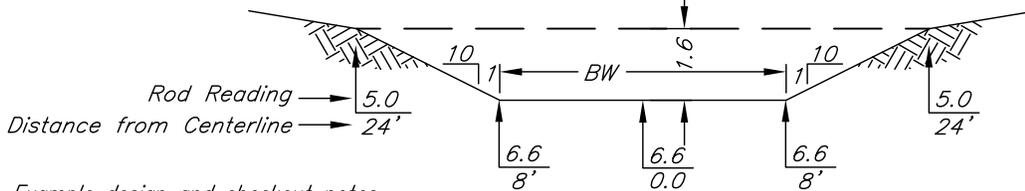


TRAPEZOIDAL WATERWAY CHECKOUT SHEET

Complete an as-built survey to provide a record of the construction checkout. If desired, record design data from waterway design or cut sheets. Record shape of waterway with ground shots using laser or optical level. Record grade rod from designated Hub. Left (-) and right correspond to left and right looking in the direction of increasing stationing. Upstream designated by u.s., and downstream is d.s. Waterway depth is determined from the low side of the waterway. Record additional ground shots and distance from centerline 5-10 feet beyond design top width. Note discrepancies or compliance with design.

Example Design: Bottom Width: 16 ft., Depth: 1.6 ft., Grade: 1.0%, Side Slope: 10:1; TW: 48'



Example design and checkout notes

| Design data from Plan | WW ID | Sta. | ℄ Elev. | BW | SS (x:1) | Depth | Grade (%) | Hub ID | Hub Elev. | Cut/Fill from Hub at ℄ |
|-----------------------|------------------------|------|---------|-----|------------------------|------------------------|-----------|--------|--------------|------------------------|
| Ex. | | 3+00 | 101.0 | 16 | 10 | 1.6 | 1.0 | 3+00 | 102.82 | 1.8' |
| As-Built Survey Data | Hub Rod Reading: | | | | 4.8 | Measured Bottom Width: | | | 16 | X |
| | Rod Reading | | 4.8 | 5.0 | 6.6 | 6.6 | 6.6 | 5.0 | 4.5 | |
| | Distance | | -34 | -24 | -8 | ℄ | 8 | 24 | 34 | |
| | As-built Depth | | | 0.0 | 1.6 | 1.6 | 1.6 | 0.0 | | |
| | ℄ Rod Reading 50' u.s. | | | 6.1 | ℄ Rod Reading 50' d.s. | | | 7.1 | X | |

Notes: _____

Grade = $7.1 - 6.1 = 1\%$

Lt SS = $16 / (6.6 - 5.0) = 10:1$

Rt SS = $16 / (6.6 - 5.0) = 10:1$

Construction OK? Y N

| Design data from Plan | WW ID | Sta. | ℄ Elev. | BW | SS (x:1) | Depth | Grade (%) | Hub ID | Hub Elev. | Cut/Fill from Hub at ℄ |
|-----------------------|------------------------|------|---------|----|------------------------|------------------------|-----------|--------|--------------|------------------------|
| | | | | | | | | | | |
| As-Built Survey Data | Hub Rod Reading: | | | | | Measured Bottom Width: | | | | X |
| | Rod Reading | | | | | | | | | |
| | Distance | | | | | ℄ | | | | |
| | As-built Depth | | | | | | | | | |
| | ℄ Rod Reading 50' u.s. | | | | ℄ Rod Reading 50' d.s. | | | | X | |

Notes: _____

Grade = _____

Lt SS = _____

Rt SS = _____

Construction OK? Y N

| Design data from Plan | WW ID | Sta. | ℄ Elev. | BW | SS (x:1) | Depth | Grade (%) | Hub ID | Hub Elev. | Cut/Fill from Hub at ℄ |
|-----------------------|------------------------|------|---------|----|------------------------|------------------------|-----------|--------|--------------|------------------------|
| | | | | | | | | | | |
| As-Built Survey Data | Hub Rod Reading: | | | | | Measured Bottom Width: | | | | X |
| | Rod Reading | | | | | | | | | |
| | Distance | | | | | ℄ | | | | |
| | As-built Depth | | | | | | | | | |
| | ℄ Rod Reading 50' u.s. | | | | ℄ Rod Reading 50' d.s. | | | | X | |

Notes: _____

Grade = _____

Lt SS = _____

Rt SS = _____

Construction OK? Y N

Minimum check out requirements:

1. Survey at least one cross-section for each design reach.
2. Surveyed cross sections shall be no more than _____ feet apart.

STANDARD CHECKOUT SHEET
IA-1511C

DATE June 2011 PAGE 1 OF 1



TRAPEZOIDAL GRASSED WATERWAY CHECK OUT

Owner: _____
 Location: Sec. _____, T _____ N R _____
 _____ Township
 _____ County, Iowa

| | | |
|----------------|------------|--------------------|
| Surveyed _____ | Date _____ | File Name NA |
| Checked _____ | | Drawing Name NA |
| | | Sheet of _____ |

Guidance for use of IA-1511 Standard Drawing

June 17, 2011

1. Standard Drawing IA-1511 can be used as part of a plan set for a trapezoidal grassed waterway design. It is not meant to fit all design situations. The designer may use other drawings to present the information contained in this document. Print only the sheets that you need. Please use the most current version.
2. If needed, clear the form by selecting <Forms>, <Clear Form> from the main menu (top toolbar). Using the 'tab' key is a good way to navigate sequentially through the entry fields.
3. More than one waterway design may be shown on the drawing. Separate each waterway with a blank line in the station and design elevation columns.
4. Station: Do not use a "+" when entering the stationing; use distance only. For example, enter 500, not 5+00. If you do enter a "+" by mistake, you will get an error message because the data is seen as incorrect by other fields that calculate distance and grade. You should be able to delete the entry and reenter it correctly without consequence.
5. Design Elevation: This is an optional entry. For certain short, steep waterways it may be sufficient to enter only a design reach grade if the design is not based on elevations. It is assumed elevations will be entered to the tenth of a foot since that is the precision used for construction. However, values stated to the hundredth will be accepted and will be used in the reach length and grade calculations. If you get unexpected values for grade, you may want to check the design elevations.
6. Cut or Fill at Centerline : Entering cut/fill data is optional. This form is not meant to be a cut sheet, but can be used as one for simple waterways. If you choose to enter cut/fill data;
 - a. Select either "Hub" or "Flag" to denote the location of the vertical datum the cut/fill is based on.
 - b. Select or enter "C" for cut, or "F" for fill.
7. Enter the cut or fill to the nearest 0.1 ft. Entries will be rounded to the nearest 0.1'.
8. Reach Length: Reach length is calculated from the stationing. This and subsequent calculations serve as a check that design information is entered correctly. Calculation is done to the nearest foot.
9. Reach Grade: This value is calculated if design elevations are entered and is displayed in the 'Grade' column. You must then skip the manual grade entry field.
 - a. The grade will display in either tenths of a percent or hundredths depending on the results of the calculation. It is assumed that the designer has determined stations and elevations so that the grade will display to the required precision. In other words, the designer will have the math correct. If the grade is displayed to hundredths and the user wants the display to tenths, the stations and or elevations will have to be adjusted to get the appropriate display.

- b. For designs where elevations are not determined or entered, you must enter the grade manually.
 - c. A column on the right edge of the form has been added as a check on the grade calculations. This value will be calculated to thousandths so you can compare it to the value displayed in the grade column to check for rounding errors. The values in this column are not printed.
10. The top width (TW) will be calculated automatically from the bottom width, depth, and side slope values for each reach. This value will be used for area calculations
11. When subsurface drains are installed, enter the number used and the offset from the centerline. This form assumes that the offset will be the same for each drain when two are used. If this is not the case, a note can be added to the notes section. The location of the tile (which side) can be shown on the plan view or perhaps described in the notes.
12. Quantities: The waterway length and area are calculated from the design data entered. Earthfill, excavation, and clearing quantities can be added if these quantities are known. The default entry is 'N/A' (not applicable).

Checkout sheet

1. A simple check out sheet and a continuation sheet are included in this file as IA-1511C. Other forms of check out sheets may be used and may be more useful in many situations. Since the stations selected for checkout may differ from site to site, the information must be filled out by hand after the form is printed.
2. If you choose to use this checkout sheet, the name and location of the job will be carried forward from the standard drawing. Enter the checkout requirements in terms of the maximum distance between surveyed cross-sections.
3. The person doing the as-built survey will sign and date the sheet. A field office employee will check the calculations and conclusions and sign as checker.
4. The practice certification will be completed on the plan cover sheet, IA-1005 or equivalent.

Digital Signatures

1. The person approving the waterway design & plan may sign digitally if desired. *It is not necessary to digitally sign this form.* A digital signature will change all fields to "read only" so that the plan cannot be changed. This may be useful for archival and when transmitting plans electronically to landowners or contractors. You will be prompted to save the file after signing. If subsequent editing is necessary, the approver, but no one else, can clear his signature to make changes.
2. To sign this document, you must obtain or create a digital signature. Adobe Acrobat Help provides instructions or you may consult with your IT specialist or someone who has done this. Follow area and state NRCS policy when using digital signatures.