# Title 210 – National Engineering Manual Part 541 – Drafting and Drawings

#### PIA541.0 General

This policy supplement applies to engineering drawings developed by individuals operating under Pacific Islands Area NRCS delegated engineering job approval authority. Drawings from non-NRCS engineers are not required to conform to these standards, however they must be legible and communicate information clearly and effectively.

#### PIA541.1 Media

A. Employees performing design work are to use the most efficient and expedient method(s) available to them for conveying design information, whether it be AutoCAD, other software, hand drawings, or a combination thereof.

#### **PIA541.4 Coversheet**

A. Engineering designs for projects not installed under federal construction contracts or contracting local organization construction contracts governed by project agreements shall have the following statement on the coversheet of the design drawings (or on the first sheet in the absence of a coversheet):

### **Review and Acceptance**

I have received at least two copies of the drawings and specifications for this project and they have been reviewed with me and are accepted for installation. I agree to carry out all client responsibilities spelled out in the drawings and specifications.

	Date:
Client Signature	
	Date:
NRCS Personnel Signature and Title	

A copy of the signed design will be retained in the cooperator's folder. If the project was approved by a higher level office a copy of the signed design will be sent to the office which approved it.

## **PIA541.5 Orientation**

B. All text shall be oriented so that it reads from left to right or bottom to top of the drawing sheet, never upside down.

## **PIA541.6 Style and Content**

- A. Designers and draftsmen should use as few sheets as possible in a drawing set without the information becoming cluttered. Preliminary drawings shared with cooperators for review and soliciting input shall have each sheet marked "Preliminary Design, Not For Construction."
- C. Drawing scales shall be based on a multiple of a standard engineering or architectural scale. A bar scale will be included on all plan view and "scale" drawings (except details labeled "Not to Scale"). Grid drawings do not require a bar scale if the horizontal and vertical grid scales are labeled.
- E. The title of a note should be subtitle text size. The body of a note should generally be notation B text size. All notes will be in sentence case (first word of each sentence capitalized). The use of abbreviations, acronyms and jargon in drawings should be limited to avoid miscommunication.

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F. Lineweights shall conform to NEH 641 Appendix B. Text shall conform to NEH 641 Appendix D, Figure D-1. Fonts shall be clear, readable and consistent throughout all CAD generated portions of a project's construction drawings. Drawing and detail titles shall be underlined, but overall the use of underlined, italic, bold, or altered text should be limited in drawings.

Color should be utilized to assist in the CAD process, not to convey detail on printed drawings. All engineering drawings shall be drawn so that color printing is not necessary, with the exception of "as-built" drawings, for which the color red shall be reserved for details added to the design after construction.