

GitHub Repository Links

Our Alpha for VA Form 24-SPRUCE and related documentation links:

RFP #36C10B24R0005 | VA-23-00053369 | Volume III
TF3SF1 | SPRUCE IDIQ | Agile Six Applications, Inc.

Vets-website repository with Alpha app	<u>GitHub Repository</u>
Root README replacing README in supplied repository. Contains instructions to download, install, run, and test the application	<u>README.md</u>
SPRUCE-24 Alpha app within vets-website/src/applications/	<u>spruce-challenge-app folder</u>
Design artifacts within GitHub repo	<u>Design artifacts</u>
Research artifacts within GitHub repo	<u>Research artifacts</u>
Original vets-website README, renamed to VA.GOV-README.md	<u>VA.GOV-README.md</u>

Core principles

Agile Six's ways of working

1

Quickly deliver value to end users

Design, build, and release stable sets of functionality that help users accomplish meaningful tasks

2

Lead with user research

Use foundational user research and usability tests to refine requirements and build the product roadmap

3

Balance velocity with quality

Prioritize small, valuable increments to deliver features quickly and compromise scope, not accessibility or code quality

Principles in action

How we applied them in the sprint

Steel threads and vertical slices

Implemented end-to-end scenarios that cut through all system layers in order to test the complete form flow before adding features

Tight iteration and feedback loops

Hosted daily scrum, planning, and demos to align the whole team. Used GitHub and Slack to communicate priorities and progress

Usability tests and automated checks

Conducted usability tests to inform and validate iterative releases

Sprint timeline

How we approached the challenge

Day 1-2: Product discovery, and setup

Identifying assumptions, planning our sprint, setting up our research plan and codebase

Day 3-4: First iteration

Implementing the basic form flow and validation, and testing solution with users

Day 5: Second iteration

Pre-filling user data, adding address verification, and testing the full form flow with users

Day 6-7: Third iteration

Improving form flow and expanding automated test coverage

Day 8-9: Final Iteration, Closeout, and submission

Finalizing our documentation and submitting our deliverables for review

Product Discovery and Research

Identifying assumptions about user needs

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Activities

- Developed [user personas](#)
- Mapped [user workflows](#)
- Created [wireframes](#)
- Developed [research plan](#) for first round of user research
- Recruited research participants
- Created [conversation guide](#)

Outcome

- Identified riskiest assumptions to test in user research
- Aligned as a team on the high level solution and workflow

First-round feedback

Veteran usability testing with wireframes

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Goal

Gather feedback on a targeted set of wireframes to inform design choices around complex steps in the form flow.

Key questions

- How should we group and order the questions into chapters and pages?
- How do we successfully guide users through the complex workflow of “pre-fill, modify, and validate with optional profile update” for address?

Findings

- It would help to group similar questions into fewer chapters
- The option to “Save this to VA profile” for mailing address wasn’t clear
- Providing a shipping option to Veterans without a permanent address requires more research
- The form name could be more descriptive and include DD-217

Want to learn more?

Read the [summary](#) in GitHub

First iteration

Basic form flow and validation

What

Users can navigate a form flow that:

- Guides them to fill out the required questions for VA Form 24-SPRUCE
- Applies basic validation to personal information fields

Why

- Supports the simplest happy path that enables Veterans to request a frame
- Proves our ability to integrate with the existing VA infrastructure

Want to learn more?

View [the release](#) in GitHub

How

- Implemented a new form flow within the existing vets website codebase
- Adopted VA guidelines for design, engineering, and accessibility
- Designed and built a form flow that:
 - Collects the required data
 - Handles the validation test cases provided
- Incorporated insights from first round of wireframe-based usability testing

Second-round feedback

Veteran usability testing with live form flow

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Goal

Observe how users interact with a live version of the form flow and surface pain points to address in future iterations

Key questions

- Are there any sections of the form flow that users struggle to complete or have questions about?
- Do we need to clarify or update content or validations to make the form flow easier to understand?

Findings

- “Date of Death” seemed out of context and grim if a Veteran is filling out the form
- The meaning of “Verified” wasn’t clear regarding the shipping address
- More context was needed for the duty assignment and major command fields
- DD-214 was offered as the place the Veteran would find service history information

Want to learn more?

Read the [summary](#) in GitHub

Second iteration

Pre-fill and update workflow

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What

Users can navigate a form flow that:

- Prefills key sections with existing information from their user profile
- Adds additional field level validations

Why

- Reduces user burden and improves customer satisfaction with the form
- Ensures that the information in the user's profile remains up-to-date

How

- Mocked integration with the Address Verification API and user profile
- Updated the form flow to:
 - Pre-populate profile data for the current user
 - Allow users to review and optionally update prefilled data
 - Extends the set of supported validations for both pre-filled and manually entered data

Want to learn more?

View the [release](#) in GitHub

Third iteration

Incorporating user feedback

What

Users can navigate a form flow that:

- Includes more helpful content and context-specific validations
- Addresses specific UX pain points surfaced in usability testing

Why

- Build trust with Veterans by quickly incorporating their feedback
- Make it easier to fill out the form

Want to learn more?

Read the [release](#) in GitHub

How

- Changed content to include guidance to use DD-214 to help complete form
- Expanded automated unit testing to prevent form changes from breaking existing functionality
- Updated the form flow to:
 - Improve content and design
 - Update contextual validation
- Continued to build out the backlog for future sprints and iterations

Final product

Accessibility, test coverage, usability

What

Users can navigate a form flow that:

- Allows the user to save a corrected address back to their profile
- Is accessible by screen readers
- Adds additional pre-fill capabilities including name and DOB

Why

- Continue to improve the user experience

How

- Updated the form flow after a content review to:
 - Ensure field labels and error messaging use consistent language
 - Provides instructions to users to alleviate confusion on optional fields
- Implemented 3 additional end-to-end Cypress tests with accessibility tests built in

Want to learn more?

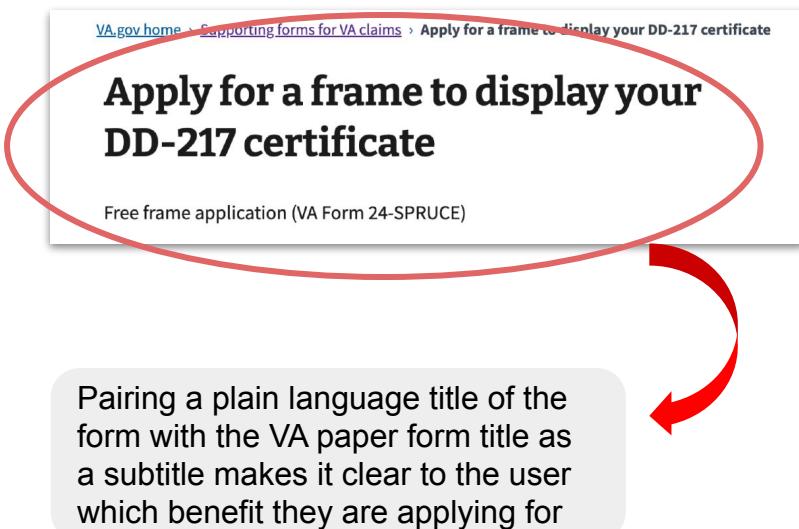
Read the [release](#) in GitHub

Form flow

Introduction page

The Introduction form page for authenticated users provides context about:

- What this form is used for
- The information needed to complete the form, and where the user can obtain this information if they don't have it readily available
- The approximate length of time to complete the application
- Other standard information included in the VA website header and footer

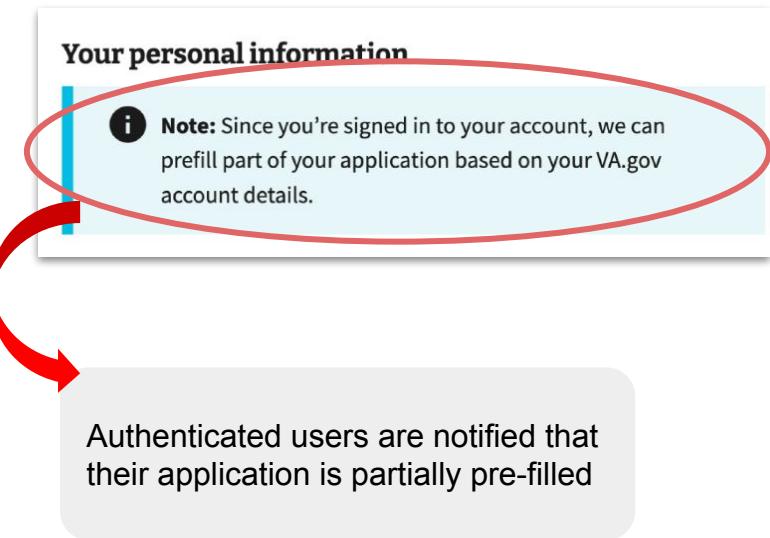


Form flow

Personal information page

The personal information page asks the user for their personal information, including:

- First name (required)
- Middle name
- Last name (required)
- Date of birth (required)



Form flow

Identity information page

On the Identity information page, a second page asking for the user's personal information, the user is asked to provide:

- One of the following (required):
 - Social security number
 - Department of defense ID number

and

- Date of discharge (required)

Apply for a frame to display your
DD-217 certificate

Free frame application (VA Form 24-SPRUCE)

1 of 5 Personal Information

The progress bar indicator
informs the user of how far
along in the process they are.

Form flow

Service history page

The user is prompted to add their service period information, including:

- Branch of service (required)
- Service start date (required)
- Service end date (required)
- Grade, rank or rating
- Duty assignment and major command (required)

Service periods

Only one service period is required for eligibility for the frame. You may add information about multiple service periods if you choose.

[Add another service period](#)

Users are informed that they need only add one service period to their application, but can add more with the “Add another service period” button.

Form flow

Frame type page

Users must make a frame selection on this page, and inputs are required for:

- Type of wood (one selection required from Cedar, Cypress, Pine, and Walnut)
- Choice of mount (one selection required from Wall mount or Table top)

Choice of wood (*Required)

Cedar
 Cypress
 Pine
 Walnut

Choice of mount (*Required)

Wall mount
 Table top



The radio buttons ensure that the user chooses one and only one selection for each category.

Form flow

Mailing address page

The Mailing address page prompts the user to provide their mailing address for frame shipping with the following inputs:

- Country (required)
- Street address (required)
- Street address line 2
- City (required)
- State/Province/Region (required)
- 5-digit Postal code (required)

I want to save the selected address as my mailing address for VA letters, bills, and prescriptions

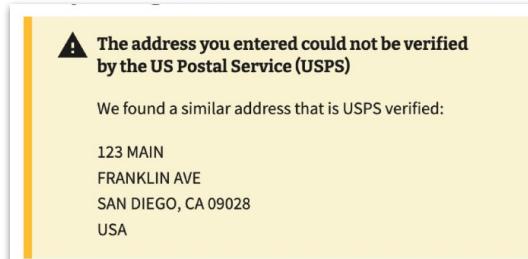
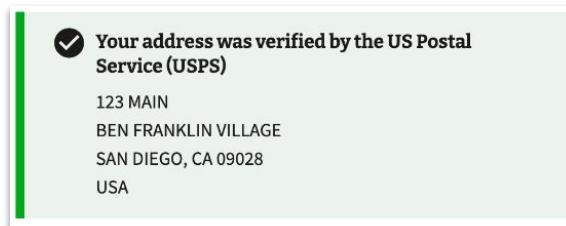
Users are also able to optionally update their address in their VA Profile at this point.

Form flow

Mailing address verification

The address input by the user is verified with the address verification api.

- If the address can be verified, the user is informed of this and can proceed in the form flow.
- If the address cannot be verified, the user is informed of a close match if available and asked to confirm which address they would like to use.



Select which address to use

USPS verified address
123 MAIN
FRANKLIN AVE
SAN DIEGO, CA 09028
USA

Mailing address as you entered it
123 main
Franklin ave
San Diego, CA 09028
USA

Form flow

Review application page

All of the inputs are displayed on the Review application page for the user to review and verify before the form is submitted.

At this point, the user can use the navigation buttons to go back and correct any information input incorrectly, or submit their form.

Mailing Address	
Mailing address	<button>Edit</button>
Country	United States
Street address	123 MAIN ST
Street address line 2	BEN FRANKLIN VILLAGE
City	SAN DIEGO
State/Province/Region	California
Postal Code (5-digit)	09028

Form flow

Submission confirmation page

When the user submits their completed form, they receive a confirmation page verifying that their form was submitted.

The user is provided with an option to print a confirmation page.

If the user chose to update their mailing address on their VA Profile, a confirmation message is displayed for this change as well.

What are my next steps?

Once you submit your form, it may take up to 5 days for us to review and process your information. Depending on your choice of frame and your mailing address, it could take up to 4 weeks to receive your frame.



[Go back to VA.gov](#)

Next steps are provided for the user at the bottom of the page so they know what to expect.

Usability tests

Does our form meet user needs?

1

With wireframes

During the initial design phase, we built a Figma wireframe of certain steps that we tested with Veterans for early feedback

2

With the live form flow

We also tested the first stable release of the full form flow with Veterans to identify content and UX improvements

3

With assistive technology

We also tested the pre-fill and validation form flow with a Veteran who uses assistive technology for compliance with accessibility standards

Software testing

Does our code work as expected?

With manual test cases

Pull requests included instructions and manual test cases to verify the accuracy of the proposed changes.

With unit and integration tests

Once we started implementing validation, we also expanded unit tests using the existing vets-website testing harness.

With end-to-end testing of the UI

In our final iteration we expanded end-to-end Cypress tests to validate UI behavior and build in automated accessibility testing

Accessibility

Adding focus targets

While following common form structures and designs used on VA.gov, like the review and confirmation pages, we also looked to adhere to accessibility standards wherever possible.

Setting the focus target to be contextually relevant to the page is one example of this.

The screenshot shows a user interface for submitting an application. At the top, there is a message: "Please read and accept the [privacy policy](#).
". Below this is a checkbox labeled "I have read and accept the privacy policy. (*Required)". Underneath the checkbox is a link "Finish this application later". At the bottom are two buttons: a blue "« Back" button and a blue "Submit application" button, which is highlighted with a yellow border.

Accessibility

Features and practices

Goal

Ensure accessibility standards are met and exceeded through a combination of manual testing and automated accessibility tests

Benefits

- **Manual Testing:** Validates ARIA labels and other accessibility features are working as intended
- **Automated Accessibility Tests:** Ensures WCAG compliance and prevents accessibility regressions with consistent coverage

Approach

- Leveraged end-to-end tests using Cypress with Axe for accessibility testing
 - Fixed accessibility issues as Cypress flagged them
- Verified accessibility features using VoiceOver in iOS

Cognitive Ease in Design

Fewer segments, low cognitive load

To keep cognitive load low for users, only 5 segments were used in the progress bar - segmented component.

Apply for a frame to display your DD-217 certificate

Free frame application (VA Form 24-SPRUCE)

1 of 5 Personal Information

Your identity information

Apply for a frame to display your DD-217 certificate

Free frame application (VA Form 24-SPRUCE)

2 of 5 Service History

Service periods

Apply for a frame to display your DD-217 certificate

Free frame application (VA Form 24-SPRUCE)

3 of 5 Frame Type

Choose your frame type

Apply for a frame to display your DD-217 certificate

Free frame application (VA Form 24-SPRUCE)

1 of 5 Personal Information

Your personal information

Responsive design

Built to work across breakpoints

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Design

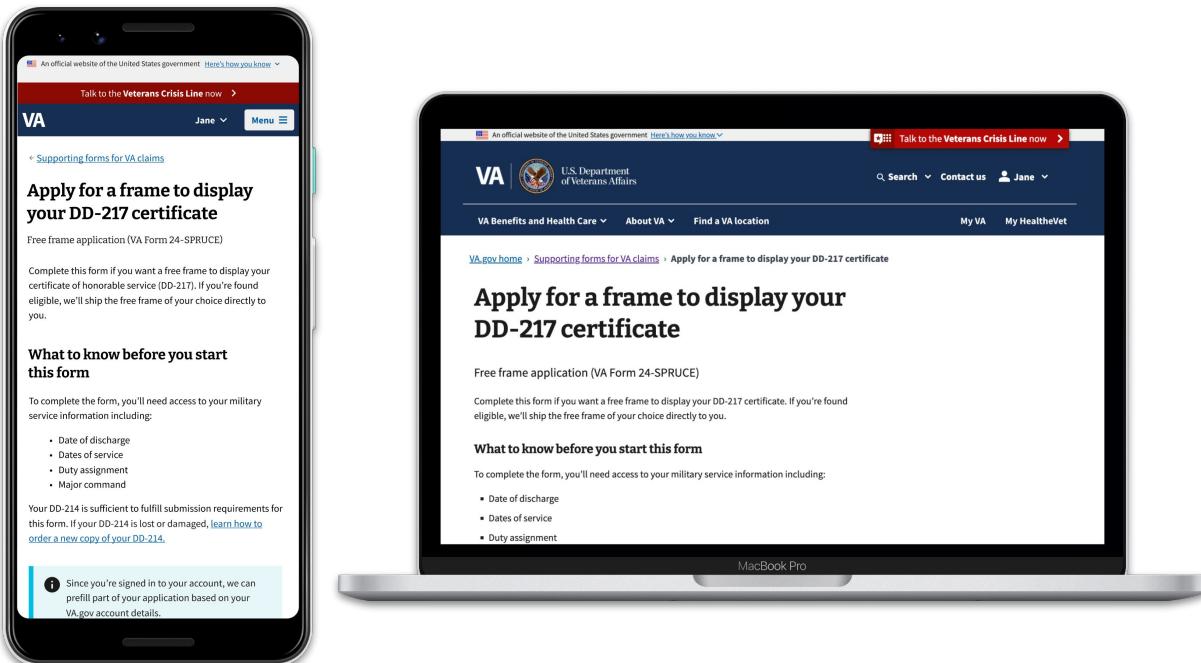
Designed the form flow with a mobile-first approach

Development

Used responsive components from the VA Design System

Testing

Tested the form at multiple breakpoints through local development



Noted Areas for UX Improvement

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Goal

Note areas for improvement in the application that were not prioritized due to time constraints

Summary

The team noted a number of improvements that could be made to the application to improve the user experience. Some of the limitations to implementing those improvements were limitations in the VA Forms library

Example

The team decided to not implement unique h1s even though it's a known accessibility issue. It would have required a rewrite of the VA Forms library to explore using h1s inside the element and using fieldsets. In addition, this would allow the focus target to be contextually relevant to the page the user is on. Reference: [WCAG 2.4.6 Headings and Labels](#).

Want to learn more?

Read the [details](#) in GitHub

Development practices

GitHub issues and projects

GitHub issues

The team used GitHub issues to assign work and collaborate, which helped us:

- Align on priorities and requirements
- Document questions or updates
- Link to relevant deliverables or PRs

GitHub projects

The team also used GitHub projects to organize issues throughout the sprint, which helped us:

- Focus on core sprint deliverables
- Communicate daily priorities
- Track status of ongoing work

The screenshot shows a GitHub Project board titled "SPRUCE code challenge". The board has four columns based on task type: Frontend (3 items), Design (6 items), DevOps (5 items), and Product (1 item). Each column contains a list of GitHub issues with their titles, descriptions, and labels (e.g., PO, Dinner, Product, P1, Lunch, DevOps). The issues are categorized into "Backlog" (not ready to be assigned) and "Prioritized" (ready to be worked on). The interface includes filters for "Sprint deliverables", "By day (table)", "By day (board)", "By priority", "Yesterday", and "Today". A search bar at the top right is set to "Ty".

Task type	Items
Frontend	3
Design	6
DevOps	5
Product	1

Issues listed in the backlog:

- vets-website #3: The form is pre-populated with existing information from a user's profile. Labels: PO, Dinner, Product.
- vets-website #30: Automated checks for each test case run on every PR. Labels: P1, Lunch, DevOps.
- vets-website #44: Convo guide for usability study round 2. Labels: P1, Lunch, Design.
- vets-website #46: Design the structure and content for Intro page. Labels: PO, Snack, Design.

Prioritized issues:

- vets-website #29: User input is validated by the front-end before hitting the form flow. Labels: PO, Lunch, Frontend.
- vets-website #45: Complete comments in Figma. Labels: PO, Snack, Design.

Development practices

GitHub PRs and releases

Pull Requests

The team used Pull Requests and the default template to:

- Outline proposed changes
- Explain how to verify those changes
- Provide feedback on changes
- Flag issues or challenges

Releases

We also used GitHub releases to:

- Create stable snapshots of our form flow after each major iteration
- Highlight the key changes features introduced by that release
- Link to the relevant issues

The screenshot shows a GitHub release page for the repository 'agilesix/vets-website'. The release is titled '24-SPRUCE ALPHA 3' and is marked as 'Latest'. It was released 19 hours ago by user 'tjheffner' with 24 commits. The release notes highlight 'Alpha Iteration 3: Incorporating user feedback'. The 'What' section describes the update to the VA Form 24-SPRUCE application. The 'Why' section explains the improvements based on user research. The 'Other key changes introduced' section lists expanded automated unit testing, refactored address page, increased validations, and updated form URLs. A note at the bottom right indicates existing functionality can be easily added if user chooses to.

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Issues & Pr... HHS Grants Gap A... Unanet Deliverable Specs Lucas Brown Avail... DEI Working Grou... HHS Grants Gap A...

agilesix / vets-website

Issues 8 Pull requests 2 Actions Projects 1 Wiki Security Insights Settings

Releases / alpha-3

24-SPRUCE ALPHA 3 Latest

tjheffner released this 19 hours ago · 24 commits to main since this release · alpha-3 · 880bc3c

Alpha Iteration 3: Incorporating user feedback

What

This release updates the VA Form 24-SPRUCE application, so that it:

- Guides user to use DD-214 to help complete form
- Provides contextual validation
- Expands the set of validations applied to Veteran responses

Why

This third iteration of the form flow makes it easier for Veterans to fill out the form by guiding them to use the DD-214, which can be found. We also improved validation so that it is clearer what the Veteran needs to do in order to correctly enter data, and made improvements based on our findings in user research.

Other key changes introduced

- Expanded automated unit testing to prevent form changes from breaking existing functionality
- Refactored address page to use custom page, so that API result can be easily added as form data if user chooses to
- Increases validations + test coverage of form fields in accordance with the provided test cases
- update form urls

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Development practices

Scrum ceremonies

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Internal demos

Daily demos allowed all team members to stay informed of progress and inform product backlog priorities.

Micro retrospectives

Every day the team talked about small improvements they could make to the way they work together.

Daily scrum and planning

The team held daily scrum calls to share work updates and raise blockers. Brief planning sessions were also conducted daily to communicate backlog priorities.

