



APPLICATION FOR SPECIAL USE PERMIT

UPPER DELAWARE SCENIC & RECREATIONAL RIVER

274 RIVER ROAD
BEACH LAKE, PA 18405-4046
upde_permits@nps.gov, 570-729-7134



Please supply the information requested below. **Attach additional sheets, if necessary, to provide required information.** A nonrefundable processing fee of \$100 will be billed separately via Pay.gov once we receive your application unless the requested use is an exercise of a First Amendment right. You must allow six weeks for the park to process your request; check with the park for guidelines. You will be notified of the status of the application and the necessary steps to secure your final permit. Your permit may require the payment of cost recovery charges and proof of liability insurance naming the United States of America an additional insured.

Applicant Information	Company/Organization Information
Applicant Name:	Company/Organization Name:
Social Security Number*: N/A	Tax Identification Number*:
Street Address:	
City:	City:
State:	State:
Zip Code:	Zip Code:
Country:	Country:
Telephone Number:	Telephone Number:
Cell Phone Number:	Contact Name:
Fax Number:	Fax Number:
Email Address:	Email Address:

Activity Details

Description of Proposed Activity (attach diagram and/or additional pages, if necessary)

Location Details

Requested Location

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Equipment Details

Support equipment (list all equipment; attach additional pages if necessary)

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Timing

Set-Up Begins	Activity Begins	Activity Ends	Removal Completed
<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM
<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM
<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM	<i>Date:</i> <i>Time:</i> <input type="checkbox"/> AM <input type="checkbox"/> PM

Vehicles & Participants

If using any vehicles, attach a parking plan to this form.

Type	Maximum Number
Participants (best estimate)	
Cars	
Vans/Light Trucks	
Utility Vans/Trucks	
Buses/Oversized Vehicles	

Support Personnel

List support personnel including addresses and telephones; attach additional pages if necessary

Name	Address	Cell Phone Number

Individual in Charge

Individual in charge of activity onsite who is authorized to make decisions related to the permitted activity

Name	Cell Phone Number

Activity Questions

Is this an exercise of First Amendment Rights?

☐ Yes ☐ No

Have you visited the requested area?

☐ Yes ☐ No

Do you plan to advertise or issue a press release before the event?

☐ Yes ☐ No

Have you obtained a permit from the National Park Service in the past?

☐ Yes ☐ No

(If yes, provide a list of permit dates and locations on a separate page.)

Will you distribute printed material?

☐ Yes ☐ No

Is there any reason to believe there will be attempts to disrupt, protest or prevent your event?

☐ Yes ☐ No

(If yes, please explain on a separate page.)

Do you intend to solicit donations or offer items for sale?

☐ Yes ☐ No

(These activities may require an additional permit.)

Is this permit to carry out a Good Samaritan Search and Recovery Mission?

☐ Yes ☐ No

You are encouraged to attach additional pages with information useful in evaluating your permit request

including: staging, sound systems, parking plan, security plans, sanitary facilities, crowd control, emergency medical plan, use of any building, site clean-up, etc.

The applicant by his or her signature certifies that all the information given is complete and correct, and that no false or misleading information or statements have been given.

Name	
Title	
Signature	
Date	

Appendix A: Governor Emergency Declaration



GOVERNOR JOSH SHAPIRO

December 16, 2024

Ms. Alicia Nolan
Division Administrator
Federal Highway Administration
228 Walnut Street, Room 508
Harrisburg, PA 17101-1720

Re: Declaration of Emergency in Relation to Skinners Falls

The Department of Transportation (Department) has identified an emergent need to remove the Skinners Falls Bridge on State Route 1002 over the Delaware River. Department inspections have identified deterioration of key bridge components, specifically steel trusses and the timber deck. Ultimately, the bridge was closed to traffic on October 17, 2019. Due to the condition of the bridge, the Department has been conducting inspections on an increased frequency since 2002. The most recent inspection revealed that one of the structure's abutments was failing. This continued deterioration of the Skinners Falls Bridge has been of such a rapid nature that removal of the structure has become necessary. The bridge poses risks to those below and downstream from the structure, including those using the Delaware River for recreational purposes.

Therefore, I, Josh Shapiro, Governor of the Commonwealth of Pennsylvania, do hereby declare an emergency to exist in Wayne County of the Commonwealth because of the deterioration of this bridge. This declaration is not a Proclamation of Disaster Emergency made under the authority vested in me pursuant to the Pennsylvania Constitution and Title 35 of the Pennsylvania Consolidated Statutes.

The immediate removal of the structure, while attempting to minimize impacts to the environmental resources, is vital to the security, well-being, and health of the citizens of the Commonwealth of Pennsylvania. The Federal Highway Administration Division Administrator is hereby requested to concur in the declaration of this emergency.

Given under my hand and the seal of the Governor, at the city of Harrisburg, this sixteenth day of December two thousand twenty-four, the year of the Commonwealth the two hundred forty-ninth.

Sincerely,

Governor Josh Shapiro

Appendix B: Narrative

**Skinnners Falls Bridge
Emergency Project
Damascus Township, PA and Town of Cochection NY
SR 1002 Section R24
Pre-decisional document for draft discussion
Project Description
December 16, 2024**

Introduction

The Pennsylvania Department of Transportation (PennDOT) District 4-0 has announced the emergency removal of the historic Skinnners Falls Bridge over the Delaware River in the interest of public safety. This decision comes after thorough bridge inspections revealed significant structural concerns that pose an imminent risk to the boaters using the Delaware River and the community. PennDOT is committed to ensuring the safety of all residents, visitors and the boating public.

The project consists of the removal of the Skinnners Falls Bridge (S.R. 1002) over the Delaware River in Damascus Township, Wayne County, PA and Town of Cochection, Sullivan County, NY. The existing Skinnners Falls Bridge is a single-lane, 466-foot 6-inch, two-span, Baltimore through truss bridge, which was constructed in 1901 and 1902 and is owned by the New York-Pennsylvania Joint Interstate Bridge Commission (JIBC). Multiple rehabilitation projects and emergency repairs have taken place since 1902. The bridge was closed to all traffic, including pedestrians, in October 2019 due to safety concerns.

The biennial NBIS inspection was performed using rope access and completed in mid-October 2024. Priority notifications were submitted to PennDOT on October 14, 2024 and the full inspection report was submitted to PennDOT on October 22, 2024. In summary, the inspection findings recommended the condition rating for the superstructure be lowered from a '4 - Poor' to a '2 - Critical' and for the substructure from a '2 - Critical' to a '0 - Failed'. The masonry substructure units were being monitored at an increased frequency due to loss of mortar and cracking through several courses of stone. It was noted that the crack length and width as well as loss of backfill material through the joint had advanced from the prior documented observations.

The project purpose is to address the failed condition of the existing structure and prevent its uncontrolled collapse. The project needs are:

1. The structure's current overall inspection condition rating is 0 (failed). The deck condition rating is 4 (poor). The superstructure condition rating is 2 (critical). The substructure condition rating is 0 (failed).
2. The existing condition poses a danger to public use of the Delaware River near/under the structure.

Activities Authorized under Emergency Permits. As an emergency situation, the sequence of work, layouts and anticipated impacts are based on available information as of the date of this application and are subject to change. Additional agency coordination will be conducted should changes occur.

A partial causeway extending west from the New York banks within the Delaware River and extending beyond the central river pier will be installed. The partial width causeway allows for bridge demolition activities, including access by workers, small cranes and trucks. No pipes will be

installed in the causeway. As part of the demolition, the PA truss span will be dropped into the Delaware River and dragged onto the causeway. The NY truss span will be dropped from its current location onto a causeway and the bridge components would be scrapped. Explosive charges are anticipated to be used to drop the bridge onto the causeway. Additionally, the NY abutment and the center river pier will be removed. The PA abutment will be stabilized with a concrete cap and a fence to restrict access.

Resources present:

Wetlands and Watercourses:

Based on a field view, the only resource present within the project area is the Delaware River. Based on Pennsylvania Code Chapter 93, the Delaware River is listed as Cold Water Fishes/Migratory Fishes (CWF). Within New York, the Delaware River and are classified under Standard A(T) for trout waters and classification A surface waters for drinking water supply under the NYS Surface Water Classifications in 6 NYCRR 701. Based on the Pennsylvania Fish and Boat Commission (PFBC) information, the Upper Delaware River is not stocked with trout, is not a naturally reproducing trout streams, and is not Class A Wild Trout Waters. Based on New York State Department of Environmental Conservation (NYSDEC) information, the Upper Delaware River is not stocked with trout.

Within the proposed LOD one Palustrine emergent wetland (PEM) was delineated in the northeast quadrant of the bridge on the New York side and a second PEM wetland located east of the bridge along the Pennsylvania banks. The wetland on the NY side is located within the floodplain of the Delaware River and partially within a maintained area used by a commercial river trip company. The wetland on the Pennsylvania side is located within the floodplain fringe of the Delaware River.

Threatened and Endangered Species

An online Pennsylvania Natural Diversity inventory (PNDI) search was executed for an area containing the half width causeway alternative on 12/3/2024. Potential impacts under the jurisdiction of the US Fish and Wildlife Service (USFWS) and Pennsylvania Fish and Boat Commission (PFBC) were identified by PNDI for this project. Although not listed on the PNDI, coordination with NYSDEC was also conducted as part of ongoing agency coordination. Coordination with the resource agencies have indicated that the main species of concern is the federally and state endangered dwarf wedge mussel (*Alasmidonta heterodon*), which is known to inhabit the Delaware River.

Using online GIS resources, the presence of federally regulated Bald Eagle (*Haliaeetus leucocephalus*) nests were screened. Based on USFWS PA Field Office Bald Eagle nest data, the nearest bald eagle nest on the PA side is approximately 2.9 miles south. Based on NY Natural Heritage Database GIS Information non-breeding habitat for bald eagle is located along the entire Delaware River Corridor. There are two nests nearby with the closest being named the Nobody Station nest 1.5 miles south. There is another nest, which is listed as a potential location that is named Perry Pond 2.1 miles southeast of the bridge.

Floodplain/Floodways

The project is located within the FEMA detailed Study Area for The Delaware River. The existing bridge is located within the defined floodway and within the 100-year floodplain zone AE (Elev 725 feet

upstream of the bridge and 723 feet downstream of the bridge). The 100-year floodplain extends to the east, approximately 650 feet to the vicinity of the existing railroad tracks.

Upper Delaware Scenic and Recreational River NPS Unit

The entire study area is within the Upper Delaware Scenic and Recreational River unit as designated by the United States National Park Service (NPS). This NPS unit was designated in 1978 and extends from Hancock, NY, south to Mill Rift, PA. The unit encompasses 73.4 miles of the Delaware River, extending from the river to the adjacent ridgetop in both states. Unlike the majority of areas managed by the NPS, nearly all of the land within the Upper Delaware Scenic and Recreational River unit remains privately owned. In 1986, the Conference of Upper Delaware Townships (COUP) and the NPS published the *Final River Management Plan. Upper Delaware Scenic and Recreational River* (River Management Plan), which established the Upper Delaware Council (UDC) to oversee the implementation of the River Management Plan. The UDC includes representation from both states, the Delaware River Basin Commission, and up to 15 river towns and townships. Any project located within the Upper Delaware Scenic and Recreational River must comply with the Land and Water Use Guidelines, published as a part of the River Management Plan. Furthermore, the UDC reviews all development activities for compliance with those land use regulations and supports the NPS in determining whether the potential development is in substantial conformance with the Land and Water Use Guidelines included in the River Management Plan.

Federal Wild and Scenic River

In addition to the NPS designation, the Upper Delaware River also became a federal Wild and Scenic River in 1978. The federal Wild and Scenic Rivers Act, originally enacted in 1968, seeks to protect certain selected rivers and their immediate environments in their free-flowing condition for the benefit and enjoyment of present and future generations. This designation protects 73.4 miles of the Delaware River from Hancock, NY, to Mill Rift, PA. Under the Wild and Scenic Rivers Act, protection of “Outstandingly Remarkable Values” is required. The Upper Delaware Scenic and Recreational River unit’s Outstandingly Remarkable Values consist of culture, ecology, geology, recreation, and scenery. The Skinners Falls Bridge is an element that supports the cultural and scenic Outstandingly Remarkable Values of the Upper Delaware Scenic and Recreational River unit. Projects within the Upper Delaware Scenic and Recreational River unit system must comply with Section 7 of the Wild and Scenic Rivers Act, which is also regulated by the NPS.

Cultural Resources:

Within the study area, aboveground historic resources consist of the Skinners Falls Bridge and the Milanville Historic District. Previous studies also indicate the presence of archaeological resources on the Pennsylvania side of the river. Both the aboveground historic resources and the archaeological resources are discussed below.

Skinners Falls Bridge:

The Skinners Falls Bridge was listed on the NRHP in 1988 under Criterion C for Engineering as a rare example of an intact multiple-span Baltimore through truss bridge of moderate length.

The primary character-defining features of the bridge are the two Baltimore through truss spans; truss configurations; and pin connections. Specifically, the structural members, including the top and bottom chords and the vertical and diagonal members, define the character of the truss configuration. Secondary character-defining features include the size and scale of the structure, portals, bracing, finials, decorative railings, bridge plaques, and decorative ornamentation. The

structure retains its historic location over the Delaware River and its setting, which were cited in the original NRHP nomination as unique, as most Baltimore through truss bridges are found in other regions of the state. The Pennsylvania State Historic Preservation Office (PA SHPO), with assistance from PennDOT, conducted evaluations of metal truss bridges in 2018 and created a preservation prioritization system that ranked NRHP-eligible or listed bridges as having an exceptional, high, or moderate preservation priority based on several attributes. Exceptional and high preservation priority bridges are usually rare, one-of-a-kind, or outstanding bridges within the remaining metal truss bridge population. The PA SHPO notes the historic preservation priority level of Skinners Falls Bridge as “Exceptional” because the bridge is one of only three representative examples of this type of truss bridge remaining in Pennsylvania. The New York State Historic Preservation Office (NY SHPO) notes it as “Significant” as it is the oldest example of an American Bridge Company Baltimore through truss highway bridge in the United States.

Milanville Historic District (Pennsylvania):

The Milanville Historic District was listed on the NRHP in 1993 under Criterion A for its association with the area’s nineteenth- and twentieth-century industrial development, and under Criterion C for its noteworthy architecture of the same eras. The district’s period of significance extends from 1815, reflecting the construction date of the earliest extant building, to ca. 1920, marking the end of the primary development period (Curtis 1992). Milanville was a center for lumbering, tanning, and wood distillation (creating industrial acids/chemicals from wood materials) during the nineteenth century, and played a key role in the history and development of the Upper Delaware Valley. The sawmill, tannery, and acid factory associated with these important industries are no longer extant; however, the residential and commercial buildings remain as evidence of the town’s vitality during the period of significance (1815 to ca. 1920). The Milanville-Skinners Falls Bridge also contributes to the historic district, representing an intact example of a Baltimore through truss bridge constructed during the district’s period of significance. The district retains integrity of location, materials, design, setting, association, and feeling from the period of significance (1815 to ca. 1920). The NRHP boundary includes the historic core of the village as well as the Skinners Falls Bridge.

Archaeology

Preliminary investigations performed for projects along the Pennsylvania side of the river resulted in the identification of two archaeological sites within the study area: the Skinners Falls Bridge Tollhouse and the Volney and Milton Skinner Sawmill. A geomorphology study conducted in December 2024 indicated the presence of approximately 2.5 ft of modern alluvium soils in the southeastern quadrant of the project area.

Navigable Waterways

Because the Delaware River is a recreationally navigable waterway, an Aids to Navigation (ATON) Plan was previously submitted to the Pennsylvania Fish and Boat Commission (PFBC), National Park Service (NPS), New York State Department of Conservation (NYSDEC) and US Coast Guard. The ATON was installed in Fall 2024 and will need to be amended as part of the permitting process.

Resource Impacts

A project impact plan has been prepared to show the water resource, floodway and floodplain impacts associated with the project. The following discussions present the resource impact plan as anticipated to occur from project-related activities for each of the two alternatives.

Delaware River:

Partial Width Causeway:

Temporary watercourse impacts to the Delaware River will occur as a result of the installation of the temporary causeway. The causeway will be constructed of rock riprap. It is anticipated that the portion of the causeway under the PA span could be removed once the PA span is removed

Temporary Waterway Impacts (Upper Delaware River)

- i. 38,706 square feet (0.89 acres)
- ii. 190 linear feet (longest dimension)

The center river pier will be removed while the partial causeway is in place, resulting in permanent impacts to the Delaware River.

Permanent Waterway Impacts

- i. 2,632 square feet (0.060 acres)
- ii. 60 linear feet (longest dimension)

Palustrine Emergent Wetland:

Partial Width Causeway:

Temporary wetland impacts to the PEM wetland located on the western side of the River is anticipated as a result of the temporary partial width causeway. The causeway will be constructed of rock riprap.

Temporary Wetland Impacts

- i. 384.2 square feet (0.008 acres)

Floodway

Partial Width Causeway

This activity is the temporary placement of fill within the FEMA delineated floodway associated with the partial width temporary causeway within the Delaware River. The temporary fill is required for the placement of the temporary causeway which will be located above the water line, but within the floodway.

Temporary Floodway Impact

- i. 2,582 square feet (0.059 acres)

Floodplain

Partial Width Causeway

This activity is the temporary placement of will within the FEMA delineated floodplain of the Delaware River associated with the fill needed for the temporary causeway staging and access outside of the floodway.

Temporary Floodplain Impact

- i. 50,632 square feet (1.16 acres)

Anticipated Mitigation:

1. Federally and State Endangered Dwarf Wedge Mussel (*Alasmidonta heterodon*):

The project team has worked with members of the Pennsylvania Fish & Boat Commission, USFWS Pennsylvania Field Office, and New York Department of Conservation staff to review project level impacts to aquatic resources and its potential to affect fresh water mussel species. Temporary aquatic impacts associated with the installation of a rock causeway has

been estimated at 38,706 SF (3410.10M²). Using the Pennsylvania Fish & Boat Commission mussel conservation fund appears to be the desired mitigation opportunity for the project and is anticipated to support future mussel surveys within this section of the Upper Delaware River watershed. The formula to determine project impact costs is as follows: [Impact Area (m²)] x [Cost(\$)/mussel] x [mussels/m²] = Cost (\$) Additional consultation with Pa Fish and Boat Commission, USWFS, and New York DEC is ongoing and will include further discussion and analysis as it relates to protected mussel species and applicable mitigation.

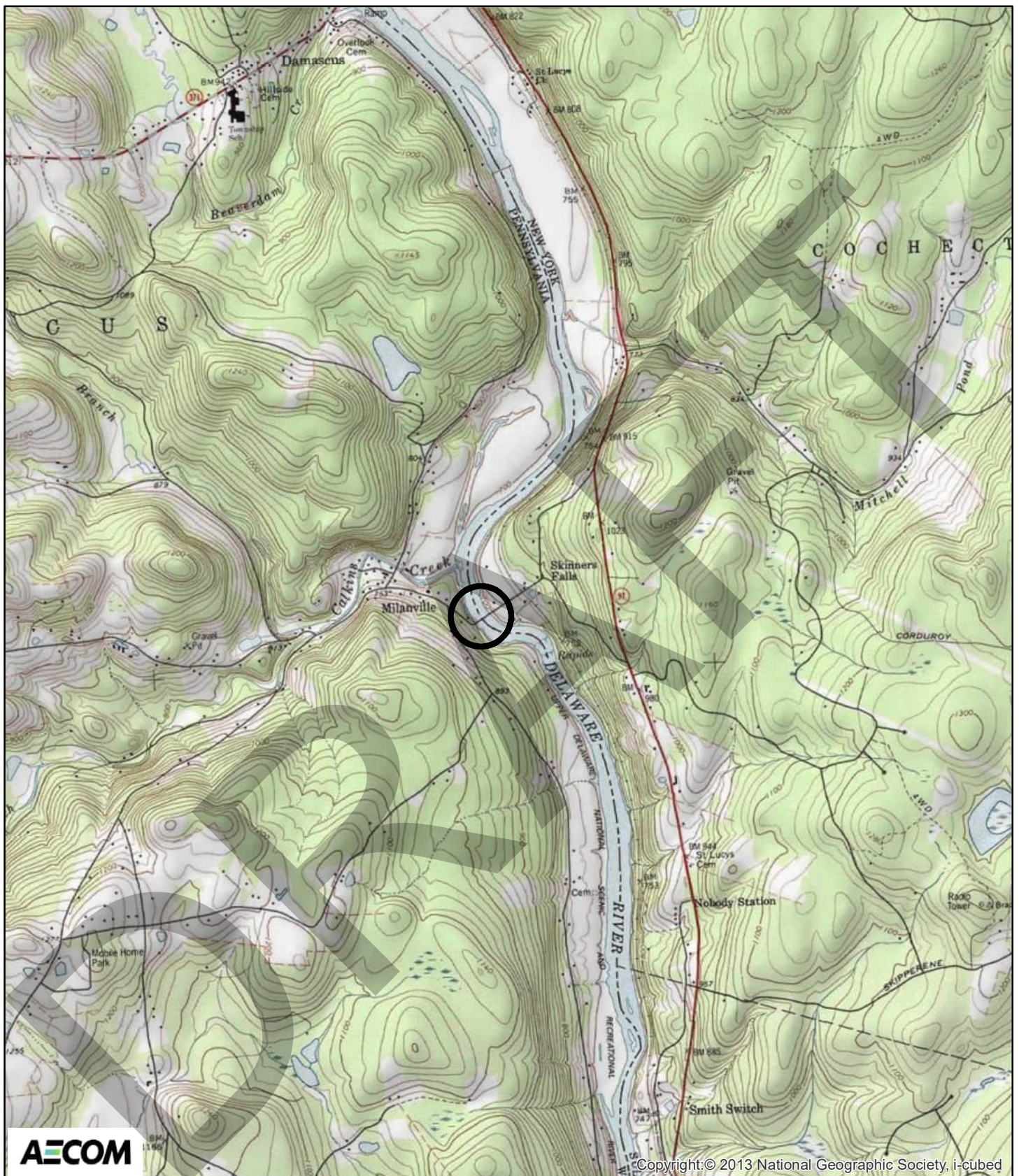
2. Japanese Knotweed (*Fallopia japonica*) Invasive Species:

There is known presence of Japanese knotweed along the New York shoreline and floodplain. Japanese knotweed is an invasive species. Measures to minimize the spread of invasive species including cleaning of boots and equipment will be implemented.

3. NYSDEC Boat Launch

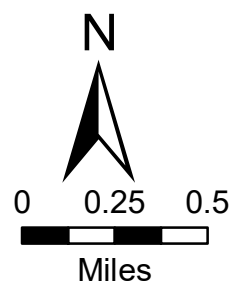
Because the boat launch is proposed to be utilized as a staging area, there will be disturbance to this resource during construction. Following construction, measures to restore the boat launch including by replacing gravel in the disturbed areas of the parking lot. The project will continue to coordinate with NYSDEC and NPS regarding additional restoration to be implemented following the completion of construction activities.

Appendix C: USGS Map



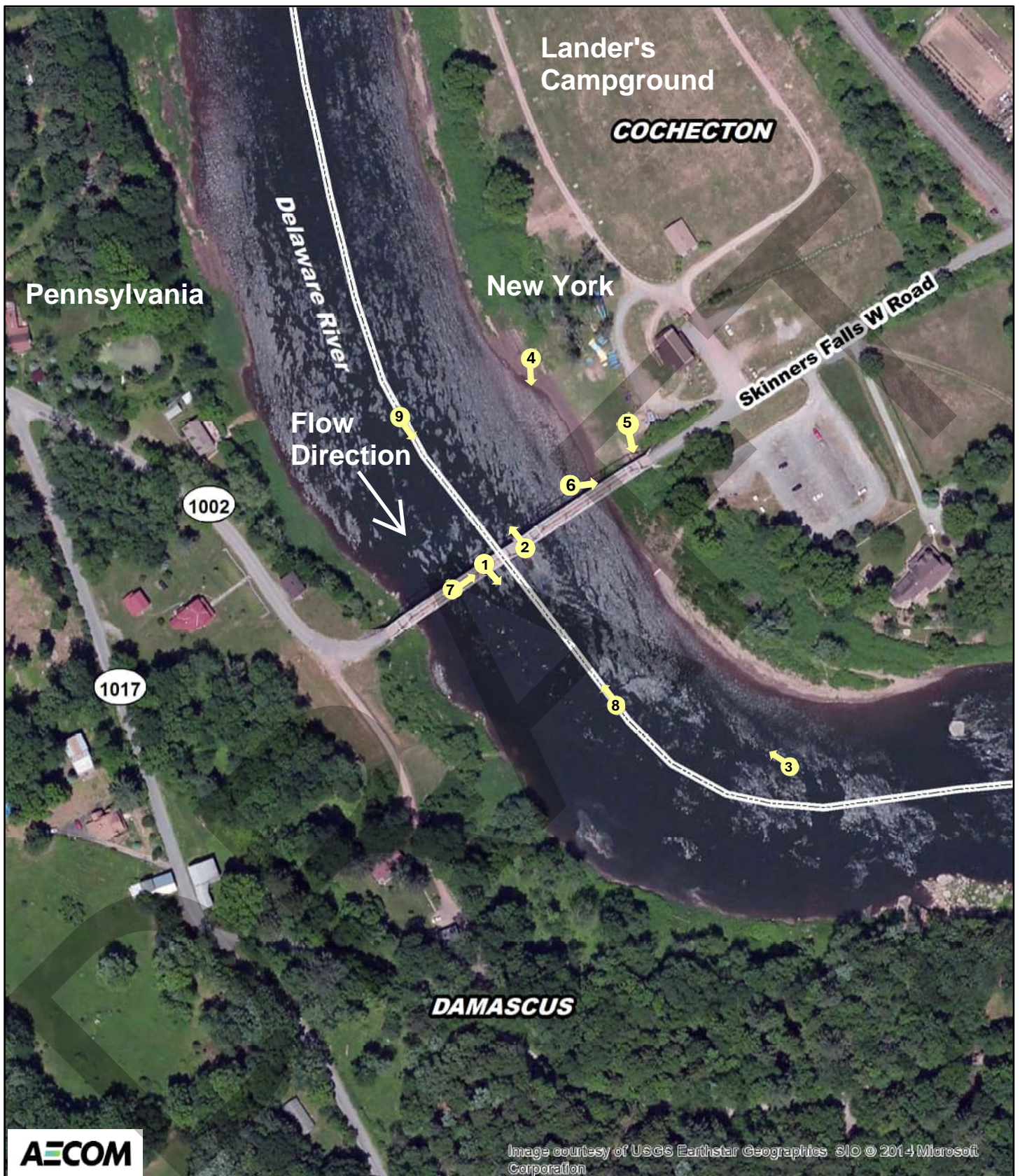
Skinnerville Falls Bridge
SR 1002-E24 over the Delaware River
FIGURE 1: PROJECT LOCATION MAP

 Project Location



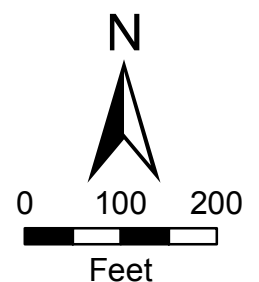
Source: 2013 National Geographic Society, i-cubed

Appendix D: Photos and Photo Location Map



Skinnners Falls Bridge
SR 1002-E24 over the Delaware River
EMERGENCY BRIDGE PROJECT
PHOTOGRAPH LOCATION MAP

Source: USGS Earthstar Geographics SIO, 2014 Microsoft Corporation.



S.R. 1002 (Skinners Falls Road) Emergency Bridge Project
Pennsylvania Department of Environmental Protection
Photographs



Photograph 1: Looking Downstream from Existing Truss Bridge (July 2023).



Photograph 2: Looking Upstream from Existing Truss Bridge (July 2023).

S.R. 1002 (Skinners Falls Road) Emergency Bridge Project
Pennsylvania Department of Environmental Protection
Photographs



Photograph 3: Looking Upstream at Existing Truss Bridge (September 2023).

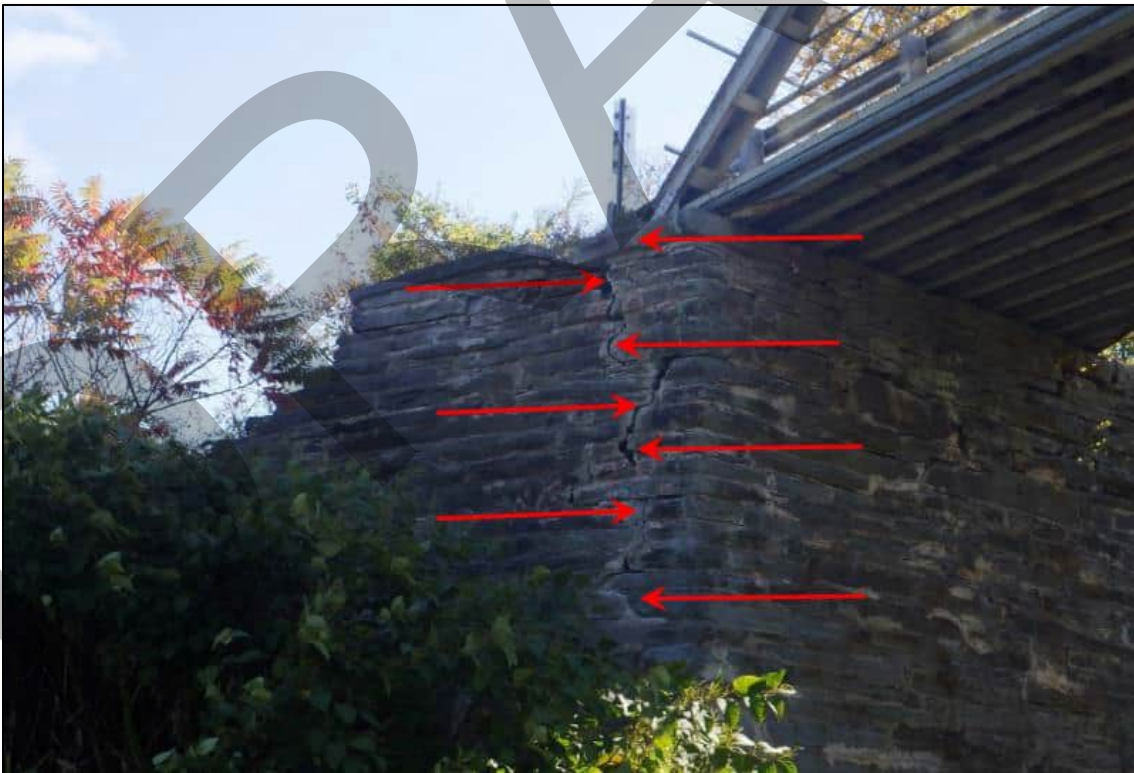


Photograph 4: NY Riverbank and PA Shoreline from Lander's Campground Property (September 2023).

S.R. 1002 (Skinners Falls Road) Emergency Bridge Project
Pennsylvania Department of Environmental Protection
Photographs



Photograph 5: Sole plate shifted left on the left truss bearing at the Far Abutment (October 2024).



Photograph 6: Crack with voids and loose stones at the Far Left wingwall (October 2024).

S.R. 1002 (Skinners Falls Road) Emergency Bridge Project
Pennsylvania Department of Environmental Protection
Photographs



Photograph 7: Deteriorated cross bracing (October 2024).



Photograph 8: Drone Photograph looking Upstream at Existing Bridge (November 2024).

S.R. 1002 (Skinners Falls Road) Emergency Bridge Project
Pennsylvania Department of Environmental Protection
Photographs



Photograph 9: Drone Photograph looking Downstream at Existing Bridge (November 2024).

Appendix E: Project Plan and Cross Section



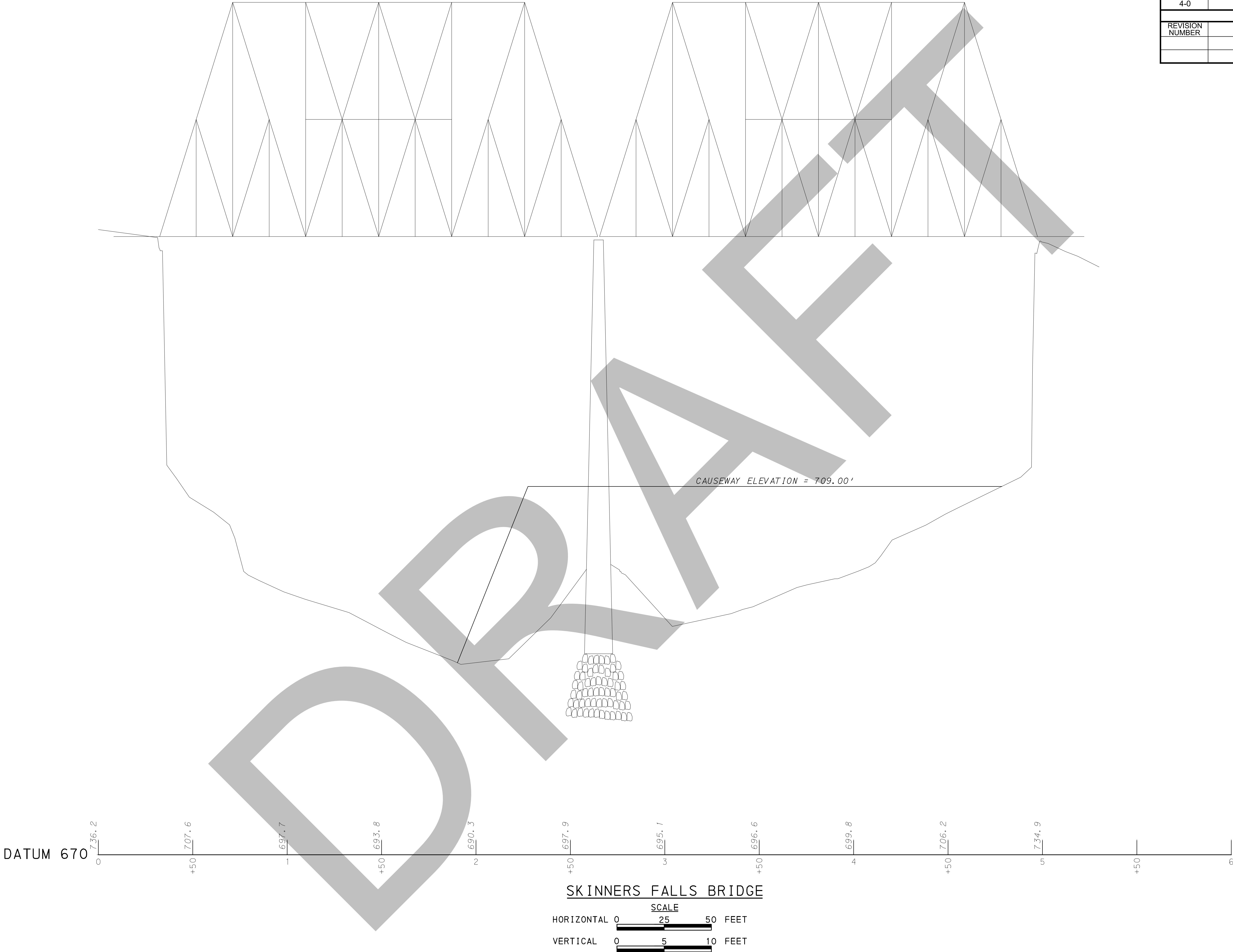
DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
4-0	WAYNE	1002	0230	OF 3	
REVISION NUMBER	REVISIONS			DATE	BY

AECOM \$USERS \$FILES \$DATES \$TIMES

Causeway Size: 0.82 Acres
Total LOD: 2.12 Acres

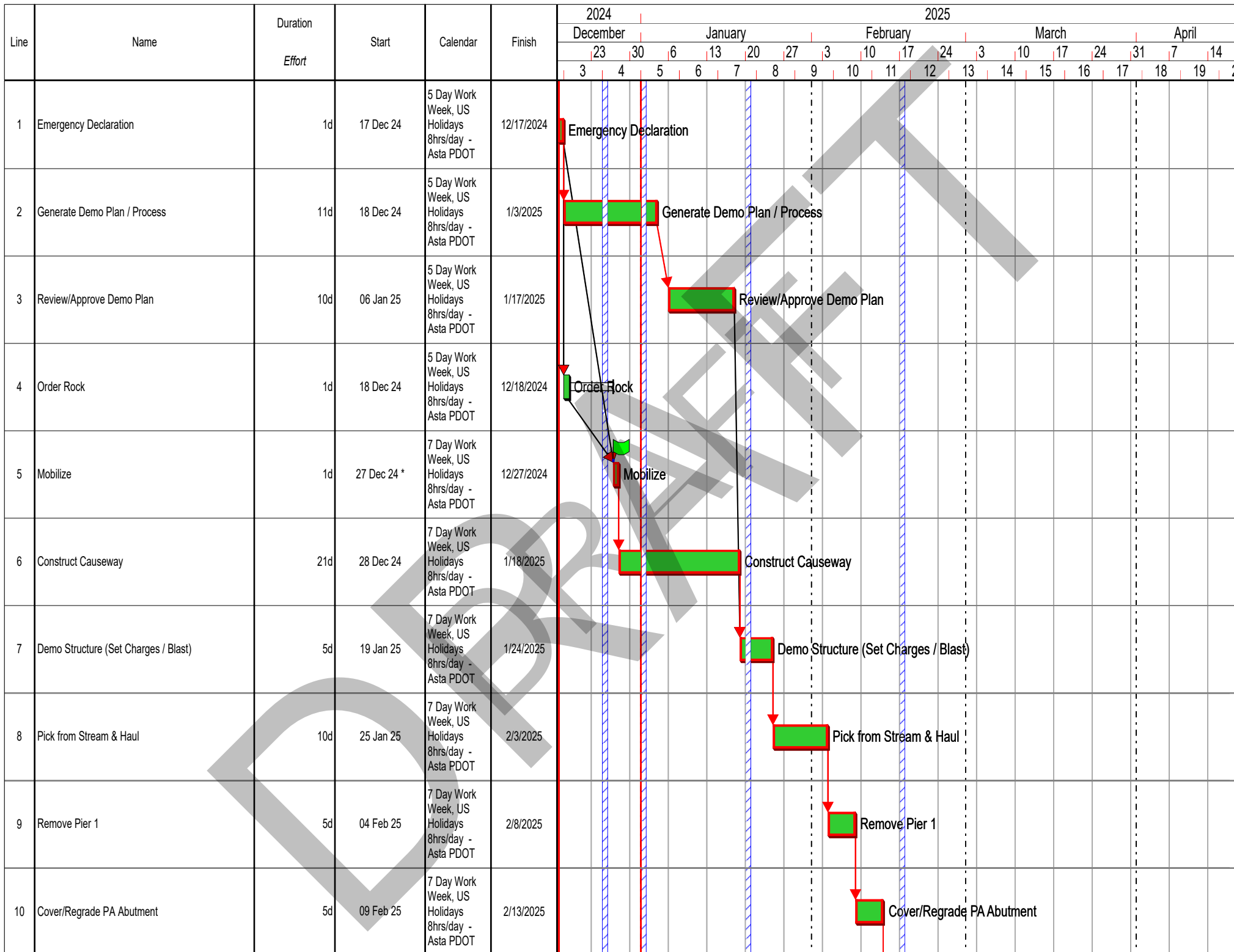
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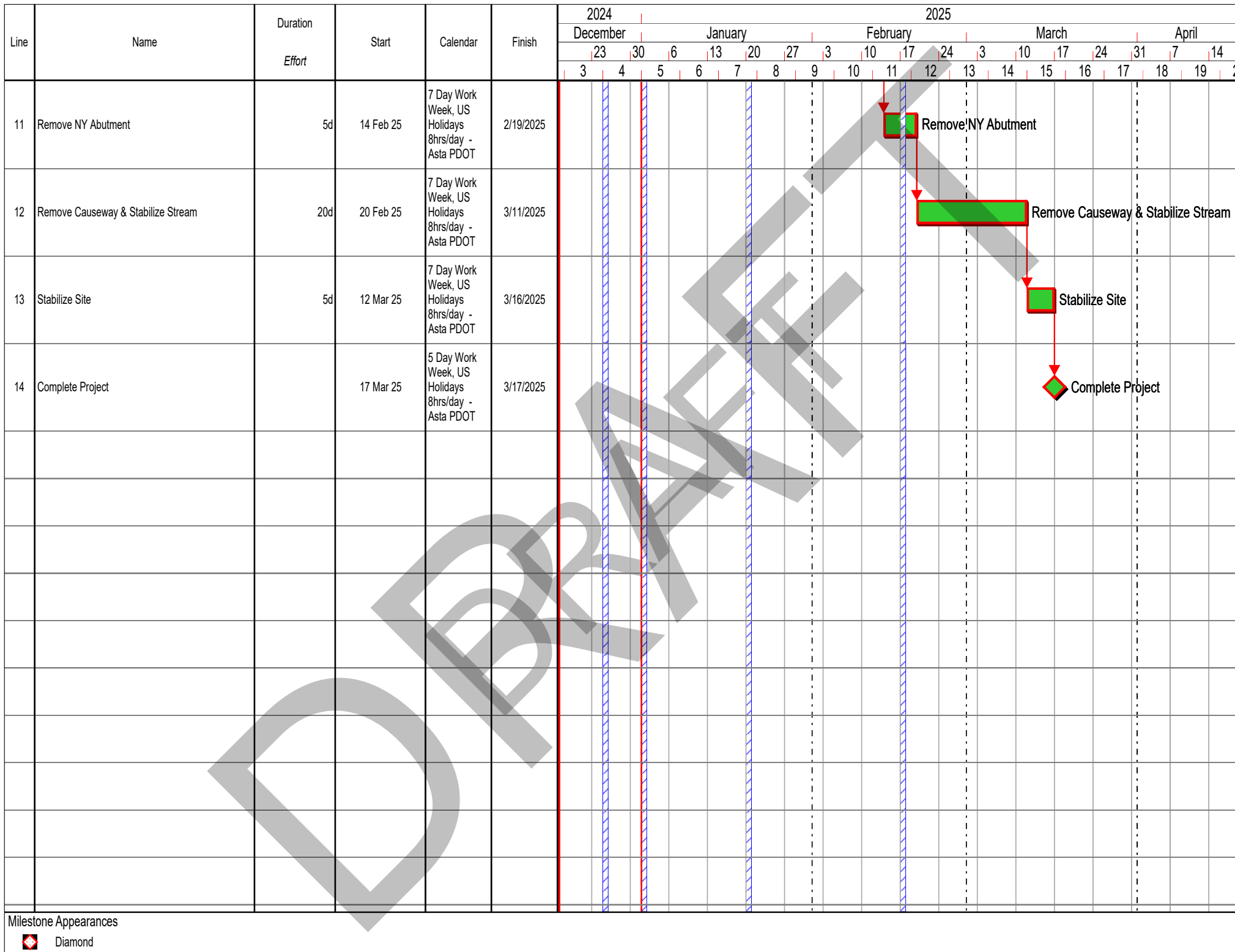
DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
4-0	WAYNE	1002	0230	OF 3	
REVISION NUMBER	REVISIONS			DATE	BY



Appendix F: Impact Plan

Appendix G: Schedule





Appendix H: PNDI Search

1. PROJECT INFORMATION

Project Name: **Skinner's Falls Bridge Emergency Bridge Project**

Date of Review: **12/17/2024 11:47:35 AM**

Project Category: **Transportation, Structures and Bridges, Other**

Project Area: **2.45 acres**

County(s): **Wayne**

Township/Municipality(s): **Damascus Township**

ZIP Code:

Quadrangle Name(s): **DAMASCUS**

Watersheds HUC 8: **Upper Delaware**

Watersheds HUC 12: **Peggy Run-Delaware River**

Decimal Degrees: **41.669967, -75.057585**

Degrees Minutes Seconds: **41° 40' 11.8816" N, 75° 3' 27.3059" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response

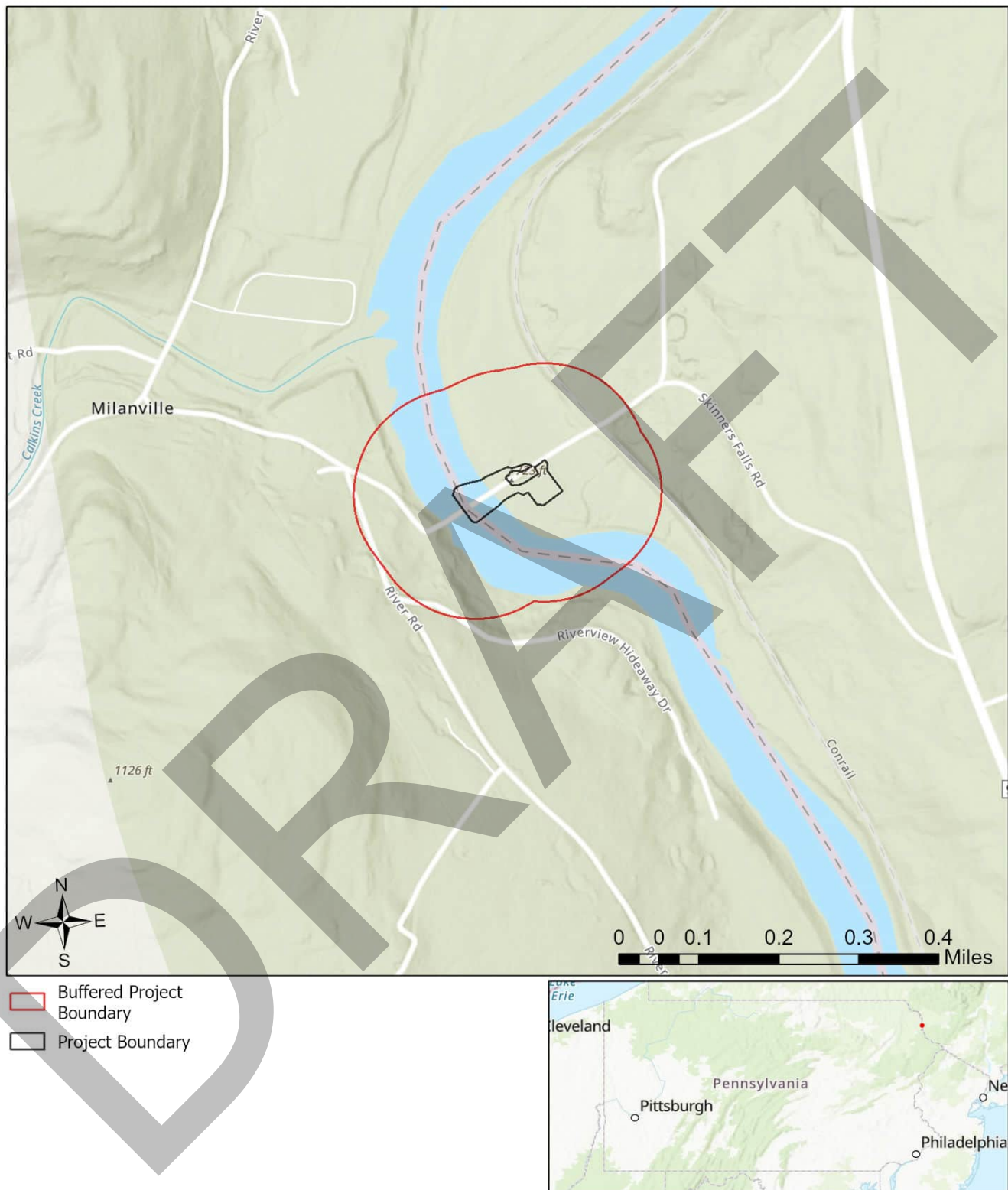
As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Skinners Falls Bridge Emergency Bridge Project



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Skinners Falls Bridge Emergency Bridge Project



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Endangered
Sensitive Species**		Endangered
Utterbackiana implicata	Alewife Floater	Special Concern Species*

U.S. Fish and Wildlife Service

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).

*If information was requested by USFWS, applicants must email, or mail, project information to IR1_ESPenn@fws.gov to initiate a review. USFWS will not accept uploaded project materials.

Check-list of Minimum Materials to be submitted:

____ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

____ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

____ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

____ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

____ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

PA Fish and Boat Commission

Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

U.S. Fish and Wildlife Service

Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Game Commission

Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

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Phone: (310) 739-8618 Fax: ()
Email: melina.mallory@aecom.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Melina Mallory
applicant/project proponent signature

12/17/2024
date

Attachment I: Alternatives Analysis

Evolution of Engineering Solutions for Skinners Falls Bridge

December 17, 2024

Background:

The Skinners Falls Bridge is a Baltimore Through Truss bridge that has a total length of 466' and is comprised of two 232' truss spans over the Delaware River. The truss spans have an approximate width of 18.5' and height of 38', respectively. In October 2024, the biennial National Bridge Inspection Survey (NBIS) inspection findings recommended the condition rating for the superstructure (the metal truss part of the bridge above the stone abutments on either side of the river and center stone pier, see **Figure 1**) be lowered from a '4 - Poor' to a '2 - Critical' and for the substructure (the stone abutments and center stone pier, see **Figure 1**) from a '2 - Critical' to a '0 - Failed'. On October 31, 2024, PennDOT issued an emergency declaration for removal and carefully disassembly of the truss spans to protect the recreational users below the bridge and to preserve the truss spans from a catastrophic loss of the National Register of Historic Places (NRHP)-Listed resource.

Project Purpose and Needs:

The project purpose is to address the failed condition of the existing structure and prevent its uncontrolled collapse. The project needs are:

1. The structure's current overall inspection condition rating is 0 (failed). The deck condition rating is 4 (poor). The superstructure condition rating is 2 (critical). The substructure condition rating is 0 (failed).
2. The existing condition poses a danger to public use of the Delaware River near/under the structure.

Project Area Constraints:

There are a number of constraints at the project area including, but not limited to, the following:

- Historic Resources – Bridge is individually listed on the NRHP and a contributing element to the NRHP-listed Milanville Historic District.
- Possible populations of the federally endangered dwarf wedge mussel and other species of special concern.
- Two recreational based businesses on New York side of the river and DEC public boat launch
- Delaware River is a PFBC water trail, and a federally listed Wild and Scenic River. The bridge is a cultural and visual Outstandingly Remarkable Value to the Wild and Scenic River.
- Entire area within the Upper Delaware Scenic and Recreational River Unit managed by NPS.
- Weather – The upcoming freeze/thaw season will increase the risk of collapse. Ice dams can be present in this area in late winter. Winter weather also poses a threat to worker safety.
- Time – The longer it takes to act, the greater the potential impact to the businesses and aquatic resources (including mussels).
- Right-of-Way Procedures – If property owners in New York do not voluntarily allow the use of their property, formal eminent domain procedures could require greater than one year to complete
- Recreational river users- The Delaware River in this area receives a high number of canoeists, kayakers and tubers. Skinners Falls is a popular destination in the summer months. River users may be present year-round.

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Alternatives Analysis:

An alternatives analysis was conducted to evaluate the location and size of the required staging area (where the crane would be assembled and work would occur) for the crane, the location for the careful disassembly and tagging of the truss members (lift/pick/disassemble), and the type of causeway (a temporary landform beneath and beside the bridge to allow access for machinery and workers) to be constructed. In addition, the analysis included an examination of the Do Nothing Alternative, the Temporary Bracing Alternative, and Demolition Alternatives. In summary, the following alternatives were considered:

1. Do Nothing Alternative
2. Temporary Bracing Alternative
3. Disassembly from Existing Bridge Alternative
4. Disassembly from the Causeway Alternatives
 - 4.1. Disassembly on a Causeway
 - 4.1.1. Staging Area Located North of Bridge
 - 4.1.2. Staging Area Located South of Bridge
 - 4.2. Disassembly on the Floodplain – South of Bridge
5. Demolition Alternative
 - 5.1. Demolition Alternative via Full Width Causeway (causeway would extend across the entire Delaware River)
 - 5.2. Demolition Alternative via Partial Width Causeway (causeway would extend only partway across the Delaware River, from the New York embankment)

As PennDOT underwent this engineering analysis, in the Fall of 2024, to develop and analyze several options for the lift/pick/disassemble of the bridge they identified several challenges noted below:

- Because of the size of the trusses (232 feet each), if crane swings are not “well-orchestrated”, there is a potential for catastrophic crane and load loss. Once the crane loses its load, the boom and crane flip backwards off the causeway. Worker safety is at risk with the unknown stability of the structure.
- There is also a serious concern that the deteriorated structure would not survive the pick and move by crane due to severe section loss throughout the structure.
- The site preparations, assembly and disassembly of the crane and careful disassembly of the truss is expected to require multiple months of time, extending well into the river recreation season.

The time needed to design and implement a safe method to lift/pick/disassemble the bridge is not reasonable given the bridge’s rapidly deteriorating condition. In addition, with the information gathered to date, it is uncertain that a lift/pick/disassemble alternative could be safely executed. Therefore, the lift/pick/disassemble alternatives were not considered to be practicable and were dismissed.

The following discussion presents the evolution of engineering decisions made as new engineering information was developed. The engineering team examined several alternatives for the emergency removal and disassembly of the Skinners Falls Bridge. As an emergency, the sequence of work, layouts and anticipated impacts are based

Evolution of Engineering Solutions for Skinners Falls Bridge

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on available information as of the date of this alternatives analysis and are subject to change. The alternatives varied on the size of causeway, the size of staging area, and the length of time in the river. Each removal and disassembly operation will require a causeway, numerous cranes and manlifts of varying sizes, and a significant amount of material be delivered and later removed from the site. Causeway limits, crane size(s), and construction duration will vary substantially for each alternative. The lift/pick/disassemble process will require a very large crawler crane to pick the trusses due to the weight of the trusses themselves, as well as the height of the trusses above the causeway (**Figures 4 & 5**). A large crane staging area will be required to deliver crane components and to assemble/disassemble the crane. At the time of this alternative analysis, the anticipated crane needed to pick the trusses of alignment will be about 30 feet wide and have a 300-foot boom. (The swing radius is shown on Figure 7.) The track height will be approximately 6 feet high. This type of crawler crane uses a rear tray of counterweights to balance the load when it is picking up the crane boom and later when picking the trusses. (The rear tray of counterweights can be seen in Figure 4, located on the left side of the image. As a result, it requires a second crane to add weights to the rear tray when there is anything on the hook of the larger crane. As a result, there will be at least two cranes on the causeways at any one time.

A conceptual screening of the land surrounding the bridge in Pennsylvania and New York was conducted to identify possible locations for staging area was conducted. It was determined that all work will be conducted from the New York side of the river. The reasons for utilizing the New York side includes:

- The local roadway network in Pennsylvania is narrow and will not be traversable with the trucks necessary to deliver cranes and equipment.
- The embankments on the Pennsylvania side are fairly steep prohibiting a crane from moving from bank to causeway. Grades on the New York side are more consistent, gradual slopes.
- Two archaeological sites are located at the Pennsylvania approach which should be avoided.
- Topography and site conditions on the Pennsylvania side are not conducive to a staging area, nor is there enough room for the large staging area required.

1. Do Nothing Alternative:

The Do Nothing Alternative would result in the eventual catastrophic collapse of the New York abutment. Once the stone abutment collapses, the New York truss will likely fall into the river and suffer fatal and irreparable damage to the historic integrity of the truss. Should the New York truss fall into the River, the Pennsylvania truss may also become unstable and fall into the river. This alternative would also be very dangerous to the recreational users in the area who would be at risk for serious injury or death in the event of a sudden catastrophic collapse. This alternative was only carried for comparison and was dismissed for safety concerns.

2. Temporary Bracing Alternative:

The Temporary Bracing of the New York abutment was examined as an interim measure. This alternative would involve adding bracing to the New York abutment to slow the rate of continued deterioration. It would also require

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adding netting or protection under the bridge to capture deteriorated steel bridge members and other materials falling from the bridge.

Stabilization of the abutment as a mitigation measure was considered and cannot be safely and effectively implemented. Further rotation of the failed stone masonry abutment could be restrained through an engineered temporary measure, but without full rehabilitation, the stone abutment will continue to degrade, causing settlement, and poses an ongoing risk for collapse. Unlike most modern bridges, the bearing location for this truss superstructure must be located at the existing joint and cannot simply be shifted along the truss line from the existing bearing location without independent and substantial structural framing to transfer load to a temporary abutment.

Additionally, it is not possible to safely add netting under the bridge. The netting would need to be applied from the top of the bridge, at deck level. Because of the failed condition, the bridge is not safe, even for workers on foot to access and install the netting. Additionally, potential concerns of accumulation of ice on the netting during weather events increases the dead load weight that the bridge must be able to support. It was determined that the netting would need to be removed prior to each icing event and as previously mentioned, the bridge is not safe to access from the top. The trusses are currently in a deteriorated state and any further delay in their removal may result in collapse prior to or during the removal operations. This alternative was dismissed as unsafe and not reasonable.

Additionally, it is not possible to safely add any netting under the bridge. The netting would need to be applied from the top of the bridge, at deck level. Because of the failed condition, the bridge is not safe, even for workers on foot to access and install the netting. Additionally potential concerns due to accumulation of ice on the netting during weather events increases the dead load weight that the bridge must be able to support. It was determined that the netting would need to be removed prior to each icing event and as previously mentioned, the bridge is not safe to access from the top. The trusses are currently in a deteriorated state and any further delay in their removal may result in collapse prior to removal or could occur during the removal operations. This alternative was dismissed as unsafe and not reasonable.

3. *Disassembly from Existing Bridge Alternative:*

For this alternative, all construction (bridge disassembly) would occur on and from the bridge itself. No causeway would be required. Due to the existing failed condition of the bridge, no machinery or personnel will be permitted on the bridge at any point during project construction activities. As a result, this alternative was dismissed due to safety reasons.

4. *Partial Causeway Alternatives:*

4.1 *Disassembly on a Causeway*

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Alternatives were developed that involved construction of a partial width causeway which will be used for the disassembly of the trusses (**Figures 6 & 7**). For these alternatives, the truss spans would be removed from the existing substructures using very large crawler cranes and placed on temporary supports down at the causeway elevation, adjacent to the bridge. The large crawler crane would then be removed from the site and disassembly would proceed on the causeway using much smaller cranes and manlifts. Due to the size of the crawler cranes, an additional contractor laydown area is recommended for equipment and material deliveries. The causeway would extend into a portion of the river and overbank area within the floodplain. Due to the height and weight of the trusses, the causeway is anticipated to extend to the west beyond the center pier to allow for crane access. Similarly, the size of the causeway also includes space for the bracing and disassembly of the trusses, as well as drive aisles around the trusses. Two alternates were examined for the staging/crane assembly area: north of bridge and south of bridge.

The anticipated sequence of construction would be as follows:

1. Construct the causeway and contractor staging area for crane assembly
2. Prepare the truss spans for crane pick (potential removal of timber deck and addition of temporary bracing components)
3. Pick and place truss spans on temporary supports at causeway level
4. Brace truss spans for disassembly and to secure against storm events, then remove large crawler crane from causeway
5. Mark the truss members for future identification and proper storage
6. Disassemble, panel by panel, and remove the members from the causeway to prepare for storage
7. Remove center pier and NY abutment
8. Remove causeway and contractor staging area
9. Remove all construction materials and restore site (signage, tree plantings, seeding/mulching, etc)

This alternative could result in the simultaneous disassembly of both trusses if the causeway is sized appropriately. Once the PA truss is removed, the river could be re-opened to recreational users. Due to the size of the causeway and laydown area, impacts to both the river and overbank areas within the floodplain area are larger for this alternate. There are two alternatives that involve disassembly on a causeway. They are discussed in detail below, including the limits of disturbance and reasons for dismissal.

4.1.1 Staging Area Located North of Bridge

One version of proposed north staging area is shown on **Figure 6**. It would require a widened access road in the overbank area to overcome the existing grade differential for safe mobile transport of the truss spans to the disassembly area in the campground.

Considerations for northern staging area include:

- Approximate limits of disturbance = 5.61 Acres
- Waterway impacts = 1.39 acres
- Walking pick (i.e. truss suspended in the air while crane slowly moves to another location) not feasible due to grade differentials

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- Allows for simultaneous disassembly of the trusses
- Requires construction of access road and crane access road
- The camping and boat livery business will not be operable during construction
- Requires landowner to voluntarily allow use of property
- Indirect impacts to businesses and recreational users due to access and noise
- Estimated length of construction is 6-9 months

A meeting was held with the property owner in November 2024, and it was determined that the campground could not be used as a proposed staging area because it contains a buried septic drainage area and a water line. In addition, the property owner would likely not be able to open the business for the season, which is 80% of his income. As a result, it was determined that the northern alternative is not reasonable and was dismissed.

4.1.2 Staging Area Located South of Bridge

The proposed staging area to the south of the bridge is shown on **Figure 7**. It would require an approximately 37 foot wide access road from Skinners Falls Road to upstream from the NY abutment for use as the crane access road. The NY State Department of Environmental Conservation (NYSDEC) parking lot is not large enough to accommodate the required space for the boom of the crane while it is being assembled or disassembled.

Considerations for southern staging area include:

- Approximate limits of disturbance = 4.39 Acres
- Waterway impacts = 1.80 acres
- Walking pick not feasible due to grade differentials
- Allows for simultaneous disassembly of the trusses
- Requires construction of access road and crane access road
- Potential access impacts to two businesses south of NYSDEC boat launch
- May impact the emergency access road to Skinners Falls
- Requires improvement to Skinners Falls Road and the NYSDEC parking lot.
- Impacts to aquatic resources, including federally protected mussels
- Requires landowner to voluntarily allow use of property
- NYSDEC parking area and boat launch inoperable during construction
- Indirect impacts to businesses and recreational users due to access and noise
- Estimated length of construction is 6-9 months

While this alternative results in a smaller staging area, it requires a very large causeway to remain in the water for an extended period of time. The causeway as shown in the conceptual plan would not be large enough for the crane to maneuver while the trusses are sitting on the causeway. The plan as shown would also not be enough space for the support crane required for the placement of the counterweights onto the large crane. The parking area was also determined to not be of sufficient size to assemble and disassemble the crane. It was considered not reasonable and dismissed.

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4.2 Disassembly on Floodplain South of Bridge

For this alternative, the staging area for the crane assembly /disassembly will take place primarily south of the bridge and the trusses will be placed on/near the NYSDEC parking lot and on the overbank area (**Figures 8 and 9**). A partial width causeway within the Delaware River extending beyond the central river pier will be required for crane access and movements to remove the trusses. The truss spans would be removed from the existing substructures using very large crawler cranes to relocate the spans up on the floodplain above the NYDEC parking lot and the overbank area between the river and the parking lot. A crane access road will be required north of the existing road to access the causeway from the north. Areas to the north of the bridge will be required for crane access, as the crane can only traverse a maximum 3% grade. The design includes a rather long crane access ramps using a 3% grade, which increased the limits of disturbance. (**Figure 9**). A bench will be built up on the overbank area to provide enough area to place the PA truss and conduct the disassembly. A large causeway is still required in the river and a widened access road in the overbank area would also be required to overcome the existing grade differential for safe transport of the truss spans to the disassembly area in the campground.

The anticipated sequence of construction would be as follows:

1. Build causeway (and begin building bench & staging areas)
2. Prepare trusses for disassembly
3. Build crane for truss removal
4. Pick NY span and place on temporary supports in NYSDEC parking lot
5. Reposition crane and pick PA span and place on temporary supports on intermediate bench
6. Disassemble crane
7. Disassemble truss spans and prepare for storage
8. Remove all remaining causeway, bench, staging area materials
9. Restore site (signage, tree plantings, seeding/mulching, etc)

The anticipated overall construction duration is roughly 5-8 months from initial causeway construction to completion of site restoration. It is estimated that the lower causeway would be in place for first 3 months of construction. The bench would likely be in place for 3 to 4 months (built on top of or as part of lower causeway construction) starting in 1st month and then in place until disassembly operations are complete and all temporary supports can be removed in 4th or 5th month of construction.

Considerations for staging in the NYSDEC parking lot south of bridge include:

- Approximate limits of disturbance with 3% grade crane access roads = 7 acres
- Waterway impacts = 1.25 acres
- Concern with flood events while working on causeway
- Allows for simultaneous disassembly of the trusses
- Once spans are on causeway, river may be reopened to users on PA side
- Estimated length of construction is 5-8 months
- Allows the trusses to be moved as far away from the river as possible.
- May require a temporary access road to the bed and breakfast south of NYSDEC parking lot and to the emergency access road to Skinners Falls
- Indirect impacts to businesses and recreational users due to access and noise

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- Loss of parking at NYSDEC lot during construction
- NYSDEC boat launch inaccessible during construction

This alternative resulted in the longest duration of construction and the greatest disturbance of land. It would also render the NYSDEC parking lot and boat launch unusable for much of the boating summer season. It would also impact the adjacent businesses who rely upon access to the river. In addition, it was determined that the cranes would not be able to simply pick and swing the trusses to the disassembly area and they would need to pick and walk the trusses to the disassembly area, which is inherently risky and was dismissed.

5. Demolition Alternatives

These alternatives were investigated as alternatives of last resort. PennDOT determined that the time needed to design and implement a safe method to lift/pick/disassemble the bridge, is not reasonable given the bridge's rapidly deteriorating condition. In addition, with the information gathered to date, it is uncertain that a lift/pick/disassemble alternative could be safely executed. Therefore, two demolition alternatives were examined: Demolition via a Full Width Causeway Alternative and a Demolition via a Partial Width Causeway Alternative.

6.1 Demolition with a Full Width Causeway Alternative

The truss spans would be dropped from their current locations onto a causeway spanning the entire river (**Figure 10**). The causeway would be at least 120 feet wide in order to account for the trusses twisting or shifting laterally as they are dropped. Minimal laydown areas are needed. The bridge components would not be reusable as structural elements after the drop. Under this alternative, the bridge would be scrapped rather than disassembled.

The full width causeway allows for bridge demolition activities, including access by workers, small cranes and trucks. Twenty-five 6' diameter pipes will be installed in the causeway to allow for the passage of normal water flows through the causeway. Explosive charges are anticipated to be used to drop the bridge onto the causeway. Additionally, the New York abutment will be removed in addition to the center river pier.

The Pennsylvania abutment will be stabilized with a concrete cap and a fence to restrict access. The work on the Pennsylvania abutment will occur from the roadway.

The anticipated sequence of construction would be as follows:

1. Construct the causeway
2. Drop the PA and NY spans onto the causeway. Remove and scrap bridge components beginning with PA Span.
3. Begin to Remove PA causeway.
4. Remove pier and NY abutment.
5. Remove the remainder of the causeway.
6. Remove all construction materials and restore site.

Consideration of dropping the bridge and scrapping the members alternative include:

- Causeway would span entire river
- Approximate limits of disturbance =2.5 acres

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- Waterway impacts = 1.30 acres
- Requires minimal lay down/staging areas
- Impacts related to fish passage, recreational users, businesses and T&E species.
- Estimated length of construction is 4-5 months
- Safer working conditions than a lift/pick/disassemble alternative
- More likely to be subjected to high river flows and/or ice flows
- Concern over ice jams in the pipes resulting in flooding.

The full width causeway alternative results in the most impact to recreational users, aquatic resources, (including federally protected mussels), and fish passage. A full width causeway in the upper Delaware River in the winter is subject to ice dams and subsequent flooding. This alternative was presented to state and federal permitting agencies on December 11, 2024. The agencies requested that PennDOT examine an alternative that utilizes a partial causeway which would reduce impacts and eliminate the need to fully close the river.

6.2 Demolition with a Partial Width Causeway Alternative

For the partial width demolition alternative, a causeway would be constructed to approximately 20 feet beyond the center pier (**Figure 11**). The NY truss would be dropped onto the causeway and the PA truss would be dropped into the river and pulled up onto the causeway. The causeway would be at least 120 feet wide in order to account for the NY truss twisting or shifting laterally as it is dropped and to allow room to pull the PA truss up on the causeway for demolition. The bridge components would not be reusable as structural elements after the drop. Under this alternative, the bridge would be scrapped rather than disassembled.

Explosive charges are anticipated to be used to drop the bridge onto the causeway. Additionally, the New York abutment and center pier will be removed. The Pennsylvania abutment will be stabilized with a concrete cap and a fence to restrict access. The work on the Pennsylvania abutment will occur from the roadway.

The anticipated sequence of construction would be as follows:

7. Construct the causeway and install “turbidity curtain”. A turbidity curtain is a flexible, impermeable barrier that will be used to trap debris and sediment downstream from the bridge. This curtain is generally weighted at the bottom to ensure that debris and sediment does not travel under the curtain, which is supported at the top through a flotation system.
8. Drop the NY span onto the causeway and PA Span into river.
9. Drag PA span onto causeway.
10. Remove and scrap bridge components.
11. Remove pier and NY abutment.
12. Remove the remainder of the causeway.
13. Remove all construction materials and restore site.

Consideration of dropping the bridge and salvage alternative include:

- Causeway would allow for part of river to remain open

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- Approximate limits of disturbance = 2 acres
- Waterway impacts = 0.82 acres
- Requires minimal lay down/staging areas
- Reduces impacts related to fish passage, recreational users, businesses and T&E species.
- Estimated length of construction is 3 months
- Safer working conditions than a lift/pick/disassemble alternative

This causeway alternative was recommended by state and federal permitting agencies during a December 11, 2024 meeting. The agencies requested that PennDOT examine an alternative that utilizes a partial causeway which would reduce total impacts and eliminate the need to fully close the river. Upon further review, this alternative was determined to be the most expeditious for permitting and construction and would result in fewer impacts to aquatic resources, business owners and recreational users. The Demolition with a Partial Width Causeway Alternative has been included as the selected alternative in the required NEPA, Section 106, Section 4(f) and all regulatory permit applications.

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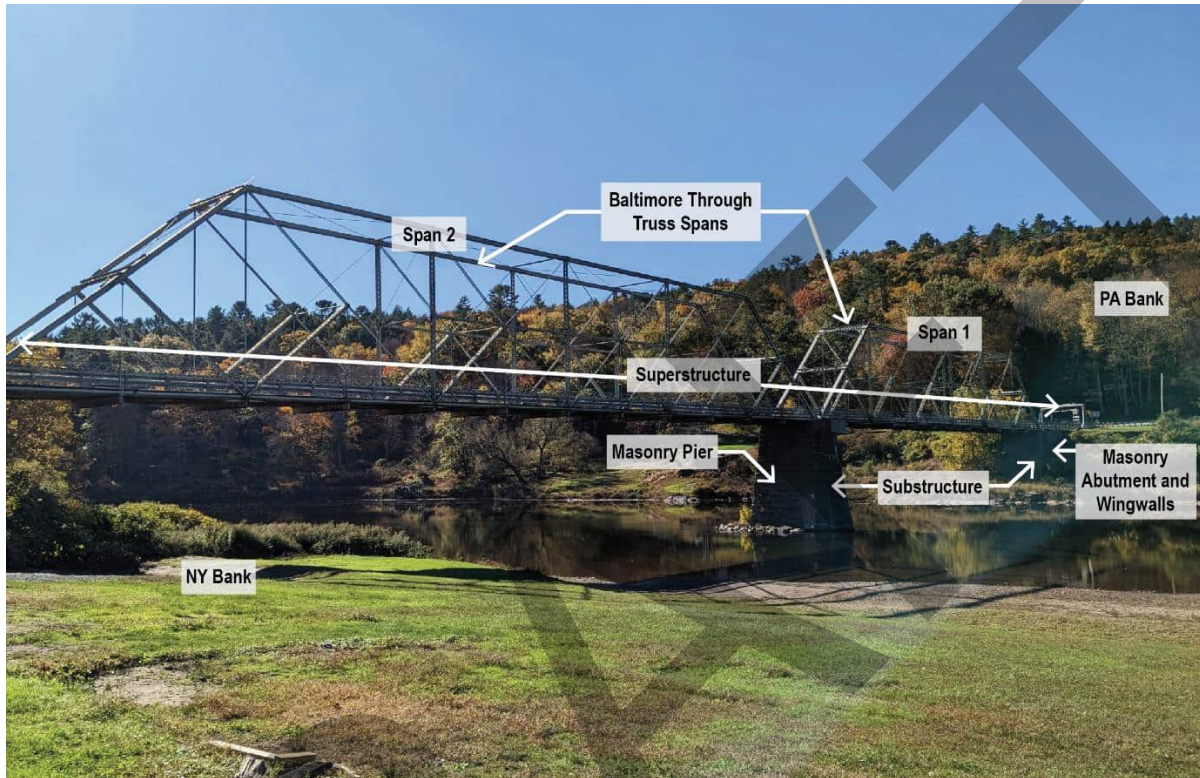


Figure 1: General Bridge Components, Elevation View

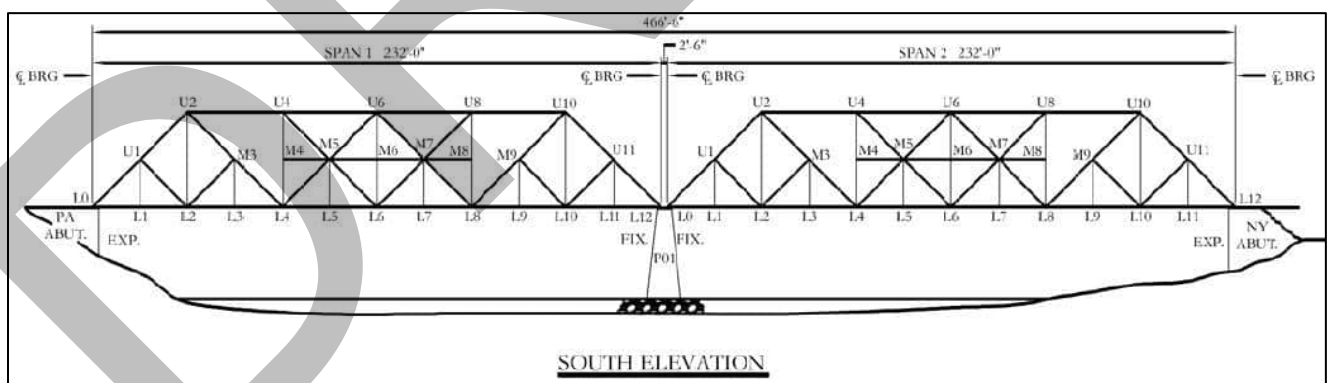


Figure 2: Elevation View of Skinners Falls Bridge

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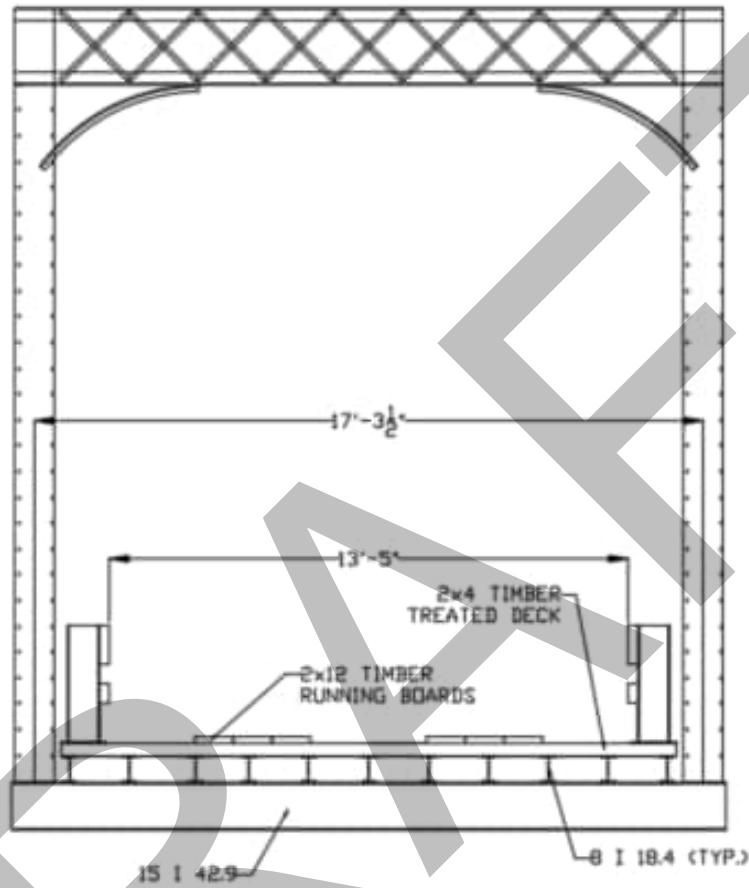


Figure 3: Existing Skinners Falls Bridge Cross Section

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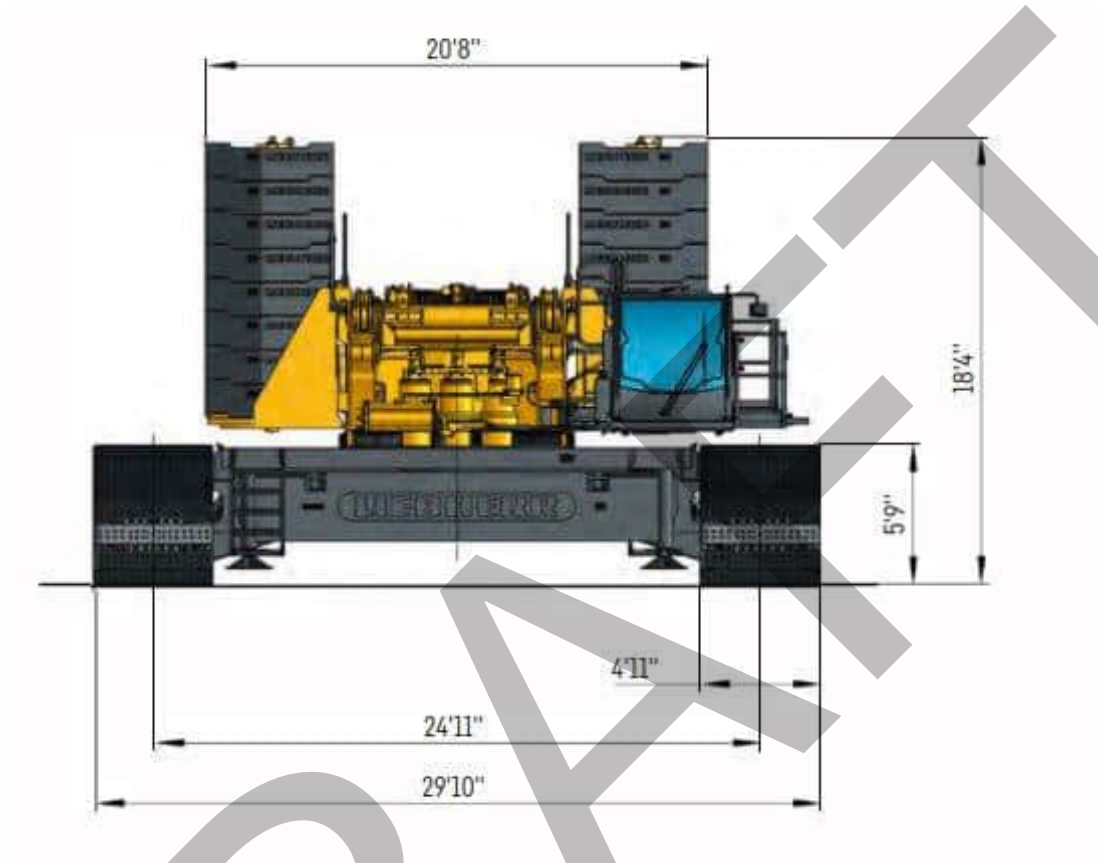


Figure 4: Schematic of type of crane equipment to be used

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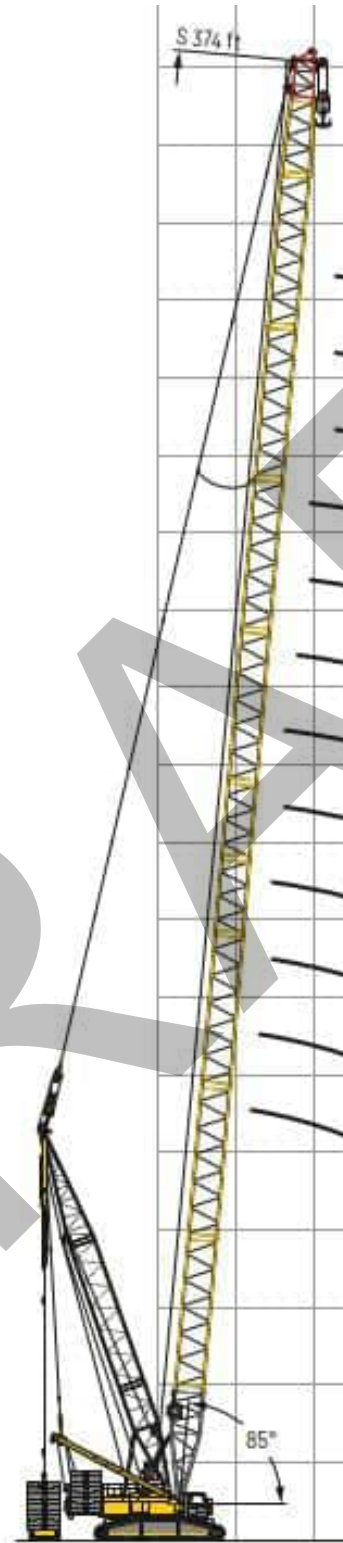


Figure 5: Schematic of typical crane to be used

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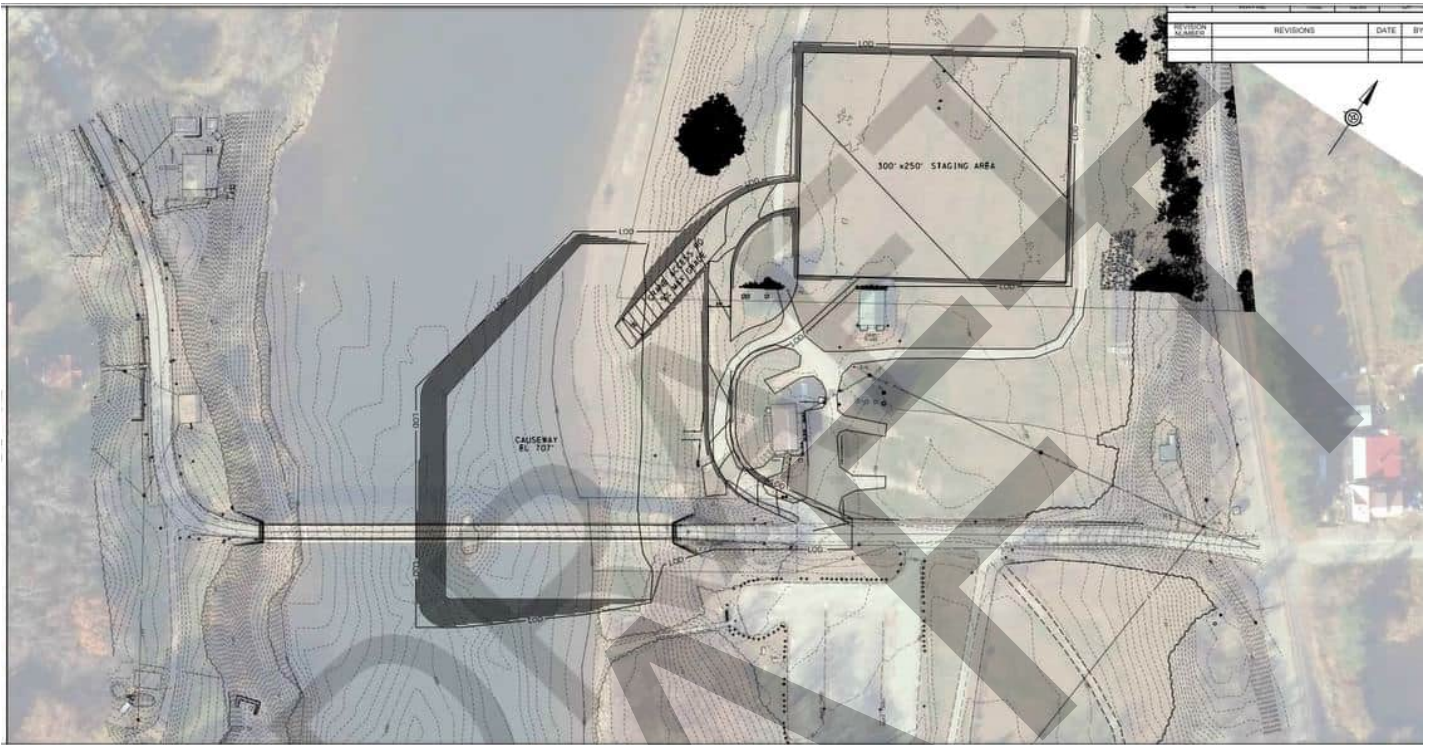


Figure 6: Draft Conceptual Schematic of Northern Staging Area and Causeway

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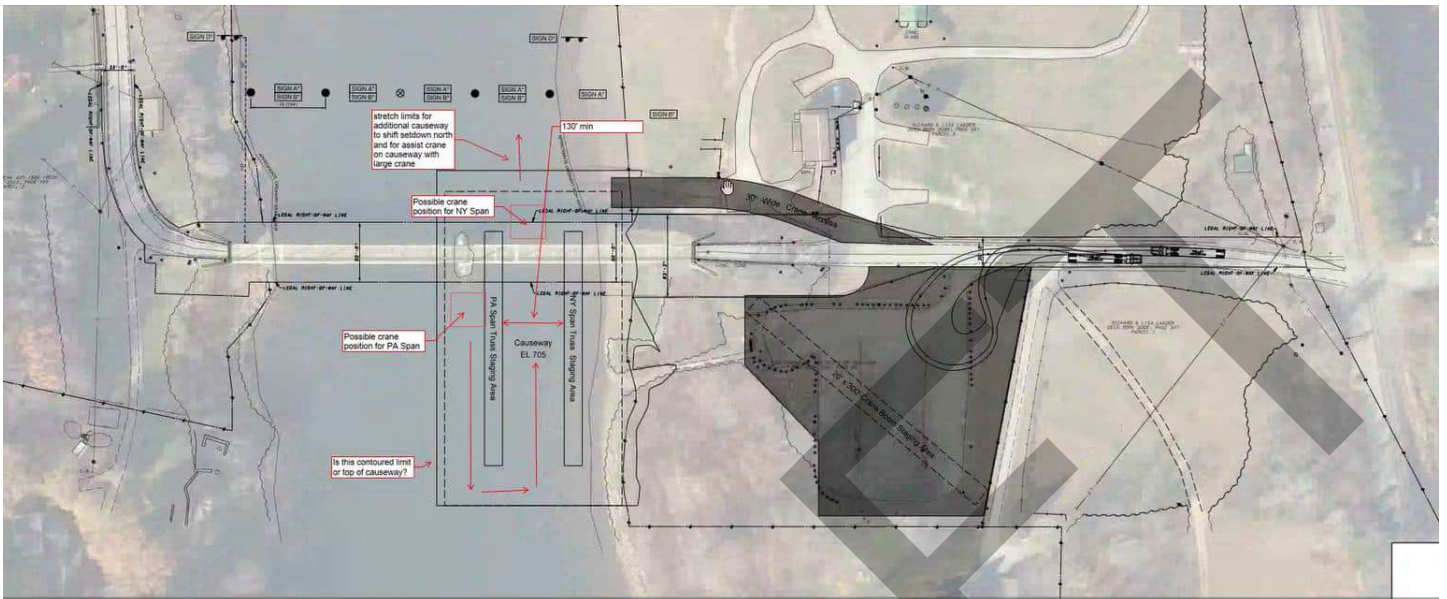


Figure 7: Draft Conceptual Schematic of Southern Staging Area and Causeway for Disassembly

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Figure 8: Draft Conceptual Schematic of Southern Staging Area and Causeway

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Figure 9: Draft Conceptual Schematic of Southern Staging Area and Causeway with 3% Crane Access Ramps

Evolution of Engineering Solutions for Skinners Falls Bridge

December 17, 2024

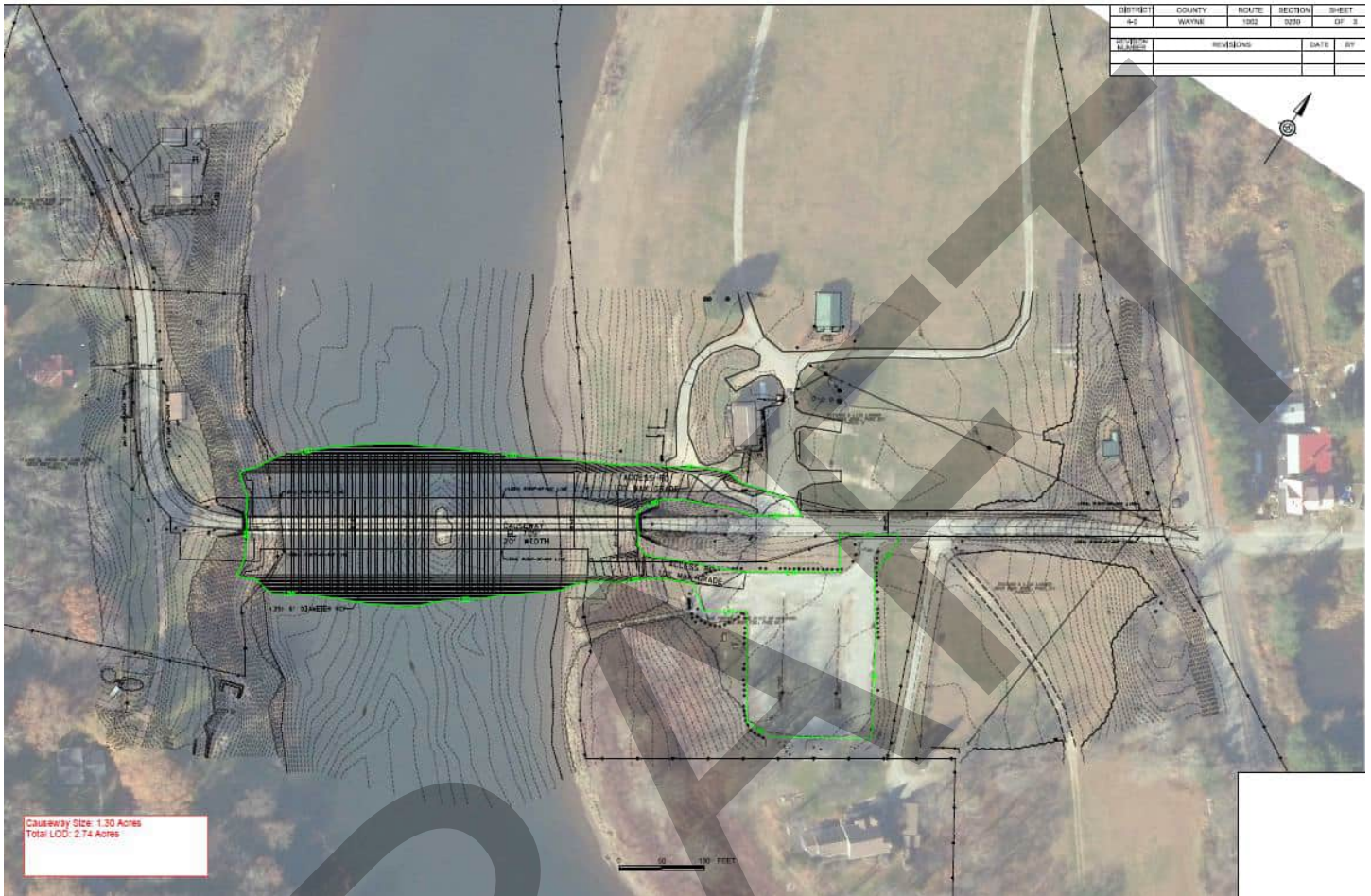


Figure 10: Demolition with a Full Width Causeway

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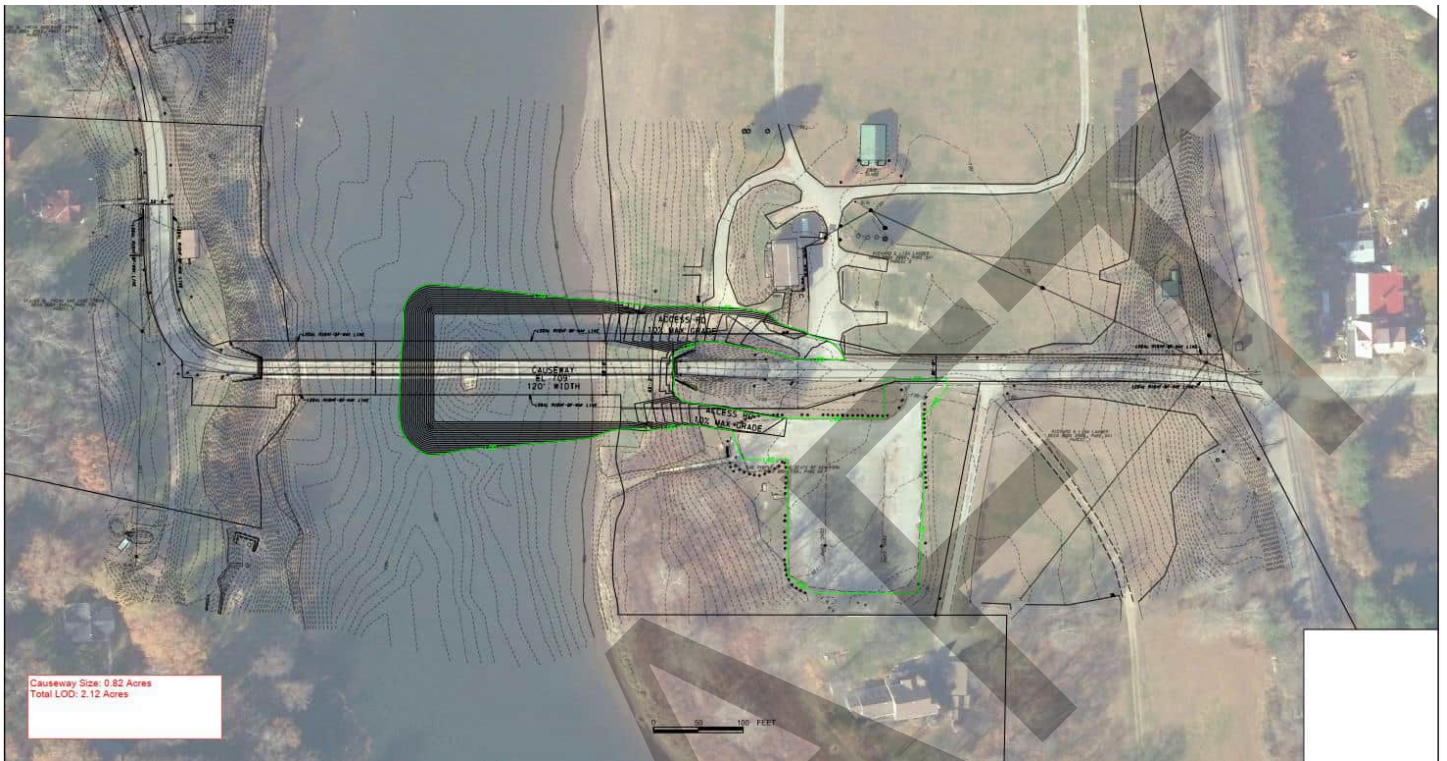


Figure 11: Demolition with a Partial Width Causeway

Appendix J: Hydrology and Hydraulics Memorandum

H&H MEMORANDUM

FROM: NTM ENGINEERING, INC.
SUBJECT: SKINNERS FALLS BRIDGE – TEMPORARY CONDITIONS
DATE: DECEMBER 13, 2024
CC: PENNDOT DISTRICT 4-0; AECOM

The purpose of this memo is to summarize the H&H analysis of the SR 1002 (Skinners Falls) bridge over the Delaware River for the emergency waterway permit. This analysis evaluated temporary conditions for the removal of the Skinners Falls bridge trusses and pier. The site is located at 41°40'11" N latitude and 75° 03' 30" W longitude. The project is located in a detailed FEMA floodplain and floodway; the FEMA HEC-RAS model was obtained for the Delaware River.

The drainage area at the project site is approximately 1,900 square miles as delineated with the USGS StreamStats website. Peak flows were computed using a Bulletin 17B gage analysis of the Delaware River at Callicoon, NY gage (USGS 01427510). The Delaware River gage has a drainage area of 1,820 square miles and can be applied to the site per PennDOT Publication 13M, DM-2 Chapter 10. The gage record was transposed to the project site per the procedure outlined in DM-2, Chapter 10.6.C.4.a. A systematic record skew of 0.504 was determined from 48 years (1976 – 2023) of peak flow data. The USGS PeakFQ version 7.1 computer program, which follows the Bulletin 17B methodology, was used to perform the analysis. The peak flows used in the hydraulic analysis are provided in **Table 1**. The normal flow was determined from the monthly mean discharge data from the USGS 01427510 gage between 2003 and 2024, with April having the most conservative monthly mean flow (6,258 cfs).

Table 1: Estimated Flows at the SR 1002 (Skinners Falls) Bridge

Monthly Mean Discharge Gage Data	Bulletin 17B Gage Analysis		100-year FEMA Regulatory (cfs)
Normal Flow – April (cfs)	1-year (cfs)	2-year (cfs)	
6,258	13,503	37,799	139,250

The existing SR 1002 structure is a two-span through truss bridge. The pier has 90-degree triangular nose with a width of 13.5 feet at the bottom and 5.67 feet at the cap. The overall span from left abutment to right abutment is 462.25 feet. The normal clear spans of the left and right spans, as measured from the abutment to the edge of the pier cap, are 228.00 feet and 228.58 feet, respectively. The out-to-out structure width is 18.3 feet, the average underclearance is 35 feet, and the hydraulic opening is approximately 16,150 square feet. The minimum low chord elevation is 733.93 feet at the upstream left abutment.

The hydraulic analysis was performed using the U.S. Army Corps of Engineers HEC-RAS River Analysis System program (Version 6.2). Existing and temporary conditions were modeled based on the surveyed cross sections, LiDAR, temporary causeway grading, and peak discharge calculations. Hydraulic cross sections 1 through 20 include approximately 4,300 feet of the modeled reach and were based on a combination of bathymetric survey within the channel, topographic survey in the immediate overbanks, and LiDAR in the overbanks. Cross sections 227775 through 246959 were

obtained directly from the FEMA HEC-RAS model with no modifications and represent more than 20,300 feet of the upstream channel.

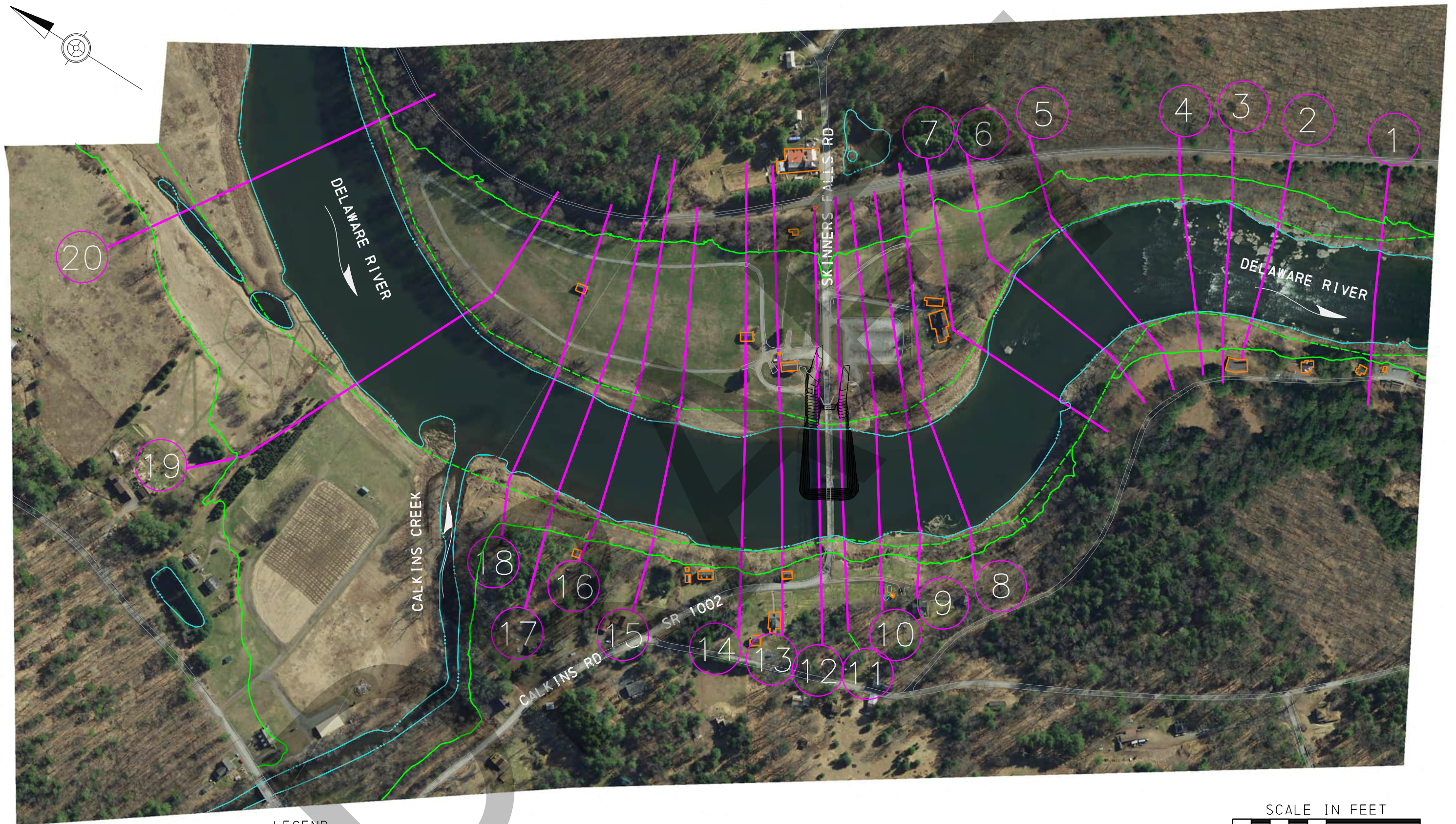
Roughness coefficients were based on aerial photographs, the FEMA model, and Table 3-1 in the HEC-RAS Hydraulic Reference Manual. Ineffective flow areas and contraction/expansion coefficients were included in the existing and temporary models immediately upstream and downstream of the bridge and causeway. Obstructions were coded at the locations shown on the hydraulic cross section map (attached). Steady flow analysis was performed using a subcritical flow regime for all profiles. Normal depth boundary conditions were applied for the 1-year, 2-year, and normal flow profiles using an average downstream stream bottom slope of 0.003 feet per foot. A single peak flow for each return period analyzed was applied to the reach (i.e., no flow changes).

AECOM designed a partial-width causeway to extend from the New York side (left bank) of the Delaware River to approximately 30 feet beyond the pier, as measured from the pier to the edge of the top of the causeway. The causeway has a top width of 120 feet and top elevation of 709 feet. The causeway design does not include pipes due to the potential for ice limiting their effectiveness and to expedite the placement and removal of the causeway. The temporary model coded the causeway fill into the HEC-RAS model by adjusting the channel elevation points of the internal bridge sections and the bounding bridge sections (XS 11, 11.5 BRD, 11.5 BR U, and 12). Additional ineffective flow areas were included in the sections immediately upstream and downstream of the causeway (XS 10 and 13).






The results of the temporary model indicate that the causeway will provide at least 6.3 feet of freeboard over the normal flow. The causeway will provide approximately 2.7 feet of freeboard over the 1-year event. The 2-year event will overtop the causeway by 5.5 feet.

The Joint Agency Guidance between PennDOT and PADEP requires the evaluation of the 2-year event for the risk of flooding during construction. A comparison of the existing and temporary results indicate that the maximum 2-year increase is approximately 4.4 feet, and the 2-year temporary increases are within 0.1 feet of the 2-year existing profile at approximately 18,900 feet upstream from the causeway. The 2-year temporary flood elevations are contained within the FEMA 100-year floodplain and will not affect buildings in the FEMA 100-year floodplain.

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LEGEND

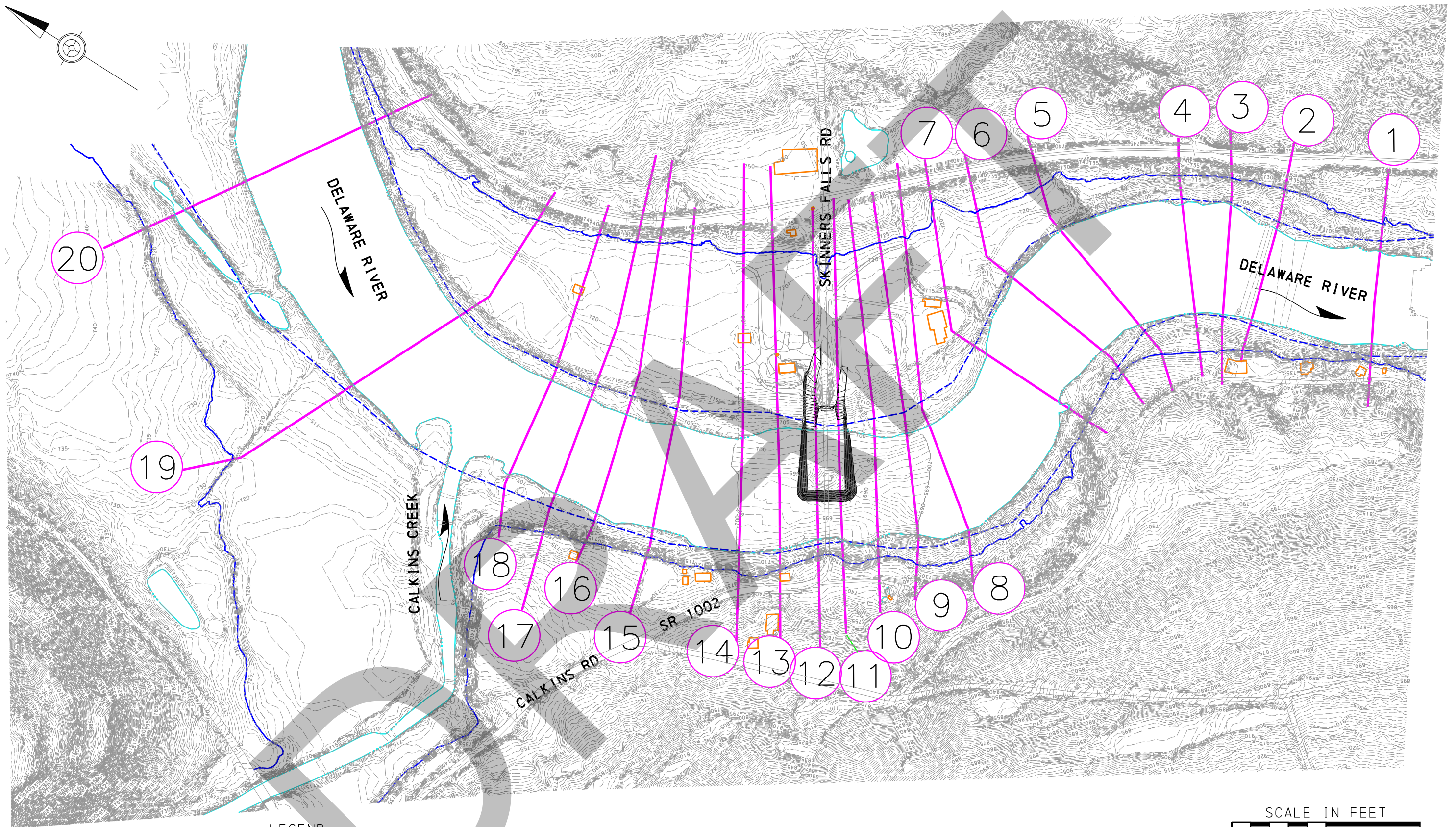
-  - EXISTING & TEMPORARY HYDRAULIC CROSS-SECTION
-  - EDGE OF WATER
-  - OBSTRUCTION
-  - FEMA 100-YR FLOODPLAIN
-  - FEMA FLOODWAY








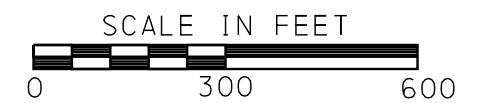
130 WEST CHURCH, SUITE 200
DILLSBURG, PA 17019
PHONE 717-432-4425
FAX 717-432-4426

SR 1002 SKINNERS FALLS
EXISTING AND TEMPORARY
HYDRAULIC CROSS-SECTION MAP

COUNTY: WAYNE, PA & SULLIVAN, NY
MUNICIPALITY: DAMASCUS TWP & TOWN OF COCHETON



- LEGEND**
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