inputted on this sheet or the Data Input & Sag sheet. Most data here was given in the direction examples. Some companies you sag for will supply data for elevation differences and such. Others will have you shoot your own with a transit. Your conductor and shield wire instrument distances need to be accurate, measure to bottom of wire in blocks or their attachments and use the structure prints to help with this measurement and setup.

**All angles in this program are in decimal degrees and must be converted on a calculator to degrees, minutes, and seconds. Some easy ways to do this later in these directions.**

**SAG REPORT**

1. After the data input & sag sheet and the sag locations & sag angles sheets are complete and answered all you have to do is click on the SAG REPORT tab at the bottom of this program and click print. Your sag data is complete and ready to sign and turn in. Any information that is zero on the data input & sag or sag locations & sag angles sheet will not show up on the sag report. This example is not showing a third sagger for this reason.

**Example SAG REPORT: This example is smaller than the actual sag report that you will print.**

<u>GEORGIA POWER COMPANY</u>		<u>McGRAW FORD TO CRESTVIEW 500 KV LINE</u>		<u>CONTRACTOR: WISON CONSTRUCTION</u>						
<u>RULING SPAN LENGTH: 2480.77</u>		<u>SAG CHART #: 11 of 31</u>		<u>JOB # OR P.O. P7891</u>						
<u>CONDUCTOR SAG REPORT</u>										
<u>DATE:</u>	<u>SAG SECTION</u>	<u>SAGGER</u>	<u>SPAN SAGGED</u>	<u>SPAN LENGTH</u>	<u>TEMPERATURE</u>	<u>SAG IN FEET</u>	<u>VERTICAL ANGLE IN DECIMAL DEGREE'S</u>	<u>INSTRUMENT STRUCTURE</u>	<u>ELEVATION DIFFERENCE</u>	<u>WEATHER</u>
12/22/2007	153 TO 159	NORMAN JAYJOHN KENNETH MITCHAM	154-155 157-158	2721.6 3187.6	-12 -12	173.76 238.37	0.5415809637 -1.2993705185	154 157	75 100	cold/windy cold/windy
<u>SHIELD WIRE SAG REPORT</u>										
<u>DATE:</u>	<u>SAG SECTION</u>	<u>SAGGER</u>	<u>SPAN SAGGED</u>	<u>SPAN LENGTH</u>	<u>TEMPERATURE</u>	<u>SAG IN FEET</u>	<u>VERTICAL ANGLE IN DECIMAL DEGREE'S</u>	<u>INSTRUMENT STRUCTURE</u>	<u>ELEVATION DIFFERENCE</u>	<u>WEATHER</u>
12/22/2007	153 TO 159	NORMAN JAYJOHN KENNETH MITCHAM	154-155 157-158	2721.6 3187.6	-12 -12	134.14 184.02	3.5439226479 2.1854939436	154 157	75 100	cold/windy cold/windy

FOREMAN: \_\_\_\_\_

REPRESENTATIVE: \_\_\_\_\_

### **Directions for a complete Project Sag Report workbook**

1. All you have to do is make a new Microsoft excel workbook file and name it after the project, job number or P.O. number or anything you would like. Next copy and paste a copy of the Sag Report sheet from this program each time you finish a sag set up in this program to this new excel file. Please do not use copies of this file to send data. This will violate your user agreement with Peanut Calculations.

### **Drawing**

1. The Drawing sheet is to show you the measurements this program is calculating from.

### **Decimal Degrees to Degrees, Minutes, & Seconds**

1. Because this program will not convert your vertical angles to Degrees, Minutes, & Seconds from decimal degrees you will manually have to do this on a Scientific Calculator. There are several inexpensive versions to choose from and the conversion is relatively simple. Three calculators that we have listed the steps for the conversion were bought for \$8.00 to \$14.00 at a local department store. Our first example is for a Texas Instruments model TI-30XA. In the calculator's degree mode enter your decimal degree number with as many digits as the calculator will allow, then press the 2nd key then press the DD>DMS key and you have your answer in degrees, minutes and seconds. The DD>DMS key is also the = key. Our second example is the Texas Instruments model, TI-36X SOLAR. In the calculator's degree mode enter your decimal degree number with as many digits as the calculator will allow, then press the 3rd key then press the >DMS key and you have your answer in degrees, minutes, and seconds. To convert back to decimal degrees, press the 2nd key then press the >DD key and your answer is converted back. The third example is the CASIO model fx-300MS, with the calculator in the degrees mode, input your decimal degree number with as many digits as the calculator will allow then press the = key, then press the SHIFT key, Next press the ' ' ' key and you have your answer in degrees, minutes, and seconds. We are not promoting any brand of calculator, but there are several to choose from. We hope these examples were helpful.

Please remember we are here to support you, and keep checking our web site for updates and new programs. Check [www.peanutcalculations.com](http://www.peanutcalculations.com) and any questions or problems you have will be answered.