

**MSP ZONING ORDINANCE  
BOARD OF ADJUSTMENT MEETING**

**Monday, March 16, 2026  
12:15 p.m.  
Room LT-3048A – Terminal 1  
Minneapolis-St. Paul International Airport**

**AGENDA**

1. Variance Request:

MnDOT's I-494/TH77 Dry Ponds in Bloomington, MN

The application variance seeks relief from the waterfowl attractant restrictions imposed in Section V: Safety Zone B Restrictions.

Materials for this meeting are available at the following Webpage:

<https://metroairports.org/resources/commission-meetings>

**Please see attached security checkpoint information**

## **SECURITY CHECKPOINT INFORMATION**

Commission board and committee meetings are held within the secure area of Terminal 1 at Minneapolis-St. Paul International Airport (MSP). To access the board chambers, all individuals must:

1. Obtain a concourse security pass.
2. Present an acceptable [REAL ID-compliant form of identification](#), such as a valid passport. *Please note that not all [state-issued ID cards](#) are REAL ID compliant.*
3. Complete screening at a TSA checkpoint.

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Effective Feb. 1, 2026, individuals who do not present an acceptable form of REAL ID at TSA checkpoints may use TSA ConfirmID to attempt to verify their identity. Verification is not guaranteed.

[TSA ConfirmID](#) is a fee-based service operated by the federal government. It is designed to enhance security and streamline the verification process for people without a REAL ID who require access through TSA security checkpoints. TSA ConfirmID ensures compliance with federal security standards.

REAL ID and TSA ConfirmID resources:

- [Transportation Security Administration \(TSA\)](#)
- [TSA ConfirmID](#)
- [About TSA ConfirmID](#)
- [TSA ConfirmID FAQs](#)
- [REAL ID](#)

### **Plan ahead: Time considerations**

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Depending on demand, obtaining a security pass generally takes less than five minutes if you present a REAL ID-compliant identification.

If you do not have an acceptable form of ID, the TSA ConfirmID process may take 30 to 45 minutes. TSA ConfirmID costs \$45, and the MAC will cover this cost for up to three meetings.

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- Present a REAL ID-compliant identification photo ID to the personnel at the Information Booth on the Departures Level. They will prepare a security pass for you.
- Use the North security checkpoint to pass through security. You will be asked to show your ID and security pass at that time.
- Once you are through security, proceed to your left. Go through the Airport Mall and look for the signs for the Airport Conference Center above the entrance to Concourse F.
- Use the stairs or elevator to go up one level.

The board meetings take place at the MSP Airport Conference Center on the Mezzanine Level above the Delta Air Lines Sky Club.

For more information, call 612-726-5555.



## Metropolitan Airports Commission

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TO: MSP Zoning Ordinance Board of Adjustment

FROM: Eric Gilles, Director, Airport Planning (612-725-4694)

SUBJECT: **Variance Request for MnDOT's I-494/TH 77 Dry Ponds in Bloomington, MN**

DATE: March 9, 2026

### **Background**

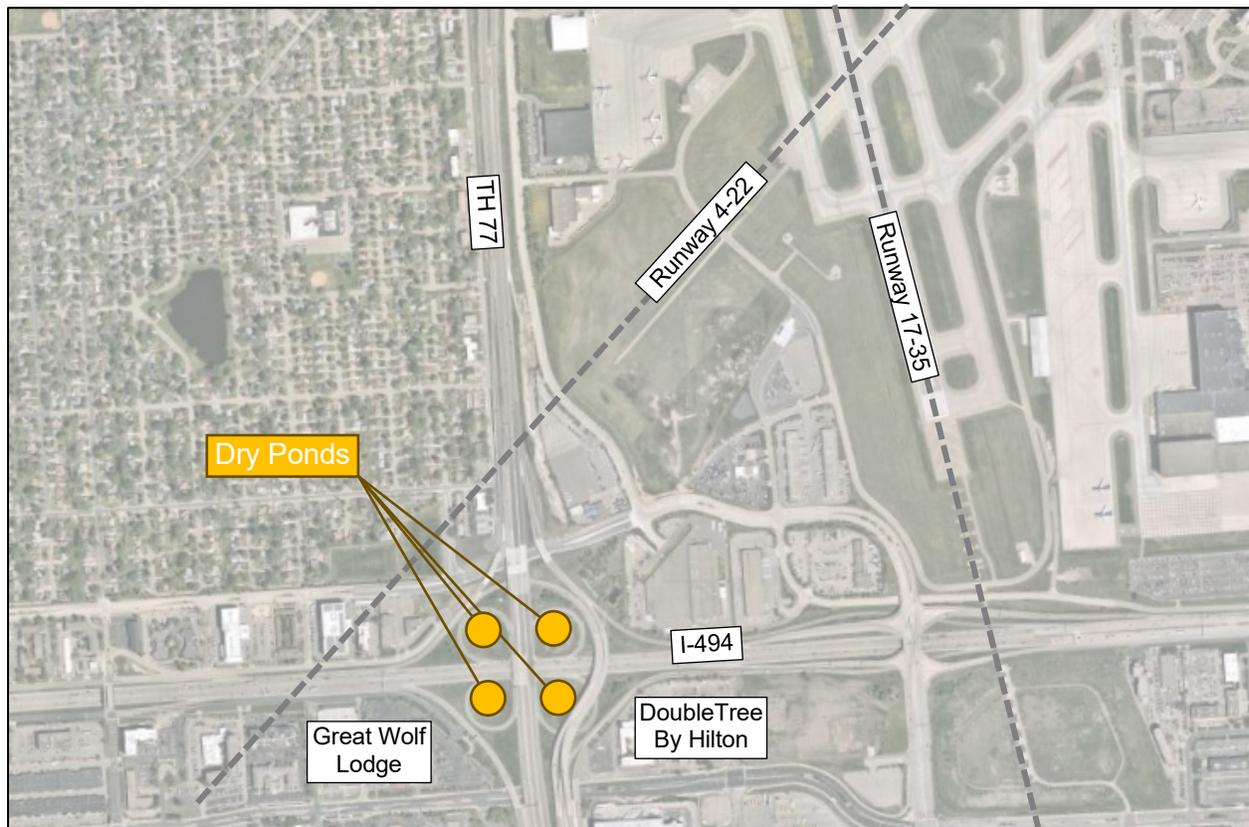
Attached for your review is a request for a variance submitted by MnDOT for construction of dry ponds within the intersection of Interstate 494 and Cedar Avenue (TH 77) in the City of Bloomington. The variance request is submitted under provisions of the Minneapolis-St. Paul International Airport (Wold-Chamberlain Field) Zoning Ordinance and seeks relief from the zoning ordinance language in Section V. prohibiting ponds or other uses that might attract waterfowl. The request is limited to the dry pond component of the proposed construction. A separate zoning variance application may be required for any airspace impacts, temporary construction requirements, or physical components not related to the dry ponds that may not conform to Safety Zone B limitations.

In sum: the variance request is submitted under provisions of the Minneapolis-St. Paul International Airport (Wold-Chamberlain Field) Zoning Ordinance (MSP Zoning Ordinance) and seeks relief from the pond/waterfowl attractant restrictions imposed in Section V: Safety Zone B Restrictions.

### **Facts**

As depicted in the attached Variance Application package, the reconstruction of I-494 at the intersection of TH 77 includes the replacement of the TH 77 bridge deck. By landmarks, the site is both immediately northwest of the DoubleTree by Hilton, immediately northeast of the Great Wolf Lodge, and between extended centerlines of Runways 4-22 and 17-35. The graphic on the following page shows the location.

The proposal includes the construction of four dry ponds and will include liners for each to prevent migration of groundwater into the pond but also prevent vegetation growth. Large diameter outlets are proposed to draw down water within 48 hours post storm event. The pipe outlets are proposed to be set at the bottom of the basins to allow for complete draw down.



The proposed dry ponds are connected to the broader reconstruction of a portion of I-494 and TH 77's bridge over I-494. The dry pond work is earth work and does not have impacts to MAC's Zone C (airspace limitations). The proposer has indicated use of temporary equipment to complete the rest of the project, including the I-494 pavement and TH 77 bridge replacement, will also not impact Zone C.

### **Analysis**

Zone B does not allow ponds or other waterfowl attractants. The proposer has coordinated with the US Department of Agriculture (USDA) to obtain a determination that the proposed dry ponds are not an attractant. Moreover, as designed, the ponds are intended to drawdown within 48 hours post storm event and leave no standing water. Thus, any ponding that may occur is designed to be a temporary condition. Construction of these dry ponds does not impact airspace, and the temporary equipment that will be used to reconstruct the I-494 pavement and bridge work on TH 77 will also remain clear of zoning airspace impacts. MAC has noted to the project proposer FAA airspace filings for the use of temporary equipment are still required to be made with the FAA regardless of no Zone C airspace impacts.

### **Evaluation**

Section IX. C. of the MSP Zoning Ordinance allows the granting of variances, "...where it is found that a literal application or enforcement of the provisions of [the] MSP Zoning Ordinance would result in practical difficulty or unnecessary hardship and relief granted would not be contrary to the public interest but do substantial justice and be in accordance with the spirit of [the] MSP

Zoning Ordinance and Minnesota Statutes Chapter 360. Any variance granted may be granted subject to any reasonable conditions that the Board of Adjustment, or the Commissioner [of the Minnesota Department of Transportation] acting under Section IX.B., may deem necessary to effectuate the purpose of this MSP Zoning Ordinance.”

Considering the USDA’s determination that these four (4) dry ponds are not an attractant, designed to drawdown quickly, and there are no airspace impacts to zoning, it is the MAC’s conclusion that granting the requested variance is allowable and consistent with the variance provisions, Section IX, C. of the MSP zoning ordinance. Staff recommend that the MSP Zoning Board of Adjustment grant a variance for the proposed dry ponds within Zone B as stated in the attached **Findings, Conclusions and Approval of Variance with Conditions** and to be subject to all conditions therein.

**BOARD ACTION REQUESTED**

GRANT THE VARIANCE REQUESTED BY MNDOT FOR THE CONSTRUCTION OF FOUR (4) DRY PONDS AT THE INTERSECTION OF I-494 AND TH 77 IN BLOOMINGTON, MN AND ADOPT THE ATTACHED FINDINGS, CONCLUSIONS AND APPROVAL OF VARIANCE WITH CONDITIONS.

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State of Minnesota  
County of Hennepin

Zoning Jurisdiction under the MSP  
Zoning Ordinance

MSP Zoning Ordinance Board of Adjustment

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In the Matter of the Application/Petition for  
Variance of Runway 4 Zone B Restrictions for  
the MnDOT Dry Ponds at the I-494 / TH 77 Intersection

### **Findings, Conclusions and Approval of Variance with Conditions**

After considering the request and the evidence presented, the MSP Zoning Ordinance Board of Adjustment makes the following findings and conclusions:

#### **Findings**

1. On December 24, 2025, Minnesota Department of Transportation (MnDOT) submitted a request for variance from the strict application of the Minneapolis-St. Paul International Airport (Wold Chamberlain Field) Zoning Ordinance for the construction of four (4) dry ponds as part of a broader reconstruction project related to the intersection of I-494 and TH 77 in Bloomington, MN.
2. The proposed dry pond piece of the project is located at the intersection of I-494 and TH 77, which is east of the Great Wolf Lodge and west of the DoubleTree by Hilton. The proposed work is located within Zone B of the Runway 4 approach end.
3. The MSP Zoning Ordinance establishes land use restrictions within Zone B. One such land use restriction prohibits the construction of “ponds or other uses that might attract waterfowl or other birds.”
4. The United States Department of Agriculture (USDA) has reviewed the description of the construction project and determined that the proposed dry ponds would not be waterfowl attractants.
5. MnDOT’s proposed design for the dry ponds is proposed to provide for large diameter outlets providing quick drawdown of stormwater, and no ponding forty-eight hours after the storm event.

6. The MSP Zoning Ordinance establishes height restrictions. Since the proposed dry pond work is earth work and drainage below ground, the proposed variance request does not have an impact to height restrictions related to the ordinance. The work related to reconstructing I-494 pavement and replacement of TH 77 bridge deck was also indicated by the proposer that any temporary construction equipment will remain clear of Zone C and no variance is necessary for the use of that equipment.
7. FAA Determinations with Findings of No Hazard will not be required for the dry pond portion of the project, as the work is surface work and underground drainage work. The MAC noted to the proposer that coordinating with the FAA on obtaining Determinations with Findings of No Hazard will still be required for the proposed pavement reconstruction, bridge reconstruction, and associated use of temporary construction equipment as that process is separate from the variance process.

### **Conclusions**

1. The variance request, as clarified, is a complete application for a variance from strict application of the MSP Zoning Ordinance. Any deviation from the description provided would require an additional zoning variance request.
2. A literal application of enforcement of the MSP Zoning Ordinance would result in practical difficulty or unnecessary hardship to the applicant.
3. Granting the requested variance will, if all conditions are followed, have no adverse effect on MSP airport or aircraft activity to and from MSP airport.
4. Granting the requested variance would not be contrary to the public interest and would be in accordance with the spirit of the MSP Zoning Ordinance.

### **Approval of Variance with Conditions**

Based on the Findings and Conclusions, the Board hereby approves a variance for the construction of dry ponds at the intersection of I-494 and TH 77 as described in the application, subject to the following conditions:

1. All elements related to the project, aside from the dry pond work, will remain clear of and compliant with the MSP Zoning Ordinance restrictions.
2. The dry ponds will be constructed according to a design to provide for no stormwater ponding forty-eight hours after a storm event.
3. FAA Determinations with Findings of No Hazard, related to the use of temporary cranes, reconstruction of I-494, and replacement of TH 77 bridge deck will be obtained prior to construction of the dry ponds and all other construction elements.

Adopted this \_\_\_\_\_ day of \_\_\_\_\_, 2026 by:

Ginsberg: \_\_\_\_\_

Lawrence: \_\_\_\_\_

Bizen: \_\_\_\_\_

Attested to by \_\_\_\_\_, Secretary

**APPLICATION INFORMATION**

Please provide the following information:

**1. Applicant's Identification**

NAME Asche Greg  
(LAST) (FIRST) (M.I.)

ADDRESS 395 John Ireland Blvd

CITY St Paul STATE MN ZIP 55155

HOME PHONE ( ) -

BUSINESS/MOBILE PHONE ( 651-775-1168 )

EMAIL (if available) greg.asche@state.mn.us

**2. Fee Owner's Identification**

NAME Asche Greg  
(LAST) (FIRST) (M.I.)

ADDRESS (if different) \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

DAYTIME PHONE ( ) -

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**3. Legal Description of Site (attach survey, if possible)**

I-494/TH-77 Interchange, see attached location map. I-494/12th Avenue northeast quadrant, see attached.

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**4. Property Identification Number** N/A - MnDOT right-of-way

**5. Zoning Classification**

MnDOT right-of-way - transportation corridor. MSP Safety Zone B

\_\_\_\_\_

\_\_\_\_\_

6. Present Use(s)

MnDOT right-of-way - transportation corridor. MSP Safety Zone B

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7. Attach site plan, drawn to scale, showing all existing conditions and proposed improvements, if any (including construction start and end dates). Construction start Spring 2027. End 2030

8. Please provide the dates and descriptions of any preliminary and final approvals regarding your property given by the municipality in which your property lies, and attach copies of such approvals.

Environmental Assessment August 2022  
MnDOT Staff Approved Layout - Approved 1/17/2025  
EA/EAW Update in progress

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9. List the provisions and cite to sections of the MSP Zoning Ordinance from which variance is requested.

Section V. Part B.3. MSP Zoning Ordinance "prohibition of ponds or other uses that might attract waterfowl or other birds" within Safety Zone B.

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10. Provide cost estimates for compliance with the Ordinance and describe changes that would be made to the land, structure or construction plan to gain compliance.

See Attached memo documenting justification for the proposed dry ponds and approach for compliance with 48-hour drawdown period, concrete pilot channel to reduce standing water potential, maintenance responsibilities, and incorporation of design guidance from FAA Circular.

If dry ponds are not allowed within this location, storage would need to be provided below ground in chamber-systems. Cost estimates range from \$60M to \$120M depending on the size of the underground system and level of surface storage that would be allowed.

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11. State the age and condition of the portions of the land or structure(s) that currently obstruct airspace, if any.

Not Applicable

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12. State the impact on the operation of the land or structure(s) from which an airspace obstruction must be removed to gain compliance with the Ordinance.

Not Applicable

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13. On a separate page, please state the reasons why this variance is in accordance with the MSP Zoning Ordinance Section IX (Variances). In doing so, explain why: 1) literal enforcement of the Zoning Ordinance would result in practical difficulty or unnecessary hardship; and 2) a grant of the variance would be consistent with the public interest, do substantial justice and be in accordance with the spirit of the MSP Zoning Ordinance.

14. Please attach any correspondence with the Federal Aviation Administration (FAA) regarding the land or structure(s) and its/their impact on airport operations.

15. Please attach a certified list of the names and addresses of the owners of property located within 100 feet.

**MAILING INSTRUCTIONS**

For a variance application to be considered it must be mailed to the following:

1. Six copies via certified United States Mail to:

MSP Zoning Ordinance Board of Adjustment  
c/o JAZB Secretary Jenn Felger  
Metropolitan Airports Commission  
6040 28<sup>th</sup> Avenue South  
Minneapolis, MN 55450

2. Via regular United States Mail to:

The Zoning Administrator of the jurisdiction in which the structure, tree or property is located as designated in Section XI.B. of the MSP Zoning Ordinance.

The following summarizes justifications for the need for a variance for the proposed dry ponds that are located within Safety Zone B. in accordance with MSP Zoning Ordinance Section IX (Variances).

The proposed dry basins are proposed in the interchange of I-494/TH77 and in the northeast corner of 12<sup>th</sup> Avenue and I-494 to provide flood storage to reduce significant flooding that currently occurs on I-494. The project is required to comply with Federal Highway Administration (FHWA) requirements to address the flooding that occurs on I-494 at the sag points under 12<sup>th</sup> Avenue, Nicollet, Portland, and the Railroad (documented in the Environmental Assessment completed in 2022). [Environmental Assessment - I-494 Minneapolis Airport to Hwy 169 Study - MnDOT](#) The flooding is extensive, between 3-6 feet at each sag point during the 50-year storm event.

MnDOT completed multiple evaluations of alternatives to meet this requirement to address the flooding at the sag points, extending for over 20 years. Alternatives that have been considered are further described in the EA linked above and include a deep tunnel, property acquisition for flood storage, and replacement/upsizing of the existing MnDOT trunk storm sewer to the Minnesota River downstream. The proposed approach to construct the dry ponds in the I494/TH77 interchange along with frontage road storm sewer systems was determined to be the most economical, while balancing environmental impacts and achieve the FHWA requirement.

Eliminating the surface storage basins that are proposed within Safety Zone B would require constructing the storage in large underground systems. While feasible, this adds a considerable constructability and long-term challenges to the project given the volume of storage that is needed (approximately 35-40 ac-ft). The underground storage alternative would require:

- 1) extensive groundwater dewatering. The groundwater table is between 6-12 feet higher than the proposed invert of the underground systems.
- 2) calculation of buoyancy in the design of the underground system due to the higher groundwater conditions,
- 3) evaluation of potential for soil/groundwater contamination (ongoing) that would impact the design of the underground chamber system. Contamination would impact the type of chamber system that can be used, materials, and may require an additional liner system.
- 4) extended construction timeframe,

- 5) additional traffic disruption during construction due to the depth of the underground chambers that would require additional lane closures,
- 6) ongoing monitoring and maintenance that exceeds what is required with the surface systems.
- 7) More robust maintenance access considerations for the underground system for vacuum trucks, equipment, and staff.

Additionally, besides the items listed above, the construction cost of underground storage systems far exceeds the surface dry basin storage option. Beyond the construction cost, the long-term maintenance costs also exceed the cost of the surface dry basin option that is proposed. The significant added cost exceeds what MnDOT currently has budgeted for the project and could delay construction of the improvements.

Granting of the variance would be in accordance with MSP Zoning Ordinance as MnDOT is proposing several measures to reduce the potential for the basins to be a waterfowl attractant and to comply with Federal Aviation Administration (FAA) Circular No. 150/5200-33C. These measures are described in more detail in the attached memo. Additionally, the proposed approach would address the existing wet pond condition that exists in the northeast quadrant of the 494/77 interchange and correct an existing issue.

MnDOT has coordinated with the US Department of Agriculture (USDA) for feedback on the proposed design and potential to be considered a hazard or waterfowl attractant. Their email response is attached and indicates that the proposed design is not considered an attractant.

## Earth Evans

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**From:** Schumacher, Alan - MRP-APHIS <alan.k.schumacher@usda.gov>  
**Sent:** Friday, November 7, 2025 1:35 PM  
**To:** Earth Evans  
**Cc:** Lutaya, Andrew (DOT); Asche, Gregory (DOT); Derek Schmidt; Kowalczyk, Katie (She/Her/Hers) (DOT); Matt Schulz; Pat.Mosites@mspmac.org; Harken, Jeff; Jeff.Mattson@mspmac.org; Alberg, Chad - MRP-APHIS; Nohrenberg, Gary - MRP-APHIS  
**Subject:** RE: [External Email]MnDOT 494/77 dry basins - waterfowl  
**Attachments:** 494\_77 Basins.pdf; I-494 Recon Airport BMPs PDF.pdf

### EXTERNAL EMAIL

Earth-

After reviewing the provided memo regarding the proposed dry basins located at the 494/77 interchange, USDA Wildlife Services does NOT believe the proposed will increase wildlife hazards at MSP airport. If designed following the MSP Zoning Ordinance incorporating dry basins, liners for groundwater prevention, and outlets to drawdown within the 48hr FAA recommendation, WS Does not see them as an attractant for waterfowl. Further, the “draft criteria” for incorporation into contract documents, seem sufficient to monitor future performance of the ponds post-project.

Thank you,  
Alan

Alan Schumacher  
Wildlife Biologist  
USDA/APHIS/Wildlife Services  
Minnesota - State Office  
644 Bayfield Street, STE 215  
Saint Paul, MN 55107  
O: 651-224-6027  
C: 612-396-4487

**From:** Earth Evans <eevans@wsbeng.com>  
**Sent:** Thursday, October 30, 2025 4:01 PM  
**To:** Schumacher, Alan - MRP-APHIS <alan.k.schumacher@usda.gov>  
**Cc:** Lutaya, Andrew (DOT) <andrew.lutaya@state.mn.us>; Asche, Gregory (DOT) <greg.asche@state.mn.us>; Derek Schmidt <dtschmidt@wsbeng.com>; Kowalczyk, Katie (She/Her/Hers) (DOT) <katherine.kowalczyk@state.mn.us>; Matt Schulz <mschulz@wsbeng.com>  
**Subject:** [External Email]MnDOT 494/77 dry basins - waterfowl

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Hi Alan

Thanks for taking my call today regarding review of the proposed design being considered for MnDOT's I-494 Project 2 Improvements near the Minneapolis-St Paul Airport. I've attached a brief memo that we had originally prepared for MAC describing the proposed dry basins that are proposed at the 494/77 interchange. Also attached is a zoomed in figure with the proposed grading of these basins.

Here's a pin to the location.

<https://maps.app.goo.gl/ApG7W5bnNHQEgnfv7>

We're looking for your input on concerns with these basins being considered a waterfowl attractant. Once you've had a chance to review these materials, please let me know if it would be beneficial to meet to discuss further or clarify any questions.

Thanks again for your help  
Earth

Earth Evans, PE  
Director, Water Resources

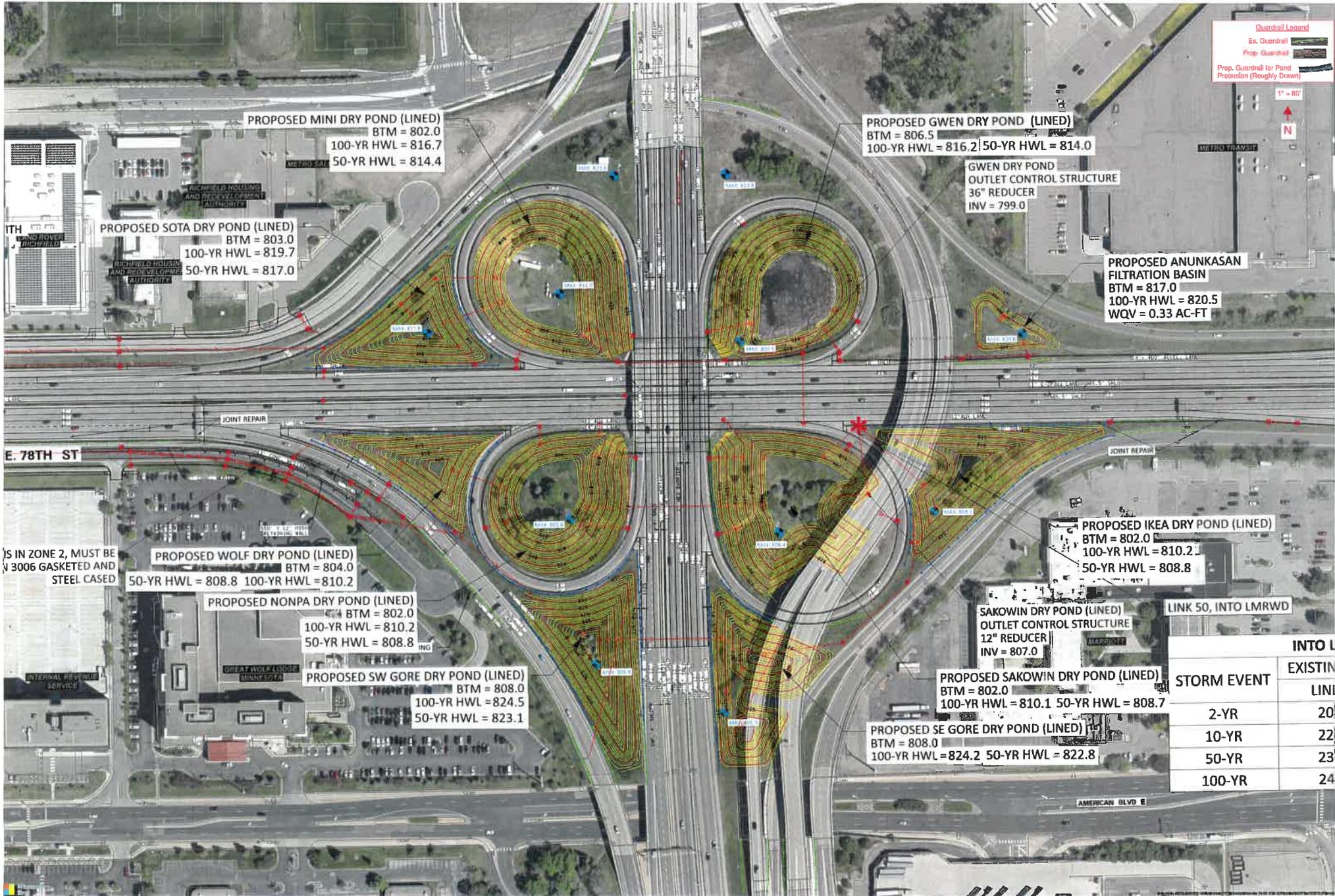
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-  
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For a list of WSB employee licenses and certifications visit [here](#).

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**Guardrail Legend**  
 Ex. Guardrail  
 Prop. Guardrail  
 Prop. Guardrail for Pond Protection (Roughly Drawn)

1" = 80'  
 N

**PROPOSED MINI DRY POND (LINED)**  
 BTM = 802.0  
 100-YR HWL = 816.7  
 50-YR HWL = 814.4

**PROPOSED SOTA DRY POND (LINED)**  
 BTM = 803.0  
 100-YR HWL = 819.7  
 50-YR HWL = 817.0

**PROPOSED GWEN DRY POND (LINED)**  
 BTM = 806.5  
 100-YR HWL = 816.2  
 50-YR HWL = 814.0

**GWEN DRY POND  
 OUTLET CONTROL STRUCTURE**  
 36" REDUCER  
 INV = 799.0

**PROPOSED ANUKASAN  
 FILTRATION BASIN**  
 BTM = 817.0  
 100-YR HWL = 820.5  
 WQV = 0.33 AC-FT

E. 78TH ST

**PROPOSED WOLF DRY POND (LINED)**  
 BTM = 804.0  
 50-YR HWL = 808.8  
 100-YR HWL = 810.2

**PROPOSED IKEA DRY POND (LINED)**  
 BTM = 802.0  
 100-YR HWL = 810.2  
 50-YR HWL = 808.8

**PROPOSED NONPA DRY POND (LINED)**  
 BTM = 802.0  
 100-YR HWL = 810.2  
 50-YR HWL = 808.8

**SAKOWIN DRY POND (LINED)  
 OUTLET CONTROL STRUCTURE**  
 12" REDUCER  
 INV = 807.0

**PROPOSED SW GORE DRY POND (LINED)**  
 BTM = 808.0  
 100-YR HWL = 824.5  
 50-YR HWL = 823.1

**PROPOSED SAKOWIN DRY POND (LINED)**  
 BTM = 802.0  
 100-YR HWL = 810.1  
 50-YR HWL = 808.7

**PROPOSED SE GORE DRY POND (LINED)**  
 BTM = 808.0  
 100-YR HWL = 824.2  
 50-YR HWL = 822.8

LINK 50, INTO LMRWD

STORM EVENT	INTO LMRWD EXISTING LINE
2-YR	20
10-YR	22
50-YR	23
100-YR	24

IN ZONE 2, MUST BE 3006 GASKETED AND STEEL CASED

AMERICAN BLVD E

# Memorandum

To: Greg Asche, MnDOT  
 Andrew Lutaya, MnDOT  
 Derek Schmidt, WSB

From: Earth Evans, WSB  
 Laura Pietila, WSB

Date: May 29, 2025

Re: I-494 Reconstruction Project 2 – BMP Approach adjacent to Metropolitan Airport Commission (MAC)  
 WSB Project No. 026612-000

The purpose of this memorandum is to summarize the proposed restrictions on stormwater wet ponds and design parameters that will be incorporated into the contract documents for I-494 Project 2 in proximity to the Minneapolis/St Paul International Airport (MSP), managed by Metropolitan Airport Commission (MAC). Federal Aviation Administration (FAA) Circular No. 150/5200-33C provides guidance on land uses in proximity to airports to reduce potential to attract wildlife. MSP Zoning Ordinance, Adopted January 1984 and amended April, 2004, prescribes allowable uses within the Airport Safety Zones. [document](#)

The FAA Circular recommends a 5-mile range from the farthest operations area to protect the airspace. A portion of the I-494 Project 2 work is within this range. In particular, the FAA recommends that stormwater management BMPs located within the 5-mile radius be designed to not result in standing water. Ponds should drawdown within 48 hours after a design storm and remain dry between storms. If it is not feasible to achieve these parameters, the FAA provides recommendations on design approaches to incorporate to reduce the potential for wildlife.

MSP Zoning Ordinance outlines the allowable uses within the Safety Zones. Below image shows the Airport Safety Zones for MSP. Safety Zone B (yellow) restrictions include construction of wet stormwater ponds.



The additional restrictions associated with Zone A and C are primarily related to height of structures and trees.

The preliminary design of stormwater BMPs for the I-494 Project includes several large dry ponds located at the interchange of I-494/TH77, within Safety Zone B. Yamni Topa Pond, constructed with Project 1, is also located within Safety Zone B and is a dry pond in compliance with the MSP Zoning Ordinance. Refer to attached Figure 4 for the proposed preliminary grading of these basins. The dry ponds at I-494/TH77 are needed to provide flood storage to address flooding at several sag points on I-494. Groundwater elevations in this area were monitored in 2021-2022 and indicate that they range between 804.5 to 811; see attached Figure 4.

The following design parameters have been incorporated into the preliminary design to reduce potential for the ponds to become wet and comply with the MSP Zoning Ordinance.

- A liner is proposed for each of the basins to prevent migration of groundwater into the pond. The proposed ponds will be excavated down below the groundwater elevation in some cases and therefore it will be necessary to line the ponds to achieve the flood storage needed and reduce potential for the ponds to remain wet between storm events.
- Large diameter outlets are proposed from each of the ponds allowing them to drawdown within 48-hours post storm event. The 50-year, 24-hour, 6.37-inch and 100-year, 24-hour, 7.5-inch storm events were evaluated (Atlas 14 precipitation depths). Hydrographs of the drawdown period for several of the ponds are provided attached.
- The pipe outlets are set at the bottom of the basins to allow them to draw completely down to the bottom and not have standing water.
- The lowest bottom elevation for the dry ponds is set at 802, 3-4 feet above the invert of the existing 84" trunk line. This is required due to a constant baseflow in the trunk line driven by inflows from Richfield.
  - o The Wood Lake lift station that discharges into the MnDOT trunk line results in an extended duration inflow post peak storm event (30-40 days). The peak discharge from the lift station is small and remains below elevation 802 of the trunk line and therefore does not impact the 48-hour dry pond drawdown.
  - o The Richfield/Bloomington regulator structure, located east of 12<sup>th</sup> Avenue, also results in an extended duration of inflow volume into the MnDOT trunk line.
- Adding a concrete lined pilot channel/low flow trench to select basins (see attached hydrographs and exhibits for locations). The depth/dimensions of the pilot channel will continue to be refined; however, it is generally less than 3-inches deep and is needed to contain the water from the trailing leg of the hydrographs. As noted above, the inflow to the MnDOT trunk line extends over a large area and results in a long hydrograph (discharge versus time graph) due to the time that it takes for runoff to reach the trunk line. The pilot channel contains the very low flows that occur at the end of the rain event and prevents vegetation growth that may provide a nesting habitat and is a recommended option by the FAA for reducing waterfowl potential.
- Options have been considered for constructing a portion of the storage in the 494/77 interchange in underground chamber systems. Even if that option is pursued, surface dry pond storage will still be required, i.e. it does not fully eliminate the need for surface storage.

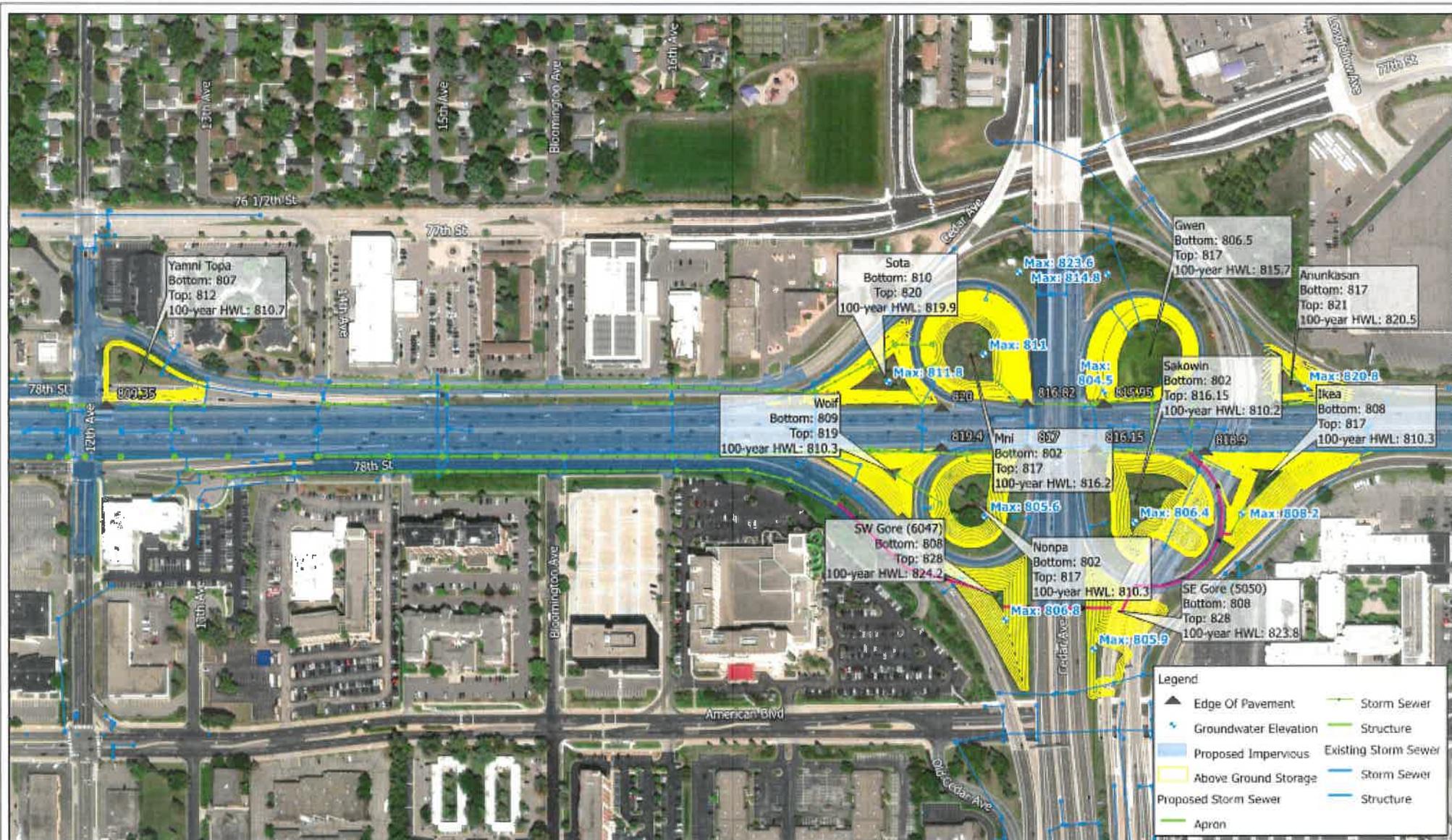
The I-494 Project will be a Design Build project. This allows flexibility for the contractor's team to design alternative methods for achieving the flood storage volume if they meet the parameters

defined in the contract documents and permitting requirements. The FAA does not have a formal permitting mechanism, and the FAA Circular is guidance and recommendations, versus a requirement. The MSP Zoning Ordinance requires a permit for work within the Safety Zones. The following list of items are draft criteria that will be incorporated into the contract documents:

- Require compliance with the FAA Circular and MSP Zoning Ordinance and prohibit wet ponds and require that ponds drawdown within 48-hours post storm event within Safety Zone B.
- Obtain an Airport Zoning Permit during preliminary design phase and reference in the contract documents requiring the Contractor to comply with the MSP Zoning Ordinance.
- Any ponding constructed within Zone B will be required to be dry; e.g. outlet set at the bottom of the pond. Consideration of the inflows from Wood Lake lift station and Richfield/Bloomington regulator structure will need to be factored into the dry pond bottom elevations.
- Dry Ponds located below the groundwater level, will be required to be lined and the liner to be designed by a Geotechnical Engineer to counteract buoyancy.
- Require inspection of any dry ponds constructed within Zone B within 48 hours of a rain event greater than 1 inch. Document performance of the dry pond to confirm the drawdown period is met. Provide monitoring reports to MnDOT after each event.
- Include compliance with the drawdown requirement in the Design Build Warranty items. Require the Contractor to provide monitoring and documentation of performance of the dry ponds for 3 years post-project.

## **ATTACHMENTS**

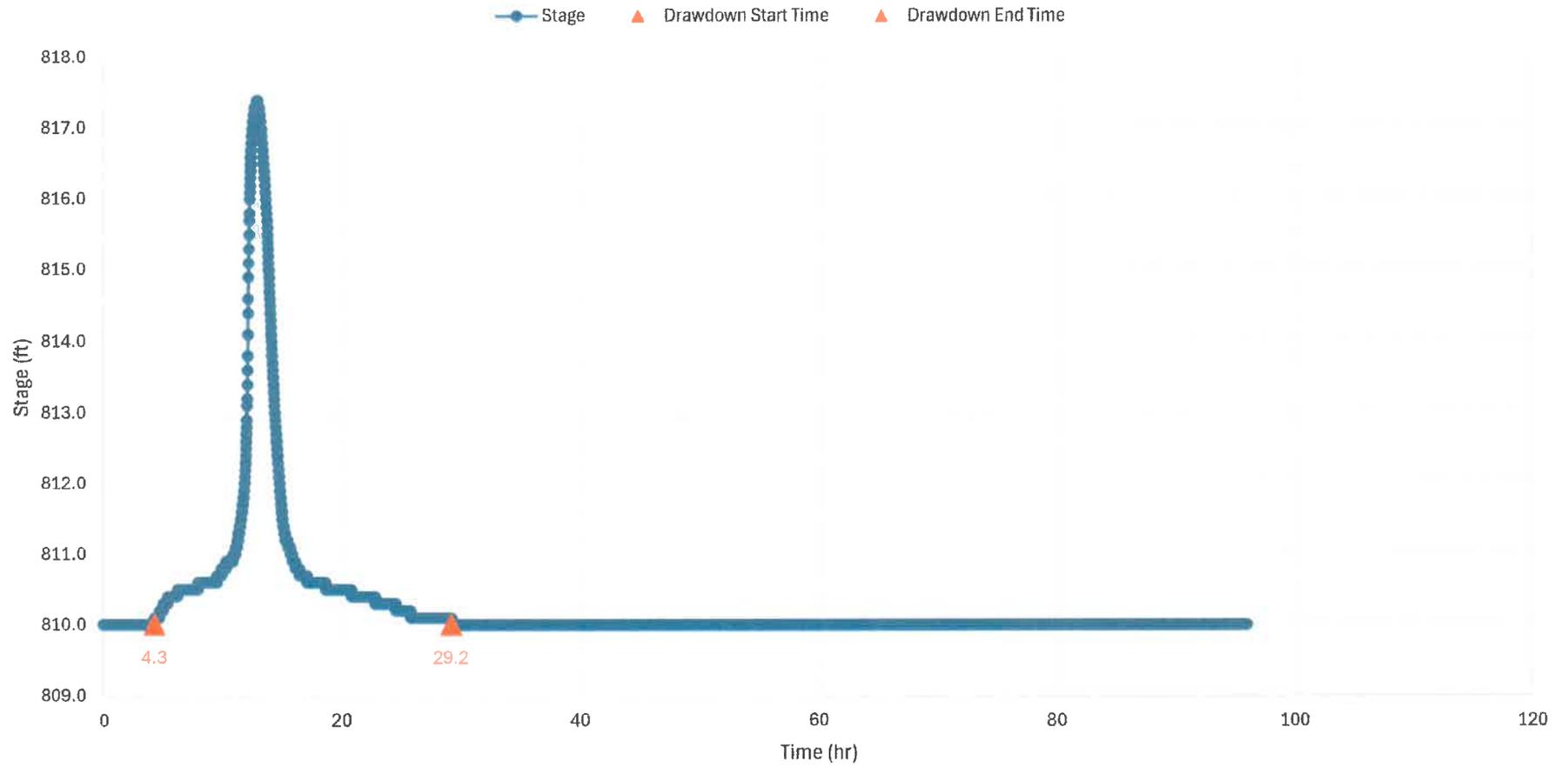
Hydrographs  
Location Exhibit



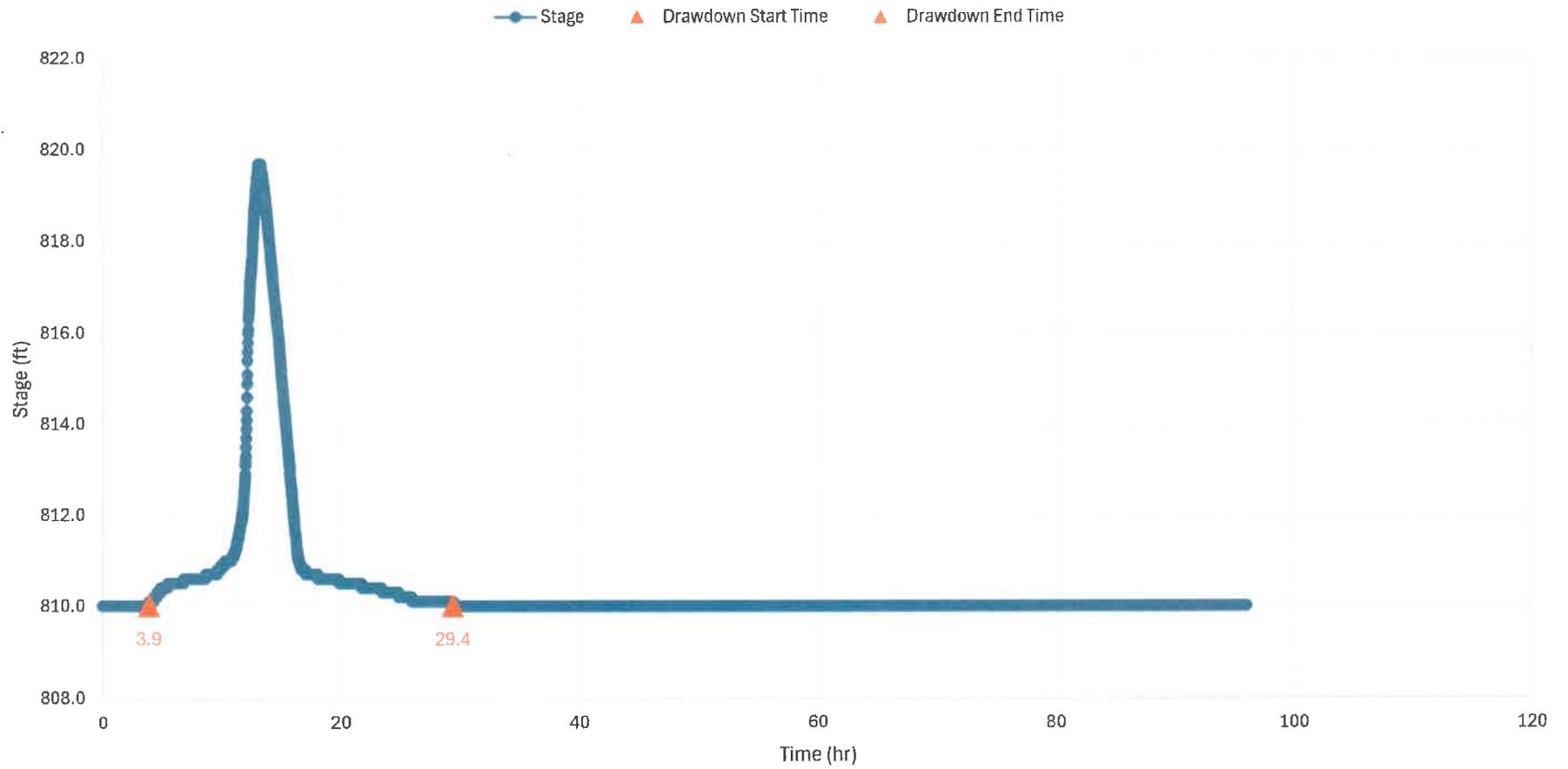
### I-494/Hwy-77 Basin Design

494 Reconstruction Project  
Minnesota Department of Transportation

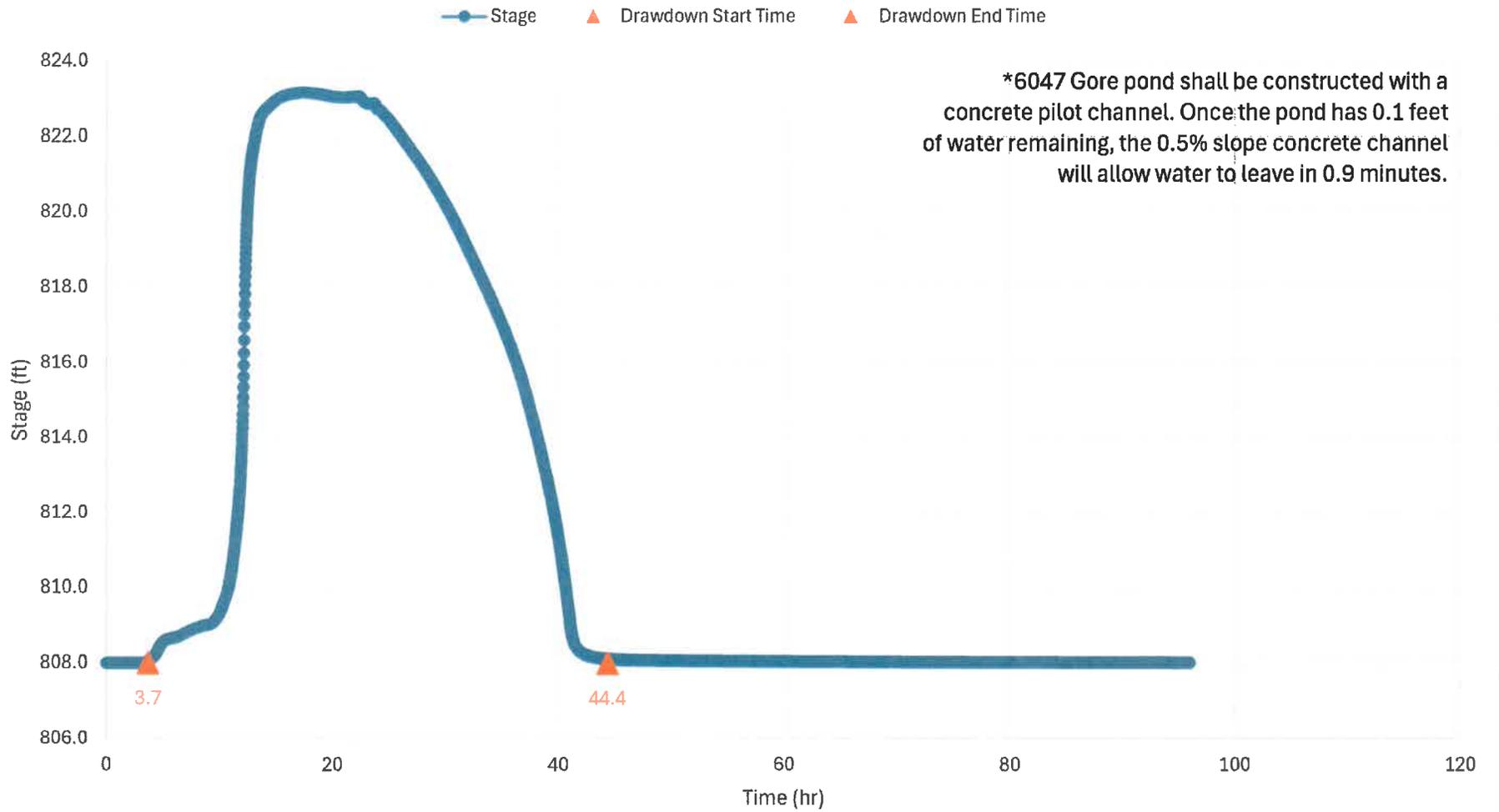
### Sota 50-Year Stage and 24.9 Hour Drawdown



### Sota 100-Year Stage and 25.5 Hour Drawdown

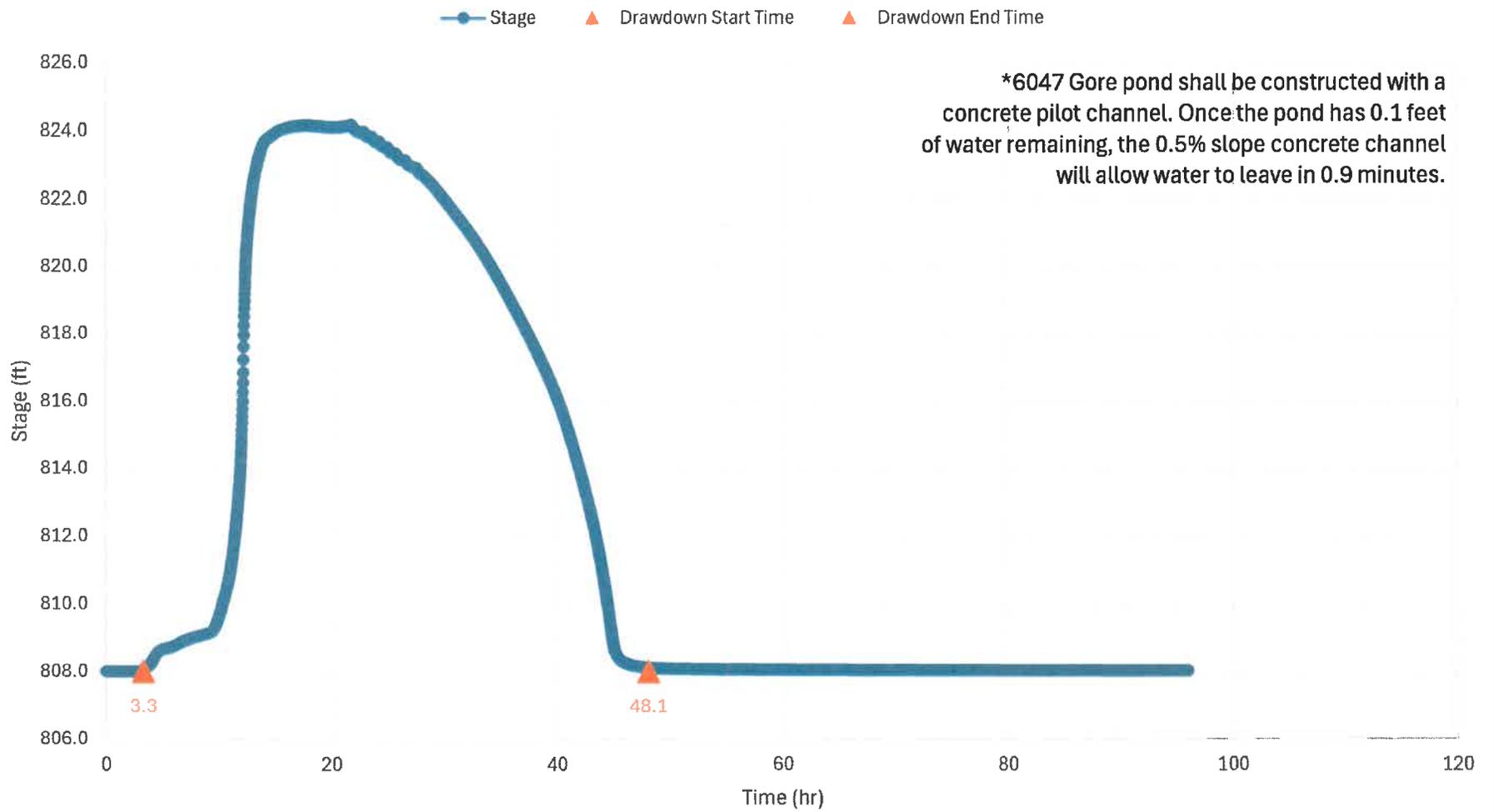


### 6047 Gore 50-Year Stage and 40.7 Hour Drawdown



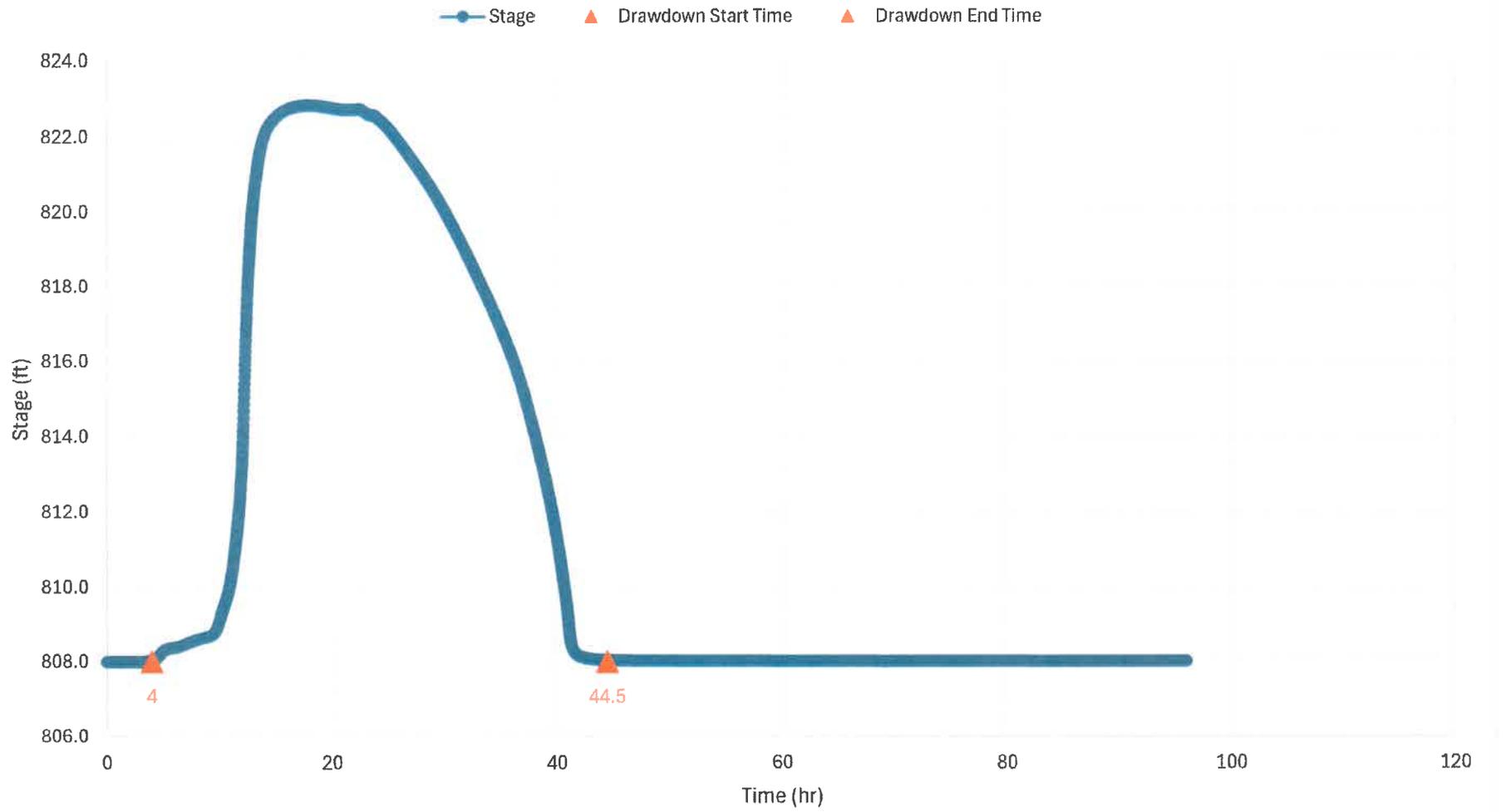
**\*6047 Gore pond shall be constructed with a concrete pilot channel. Once the pond has 0.1 feet of water remaining, the 0.5% slope concrete channel will allow water to leave in 0.9 minutes.**

### 6047 Gore 100-Year Stage and 44.8 Hour Drawdown

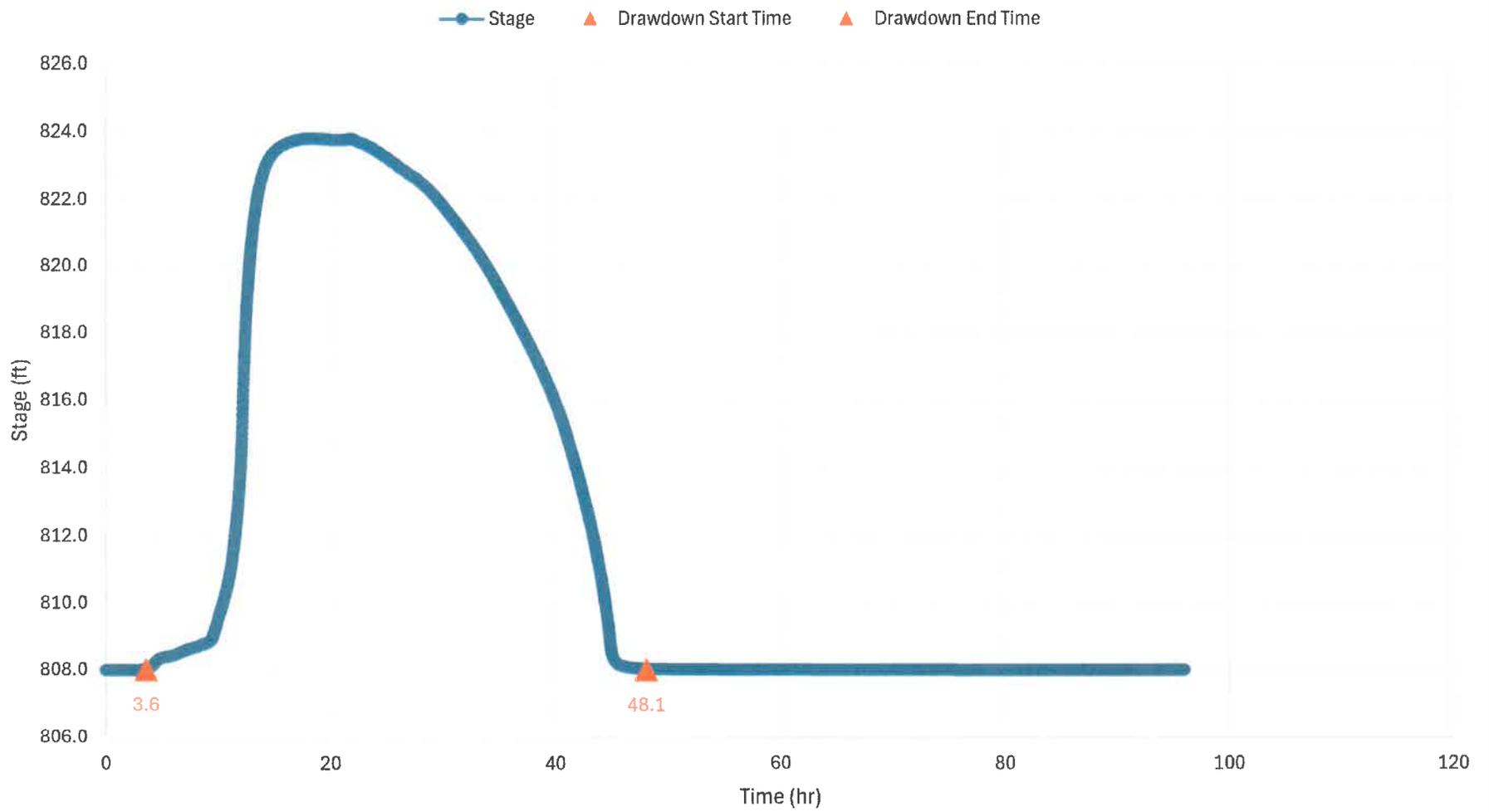


**\*6047 Gore pond shall be constructed with a concrete pilot channel. Once the pond has 0.1 feet of water remaining, the 0.5% slope concrete channel will allow water to leave in 0.9 minutes.**

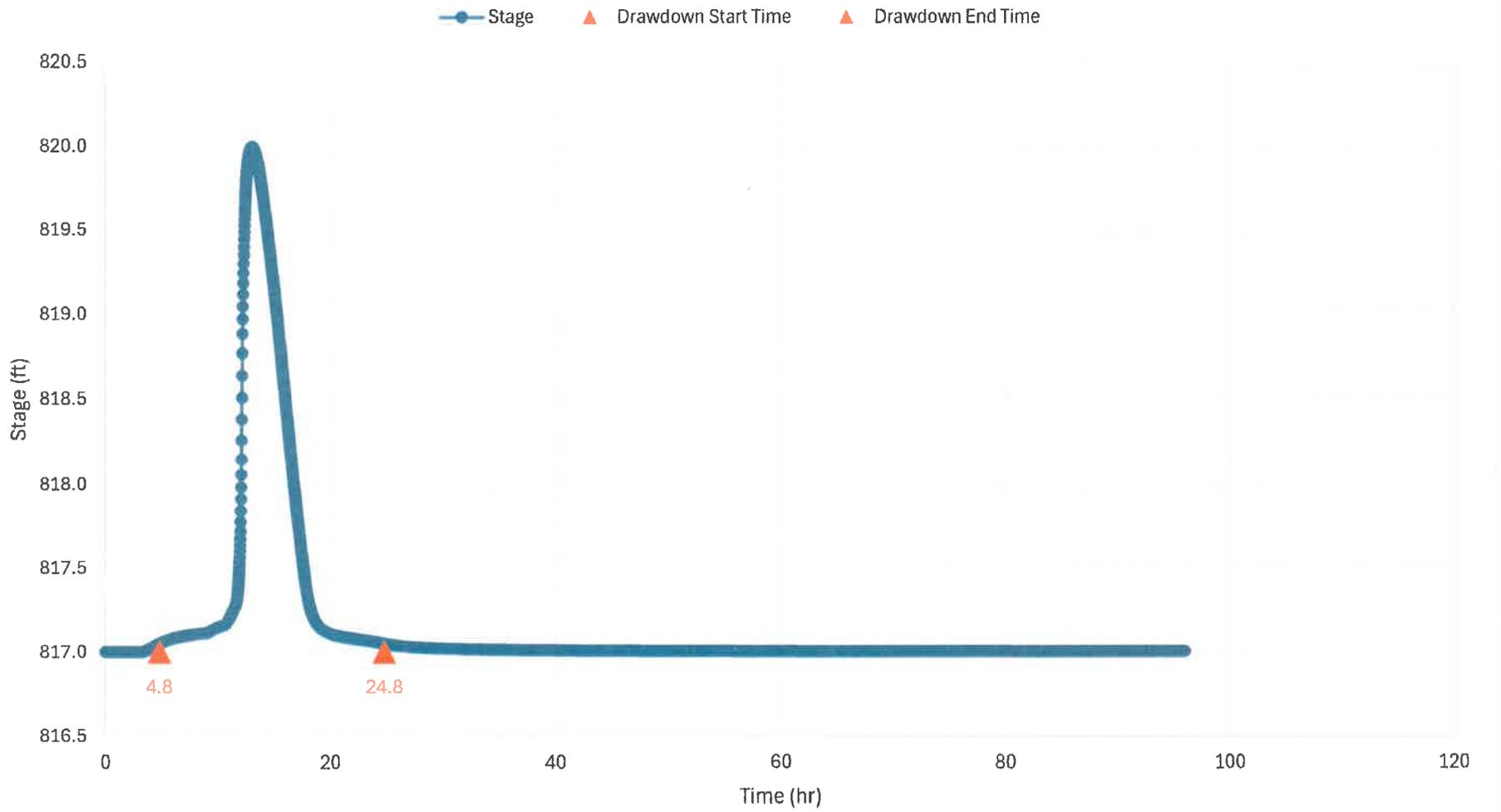
### 6050 Gore 50-Year Stage and 40.5 Hour Drawdown



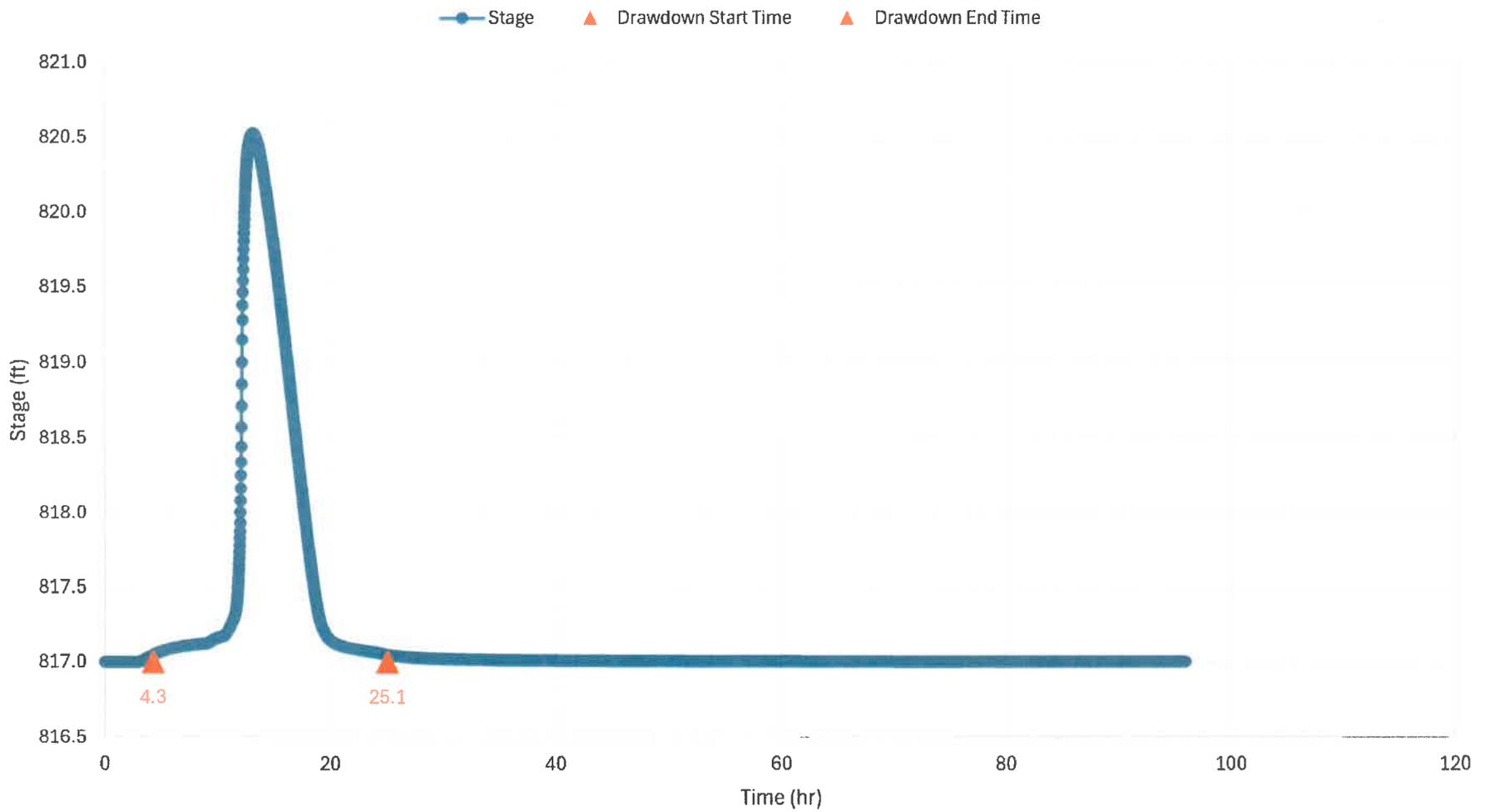
### 6050 Gore 100-Year Stage and 44.5 Hour Drawdown



### Anunkasan 50-Year Stage and 20 Hour Drawdown

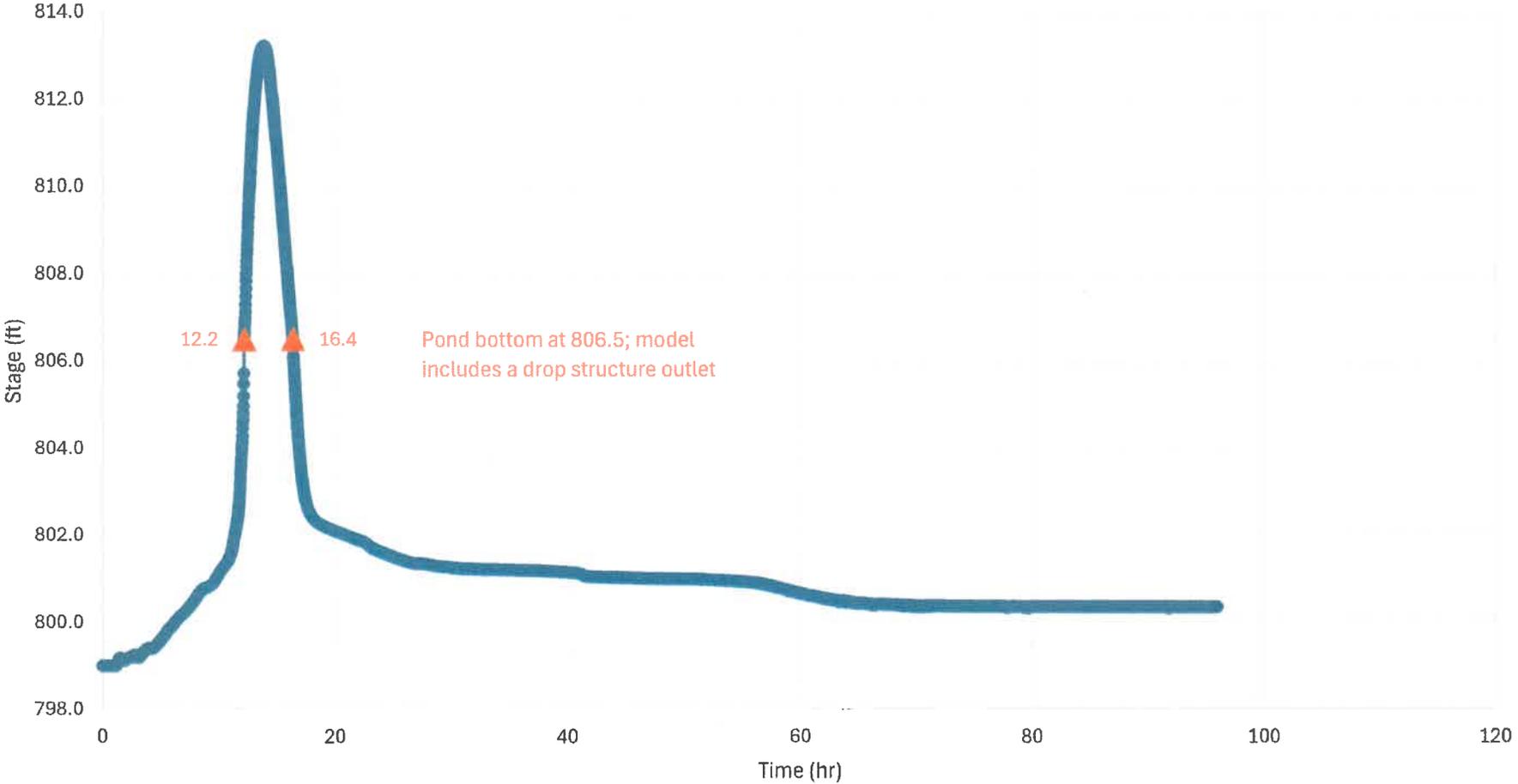


### Anuncasan 100-Year Stage and 20.8 Hour Drawdown



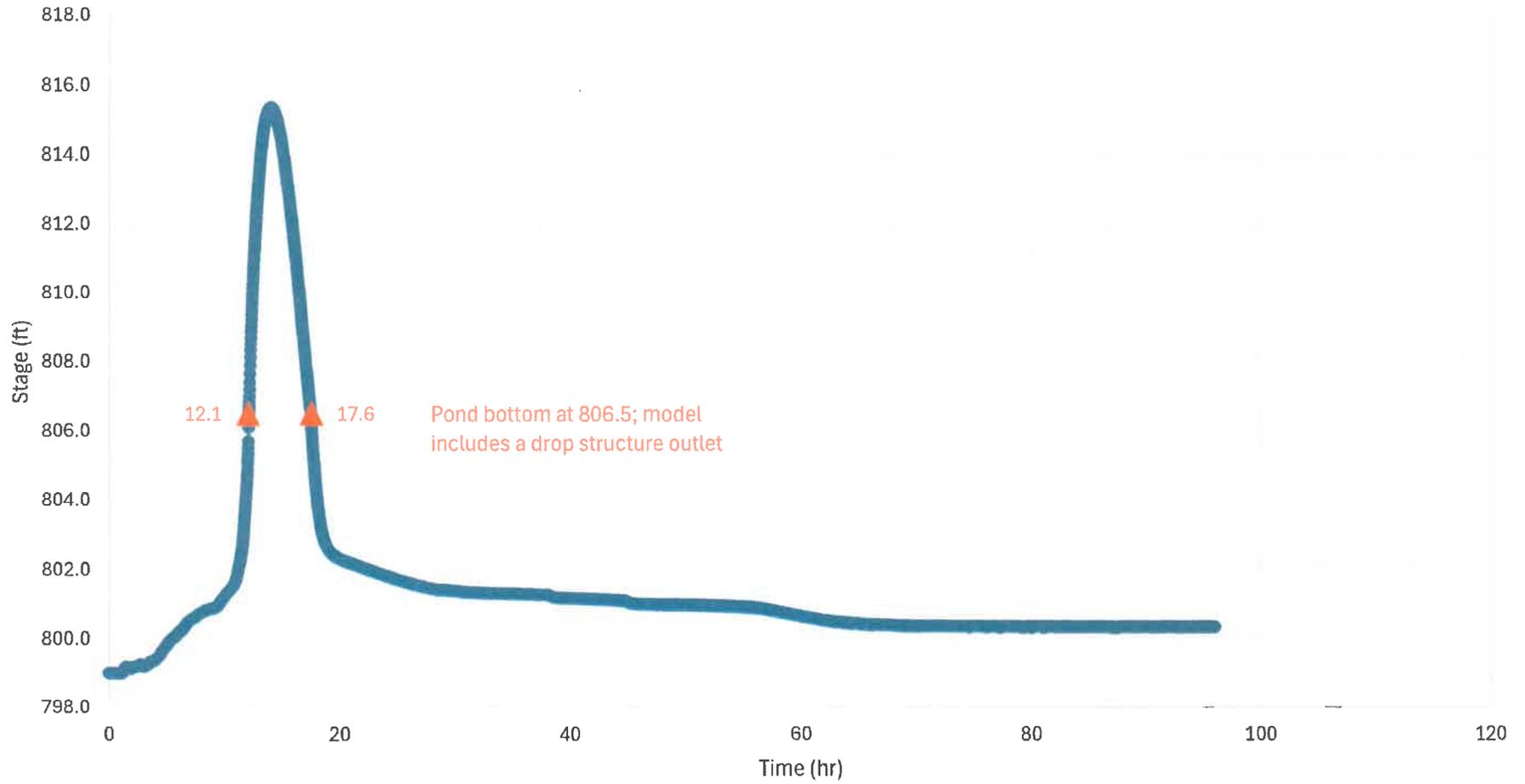
### Gwen 50-Year Stage and 4.2 Hour Drawdown

—●— Stage    ▲ Drawdown Start Time    ▲ Drawdown End Time

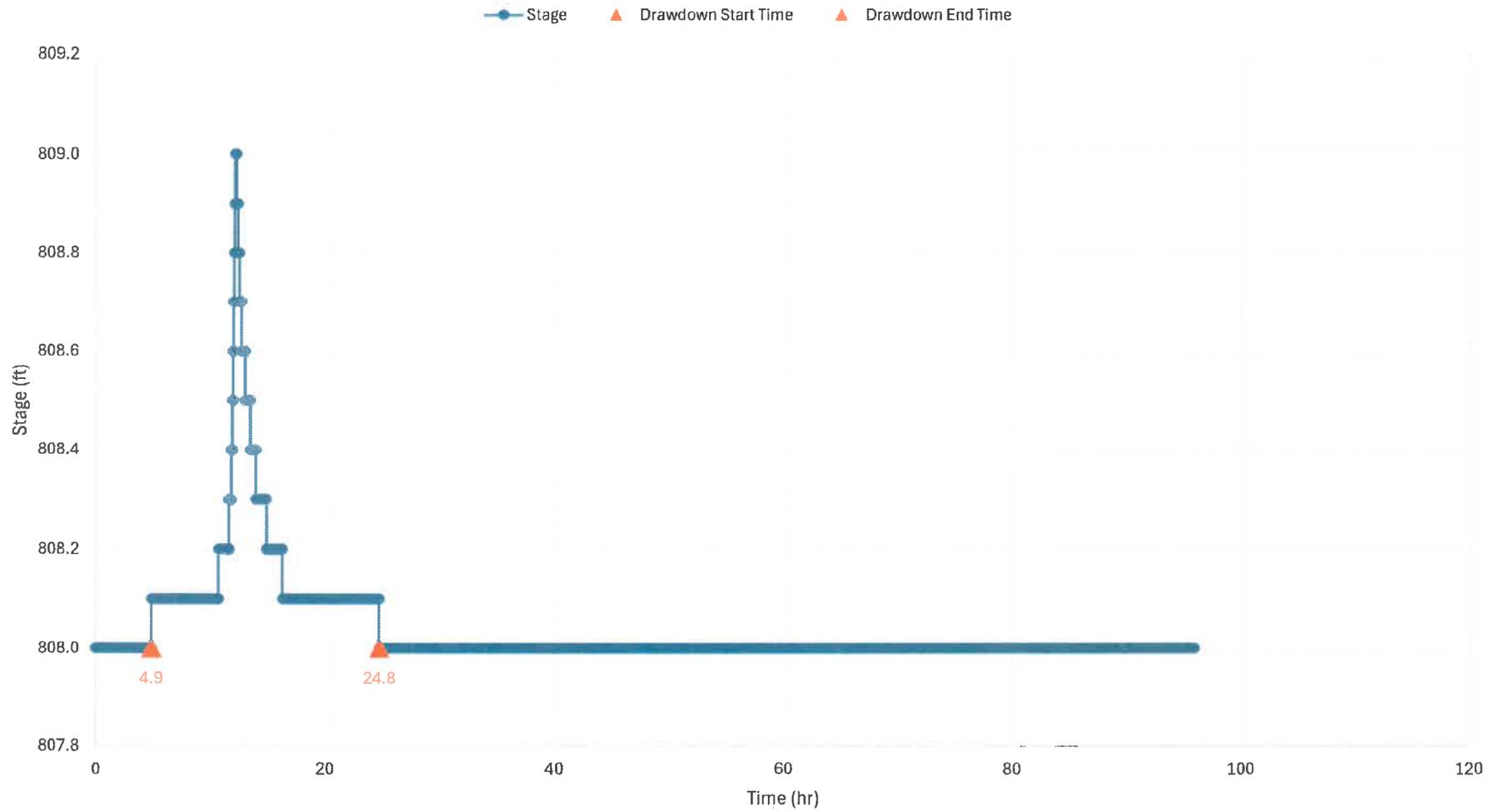


### Gwen 100-Year Stage and 5.5 Hour Drawdown

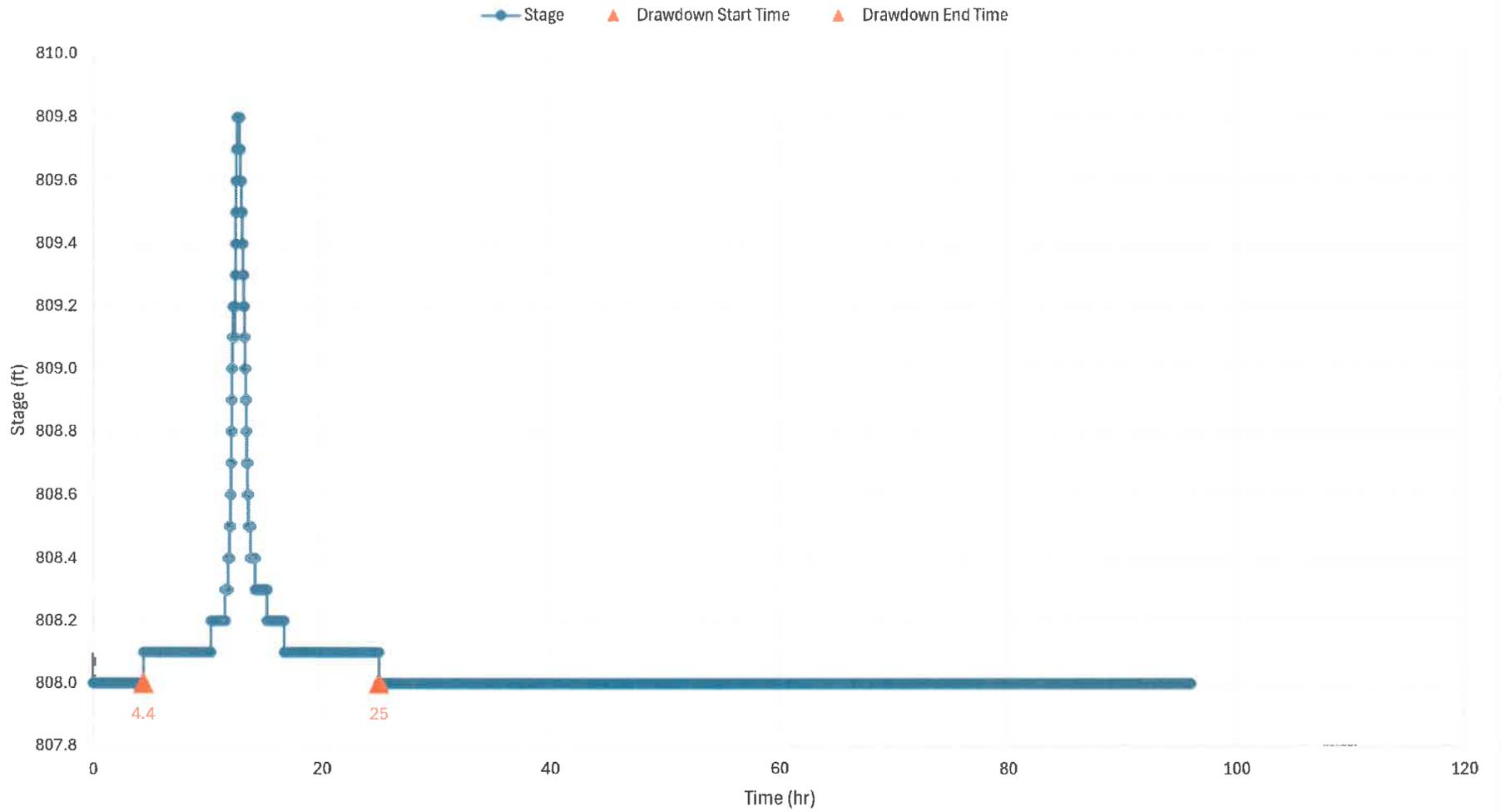
—●— Stage    ▲ Drawdown Start Time    ▲ Drawdown End Time



### Ikea 50-Year Stage and 19.9 Hour Drawdown

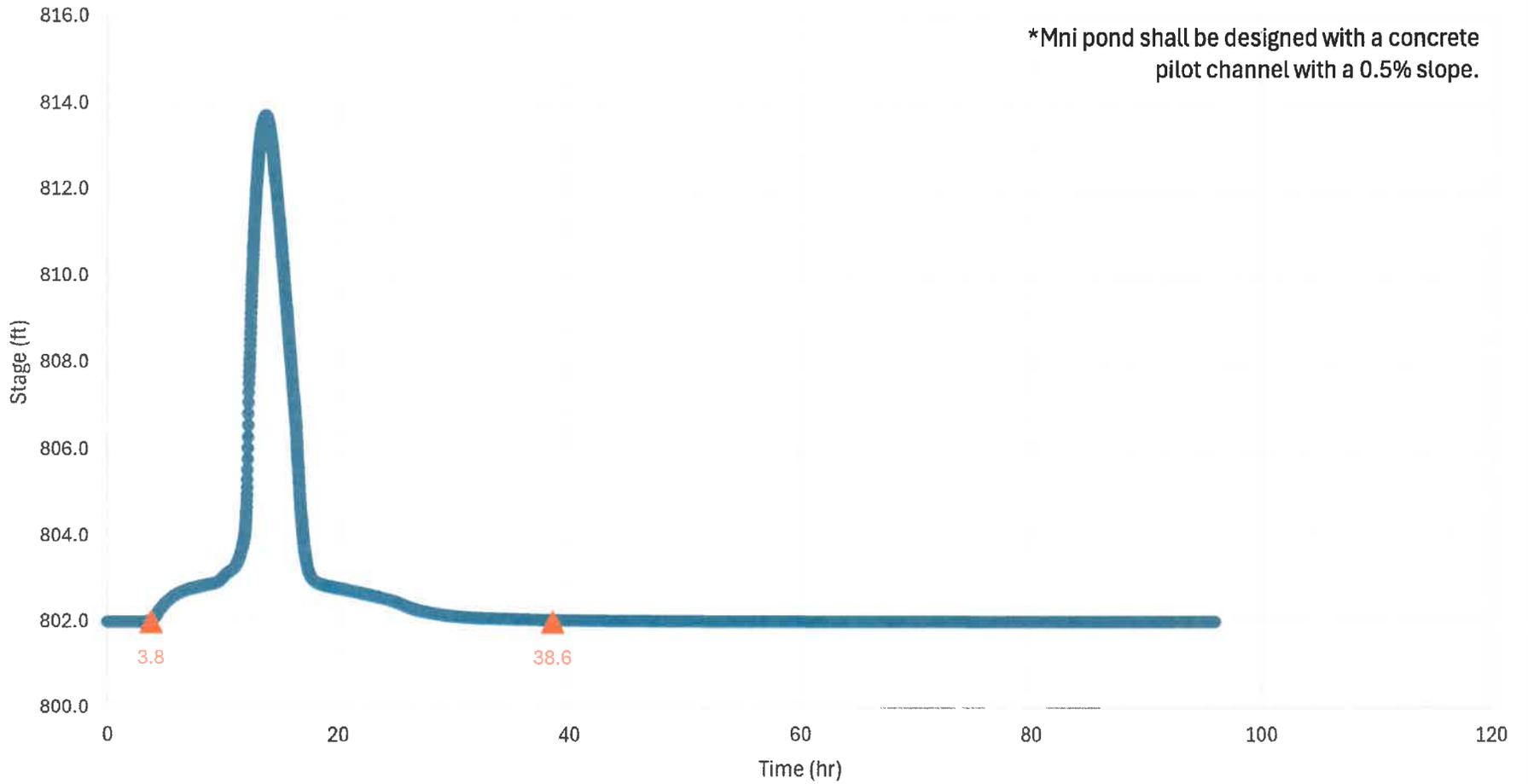


### Ikea 100-Year Stage and 20.6 Hour Drawdown



### Mni 50-Year Stage and 34.8 Hour Drawdown

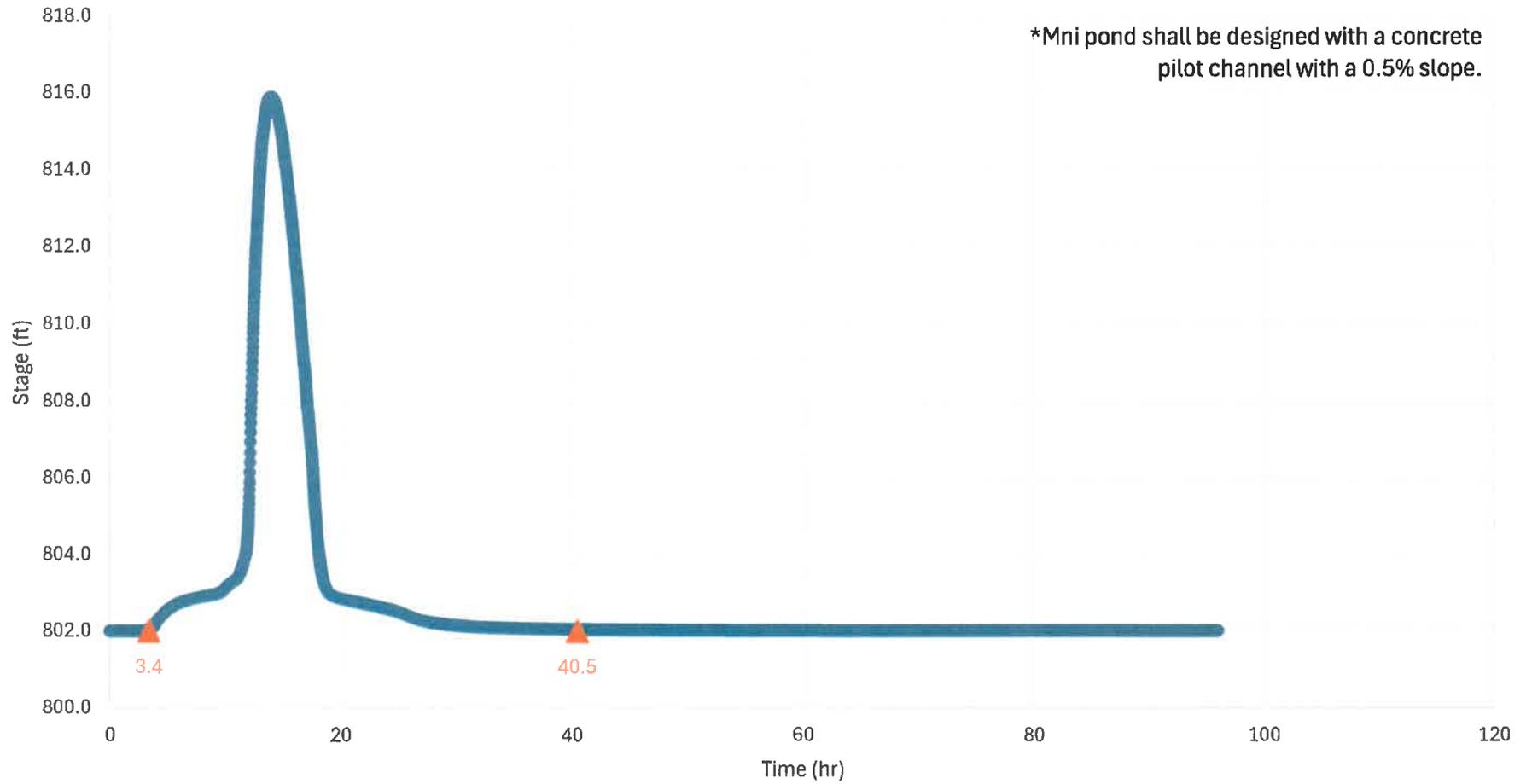
● Stage    ▲ Drawdown Start Time    ▲ Drawdown End Time



\*Mni pond shall be designed with a concrete pilot channel with a 0.5% slope.

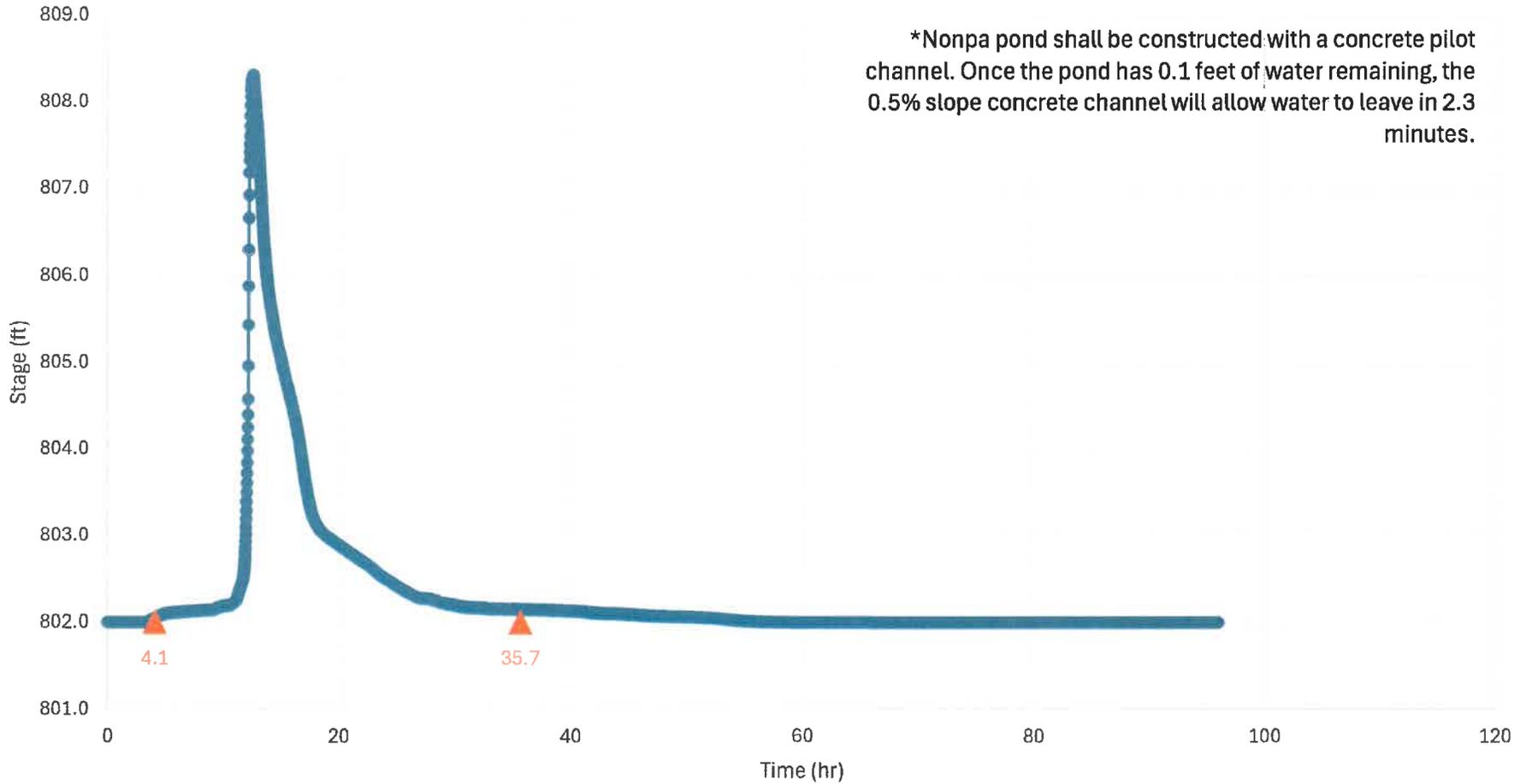
### Mni 100-Year Stage and 37.1 Hour Drawdown

● Stage    ▲ Drawdown Start Time    ▲ Drawdown End Time



### Nonpa 50-Year Stage and 31.6 Hour Drawdown

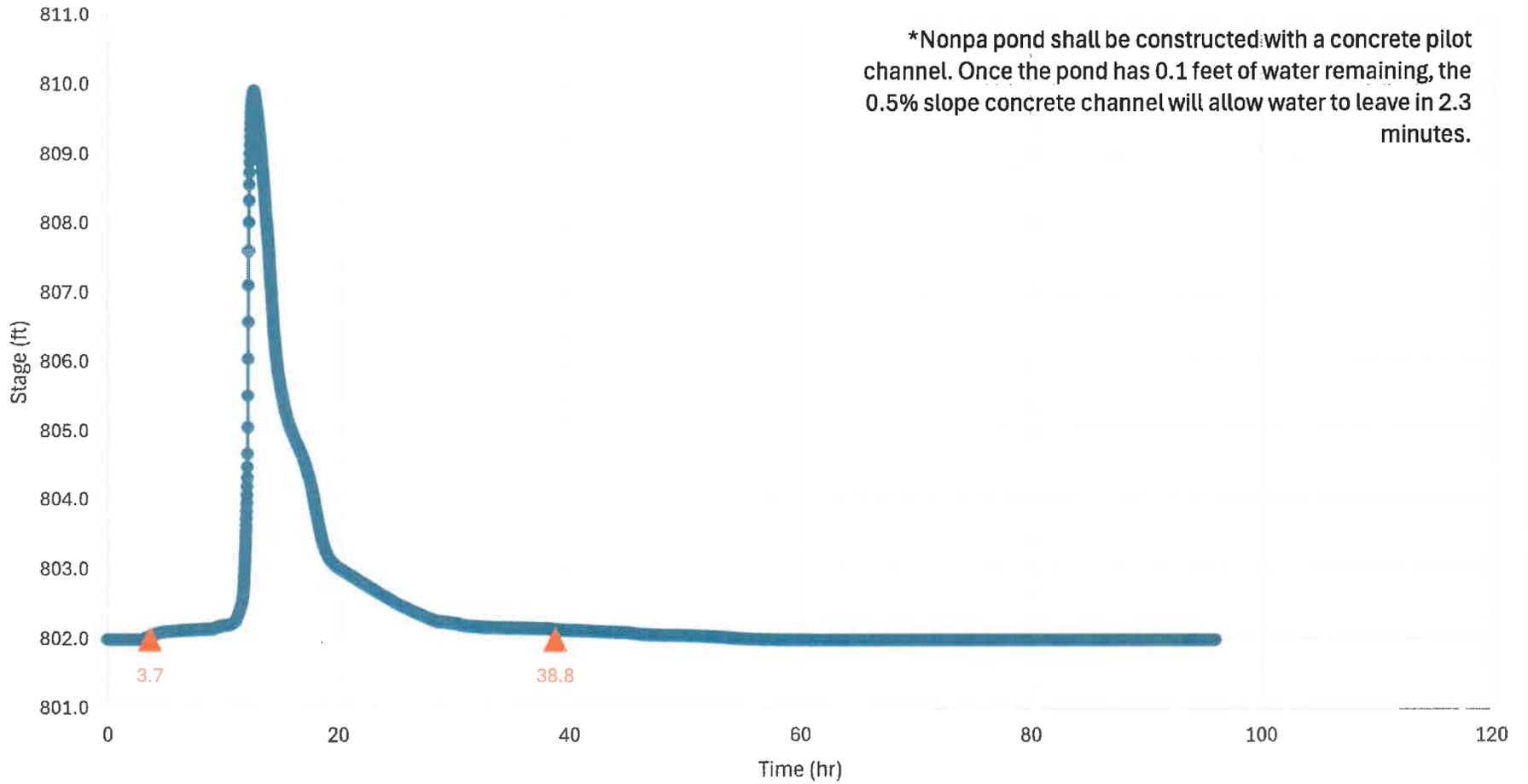
● Stage    ▲ Drawdown Start Time    ▲ Drawdown End Time



**\*Nonpa pond shall be constructed with a concrete pilot channel. Once the pond has 0.1 feet of water remaining, the 0.5% slope concrete channel will allow water to leave in 2.3 minutes.**

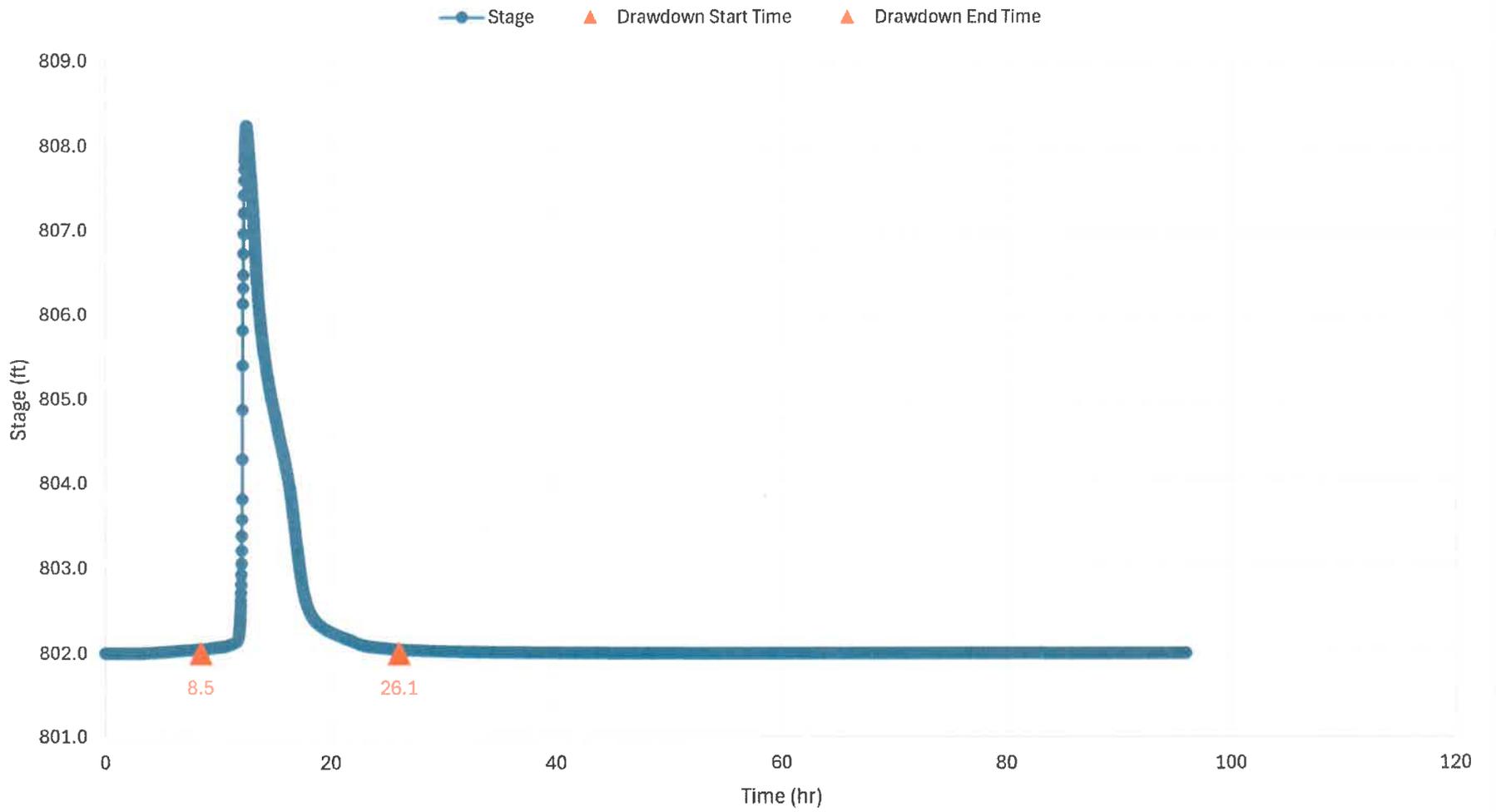
### Nonpa 100-Year Stage and 35.1 Hour Drawdown

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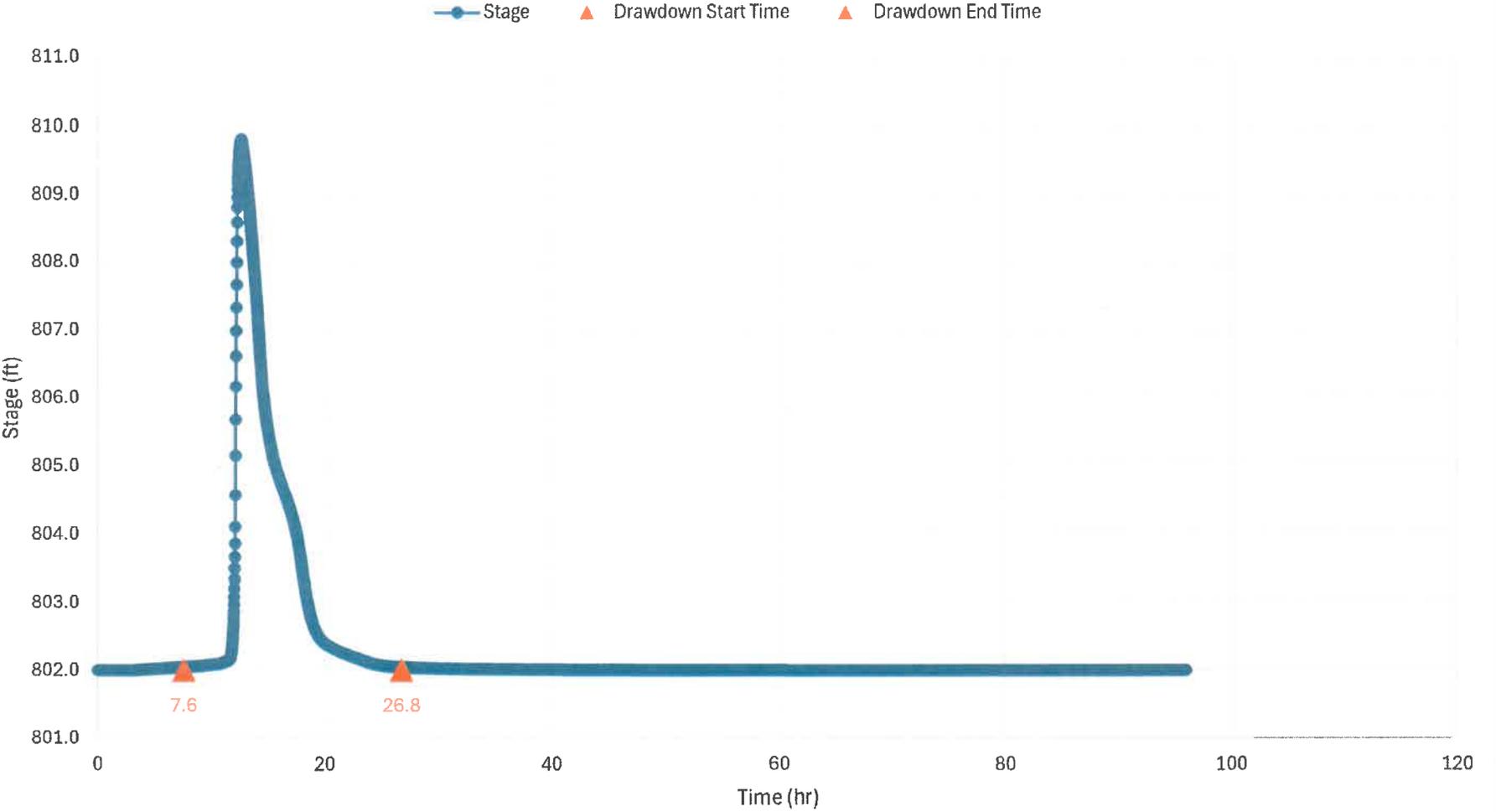


\*Nonpa pond shall be constructed with a concrete pilot channel. Once the pond has 0.1 feet of water remaining, the 0.5% slope concrete channel will allow water to leave in 2.3 minutes.

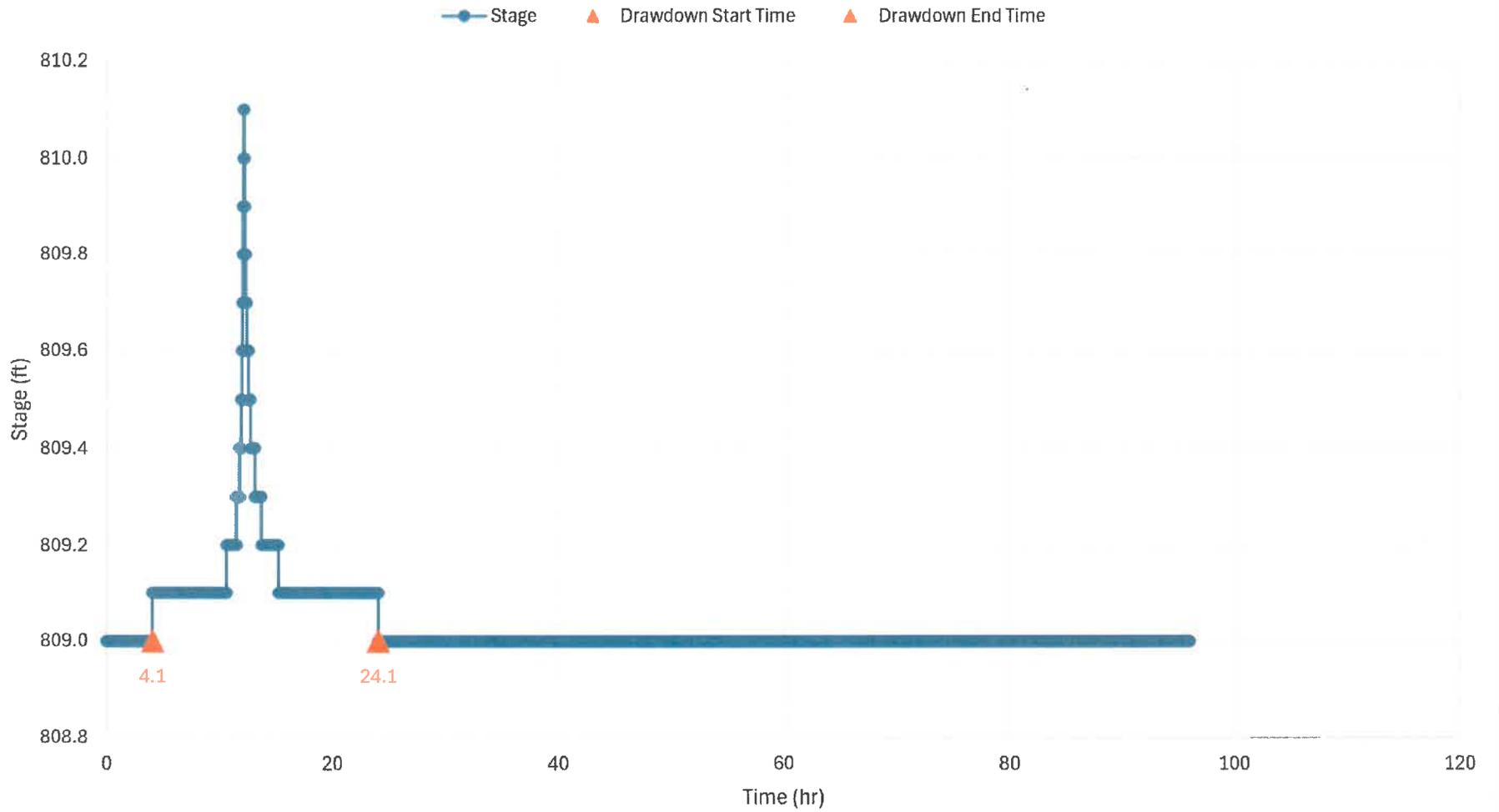
### Sakowin 50-Year Stage and 17.6 Hour Drawdown



### Sakowin 100-Year Stage and 19.2 Hour Drawdown

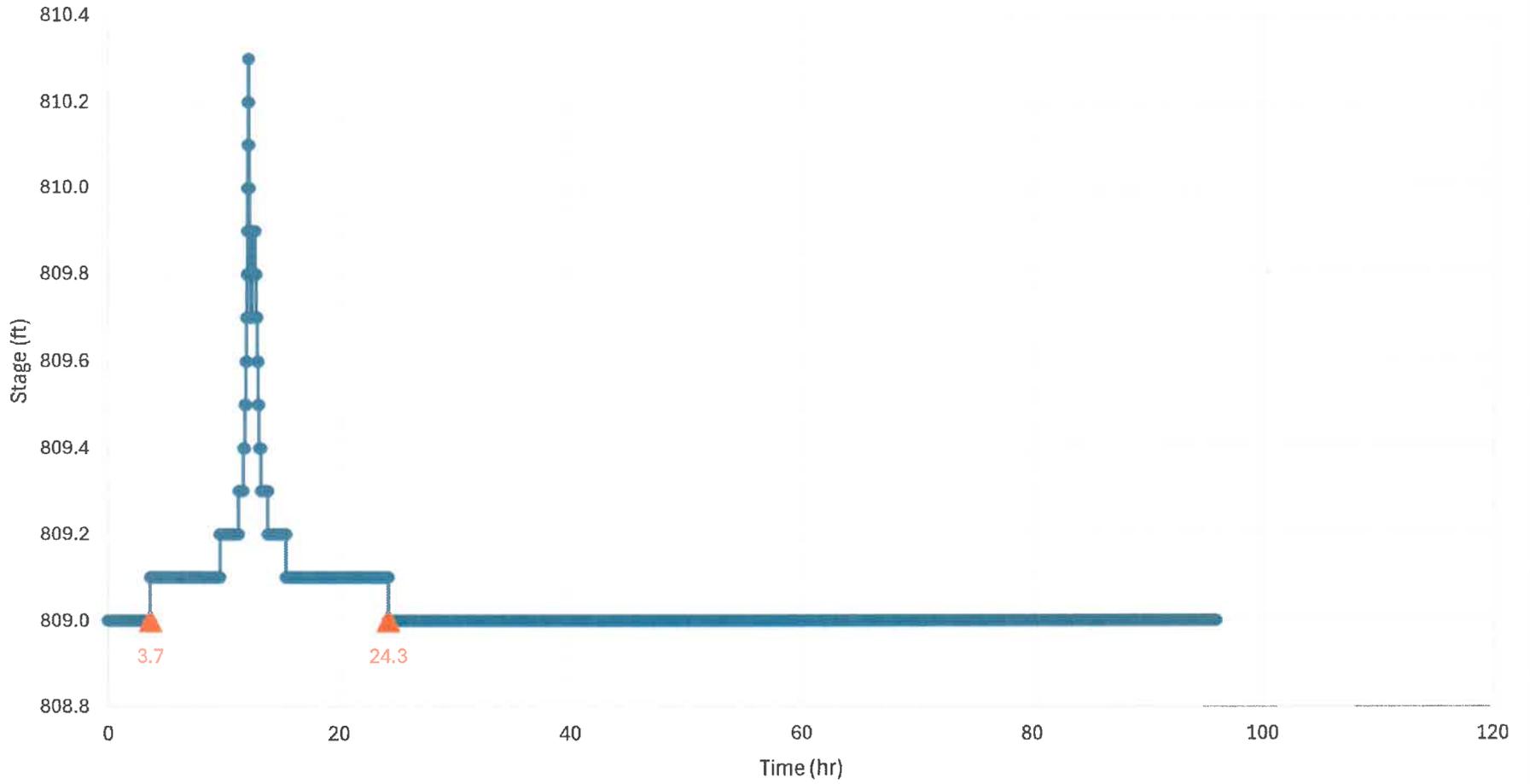


### Wolf 50-Year Stage and 20 Hour Drawdown

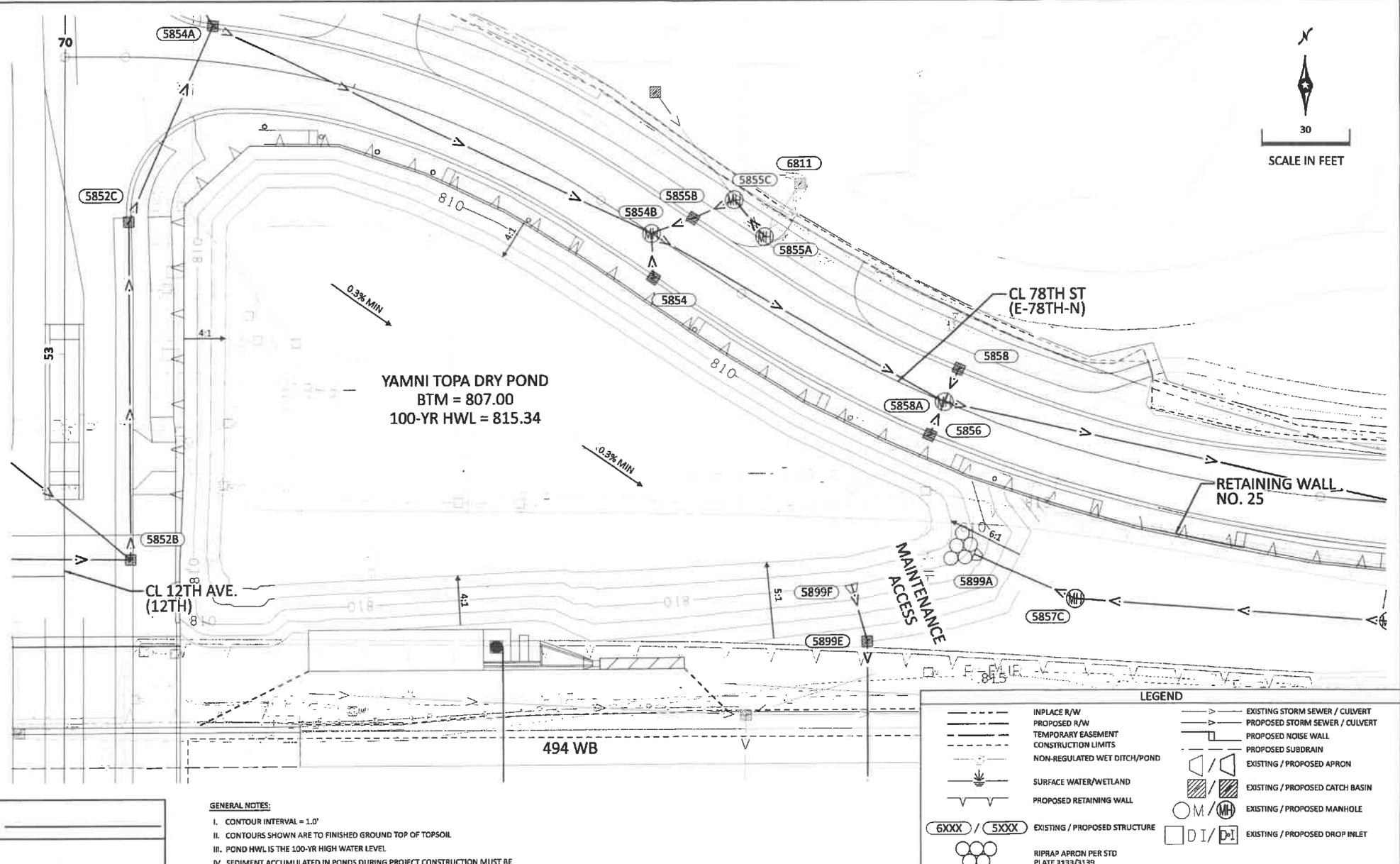
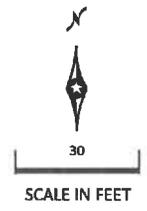


### Wolf 100-Year Stage and 20.6 Hour Drawdown

● Stage    ▲ Drawdown Start Time    ▲ Drawdown End Time



PLOT NAME: c:\2785424\_drn\_3\_cri05  
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 PLOTTED/REVISED: 19-DEC-2024  
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- GENERAL NOTES:**
- I. CONTOUR INTERVAL = 1.0'
  - II. CONTOURS SHOWN ARE TO FINISHED GROUND TOP OF TOPSOIL
  - III. POND HWL IS THE 100-YR HIGH WATER LEVEL
  - IV. SEDIMENT ACCUMULATED IN PONDS DURING PROJECT CONSTRUCTION MUST BE REMOVED TO RESTORE PLAN BOTTOM ELEVATION

LEGEND			
	INPLACE R/W		EXISTING STORM SEWER / CULVERT
	PROPOSED R/W		PROPOSED STORM SEWER / CULVERT
	TEMPORARY EASEMENT		PROPOSED NOISE WALL
	CONSTRUCTION LIMITS		PROPOSED SUBDRAIN
	NON-REGULATED WET DITCH/POND		EXISTING / PROPOSED APRON
	SURFACE WATER/WETLAND		EXISTING / PROPOSED CATCH BASIN
	PROPOSED RETAINING WALL		EXISTING / PROPOSED MANHOLE
	EXISTING / PROPOSED STRUCTURE		EXISTING / PROPOSED DROP INLET
	RIPRAP APRON PER STD PLATE 3133/3139		

NO	DATE	OWN	CKD	REVISIONS

**C.S. McCrossan** **BOLTON & MENK**

I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JOHN L. PERKINS  
 SIGNATURE:   
 DATE: 11/18/2024 LICENSE: \*56278

DMG  
 DRN BY: JLP  
 CKD BY:

**DRAINAGE PLAN DETAILS**

I-494: AIRPORT TO HWY 169 DB (S.P. 2785-424)  
 SHEET NO. 313 OF 342 SHEETS

