High–level accessibility review – American Society of Civil Engineering (ASCE) - Library Accessibility Alliance

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High–level accessibility review – ASCE - Library Accessibility Alliance

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ASCE

Summary:

Top 3 problems for the ASCE

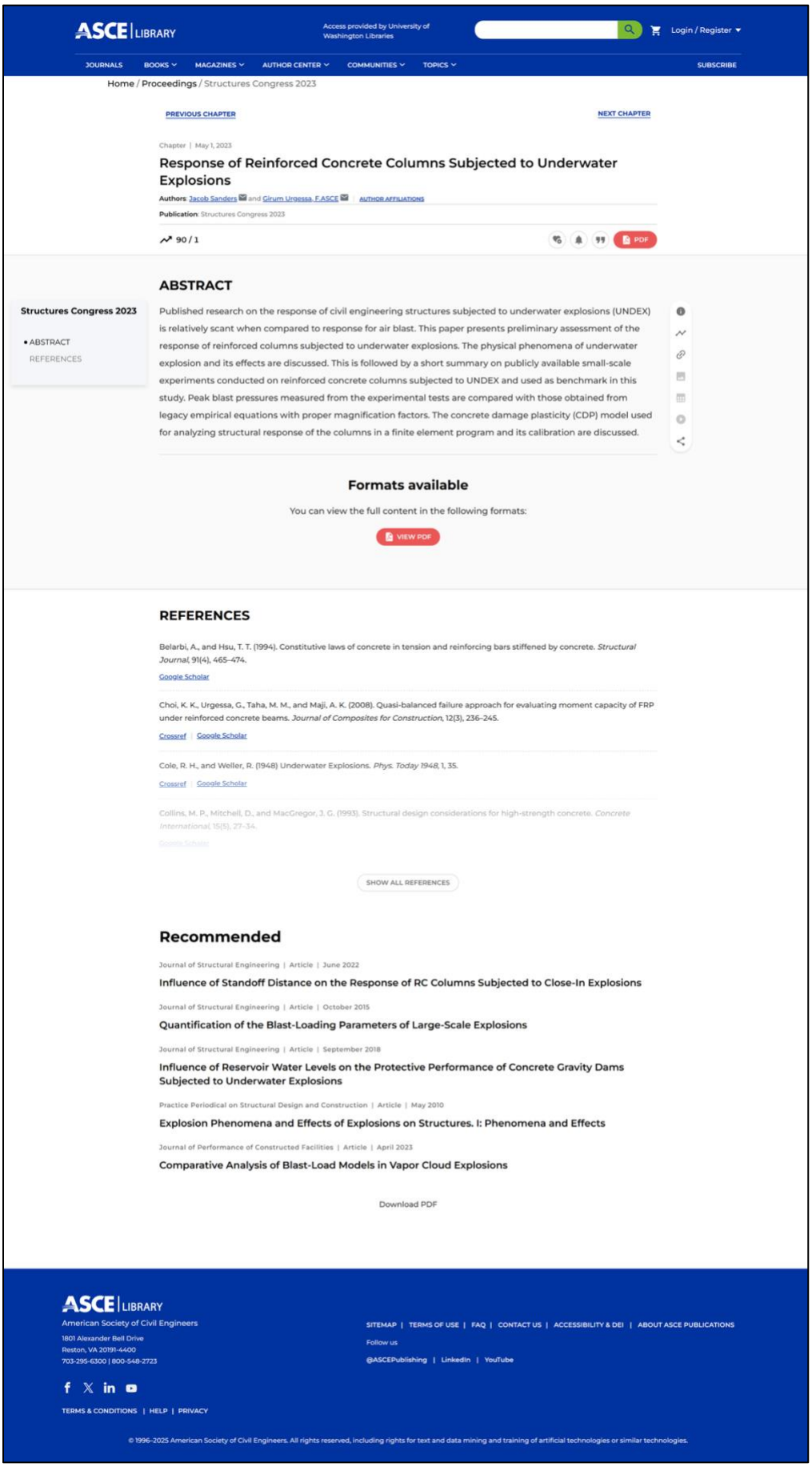
This high-level assessment covers limited portions and functionality of the ASCE. The assessment revealed issues with assistive technology compatibility, resulting in some users missing information required to understand content, states and operate functions. It is important to keep in mind that the findings represent a high-level assessment, and do not reflect the results of a Deque Comprehensive Web Assessment. Following are top 3 issues from this evaluation.

- **Active Images:** Alternative text for logo images does not contain the visible text.
- **Link purpose (In Context):** Multiple links have same programmatic labels.
- **Keyboard Navigation:** Buttons do not expand/collapse using keyboard only.

Accessibility findings

1. Initial Interface/Landing Page

Source: https://ascelibrary-org.offcampus.lib.washington.edu/doi/10.1061/9780784484777.001
Test case: Test initial interface/landing page to ensure menus, sub-menus, search box, images, icons, etc. are accessible. Please test a browse screen too, such as Browse Proceedings.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PREVIOUS CHAPTER
NEXT CHAPTER
Chapter | May 1, 2023
Response of Reinforced Concrete Columns Subjected to Underwater Explosions
Authors: Jacob Sanders and Girum Urgessa, F.ASCE
AUTHOR AFFILIATIONS
Publication: Structures Congress 2023
90 / 1
PDF
ABSTRACT
Structures Congress 2023
• ABSTRACT
REFERENCES
Published research on the response of civil engineering structures subjected to underwater explosions (UNDEX) is relatively scant when compared to response for air blast. This paper presents preliminary assessment of the response of reinforced columns subjected to underwater explosions. The physical phenomena of underwater explosion and its effects are discussed. This is followed by a short summary on publicly available small-scale experiments conducted on reinforced concrete columns subjected to UNDEX and used as benchmark in this study. Peak blast pressures measured from the experimental tests are compared with those obtained from legacy empirical equations with proper magnification factors. The concrete damage plasticity (CDP) model used for analyzing structural response of the columns in a finite element program and its calibration are discussed.
Formats available
You can view the full content in the following formats:
VIEW PDF
REFERENCES
Belarbi, A., and Hsu, T. T. (1994). Constitutive laws of concrete in tension and reinforcing bars stiffened by concrete. Structural Journal, 91(4), 465–474.
Google Scholar
Choi, K. K., Urgessa, G., Taha, M. M., and Maji, A. K. (2008). Quasi-balanced failure approach for evaluating moment capacity of FRP under reinforced concrete beams. Journal of Composites for Construction, 12(3), 236–245.
Crossref | Google Scholar
Cole, R. H., and Weller, R. (1948) Underwater Explosions. Phys. Today 1948, 1, 35.
Crossref | Google Scholar
Collins, M. P., Mitchell, D., and MacGregor, J. G. (1993). Structural design considerations for high-strength concrete. Concrete International, 15(5), 27–34.
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Recommended
Journal of Structural Engineering | Article | June 2022
Influence of Standoff Distance on the Response of RC Columns Subjected to Close-In Explosions
Journal of Structural Engineering | Article | October 2015
Quantification of the Blast-Loading Parameters of Large-Scale Explosions
Journal of Structural Engineering | Article | September 2018
Influence of Reservoir Water Levels on the Protective Performance of Concrete Gravity Dams Subjected to Underwater Explosions
Practice Periodical on Structural Design and Construction | Article | May 2010
Explosion Phenomena and Effects of Explosions on Structures. I: Phenomena and Effects
Journal of Performance of Constructed Facilities | Article | April 2023
Comparative Analysis of Blast-Load Models in Vapor Cloud Explosions
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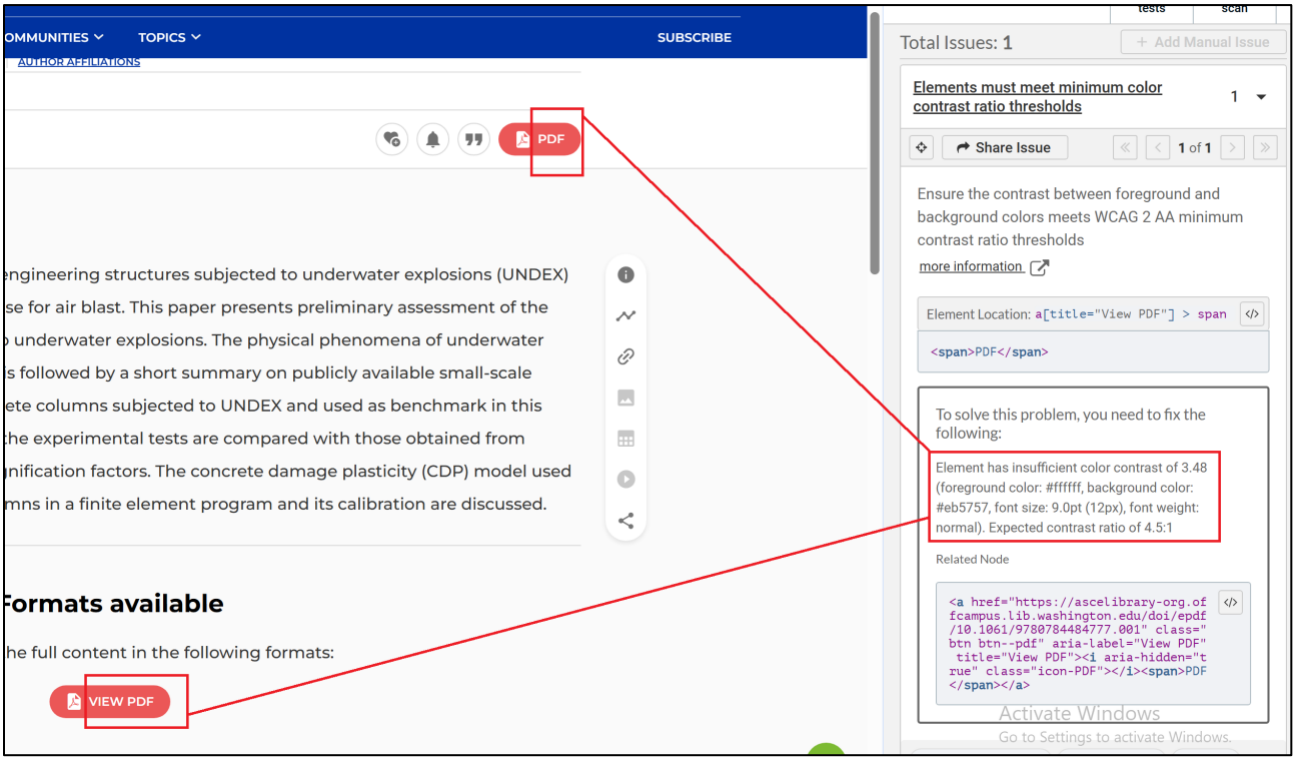
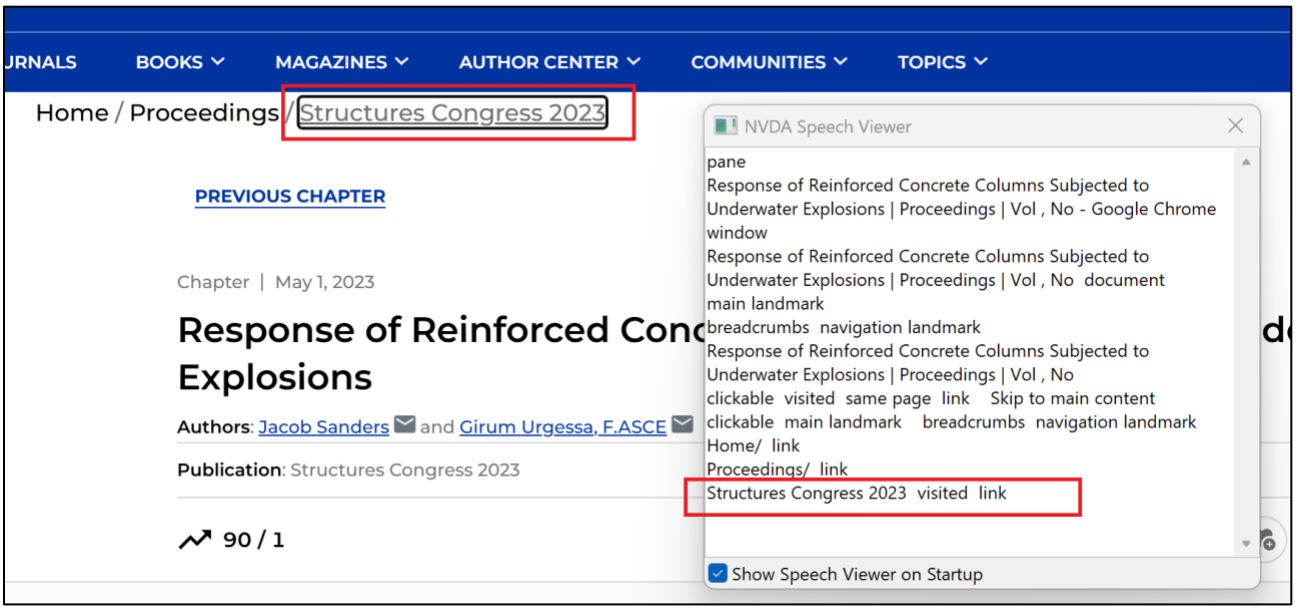
Automated findings using Axe

- **SC 1.4.3 – Color Contrast (Regular Text)**
  "PDF" and "VIEW PDF" links text do not have a minimum color contrast ratio of 4.5:1 against the button inner background.



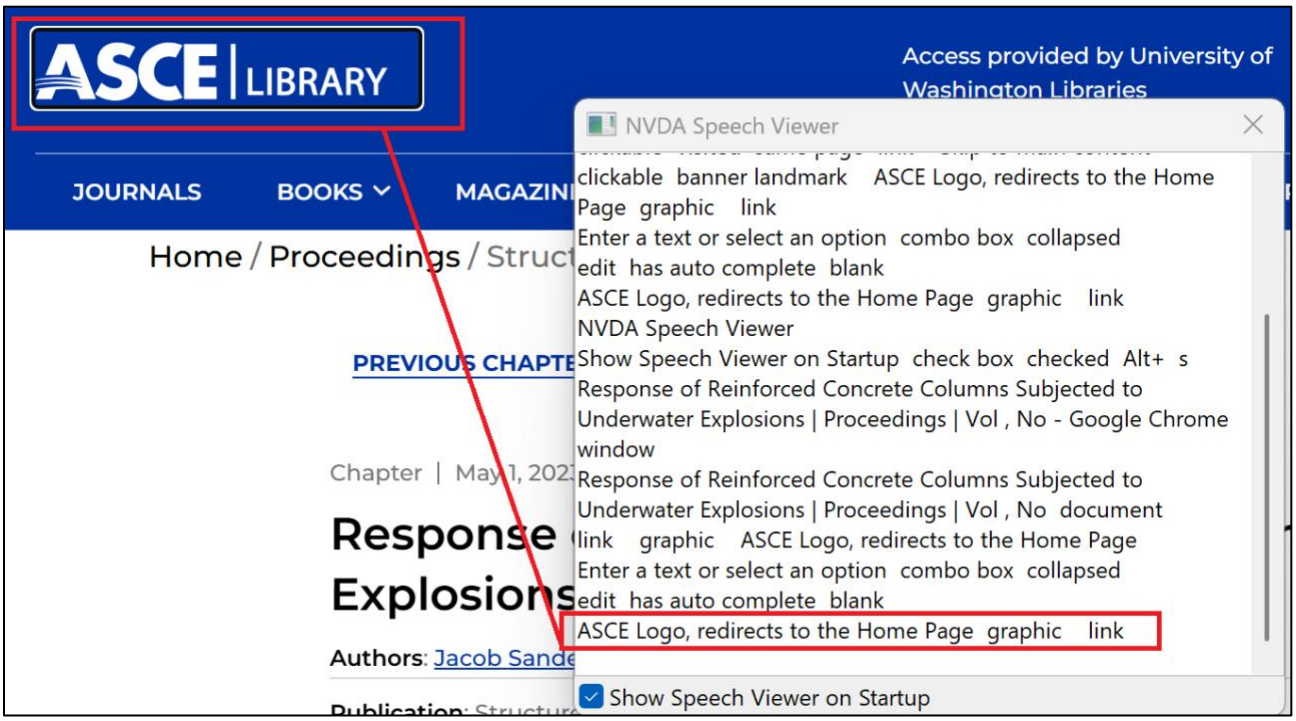
Additional manual findings

- **SC 4.1.2.b Custom Controls:**
  NVDA does not announce the "current page" for the current page link on the breadcrumb.

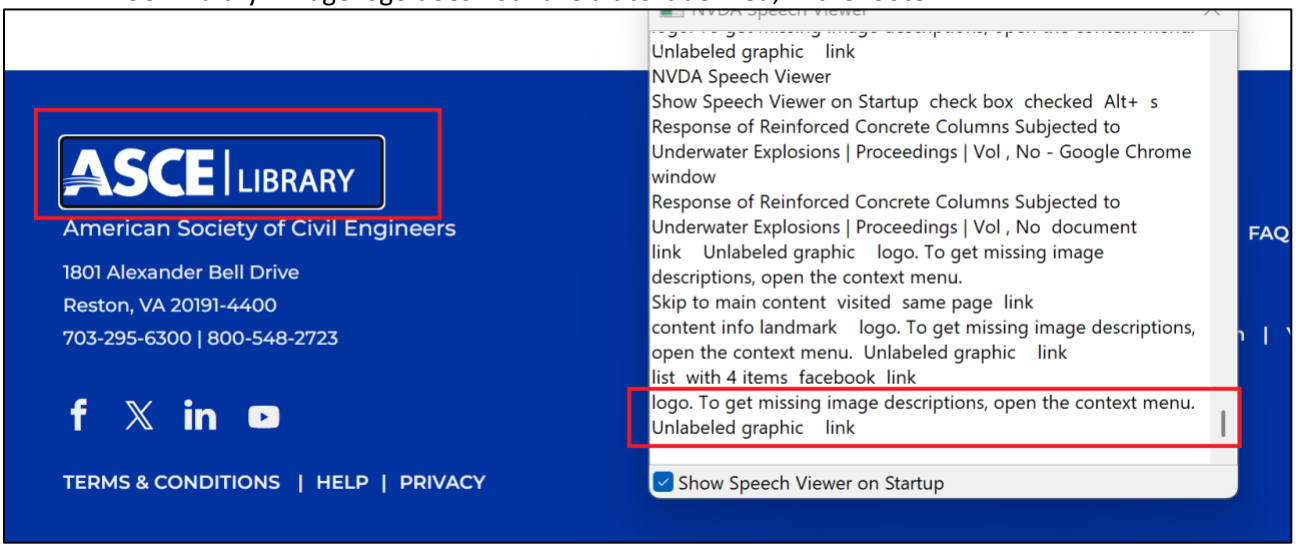


- **SC 2.4.7.a Focus Visible:**
  Keyboard focus is not visible on the “search” button in the search box on the header

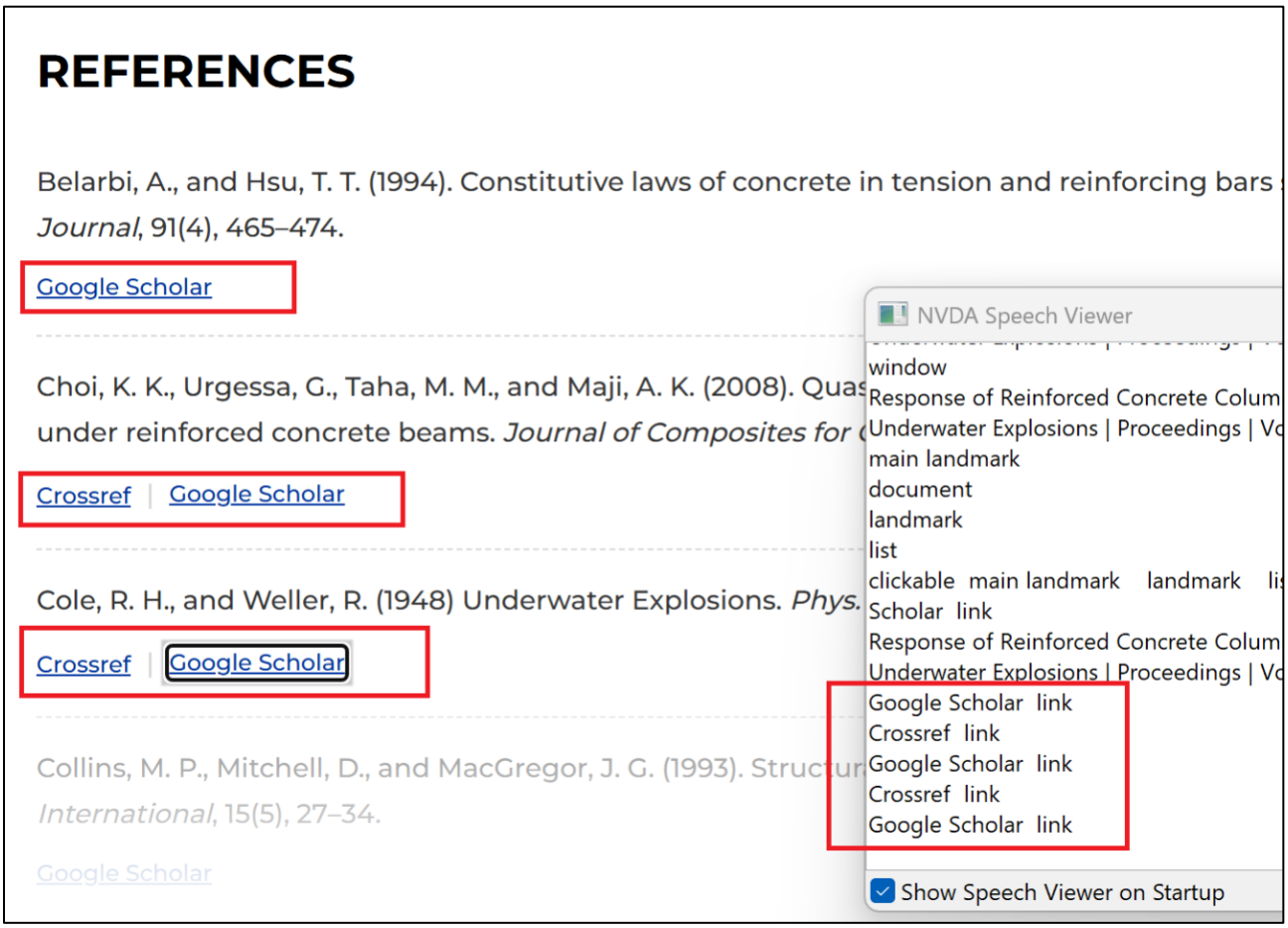
- **SC 1.1.1.a Alternative Text (Active images):**
  ALT text for logo does not contain “Library” text in the logo. NVDA announces as “ASCE logo, redirects to the home page”.



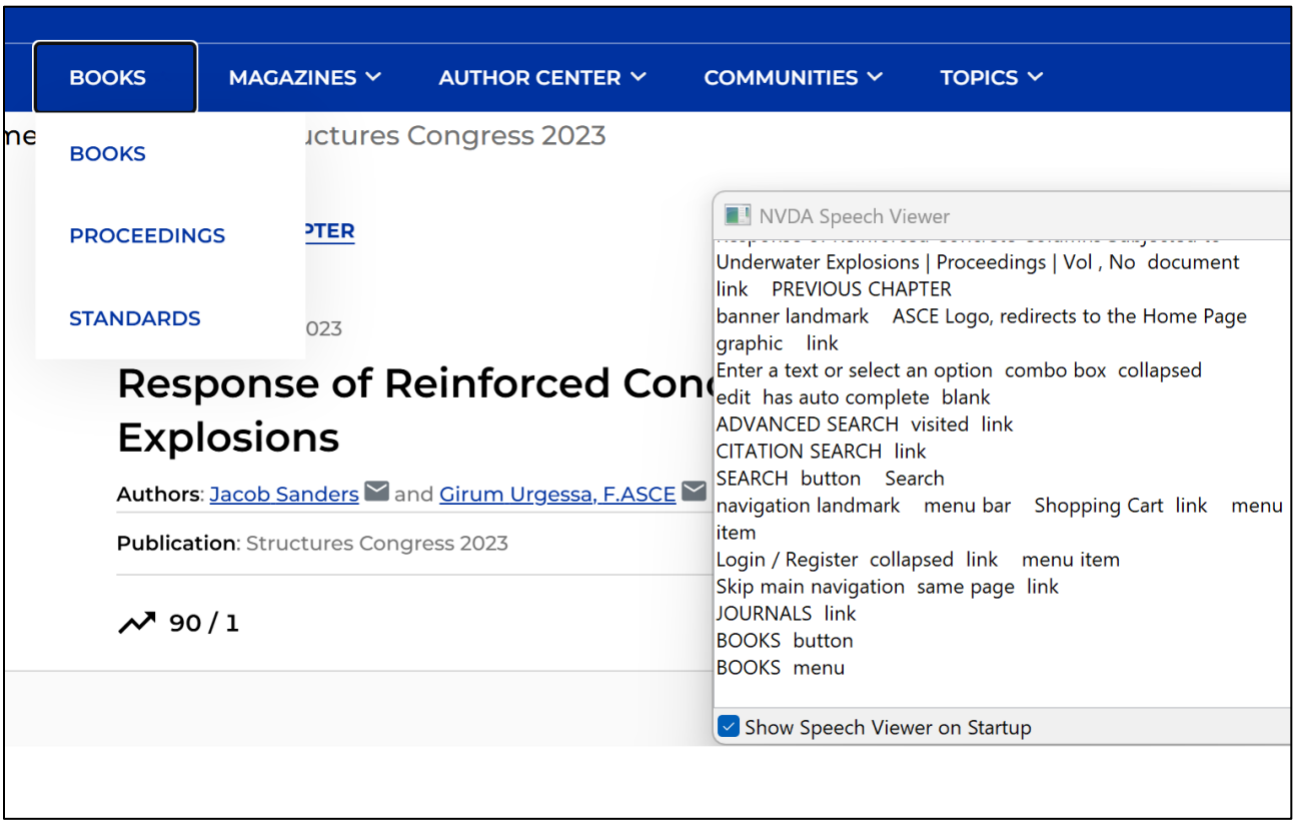
- **SC 1.1.1.a Alternative Text (Active Images):**
  "ASCE Library" image logo does not have alt text defined, in the footer.



- **SC 2.4.4.a Link Purpose (In Context):**
  Multiple links under "References", such as "Crossref" and "Google Scholar," have same programmatic labels.



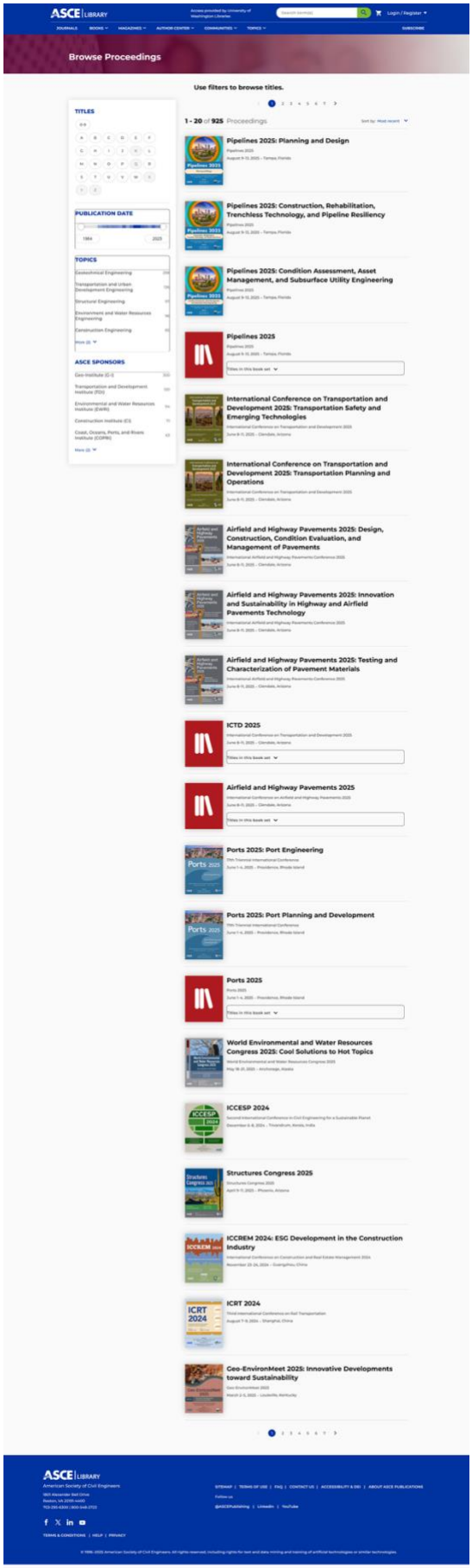
- **SC 4.1.2.a Name, Role, Value:**
  Expand/Collapse state not announced for “Books”, “Magazines”, “Author Center”, “Communities”, and “Topics” buttons



- **SC 2.1.1.a Keyboard Navigation:**
  "Communities" button does not expand using keyboard.

2. Browse Proceedings Page

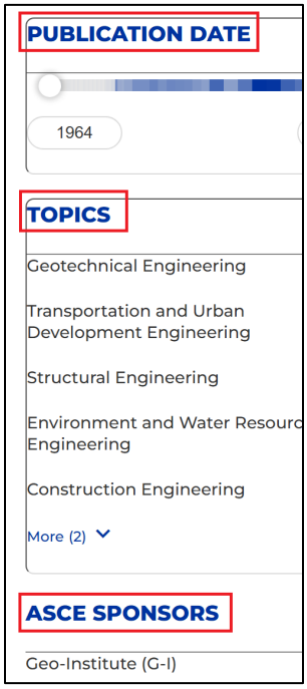
Source: https://ascelibrary-org.offcampus.lib.washington.edu/proceedings
Test case: Test initial interface/landing page to ensure menus, sub-menus, search box, images, icons, etc. are accessible. Please test a browse screen too, such as Browse Proceedings.


ASCE LIBRARY
Browse Proceedings
Use filters to browse titles.
TITLES
PUBLICATION DATE
TOPICS
ASCE SPONSORS
1 - 20 of 925 Proceedings
Pipelines 2025: Planning and Design
Pipelines 2025: Construction, Rehabilitation, Trenchless Technology, and Pipeline Resiliency
Pipelines 2025: Condition Assessment, Asset Management, and Subsurface Utility Engineering
Pipelines 2025
International Conference on Transportation and Development 2025: Transportation Safety and Emerging Technologies
International Conference on Transportation and Development 2025: Transportation Planning and Operations
Airfield and Highway Pavements 2025: Design, Construction, Condition Evaluation, and Management of Pavements
Airfield and Highway Pavements 2025: Innovation and Sustainability in Highway and Airfield Pavements Technology
Airfield and Highway Pavements 2025: Testing and Characterization of Pavement Materials
ICTD 2025
Airfield and Highway Pavements 2025
Ports 2025: Port Engineering
Ports 2025: Port Planning and Development
Ports 2025
World Environmental and Water Resources Congress 2025: Cool Solutions to Hot Topics
ICCESP 2024
Structures Congress 2025
ICCREM 2024: ESG Development in the Construction Industry
ICRT 2024
Geo-EnvironMeet 2025: Innovative Developments toward Sustainability

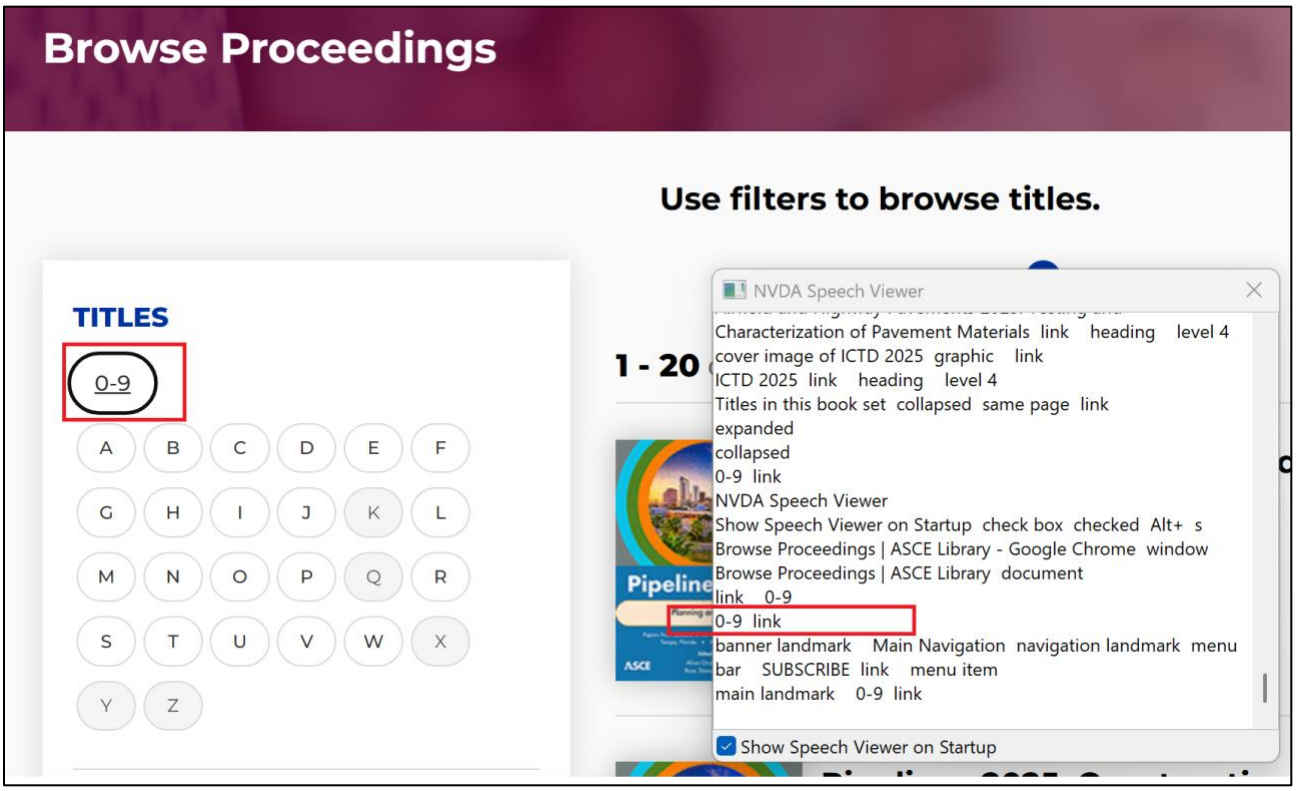
Automated findings using Axe: None

Additional manual findings

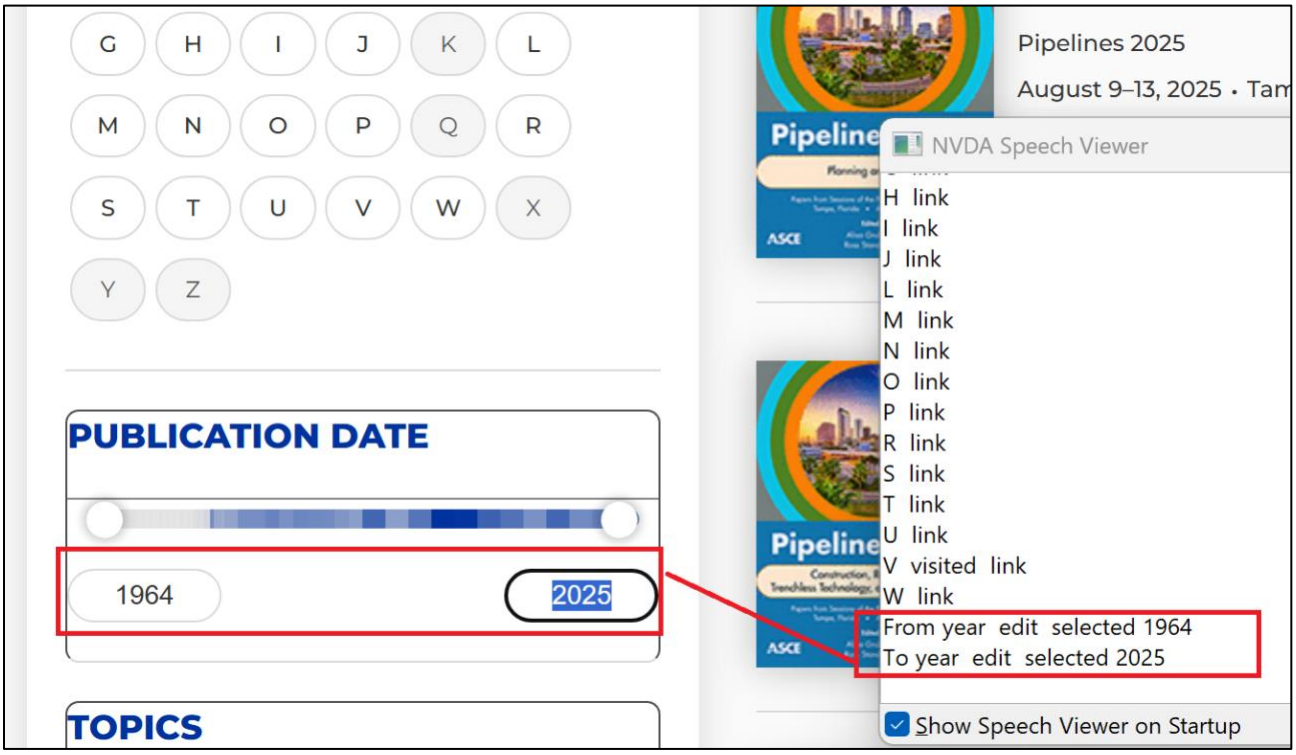
- **SC 1.3.1.e Headings:**
  "Publication Date", "Topics", and "ASCE Sponsors" are not marked as headings.



- **SC 1.3.1.d Group Related Form Elements:**
  Links under "Titles" not associated with the group label.

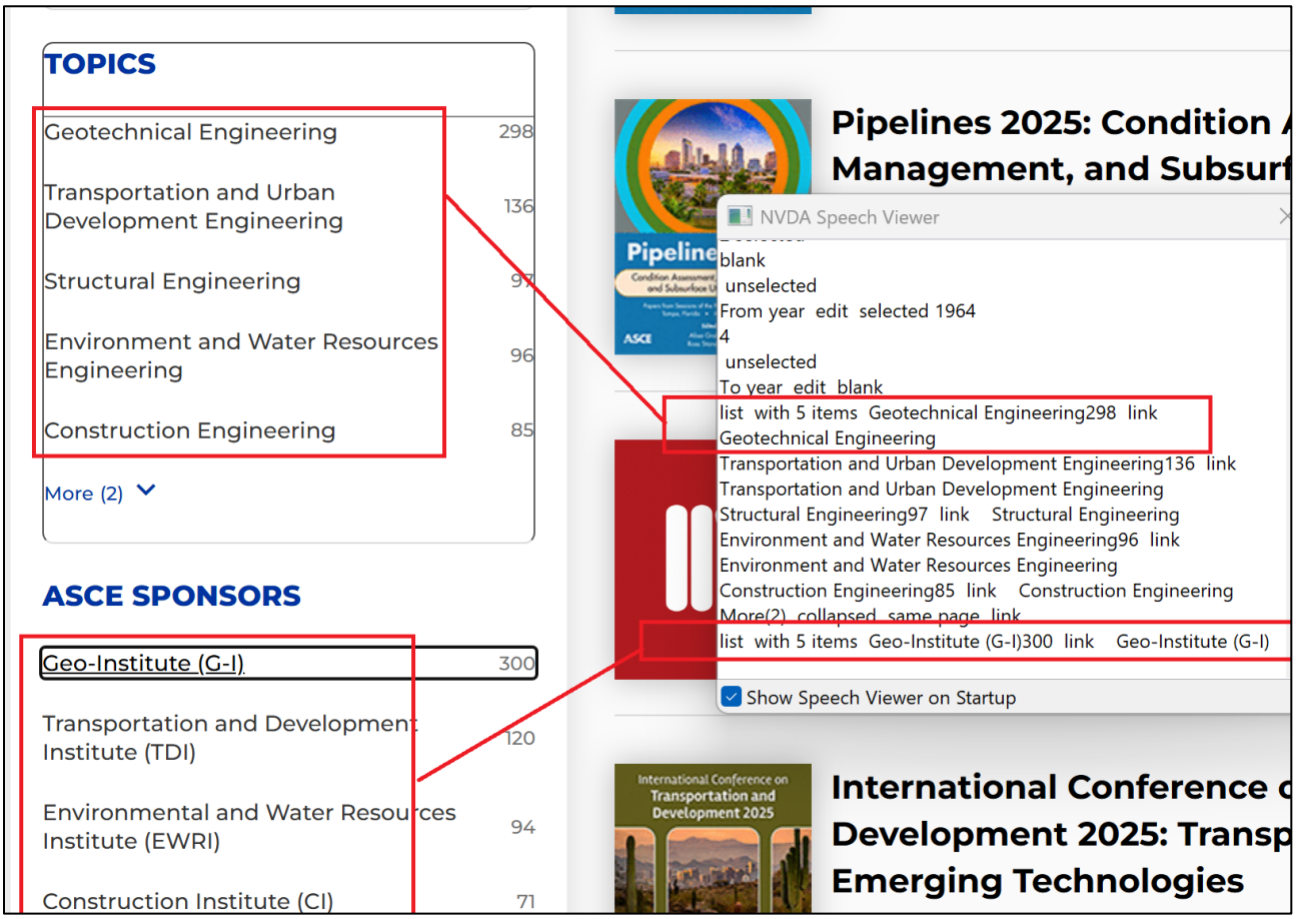


- **SC 1.3.1.d Group Related Form Elements:**
  Edit fields under “Publication Date” are not associated with the group label.

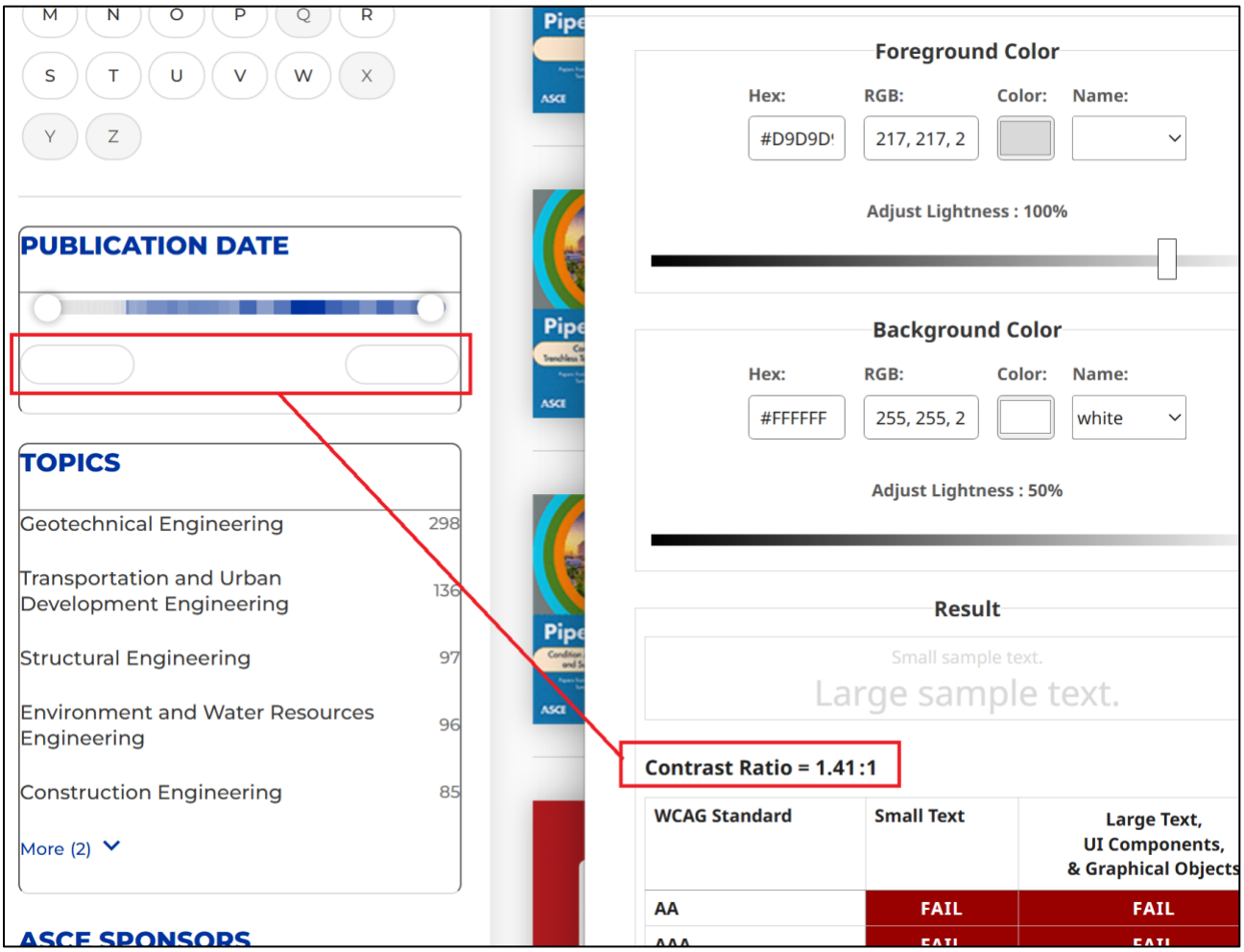


- **SC 1.3.1.d Group Related Form Elements:**

Links under “Topics” and “ASCE Sponsors” are not associated with the group label.



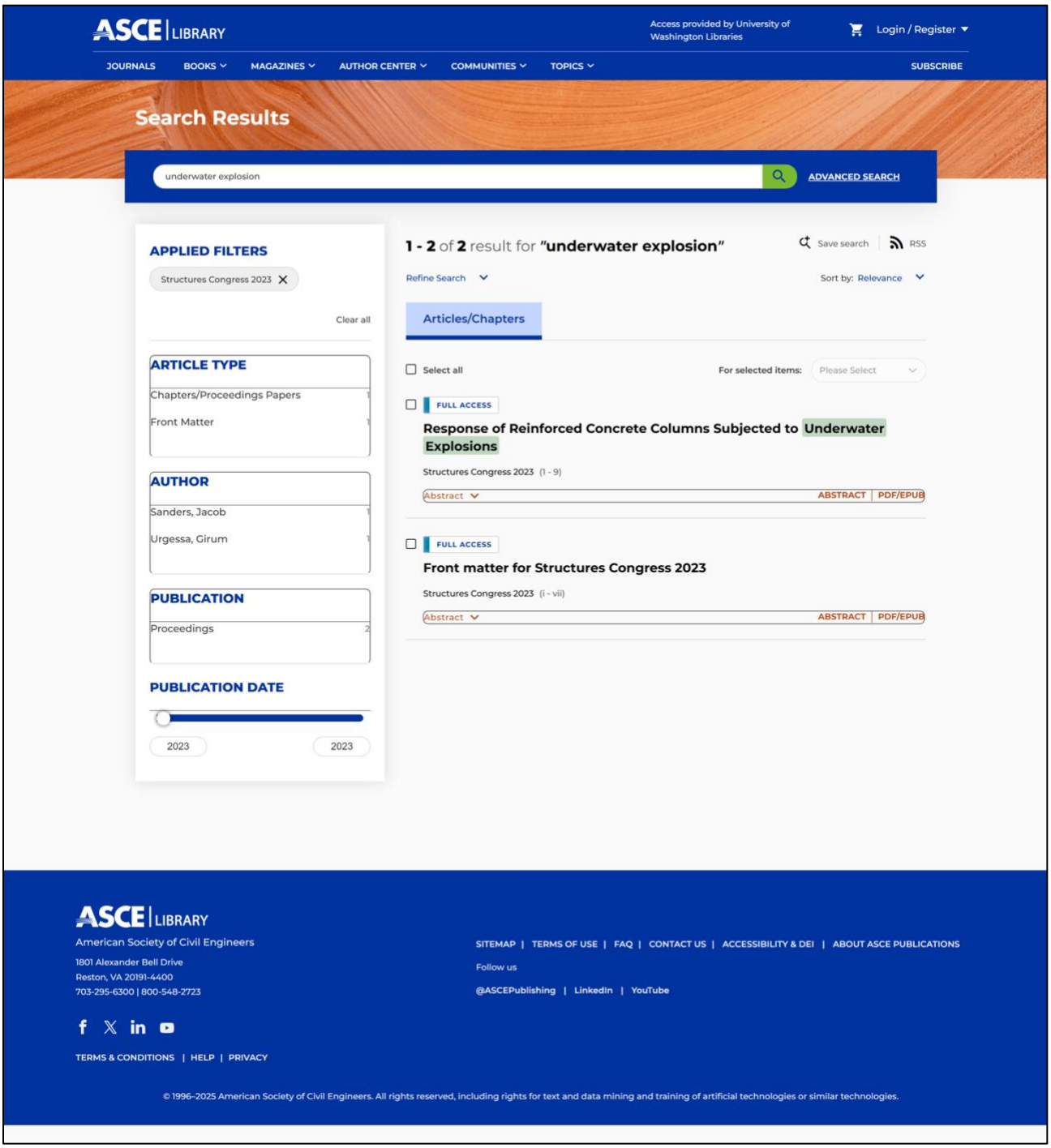
- **SC 1.4.11.a Non-Text Contrast – Active User Interface Components:**
  “Publication” Edit boxes boundary does not have a minimum contrast of 3:1 with the adjacent background.



3. Search Results Page

Source: https://ascelibrary-org.offcampus.lib.washington.edu/action/doSearch?AllField=underwater+explosion&ContentGroupKey=10.1061%2F9780784484777

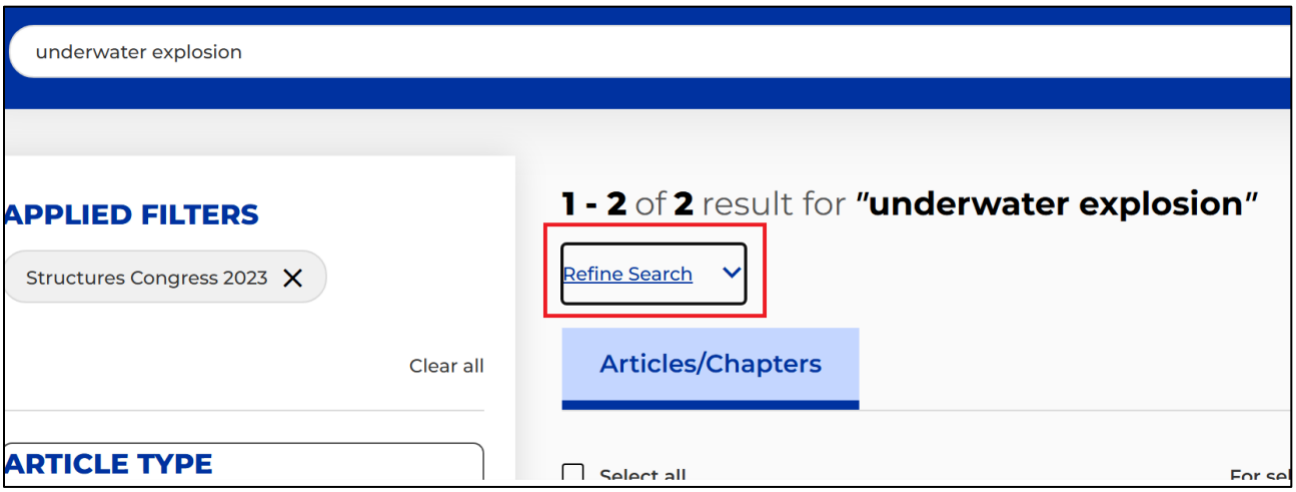
Test case: From the initial landing page, conduct a search for: **underwater explosion.** Test Search results page, including filters/refine search.



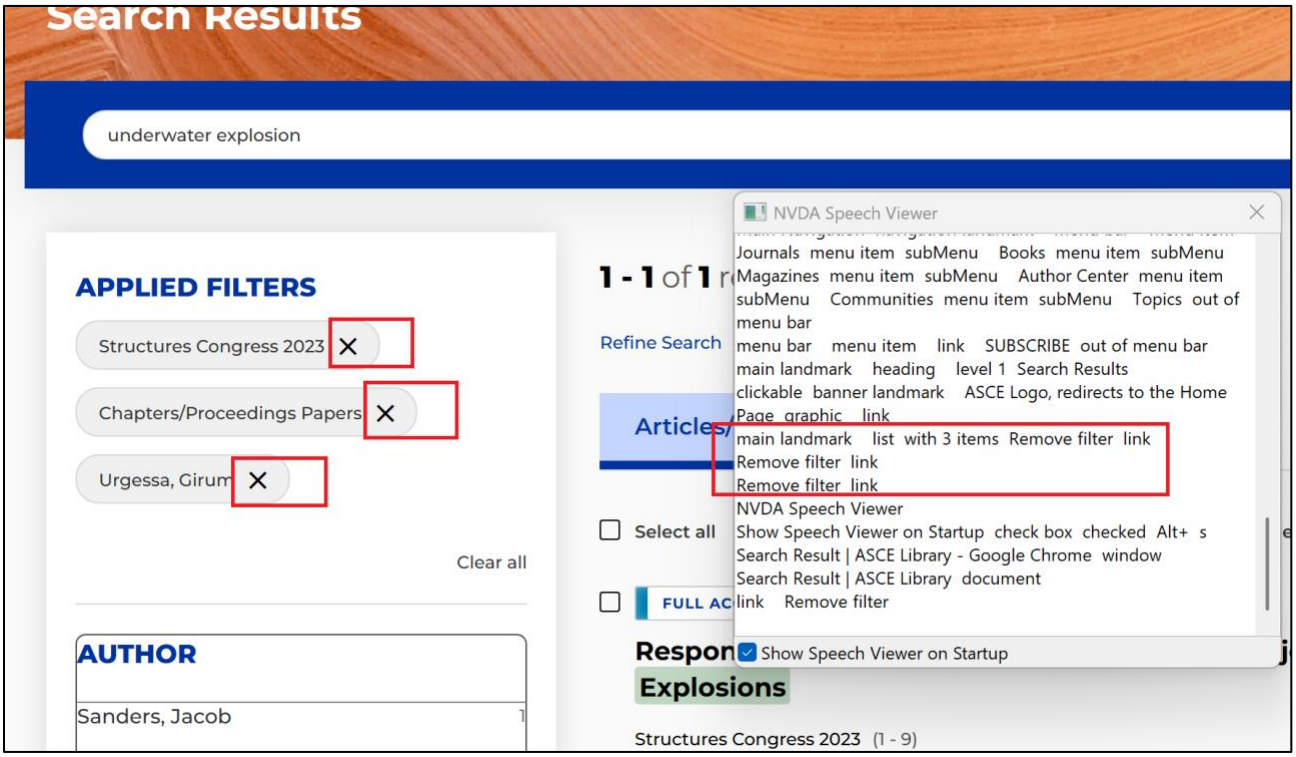
Automated findings using Axe: None

Additional manual findings

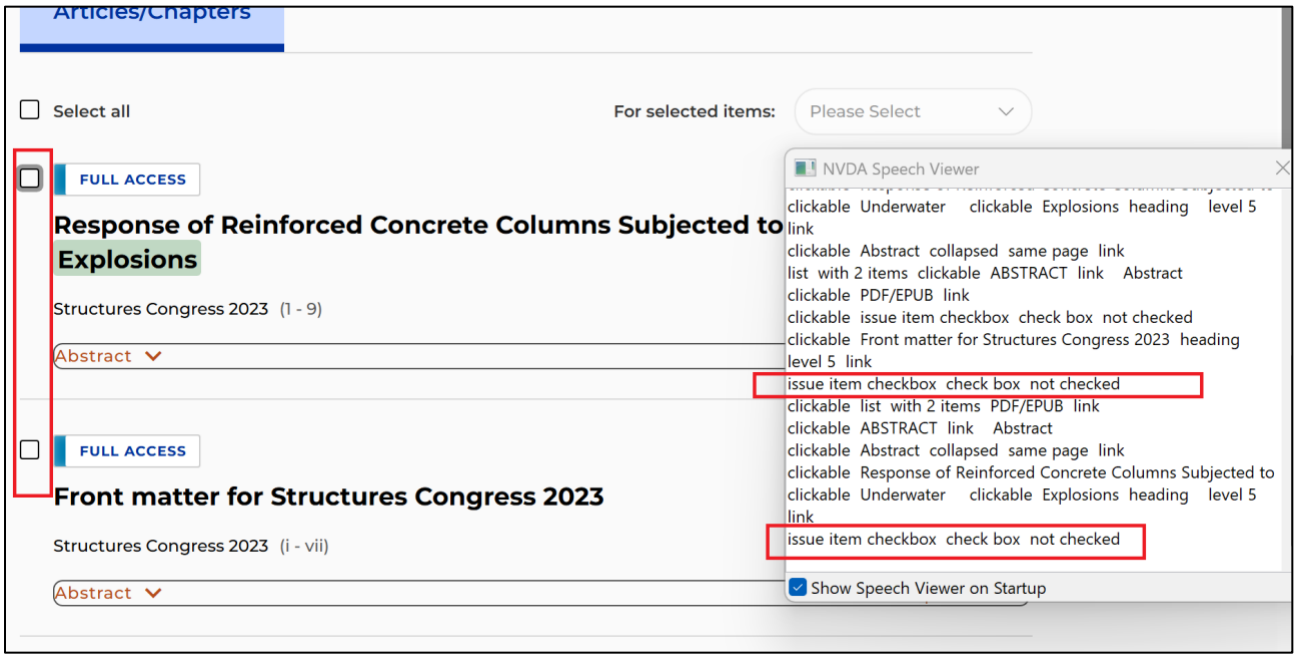
- **SC 2.1.1.a Keyboard Navigation:**
  "Refine Search" button does not expand/collapse using keyboard only.



- **2.4.4.a Link Purpose (In Context):**
  Under “Applied Filters,” multiple “X” links have the same programmatic label as “Remove filter.”



- **2.4.6.b Descriptive Labels:**
  Checkbox programmatic labels do not describe the purpose. NVDA announces each checkbox as “issue item check box”.
  <input name="doi" value="10.1061/9780784484777" type="checkbox" class="issue-Item__checkbox" aria-label="issue item checkbox">



4. Conference Landing Page

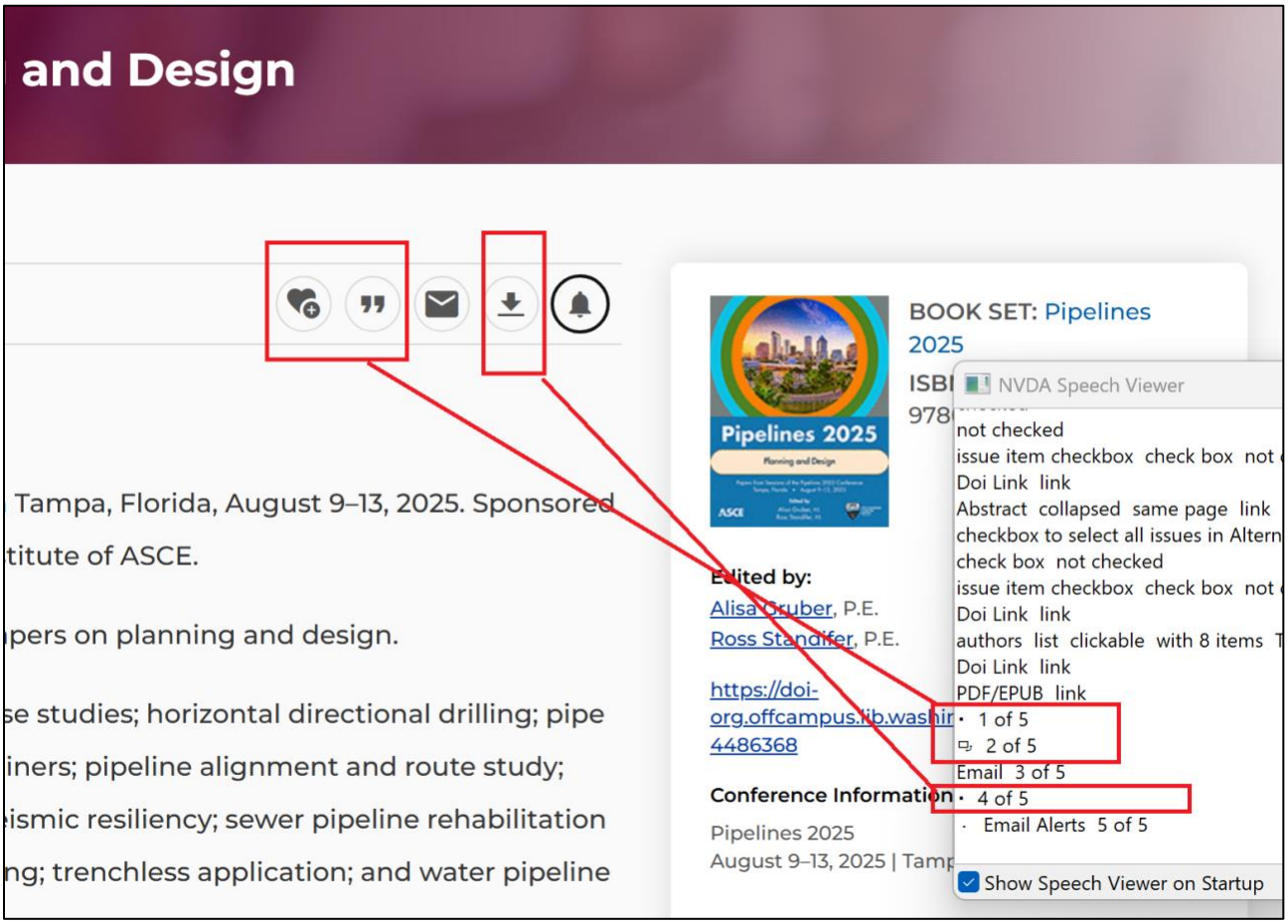
Source: https://ascelibrary-org.offcampus.lib.washington.edu/doi/book/10.1061/9780784486368
Test case: If there is time, please test the Conference Landing Page.

Pipelines 2025: Planning and Design
Abstract
Front Matter for Pipelines 2025: Planning and Design
Alternate Project Delivery
Case Studies
Horizontal Directional Drilling
Pipe and Appurtenance Design
Pipe Linings and Liners

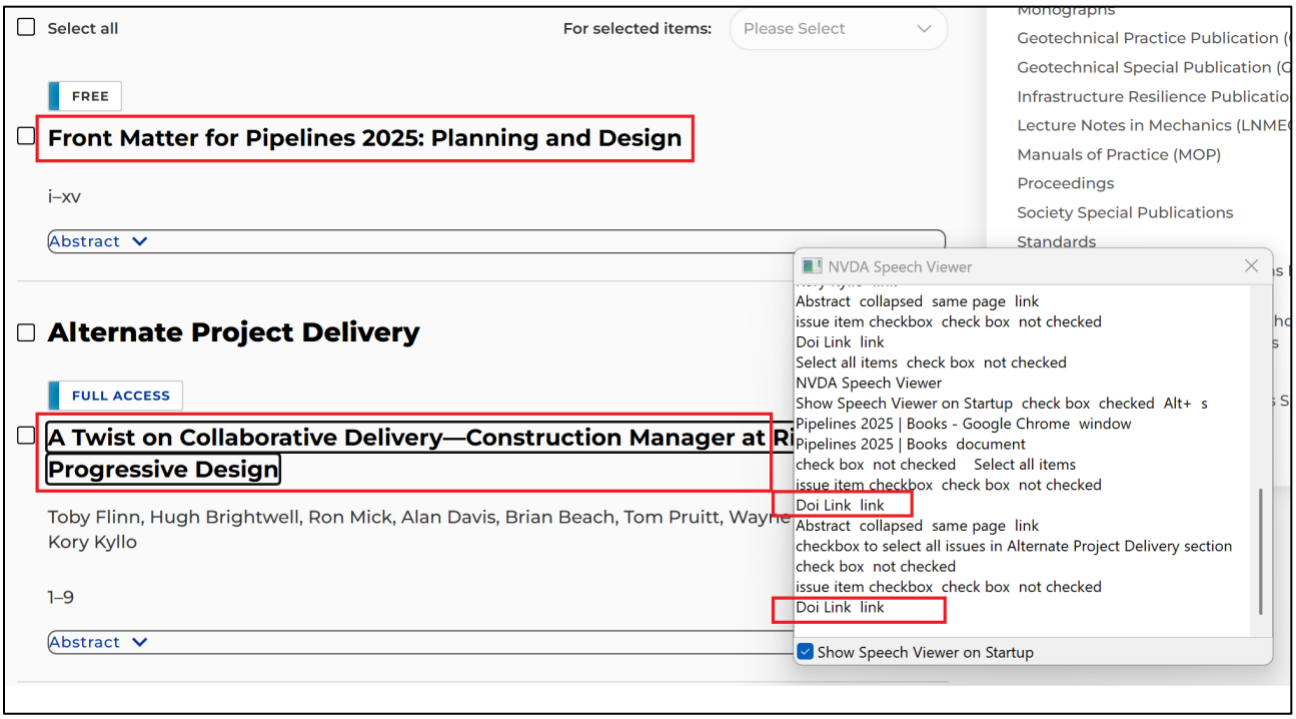
Automated findings using Axe: None

Additional manual findings

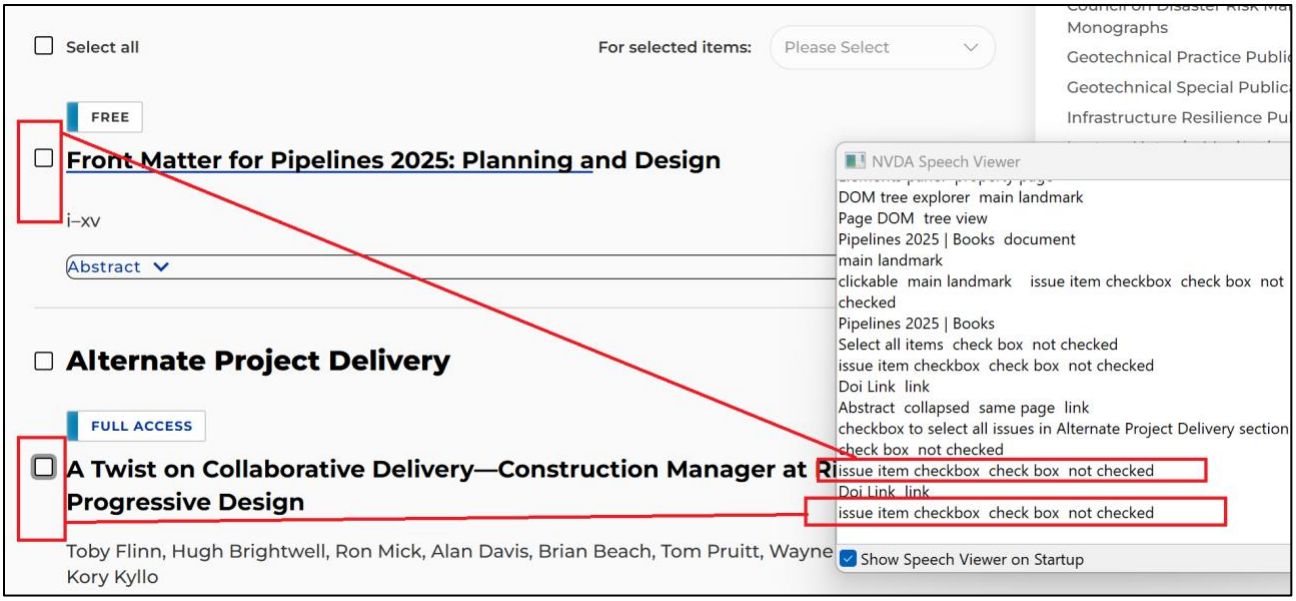
- **4.1.2.a Name, Role, Value:**
  Links are missing a programmatic label and role. NVDA announces as “1 of 5, “2 of 5”, and “4 of 5”



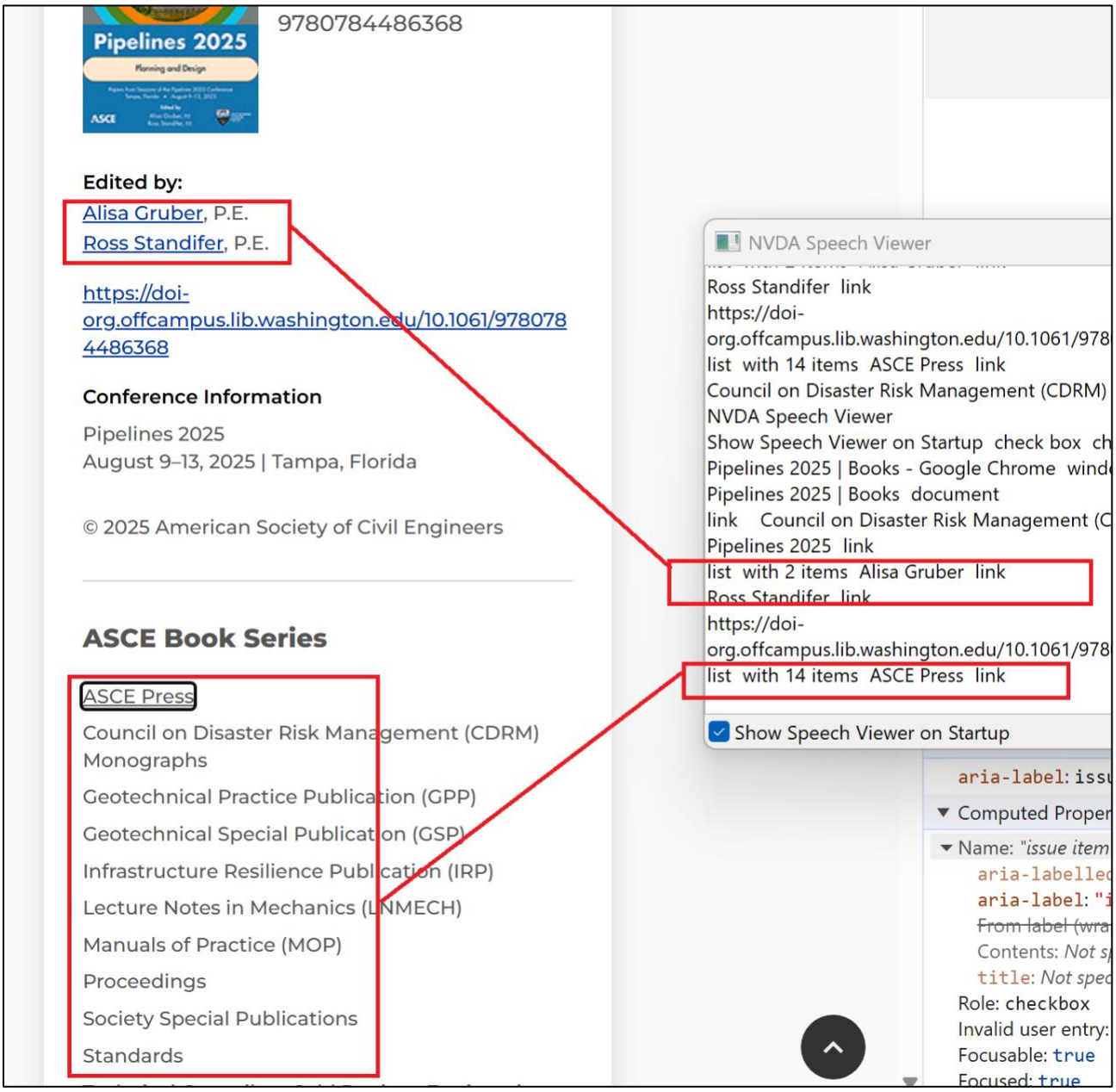
- **2.5.3.a Label in Name:**
  The Links programmatic label does not include visible link text. NVDA announces as “DOI Link”



- **2.4.6.b Descriptive Labels:**
  Checkbox programmatic labels do not describe the purpose. NVDA announces each checkbox as "issue item check box".
  <input name="doi" value="10.1061/9780784486368.fm" type="checkbox" class="issue-Item__checkbox" aria-label="issue item checkbox">

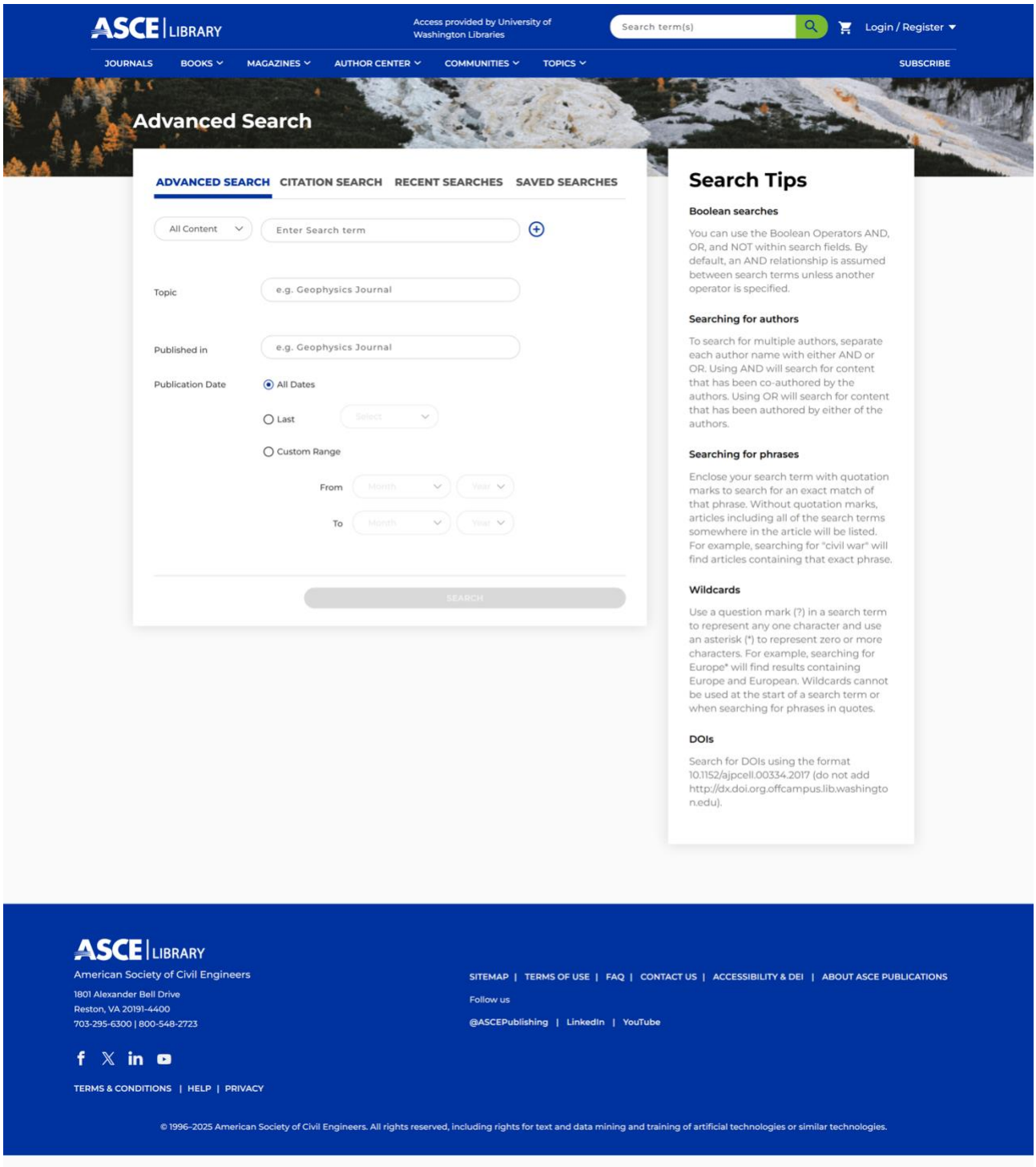


- **1.3.1.d Group Related Form Elements:**
  Links under "Edited by:" and "ASCE Book series" are not programmatically associated with their respective group labels.



5. **Advanced Search Page**

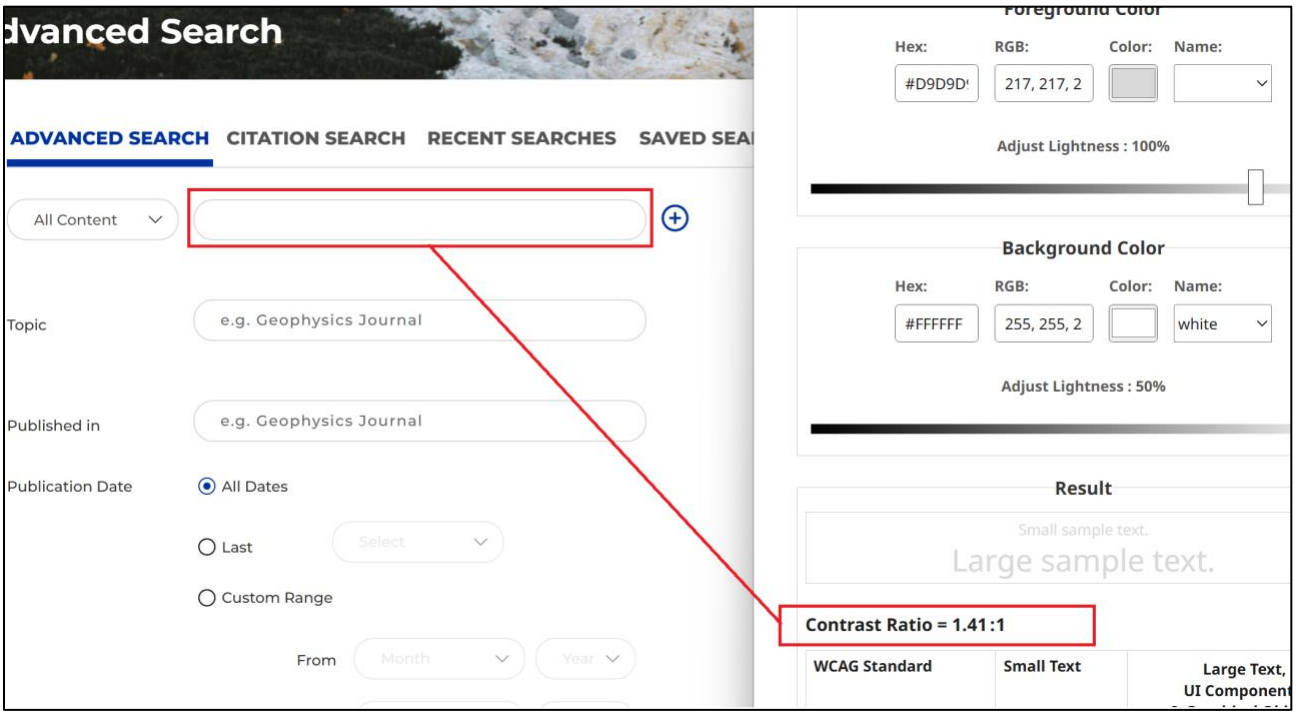
Source: https://ascelibrary-org.offcampus.lib.washington.edu/search/advanced
Test case: Test “Advanced search” page



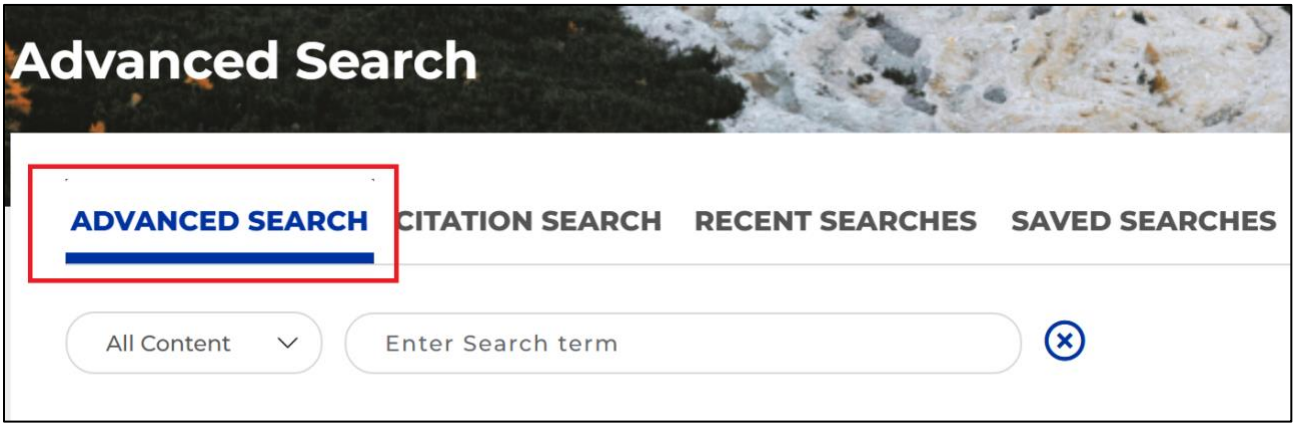
Automated findings using Axe: None

Additional manual findings

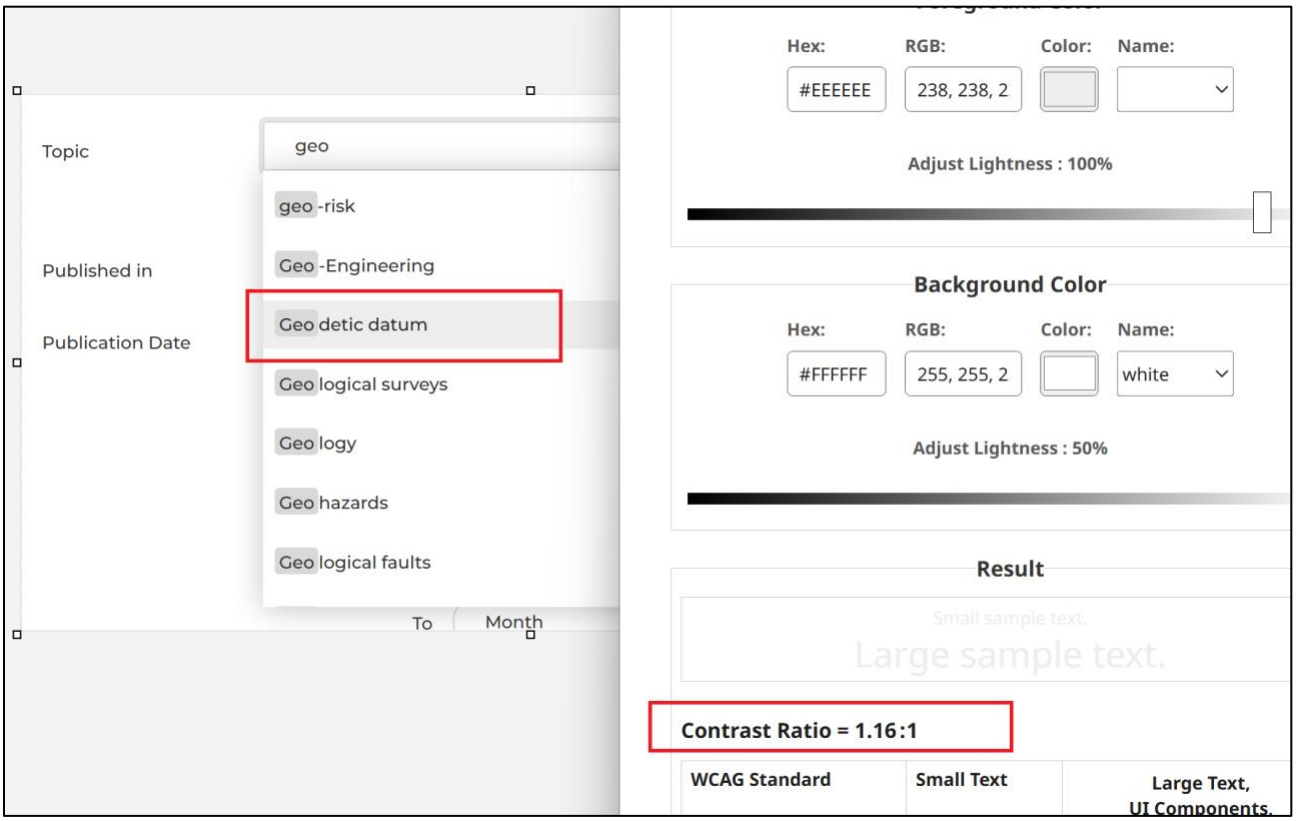
- **SC 1.4.11.a Non-Text Contrast – Active User Components**
  The edit box next to the “All content” button does not have a minimum contrast of 3:1.



- **SC 2.4.7.a Focus Visible:**
  Keyboard focus is not visible on the tabs. “Advanced Search” and others.



- **SC 1.4.1.a Color as Information:**
  Only color is used to convey the selected state for drop-down items under “Topic” and “Published in” combo boxes. Color contrast ratio between selected and non-selected state is less than 3:1


Topic
geo
geo-risk
Geo-Engineering
Geo detic datum
Geo logical surveys
Geo logy
Geo hazards
Geo logical faults
Published in
Publication Date
To
Month
Hex:
RGB:
Color:
Name:
#EEEEEE
238, 238, 2
Adjust Lightness : 100%
Background Color
Hex:
RGB:
Color:
Name:
#FFFFFF
255, 255, 2
white
Adjust Lightness : 50%
Result
Small sample text.
Large sample text.
Contrast Ratio = 1.16:1
WCAG Standard
Small Text
Large Text,
UI Components.