The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

March 17, 2020

His Excellency, Governor Christopher T. Sununu
and The Honorable Council
State House
Concord, NH 03301

REQUESTED ACTION

Approve Town of Gilmanton's request to perform the following work on Crystal Lake/Nelson Brook in Gilmanton. File # 2019-03098. This project will not have significant impact on or adversely affect the values of Crystal Lake/Nelson Brook.

Dredge and fill 2,775 square feet (SF) within the bed and banks of Crystal Lake in Gilmanton (impacting 186 linear feet [LF]) and palustrine scrub-shrub wetland in order to replace an existing 20-foot-wide by 10-foot-long span bridge with a 24-foot-wide by 35-foot-long span bridge. In addition, temporarily impact 1,675 SF within the bed and banks of Crystal Lake in Gilmanton (impacting 209 LF) and palustrine scrub shrub wetland for erosion and sedimentation controls, turbidity controls, dewatering, construction access, relocating an existing utility pole, and restoration of approximately 150 SF of lake bed within the increased bridge span.

The New Hampshire Department of Environmental Services (NHDES) imposed the following conditions as part of this approval:

1. All work shall be in accordance with plans by Hoyle, Tanner & Associates, Inc., dated December 2019, and revised through December 19, 2019, as received by the NH Department of Environmental Services (NHDES) on January 14, 2020.
2. The permittee shall submit a plan, stamped by a licensed surveyor, of the area to be impacted by the project on which the contours of both Full Pond Elevation at 623.19 (NGVD29) and Natural Mean High Water Elevation 617.2 feet (NGVD 1929) are clearly identified to the NHDES Wetlands Bureau, prior to the initiation of any dredge, excavation, or fill associated with the approved project.
3. This permit is not valid until the permittee or permittee's contractors submit a final construction sequence and dewatering and diversion plan to the NHDES Wetlands Bureau and the NH Fish & Game Department (NHF&G) for review and written approval. The plan shall include the relative timing and progression of all work and all proposed cofferdams, diversion and dewatering strategies, estimated maximum flow to be diverted, site stabilization provisions if capacity of diversion is exceeded, and measures to reduce turbidity and erosion. This plan shall be stamped by a licensed Professional Engineer (PE), in accordance with New Hampshire Administrative Rule Env-Wt 303.04(l).
4. This permit is not valid until the applicant/owner obtains construction easements on abutting parcels or written permission from abutting property owners if work is beyond the ROW. The permittee shall submit a copy of each recorded easement to the NHDES Wetlands Bureau prior to construction.

5. If any work associated with the project authorized by this permit will encroach on an abutter's property or occur within 20 feet of the property line, then prior to starting work the permittee shall (1) obtain temporary construction easements or other written agreements from the owner of the abutting property, and (2) submit a copy of each agreement to the NHDES Wetlands Bureau.
6. All development activities associated with this project shall be conducted in compliance with applicable requirements of RSA 483-B and N.H. Code of Administrative Rules Env-Wq 1400 during and after construction.
7. Work shall be done during drawdown and in dry conditions only.
8. The permittee shall coordinate drawdown activities with the NHDES Dam Bureau and NH Fish and Game Department (NHF&G).
9. Per recommendation of the NHF&G, work shall be done in such a way as to maintain an open portion of the channel at all times throughout construction.
10. Per recommendation of the NHF&G, any erosion control matting used shall consist of jute matting that is fully biodegradable and does not contain any plastic netting or thread. The use of welded plastic or 'biodegradable plastic' erosion control netting and matting with plastic mesh shall be avoided to limit mortality to wildlife.
11. Work authorized shall be carried out such that there are no discharges in or to spawning or nursery areas during spawning seasons. Impacts to such areas shall be avoided or minimized to the maximum extent practicable during all other times of the year.
12. Work shall be carried out in a time and manner to avoid disturbances to migratory waterfowl breeding and nesting areas.
13. A certified wetlands scientist or qualified professional, as applicable, shall monitor the project during construction to verify that all work is done in accordance with the approved plans and narratives, adequate siltation and erosion controls are properly implemented, and no water quality violations occur. A follow-up report including photographs of all stages of construction shall be submitted to the NHDES Wetlands Bureau within 60 days of final site stabilization.
14. Not less than 5 state business days prior to starting work authorized by this permit, the permittee shall notify the NHDES Wetlands Bureau and the local conservation commission in writing of the date on which work under this permit is expected to start.
15. No person undertaking any activity shall cause or contribute to, or allow the activity to cause or contribute to, any violations of the surface water quality standards in RSA 485-A and Env-Wq 1700.
16. Any further alteration of areas on this property that are subject to RSA 482-A jurisdiction will require a new application and further permitting.
17. Appropriate siltation and erosion controls shall be in place prior to construction, shall be maintained during construction, and shall remain until the area is stabilized. Temporary controls shall be removed once the area has been stabilized.
18. Appropriate turbidity controls shall be installed prior to construction, shall be maintained during construction such that no turbidity escapes the immediate dredge area, and shall remain until suspended particles have settled and water at the work site has returned to normal clarity.
19. Erosion control products shall be installed per manufacturers recommended specifications.
20. Work shall be conducted in a manner so as to minimize turbidity and sedimentation to surface waters and wetlands.

21. All dredged and excavated material and construction-related debris shall be placed outside of the areas subject to RSA 482-A. Any spoil material deposited within 250 feet of any surface water shall comply with RSA 483-B.
22. The contractor responsible for completion of the work shall use techniques described in the New Hampshire Stormwater Manual, Volume 3, Erosion and Sediment Controls During Construction (December 2008).
23. Prior to commencing work on a substructure located within surface waters, the permittee or permittee's contractors shall construct a cofferdam to isolate the substructure work area from the surface waters.
24. The temporary cofferdam shall be entirely removed within 2 days after work within the cofferdam is completed and water has returned to normal clarity.
25. Discharge from dewatering of work areas shall be to sediment basins that are: a) located in uplands; b) lined with hay bales or other acceptable sediment trapping liners; c) set back as far as possible from wetlands and surface waters, with a preferred undisturbed vegetated buffer of at least 50 feet and a minimum undisturbed vegetative buffer of 20 feet.
26. Dredged materials, whether to be stockpiled or disposed of, shall be dewatered in sedimentation basins lined with siltation and erosion controls, and located outside of areas subject to RSA 482-A jurisdiction.
27. Construction equipment shall be inspected daily for leaking fuel, oil, and hydraulic fluid prior to entering surface waters or wetlands or operating in an area where such fluids could reach groundwater, surface waters, or wetlands.
28. The permittee's contractor shall maintain appropriate oil/diesel fuel spill kits on site that are readily accessible at all times during construction, and shall train each operator in the use of the kits.
29. All refueling of equipment shall occur outside of surface waters or wetlands during construction. Machinery shall be staged and refueled in upland areas only.
30. Faulty equipment shall be repaired immediately prior to entering areas that are subject to RSA 482-A jurisdiction.
31. Any fill used shall be clean sand, gravel, rock, or other suitable material.
32. Native material removed from the lakebed during bridge installation shall be stockpiled separately and reused to emulate a natural channel bottom within the bridge, between wing walls, and beyond. Any new materials used must be as similar to the natural lake substrate as practicable and shall not include any angular rock. Materials used to emulate a natural lake bottom must be consistent with the bed materials identified in the reference reach, and shall not include angular riprap or gravel unless specifically identified on the approved plans.
33. Area of temporary impact shall be regraded to original contours following completion of work.
34. Within three days of final grading or temporary suspension of work in an area that is in or adjacent to wetlands or surface waters, all exposed soil areas shall be stabilized by seeding and mulching during the growing season, or if not within the growing season, by mulching with tackifiers on slopes less than 3:1 or netting and pinning on slopes steeper than 3:1.
35. Where construction activities occur between November 30 and May 1, all exposed soil areas shall be stabilized within 1 day of establishing the grade that is final or that otherwise will exist for more than 5 days. Stabilization shall include placing 3-inches of base course gravels, or loaming and mulching with tack or netting and pinning on slopes steeper than 3:1.

EXPLANATION

The NHDES approved this project on February 13, 2020. The NHDES supported its decision with the following findings:

1. This project is classified as a Major Project per NH Administrative Rule Env-Wt 303.02(n) for fill in public waters for the purposes of making land, and Env-Wt 303.02(h) as the project will disturb more than 200 linear feet, measured along the shoreline, of a lake or pond or its bank.
2. This project involves the replacement of a deteriorating 20-foot-wide by 10-foot-long span bridge over Crystal Lake in Gilmanton with a 24-foot-wide by 35-foot-long span bridge. This project will involve 52 cubic yards of fill below the reference line elevation of 623.19 (NGVD29) in order to expand the footprint of the existing causeway to support the proposed bridge structure and the restoration of approximately 150 square feet of lake bed beneath the bridge associated with the increased bridge span.
3. The applicant has provided evidence which demonstrates that this proposal is the alternative with the least adverse impact to areas and environments under the NHDES' jurisdiction per NH Administrative Rule Env-Wt 302.03 as the proposed bridge will significantly improve public safety of this structure, the hydraulic capacity of bridge will increase from a 10-foot span to a 35-foot span, and a portion of the lake bed beneath the bridge will be restored thus improving aquatic organism passage.
4. The applicant has demonstrated by plan and example that each factor listed in NH Administrative Rule Env-Wt 302.04(a) Requirements for Application Evaluation, has been considered in the design of the project.
5. In accordance with RSA 482-A:8, NHDES finds that the requirements for a public hearing do not apply as the permitted project is not of substantial public interest, and will not have a significant impact on or adversely affect the values of the lacustrine resources, as identified under RSA 482-A:1.
6. The need for compensatory mitigation pursuant to Env-Wt 800 was assessed and the NHDES determined that compensatory mitigation shall not be required for this project in accordance with NH Administrative Rule Env-Wt 302.03(c)(2).
7. In a New Hampshire Programmatic General Permit review dated November 13, 2019, the US Environmental Protection Agency (USEPA) determined that the project was eligible for a Programmatic General Permit through the US Army Corp of Engineers as proposed.
8. In an Intra-Division Communication Memo dated June 13, 2019, the NHDES Dam Bureau indicated that the proposed fill related to the reconstruction of the Crystal Lake Bridge would not constitute filling of land in the Public Trust and that flowage issues would still need to be addressed.
9. The NHDES Dam Bureau has deeded flowage rights on Crystal Lake in Gilmanton pursuant to Belknap County Registry of Deeds Book 383, Page 163, dated September 20, 1957.
10. In a letter dated January 9, 2020, the NHDES Dam Bureau indicated that the proposed 52 cubic yards of fill for this project below reference line elevation (NGVD29) would have a negligible effect on the NHDES' deeded flowage rights and stated that they had no objections to allowing this fill within State controlled flowage pursuant to RSA 482-A:17.
11. In a review letter dated November 07, 2017, and received by the NHDES on September 30, 2019, the NH Department of Historical Resources (DHR) stated that no historic properties will be affected by the proposed project.
12. In a letter dated April 02, 2019, and received by NHDES on September 30, 2019, the DHR determined that the existing bridge was not eligible for the National Register of Historic Places.

13. In a review letter dated May 29, 2019, and received by the NHDES on September 30, 2019, the NH Natural Heritage Bureau (NHB) identified that records of bridle shiner (Notropis bifrenatus), common loon (Gavia immer), and wood turtle (Glyptemus insculpta) were recorded in the vicinity of the project.
14. In email correspondence dated June 13, 2019, the NH Fish & Game (NHF&G) staff indicated that impacts to the protected species would not be expected for this project provided that that drawdown would not take place during breeding seasons, that flowage through the crossing is maintained throughout construction, and that wildlife friendly erosion control matting that is free of welded plastic or "biodegradable plastic" is used to limit wildlife mortality.
15. The NHF&G recommendations were included as conditions in the permit at the request of the NHF&G staff.
16. In a regulatory reviews dated May 16, 2019, and September 18, 2019, and received by the NHDES on September 30, 2019, the US Fish and Wildlife Service found that while Northern Long-eared Bats (Myotis septentrionalis) were present in the vicinity of the site, there were no critical habitats for this species at this location.
17. In a letter signed July 14, 2019, and received by the NHDES on September 30, 2019, the abutting property owner granted the applicant consent to perform the work authorized under this permit on or within 20 feet of their property at Gilmanton Tax Map #104 Lot #1.
18. In a letter signed July 26, 2019, and received by the NHDES on September 30, 2019, the abutting property owner granted the applicant consent to perform the work authorized under this permit on or within 20 feet of their property at Gilmanton Tax Map #104 Lot #2, provided that the bridge under-clearance be no lower than its existing design and the water depth is sufficient for passage.
19. As of February 13, 2020, no comments of concern have been received by the NHDES from abutters or local governing organizations.

Application file documents are being forwarded to the Governor and the Executive Council in connection with their consideration of this matter pursuant to RSA 482-A:3,II.(a) as it is a major project in public waters of the state.

We respectfully request your approval of this item.

Robert R. Scott
Commissioner

NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management
Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: RSA 482-A/ Env-Wt 100-900

RECEIVED
SEP 30 2019
NHDES
LAND RESOURCES MANAGEMENT

COMPLETE
Administrative Use Only
OCT 01 2019

Administrative Use Only

2019-03098
CK# 036157
Amount: $302.00
Initials: RS

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact) ☐ Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:
If mitigation is required, a Mitigation Pre-Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if mitigation is required, please refer to the Determine if Mitigation is Required Frequently Asked Questions.

Mitigation Pre-Application Meeting Date: Month: __ Day: __ Year: ____
☒ N/A - Mitigation is not required

3. PROJECT LOCATION:
Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.

ADDRESS: Crystal Lake Road | TOWN/CITY: Gilmanton
TAX MAP: 104 | BLOCK: N/A | LOT: N/A | UNIT: N/A
USGS TOPO MAP WATERBODY NAME: Crystal Lake/Nelson Brook ☐ NA | STREAM WATERSHED SIZE: 6.95 square miles ☐ NA
LOCATION COORDINATES (If known): 43.45195, -71.31916 ☒ Latitude/Longitude ☐ UTM ☐ State Plane

4. PROJECT DESCRIPTION:
Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

The Town of Gilmanton proposes to replace the Crystal Lake Road Bridge over Crystal Lake/ Nelson Brook. Proposed replacement consists of a 35' clear span precast-prestressed concrete deck beam superstructure founded on a precast concrete cap with deep pile foundations. The new bridge will safely carry statutory loads and provide 75-year service life. The preferred roadway alignment across the bridge will be shifted 5' east of the existing alignment to maintain the existing westerly armored side slopes while also allowing the existing stone masonry retaining walls to be reconstructed. The proposed method of managing traffic during construction is through the use of a detour.

There will be a total of 1,510 square feet of temporary wetland impact as a result of this project.

5. SHORELINE FRONTAGE:

☒ N/A This does not have shoreline frontage. SHORELINE FRONTAGE:

Shoreline Frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line (Env-Wt 101.89).

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:
Please indicate if any of the following permit applications are required and, if required, the status of the application.
To determine if other Land Resources Management Permits are required, refer to the Land Resources Management Webpage.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Individual Sewerage Disposal per RSA 485-A:2	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Subdivision Approval Per RSA 485-A	☐ YES ☒ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Shoreland Permit Per RSA 483-B	☒ YES ☐ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED

7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:
See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB 19 - 1497

b. ☐ This project is within a Designated River corridor. The project is within ¼ mile of: _____ ; and date a copy of the application was sent to the Local River Management Advisory Committee: Month: __ Day: __ Year: ____
☒ N/A – This project is not within a Designated River corridor.

8. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: Boré, Patrick / Town Administrator

TRUST / COMPANY NAME: Town of Gilmanton | MAILING ADDRESS: P.O. Box 550

TOWN/CITY: Gilmanton | STATE: NH | ZIP CODE: 03237

EMAIL or FAX: TownAdministrator@gilmantonnh.org | PHONE: 603-267-6700 Ext 12

ELECTRONIC COMMUNICATION: By initialing here: PB, I hereby authorize NHDES to communicate all matters relative to this application electronically.

9. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.:

TRUST / COMPANY NAME: | MAILING ADDRESS:

TOWN/CITY: | STATE: | ZIP CODE:

EMAIL or FAX: | PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically.

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.: Peace, Kimberly R. | COMPANY NAME: Hoyle, Tanner & Associates, Inc.

MAILING ADDRESS: 150 Dow Street

TOWN/CITY: Manchester | STATE: NH | ZIP CODE: 03101

EMAIL or FAX: kpeace@hoyletanner.com | PHONE: 603-669-5555 Ext 151

ELECTRONIC COMMUNICATION: By initialing here KRP, I hereby authorize NHDES to communicate all matters relative to this application electronically.

11. PROPERTY OWNER SIGNATURE:
See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for National Historic Preservation Act (NHPA) 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the NHDES is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.

Property Owner Signature	PATRICK BORÉ Print name legibly	9/17/2019 Date

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

⇨ Authorized Commission Signature	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will be reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

⇨ Town/City Clerk Signature	Print name legibly	Town/City	Date
Maura	Maura Thomas	Gilmanton	9/17/19

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

14. IMPACT AREA:
For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact.
Permanent: impacts that will remain after the project is complete.
Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.
Intermittent Streams: linear footage distance of disturbance is measured along the thread of the channel.
Perennial Streams/ Rivers: the total linear footage distance is calculated by summing the lengths of disturbance to the channel and each bank.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.	TEMPORARY Sq. Ft. / Lin. Ft.
Forested wetland	☐ ATF	☐ ATF
Scrub-shrub wetland	☐ ATF	340 sq. ft. ☐ ATF
Emergent wetland	☐ ATF	☐ ATF
Wet meadow	☐ ATF	☐ ATF
Intermittent stream channel	/ ☐ ATF	/ ☐ ATF
Perennial Stream / River channel	/ ☐ ATF	/ ☐ ATF
Lake / Pond	/ ☐ ATF	/ ☐ ATF
Bank - Intermittent stream	/ ☐ ATF	/ ☐ ATF
Bank - Perennial stream / River	/ ☐ ATF	1,170 sq. ft. / 199 Lin. Ft. ☐ ATF
Bank - Lake / Pond	/ ☐ ATF	/ ☐ ATF
Tidal water	/ ☐ ATF	/ ☐ ATF
Salt marsh	☐ ATF	☐ ATF
Sand dune	☐ ATF	☐ ATF
Prime wetland	☐ ATF	☐ ATF
Prime wetland buffer	☐ ATF	☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)	☐ ATF	☐ ATF
Previously-developed upland in TBZ	☐ ATF	☐ ATF
Docking - Lake / Pond	☐ ATF	☐ ATF
Docking - River	☐ ATF	☐ ATF
Docking - Tidal Water	☐ ATF	☐ ATF
Vernal Pool	☐ ATF	☐ ATF
TOTAL	0 / 0	1,510 sq. ft. / 199 Lin. Ft.

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of $ 200

☒ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking)	1,510 sq. ft.	X $0.20 =	$ 302.00
Temporary (seasonal) docking structure:	sq. ft.	X $1.00 =	$
Permanent docking structure:	sq. ft.	X $2.00 =	$
Projects proposing shoreline structures (including docks) add $200		=	$
		Total =	$ 302.00
The Application Fee is the above calculated Total or $200, whichever is greater =			$ 302.00

Crystal Lake Road Bridge - Tax Area Map

Gilmanton, NH

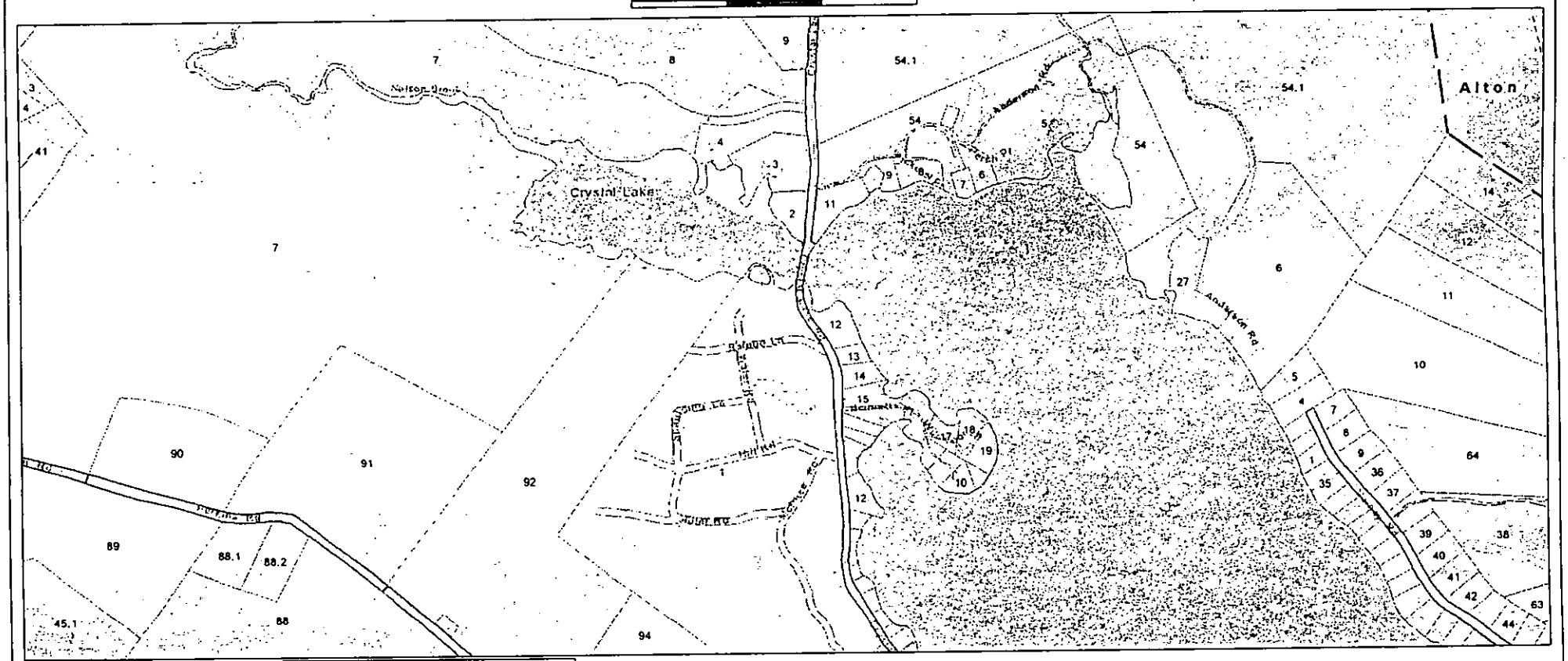
1 inch = 537 Feet

0 537 1075 1613

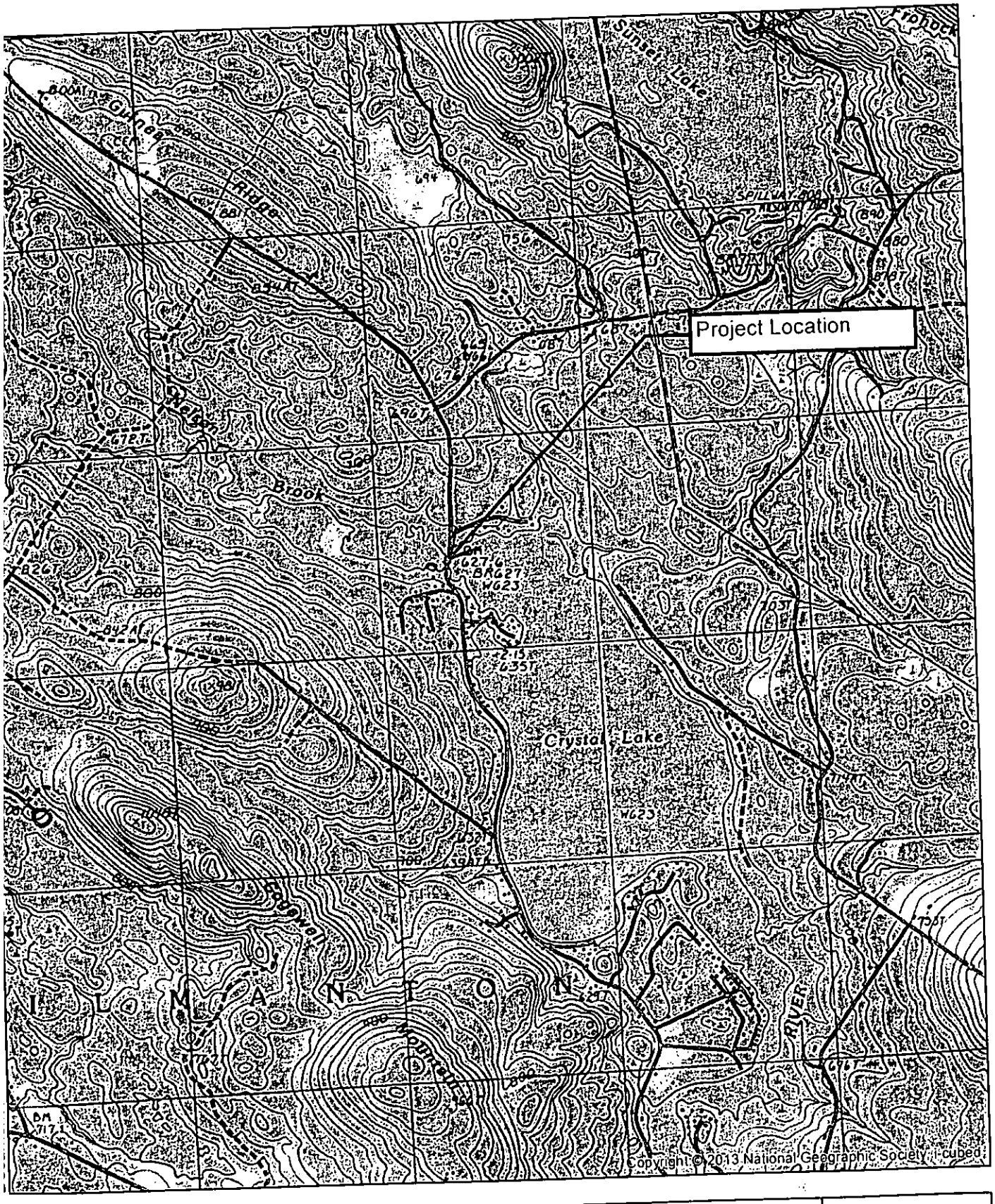
June 19, 2017

CAI Technologies

www.cai-tech.com



Large Scale	PWATER	PVTRD-RW	Condos
CAI Town Line	ROAD	ROADTIC	Wet Areas
100-PROPERTYLINE	ROADCLASSVI	RW	
400-100PROPERTYLINE	100-HOOKS	TRAIL	
PROPERTYLINE	100-PT	WATER	
PVTRD	100-RW	WETLAND	



Hoyle, Tanner & Associates, Inc. 150 Dow Street Manchester, NH 03101-1227 Tel 603-669-5555 Fax 603-669-4168 Web Page www.hoyletanner.com		CRYSTAL LAKE ROAD BRIDGE OVER NELSON BROOK GILMANTON, NH	
DR. BY dlc	DATE 5/16/2019	SCALE 1 inch = 2,000 feet	USGS LOCATION MAP

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo

NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

To: Deb Coon, Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101

From: Amy Lamb, NH Natural Heritage Bureau
Date: 5/29/2019 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB19-1497 Town: Gilmanton Location: Tax Maps: 104
Description: Replacement of the Crystal Lake Road Bridge over Crystal Lake
cc: Kim Tuttle

RECEIVED SEP 30 2019 NHDES LAND RESOURCES MANAGEMENT

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Please contact the NH Fish & Game Department to address wildlife concerns.

Vertebrate species	State[1]	Federal	Notes
Bridle Shiner (*Notropis bifrenatus*)	T	--	Contact the NH Fish & Game Dept (see below).
Common Loon (*Gavia immer*)	T	--	Contact the NH Fish & Game Dept (see below).
Wood Turtle (*Glyptemys insculpta*)	SC	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

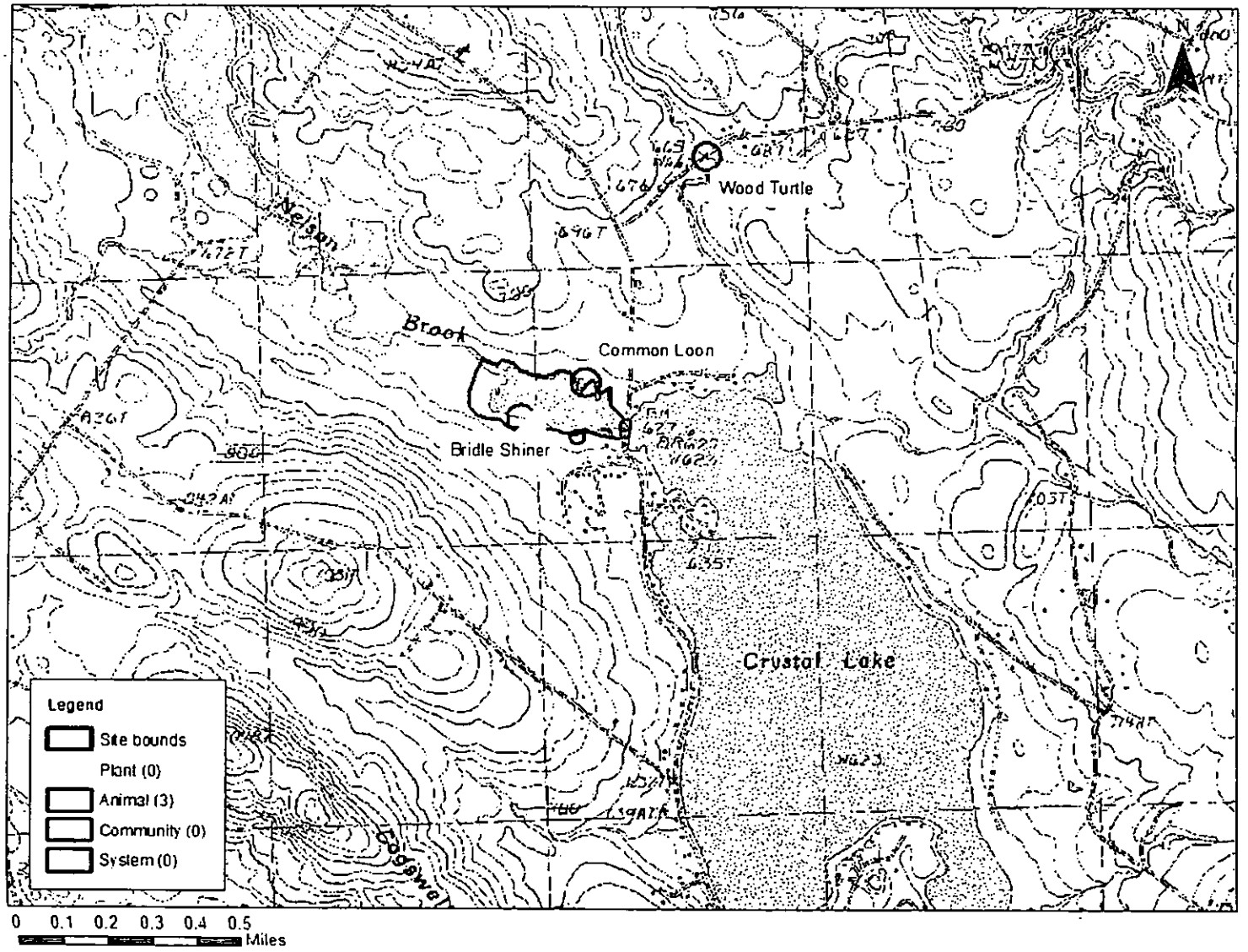
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB19-1497

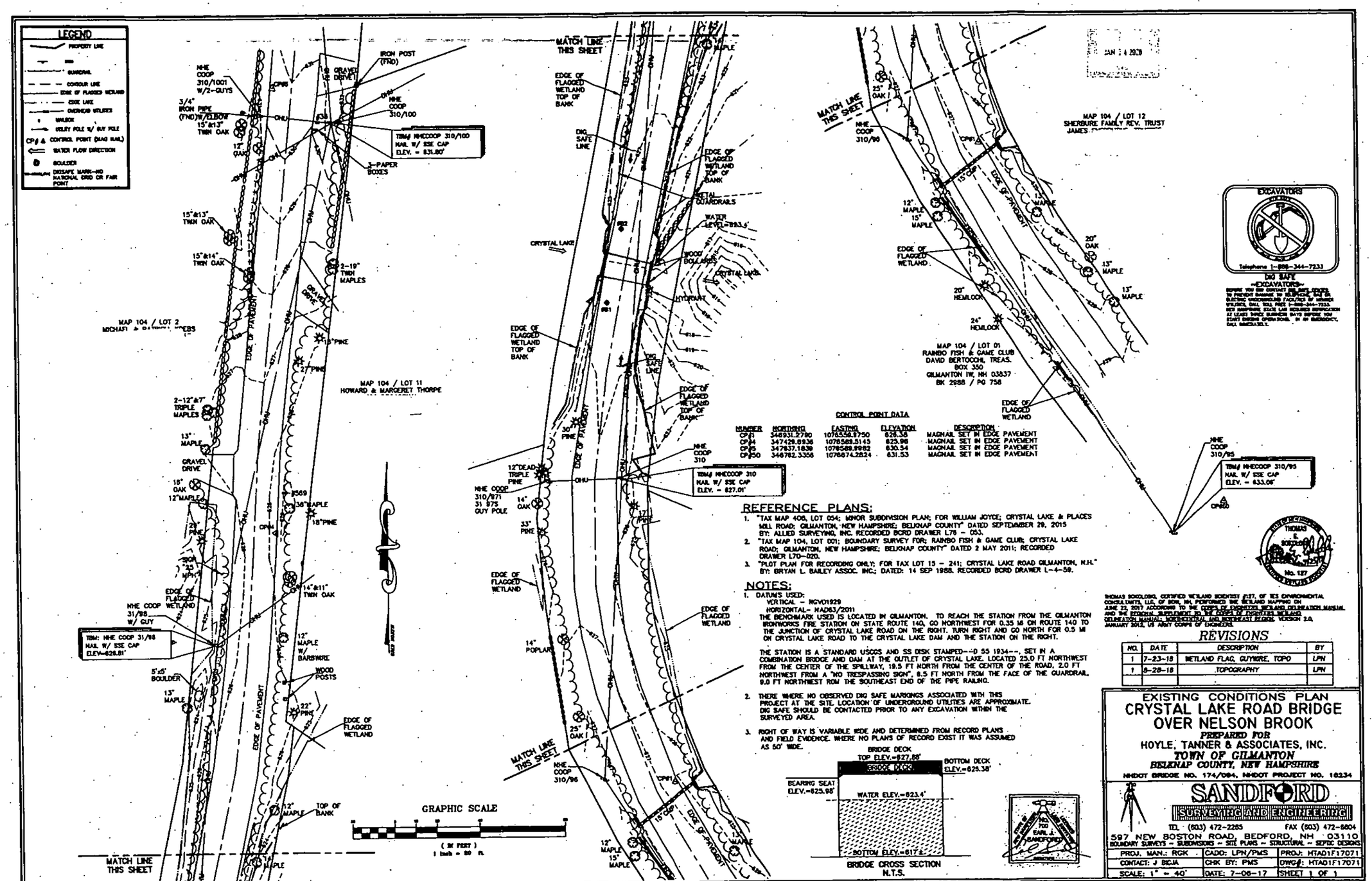


2019-03098

Abutters List
New Hampshire Department of Environmental Services
WETLAND PERMIT APPLICATION

Replacement of the Crystal Lake Road Bridge over Crystal Lake/Nelson Brook
Gilmanton, NH

MAP /LOT #	OWNER	PROPERTY ADDRESS	MAILING ADDRESS
406/9	David & Dawn Lacroix	617 Crystal Lake Road Gilmanton, NH 03837	
406/8	Lawrence & Mary Alice Cutler	595 Crystal Lake Road Gilmanton, NH 03837	
406/7	Timothy Freese 1997 Rev Trust Dana Freese	Guinea Ridge Road Gilmanton, NH 03837	
104/4, 104/3	Timothy Freese	Guinea Ridge Road Gilmanton, NH 03837	
104/2	Michael & Patricia Krebs	569 Crystal Lake Road Gilmanton, NH 03837	
104/1	Rainbo Fish & Game Club David Bertocchi, Treasurer	32 Water Road Gilmanton, NH 03837	
104/15	John & Anna Arico	Bennetts Point Gilmanton, NH 03837	
104/14	Timothy & Janice Patteson	532 Crystal Lake Road Gilmanton, NH 03837	
104/13	Roger & Beverly Kindred	536 Crystal Lake Road Gilmanton, NH 03837	
104/12	James P Sherburne Tr Etal Sherburne Family RE TR 3/1/13	546 Crystal Lake Road Gilmanton, NH 03837	
104/11	Howard & Margaret Thorp	572 Crystal Lake Road Gilmanton, NH 03837	
406/54 406/54.1	William Joyce	Anderson Road Gilmanton, NH 03837	



REFERENCE PLANS:

1. "TAX MAP 408, LOT 054; MINOR SUBDIVISION PLAN; FOR WILLIAM JOYCE; CRYSTAL LAKE & PLACES MILL ROAD; GILMANTON, NEW HAMPSHIRE; BELKNAP COUNTY" DATED SEPTEMMBER 29, 2015 BY: ALLIED SURVEYING, INC. RECORDED BCRD DRAWER L76 - 053.
2. "TAX MAP 104, LOT 001; BOUNDARY SURVEY FOR; RAINBO FISH & GAME CLUB; CRYSTAL LAKE ROAD; GILMANTON, NEW HAMPSHIRE; BELKNAP COUNTY" DATED 2 MAY 2011; RECORDED DRAWER L70-020.
3. "PLOT PLAN FOR RECORDING ONLY; FOR TAX LOT 15 - 241; CRYSTAL LAKE ROAD GILMANTON, N.H." BY: BRYAN L. BAILEY ASSOC. INC.; DATED: 14 SEP 1988. RECORDED BCRD DRAWER L-4-58.

NOTES:

1. DATUMS USED:
   VERTICAL - NGVD1929
   HORIZONTAL- NAD83/2011
   THE BENCHMARK USED IS LOCATED IN GILMANTON. TO REACH THE STATION FROM THE GILMANTON IRONWORKS FIRE STATION ON STATE ROUTE 140, GO NORTHWEST FOR 0.35 MI ON ROUTE 140 TO THE JUNCTION OF CRYSTAL LAKE ROAD ON THE RIGHT. TURN RIGHT AND GO NORTH FOR 0.5 MI ON CRYSTAL LAKE ROAD TO THE CRYSTAL LAKE DAM AND THE STATION ON THE RIGHT.

   THE STATION IS A STANDARD USCGS AND SS DISK STAMPED--0 55 1934--, SET IN A COMBINATION BRIDGE AND DAM AT THE OUTLET OF CRYSTAL LAKE. LOCATED 25.0 FT NORTHWEST FROM THE CENTER OF THE SPILLWAY, 19.5 FT NORTH FROM THE CENTER OF THE ROAD, 2.0 FT NORTHWEST FROM A "NO TRESPASSING SIGN", 8.5 FT NORTH FROM THE FACE OF THE GUARDRAIL, 9.0 FT NORTHWEST ROM THE SOUTHEAST END OF THE PIPE RAILING.
2. THERE WHERE NO OBSERVED DIG SAFE MARKINGS ASSOCIATED WITH THIS PROJECT AT THE SITE. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. DIG SAFE SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION WITHIN THE SURVEYED AREA.
3. RIGHT OF WAY IS VARIABLE WIDE AND DETERMINED FROM RECORD PLANS AND FIELD EVIDENCE. WHERE NO PLANS OF RECORD EXIST IT WAS ASSUMED AS 50' WIDE.

THOMAS E. SOKOLOSKI No. 127 CERTIFIED WETLAND SCIENTIST

THOMAS SOKOLOSKI, CERTIFIED WETLAND SCIENTIST #127, OF TES ENVIRONMENTAL CONSULTANTS, LLC, OF BOW, NH, PERFORMED THE WETLAND MAPPING ON JUNE 22, 2017 ACCORDING TO THE CORPS OF ENGINEERS DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	7-23-18	WETLAND FLAG, GUYWIRE, TOPO	LPN
1	8-28-18	TOPOGRAPHY	LPN

EXISTING CONDITIONS PLAN
CRYSTAL LAKE ROAD BRIDGE OVER NELSON BROOK

PREPARED FOR
HOYLE, TANNER & ASSOCIATES, INC.
TOWN OF GILMANTON
BELKNAP COUNTY, NEW HAMPSHIRE
NHDOT BRIDGE NO. 174/084, NHDOT PROJECT NO. 16234

SANDFORD
SURVEYING AND ENGINEERING
TEL: (603) 472-2265 FAX: (603) 472-5604
597 NEW BOSTON ROAD, BEDFORD, NH 03110
BOUNDARY SURVEYS ~ SUBDIVISIONS ~ SITE PLANS ~ STRUCTURAL ~ SEPTIC DESIGNS

PROJ. MAN.: RGK	CADD: LPN/PMS	PROJ: HTA01F17071
CONTACT: J BOJA	CHK BY: PMS	DWG#: HTA01F17071
SCALE: 1" = 40'	DATE: 7-06-17	SHEET 1 OF 1

HTA PROJECT NO.: ST.1166.03

MICROPILE NOTES

1. MAXIMUM FACTORED PILE LOAD: ABUTMENT A – 50 TONS PER PILE; ABUTMENT B – 50 TONS PER PILE

2. THE MICROPILES SHALL CONSIST OF A CONTINUOUS STEEL PIPE CASING FILLED WITH HIGH STRENGTH NON-SHRINK GROUT. INTERNAL REINFORCING SHALL CONSIST OF A #8 BAR. NON-METALLIC CENTERING DEVICES SHALL BE USED TO ENSURE THE LOCATION OF THE INTERNAL REINFORCING.

3. MICROPILES SHALL HAVE A 5'-0" MINIMUM PLUNGE LENGTH INTO COMPETENT BEDROCK. PLUNGE LENGTH CORING PAID FOR AS ITEM 509.4, ROCK SOCKET EXCAVATION.

4. ESTIMATED MICROPILE LENGTHS: ABUTMENT A: 26 FT; ABUTMENT B: 29 FT

5. THREADED CASING JOINTS SHALL NOT BE PERMITTED IN THE TOP 9' OF THE PILE AS MEASURED FROM THE BOTTOM OF PILE CAP.

6. HIGH-STRENGTH NON SHRINK GROUT INSIDE THE MICRPOILES SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI PRIOR TO SETTING THE BEAMS.

FOUNDATION SEAL NOTES

1. PROTRUDING BOULDERS OR COBBLES ENCOUNTERED AT THE FINAL EXCAVATION DEPTH SHALL BE REMOVED OR SPLIT TO PROVIDE A LEVEL BEARING SURFACE.

2. THE PRECAST CONCRETE PILE CAPS SHALL BE FOUNDED ON A 2'-0" THICK TREMIE SEAL PAID AS ITEM 520.6, CONCRETE CLASS T, FOUNDATION SEAL.

3. PAY LIMITS FOR THE FOUNDATION SEAL ARE 2' BEYOND THE LIMITS OF THE PRECAST ABUTMENT CAP. ADDITIONAL AREA BEYOND THESE LIMITS TO SUIT THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION IS SUBSIDIARY TO ITEM 520.6.

4. CONTRACTOR SHALL PAY SPECIAL ATTENTION TO ENSURE THAT ALL EXISTING SOIL IS REMOVED FROM THE CORRUGATIONS IN THE SHEET PILING TO ENSURE A PROPER SEAL IS OBTAINED FROM DEWATERING.

ABUTMENT NOTES

1. ITEM 534.3, WATER REPELLENT (SILANE/SILOXANE) SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES ON ABUTMENTS TO 1'-0" BELOW THE FILL LINES.

2. WEEPERS SHALL BE PLACED AT THE ELEVATION AND SPACING AS SHOWN ON THESE PLANS. WEEPERS SHALL BE 4" IN DIAMETER AND SLOPED TO DRAIN WITH A 12:1 SLOPE. ALL COSTS SHALL BE SUBSIDIARY TO ITEM 529.1.

3. ITEM 583.3, RIPRAP CLASS 3, SHALL BE 2'-0" THICK, UNLESS OTHERWISE NOTED.

4. ABUTMENTS SHALL BE BACKFILLED TO THE LEVEL OF THE RIPRAP BERM PRIOR TO ERECTING THE BEAMS. BOTH ABUTMENTS SHALL BE BACKFILLED SIMULTANEOUSLY AFTER THE BEAMS ARE CONNECTED TO THE ABUTMENTS WITH THE GROUTED IN ANCHOR DOWELS. NO MORE THAN 2'-0" OF DIFFERENTIAL BACKFILL HEIGHT SHALL BE PERMITTED.

5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾".

PRECAST PILE CAP AND APPROACH SLAB NOTES

1. ALL COSTS FOR THE FABRICATION, ERECTION/INSTALLATION OF THE PILE CAP SHALL BE INCLUDED IN ITEM 529.1, PRECAST CONCRETE PILE CAP. ALL COSTS FOR THE FABRICATION, ERECTION/INSTALLATION OF THE APPROACH SLABS SHALL BE INCLUDED IN ITEM 529.2, PRECAST CONCRETE APPROACH SLAB.

2. SEE SPECIAL PROVISIONS FOR SECTION 529 FOR DETAILED REQUIREMENTS.

3. A SINGLE ASSEMBLY PLAN DETAILING ALL ASPECTS OF THE CONSTRUCTION OF THE PILE CAP AND APPROACH SLAB, INCLUDING BUT NOT LIMITED TO, SHOP DRAWINGS, ERECTION PLANS, GROUTING, CAST-IN-PLACE CONCRETE, AND TEMPORARY BRACING SHALL BE SUBMITTED FOR REVIEW AND APPROVAL TO THE ENGINEER. THE ERECTION PLAN SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE. ALL COSTS SHALL BE INCLUDED IN ITEMS 529.1 AND 529.2.

4. THE DIMENSIONS AND GEOMETRIC LAYOUT OF THE STRUCTURE (LAYOUT DIMENSIONS, ELEVATIONS, AND WORKING POINT COORDINATES) WERE DEVELOPED BASED ON THE PRECAST DIMENSIONS AS SHOWN ON THESE PLANS. IF THE DIMENSIONS OR GEOMETRY OF THE PRECAST COMPONENTS ARE ALTERED BY THE FABRICATOR FROM WHAT IS SHOWN, THE FABRICATOR SHALL ADJUST THE AFFECTED DIMENSIONS, ELEVATIONS, AND WORKING POINT COORDINATES ACCORDINGLY AS PART OF THE ASSEMBLY PLAN.

5. REINFORCING STEEL, SLEEVES, THREADED INSERTS AND LEVELING DEVICES USED IN PRECAST ABUTMENTS AND APPROACH SLABS SHALL BE PAID UNDER ITEMS 529.1 AND 529.2. ALL REINFORCING STEEL IN THE PRECAST PILE CAP AND APPROACH SLAB SHALL BE EPOXY COATED.

PRESTRESSED DECK BEAM NOTES

1. THE CONCRETE COMPRESSIVE STRENGTH OF THE PRECAST DECK BEAM UNITS SHALL BE 6,400 PSI AT RELEASE AND 8,000 PSI AT 28 DAYS. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY CYLINDER TEST, OF AT LEAST 6,400 PSI.

2. PRESTRESSING STRAND SHALL BE UNCOATED 0.6" DIAMETER SEVEN-WIRE STRAND, CONFORMING TO AASHTO M203-05 (ASTM A416) GRADE 270 LOW RELAXATION. ALL STRANDS SHALL BE PRE-TENSIONED TO 44 KIPS PER STRAND (75% INITIAL PULL).

3. REINFORCING STEEL, SLEEVES, THREADED INSERTS AND STEEL STRANDS USED IN PRESTRESSED BEAMS SHALL BE PAID UNDER ITEM 528.311 PRESTRESSED CONCRETE BRIDGE DECK, BUTTED DECK BEAMS (F). ALL REINFORCING STEEL IN THE DECK BEAMS SHALL BE EPOXY COATED.

4. THE BEAM HANDLING AND ERECTION PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

5. PRESTRESSED CONCRETE DECK BEAMS SHALL NOT BE ERECTED UNTIL THE ABUTMENTS HAVE BEEN BACKFILLED TO THE RIPRAP BERM ELEVATION IN FRONT OF THE ABUTMENTS.

6. DRILLING INTO DECK BEAMS SHALL NOT BE ALLOWED.

7. ALL STRAND ENDS SHALL BE CUT FLUSH AND PAINTED WITH TWO COATS OF AN APPROVED EPOXY PAINT. ALL COSTS [illegible]

8. 1" DIAMETER DRAINS SHALL BE PROVIDED AT THE LOW END OF ALL DECK BEAM VOIDS.

9. THE DECK BEAM SHEAR KEYS SHALL BE BLAST CLEANED PRIOR TO SHIPPING.

10. THE TOP OF ALL BEAMS SHALL BE GIVEN A RAKE FINISH (¼" AMPLITUDE) ACROSS THE WIDTH (PERPENDICULAR TO THE BEAM'S AXIS).

11. DIFFERENTIAL CAMBER (AT ERECTION) BETWEEN ADJACENT MEMBERS SHALL BE LIMITED TO 1". VALUES FOR MID-SPAN CAMBER AT TRANSFER SHALL BE DETAILED ON THE SHOP DRAWINGS.

12. LIFTING DEVICES SHALL BE WITHIN 24" OF EACH END OF THE PRECAST DECK BEAM UNITS. COST SHALL BE PAID UNDER ITEM 528.311.THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.

13. POST-TENSIONING OF THE BEAM UNITS SHALL BE IN ACCORDANCE WITH APPENDIX A OF SECTION 528.

14. A CORROSION INHIBITOR ADMIXTURE MEETING THE REQUIREMENTS OF 520, PARAGRAPH 2.3.3.2 SHALL BE INCLUDED IN THE CONCRETE FOR THE DECK BEAMS AND BRUSH CURBS. THE ADMIXTURE SHALL BE FROM THE NHDOT QUALIFIED PRODUCTS LIST. THE DOSAGE SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS FOR A 75-YEAR SERVICE LIFE.

15. THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC COPY TO THE ENGINEER OF THE APPROVED SHOP DRAWINGS INCORPORATING ALL REVIEW COMMENTS.

TRANSVERSE TIE NOTES

1. POST-TENSIONING STRANDS SHALL BE 0.6" DIAMETER SEVEN-WIRE STRAND CONFORMING TO AASHTO M203 (ASTM A416) GRADE 270 LOW RELAXATION. POST-TENSIONING STRANDS SHALL BE COMPLETELY COATED WITH A CORROSION PREVENTATIVE COATING SUCH AS FLO-GARD, AS MANUFACTURED BY INSTEEL INDUSTRIES, INC., SANDERSON, FL OR POLYSTRAND, AS MANUFACTURED BY LANG TENDONS, INC., TOUGHKENAMON, PA OR APPROVED EQUAL. IF THE FLO-GARD COATING IS SUPPLIED, GROUT SHALL BE EXCLUDED FROM THE LATERAL POST-TENSIONING DUCTS DURING GROUTING OF THE SHEAR KEYS BETWEEN THE BEAMS. THE CONTRACTOR'S PROPOSED METHOD FOR EXCLUDING GROUT FROM THE POST TENSIONING DUCTS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS. POST-TENSIONING ANCHORAGE SYSTEM SHALL BE MONO-STRAND CORROSION PROTCTION SYSTEM AS MANUFACTURED BY HAYES INDUSTRIES, INC., HOUSTON TEXAS, OR APPROVED EQUAL.

2. MORTAR FOR EXTERIOR POCKETS SHALL BE AN APPROVED NON-SHRINK TYPE. MORTAR SHALL BE THE SAME COLOR AND TEXTURE AS THE BEAM CONCRETE. COST TO BE SUBSIDIARY TO ITEM 528.311.

3. AFTER ALL BEAMS HAVE BEEN ERECTED, TENSION EACH TRANSVERSE TIE TO 5,000 LBS.

4. FILL ALL KEYWAYS WITH MORTAR. IF THE KEYWAYS ARE NOT FILLED WITHIN FIVE (5) DAYS AFTER THE BEAMS ARE ERECTED, THE CONTRACTOR SHALL COVER AND PROTECT THE KEYWAYS FROM WATER AND DEBRIS UNTIL THEY ARE FILLED.

5. AFTER THE MORTAR HAS CURED (24 HOURS MIN.), TENSION EACH TRANSVERSE TIE TO 44,000 LBS. NO TRAFFIC OR HEAVY EQUIPMENT WILL BE PERMITTED ON THE BEAMS UNTIL ALL TIES HAVE BEEN FULLY TENSIONED AND THE CONCRETE OVERLAY HAS CURED PER STANDARD SPECIFICATIONS.

REINFORCEMENT NOTES

1. ALL REINFORCING STEEL SHALL HAVE 2 ½" MINIMUM CLEAR COVER UNLESS OTHERWISE NOTED.

2. PLACE REINFORCING STEEL TO AVOID WEEPERS, RAIL POST ANCHOR ASSEMBLIES, AND PILE CAP CMP VOIDS.

3. REINFORCING LEGEND:

SP = SPACE	SPL = SPLICE	FS = FAR SIDE
NS = NEAR SIDE	BOT = BOTTOM	MID = MIDDLE
EQ = EQUAL	ALT = ALTERNATING	DOW = DOWELS

4. REINFORCING BAR MARKS WITH AN (E) REFERENCE, INDICATE EPOXY COATING.

5. ANY EPOXY COATED REBARS CUT TO FIT SHALL BE TOUCHED UP WITH AN APPROVED EPOXY COATING MATERIAL. ALL COSTS SHALL BE INCLUDED IN ITEM 544.31.

PAVEMENT NOTES

1. ALL PAVING OPERATIONS SHALL BE PERFORMED BY A SUBCONTRACTOR THAT IS LISTED ON THE NHDOT PREQUALIFIED CONTRACTORS LIST IN THE CATEGORY OF PAVING.

2. THE BITUMINOUS MIXTURE SHALL BE THOROUGHLY COMPACTED BY ROLLING. THE INITIAL ROLLING SHALL BE DONE WITH A STATIC OR VIBRATORY STEEL-DRUM ROLLER. INTERMEDIATE ROLLING SHALL BE DONE BY A PNEUMATIC-TIRED ROLLER. FINAL ROLLING SHALL BE DONE WITH A STATIC-DRUM ROLLER. THE MINIMUM WEIGHT OF STATIC ROLLER SHALL BE 8 TONS.

3. SUBMIT PAVEMENT MIX DESIGN TO ENGINEER FOR APPROVAL PRIOR TO PAVING. SEE SECTION 401 OF THE NHDOT STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

4. THE GRADE OF ASPHALT CEMENT SHALL BE PG 58-28.

SUGGESTED SEQUENCE OF WORK NOTES

1. INSTALL EROSION AND SEDIMENT CONTROLS AND THE TURBIDITY BARRIER. REMOVE THE TOP SLAB OF THE EXISTING BRIDGE AND EXCAVATE BEHIND THE EXISTING ABUTMENTS TO THE WATER SURFACE ELEVATION OF CRYSTAL LAKE.

2. INSTALL WATER DIVERSION STRUCTURES. SEE WATER DIVERSION NOTES FOR MORE INFORMATION

3. INSTALL COFFERDAMS AND EXCAVATE TO THE BOTTOM OF TREMIE SEAL ELEVATION. SEE COFFERDAM NOTES FOR MORE INFORMATION

4. INSTALL THE MICROPILES AND PLACE THE TREMIE CONCRETE (ITEM 520.6).

5. DEWATER THE COFFERDAM (AFTER THE TREMIE SEAL HAS CURED), PLACE THE LEVELING MATERIAL (CONTRACTOR DETAILED) ON TOP OF THE TREMIE SEAL TO ACHIEVE THE BOTTOM OF FOOTING ELEVATION.

6. ERECT THE PRECAST CONCRETE PILE CAPS AND PLACE THE HIGH EARLY STRENGTH CONCRETE IN THE CORRUGATED METAL PIPE (CMP) VOIDS.

7. REMOVE EXISTING ABUTMENTS TO THE ELEVATIONS SHOWN IN THESE PLANS AND BACKFILL ABUTMENTS EVENLY ON BOTH SIDES TO THE TOP OF BERM ELEVATION. REMOVE THE COFFERDAMS AND WATER DIVERSION STRUCTURES. [illegible]

8. SET BEARING PADS AND ERECT THE PRECAST PRESTRESSED DECK BEAMS. SEE PRESTRESSED DECK BEAM NOTES FOR MORE INFORMATION.

9. POST TENSION THE BEAMS AND GROUT THE BEAM SHEAR KEYS. SEE TRANSVERSE TIE NOTES FOR MORE INFORMATION. INSTALL AND GROUT IN THE ANCHOR RODS TO FIX THE BEAMS TO THE ABUTMENTS.

10. BACKFILL BOTH ABUTMENTS SIMULTANEOUSLY, COMPLETE INSTALLATION THE GABION WALLS, AND INSTALL THE PRECAST CONCRETE APPROACH SLABS. SEE ABUTMENT NOTES FOR MORE INFORMATION RELATIVE TO ABUTMENT BACKFILLING REQUIREMENTS.

11. PLACE THE CONCRETE DECK, COMPLETE THE ROADWAY CONSTRUCTION, INSTALL THE DRY HYDRANT, PAVE THE ROADWAY APPROACHES AND INSTALL BRIDGE AND APPROACH GUARDRAIL. RESTORE ALL DISTURBED AREAS TO PRECONSTRUCTION CONDITIONS WITH TURF ESTABLISHMENT AND SLOPE STABILIZATION.

STORMWATER POLLUTION PREVENTION NOTES

1. THE EROSION AND SEDIMENT CONTROLS DETAILED IN THESE PLANS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO DICTATE CONSTRUCTION MEANS AND METHODS, NOR THE SPECIFIC EROSION AND SEDIMENT CONTROLS NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL SUBMIT ITEM 654.7, STORMWATER POLLUTION AND PREVENTION PLAN (SWPPP), FOR REVIEW AND APPROVAL TO THE ENGINEER. UPON APPROVAL BY THE ENGINEER, THE SWPPP WILL BE SENT TO NHDES FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK IF ANY OF THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES VARY FROM THOSE SHOWN IN THESE PLANS.

2. THE EROSION AND SEDIMENT CONTROL MEASURES DETAILED ON THESE PLANS ARE BASED ON THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION, DECEMBER 2008.

3. ALL STORMWATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE LOCATED WITHIN THE TEMPORARY AND PERMANENT EASEMENT AREAS SHOWN ON THE EASEMENT PLAN.

4. A TURBIDITY CURTAIN SHALL BE INSTALLED ACROSS THE UPSTREAM AND DOWNSTREAM TOE OF SLOPE PRIOR TO ANY EXCAVATION IN NELSON BROOK OR CRYSTAL LAKE, TO PREVENT SILTATION OUTSIDE THE PROJECT LIMITS. ALL COSTS FOR SUCH WORK SHALL BE PAID FOR UNDER ITEM 645.0011, TURBIDITY BARRIER.

5. FOR ANY WORK ASSOCIATED WITH ITEM 699, MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL, DETAILED ESTIMATES FOR THE WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF THE WORK.

Hoyle, Tanner & Associates, Inc.
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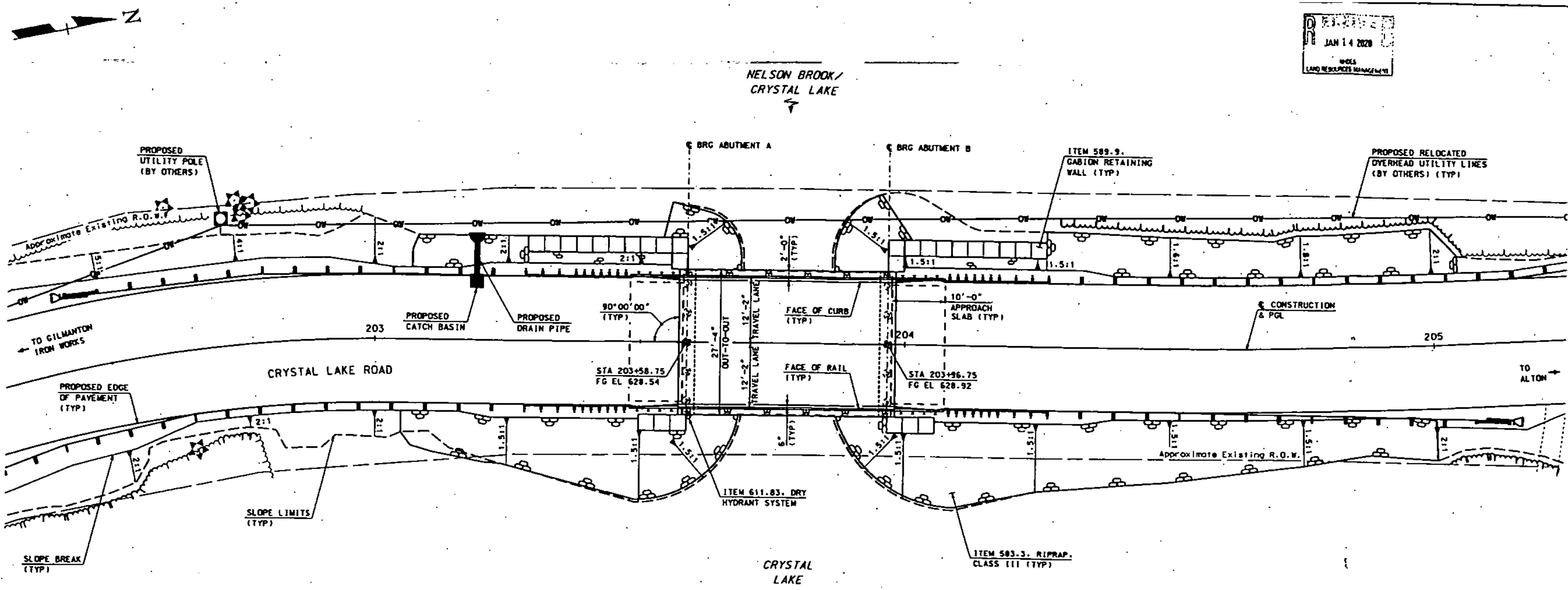
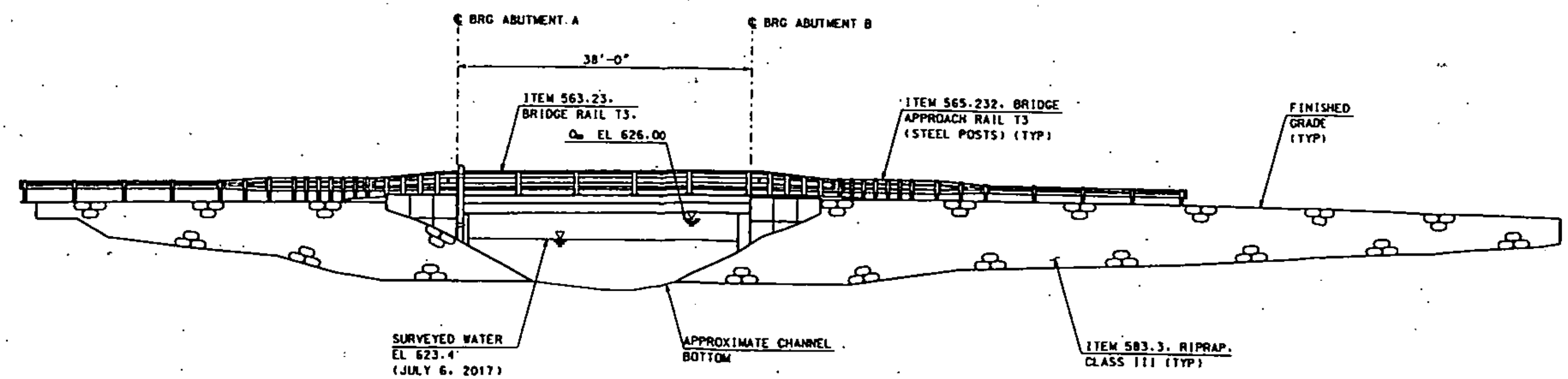
TOWN OF GILMANTON
GILMANTON, NEW HAMPSHIRE
CRYSTAL LAKE ROAD OVER NELSON BROOK
PROJECT NOTES (2 OF 2)



NELSON BROOK/
CRYSTAL LAKE
℄ BRG ABUTMENT A
℄ BRG ABUTMENT B
PROPOSED
UTILITY POLE
(BY OTHERS)
ITEM 589.9.
GABION RETAINING
WALL (TYP)
PROPOSED RELOCATED
OVERHEAD UTILITY LINES
(BY OTHERS) (TYP)
Approximate Existing R.O.W.
PROPOSED
CATCH BASIN
PROPOSED
DRAIN PIPE
90°00'00"
(TYP)
FACE OF CURB
(TYP)
10'-0"
APPROACH
SLAB (TYP)
℄ CONSTRUCTION
& PGL
TO GILMANTON
IRON WORKS
203
204
205
CRYSTAL LAKE ROAD
27'-4"
OUT-TO-OUT
12'-2"
TRAVEL LANE
STA 203+58.75
FG EL 628.54
FACE OF RAIL
(TYP)
STA 203+96.75
FG EL 628.92
TO
ALTON
PROPOSED EDGE
OF PAVEMENT
(TYP)
ITEM 611.83. DRY
HYDRANT SYSTEM
SLOPE LIMITS
(TYP)
SLOPE BREAK
(TYP)
ITEM 583.3. RIPRAP.
CLASS III (TYP)
CRYSTAL
LAKE

GENERAL PLAN

10 0 10 20
SCALE IN FEET



ELEVATION

10 0 10 20
SCALE IN FEET

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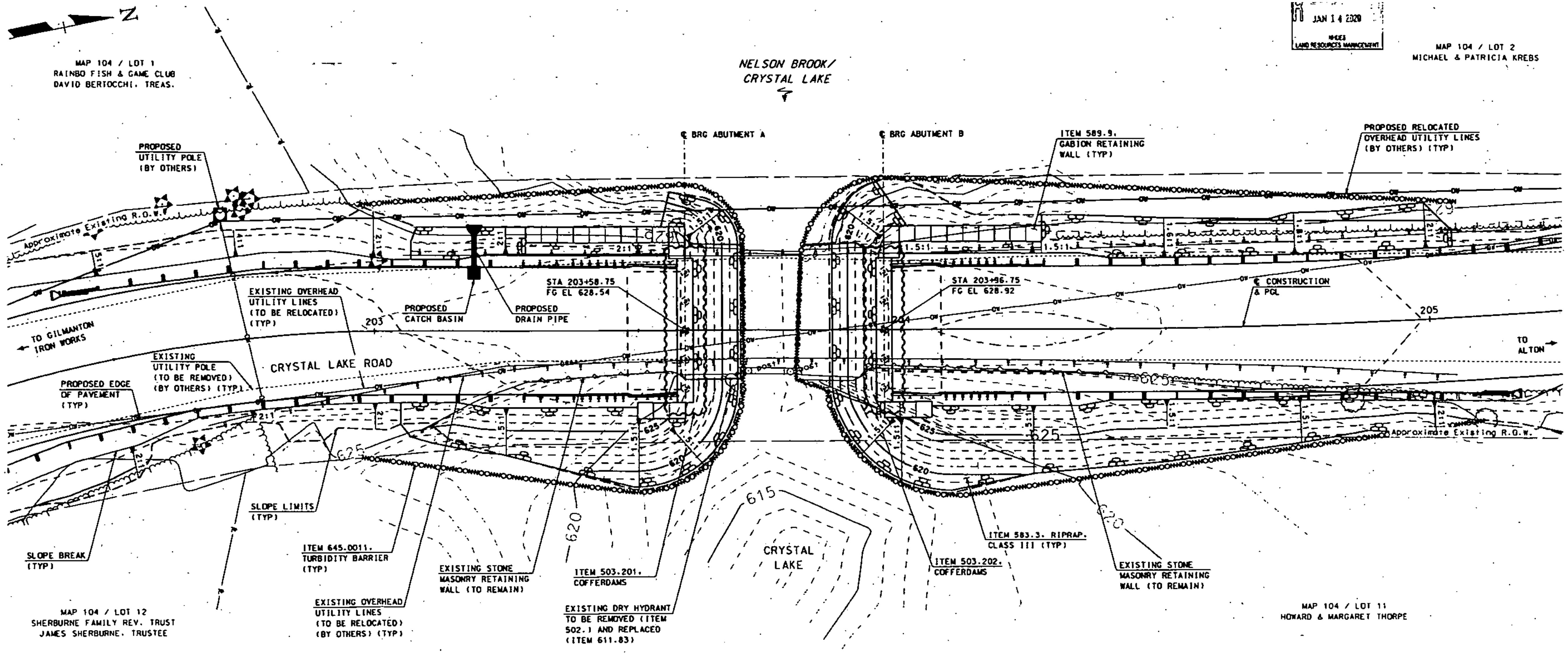
TOWN OF GILMANTON
GILMANTON, NEW HAMPSHIRE
CRYSTAL LAKE ROAD OVER NELSON BROOK
GENERAL PLAN AND ELEVATION

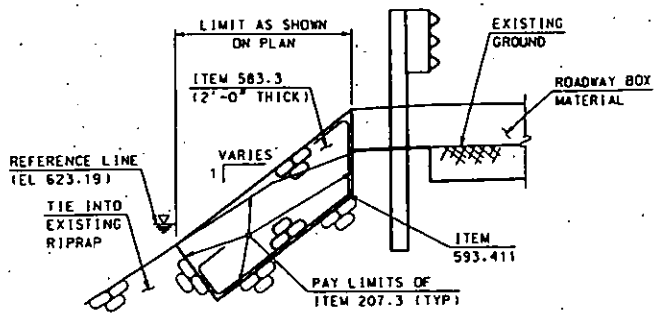
SCALE AS SHOWN
DATE DECEMBER 2019

SHEET NO.
17
SHEET 17 OF 37

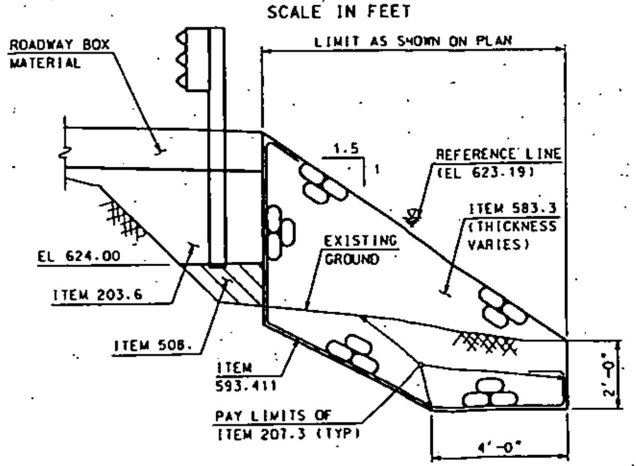


SITE PLAN

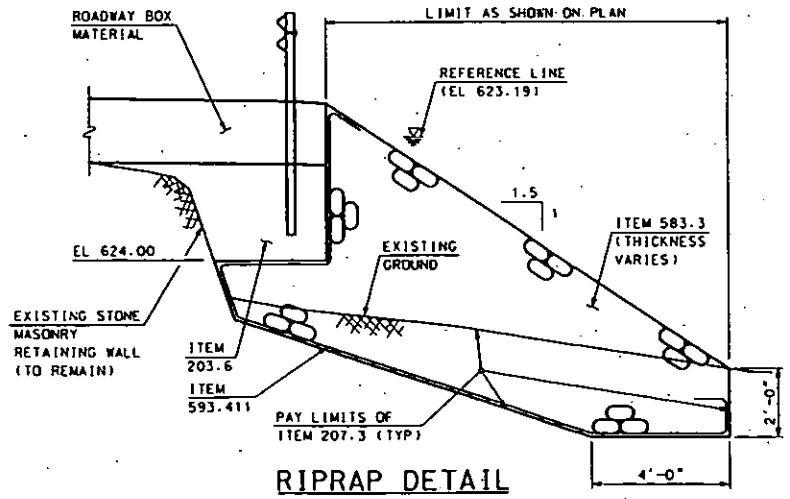
10 0 10 20
SCALE IN FEET



RIPRAP DETAIL
(STA 203+07 TO 203+28.75 LT)
(STA 204+26.75 TO 205+05 LT)



RIPRAP DETAIL
(STA 203+05 TO 203+49.75 RT)
NOT TO SCALE



RIPRAP DETAIL
(STA 204+05.75 TO STA 205+00 RT)
NOT TO SCALE

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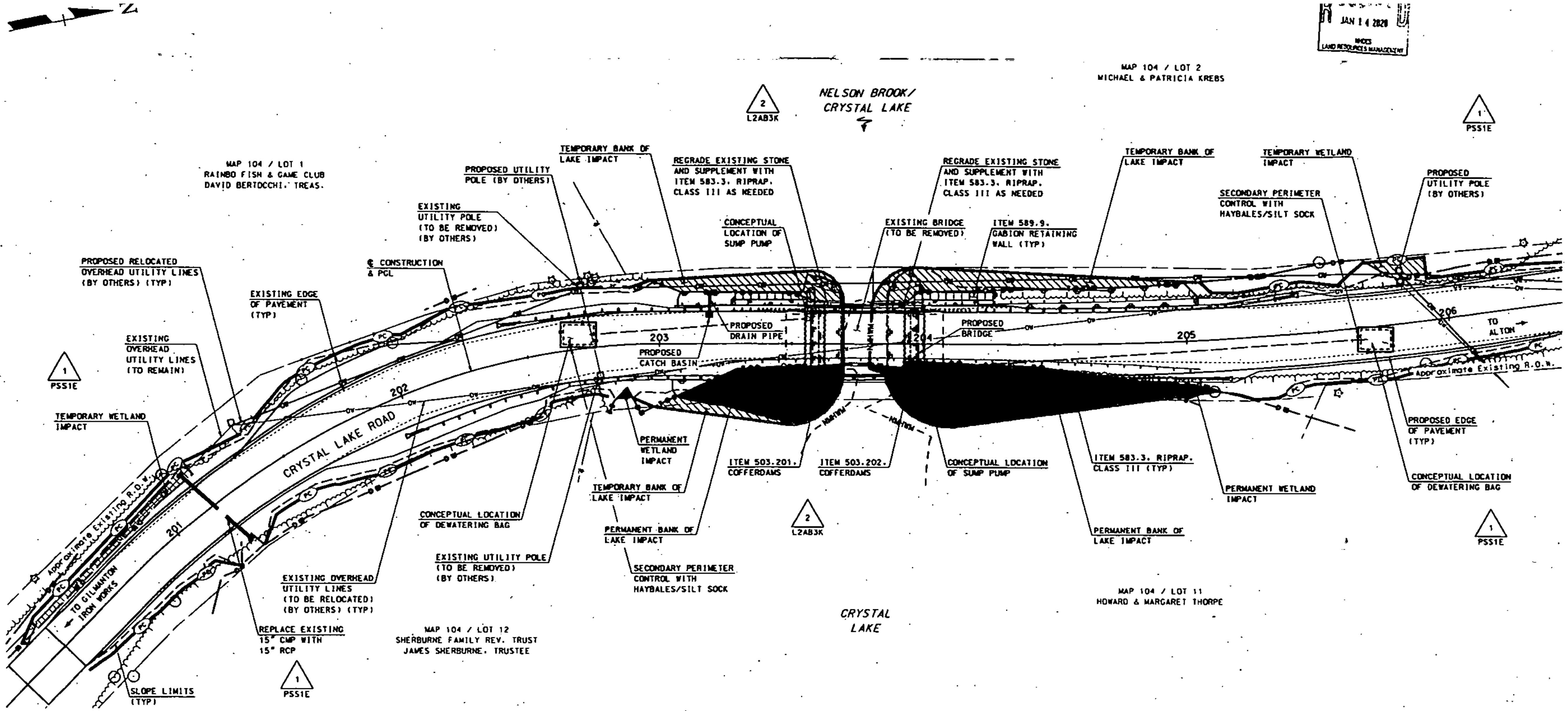
TOWN OF GILMANTON
GILMANTON, NEW HAMPSHIRE
CRYSTAL LAKE ROAD OVER NELSON BROOK
SITE PLAN

SCALE: AS SHOWN
DATE: DECEMBER 2019
PROJECT NO. 908205
SHEET NO. 18



WETLAND IMPACTS PLAN

20 0 20 40
SCALE IN FEET

GENERAL WETLAND IMPACTS NOTES

1. WETLAND IMPACTS:
   TEMPORARY WETLAND IMPACT = 340 SF
   PERMANENT WETLAND IMPACT = 110 SF
   TEMPORARY BANK OF LAKE IMPACT = 1335 SF/209 LF
   PERMANENT BANK OF LAKE IMPACT = 2665 SF/186 LF

   TOTAL NEW TEMPORARY IMPACT = 1675 SF
   TOTAL NEW PERMANENT IMPACT = 2775 SF

   TOTAL SHORELINE IMPACTS = 395 LF

WETLAND CLASSIFICATION	
PSS1E	PALUSTRINE, SCRUB-SHRUB, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
L2AB3K	LACUSTRINE, LITTORAL, AQUATIC BED, ROOTED VASCULAR, ARTIFICIALLY FLOODED

THOMAS SOKOLOSKI, CERTIFIED WETLAND SCIENTIST #127, OF TES ENVIRONMENTAL CONSULTANTS, L.L.C. OF BOW, NH, PERFORMED THE WETLAND MAPPING ON JUNE 22, 2017 ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.

LEGEND

- TEMPORARY IMPACTS
- PERMANENT IMPACTS
- COFFERDAM
- NATURAL MEAN HIGH WATER MARK (EL 617.2)
- DELINEATED WETLAND
- TOP OF BANK
- WATER DIVERSION STRUCTURE
- PERIMETER CONTROL (SILT FENCE OR SILT SOCK)
- TURBIDITY BARRIER
- PROPERTY LINE
- WETLAND DESIGNATION NUMBER

JAN 14 2020
NHDES LAND RESOURCES MANAGEMENT

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TOWN OF GILMANTON
GILMANTON, NEW HAMPSHIRE
CRYSTAL LAKE ROAD OVER NELSON BROOK
WETLAND IMPACTS PLAN

SCALE: AS SHOWN
DATE: DECEMBER 2019
PROJECT NO. 909205

SHEET NO.
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SHEET 19 OF 37