



VERMONT

Exhibit A

Application for Hearing before the Development Review Board

Applicant name: Thomas and Elizabeth Merritt

Applicant address: 178 Chandler Road, Chester, VT 05143

Applicant email: tmerritt23@outlook.com Phone: 802-952-9375 (cell)

Landowner name (if different): Same

Landowner address: _____

Landowner email: _____ Phone: _____

Location of property: 178 Chandler Road, Chester, VT 05143

Description of Request: Flood Hazard Review of a proposed bridge and at-grade driveway across Special Flood Hazard Areas between 1337 and 1497 VT-10. A driveway at this location is necessary because of court action preventing use of a previous driveway from Chandler Road to our 12-acre property with house and garage. State Highway Access and Work Permit #45404 and Stream Alteration General Permit #SR-3099 have been applied for and granted for this proposed new driveway from VT-10. A Hydrology and Hydraulics Report by Naomi Johnson P.E. dated 2/9/23 has subsequently been provided.

If new construction is involved, provide a sketch or plan showing the boundaries of the lot, the distance from the proposed new construction to each boundary, and the dimensions of the new construction together with its position on the lot in relation to existing buildings and driveways.

After receipt of this application, the Zoning Administrator will inform you of what further information is required.

Applicant Signature Thomas J Merritt Date 9/14/22
Elizabeth W. Merritt 9-14-2022

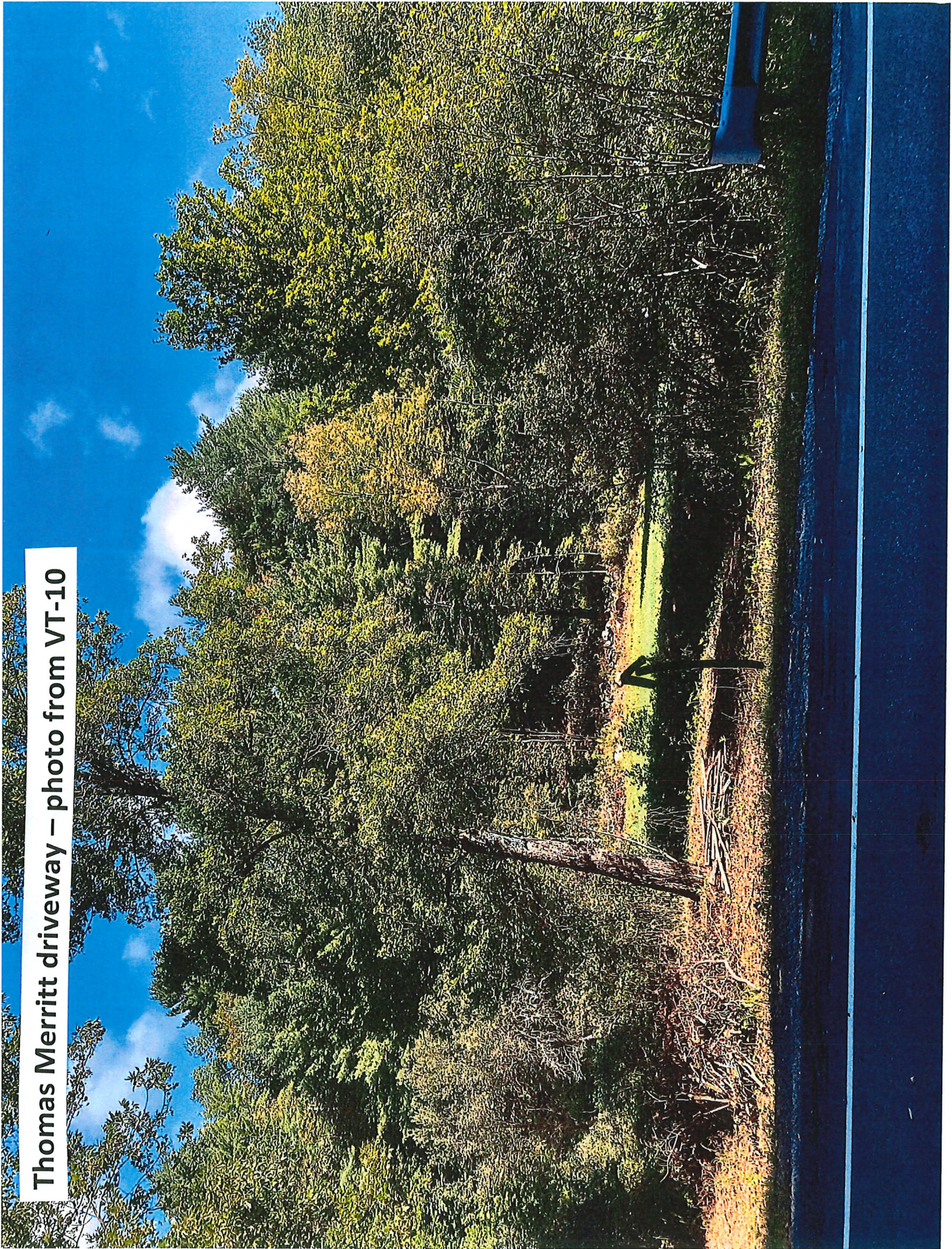
** TO BE COMPLETED BY THE ZONING ADMINISTRATOR **

Parcel Map #: 22-20-20.300 Zoning District: R120 DRB Case #: 582

Type of application: Conditional Use Approval, Flood Hazard Review, Waiver or Variance
 Appeal of decision of Zoning Administrator, Other _____

Received with \$200 application fee P.B. (ZA initials) Date 9/14/22

Thomas Merritt driveway – photo from VT-10



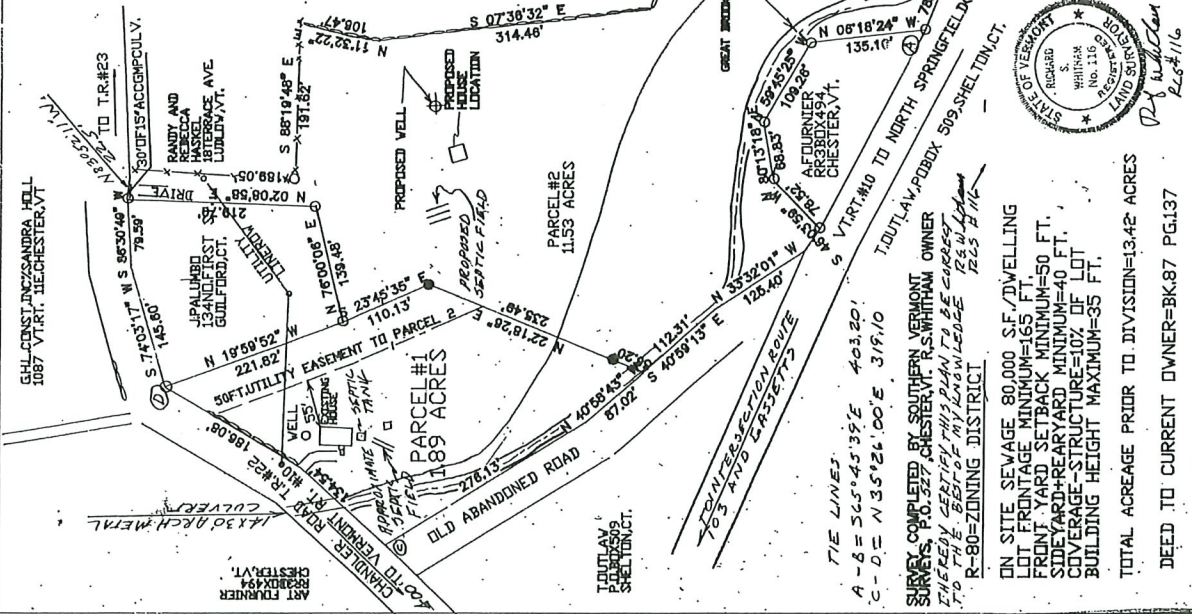
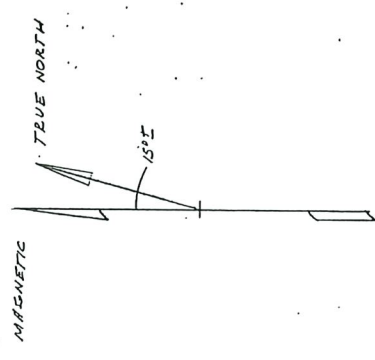
Waiver of Development Rights

In order to comply with Section 8.3.6(d) of the Town of Chester's Subdivision Regulations the Grantee shall not construct or erect any structure or building on Parcel #2 if the useful occupancy of that structure will require the installation of a sewage disposal system.

This restriction does not apply if the Grantee obtains an approved On-Site Sewage Disposal System Permit or Municipal Sewer Connection Permit from the Town of Chester. This condition runs with the land and binds the Grantee and Successors in Interest.

LEGEND

- STONEWALL
- SET IRON PIN
- EXISTING IRON PIN
- UTILITY POLE
- WIRE FENCE
- BROOK



TIE LINES
 A-B = 565'45.39'E 403.20'
 C-D = N35°26'00"E 319.10'

SURVEY COMPLETED BY SOUTHERN VERMONT SURVEYING, INC., CHESTER, VT. AS WHITTAM OWNER FILED IN DEPT. OF LANDS & FORESTRY TO THE BEST OF MY KNOWLEDGE AND BELIEF TO BE CORRECT.

R-80 ZONING DISTRICT

ON SITE SEWAGE 80,000 SF/DWELLING LOT FRONTAGE MINIMUM=165 FT. FRONT YARD SETBACK MINIMUM=50 FT. SIDEYARD-REAR YARD MINIMUM=40 FT. COVERAGE-STRUCTURE=10% OF LOT BUILDING HEIGHT MAXIMUM=35 FT.

TOTAL ACREAGE PRIOR TO DIVISION=13.42 ACRES

DEED TO CURRENT OWNER=BK.87 PG.137

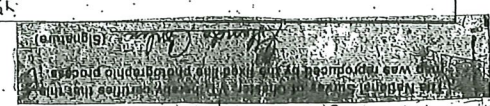


APPROVED BY THE PLANNING COMMISSION OF THE TOWN OF CHESTER, VERMONT AS PER FINDINGS OF FACT DATED DECEMBER 15, 2002 SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID FINDINGS SIGNED THIS 15 DAY OF JULY 2002 BY

[Signature]
 Planning Commission

August 5, 2002
Deborah O'Connell, Esq., Act.

PROPERTY OF			
DEALER	DATE	APPROVED	SCALE
ROBERT R GAUTHIER	05/07/02	R S M	1" = 100'
CATHERINE ALABROUOFF	DATE:	5/26/2002	
38 TREPO ROAD	CHESTER VT.	PROJECT NO.	8117-02



Thomas & Elizabeth Merritt parcel and driveway

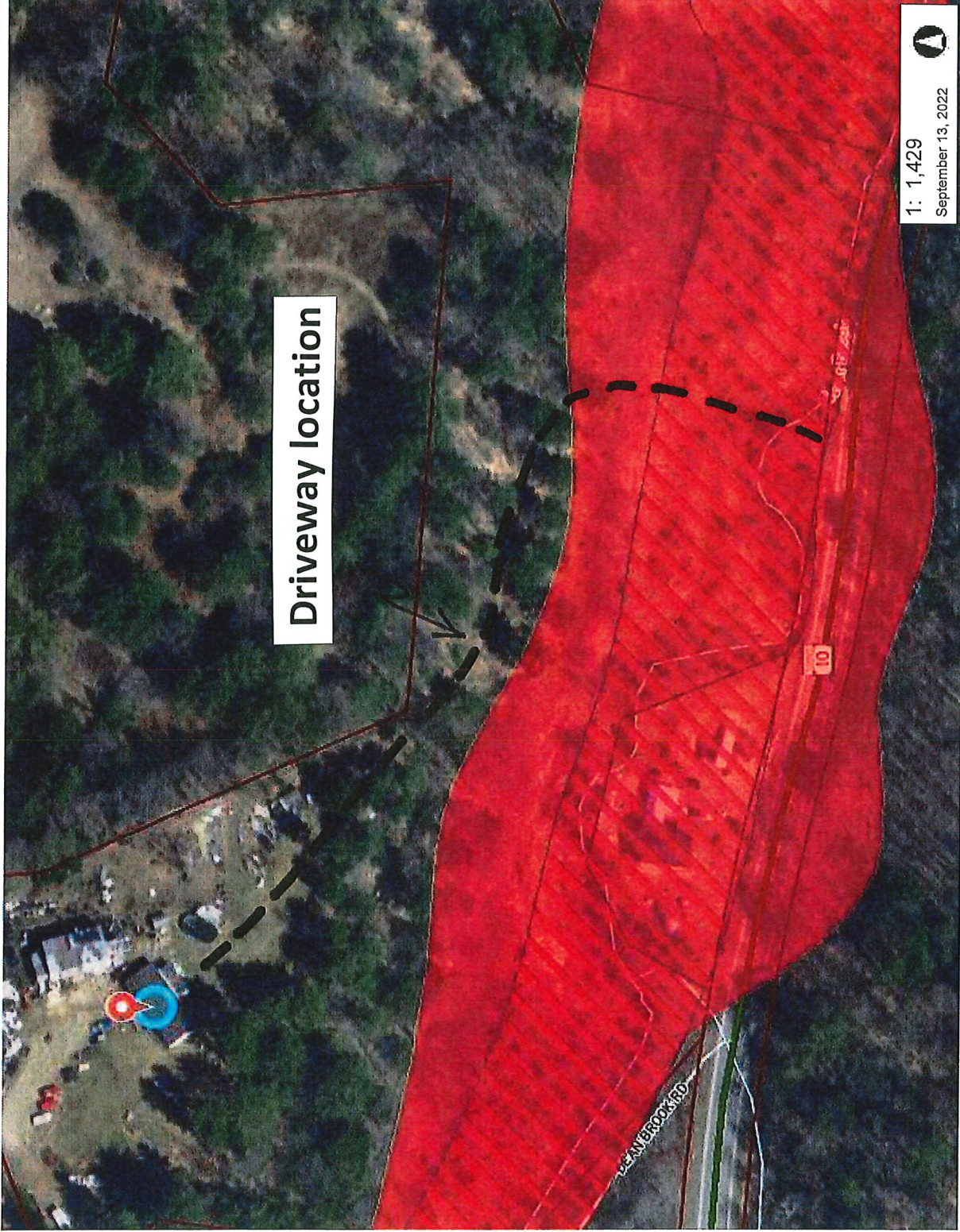




Thomas Merritt driveway - ANR Atlas

Vermont Agency of Natural Resources

vermont.gov



Driveway location

1: 1,429

September 13, 2022



73.0 0 36.00 73.0 Meters
 WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 119 Ft. 1cm = 14 Meters
 THIS MAP IS NOT TO BE USED FOR NAVIGATION
 © Vermont Agency of Natural Resources
 DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.



LEGEND

- DFIRM Floodways
- Flood Hazard Areas (Only FEI)**
 - AE (1-percent annual chance flood)
 - A (1-percent annual chance flood)
 - AO (1-percent annual chance zone feet)
 - 0.2-percent annual chance flood ha
- Parcels (standardized)**
- Roads**
 - Interstate
 - US Highway: 1
 - State Highway
 - Town Highway (Class 1)
 - Town Highway (Class 2,3)
 - Town Highway (Class 4)
 - State Forest Trail
 - National Forest Trail
 - Legal Trail
 - Private Road/Driveway
 - Proposed Roads
- Stream/River**
 - Stream
 - Intermittent Stream
- Town Boundary

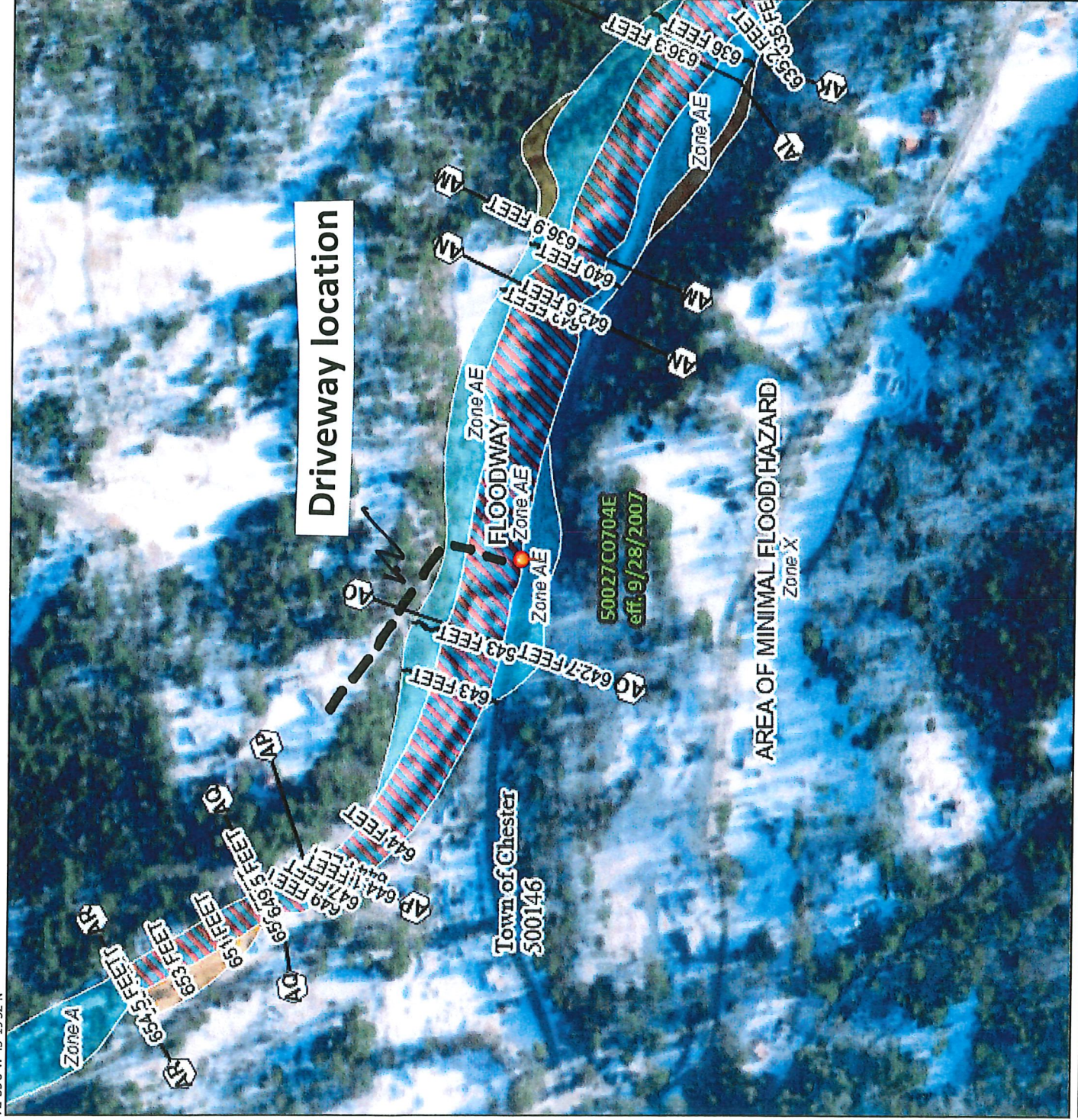
NOTES

Map created using ANR's Natural Resources Atlas

National Flood Hazard Layer FIRMette



72°35'8"W 43°19'52"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with draining areas of less than one square mile (Zone X)
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes, Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRS
- Area of Undetermined Flood Hazard Zone X

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance
- Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **9/13/2022 at 4:58 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

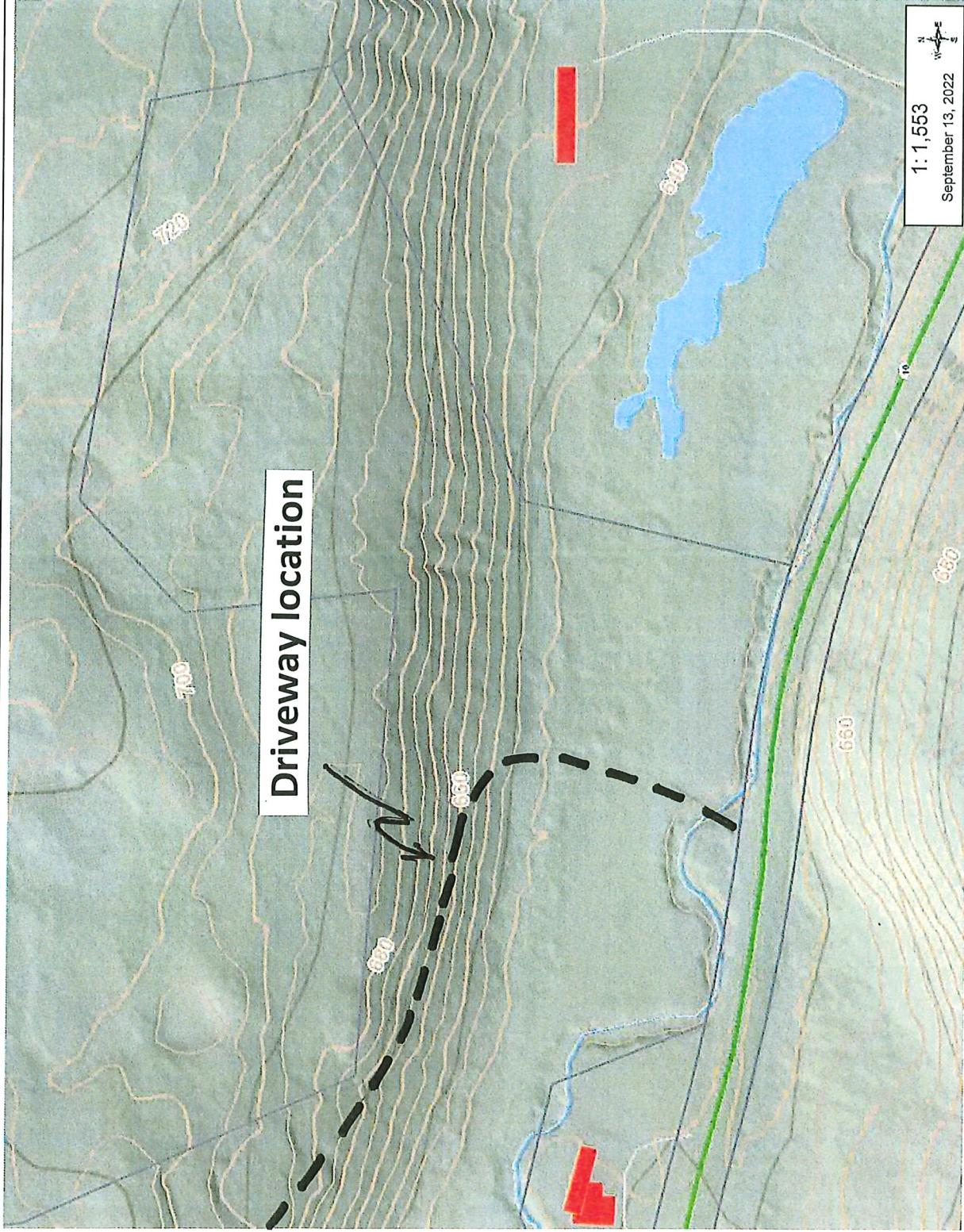
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



Thomas Merritt driveway - Lidar contours

Vermont Center for Geographic Information

vermont.gov



Driveway location

1: 1,553
September 13, 2022

0.05 0 0.02 0.05 Miles
 1" = 129 Ft 1cm = 16 Meters
 THIS MAP IS NOT TO BE USED FOR NAVIGATION
 DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. VCGI and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.



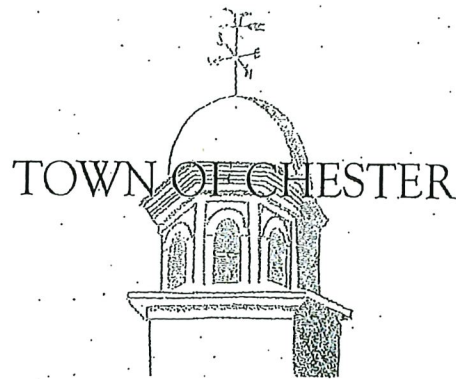
LEGEND

- Building footprints
- Parcel polygons
- Inactive parcels
- ✈ Airports
- Rail Lines
- Town Boundaries
- County Boundaries
- Buildings
- Village Boundaries
- VT State Boundary



NOTES

This map was created with the VT Interactive Map Viewer.



PLANNING & ZONING
556 Elm Street
P.O. Box 370
Chester, VT 05143

(802) 875-2173 office
(802) 875-2237 fax
zoning@chestervt.gov
www.chestervt.gov

TOWN OF CHESTER
NOTICE OF HEARING FOR FLOOD DAMAGE PREVENTION REVIEW

Thomas and Elizabeth Merritt have applied for Flood Damage Prevention Review of a proposed driveway with bridge across the regulatory floodway of Great Brook at the location of approximately 1335 VT RT 10 in the Town of Chester.

The Town of Chester Development Review Board will conduct a site visit at 5:00 PM on Monday, March 27, 2023, at the location of approximately 1335 VT RT 10 and will hold a hearing on this application at 6:00 PM on Monday, March 27, 2023, at the Chester Town Hall at 556 Elm Street in Chester. A copy of the application and additional information may be obtained from the Zoning Administrator.

Participation in this hearing in person, via Zoom videoconference, or in writing is a prerequisite to the right to take any subsequent appeal.

A link to participate in this hearing via Zoom videoconference may be found on the Town of Chester website home page at www.chestervt.gov.

Dated at Chester, Vermont this 2nd day of March 2023.

Preston Bristow
Zoning Administrator
(802) 875-2173
zoning@chestervt.gov



100 foot Abutters List Report

Chester, VT
March 02, 2023

mailed 3/6/23

Exhibit C

Subject Property:

Parcel Number: 222020300
CAMA Number: 222020300
Property Address: 178 CHANDLER ROAD

Mailing Address: MERRITT, THOMAS & ELIZABETH
178 CHANDLER ROAD
CHESTER, VT 05143

Abutters:

Parcel Number: 222017
CAMA Number: 222017
Property Address: 219 BLOOD ROAD

Mailing Address: ROCKY RIDGE OF CHESTER,, INC. C/O
MIKE KENWORTHY
219 BLOOD ROAD
CHESTER, VT 05143

Parcel Number: 222018
CAMA Number: 222018
Property Address: 206 CHANDLER ROAD

Mailing Address: HASKELL, RANDALL & REBECCA
206 CHANDLER ROAD
CHESTER, VT 05143-9699

Parcel Number: 222019
CAMA Number: 222019
Property Address: 168 CHANDLER ROAD

Mailing Address: PALUMBO, SANDRA
77 GLENMEADOW DRIVE
NORTHFORD, CT 06472

Parcel Number: 222020200
CAMA Number: 222020200
Property Address: 106 CHANDLER ROAD

Mailing Address: SURETHING, BARBARA L & PATRICK T
106 CHANDLER ROAD
CHESTER, VT 05143

Parcel Number: 222021400
CAMA Number: 222021400
Property Address: 20 CHANDLER ROAD

Mailing Address: CROSBY, DEAN O & NORMA J
20 CHANDLER ROAD
CHESTER, VT 05143

Parcel Number: 232076
CAMA Number: 232076
Property Address: 456 CHANDLER ROAD

Mailing Address: REEB, MICHAEL & JAYMIE
456 CHANDLER ROAD
CHESTER, VT 05143

Parcel Number: 252019
CAMA Number: 252019
Property Address: 1337 VT RT 10

Mailing Address: FOUGERE, PAUL & DEBBIE
1337 VT RT 10
CHESTER, VT 05143

Parcel Number: 252062
CAMA Number: 252062
Property Address: 0 VT RT 10

Mailing Address: OUTLAW, GARY OUTLAW, ROGER
3 GREENBRIAR ROAD
OXFORD, CT 06478

Parcel Number: 262001
CAMA Number: 262001
Property Address: 1497 VT RT 10

Mailing Address: NELSON, ERIC
959 ESSEX ROAD
WESTBROOK, CT 06498



www.cai-tech.com

PERMIT ID# 45404

FOR AGENCY USE ONLY

Town: Chester
Route: VT 10
Mile Marker: 1.410
Log Station: 74+45

VERMONT AGENCY OF TRANSPORTATION
State Highway Access and Work Permit

Owner's/Applicant's Name, Address, E-mail & Phone No. Thomas L & Elizabeth W Merritt
128 Chandler Rd Chester VT 05143 tmerritt23@outlook.com 802 952 9375

Co-Applicant's Name, Address, E-mail & Phone No. (if different from above)

The location of work (town, highway route, distance to nearest mile marker or intersection & which side)
RT 10 Chester VT across from marker 0100 14070140

Description of work to be performed in the highway right-of-way (attach plan)
New Driveway access & work permit

Property Deed Reference Book: 87 Page: 137 (only required for Permit Application for access)

Fee \$ (fees do not apply for residential or agricultural purposes)

Is a Zoning Permit required? Yes [] No [x] - If Yes, #

Is a 30 VSA § 248 permit required? Yes [] No [x] - If Yes, # up known

Is an Act 250 permit required? Yes [] No [x] - If Yes, #

Other permit(s) required? Yes [] No [x] - If Yes, name and # of each

Date applicant expects work to begin ASAP 20 22

Owner/Applicant: Thomas L Merritt Position Title: owner
(Print name above)

Sign in Shaded area: [Signature] Date: 8/2/22

Co-Applicant: (Print name above) Position Title:

Sign in Shaded area: [] Date: []

INSTRUCTIONS: -Contact the Development Review and Permitting Services Section (802.828.2653) or your local area Transportation Maintenance District Office to determine your issuing authority. The issuing authority will determine what plans, fee and other documents are required to be submitted with your Vermont Statutes Annotated, Title 19, Section 1111, permit application request.

- Original signatures are required on an original Form. The Owner/Applicant and Co-Applicant (if applicable) declares under the pains and penalty of perjury that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

FEE: -See Fee Schedule for applicable administrative processing and application review fee.

PERMIT APPROVAL

New driveway access following the attached standard.

The work is subject to the restrictions and conditions on the reverse page, plus the Special Conditions stated on the attached page(s).

Date work is to be completed 8/18/2023

Date work accepted:

By Tyler Birchmore Issued Date 8/18/2022
Authorized Representative for
Secretary of Transportation

By: DTA or Designee

NOTICE: This permit covers only the Vermont Agency of Transportation's jurisdiction over this highway under Vermont Statutes Annotated, Title 19, Section 1111. It does not release the petitioner from the requirements of any other statutes, ordinances, rules or regulations. This permit addresses only access to, work within, and drainage affecting the state highway. It does not address other possible transportation issues, such as access to town highways, use of private roads, and use of railroad crossings. If relevant to the proposed development, such issues must be addressed separately.

No work shall be done under this permit until the owner/applicant has contacted the District Transportation Office at:

STATE
MARKER
0100
1407
0140

VT RT 10 sand rail

1000000
1000000

old ROAD

1337

1497

culvert

Small
culvert?

Field

Field

3 lanes

Proposed
Drive Way
Culvert (Bridge)
Smaller
culverts?

Horse

up
High
on
Hill

MERRITT

Garage

Horse

No Road access ↑



State of Vermont
Policy, Planning & Intermodal Development Division
Policy, Planning and Research Bureau
Development Review & Permitting Services Section

Barre City Place, 219 North Main Street [phone] 802-636-0037
Barre, VT 05641 [ttd] 800-253-0191
vtrans.vermont.gov

Agency of Transportation

August 18, 2022

Thomas and Elizabeth Merritt
178 Chandler Rd
Chester, VT 05143
[Via Email]

Subject: Chester, VT 10 MM 1.410 LT

Dear Mr. and Mrs. Merritt,

Your application for a permit to work within the State Highway right-of-way to construct a single family access to serve your property, at the location indicated, has been processed by this office and is enclosed.

Please note, this permit contains a one-page document entitled, "Notice of Permit Action" and as a condition of this permit,

"The Permit Holder shall file a municipal clerk certified copy of the recorded "Notice of Permit Action" within one (1) month of the permit issuance date in the Office of the Development Review and Permitting Services Section."

Please contact the District Transportation Office #2 prior to starting work in the state highway right-of-way to discuss the conditions of this permit and the planned construction schedule. In addition, following completion of the work, a final inspection is required with the District. The District's telephone number in Dummerston is (802) 254-5011.

Sincerely,

A handwritten signature in cursive script that reads "Tyler Birchmore".

Tyler Birchmore
District 2 Technician
VTrans District Maintenance and Fleet

Enclosures

cc: [Via Email]
Brian McAvoy, Permitting Services Coordinator

VERMONT AGENCY OF TRANSPORTATION
NOTICE OF PERMIT ACTION

Grantor (Owner/Applicant): Thomas and Elizabeth Merritt
Address: 178 Chandler Rd
Chester, VT 05143

Chester, Vermont Town Clerk's Office
SEP 09 2022 04:00 PM
Received for record and recorded in
book: 233 on page: 211 - 211
Of Chester Land Records
Attest: Deborah Aldrich
Town Clerk

Location of Work:

<u>Location Start</u> Town: Chester Route: VT 10 Log Station/MM MM 1.410 LT
<u>Location End</u> Town: NA Route: NA Log Station/MM: NA

Property Deed Reference: Book: 87 Page: 137
Additional Book: Additional Page:
Permit ID #: 45404

Description of Work: Single family residential access

Issued Permit Notice of Violation
 Suspension of Permit Withdrawn

Action Date: 8/18/2022

Signature: Tyler Birchmore District 2 Technician
Authorized Representative for
the Secretary of Transportation

Location of Record: Vermont Agency of Transportation
Development Review & Permitting Services Section
One National Life Drive
Montpelier, Vermont 05633-5001

Town/City of _____ Clerk's Office
Received _____ at _____ a.m./p.m.
and recorded in Book _____ on Page _____
of land records. _____

Attest: _____
Assistant Town/City Clerk

**AUTHORIZATION TO CONDUCT
STREAM ALTERATION ACTIVITIES**

Pursuant to Section C.2.2, and C.2.3
of the Vermont Stream Alteration General Permit



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
**WATERSHED
MANAGEMENT DIVISION**
RIVERS PROGRAM

(Reporting activities requiring Application or Registration)

Exhibit E

A. Permitted Project Information:

Permit Number: SR-3099	Waterbody: Great Brook
Project Location: Route 10, Chester	Lat:/Long: 43.32774N, 72.58080W
Applicant Name: Thomas Merritt	Email: tmerritt23@outlook.com
Mailing Address: 178 Chandler Rd, Chester, VT 05143	Phone: (802) 952-9375

B. Findings:

The Secretary of the Vermont Agency of Natural Resources (VT ANR) has determined that:

This project consisting of the construction of a new bridge that spans top of bank to top of bank of the stream.

1. The proposed activity is eligible for coverage under the Vermont ANR Stream Alteration General Permit.
2. The proposed activity will meet the terms and conditions of the General Permit provided:
 - a) The project will be completed as described in the attached sketch and determined adjusted to meet site conditions.

C. Standard Conditions:


1. The project will not adversely affect the public safety by increasing flood hazards.
2. The project will not significantly damage fish life or wildlife.
3. The project will not significantly damage the rights of riparian owners.
4. The project will not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
5. The project is conducted in a manner which minimizes or avoids any discharge of sediment or other pollutants to surface waters in violation of the Vermont Water Quality Standards.
6. An on-site preconstruction meeting was conducted with the landowner and RME on August 18, 2022.
7. **The River Management Engineer is notified by phone or email when construction begins and when the project is complete.**
8. In-stream working dates for all GP activities are from June 1st through October 1st; *any in-stream work outside these dates will require consultation with and prior authorization from the River Management Engineer (RME).*
9. **This permit will expire: December 31, 2027**

If there are any changes in the project plan or deviation in construction from the approved plan, the Permittee must notify the River Management Engineer immediately. If the project is constructed as you have described, as shown on the above referenced approved plans and per the above conditions, there is no reason to expect any violation of Vermont Water Quality Standards.

Please be aware that the proposed project is in a municipality that participates in the National Flood Insurance Program (NFIP). Construction or storage within the Special Flood Hazard Area (SFHA) as delineated on the FEMA Flood Insurance Rate Map). 24 VSA, Section 4424 requires communities to submit SFHA permit applications to the ANR Regional Floodplain Manager for review and comment to ensure the project is compliant with local and NFIP minimum floodplain management standards.

Please be aware that this authorization does not constitute ANR's review and comment under 24 VSA Section 4424.

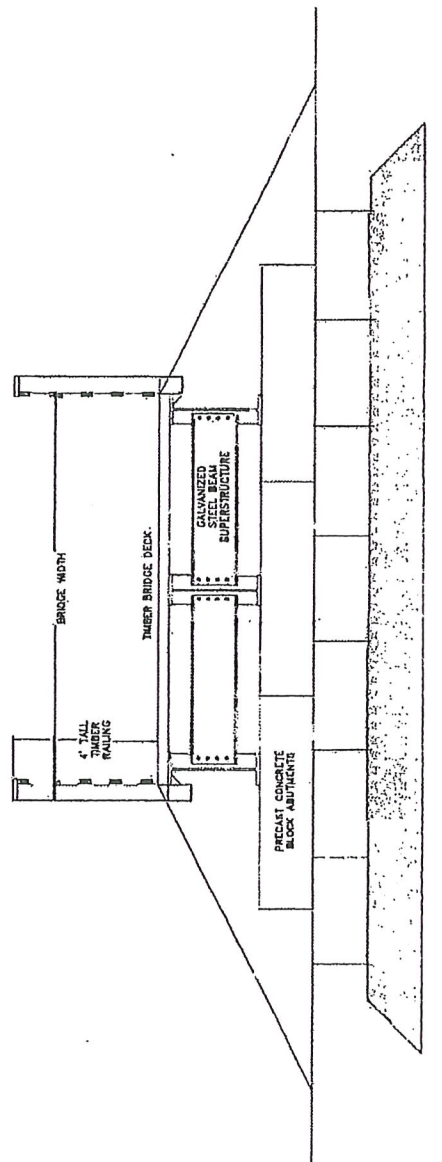
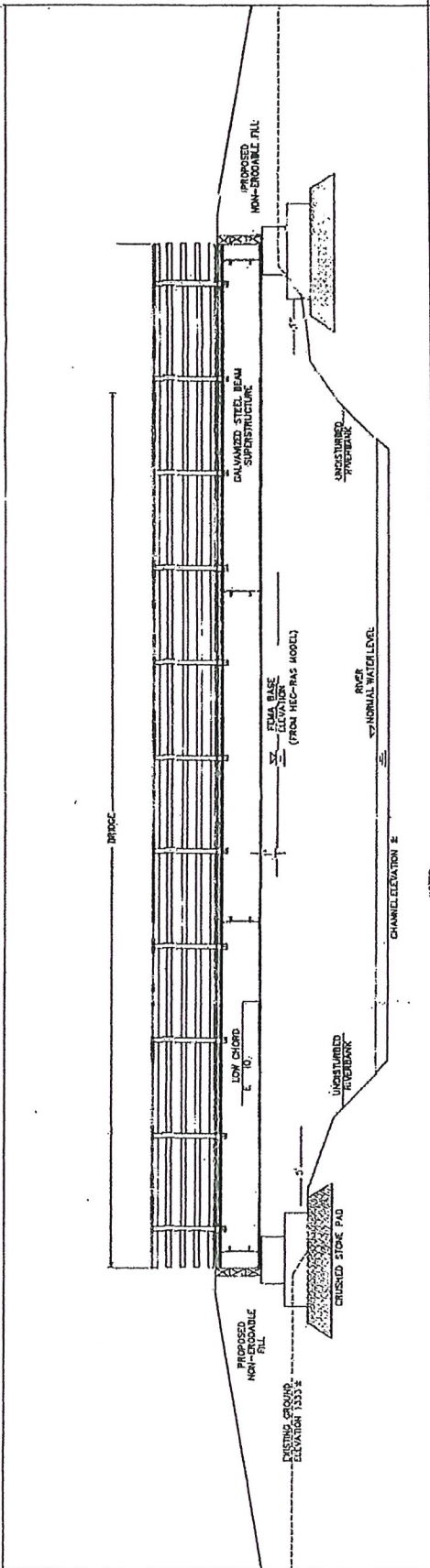
D. Authorization:

Signed this 13th day of September 2022
Julia S. Moore, Secretary, Vermont Agency of Natural Resources
by:  River Management Engineer
VT DEC Rivers Program, Watershed Management Division

E. River Engineer Contact Information

Engineer: Scott Jensen, PE
Contact Phone: 802 490-6962
Email Address: scott.jensen@vermont.gov

State of Vermont – ANR Department of Environmental Conservation
Watershed Management Division - Stream Alteration Permitting
1 National Life Drive, Main 2 Montpelier, VT 05620-3522



BRIDGE	
DETAILS	
SCALE	DATE
JOB NUMBER	1708
FILE	
SHEET	01
DRAWING NUMBER	DET-1

Zoning

From: Jensen, Scott <Scott.Jensen@vermont.gov>
Sent: Tuesday, October 04, 2022 4:10 PM
To: Zoning
Subject: RE: Thomas Merritt, VT-10, Chester

Hi Preston,

The blocks will be set below grade to account for frost, so as long as they are pinned together and the bridge is attached to the blocks, I think that would qualify as being adequately anchored to prevent flotation.

Scott Jensen, PE
River Management Engineer



Department of Environmental Conservation
Rivers Program
Telephone: (802) 490-6962

Scott.Jensen@vermont.gov

Click for: [Stream Alteration General Permit](#)

Click for: [APPLICATION](#)

You may now submit permit applications, compliance reports and fee payments through our new online form to expedite its receipt and review:
https://anonline.vermont.gov/?formtag=WSMD_Intake.

From: Zoning <zoning@chestervt.gov>
Sent: Tuesday, October 4, 2022 3:19 PM
To: Jensen, Scott <Scott.Jensen@vermont.gov>
Subject: RE: Thomas Merritt, VT-10, Chester.

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Scott –

Attached is John Broker-Campbell's 4424 flood hazard review of the Merritt driveway bridge off VT-10 in Chester.

Any thoughts on how concrete waste blocks utilized as bridge abutments could be anchored into the stream bank?

Preston Bristow

Town Planner and
Zoning Administrator
Town of Chester

Office: 802-875-2173

Cell: 603-359-5243

Email: zoning@chestervt.gov

556 Elm Street, P.O. Box 370

Chester, VT 05143

www.chestervt.gov

INTRODUCTION

Dufresne Group completed a study of hydrology and hydraulics for the Merritt's proposed driveway and bridge crossing over Great Brook, a tributary to the Black River. The site is shown in **Figure 1**. This report investigates the flow characteristics at the site during the 100-year storm event.

Site information was collected from both topographic survey completed by Dufresne Group in January of 2023, and 1' Lidar data obtained from the Vermont Center for Geographic Information. Additional information was obtained from Federal Emergency Management Agency (FEMA) studies and output from the StreamStats USGS program. Data was analyzed using the stream flow analysis software program HEC-RAS.

The analysis was performed to assess the current flood elevations and the impact of a proposed pedestrian bridge structure on the flood elevations.

HYDROLOGY

The site is in Chester, Vermont and receives flow from a drainage area that includes mostly wooded, hilly areas, some rural residential properties and some fields. The total drainage area contributing to the flow at the proposed bridge crossing is 5.3 square miles.

The storm event analyzed for this study is the 100-year storm. Under local regulations, the proposed bridge construction (classified as development) must not increase the flood levels during the occurrence of the base flood (100 year) since a portion of the structure is in the floodway.

The StreamStats program modeling reported the flow rate associated with the 100-year storm event at this location as 915 cfs +/- 47.3%. The HEC-RAS model of existing conditions was developed to simulate the 100-year storm event with a base flood elevation (BFE) of 642.5' at the crossing location and flow of 1,630 cfs. The BFE value of 642.5' at the project site was interpolated from cross sections AN and AO, as shown in the FEMA Flood Insurance Study (FIS) dated September 28, 2007. The flow of 1,630 cfs is interpolated from the FIS reported 100-year storm peak discharge at Chester Corporate Limits of 1,240 cfs and at State Highway 10 about 2,600 feet downstream of Baltimore Road of 1,920 CFS.

HYDRAULIC EVALUATION

The HEC-RAS model simulations were performed using stream channel alignment and channel cross section information obtained from the topographic mapping as input data. The existing conditions were modeled to simulate the 100-year base flood elevation. The proposed improvements were also modeled to assess changes in the BFE. **Figure 2** shows the bridge site plan and profile.

During the 100-year storm event, the base flood elevation varies from 642.50 to 642.56 ft along the stream channel within the study area, according to the FIS data and the HEC-RAS results for the existing conditions model.

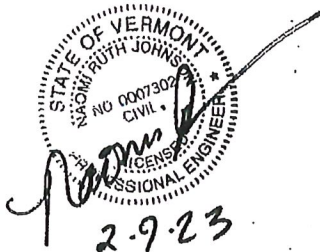
For modeling proposed conditions, with a simulated bridge in the HEC-RAS program, the proposed bottom chord of the bridge deck was set at 643.5', which is 1' above the 100-year BFE. The bridge is proposed to ramp down at 15% to meet existing grade. The Manning n roughness coefficient was reduced to account for the removal of existing vegetation for construction of the bridge and pathway. A minimum cleared width of 32 ft was used for the analysis.

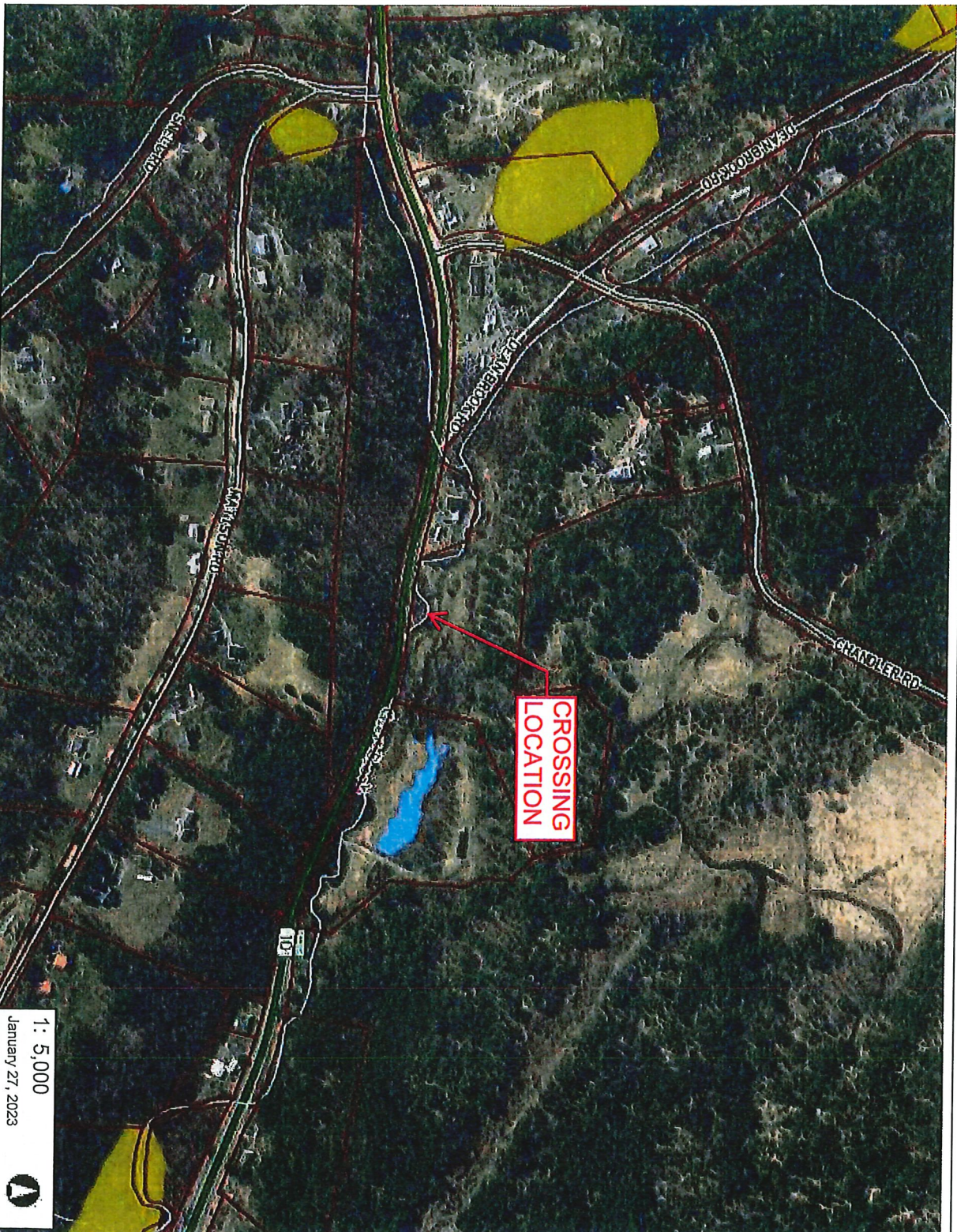
The effect of the proposed project is no increase or decrease in the BFE at a flow of 1,630 cfs. Clearing a wider section will further reduce the flood elevation. A profile showing the water surface profile of the existing and proposed conditions is shown in Figure 3.

The proposed development will result in no increase in flood levels during the occurrence of the base flood.

Naomi Johnson Digitally signed by Naomi Johnson
Date: 2023.02.09 11:39:04 -05'00'

Naomi R. Johnson, PE





254.0

0

127.00

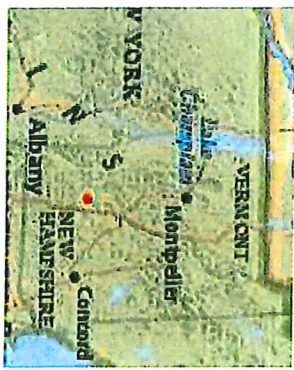
254.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Vermont Agency of Natural Resources

1" = 417 Ft.
1cm = 50 Meters
THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

1 : 5,000
January 27, 2023

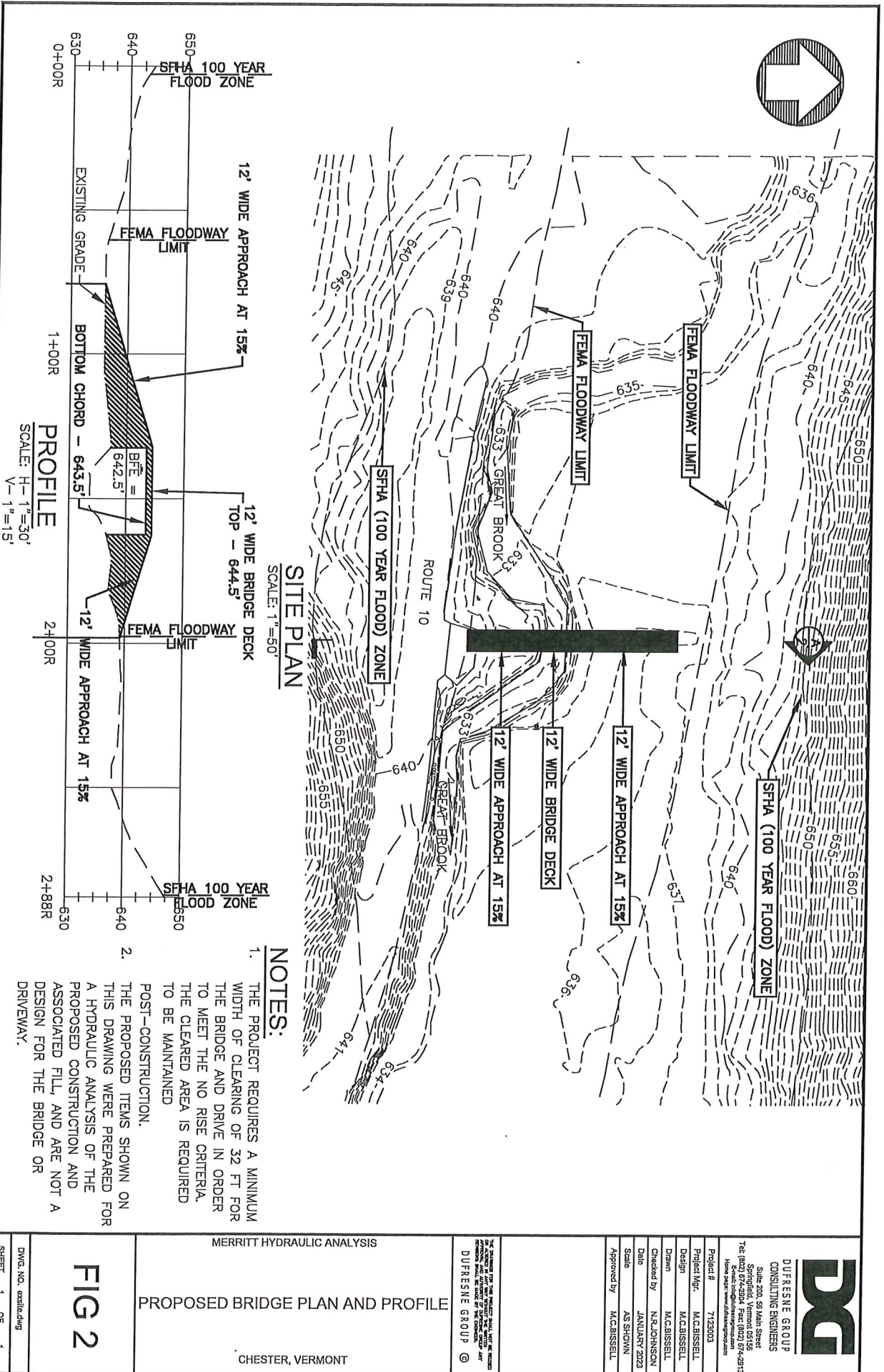


LEGEND

- Wetland - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
- Parcels (standardized)
 - Buffer
- Waterbody
 - Stream
 - Intermittent Stream
- Roads
 - Interstate
 - US Highway, 1
 - State Highway
 - Town Highway (Class 1)
 - Town Highway (Class 2,3)
 - Town Highway (Class 4)
 - State Forest Trail
 - National Forest Trail
 - Legal Trail
 - Private Road/Driveway
 - Proposed Roads
- Town Boundary

NOTES

Map created using ANR's Natural Resources Atlas



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Project # 7123003
Project Mgr. M.C. BISSELL
Design M.C. BISSELL
Drawn M.C. BISSELL
Checked by N.R. JOHNSON
Date JANUARY 2023
Scale AS SHOWN
Approved by M.C. BISSELL

"We warrant for the accuracy of the information contained in this drawing and the design thereon. We do not warrant for the accuracy of information not shown on this drawing."

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MERRITT HYDRAULIC ANALYSIS

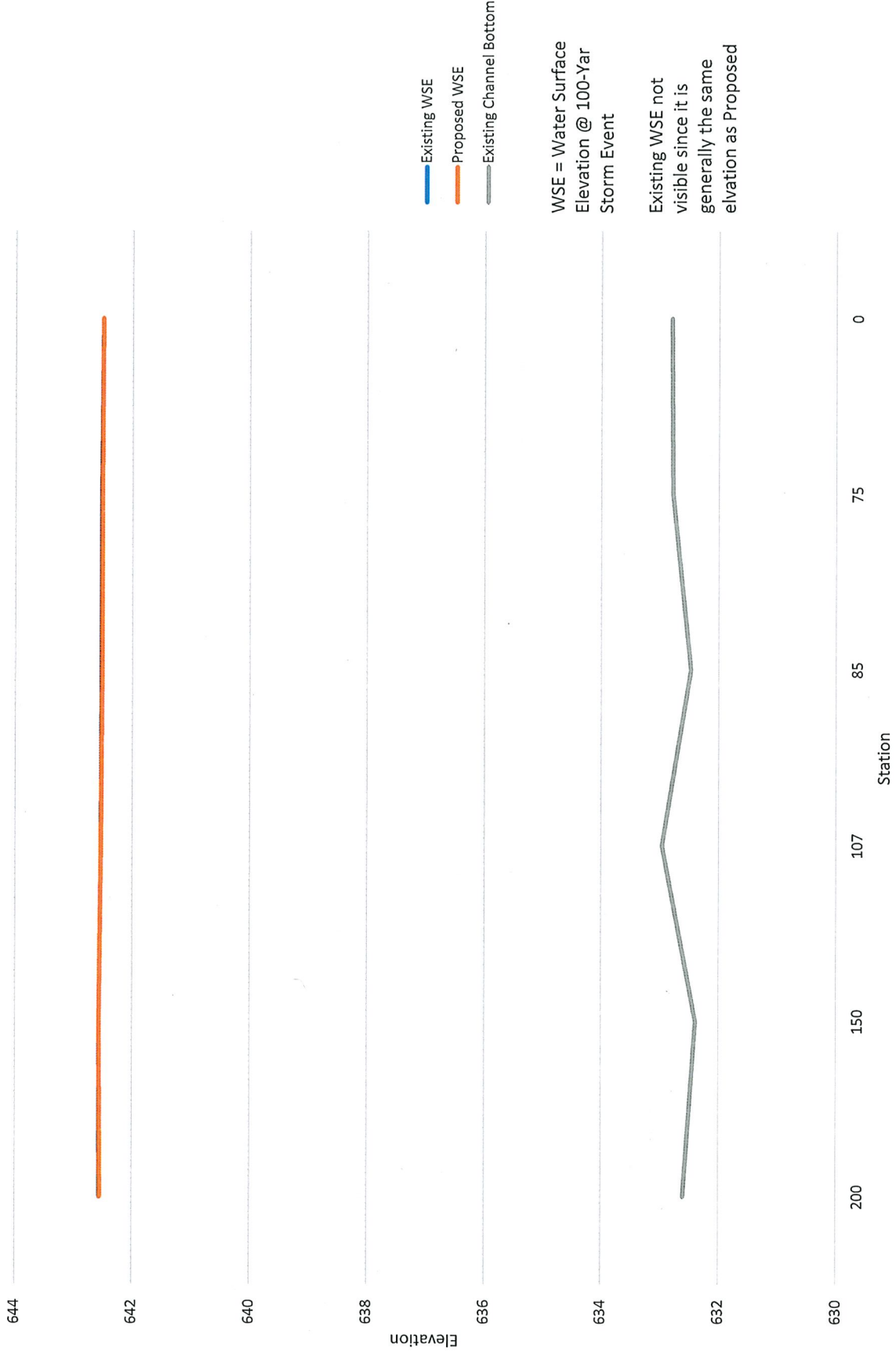
PROPOSED BRIDGE PLAN AND PROFILE

CHESTER, VERMONT

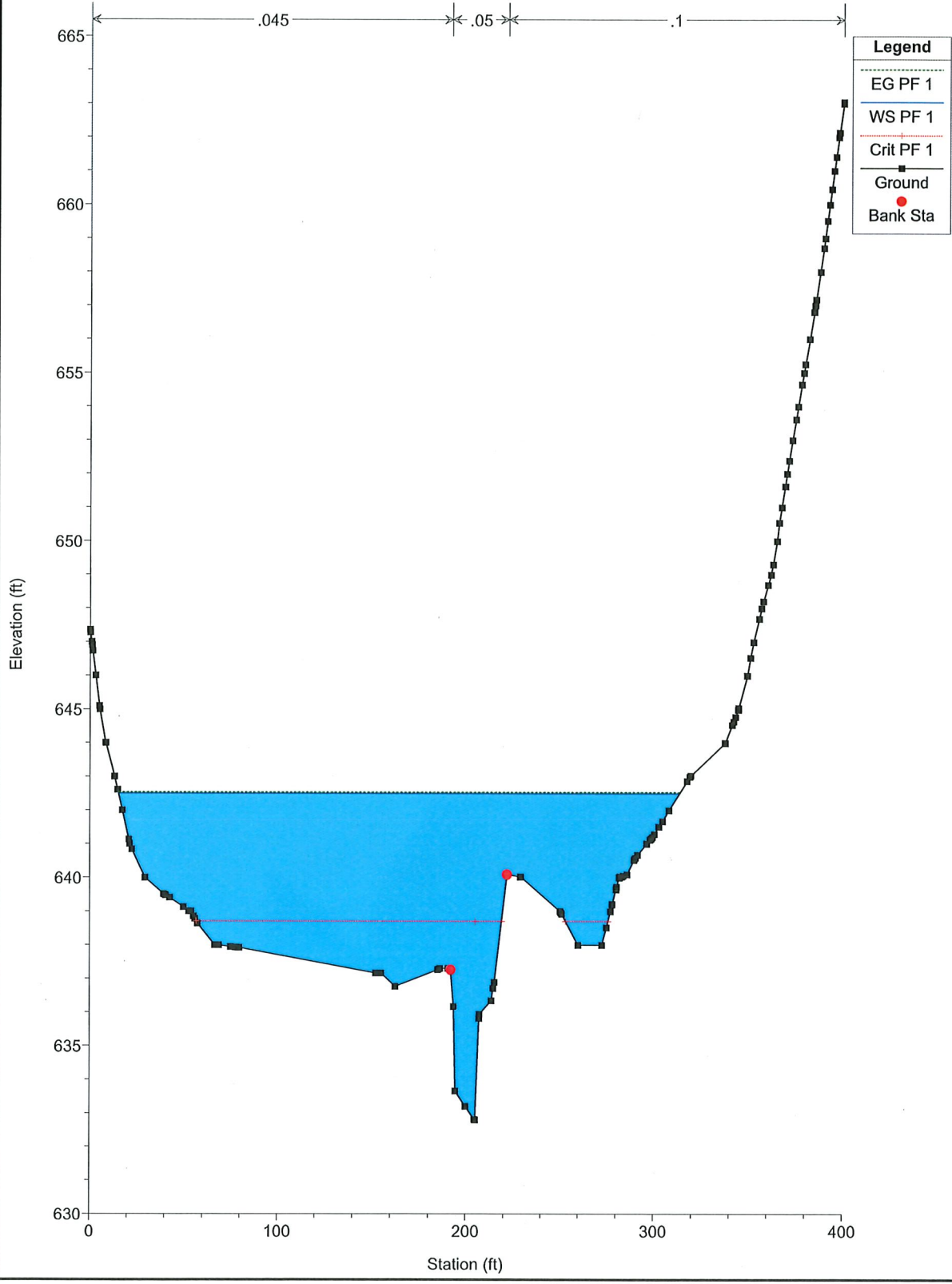
FIG 2

DWG. NO. exsite.dwg
SHEET 1 OF 1

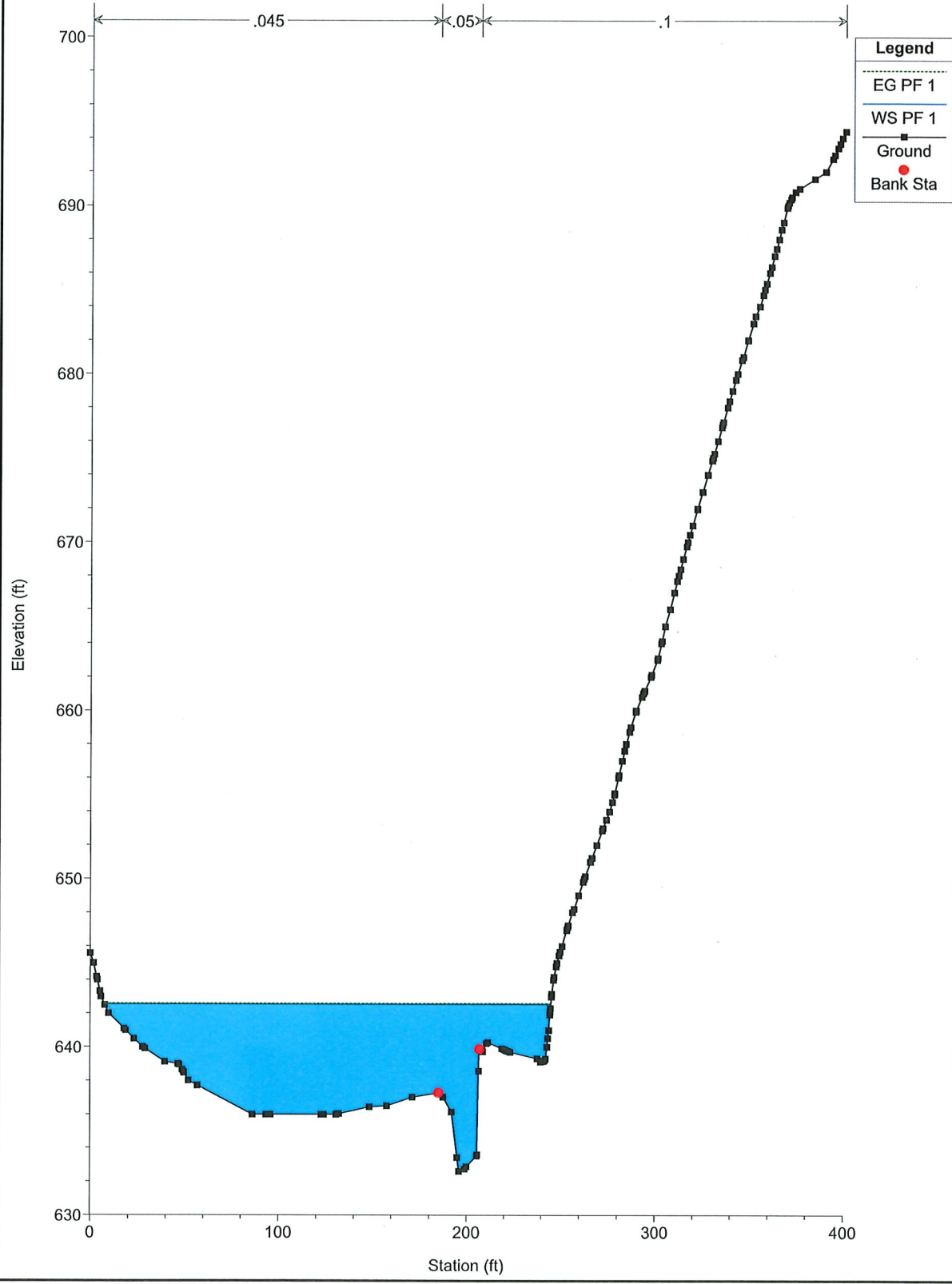
FIGURE 3 - GREAT BROOK PROFILE MERRITT DRIVEWAY PROJECT



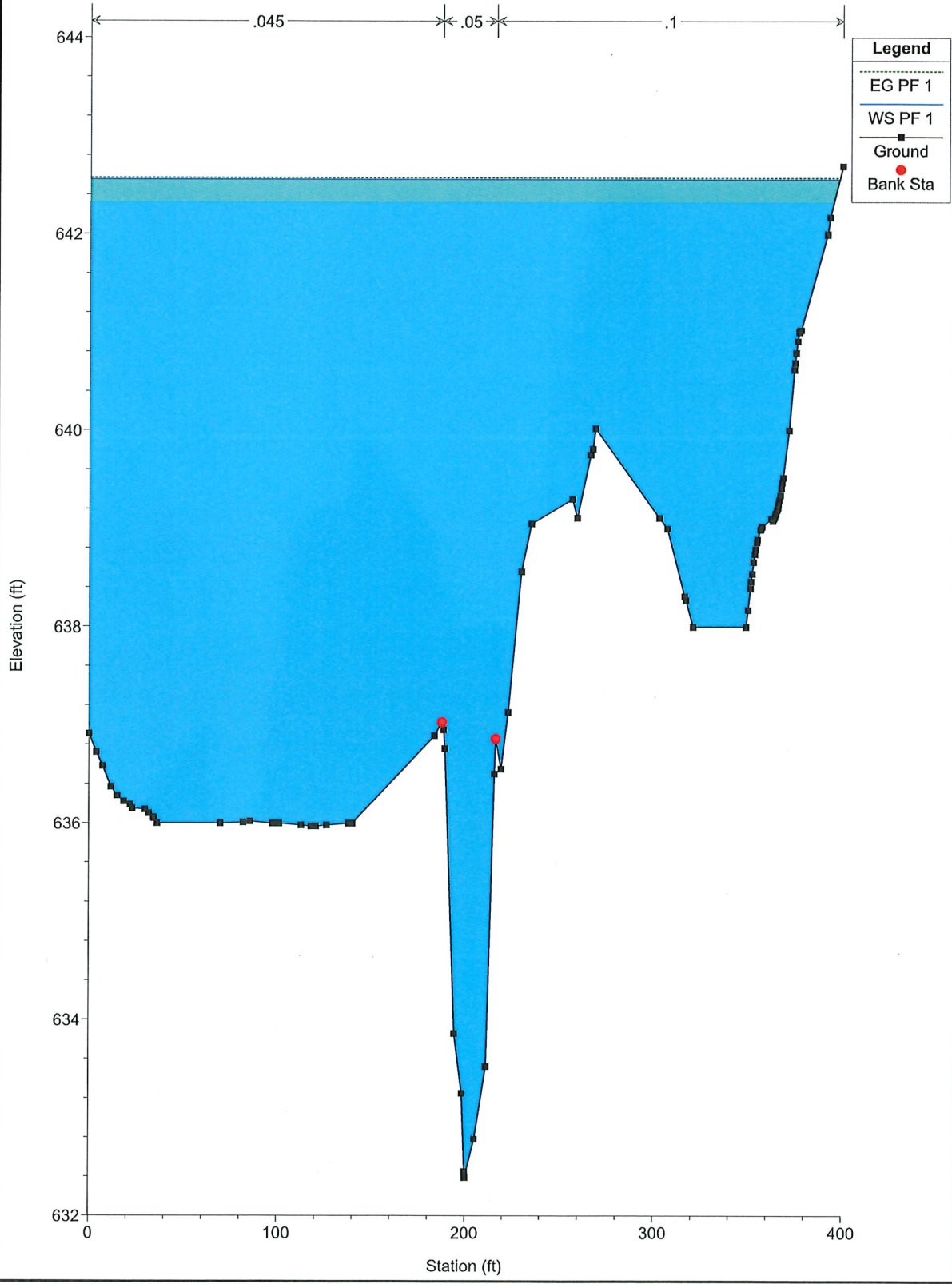
Existing Plan: Plan 01 1/25/2023



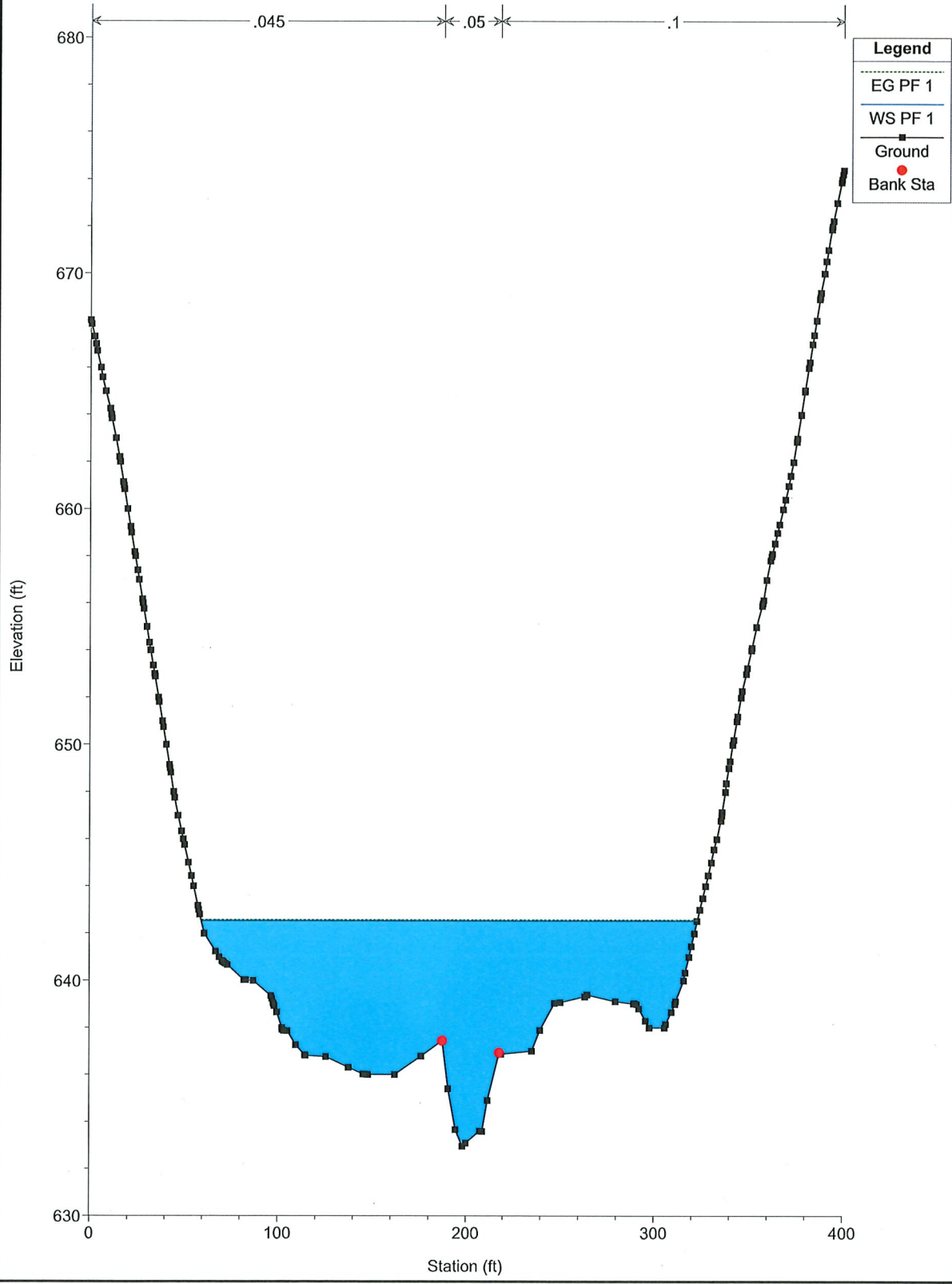
Existing Plan: Plan 01 1/25/2023



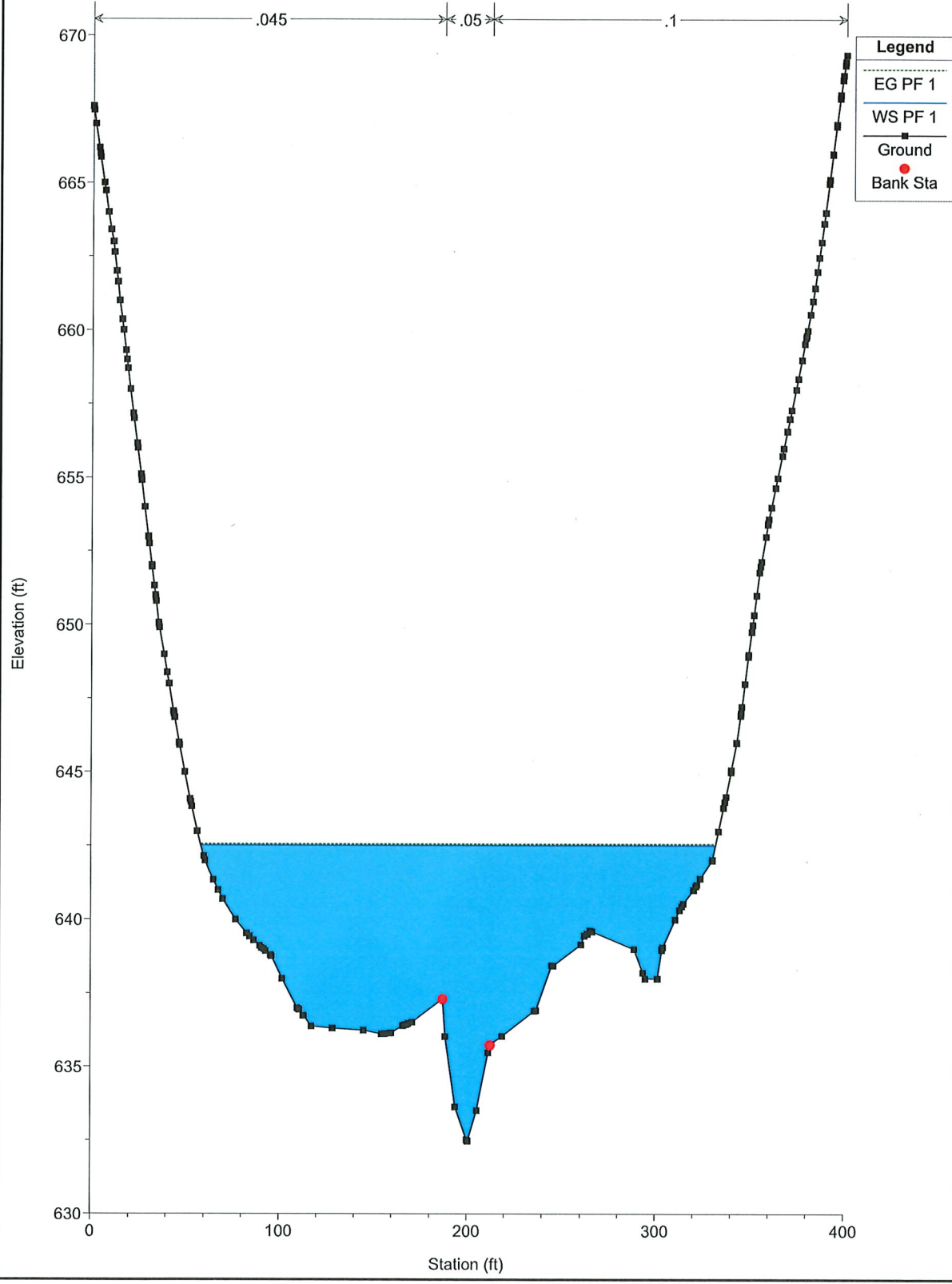
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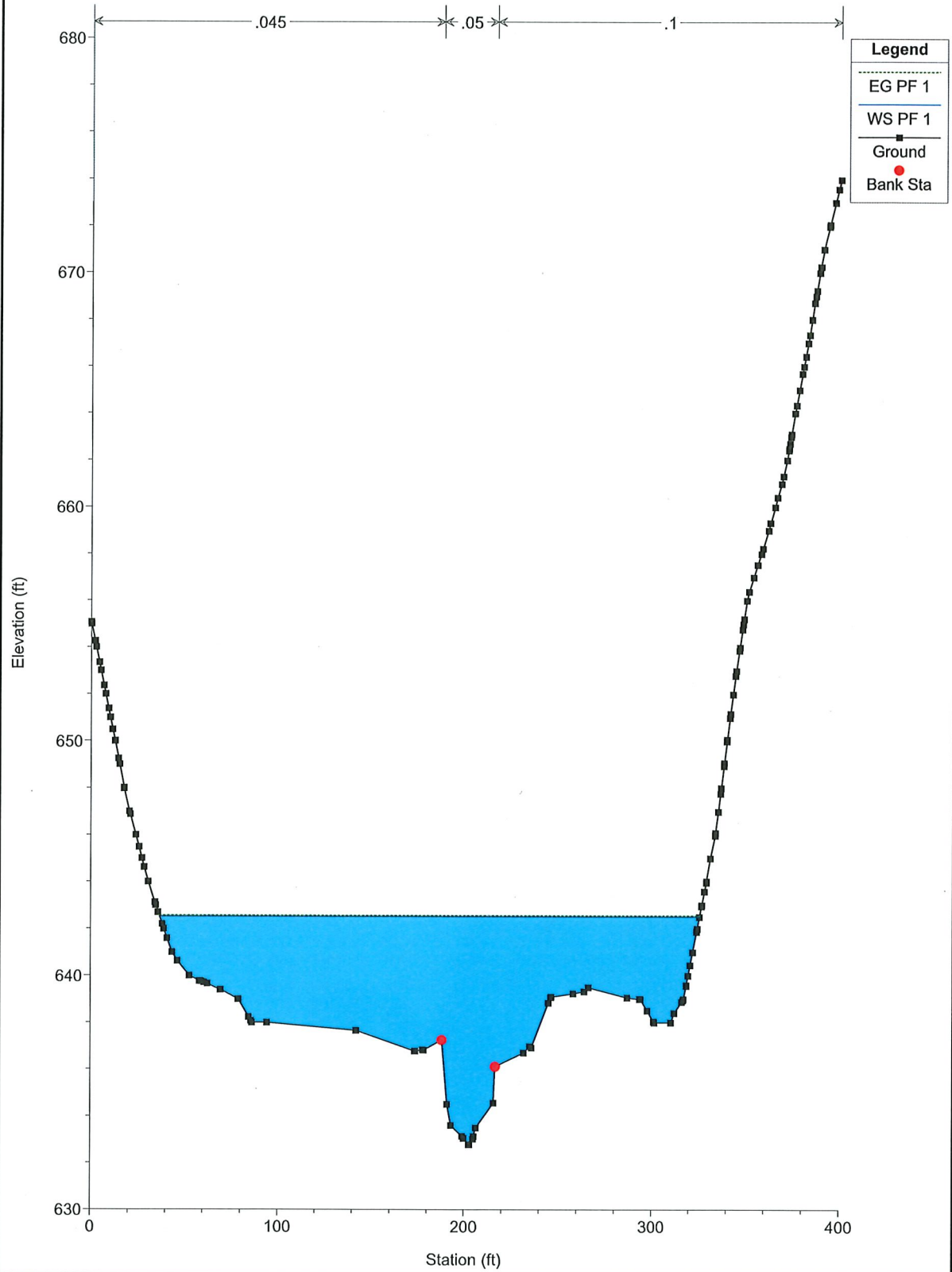
Existing Plan: Plan 01 1/25/2023



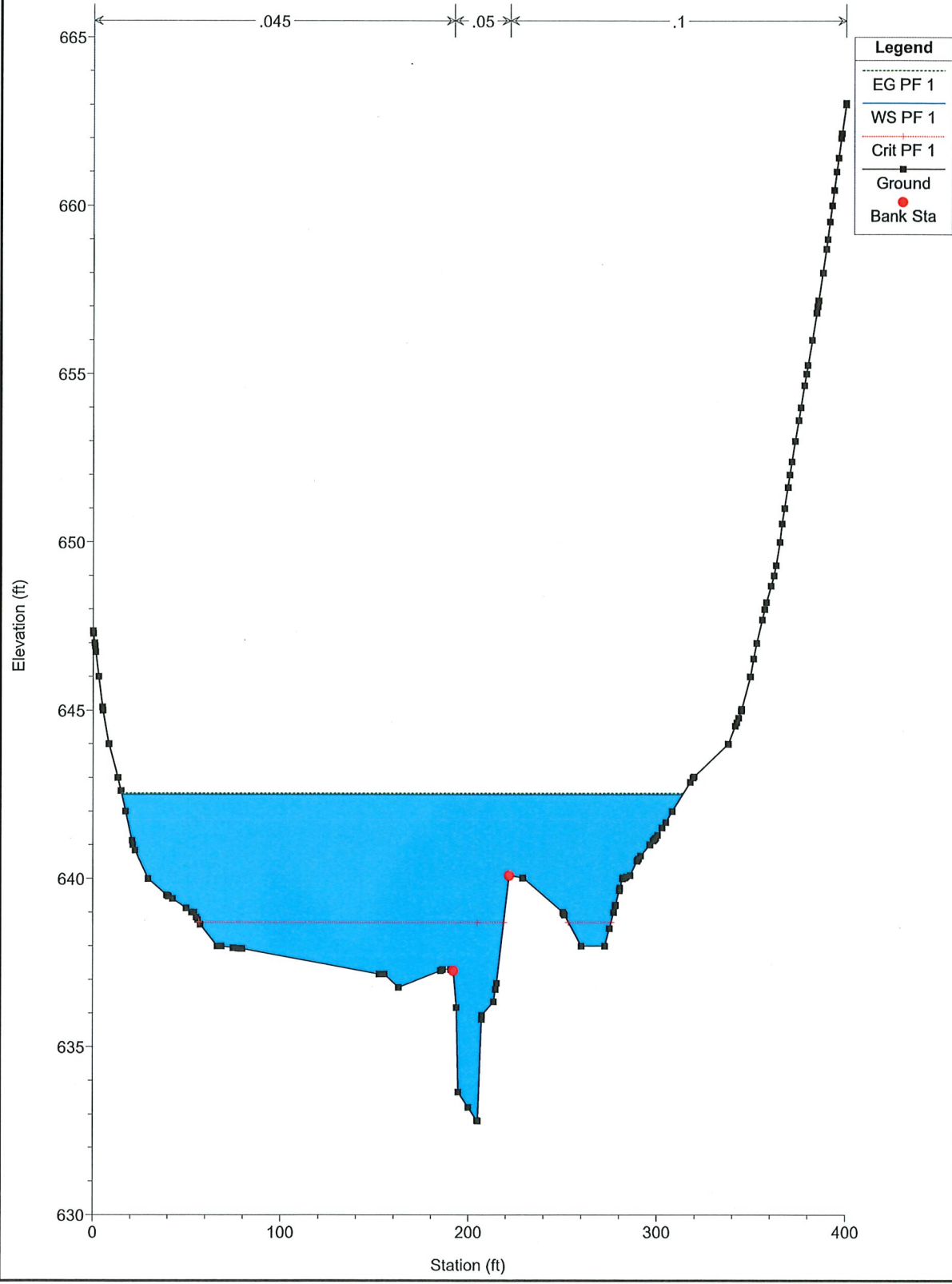
Existing Plan: Plan 01 1/25/2023



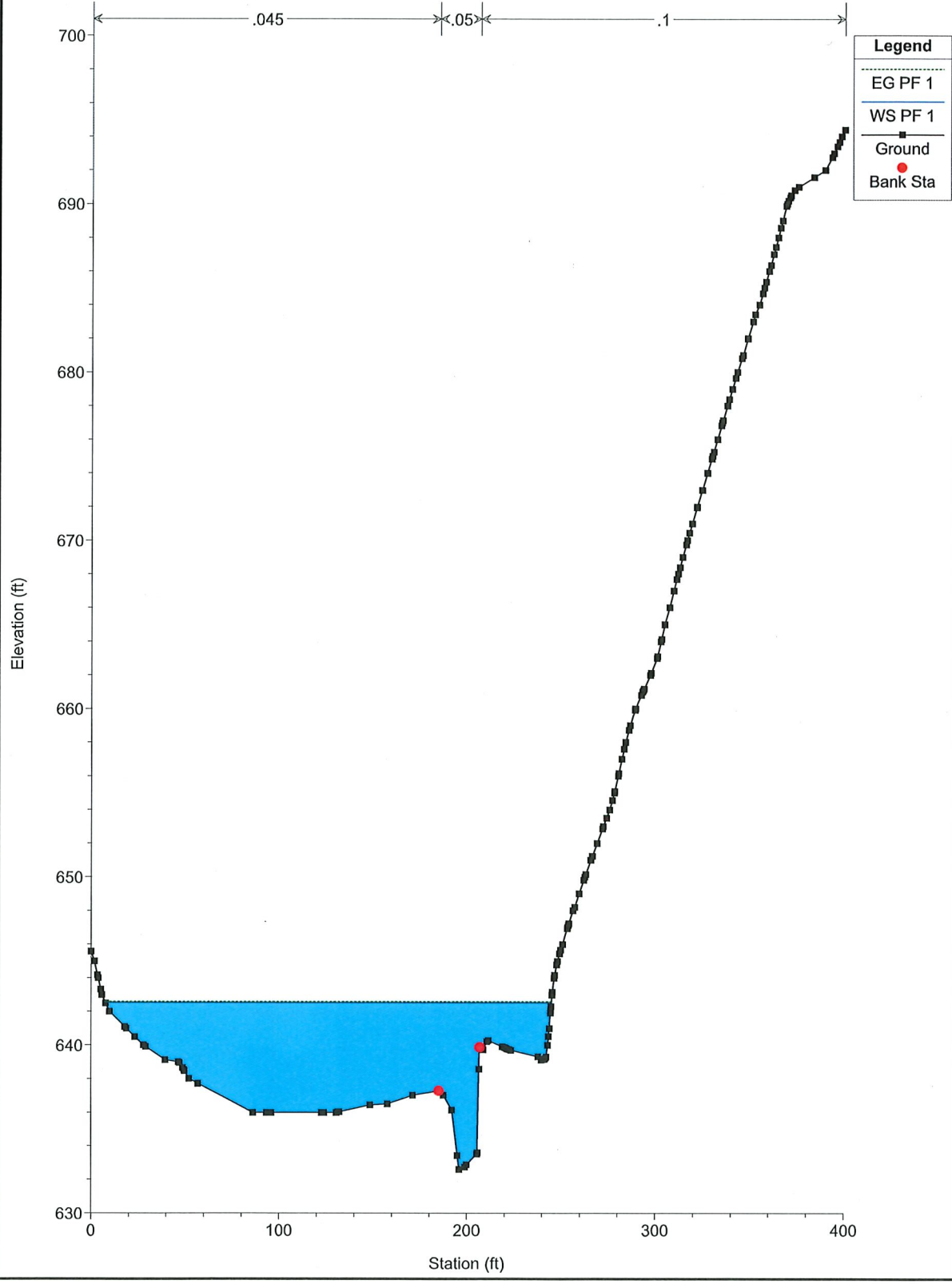
Existing Plan: Plan 01 1/25/2023



Proposed Plan: Plan 03 2/8/2023

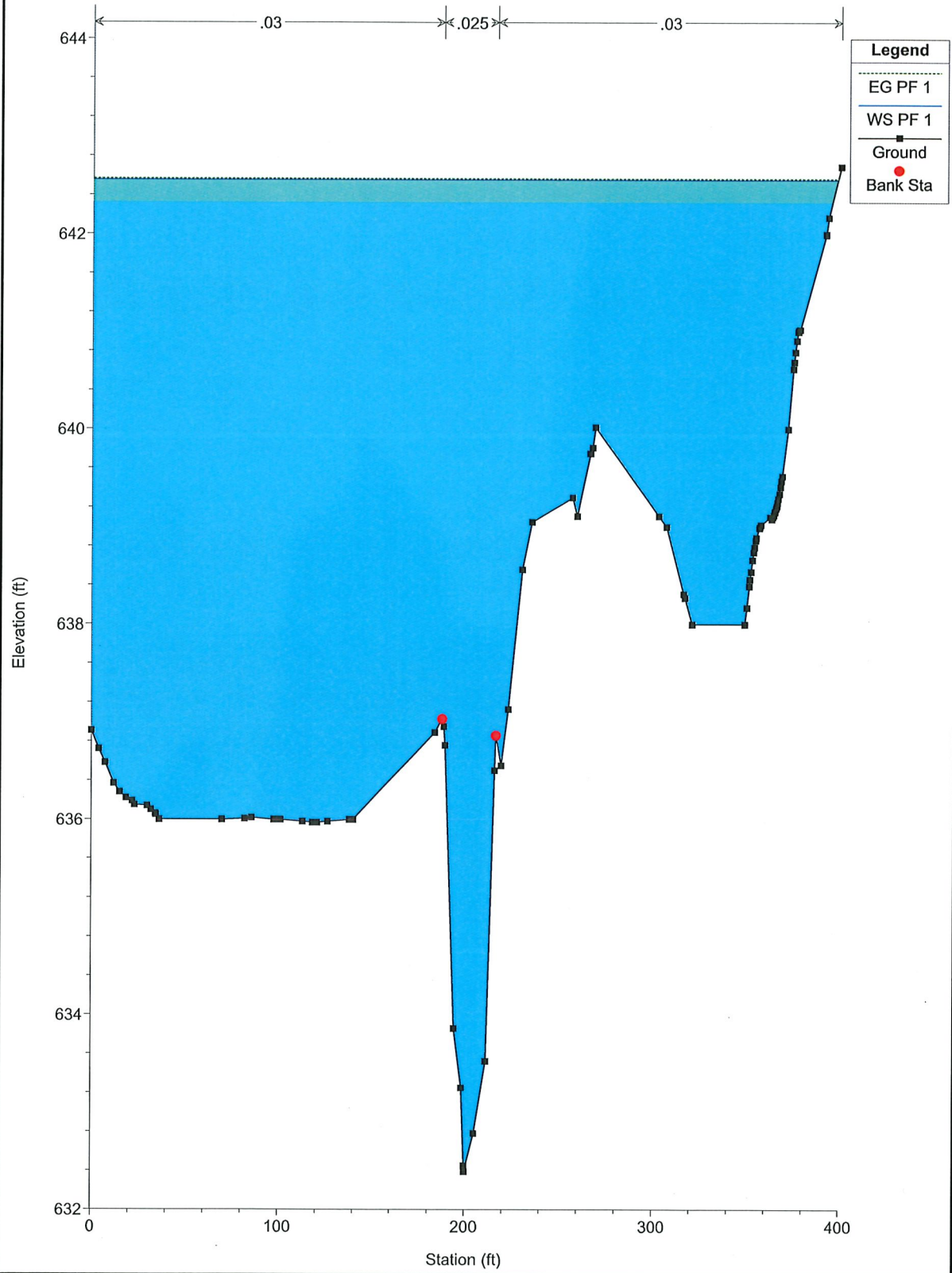


Proposed Plan: Plan 03 2/8/2023

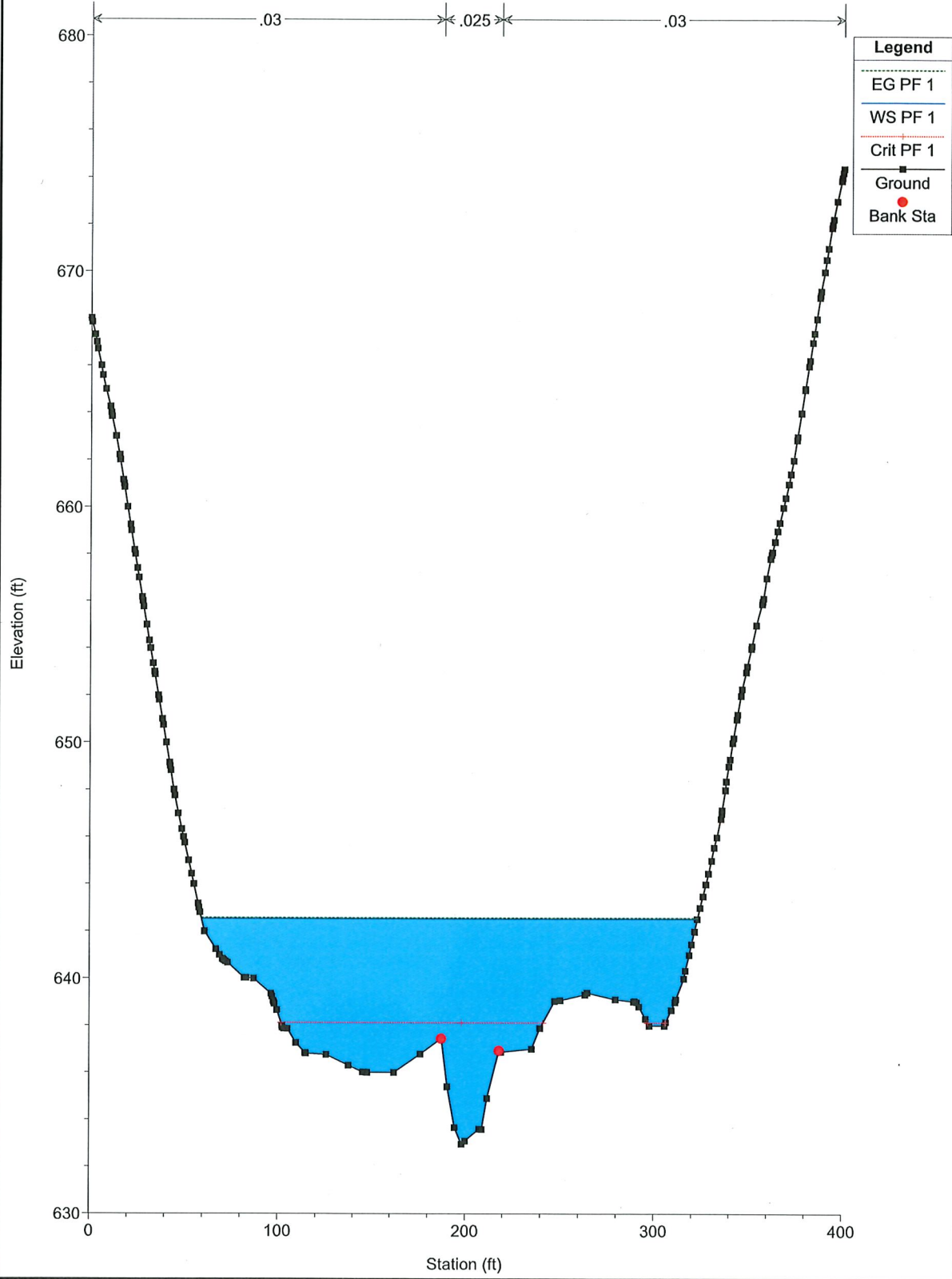


Legend	
---	EG PF 1
—	WS PF 1
■	Ground
●	Bank Sta

Proposed Plan: Plan 03 2/8/2023

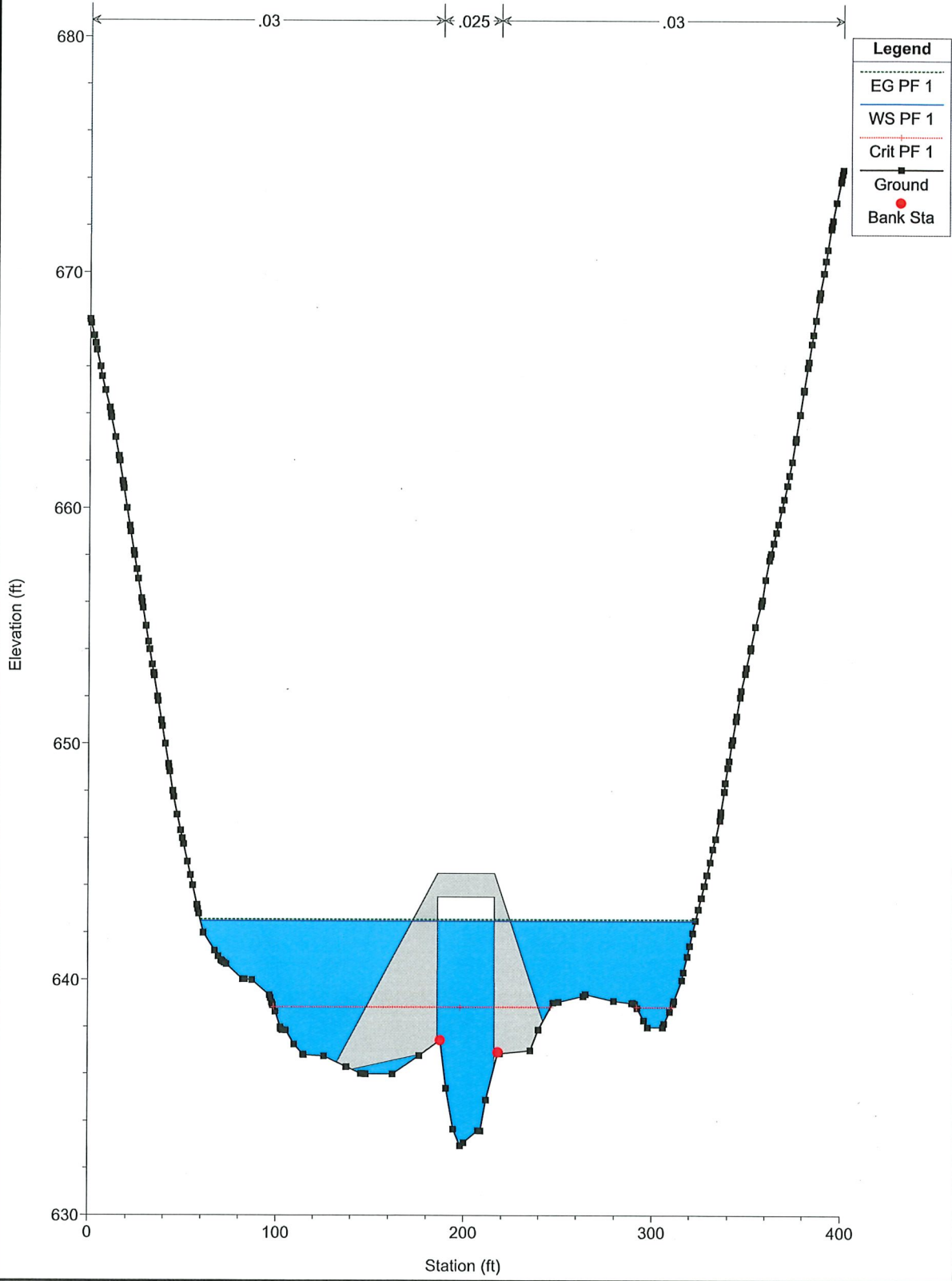


Proposed Plan: Plan 03 2/8/2023

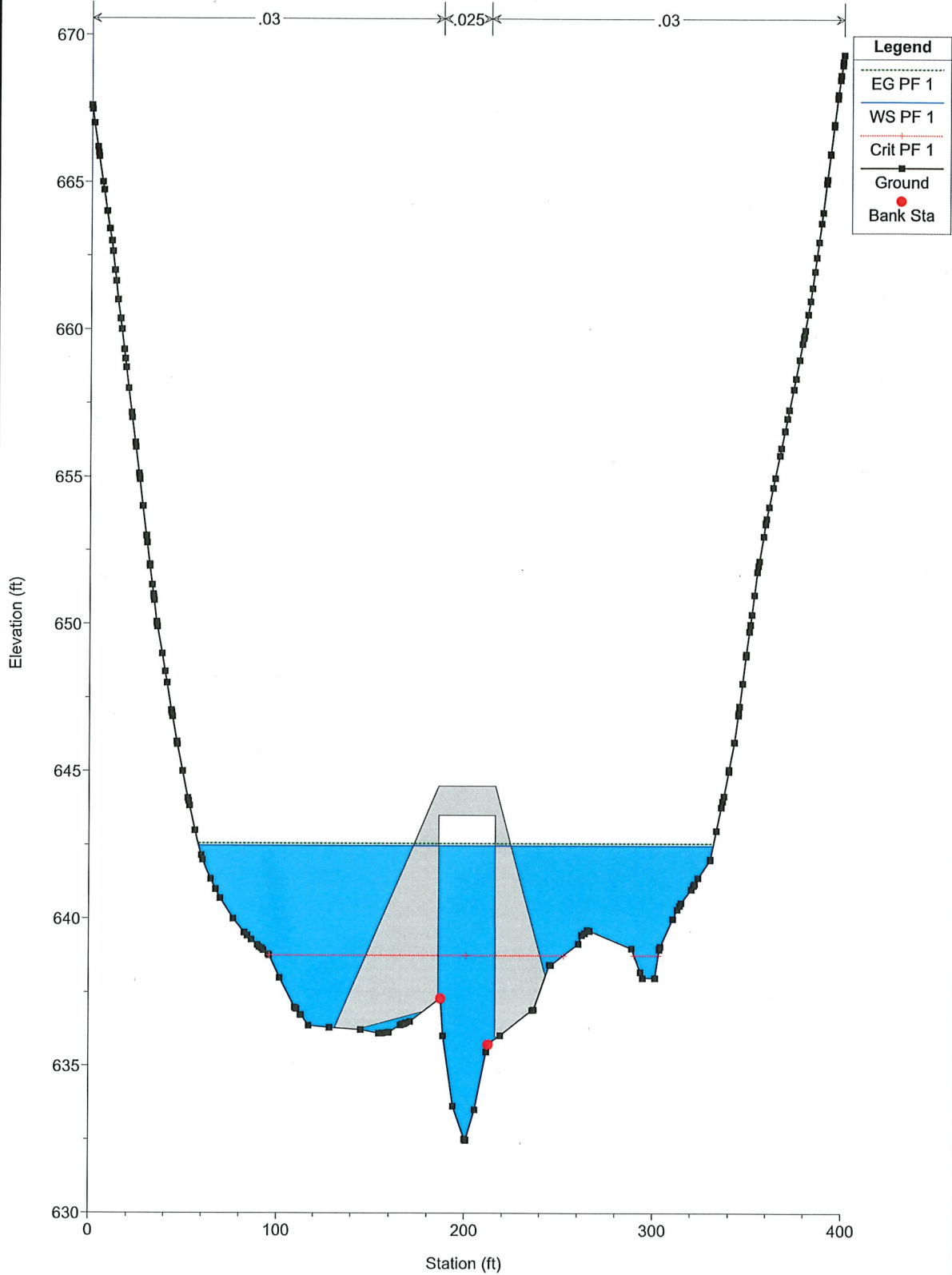


Legend	
EG PF 1	(Dashed line)
WS PF 1	(Blue shaded area)
Crit PF 1	(Red horizontal line)
Ground	(Black line with square markers)
Bank Sta	(Red dot)

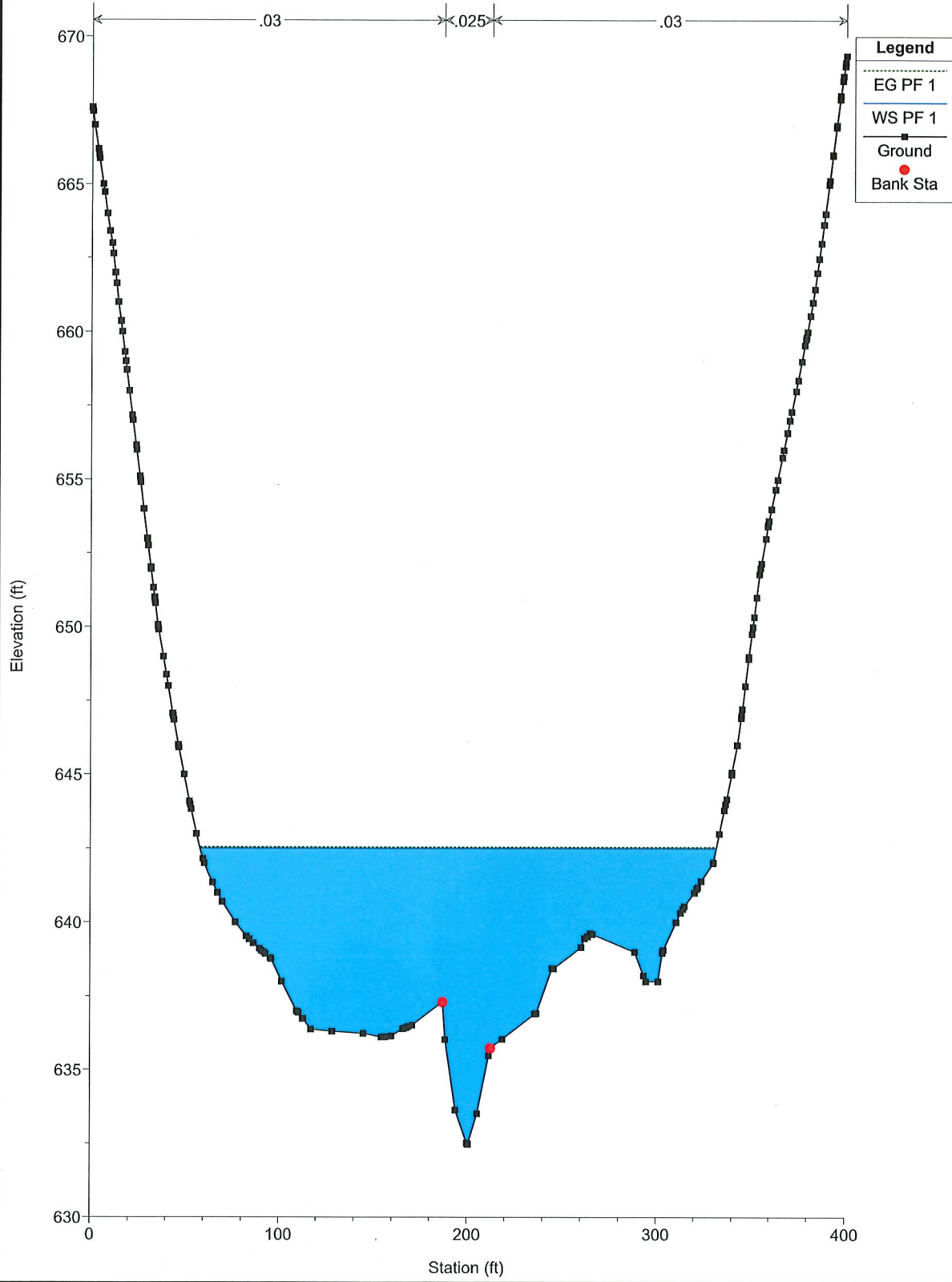
Proposed Plan: Plan 03 2/8/2023



Proposed Plan: Plan 03 2/8/2023



Proposed Plan: Plan 03 2/8/2023



Proposed Plan: Plan 03 2/8/2023

