

# **JUNIOR AGRICULTURAL MECHANICS SHOW**



## **Documentation & Research Package**

**Format shown is an example you may follow in developing your Documentation Package. It was developed to help clarify the process. You may want to put the materials in a three ring notebook. Documentation Package should have a Table of Contents with Components A-D tabbed along with page numbers.**

## OBJECTIVE

**Documentation & Research:** Documentation is considered a research portfolio and should not be constructed as a scrapbook. Documents should be easy to read and arranged neatly in a tabbed notebook with table of contents and pages numbered. Additional explanation for Documentation is found on [www.jamshow.org](http://www.jamshow.org) in *Project Documentation Presentation* and *Documentation Check Sheet*.

Documentation & Research Package must include the following components:

- a) **Working Drawing:** Must include an original (exhibitor-drawn) multiview orthographic projection drawn to a given scale with proper lettering and dimensioning. Scale must be identified on the drawing. Dimensioning shown on drawing should be specific and complete enough for it to be apparent that drawing was used to plan and construct project. Judges will spot check dimensions on projects to see if they comply with drawings. Drawing may be a CAD (Computer Aided Design). Pictorials, isometric, oblique or perspective may be included. Examples of proper drawing including scaling can be found in the *Project Documentation Presentation*.
- b) **Bill of Materials (BOM):** Must include a list or a description of material, including columns 1) Item #, 2) Description, 3) Size, 4) Quantity, 5) Unit, 6) Cost per item, 7) Extended Costs and 8) Total Costs. Other Information such as date of purchase, vendors name and/or Purchase Order Number, etc. may be included. BOM may be developed using computer spread sheet program. Examples of BOM can be found in the *Project Documentation Presentation*.
- c) **Photographs:** Show work in progress and should illustrate proper safety procedures including clothing, eye and face shields, etc. Photographs should be sequenced in the order of constructing the project. Pictures may be displayed at show using computer display if electricity is available at the site. Exhibitor(s) should be in most of the pictures. CEA/AST should be in some of the pictures. Pictures must be of good quality with labels identifying activity and exhibitor(s) in the picture. No more than 40 pictures may be included, with the exception of Division 6 Tractor Restoration) Two or up to four pictures per page is recommended. Additional photographs may be displayed in a separate notebook for public viewing, but judges may not view them.
- d) **Research - Papers to be included:**
  - 1) All projects attaching to tractors and/or PTO must include latest appropriate ASABE Standards - Special Rule 21
  - 2) All Projects including trailers pulled on public highways must include relevant DOT codes including Federal Lighting Table, - Special Rule 20.
  - 3) Product Information (PI) bulletins and/or Material Safety Data Sheets (MSDS) must be germane to the project and should include Paints and chemical supplies, etc. Manufacturer's specifications or PI (Product Information) for trailer and equipment components such as axles, springs, wheels, jacks, break-a-ways, and hydraulic cylinders should be included.

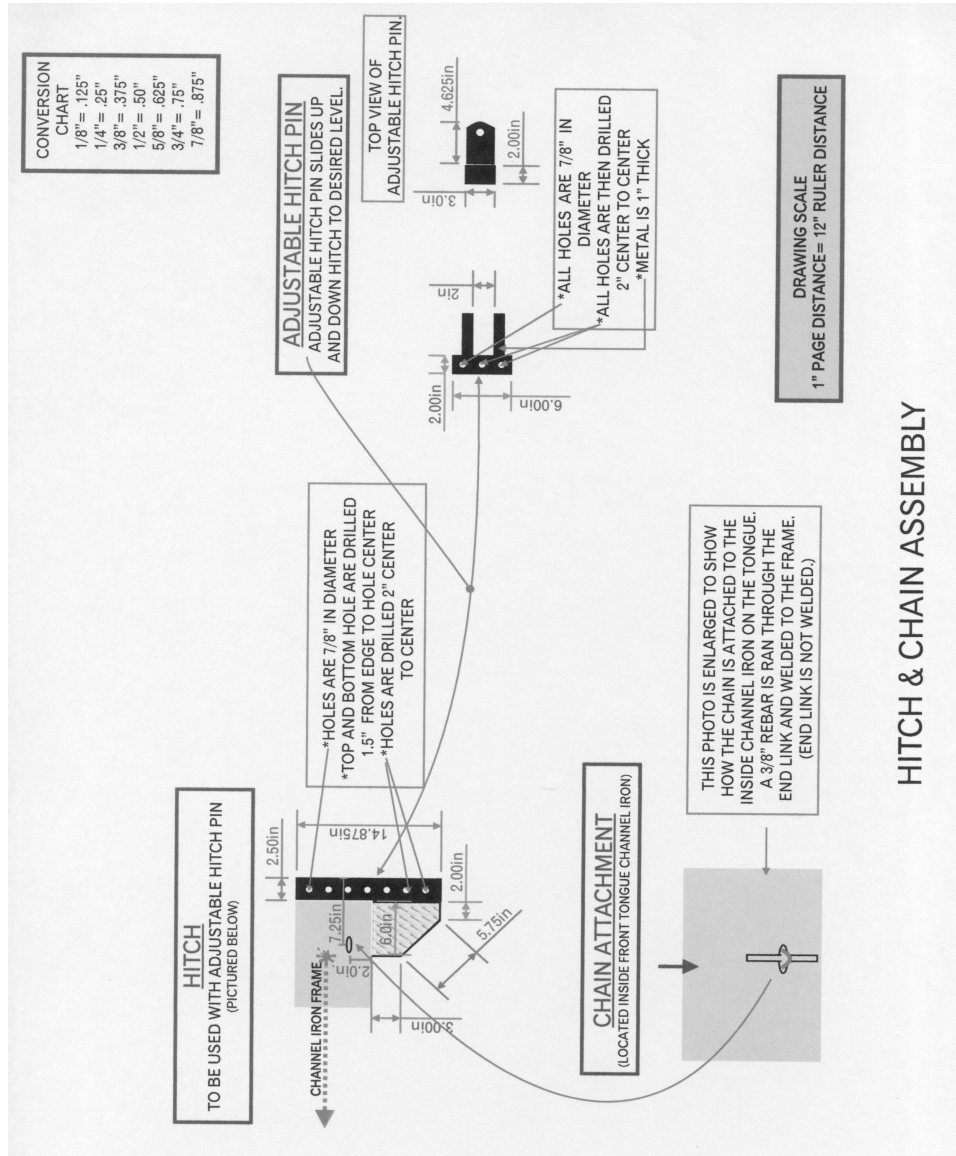
Projects having no documentation are not complete and will be disqualified.

# **PART A:**

## **WORKING DRAWING**

In this section, please include an original (exhibitor-drawn) multiview orthographic projection drawn to a given scale with proper lettering and dimensioning.

## Example Drawing



### Notes:

1. Drawings must be complete enough that project could be built from them.
2. All drawing must be original and drawn by exhibitor/s.
3. Drawings may be separate from Documentation Notebook.
4. Size of sheet/s will be determined by size of project and scale used for drawing.
5. Number of sheets making up drawing will be determined by size, scale and sophistication of project. Orientation – portrait or landscape.
6. Drawing may be made using CAD or Pencil and drawing tools.
7. Scale and dimensions must be on each sheet of drawing. The scale of picture above is not correct in that the drawing was scanned and reduced.
8. Each view of a multiview must have extension and dimension lines with arrows as shown above.
9. If pencil drawn lettering must be neat – light guidelines are recommended.
10. Use of color or shading in drawing is optional.
11. Borders around text and shading as shown in example are optional.
12. Drawings may be inserted in plastic sleeves.

## **PART B:**

# **BILL OF MATERIALS**

In this section, please include a list or a description of material, including columns:

- 1) Item Number
- 2) Description
- 3) Size
- 4) Quantity
- 5) Unit
- 6) Cost per Unit
- 7) Extended Costs
- 8) Total Costs

## Sample Bill of Materials

Item #	Description	Size	Quantity	Unit	Costs/Unit	Ex Costs
1	Channel Iron	8"	52	Ft	\$7.00	\$364.00
2	Angle Iron	2x2x1/8	7	Ft	\$0.86	\$6.02
3	Flat Stock	2 1/2x1/2	3	Ft	\$3.25	\$9.75
4	Fiberglass tank w/sparger bar	1000 gal	1	Ea	\$1,875.00	\$1,875.00
5	Bolt in saddles (W/gussets)		1	Pr	\$390.00	\$390.00
6	Torsion axle w/brakes	7.0 K lbs w/56.5" HF	2	Ea	\$538.37	\$1,076.74
7	Tire & Wheel assy.	750x16-E w/+5" offset & 5.15" pilot	4	Ea	\$133.25	\$533.00
8	Drop leg jack	12000 lb	1	Ea	\$79.88	\$79.88
9	3 Flat wire	12 ga	10	Ft	\$0.35	\$3.50

<b>Total</b>	
<b>Costs</b>	\$4,337.89

### Notes:

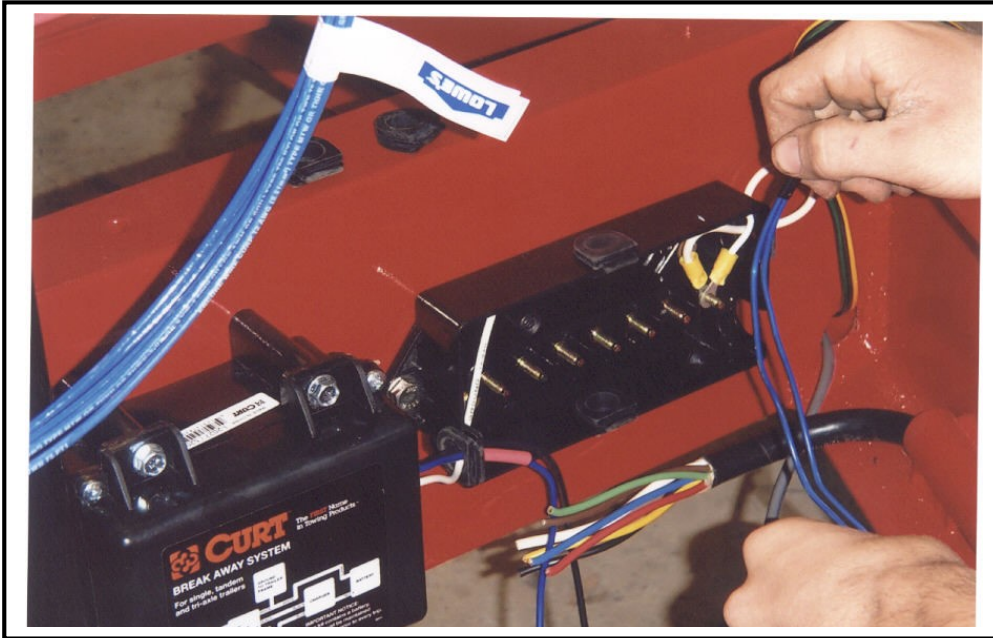
- It is recommended but not required to use Excel spreadsheet to set up Bill Of Materials (BOM)
- Shading alternate lines is optional.
- Size and description should be complete enough that materials could be ordered using them.
- Additional Information (columns) can be added, such as Date of Purchase, vendors name an/or Purchase Order Number, Part number, etc.
- If materials are used that are on hand and not purchased they should be identified with an OC (opportunity costs) and a value assigned.
- Receipts of purchases may be included or attached to the BOM.
- BOM can be shown in landscape or portrait format.

# **PART C:**

## **PHOTOGRAPHS**

**In this section, please include up to 40 pictures.  
Sequenced in order of planning, construction and finishing.  
Label to identify activity and exhibitor(s)  
Two to four pictures per page is recommended.**

## Example Photo Page



Trent Wiring junction box



Identification (VIN) Number stamped on frame of trailer

### Notes:

- Picture should be of good quality - color recommended
- VIN picture (bottom picture) could be improved by including picture of the exhibitor stamping the numbers on beam. This would show that exhibitor put VIN on trailer.
- Borders around pictures are optional.
- Descriptive label of picture may be below on in the Picture – Borders for labels are optional.
- Placing pictures in plastic sleeves is optional.



# **PART D:**

## **RESEARCH**

Include:

1. *Product Information* (PI) bulletins or specifications published by manufacturer, for example hydraulic cylinders - running gear, axles, springs jacks etc.
2. Relevant *Material Safety Data Sheet* (MSDS) or (SDS), for example: paints, solvents, welding rods, cover gases used in GMAW welding and cutting gases.
3. Standards and Codes, Latest appropriate ASABE Standards if project attaches to a tractor.
4. Relevant DOT Codes, including *Federal Lighting Table* if project is trailer or equipment pulled on highway.
5. Placing materials in plastic sleeves is not necessary but permissible.