



U.S. Department of the Interior
Bureau of Indian Affairs

Office of Information Management Technology

Section 508 Training



Section 508 of the Rehabilitation Act

Office of Information Management Technology

- Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d) applies when Federal Agencies develop, procure, maintain or use Information and Communication Technology (ICT)
- Section 508 requires ICT to be accessible to individuals with and without disabilities.



Examples of ICT

Office of Information Management Technology

- Computers, Software, Firmware and Peripherals
- Telecommunication Products (telephones and faxes)
- Information Kiosks and Transaction Machines
- Office Equipment (copiers, fax machines, and calculators)
- Video equipment and multimedia products distributed on DVDs, CDs, video tapes or internet
- Network Services
- Support Services
- Websites, E-mail, and Groupware
- Social Media (Facebook, Twitter, etc.)



Hierarchy of Section 508 Authority

Office of Information Management Technology

- **Law**
 - Section 508 of the Rehabilitation Act (as Amended), 29 U.S.C. § 794d
- **Accessibility Standards**
 - U.S. Access Board to create and update ICT Accessibility Standards for Section 508
- **The Federal Acquisition Regulation (FAR)**
 - Law mandates Section 508 Standards clause be included in, and therefore ENFORCED through, the FAR
- **Department/Agency Policy**
 - 375 DM 8, Section 508 Program and Responsibilities
- **Accessibility Resources**
 - Accessibility standards and guidance provided by Indian Affairs.



Accessibility is Important

Office of Information Management Technology

- Some people with disabilities have no other way of interacting with people, accessing information, starting a career, getting an education, or contributing to society, other than through the web, ICT and Assistive Technology (AT).
- The Census Bureau reports that 56.7 million Americans have a disability; that is about 20% of the total population. 59% of those age 21 to 64 who reported a disability are unemployed.
- Approximately 9% of DOI's workforce is disabled.



Assistive Technology Access

Office of Information Management Technology

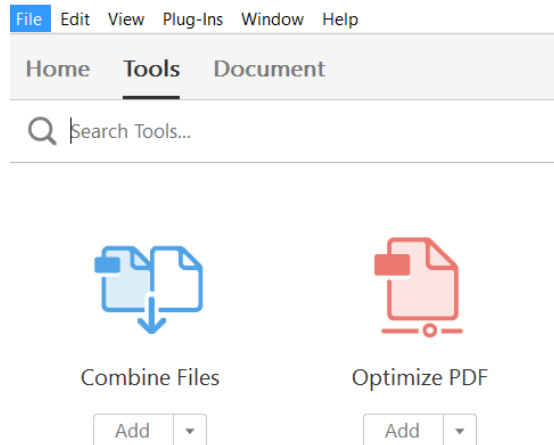
- Assistive Technology (AT) such as screen readers enable individuals with disabilities to access information.
- There are three methods that can be used to make it easier for AT to access information within a document:
 - Optimizing a PDF
 - Using Optical Character Recognition (OCR)
 - Adobe Accessibility Checker



Optimizing a PDF

Office of Information Management Technology

- Optimizing PDFs ensure maximum efficiency by saving space by removing embedded fonts, compressing images, and removing items from the file that are no longer needed.
- Click Tools > Optimize PDF.

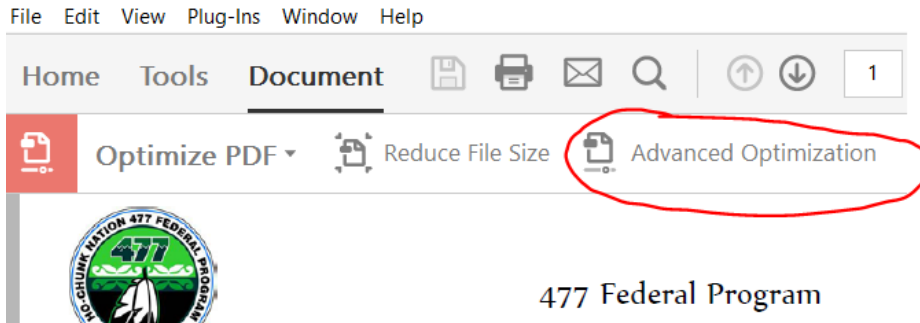




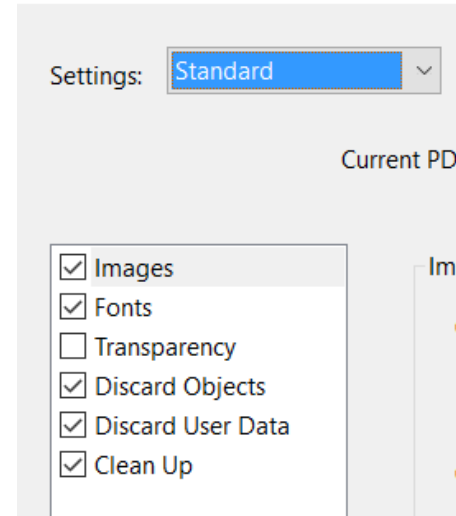
Optimizing a PDF

Office of Information Management Technology

- Click on Advanced Optimization.
- Make sure that Images and Fonts are checked. Click OK.



PDF Optimizer

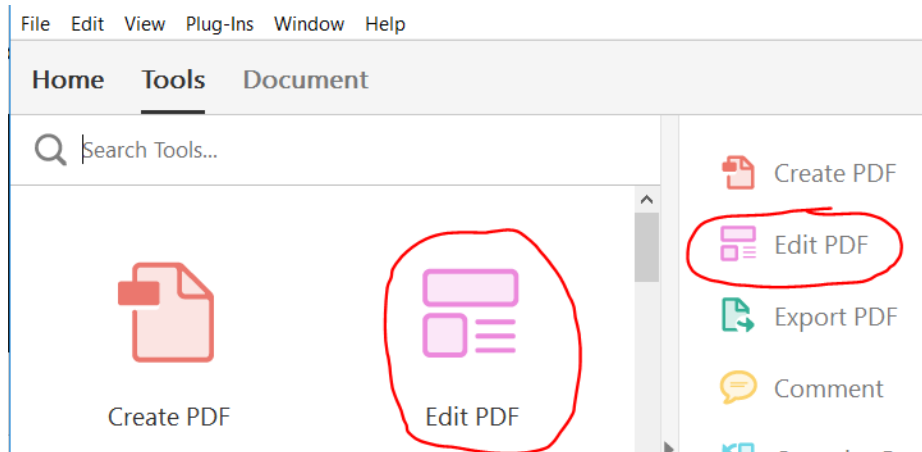




Optical Character Recognition

Office of Information Management Technology

- Optical Character Recognition (OCR) is used for AT to successfully read fonts from scanned PDFs or unrecognizable text.
- Also enables editing of scanned documents.
- Click Edit PDF.





Optical Character Recognition

Office of Information Management Technology

- Click an area of text in one of the text boxes.
- The Format (or Font) is displayed.

The screenshot displays a PDF viewer application with a menu bar (File, Edit, View, Plug-Ins, Window, Help) and a toolbar (Home, Tools, Document, Save, Print, Mail, Search, Page 1 / 2, 43.2% zoom). The main content area shows a document titled "477 Federal Program" with a logo and the following text:

PL 102-477 Federal Program Division 2014-2015

Purpose: The 477 Federal Program provides Native Americans that meet program guidelines with the opportunity to improve their education and job skills. With providing education and job experience we assisting Native Americans in becoming self-sufficient.

Goals:

1. Reduce the unemployment rate of Tribal Members in our Service area.
2. Provide training to enable participants to advance in job opportunities, following their Employment Development Plan (EDP).
3. Assist at-risk youth obtain their GED/HSED with a vocation experience program.
4. Improve the effectiveness of employment and training services.
5. Provide service to clientele in a manner that is culturally relevant and personally sensitive.

Case Management:

477 Program staff meet with clients, assist in completing a program application and develop an Employment Development Plan (EDP). The EDP is the road map for the 477 Program staff to assist the client in education and job services to achieve the goal. The program service area covers 39 counties in the state of Wisconsin. The Case Managers meet face to face with clients to fill out the initial 477 Program intake form, going out to the clients to provide the services needed in any of the 39 counties. Additionally the case managers go to the 477 service area meetings quarterly to provide program information and supportive services. Similar services are provided to eligible youth. The Program requires youth, no longer in school, to obtain a high school diploma or GED/HSED, assistance is offered to adults who wish to obtain their GED/HSED.

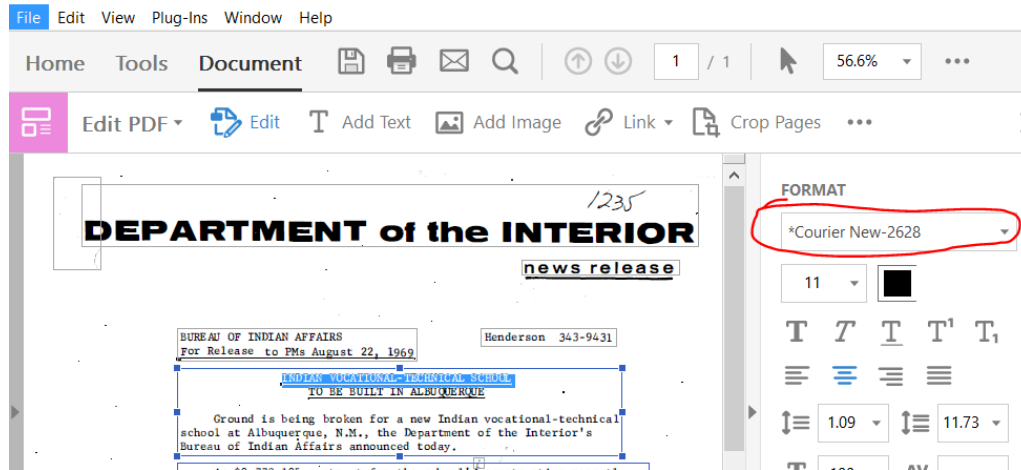
The right-hand side of the interface features a "FORMAT" panel, which is highlighted with a red box. This panel includes a font dropdown menu currently set to "Calibri", a size dropdown set to "11.04", a color selection box, and various text formatting icons (bold, italic, underline, strikethrough, subscript, superscript, bulleted list, numbered list, indent, outdent, link, unlink). Below the formatting options is an "OBJECTS" panel with navigation icons.



Optical Character Recognition

Office of Information Management Technology

- If the Format (Font) displays with an asterisk * then Adobe has converted the text to a “machine” font and it must be changed.



- In this case, the *Courier New-2628 font needs to be changed to “Courier New”.



Optical Character Recognition

Office of Information Management Technology

- The Format (Font) has now been changed to “Courier New”.

The screenshot shows a PDF editor window with a menu bar (File, Edit, View, Plug-Ins, Window, Help) and a toolbar. The document content includes the text "DEPARTMENT of the INTERIOR" in a large, bold, black font, with "1235" handwritten above it. Below this is the text "news release" in a smaller, black font. Further down, there is a section titled "BUREAU OF INDIAN AFFAIRS" with the text "For Release to PMs August 22, 1969" and "Henderson 343-9431". A blue selection box highlights the text "INDIAN VOCATIONAL-TECHNICAL SCHOOL TO BE BUILT IN ALBUQUERQUE". Below this, there is a paragraph of text: "Ground is being broken for a new Indian vocational-technical school at Albuquerque, N.M., the Department of the Interior's Bureau of Indian Affairs announced today." The right-hand side of the editor shows a "FORMAT" panel with a dropdown menu set to "Courier New", which is circled in red. Other options in the panel include font size (11), color (black), and various text formatting icons.



Adobe Accessibility Checker

Office of Information Management Technology

- The Adobe Accessibility Checker is used to check Section 508 compliance in PDF files.
- Click Tools > Accessibility.

File Edit View Plug-Ins Window Help

Home **Tools** Document

Q Search Tools...



Create Custom Tool

Add ▾



Accessibility

Add ▾



Adobe Accessibility Checker

Office of Information Management Technology

- Click Full Check.

The screenshot displays the Adobe Accessibility Checker application window. The top menu bar includes 'File', 'Edit', 'View', 'Plug-Ins', 'Window', and 'Help'. Below the menu is a toolbar with icons for Home, Tools, Document, Save, Print, Email, Search, Undo, Redo, Page 1 / 2, Mouse, Hand, and a zoom level of 61.1%. The main content area is titled 'Accessibility' and shows a document titled '477 Federal Program'. The document content includes the logo for the Bureau of Indian Affairs, the title '477 Federal Program', and the text 'PL 102-477 Federal Program Division 2014-2015'. Below this, there is a 'Purpose' section and a 'Goals' section with two numbered items. On the right side, a vertical toolbar contains several options: 'Autotag Document', 'Autotag Form Fields', 'Reading Options', 'Full Check' (which is circled in red), 'Accessibility Report', and 'Identify Form Fields'.



Adobe Accessibility Checker

Office of Information Management Technology

- Select one of the Checking Categories to run the checker.
 - Document – for files mostly containing text
 - Page content – for files mostly containing images or maps
 - Forms, Tables and Lists

The screenshot shows the 'Accessibility Checker Options' dialog box. It has a title bar with a close button (X). The dialog is divided into three sections:

- Report Options:** Contains a checked checkbox for 'Create accessibility report' and an unchecked checkbox for 'Attach report to document'. To the right, it shows the folder path 'C:\Users\george.morris\Documents' and a 'Choose...' button.
- Page Range:** Contains a radio button selected for 'All pages in document' and an unselected radio button for 'Pages from' followed by two input boxes containing the number '1'.
- Checking Options (30 of 32 in all categories):** Contains a 'Category:' label and a dropdown menu with 'Document' selected.



Requirements for Accessible PDFs

Office of Information Management Technology

- **Document Properties**

1. Assistive Technology (AT) Access
2. Descriptive Filename
3. Document Language

- **Structure Tags**

1. Tags
2. Decorative Content
3. Headers, Footers, and Watermarks
4. Headings
5. Lists
6. Section Language

- **Objects**

1. Images – Alternate Text
2. Data Tables

- **Color**

1. Color and Other Sensory Characteristics
2. Color Contrast

- **Miscellaneous**

1. Audio, Video and Multimedia
2. Flashing Objects
3. Alternative Accessible Version



Descriptive Filenames

Office of Information Management Technology

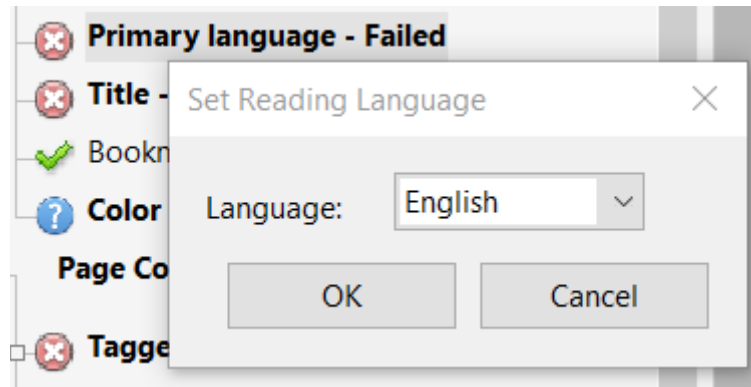
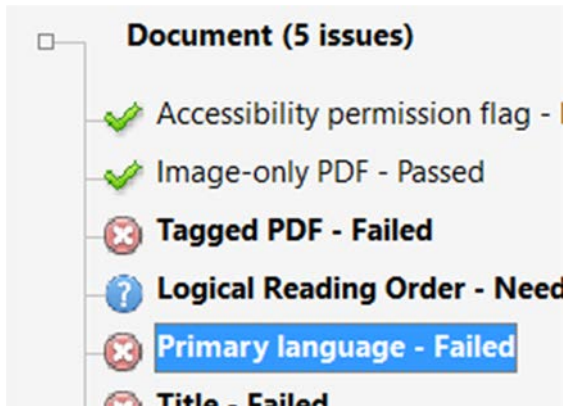
- A descriptive filename identifies the document or its purpose and helps everyone locate, open and switch between documents.
- Use a filename such as “budget_justifications_2019” or “FY_2019_Budget_Justifications” instead of “untitled budget info 011596_copy4”.
- Use underscores (_) instead of spaces. Easier for screen readers to interpret spaces.



Document Properties – Language

Office of Information Management Technology

- Screen readers use the language setting in document properties to provide the appropriate pronunciation for the document. Right-click “Primary language – Failed” and click “Fix”. Then select “English” and click OK.





Structure Tags

Office of Information Management Technology

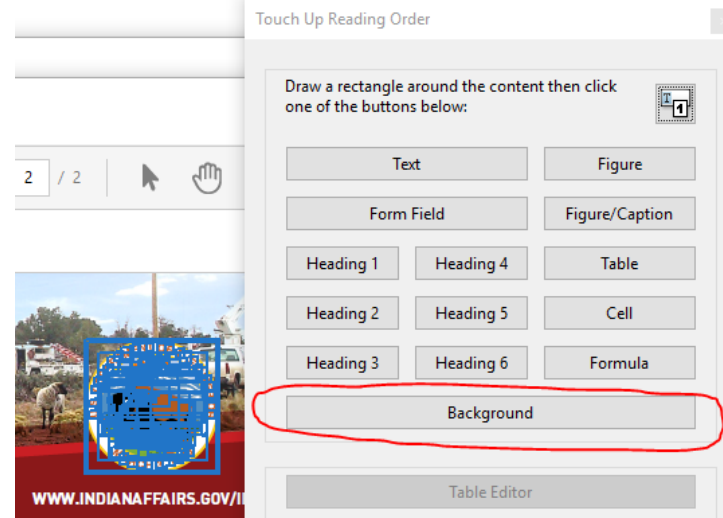
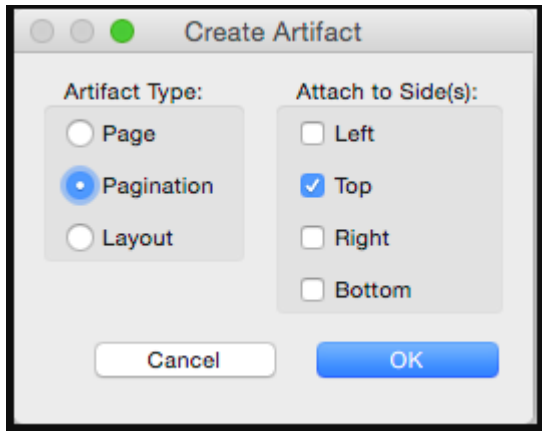
- Screen readers rely on tags to interpret document structure such as headings, paragraphs, tables, etc.
- All meaningful text and objects must correspond to a tag and the order of tags must correspond to the visual order.



Structure Tags – Decorative Content

Office of Information Management Technology

- Decorative content should be set to [Artifact](#).
- Screen readers can skip over ornamental images and redundant text tagged as Background.





Structure Tags – Headers and Footers

Office of Information Management Technology

- Information in headers, footers or watermarks must correspond to a tag at or near the start of the related information or a screen reader will skip over it.



Structure Tags - Headings

Office of Information Management Technology

- Headings break up content and make finding information easier. Assistive Technology like screen readers cannot infer meaning from visual headings created with bold or underline.
 - Visual headings must correspond with a heading tag, and
 - Heading tags must match the visual outline.
 - Headings created in Word will convert into Adobe if they were created using Headings in Styles



Structure Tags - Headings

Office of Information Management Technology

- The ***Appropriate nesting*** rule checks nested headings such as H2, H3, H4, H5 tags. When this check fails, headings are not nested properly.
- To fix this issue, find any H3, H4, or H5 tags in the Tags Panel and delete them. (Only H2 placed properly in the document should exist.)



Structure Tags - Lists

Office of Information Management Technology

- Screen readers cannot infer meaning from symbols and indents. List tags create a structure that screen readers can identify.



Structure Tags - Lists

Office of Information Management Technology

- The ***List items*** check reports whether each List Item (LI) is a child of List (L). When this rule check fails, the structure of this list is incorrect.
- Lists must have the following structure:
 - A List element must contain List Item Elements. And, List Item Elements can only contain Label Elements and List Item Body Elements.



Structure Tags - Lists

Office of Information Management Technology

- To fix the list structure:
 1. Find the list in the Accessibility Checker panel by right-clicking (Windows) or Ctrl-clicking (Mac OS) the failed element and choosing Show In Tags Panel.
 2. Create elements, change the types of elements, or rearrange existing elements by dragging.



Objects - Images

Office of Information Management Technology

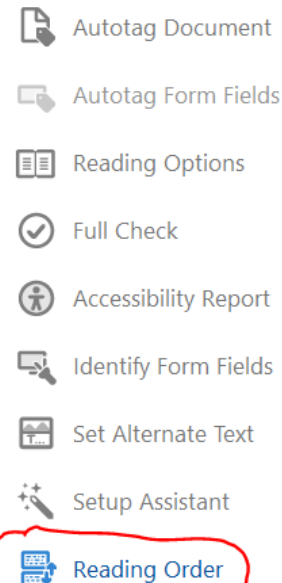
- Screen readers cannot infer meaning from images and other objects (pictures, images of text, charts, diagrams, shapes, etc.). Meaningful images must be accompanied by text that describes the purpose or function of the image.



Images – Alternate Text

Office of Information Management Technology

- Click the Reading Order option on the right-hand side.





Images – Alternate Text

Office of Information Management Technology

- Draw a rectangle around the image and click Figure in the Reading Order tool.

According to the Environmental Protection Agency: Solar energy is converted to electricity in two ways:

“One way is to use photovoltaic (PV) or solar cells that convert sunlight into electricity. PV cells are made of silicon panels and are used to charge cell phones, power calculators, and watch batteries, power homes, or generate electricity for the power grid.”

“Another way is to use concentrating solar power (CSP) plants. CSP plants use mirrors or lenses to focus a large amount of sunlight onto a receiver. The heated fluid produces steam, which turns a turbine generator. Using CSP instead of water as the heat transfer fluid makes it possible to store the heat so that electricity can be generated on a cloudy day. Power from CSP plants is transmitted through the transmission grid.”

“The solar power plants in the California desert are part of a solar electric generating system called the Solar Energy Research Institute’s CSP ‘power tower’ system on the Nevada desert. Power tower systems use mirrors (‘heliostats’) to focus and reflect sunlight onto a receiver on the tower. The Ivanpah solar tower system in California has about 170,000 heliostats and three towers. Ivanpah produces about 390 megawatts of electric power. A

Figure - No alternate text exists.



Images – Alternate Text

Office of Information Management Technology

- Right click on the image, drag down to Edit Alternate Text, and enter text in the pop-up dialogue box.

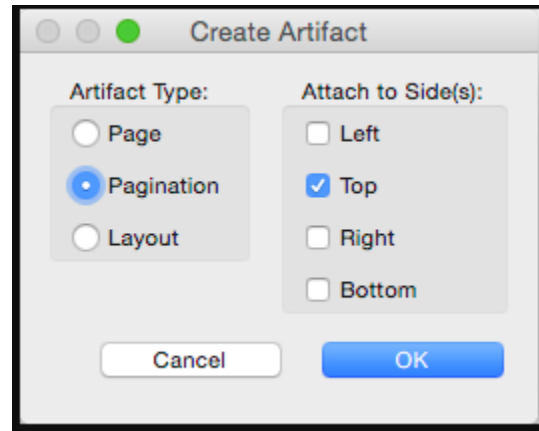
The screenshot displays a document editor interface. On the left, a 'TouchUp Reading Order' dialog box is open, featuring a grid of buttons for 'Text', 'Figure', 'Formulas', 'Figure/Equation', 'Heading 1', 'Table', 'Heading 2', 'Cell', 'Heading 3', and 'Formulas', along with a 'Background' button. Below these are checkboxes for 'Show page content order', 'Show table cells', and 'Show tables and figures'. At the bottom of the dialog are 'Clear Page Structure...', 'Show Order Panel', 'Help', and 'Close' buttons. On the right, a right-click context menu is visible over an image. The menu items include 'Show reading order panel', 'Show page content order', 'Show table cells', 'Show tables and figures', 'Edit Alternate Text...', 'Run Font Field Recognition', and 'Clear page structure'. The 'Edit Alternate Text...' option is highlighted. The background text in the document is partially visible, discussing solar energy and power towers.



Images – Alternate Text

Office of Information Management Technology

- If you encounter a ***Figures alternate text*** issue, make sure that images in the document either have an alternate text or are marked as artifacts.





Data Tables

Office of Information Management Technology

In data tables, header cells are required to describe the data. For Assistive Technology to interpret this information:

1. Data tables must correspond to a table tag <Table>.
2. Header cells must be identified with table header cell tags <TH>.
3. Complex data tables must have data cells <TD> associated with header cells.



Example – Inaccessible Table

Office of Information Management Technology

- This table has not been tagged as a table.
- Header cells and data cells have not been identified.

The screenshot shows a web application interface with a sidebar on the left and a main content area. The sidebar contains a 'Tags' section with a red arrow pointing to the text 'No Tags available'. The main content area displays a report titled 'Alaska Interagency Coordination Center Situation Report' dated 'Tuesday - 05/17/2016'. Below the report is a table with the following data:

Wildland Fires	New	Out	Active	Npr	YTD Fires	YTD Acres
Alaska Fire Service (AFS)	0	1	4	0	27	358.3
GAD (Galena Zone)	0	0	2	0	3	153.0
MID (Military)	0	0	1	0	22	172.3
TAD (Tanana Zone)	0	1	0	0	1	3.0
UYD (Upper Yukon Zone)	0	0	1	0	1	30.0



Tagging Tables

Office of Information Management Technology

To tag a table, Use the Reading Order tool to draw a rectangle around the table and click Table.



Duals to the end of the "stinger" (in feet)
3 = Bunk to bunk distance minus the length of the "stinger"
and Exhibit B were developed from these equations and can
boy and logging truck configuration described.

LENGTHS

GENERAL DESCRIPTION – Curve widening tapers should be
e the point of curvature (PC) and after the point of tangen
wing lengths:

RADIUS (R) (in feet)	TAPER LENGTH (T)
Less than 70	60
70-85	50
86-100	40
Greater than 100	30



Using the Table Editor

Office of Information Management Technology

Place the cursor over the table number and click, the table number should turn blue. You may now open the Table Editor in the Reading Order tool.

TouchUp Reading Order

Draw a rectangle around the content then click one of the buttons below:

Text Figure

Form Field Figure/Caption

Heading 1 Table

Heading 2 Cell

Heading 3 Formula

Background

Table Editor

Show page content order

Show table cells

Show tables and figures

Clear Page Structure... Show Order Panel

Help Close

Duals to the end of the "stinger" (in feet)
3 = Bunk to bunk distance minus the length of the "stinger" (in feet)

Exhibit B were developed from these equations and can be used for boy and logging truck configuration described.

LENGTHS

GENERAL DESCRIPTION – Curve widening tapers should be straight lined e the point of curvature (PC) and after the point of tangency (PT) for the wing lengths:

Table	US (R) (in feet)	TAPER LENGTH (T) (in feet)
Less than 70	50	30
70-85	50	50
86-100	40	40
Greater than 100	30	30



Table Cells

Office of Information Management Technology

- To view header cell and data cell labels, right click on a data cell and select Table Editor Options.

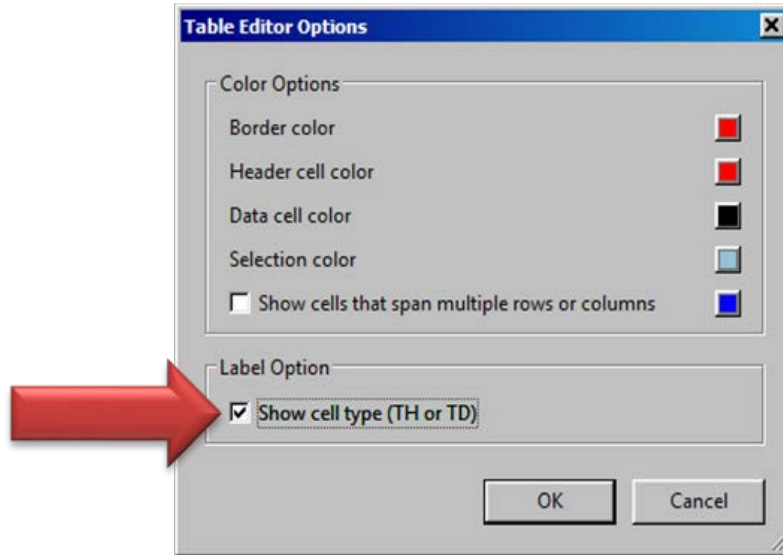
	RADIUS (R) (in feet)	TAPER LENGTH (T) (in feet)	
60		60	
70		50	
86-100		40	
Greater than 100		30	



Table Cells

Office of Information Management Technology

- Under Label Option, check Show cell type





Evaluating Simple Tables

Office of Information Management Technology

- All table header cells should be labeled <TH>.
- All table data cells should be labeled <TD>.
- This simple table is accessible.

TH	RADIUS (R) (in feet)	TH	TAPER LENGTH (T) (in feet)
TD	less than 70	TD	60
TD	85	TD	50
TD	100	TD	40
TD	greater than 100	TD	30

- In complex tables, data cells must be associated with header cells.



Web Page (HTML) Versions

Office of Information Management Technology

- Indian Affairs, through the Office of Information Management Technology is working with various offices to convert documents to fully accessible web pages. This effort ensures content is Section 508 compliant while also ensuring easier search capability and mobile responsiveness.



Alternative Accessible Versions

Office of Information Management Technology

- Federal agencies have the goal to produce on accessible document for everyone. However, there may be times when this is not feasible. In cases where a document cannot be made accessible for everyone, an accessible alternative version is acceptable.



Additional Resources

Office of Information Management Technology

- [Indian Affairs Web Standards](#)
- [IA Accessibility Guide](#)
- [Create Accessible Documents in Adobe Acrobat Pro](#)

Tony Morris
BIA Section 508 Coordinator
Office of Information Management Technology