
LAKE KANASATKA
MOULTONBOROUGH, NH
Acres
Max. Depth 40ft.

5 Lot Subdivision


Offsite Drainage Area

Developer Presents Application for Subdivision to the Planning Board at a Public Hearing.

Planning Board asks applicant to produce a Storm Water Management Plan, to contain the water coming from the gas station culvert ..... based on the “50 Year Storm” criteria.

100 YEAR / 50 YEAR STORM EVENT

A statistical measurement based on historic data over an extended period of time.

A one-hundred-year flood is a flood event that has a 1 in 100 chance (1% probability) of being equaled or exceeded in any given year.

A fifty-year-flood is a flood event that has a 2 in 100 chance (2% probability) of being equaled or exceeded in one year. (*Wikipedia)*

National Oceanic and Atmospheric Administration (NOAA) Extreme Precipitation Table

Duration	Average recurrence interval (years)							
	1	2	5	10	25	50	100	
5-min	0.282 (0.222-0.354)	0.339 (0.266-0.425)	0.431 (0.337-0.543)	0.507 (0.395-0.642)	0.612 (0.460-0.802)	0.692 (0.509-0.922)	0.775 (0.553-1.06)	(
10-min	0.400 (0.314-0.502)	0.480 (0.377-0.603)	0.610 (0.478-0.769)	0.718 (0.559-0.909)	0.867 (0.652-1.14)	0.979 (0.721-1.31)	1.10 (0.783-1.51)	(
15-min	0.470 (0.370-0.590)	0.564 (0.443-0.709)	0.718 (0.562-0.904)	0.845 (0.658-1.07)	1.02 (0.767-1.34)	1.15 (0.849-1.54)	1.29 (0.921-1.77)	(
30-min	0.650 (0.511-0.815)	0.780 (0.612-0.979)	0.992 (0.777-1.25)	1.17 (0.909-1.48)	1.41 (1.06-1.85)	1.59 (1.17-2.13)	1.79 (1.27-2.45)	
60-min	0.829 (0.652-1.04)	0.995 (0.781-1.25)	1.27 (0.991-1.60)	1.49 (1.16-1.89)	1.80 (1.36-2.36)	2.04 (1.50-2.71)	2.28 (1.63-3.13)	
2-hr	1.03 (0.815-1.29)	1.25 (0.992-1.57)	1.62 (1.28-2.03)	1.93 (1.51-2.42)	2.35 (1.78-3.07)	2.66 (1.98-3.55)	3.00 (2.17-4.14)	
3-hr	1.18 (0.937-1.47)	1.44 (1.14-1.79)	1.87 (1.48-2.33)	2.23 (1.75-2.79)	2.72 (2.07-3.55)	3.08 (2.30-4.10)	3.47 (2.53-4.80)	
6-hr	1.52 (1.22-1.88)	1.85 (1.48-2.28)	2.38 (1.89-2.95)	2.82 (2.23-3.51)	3.43 (2.63-4.45)	3.88 (2.92-5.13)	4.37 (3.20-5.98)	
12-hr	1.98 (1.59-2.42)	2.37 (1.90-2.90)	3.00 (2.40-3.69)	3.53 (2.81-4.36)	4.25 (3.27-5.45)	[illegible]	5.37 (3.92-7.24)	
24-hr	2.43 (1.97-2.96)	2.90 (2.35-3.53)	3.67 (2.96-4.48)	4.31 (3.45-5.29)	5.19 (4.01-6.60	5.85 (4.42-7.57)	6.54 [illegible]	
2-day	2.80 (2.28-3.39)	3.38 (2.75-4.09)	4.33 (3.51-5.26)	5.12 (4.13-6.24)	6.21 (4.83-7.86)	[illegible]	7.88 (5.83-10.5)	
3-day	3.07 [illegible]	3.70 [illegible]	4.74 [illegible]	5.60	6.78	7.66	8.60	

Developer produces Storm Water Management Plan.

Planning Board accepts the Storm Water Management Plan, "based on the Engineer's Stamp," and approves the Subdivision.

Planning Board never visited the property

SITE PLAN REVIEW REGULATIONS

MOULTONBOROUGH, NH

ARTICLE 7 - A

PERFORMANCE BOND

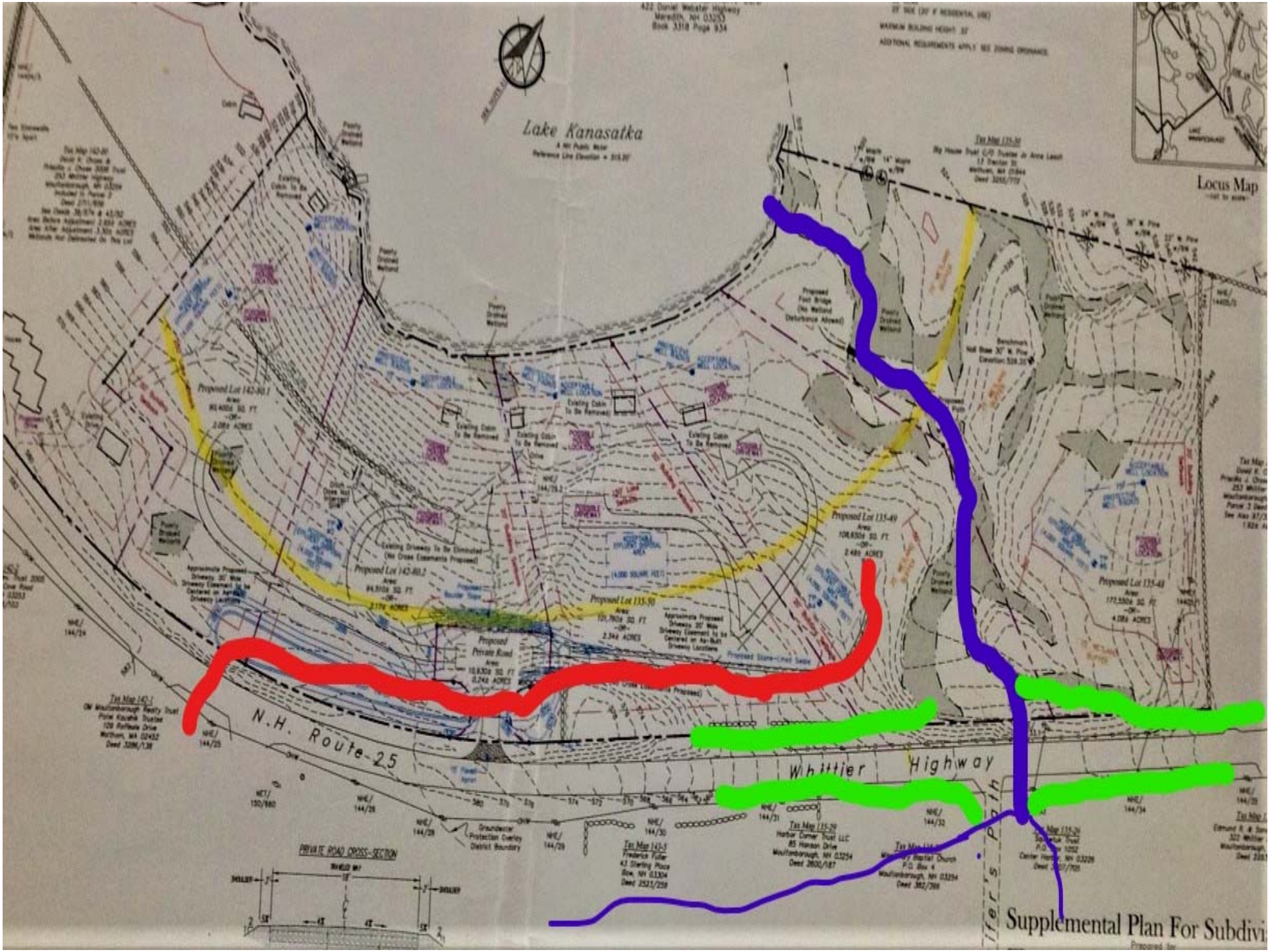
The Planning Board may require the applicant to post a bond or file an escrow agreement in an amount approved by the Board to guarantee that improvements intended to insure access, adequate streets and roads, sewer and water disposal, drainage or any other requirements and conditions of the Planning Board in accordance with Site Plan Review Regulations to reduce impact upon the abutters and/or the public are performed.

The P. B. chose not to require this.


Yellow line = 250’ setback from lake
Storm Water Management Plan
Lake Kanasatka
N.H. Route-25
Whittier Highway
PRIVATE ROAD CROSS-SECTION

Site visit by

KEVIN KELLY


Lake Kanasatka
Locus Map
N.H. Route-25
Whittier Highway
PRIVATE ROAD CROSS-SECTION
Supplemental Plan For Subdivi

CONDUCTIVITY

Conductivity is a measure of **water's** capability to pass electrical flow. This ability is directly related the concentration of ions in the **water** [1].
These **conductive** ions come from dissolved salts and inorganic materials such as alkalis, chlorides, sulfides and carbonate compounds [3].

CONDUCTIVITY

Lake Kanasatka = 90-92

Stream at Rte. 25 culvert = 65-68

Stream on Lot #5 = 285 – 320

Stream entering lake = 180 – 210

Road salt.....nutrients... ??

Flush Rate

Clean water into lake/pond via springs, mountain streams or other sources

+

Outlets to discharge lower quality water

We need to reduce the amount of storm water coming in, so the clean water "wins the battle."

Town Joint Land Use Boards Meeting

Town's Engineer pointed out that:

When a town is pro – development, the environment suffers

When a town is pro – environment, development suffers

Find a balance

Site Visit after

3 inch rainstorm


Stream entering lake

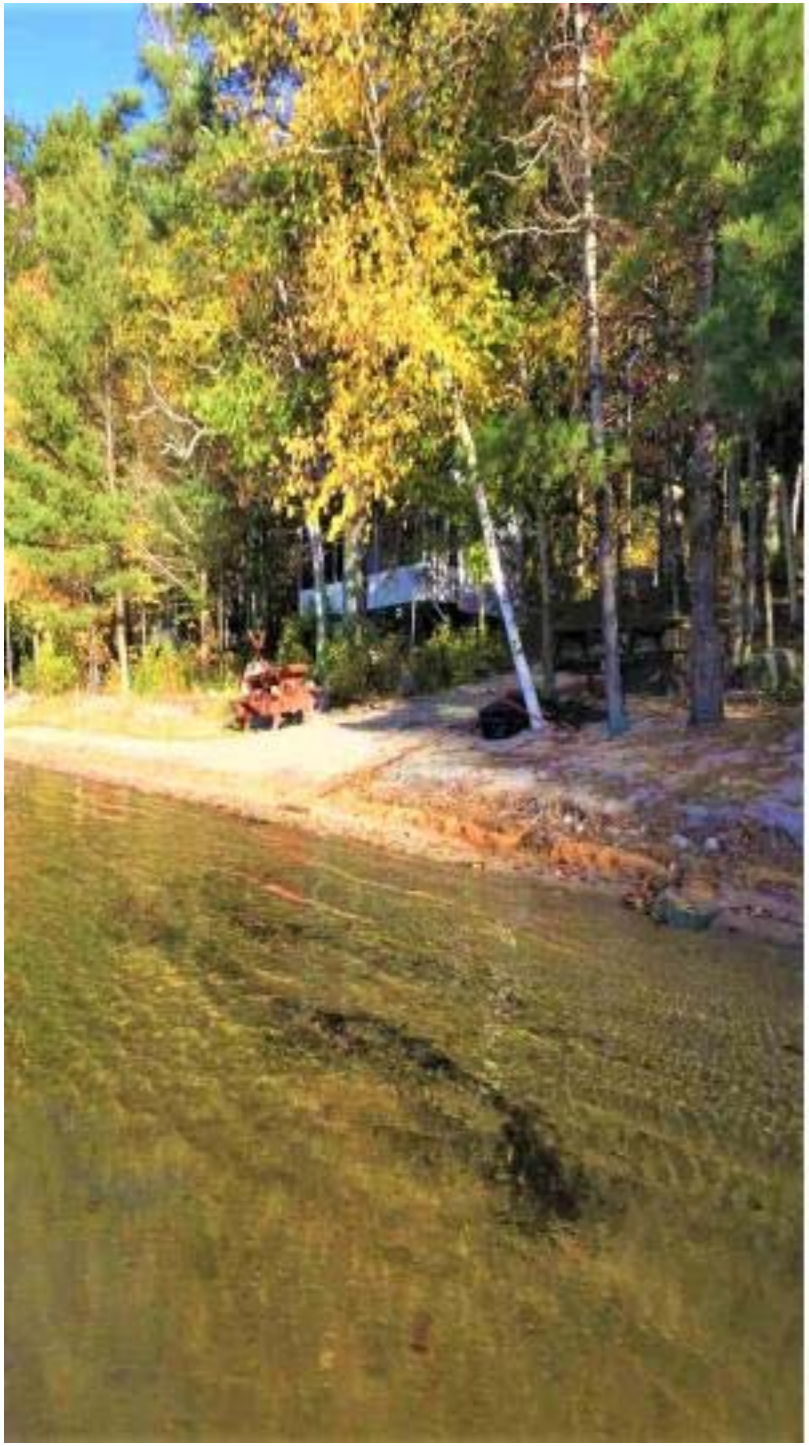
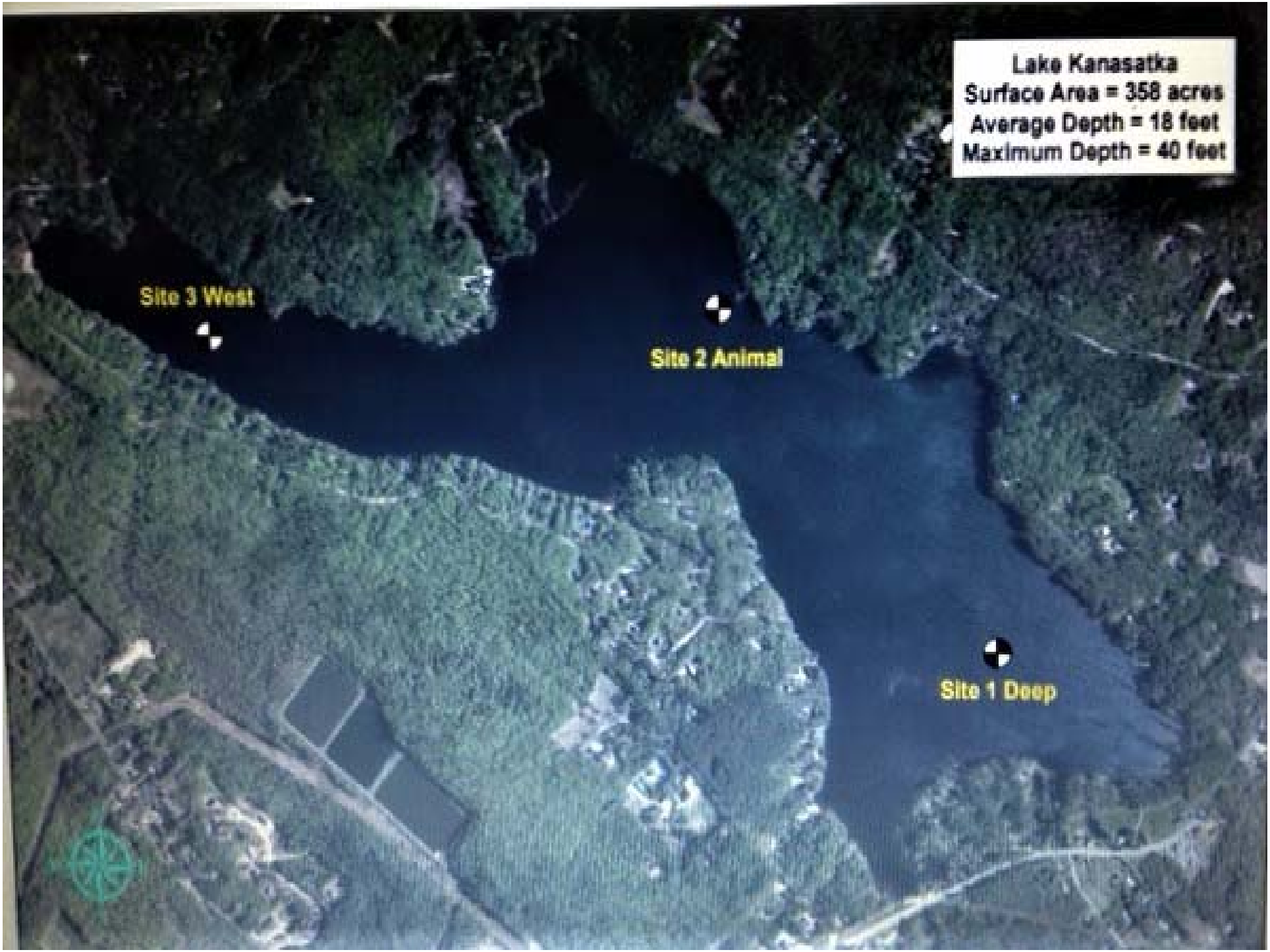



Photo taken later in the winter


Turbidity = 10
4 is high
A picture is worth a thousand words


A few days later, the water was clear
File Photo


Lake Kanasatka
Surface Area = 358 acres
Average Depth = 18 feet
Maximum Depth = 40 feet
Site 3 West
Site 2 Animal
Site 1 Deep

I obtained a copy of the developer’s storm water Management plan, and the site diagram.

New Hampshire Right To Know Law

RSA – 91A

Public Records Request

RSA-91A Right to Know Request (Template)

[Date]
[Name of Custodian of Records
[Title]
[Public Agency Name]
[Street Address]
[City, State Zip Code]

RE: Right to Know Request per RSA-91A

Dear [Custodian of Records]:

Pursuant to the Right to Know Law (RSA. 91-A), I am requesting public access, within 5 business days, to the governmental records reasonably described as follows:

1. All documents, no matter what form, including but not limited to, printed documents, electronic documents, e-mails, or any other form of documents regarding [Describe the records sought with enough detail for the public agency to respond.] for the period from MM/DD/YYYY to MM/DD/YYYY.

[Be as specific as possible while not excluding records you may want.]

If you deny any portion of this request, please cite the specific exemption used to justify the denial to make each record, or part thereof, available for inspection.

Please let me know when these records are available for inspection or you may email the records to me at [EmailAddress].

Thank you for your lawful attention to this matter.

Sincerely,

[Your Signature]
[Your Name]
[Street Address & Mailing Address, if different]
[City, ST ZIP Code]

Cost
30-50 cents
per page

Developer’s Storm Water Engineering plan did NOT show the stream flowing Through lots 4 & 5.

We felt the wetlands were already at, or beyond their capacity, and could not absorb and filter the additional storm water from this new system.

L K W A

Kanasatka.org

Lake Kanasatka - Facebook

KANASATKA WATERSHED ASSOCIATION

Lake Kanasatka property owners circulated a petition, asking the Planning Board for a Re-Hearing, to challenge the Storm Water Management Plan.

191 Signatures

Some residents wrote letters supporting the Re-Hearing request.

PETITION TO THE MOULTONBOROUGH PLANNING BOARD

REQUEST FOR RE-HEARING ON STORMWATER MANAGEMENT PLAN

[redacted]

We, the undersigned residents and/or property owners of Moultonborough, NH, respectfully request that the Moultonborough Planning Board schedule a re-hearing to receive additional concerns regarding the storm water management plan submitted by [redacted] LLC for the proposed residential development at [redacted]. We believe that comprehensive input is needed regarding the wetlands receiving run off from the proposed development. There is evidence that these wetlands have already reached capacity for bio-effectiveness in pretreating runoff and may not be able to absorb additional runoff. Not only does this plan as submitted have the potential to threaten the health of Lake Kanasatka, but also may negatively impact downstream bodies of water, specifically Lake Winnipesaukee.

NAME (printed)	ADDRESS	SIGNATURE

Kevin Kelly brings petitions to Town Hall and is granted a same-day meeting with the Town Administrator and Town Planner. They agree with us, but feel we are acting prematurely, and that NH DES will address the matter when it reaches their level.

NH DES did not get involved because the Storm Water excavation did not cross the 250’ lakefront setback.

Planning Board Chairman comments on petitions and letters…

“Where were THESE people during the public hearings?”

*Hearings were in September and October. Most property owners are seasonal.

Re-Hearings are typically limited to Zoning Board decisions, but…

During a Public Planning Board hearing, the Town Planner told the Planning Board that…

Town Counsel had found case law that allowed a *Planning Board* to grant a Re-Hearing.

Town Counsel further stated…
“These people have a point…let them be heard.”

DENIED by Planning Board

Town Hall Public Hearings
are broadcast by Live Stream
Video, then made available on
the Town website.

Minutes from the hearings are
also posted on the Town website

They are good references to refresh your memory, and to hold people accountable for their words and promises.

Kevin Kelly goes before the Moultonborough Selectmen, and asks them to intervene with the Planning Board

I began by clearly stating I was NOT opposed to the subdivision, but had concerns about the storm water management design

One Selectman asked me if I was simply opposed to development in general.

Another Selectman asked if I was one of those “Not in my backyard people.”

They suggested I appeal the Planning Board’s decision to Superior Court

APPEAL:

Appeal the Planning Board’s Decision to the Superior Court within 30 days of the Planning Board decision

LKWA hires independent Engineer
To conduct a PEER REVIEW of the Developer's Storm Water Engineering Plan. $1,600.00

LKWA's Engineer finds flaws. We share the peer review with the Town

Town's consulting engineer agrees with LKWA's Engineer

Developer's attorney refuses to make any changes.

Town does nothing else

December 12, 2018

2” rainfall in 24 hour period

Remember – 50 year storm

is 5.85 inches in 24 hours


File Photo – 2018


Breached stone swale

The Town invites me to a meeting and finally acknowledges that the storm water management system is flawed, but feels confident that NH DES will address the problems when they review the SWPPP

S W P P P

Storm Water Pollution

Prevention Plan

Federal EPA

S W P P P

A physical or electronic copy must be available at the work site, for inspection by regulatory authorities.

EPA
DES
Town

S W P P P

A “living document” containing the site plan, engineering plan, pollution prevention measures in place, AND continuous inspections and recommendations by developer’s engineer.

No Regulatory Agency ever conducted any SWPPP inspections on this site.

At my request, EPA obtained a copy of the SWPPP and conducted a site visit and SWPPP Inspection May 2, 2019.
Results are pending

I found out two days ago that the EPA Inspector did not have a copy of the SWPPP when he inspected the site.

Persistence

eventually

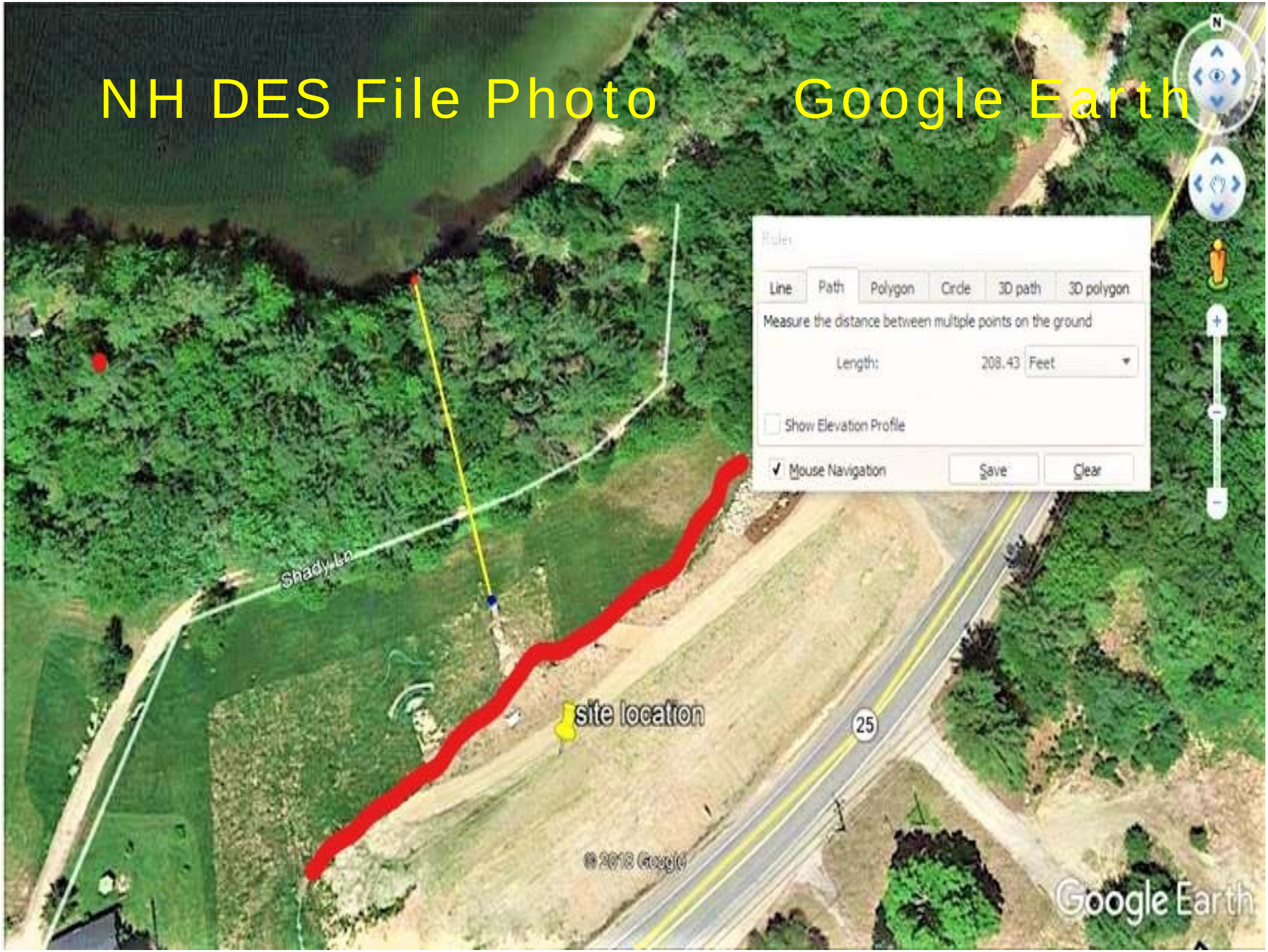
pays off

Town Planner emails me and invites me to his office to look a document he just received

NH DES – AOT
Alteration of Terrain Permit

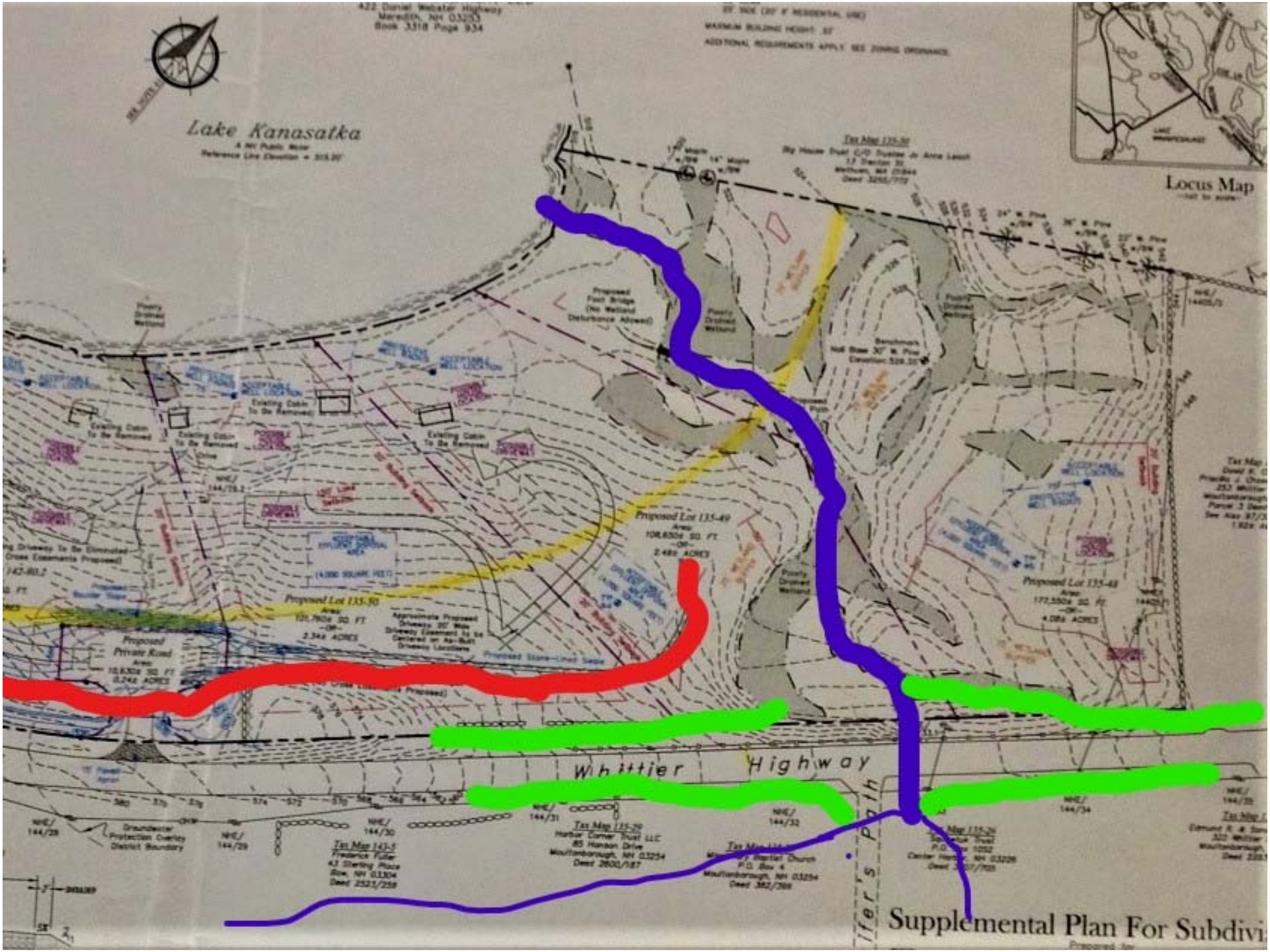
Developer inadvertently crossed the 250’ setback line during excavation, causing NH DES to request a complete “after-the-fact” AOT application.

Review period is 50 days


NH DES File Photo
Google Earth
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance between multiple points on the ground
Length:
208.43
Feet
Show Elevation Profile
Mouse Navigation
Save
Clear
Shady Ln
site location
25
© 2013 Google
Google Earth

The other sources

of storm water runoff


Lake Kanasatka
Locus Map
Proposed Lot 135-49
Proposed Lot 135-50
Proposed Lot 135-48
Proposed Private Road
Proposed Foot Bridge
Whittier Highway
Supplemental Plan For Subdivi

Non - Point - Source Pollution

Pollution resulting from many diffuse sources, where tracing it back to a single source is difficult

Non Point Source Pollution

Legal disputes over water flowing From one property onto another date back to English Common Law

Today, one neighbor would have to file a civil lawsuit against another neighbor and prove that the flow of water is “unreasonable.”

Non Point Source Pollution

When I began expressing my concerns to state and local officials……

The general feeling was that storm water has to go somewhere.

I could not accept that answer.

Meeting with Developers

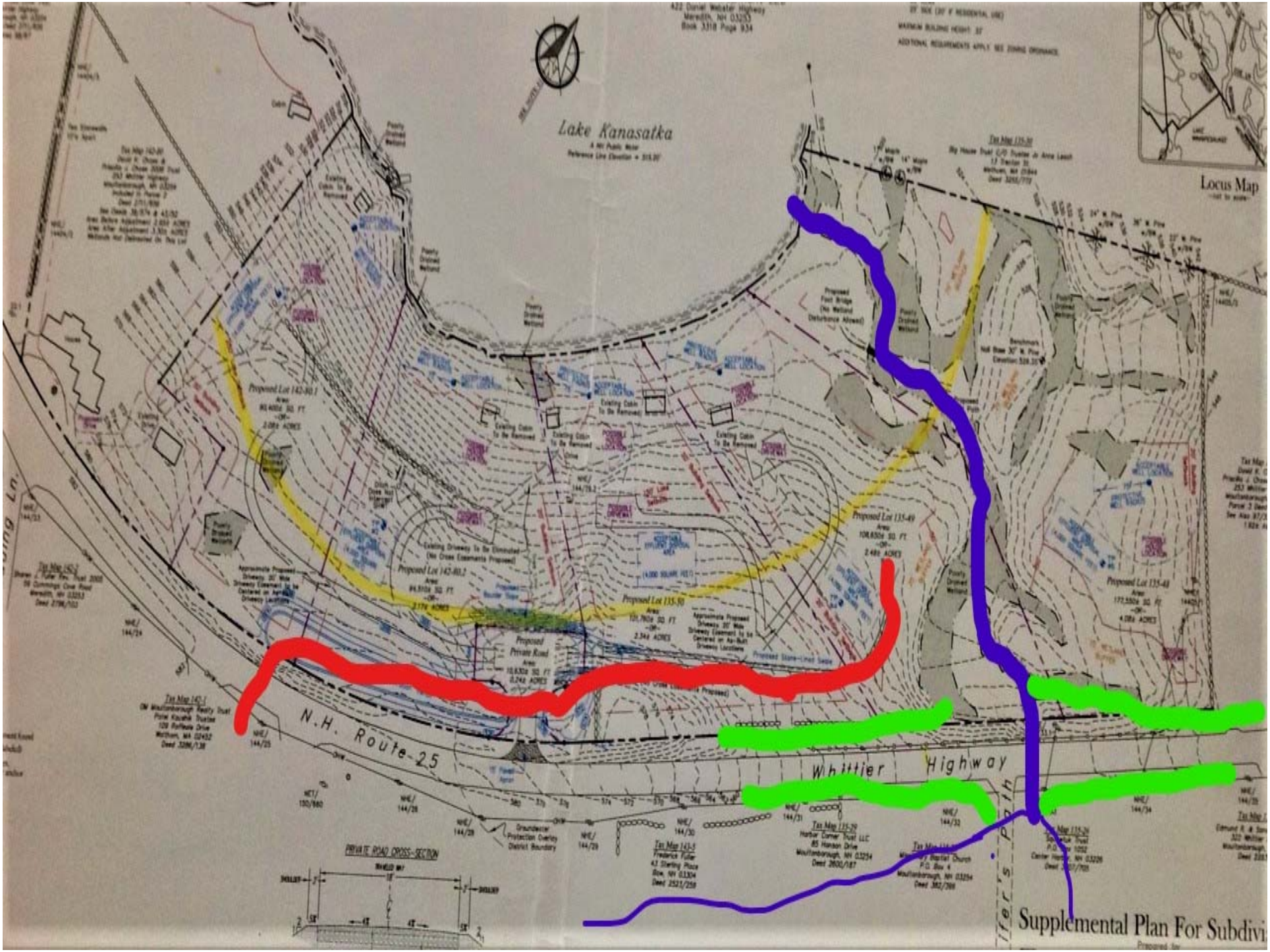
I explained my plan to reduce Non Point Source pollution onto their land by speaking with town and state officials

They were cordial, but skeptical. They said they wanted to be good neighbors, indicated they were doing us a favor by removing all the old septic systems from each demolished cottage along the waterfront.

Jennifer's Path runoff into the stream

PRIVATE WAY

Rob Livingston – NH DES asked owner to fix road. Owner agreed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Rob Livingston – NH DES

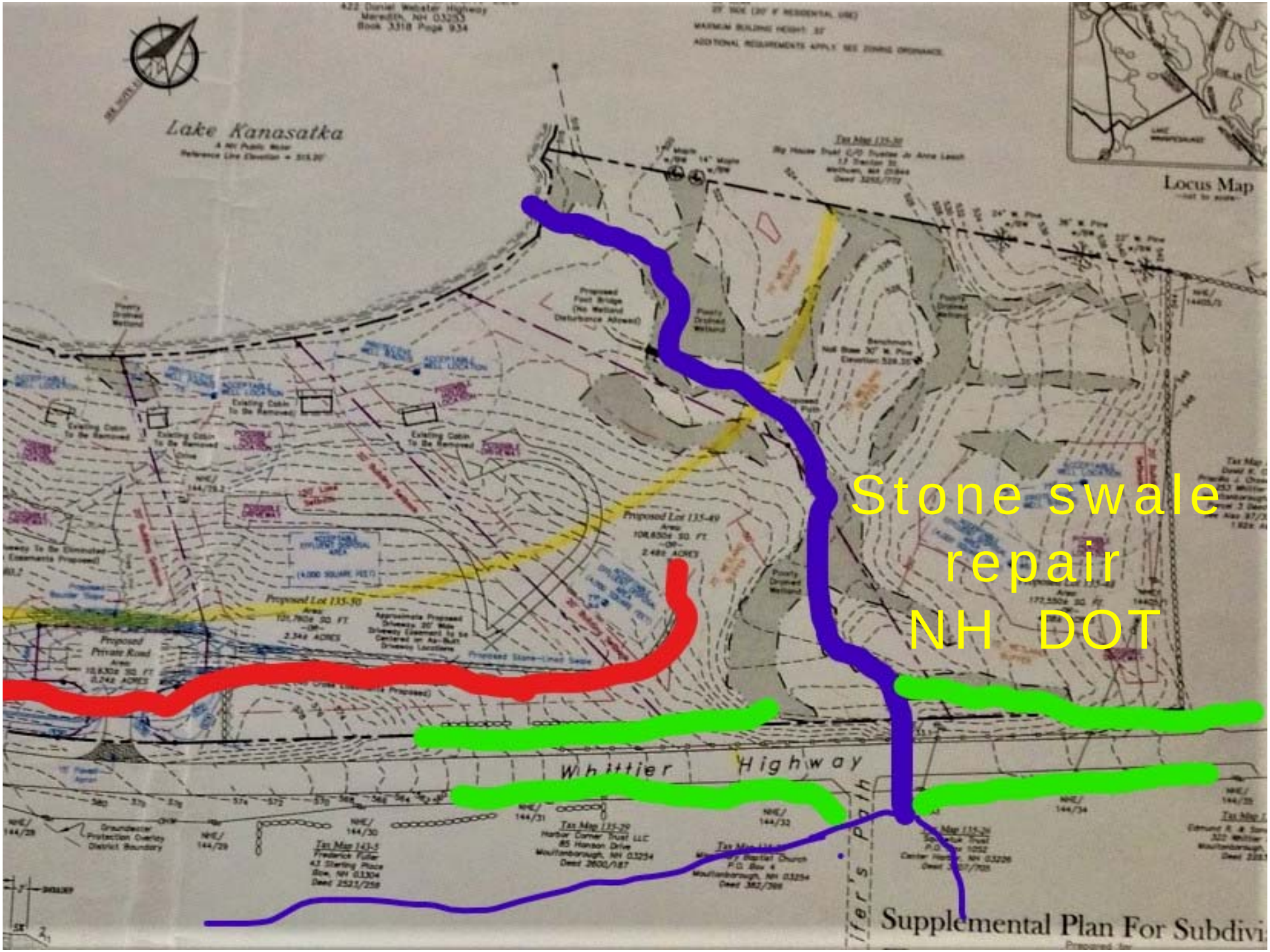
Met with town Road Agent

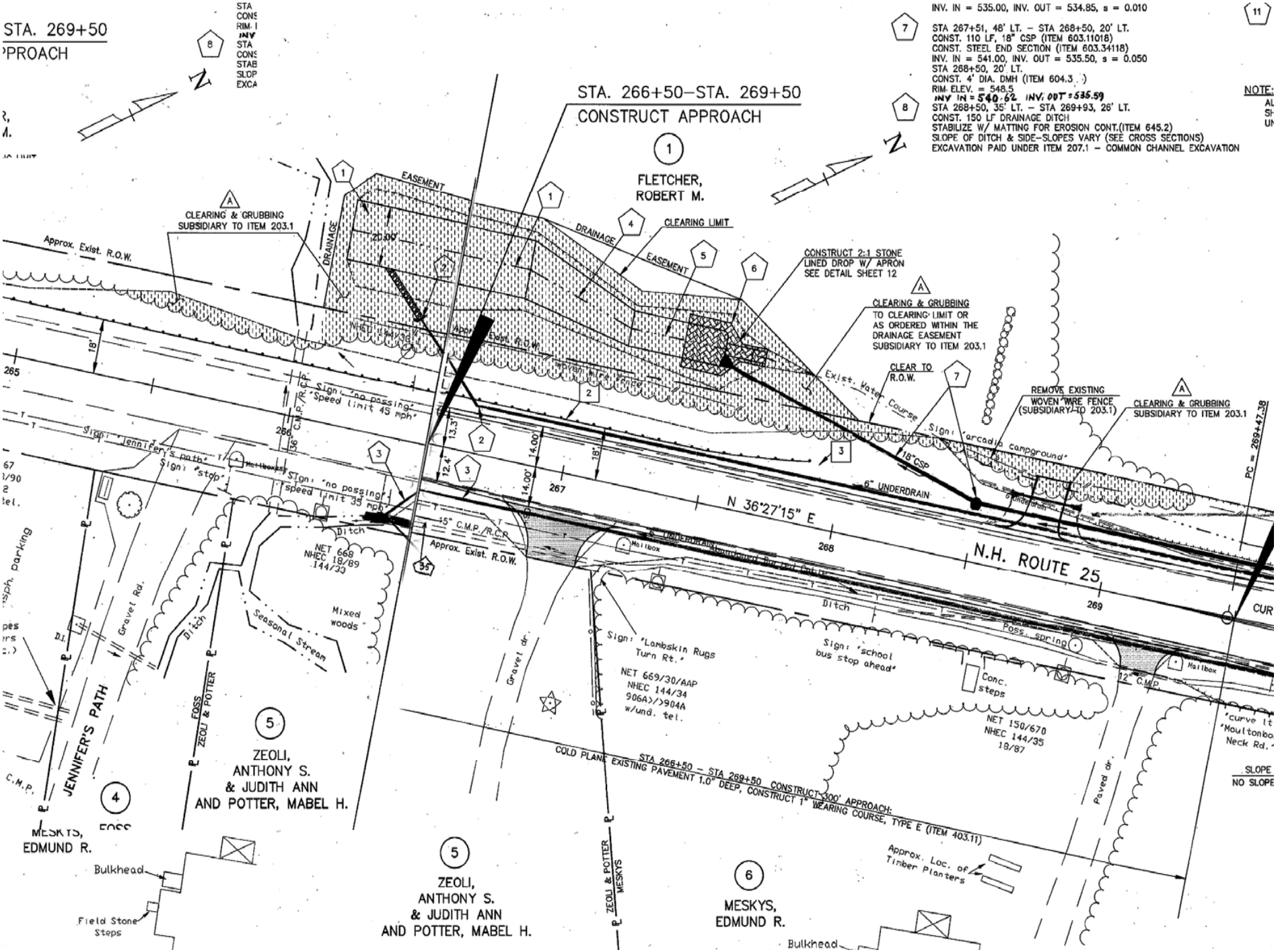
(Town plows private ways)

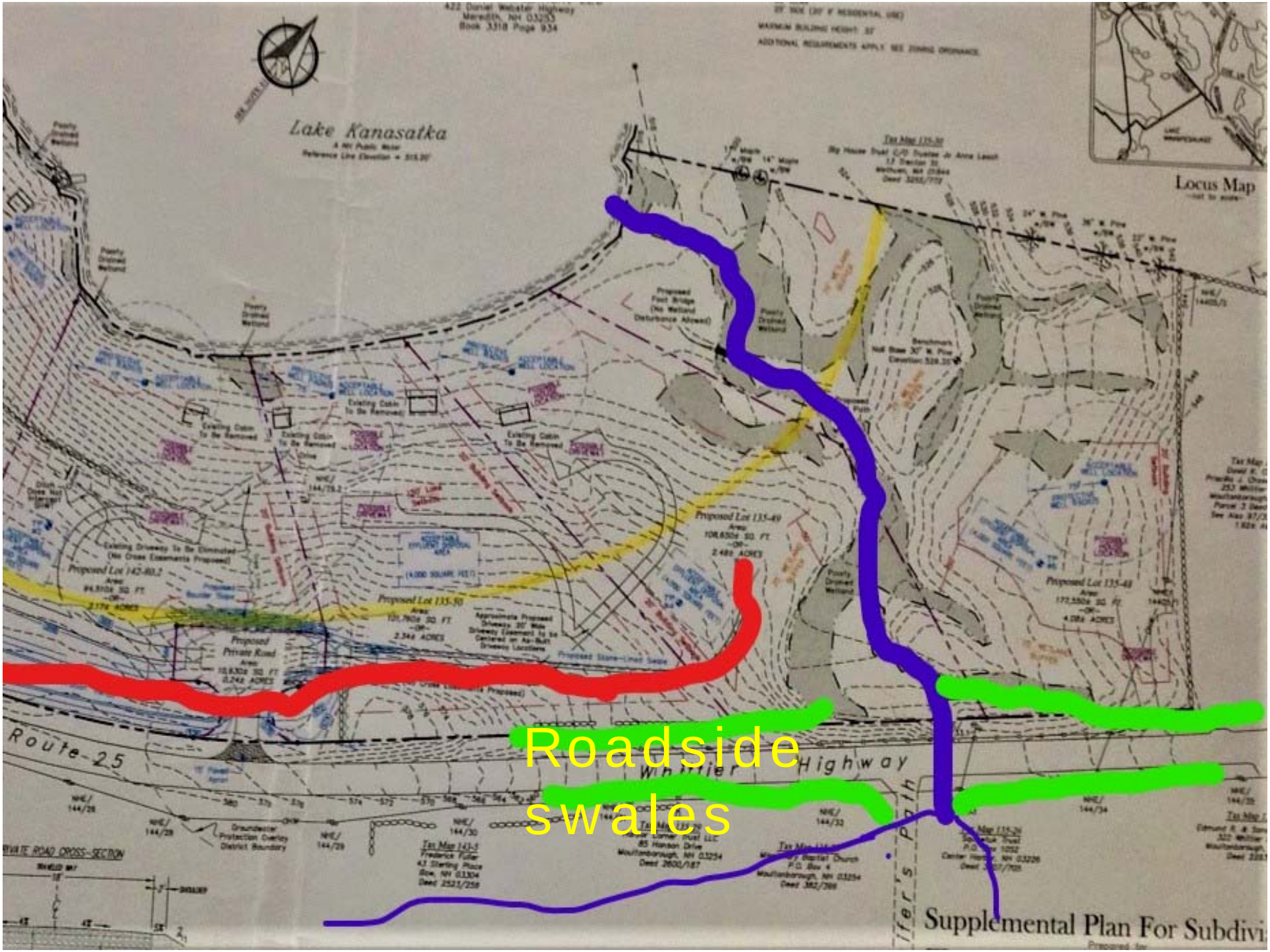
Have snow plow operators plow snow away from the stream side of the road.

Stop dumping dirty snow into the stream


10 truckloads of gravel
Culvert repair
Re-graded road away from stream


Lake Kanasatka
Locus Map
Stone swale
repair
NH DOT
Whittier Highway
Supplemental Plan For Subdivi


STA. 269+50
PPROACH
STA. 266+50–STA. 269+50
CONSTRUCT APPROACH
FLETCHER, ROBERT M.
CLEARING & GRUBBING SUBSIDIARY TO ITEM 203.1
EASEMENT
DRAINAGE
CLEARING LIMIT
CONSTRUCT 2:1 STONE LINED DROP W/ APRON SEE DETAIL SHEET 12
CLEARING & GRUBBING TO CLEARING LIMIT OR AS ORDERED WITHIN THE DRAINAGE EASEMENT SUBSIDIARY TO ITEM 203.1
CLEAR TO R.O.W.
REMOVE EXISTING WOVEN WIRE FENCE (SUBSIDIARY TO 203.1)
CLEARING & GRUBBING SUBSIDIARY TO ITEM 203.1
Approx. Exist. R.O.W.
Exist. Water Course
Exist. W.W. Fence
18" CSP
6" UNDERDRAIN
15" C.M.P./R.C.P.
N 36°27'15" E
N.H. ROUTE 25
PC = 269+47.38
Sign: "Jennifer's path"
Sign: "stop"
Sign: "no passing"
Sign: "Speed limit 45 mph"
Sign: "Speed limit 35 mph"
Sign: "arcadia campground"
Sign: "Lambskin Rugs Turn Rt."
Sign: "school bus stop ahead"
Mailbox
Ditch
Gravel Rd.
Gravel dr.
Seasonal Stream
Mixed woods
Poss. spring
Conc. steps
12" C.M.P.
NET 668 NHEC 18/89 144/33
NET 669/30/AAP NHEC 144/34 906A>/>904A w/und. tel.
NET 150/670 NHEC 144/35 18/87
JENNIFER'S PATH
FOSS
ZEOLI & POTTER
ZEOLI, ANTHONY S. & JUDITH ANN AND POTTER, MABEL H.
MESKYS, EDMUND R.
Bulkhead
Field Stone Steps
Approx. Loc. of Timber Planters
Paved dr.
COLD PLANE EXISTING PAVEMENT 1.0" DEEP, CONSTRUCT 1" WEARING COURSE, TYPE E (ITEM 403.11)
STA 266+50 – STA 269+50 CONSTRUCT 300' APPROACH:
INV. IN = 535.00, INV. OUT = 534.85, s = 0.010
STA 267+51, 48' LT. – STA 268+50, 20' LT.
CONST. 110 LF, 18" CSP (ITEM 603.11018)
CONST. STEEL END SECTION (ITEM 603.34118)
INV. IN = 541.00, INV. OUT = 535.50, s = 0.050
STA 268+50, 20' LT.
CONST. 4' DIA. DMH (ITEM 604.3 .)
RIM. ELEV. = 548.5
INV IN = 540.62 INV. OUT = 535.59
STA 268+50, 35' LT. – STA 269+93, 26' LT.
CONST. 150 LF DRAINAGE DITCH
STABILIZE W/ MATTING FOR EROSION CONT.(ITEM 645.2)
SLOPE OF DITCH & SIDE-SLOPES VARY (SEE CROSS SECTIONS)
EXCAVATION PAID UNDER ITEM 207.1 – COMMON CHANNEL EXCAVATION
NOTE:
SLOPE
NO SLOPE


Lake Kanasatka
Locus Map
Route-25
Whittier Highway
Roadside
swales
Supplemental Plan For Subdivi

B - M - P

BEST

MANAGEMENT

PRACTICES

The solution to

Non Point Source Pollution is

B. M. P.

Best Management Practices

Slow the water down and infiltrate it


Cottage Demolition


NO NH DES Shoreland Permit Required
because the excavator did not
dig a cavity

TOWN OF MOULTONBOROUGH, N.H.

Building Permit

[redacted] has been issued

Permit No. 8093 DEMO to erect ( ), alter ( )

DEMO TWO CABINS

at [redacted]

10/1 20 18 [redacted]

Code Enforcement Officer

2nd

PLUMBING

4 Pc. Bathroom

3 Pc. Bathroom

3 Pc. Shower Room

2 Pc. Toilet

Toilet Only

Lavatory

Other:

Water Supply: Public_ Private_

Electric Wiring: Underground__ Overhead__

Sewage Displ: Public__ Septic__ Tank Permit No.____ Date____

Construction to be started: 9/27/18

Estimated Cost $ 7k Fee: $ 30.00

Plot Lot and Building Improvements, showing width of front, side and real yard

indicating North. Show distances from all lot lines.

Town of Moultonborough

Requirements before a Demolition Permit is issued:

A successfully completed and inspected Plumbing Permit for Septic or Septic or Sewer cap-off.

(This is a separate permit application)

PENDING

LESSONS LEARNED

Early intervention with the Planning Board will make everyone's job easier.

Insist on a Peer Engineering Review

Insist on a Planning Board site walk

Follow the process every step of the way. Do not assume things are being done correctly.

Positive Outcomes:

Moultonborough Planning Board has begun visiting properties before approving subdivisions

Moultonborough Planning Board just Required a subdivision applicant to set up an escrow account of $5,000 to pay the Town’s engineer to review their storm water management plan. Changes were made to the plan.

The Town Administrator has agreed to review their Demolition Permitting process.

LKWA has been recognized at every level of government as an influential voice in its Watershed development process.

Kevinkelly700@yahoo.com