

## Instructions for Use of Pacific Islands Area Standard Construction Drawing Details

Standard details exist to save design and drafting time. Their use should increase both the volume and quality of installed solutions to resource problems. Standard details do not fit every situation that arises. Each standard detail will have an instructions sheet giving background. It will list conditions (wind loadings, foundation strength requirements, flow rates, quantities, etc.) so that whoever is authoring or approving the design can determine the applicability of a standard detail to the project/operation. Before incorporating a standard detail or multiple standard details into a conservation project, ensure that the conditions called for by the instruction(s) for each detail intended to be part of a project are met. For some situations they will be over designed, i.e. more than the minimums. This allows for a greater number of installations without incurring the costs associated with doing absolutely site specific design for each resource problem. When the design assumptions are not matched or exceeded by the physical features where the NRCS technical professional is contemplating using it, a site specific design or as a minimum, adjustment of the standard detail is called for.

The drawings are made available in both AutoCadd format and as pdf files. AutoCadd drawings have a .dwg file extension. One must have AutoCadd installed on their computer to even open them. Those proficient with AutoCadd are welcome to adjust the standard detail for a particular installation using that tool. When doing so be sure to not save back and corrupt the original standard detail. The AutoCadd drawings use many of the advanced features of the software. Novice or infrequent users may find adjusting them frustrating. The pdf files are created from the AutoCadd drawings and are shared so that those who do not have AutoCadd skills can still use the standard details. Doing so involves a technique often referred to as "arts and crafts," where white out, physically adding or covering notes, etc. is done with perhaps computer generated and printed revisions secured to a pdf printout using glue stick or even opaque drafting applique run through a printer. Attention to detail and maintaining a similar aesthetic quality to a site specific design is encouraged; good work reflects on us all.

Whoever signs the completed engineering package (project construction drawings, inspection plan, engineer's estimate, operation and maintenance requirements, and if required, specifications) is responsible for the performance of the project providing it gets built as designed. Those who approve designs are expected to have the appropriate level of engineering job approval authority for each of the conservation practices in the standard detail. When creating a final design make one record copy with original signatures and file where it can be retrieved. Job site and copies for potential contractors should be made from the original.

These standard details are drawn to a size that will allow duplication on 11 inch by 17 inch paper which all Field Offices should be able to make on their copiers. Check the output from the printer to ensure they retain as much of the quality and all of the legibility of the original drawings. Adjustments in shading or resolution on the copy machine may be needed.

All practices must meet the requirement of the applicable practice standard (see Section IV of the Field Office Technical Guide). Engineering activities must meet NRCS policy requirements as found in the National Engineering Manual, including state supplements to the National Engineering Manual.

Each approved design (which will include site specific information, acceptance signature blocks, general construction notes, in addition to the standard details) will need to have at least three copies. An originally signed record copy is for the Field Office, (often kept, with supporting computations, in the cooperator's file). Two copies as a minimum should go to the cooperator (one for their use and at least one so that they may solicit prices from contractors should they wish). Be prepared to make more copies as they tend to get lost, become soiled or damaged on the construction site, or when carried in the

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NRCS vehicle for inspection purposes. The cooperators may want to solicit prices from multiple contractors. This is recommended to get the best price.

All designs should contain at least the amount of information necessary (combined with field staking) for a reasonably knowledgeable builder to construct the job without seeking significant details from the individual who assembled and approved the project package. We need to inspect, but should not be performing construction supervision because of inadequate drawings and specifications.

**March 18, 2014**