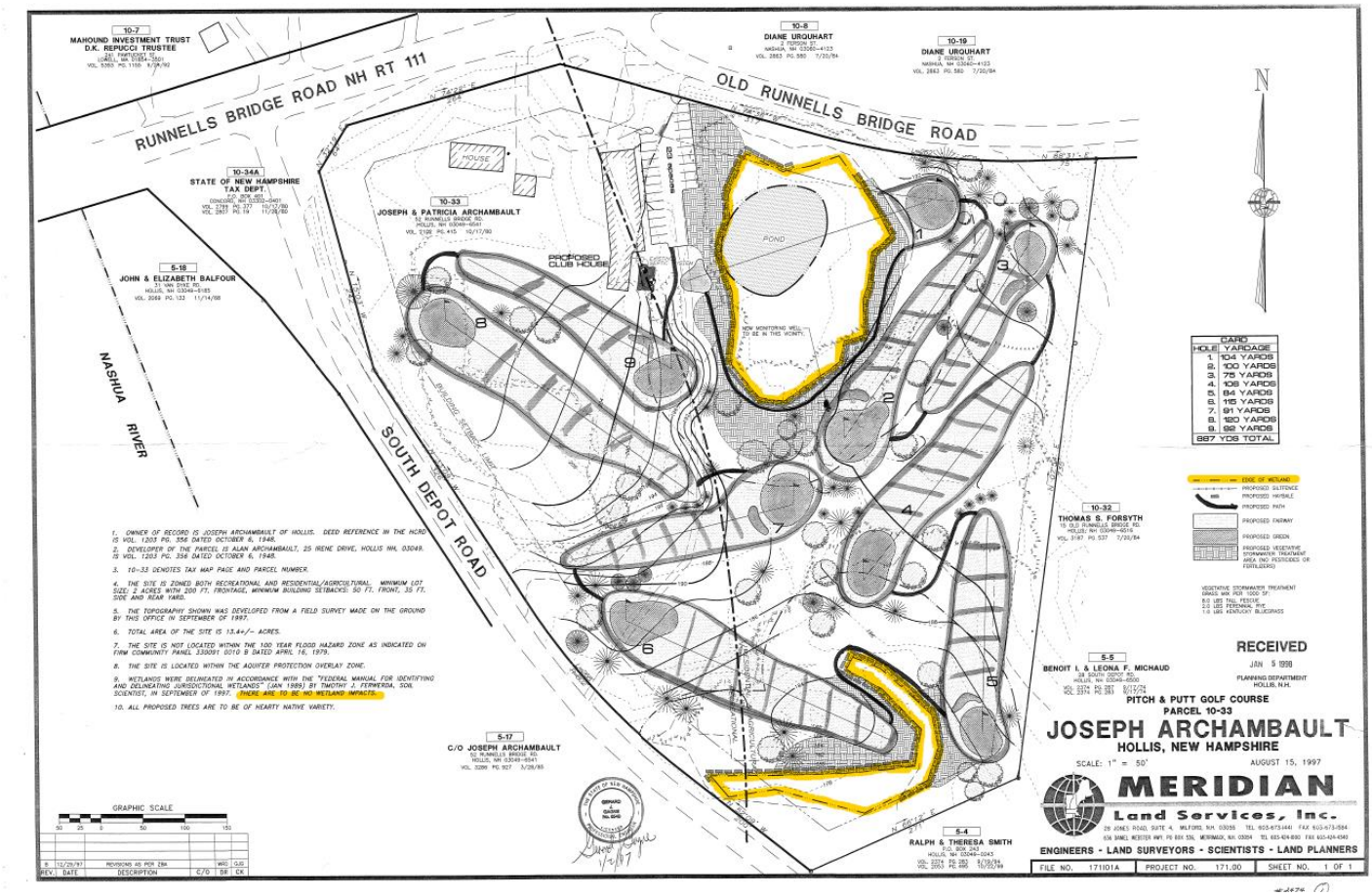
Joseph Garruba
28 Winchester Dr.
Hollis, NH 03049
Oct 10, 2019

To: Members of the Hollis Planning board
Hollis Planning Department
James P. Gove Wetland Scientist
Christopher Guida Wetland Scientist

Re: Wetland Delineation on Hollis tax map 10 Lot 33-1

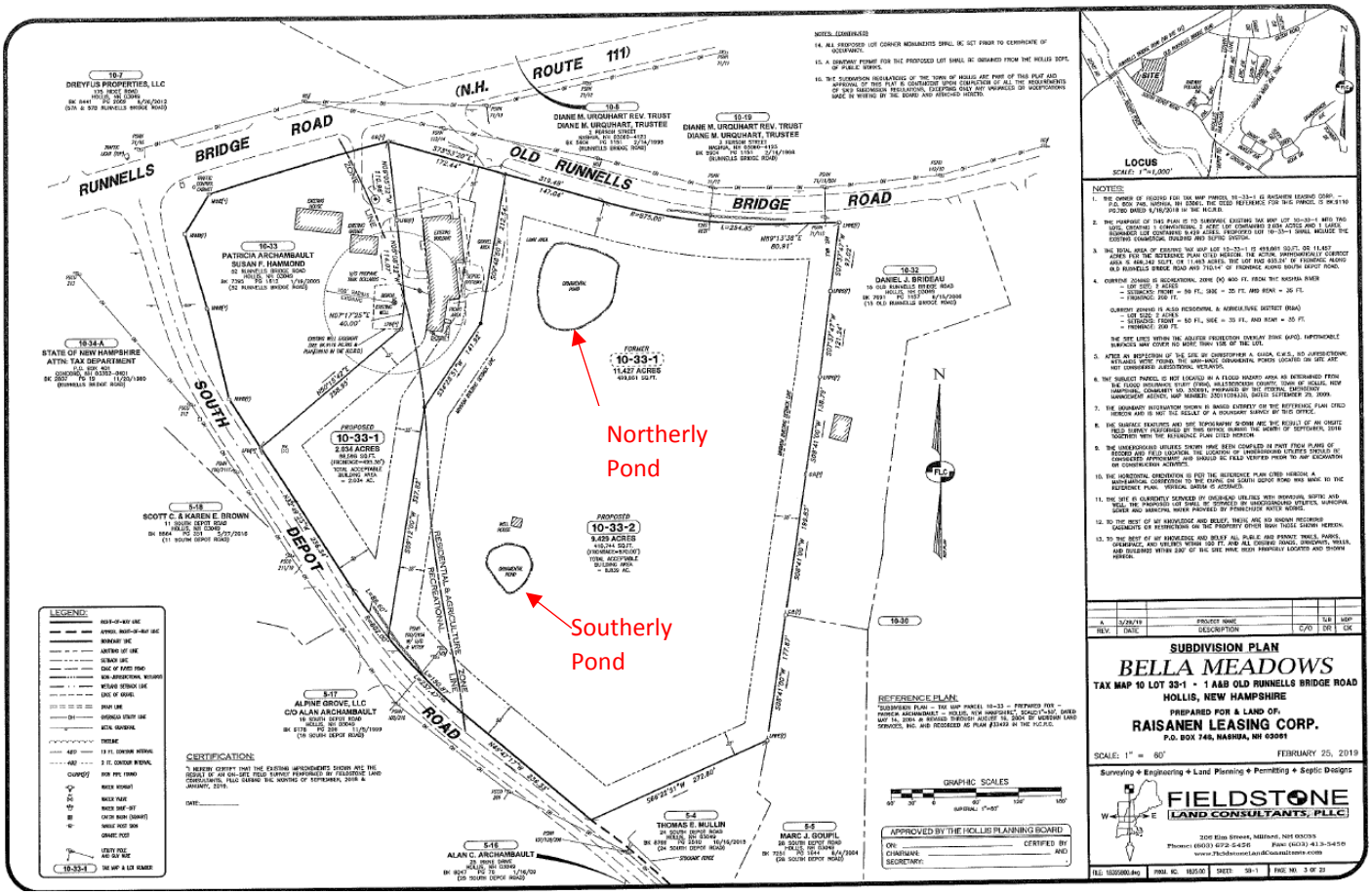
In researching the proposed development of property at Hollis tax map 10 Lot 33-1. I have reviewed the prior approvals for development of a golf course on the property. I have uncovered important information which bears directly on the delineation of wetlands on the property now.

I am attaching an image of the site plan for subdivision of the property in 1997. This plan shows two wetland areas on the site. One irregular area located near the southern border of the property and another surrounding the northern pond. This plan is on file at the Hollis town hall if an enlarged copy is required.



Presently the developer has drawn up plans which show a drastic reduction of wetland area around the northerly pond and do not show the wetlands at the southern border of the property at all. The town planner has directed a second wetland scientist, Mr. James Gove to perform a site inspection as well. Mr. Gove provided a letter which I have included below indicating. "Areas that have been identified as wetlands on the

1997 plans were tested and did not have hydric soils." I have included an image of the 2019 delineation and page 2 of Mr. Gove's letter below. Both documents are available in the town records if desired.



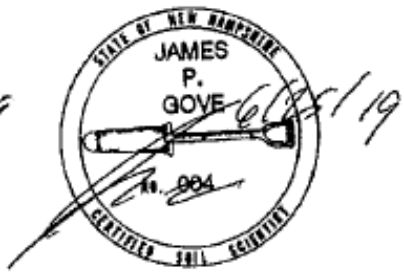
I, James Gove, President, GES, Inc., performed the site inspection on 6-18-2019. During the site inspection, two areas of jurisdiction were identified on the site. The jurisdictional areas were identified on the plans as man-made ponds. I agree with this determination. No other areas of wetlands were observed. Areas that had been identified as wetlands on the 1997 plans were tested and did not have hydric soils.

I conclude that the existing conditions plan by Fieldstone Land Consultants, PPLC is an accurate representation of the wetland resources on the Bella Meadows site, 1 A&B Runnells Bridge Road, Hollis, NH.

This completes the wetland delineation review report. If I can be of further assistance, please feel free to contact me at (603) 778-0644.

Sincerely,

James P. Gove
President, GES, Inc.



The key point is that in 2019 the wetlands have not been delineated with concern for unauthorized activities or disturbed soils in accordance to with the 1987 Army Corps of Engineers Wetland Delineation manual. Since the specific information I am presenting was not considered by the wetland scientists when evaluating the property, it is likely that wetland areas of the 1997 delineation, highlighted in yellow above have been missed entirely. Specifically the area surrounding the Northerly pond. From a Site Specific Soil Survey conducted by Christopher Guida on Sept 6 2019, it can be seen that there are disturbed soils surrounding the entire northerly pond. Soil manipulation which occurred in the wetlands area surrounding the Northerly pond constitutes an unauthorized disturbance I have included an image of the first page of a violation notice written by the town of Hollis in 1998. The entire two page letter is available in the town records if desired. Town staff can be contacted at 603-465-2209 for assistance in obtaining the references.

Subsequent to the creation of the referenced plans of 1997, the site was approved to be developed as a golf course. The wetlands on the site were specifically protected and no alteration was permitted within their boundaries. In November of 1998 the Hollis planning board identified a violation of the site plan. The violation included dredging of the northerly pond and **destruction of its natural vegetative buffer**. It also required restoration of the wetlands. I cannot find any evidence that the wetlands were restored as required.

I raise these concerns because the unauthorized destruction of the wetlands and the fact that they were not restored bears directly on the present wetland delineation. Due to the complex history on the site and the unauthorized activities in the wetlands, according to the US Army Corps of Engineers Wetlands Delineation Manual of 1987 (USACE), a Level 2 Onsite delineation is necessary. This was not apparent without the information provided in the violation letter above. The Hollis Zoning ordinance requires the 1987 USACE Delineation manual specifically. This is particularly relevant because the 2012 Northcentral and Northeast Region Supplement (Doc # ERDC\EL TR-12-1) contains a different method for delineating atypical conditions like unauthorized disturbance.

TOWN OF
HOLLIS
NEW HAMPSHIRE

November 16, 1998

Mr. Alan Archambault
Mr. Joseph Archambault
52 Runnells Bridge Road
Hollis, NH 03049

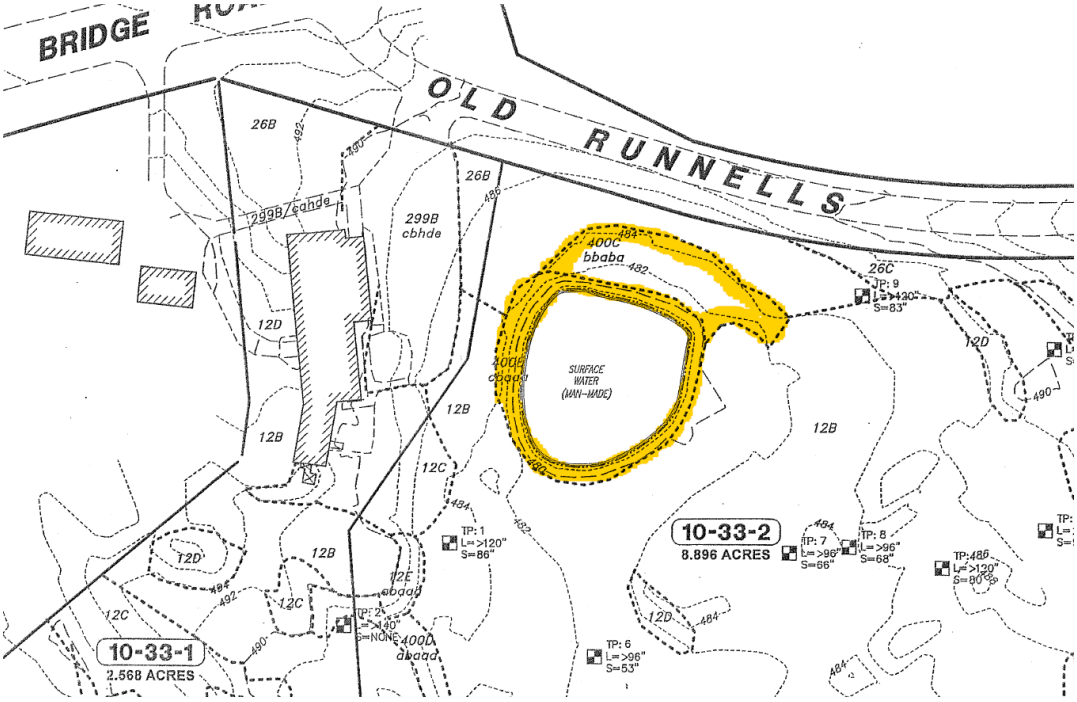
Subject: **Conditions of Site Plan Approval**
Pitch & Putt Golf Course
South Depot & Old Runnells Bridge Road
Map 10, Lot 33

Dear Mr. Archambault:

It has come to the attention of the Planning Board that you have violated your site plan approval by dredging the existing pond and destroying the natural vegetative buffer that was supposed to be the protection from run-off, particularly from the parking lot. We are aware that you have properly secured a State of NH Dredge and Fill Permit, which was signed by the Hollis Conservation Commission; however, this pond was a major part of the discussion for both the ZBA Wetland Special Exception and the Planning Board Site Plan Approval. The justification for creating a new pond for irrigation was to avoid impacting the existing pond.

Your intention to "grow grass to the edge of the pond similar to other golf courses" is contrary to what was requested by both Boards. The buffer area and wetlands adjacent to the pond will need to be restored with appropriate plant materials. A restoration plan should be prepared by a qualified wetland plant specialist, and provided to the Planning Board for approval.

The most recent Site Specific Soil Survey dated 9-6-19 by the applicant shows an area of disturbed soils surrounding the northerly pond, an image of the soil survey map is provided below. The entire Site Specific Soil Survey map and narrative are on file a Hollis town hall for inspection.



SITE SPECIFIC DISTURBED SOIL SUPPLEMENT DENOMINATOR KEY

THE SOIL TYPES ARE DEFINED BY SOIL CHARACTERISTICS AND DESIGNATED WITH A FIVE PART SYMBOL. 500A/12345

PARENT MATERIAL — RESTRICTIVE/IMPERVIOUS LAYERS
DRAINAGE CLASS — ESTIMATED Ksat
① ② ③ ④ ⑤ — HYDROLOGIC SOIL GROUP

LEGEND:

SYMBOL 1 — DRAINAGE CLASS
- a — EXCESSIVELY DRAINED
- b — SOMEWHAT EXCESSIVELY DRAINED
- c — WELL DRAINED
- d — MODERATELY WELL DRAINED
- e — SOMEWHAT POORLY DRAINED
- f — POORLY DRAINED
- g — VERY POORLY DRAINED
- h — NOT DETERMINED

SYMBOL 2 — PARENT MATERIAL (NATURALLY FORMED SOIL ONLY, IF PRESENT)
- a — NO NATURAL SOIL WITHIN 60"
- b — GLACIOFLUVIAL DEPOSITS (OUTWASH/TERRACES OF SAND AND GRAVEL)
- c — GLACIAL TILL MATERIAL (ACTIVE ICE) GLACIOLACUSTRINE DEPOSITS;
- d — VERY FINE SAND AND SILT DEPOSITS (GLACIAL LAKES)
- e — LOAMY/SANDY OVER SILT/CLAY DEPOSITS
- f — MARINE SILT AND CLAY DEPOSITS (OCEAN WATERS)
- g — ALLUVIAL DEPOSITS (FLOODPLAINS)
- h — ORGANIC MATERIALS – FRESH WATER
- i — ORGANIC MATERIALS – TIDAL MARSH

SYMBOL 3 — RESTRICTIVE / IMPERVIOUS LAYERS
- a — NONE
- b — BOULDERY, WITH MORE THAN 15% OF THE SURFACE COVERED WITH BOULDERS (LARGER THAN 12 INCHES IN DIAMETER)
- c — MINERAL RESTRICTIVE LAYER(S) ARE PRESENT IN THE SOIL PROFILE LESS THAN 40 INCHES BELOW THE SOIL SURFACE SUCH AS HARD PAN, PLATY STRUCTURE, CLAYEY TEXTURE. FOR EXAMPLES OF SOIL CHARACTERISTICS THAT QUALIFY FOR RESTRICTIVE LAYER; SEE SOIL MANUAL FOR SITE EVALUATION IN NEW HAMPSHIRE, 2nd ED.,PAGE 3–17, FIGURE 3–14
- d — BEDROCK PRESENT IN THE SOIL PROFILE 0 TO 20 INCHES
- e — BEDROCK PRESENT IN THE SOIL PROFILE 20 TO 60 INCHES
- f — AREAS WHERE DEPTH TO BEDROCK IS SO VARIABLE THAT A SINGLE SOIL TYPE CANNOT BE APPLIED WILL BE MAPPED AS A COMPLEX OF SOIL TYPES
- g — SUBJECT TO FLOODING
- h — MAN–MADE IMPERVIOUS SURFACE INCLUDING PAVEMENT, CONCRETE, OR BUILT–UP SURFACES (IE BUILDINGS) WITH NO MORPHOLOGICAL RESTRICTIVE LAYER WITHIN CONTROL SECTION.

SYMBOL 4 — ESTIMATED Ksat (MOST LIMITING LAYER EXCLUDING 3h ABOVE)
- a — HIGH
- b — MODERATE
- c — LOW
- d — NOT DETERMINED

SYMBOL 5 — HYDROLOGIC SOIL GROUP
- a — GROUP A
- b — GROUP B
- c — GROUP C
- d — GROUP D
- e — NOT DETERMINED

DISTURBED SOILS NOTE:

DISTURBED MAP UNITS WERE NOT UTILIZED WITHIN THE MAPPING COMPLETED TO DATE AND OBSERVED AREAS HAVE BEEN CALLED OUT ON SOILS MAP.

SOIL TYPES:	
12	HINCKLEY, EXCESSIVELY DRAINED, LOAMY SAND
26	WINDSOR, EXCESSIVELY DRAINED, LOAMY SAND
42	CANTON, WELL DRAINED, FINE SANDY LOAM
299	UDORTHENTS, SMOOTHED
314	PIPESTONE, SOMEWHAT POORLY DRAINED
400	UDORTHENTS, SANDY

SOURCE: USDA NRCS WEB SOIL SURVEY

MATHEMATICAL CORRECTION TO THE CURVE ON SOUTH DEPOT ROAD WAS MADE TO THE REFERENCE PLAN. VERTICAL DATUM IS ASSUMED.

7. THE SUBJECT PARCEL IS NOT LOCATED IN A FLOOD HAZARD AREA AS DETERMINED FROM THE FLOOD INSURANCE STUDY (FIRM), HILLSBOROUGH COUNTY, TOWN OF HOLLIS, NEW HAMPSHIRE, COMMUNITY NO. 330091, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, MAP NUMBER: 33011C0633D, DATED: SEPTEMBER 25, 2009.

REFERENCE PLAN:

"SUBDIVISION PLAN – TAX MAP PARCEL 10–33 – PREPARED FOR: – PATRICIA ARCHAMBAULT – HOLLIS, NEW HAMPSHIRE", SCALE: 1"=50', DATED MAY 14, 2004 LAST REVISED 8/16/04 BY MERIDIAN LAND SERVICES, INC., (H.C.R.D. PLAN #33422).

GRAPHIC SCALES

60' 30' 0 60' 120' 180'

IMPERIAL: 1"=60'

REV.	DATE	DESCRIPTION	C/O	DR	CK

SITE SPECIFIC SOIL PLAN

BELLA MEADOWS

TAX MAP 10 LOT 33-1 - 1 A&B OLD RUNNELLS BRIDGE ROAD
HOLLIS, NEW HAMPSHIRE

PREPARED FOR & LAND OF:

RAISANEN LEASING CORP.
P.O. BOX 748, NASHUA, NH 03061

SCALE: 1" = 60' JULY 29. 2019

Surveying ✦ Engineering ✦ Land Planning ✦ Permitting ✦ Septic Designs

FIELDSTONE

Per the US Army Corps of Engineers Wetlands Delineation Manual of 1987 (USACE), in more complex situations a Level 2 – Onsite inspection is necessary. Following this process, the manual provides a flow chart in section D Subsection 2 which I have included below.

57. Three levels of routine wetland determinations are described below. Complexity of the project area and the quality and quantity of available information will influence the level selected for use.

a. *Level 1 - Onsite Inspection Unnecessary.* This level may be employed when the information already obtained (Section B) is sufficient for making a determination for the entire project area (see Section D, Subsection 1).

b. *Level 2 - Onsite Inspection Necessary.* This level must be employed when there is insufficient information already available to characterize the vegetation, soils, and hydrology of the entire project area (see Section D, Subsection 2).

c. *Level 3 - Combination of Levels 1 and 2.* This level should be used when there is sufficient information already available to characterize the vegetation, soils, and hydrology of a portion, but not all, of the project area. Methods described for Level 1 may be applied to portions of the area for which adequate information already exists, and onsite methods (Level 2) must be applied to the remainder of the area (see Section D, Subsection 3).

Considering the amount of prior alteration and the unauthorized activities on the site the proper method is a level 2, onsite inspection.

The flow chart below, taken from the USACE manual, describes the procedures for an onsite wetlands delineation.

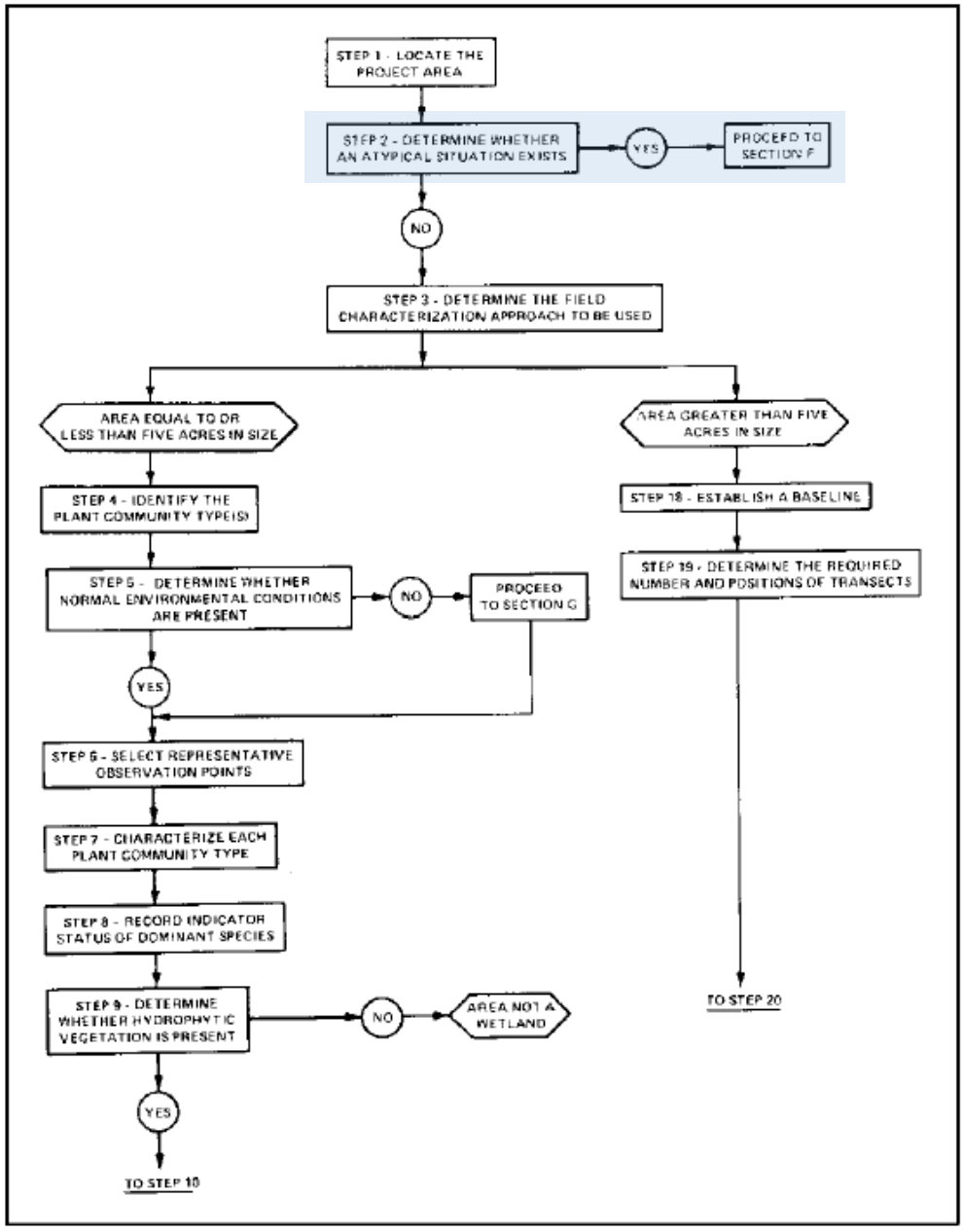


Figure 14. Flowchart of steps involved in making a routine wetland determination when an onsite visit is necessary (Continued)

Step 2 of the flow chart directs the scientist to section F for atypical conditions such as man made disturbances. Unauthorized activities such as the destruction of vegetation and dredging described in the violation letter represent an atypical situation which requires the procedures of section F. I have included the text of section F below for reference.

Section F. Atypical Situations

71. Methods described in this section should be used only when a determination has already been made in Section D or E that positive indicators of hydrophytic vegetation, hydric soils, and/or wetland hydrology could not be found due to effects of recent human activities or natural events. This section is applicable to delineations made in the following types of situations:

Section F. Atypical Situations

71. Methods described in this section should be used only when a determination has already been made in Section D or E that positive indicators of hydrophytic vegetation, hydric soils, and/or wetland hydrology could not be found due to effects of recent human activities or natural events. This section is applicable to delineations made in the following types of situations:

a. *Unauthorized activities*. Unauthorized discharges requiring enforcement actions may result in removal or covering of indicators of one or more wetland parameters. Examples include, but are not limited to: (1) alteration or removal of vegetation; (2) placement of dredged or fill material over hydric soils; and/or (3) construction of levees, drainage systems, or

When searching for evidence of hydrophilic vegetation in these conditions, especially if it was removed by any unauthorized activities described on P73 the manual recommends relying on prior historic information in particular, prior site plans such as the plan referenced above. Excerpt below from P76 of the USACE delineation manual.

c. *Previous site inspections*. Documented evidence from previous inspections of the area may describe the previous plant communities, particularly in cases where the area was altered after a permit application was denied.

To identify the prior presence of hydric soils, similarly, historic information is to be used due to the manipulation of the surface soil layers per P 78 of the USACE delineation manual.

- *STEP 3 - Characterize soils that previously occurred.* Obtain all possible evidence that may be used to characterize soils that previously occurred on the area. Consider the following potential sources of information:

    a. *Soil surveys.* In many cases, recent soil surveys will be available. If so, determine the soil series that were mapped for the area, and compare these soil series with the list of hydric soils ~~(Appendix D, Section 2)~~. If all soil series are listed as hydric soils, the entire area had hydric soils prior to alteration.

To determine prior hydrology, the same process is outlined. Again historical records are to be used as per P87 of the USACE manual.

d. *Historical records.* Examine any available historical records for evidence that the area has been periodically inundated. Obtain copies of any such information and record findings on DATA FORM 3.

The 2012 Northcentral and Northeast Supplement address the delineation of "difficult wetland situations" differently. Specifically, it does not rely as heavily on prior delineation as the original 1987 USACE manual does. This sets a higher standard for identifying previous wetlands impacted by unauthorized activities. Wetlands that would have been delineated according to the process for atypical situations set out in the 1987 manual may no longer be delineated as easily. During Mr. Gove's review of the wetland delineation he relied on the US Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual. I have included an image of the first page of Mr.Gove's letter indicating that he relied on the 2012 Regional supplement while conducting his review of Mr. Guida's prior delineation.

GOVE ENVIRONMENTAL SERVICES

6-25-2019

Mark J Fougere, AICP
Fougere Planning & Development, Inc.
253 Jennison Road
Milford, NH 03055

Subject: Wetland Delineation Review for the Planning Board of Hollis, NH
Bella Meadows, Tax Map 10, Lot 33-1
1 A&B Old Runnells Bridge Road
Hollis, NH

Dear Mr. Fougere:

Per the request of the Hollis Planning Board, this letter is to verify that GES, Inc., performed a site inspection to identify wetlands at Tax Map 10, Lot 33-1, in Hollis, NH. Wetlands were evaluated utilizing the following standards:

1. *US Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*, Technical Report ERDC/EL TR-12-1 (January 2012).
2. *Field Indicators for Identifying Hydric Soils in New England – Version 4, April 2019*. New England Hydric Soils Technical Committee.
3. *US Army Corps of Engineers National Wetland Plant List, 2018.*
4. *Classification of Wetlands and Deepwater Habitats of the United States.* USFW Manual FWS/OBS–79/31 (1979).
5. Env-Wt NH DES Rules of the Wetlands Bureau, current.

Plans and Information that were reviewed prior to the site inspection:

1. Existing Conditions Plan by Fieldstone Land Consultants, PPLC, 3-29-2019
2. Master Site Plan by Fieldstone Land Consultants, PPLC, 3-29-2019
3. Pitch & Putt Golf Course, Joseph Archambault by Meridian Land Services, Inc. 12-29-1997
4. On-Site Soil/Pond Evaluation by Fieldstone Land Consultants, PPLC, 5-13-2019

Although it may be appropriate to use the 2012 Regional supplement to conduct delineations for state permits, the Hollis Zoning ordinance is explicit in its requirement that delineations be conducted in accordance with the 1987 USACE manual as can be seen below from section VIII of the Hollis Zoning Ordinance.

> ***WETLAND:*** A wetland is an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions, does support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include, but are not limited to, swamps, marshes, bogs, and similar areas. For the purpose of determining buffer zones for site plan and subdivision review, wetland boundaries shall be delineated by either a certified soil scientist or a professional wetland scientist according to the Corps of Engineers Wetlands Delineation Manual, 1987, and the Regional Field Indicators for Identifying Hydric Soils in New England, 1998.

Based on the new information concerning the unauthorized destruction of the wetlands, the 1987 Corps of Engineer's manual is clear that the wetland scientist is to rely on prior historical information to complete the delineation, it is important to revisit the delineation conducted by Mr. Guida and reviewed by Mr. Gove for the site plan of 3-29-19. The conclusions were incomplete because neither scientist had all of the relevant information needed to make a proper delineation as they were likely unaware of the prior

unauthorized activities. Considering this new information and the fact that we have a high quality assessment of the property prior the unauthorized activities we can accurately place the wetlands as they were recorded in 1997 prior to the unauthorized activity. The Hollis zoning ordinance requires that a proper delineation be conducted according to the 1987 USACE Wetland delineation manual

It is incumbent on the board to have proper delineation of the wetland boundaries of the site before further consideration of this proposal. The board should direct a wetland scientist to conduct a **Level 2, onsite** delineation considering the unauthorized activity per the US Army Corps of Engineers Wetlands Delineation Manual of 1987. A full report will be needed including all rational for the determination considering the problematic history of the site.

Regards,

Joseph Garruba