

From: Larry Bastian <larry@terradynconsultants.com>
Sent: Monday, December 17, 2018 2:05 PM
To: Amanda L. Lessard
Cc: Jim Cummings (jimcummings111@gmail.com); Jeff Amos
Subject: Cook Road Retirement Community - Response to Review Comments
Attachments: 18218 Cook Rd Retirement Community Rev Figure 2 to Show Nitrate Plume.pdf; Response to J Earle Comments.pdf; USGS Watersheds_Cook Rd.pdf

Amanda,

We are pleased to provide the attached information in response to comments from Town of Windham staff (Memo to Planning Board dated December 5, 2018 and Memo from Jon Earle Dated November 30, 2018) and at the Planning Board meeting on Monday, December 10. Our response to specific items is noted below. You can download the revised plan set at:

<C:\Users\terra\Box\Project Folders\2018 Jobs\1841 Cummings 55+\Submissions\12-17-2018 comm response\Plans\1841 FULL SET 12-17-18.pdf>

Memo to Planning Board:

1. We will provide evidence of financial capacity under separate cover.
2. Traffic generation for Senior Housing, Land Use Code 252 based on ITE Trip Generation Publication, 9th Edition:
Daily - 3.44 trips/unit = 158 trips
AM (Street) = 0.20/unit = 9 trips
AM (Generator) = 0.39/unit = 18
PM (Street) = 0.25/unit = 12
PM (Generator) = 0.35/unit = 16
Saturday = 0.31/unit = 14 trips
3. Sight Distance at entrances:
Route 202 – 50 mph posted speed limit: 582' left, 1,447' right (495' required)
Cook Road – 25 mph posted speed limit: 558' left, 662' right (200' required)
4. Traffic Impact Study – We respectfully request a waiver of this requirement based on the following factors: Marginal increase over the threshold requirement (158 daily trip vs 140 trips in Ordinance); Two entrances will be constructed; and sight distance exceeds MaineDOT and Ordinance Standards.
5. A nitrate plume plan is enclosed.
6. Portland Water District reviewed the plans and provided comments, which have been incorporated on the Utility Plan. We are forwarding the revised plans to PWD for their review in providing the ability to serve letter.
7. We are in the process of preparing the MaineDEP Stormwater Law and NRPA permits for the project and will submit these with the Final Plan.
8. The Grading Plan now notes which buildings require roof drain filter strips.
9. Street lights at the two dead-end roads have been removed from the plans. A street light has been added at the intersection of High Garden Drive and Eastwatch Drive.

10. The proposed roadway cross section has been revised to match the Town Standard for Major Private Road (24' pavement width vs 26' width shown on previous plan).
11. Test pit locations have been added to the plans.
12. Street trees have been added to the Site Plan as required by the Ordinance.
13. The requested note regarding no clearing of trees outside of designated limits within 5 years of Planning Board approval has been added to the plan.
14. Net Residential Density calculations have been added to the Site Plan.
15. Proposed landscaping is shown on Sheet C-1.0.
16. The Standard Private Road note and Standard Conditions of Approval will be shown on the Subdivision Plan, which will be prepared by Wayne T. Wood & Co. and submitted with the Final Plan.
17. The project site is located primarily in the Black Brook watershed. A small area at the west side of the property (0.8 ac) drains to the Pleasant River (See attached figure, "USGS Watersheds").

Memo from Jon Earle dated November 30, 2018:

Our response is provided on the attached PDF (Response to J Earle Comments).

Planning Board Meeting Abutter Comments:

The owner of the abutting property to the west (Melanie Gleason) questioned whether construction of the project would increase runoff and cause flooding on their property, specifically at a wetland located at the rear of their property near the power lines. As shown in the stormwater calculations, the pre-development area draining onto the abutting property at this location is 0.80 acres (subcatchment 4). The post-development area will be reduced to approximately 0.4 acres at this location. Post-development flows are calculated to be less than pre-development, as stated in the Stormwater Narrative. We do not anticipate any adverse downstream impacts. The remainder of the development property drains to the Black Brook watershed as noted in item 17 above.

I believe this addresses all the comments that were raised relative to the preliminary application. Please let me know if you want us to deliver copies of the revised plan set.

We are hopeful that this project can be on the agenda for the January 7, 2019 Planning Board meeting. Please contact us if you have any questions.

Thank you,

Larry Bastian, PE
Terradyn Consultants, LLC
41 Campus Drive, Suite 101
New Gloucester, ME 04260
Ph. 207-926-5111
Cell 207-838-6882
Fax 207-221-1317

TERRADYN RESPONSE TO COMMENTS NOTED IN BOLD ITALICS

From: Jonathan R. Earle
Sent: Friday, November 30, 2018 3:09 PM
To: 'Jeff Amos, P.E. '; Amanda L. Lessard
Subject: 18-31 Cook Road Retirement Community - Preliminary Plan Review Comments

Jeff & Amanda,

Below are my review comments for the project:

1. High Intensity Soils Waiver – The waiver request is reasonable from a stormwater standpoint based on the assumption of Class 'C' and 'D' soils in the wetland and non-wetland areas. In recent projects, we have asked the site evaluator to make a determination (based on the test pits) that the soils are generally consistent with the Medium Intensity Survey. This additional information would provide a stronger justification for the waiver.

Waiver approved 12/10/2018

2. Traffic:
 - a. Provide the sight distances at the site intersections on Cook and Gray Roads.
Noted on Sheet C-1.0, Site Plan
 - b. The AM & PM peak hour trip generation (3 AM and 5 PM) seems low. I'm coming up with 12 PM peak, 9 AM peak, and 158 daily trip using ITE land use code 252 for 46 units of senior adult housing. Our ordinance requires a traffic impact study for subdivisions which generate more than 140 daily trips.

We re-checked and came up with the same numbers

3. Provide the ability to serve determination from PWD prior to final approval when it becomes available.

Pending

4. Will a plan be provided showing the nitrate plumes at each disposal field location. A statement from Steve Marcotte was provided which indicates that the nitrate discharge will be less than 10 mg/L at the property line, but a nitrate plume plan would be helpful in support of this criteria.

Submitted 12/17/2018

5. Stormwater
 - a. Basic Standards – An erosion and sedimentation control plan has been provided that meet these standards.
 - b. General Standard – The narrative indicates that 99 % of impervious and 84 % of the developed areas are being treated by BMP which exceeds the standard. Table is shown to confirm these calculations on Sheet C 6.1
 - c. Flooding Standard – The narrative indicates the postdevelopment flows at the two study points are at or below predevelopment levels. The HydroCAD calculation for the predevelopment conditions do not include the study point reaches for each storm event. Please provide these to verify the table in the stormwater report narrative.

HydroCAD output for these study points is attached. Calculated flows match the previously submitted narrative.

- d. Phosphorus Standard – N/A

Jon Earle, PE
Town Engineer
Town of Windham

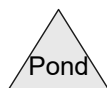
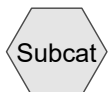
Office: (207) 894-5900, ext. 6124

SP#2

Study Point #2

SP#1

Study Point #1



Routing Diagram for 1841 PRE

Prepared by {enter your company name here}, Printed 12/11/2018
HydroCAD® 10.00-22 s/n 10466 © 2018 HydroCAD Software Solutions LLC

1841 PRE*Type III 24-hr 2 Year Rainfall=3.10"*

Prepared by {enter your company name here}

Printed 12/11/2018

HydroCAD® 10.00-22 s/n 10466 © 2018 HydroCAD Software Solutions LLC

Page 2

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Reach SP#1: Study Point #1

Inflow=7.55 cfs 2.278 af

Outflow=7.55 cfs 2.278 af

Reach SP#2: Study Point #2

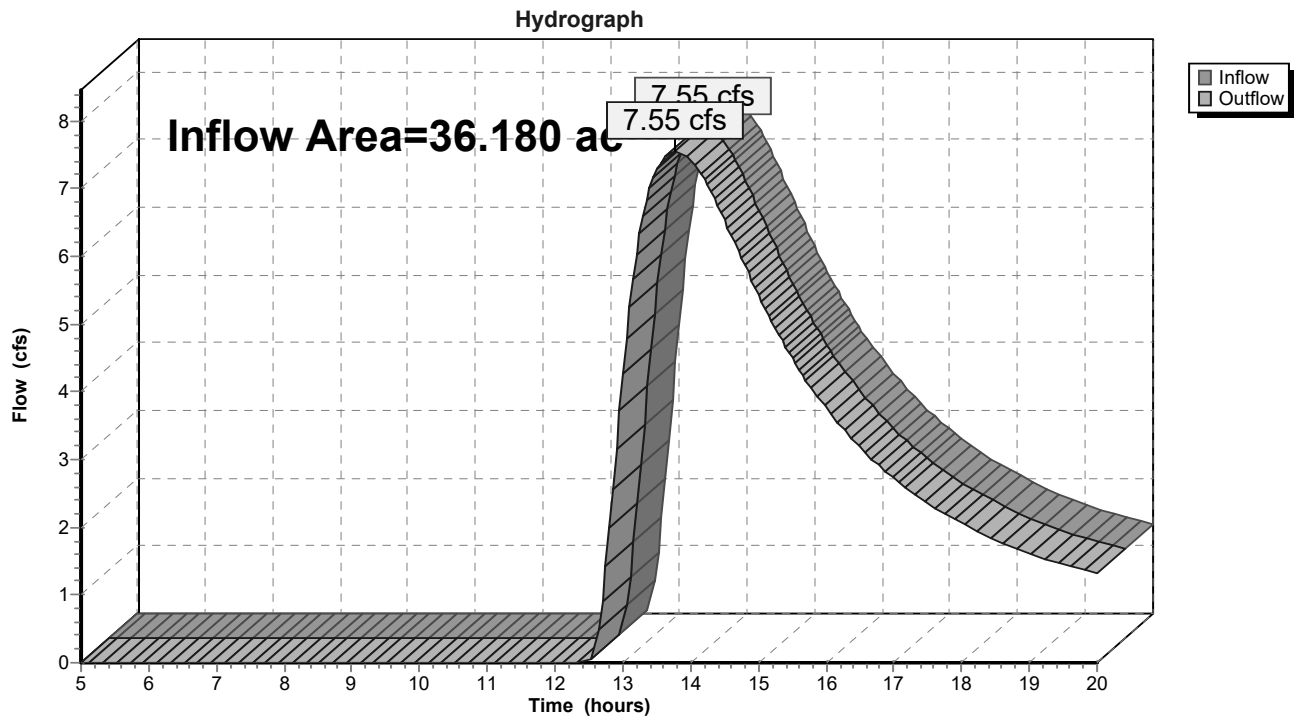
Inflow=0.51 cfs 0.046 af

Outflow=0.51 cfs 0.046 af

Summary for Reach SP#1: Study Point #1

Inflow Area = 36.180 ac, 4.06% Impervious, Inflow Depth > 0.76" for 2 Year event
Inflow = 7.55 cfs @ 13.78 hrs, Volume= 2.278 af
Outflow = 7.55 cfs @ 13.78 hrs, Volume= 2.278 af, Atten= 0%, Lag= 0.0 min

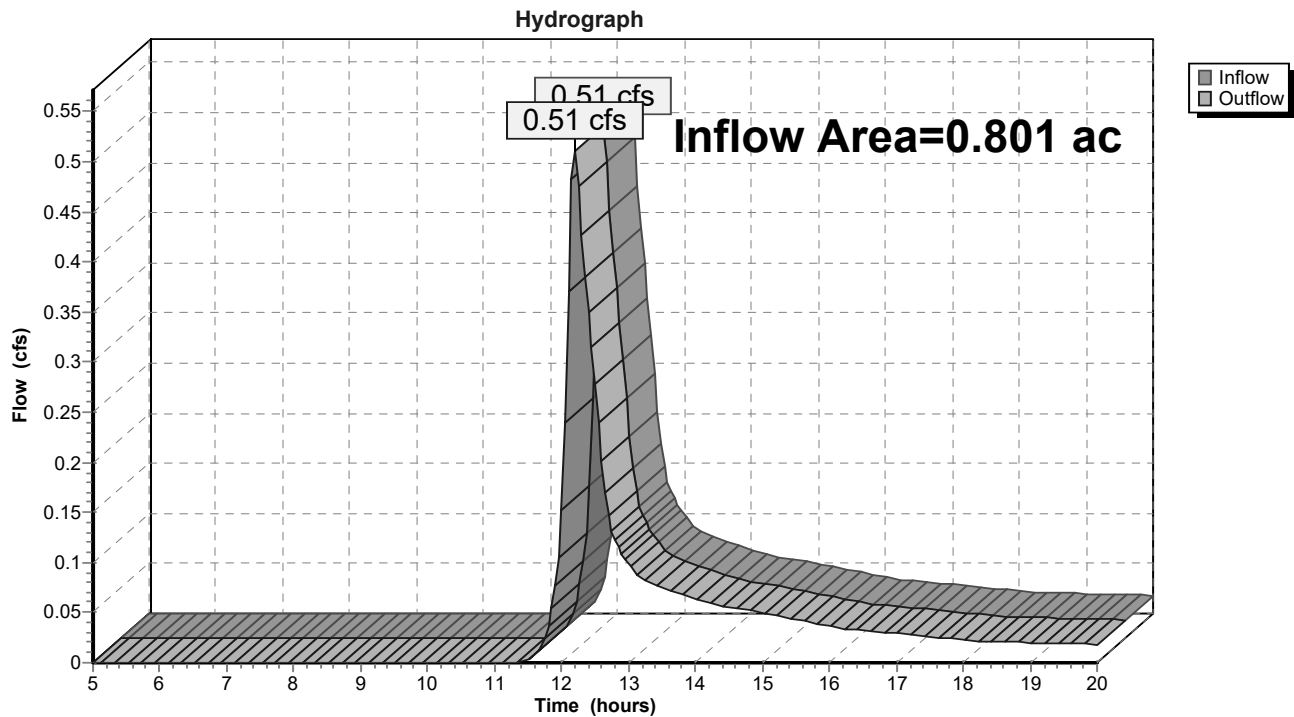
Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP#1: Study Point #1

Summary for Reach SP#2: Study Point #2

Inflow Area = 0.801 ac, 0.00% Impervious, Inflow Depth > 0.69" for 2 Year event
Inflow = 0.51 cfs @ 12.20 hrs, Volume= 0.046 af
Outflow = 0.51 cfs @ 12.20 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP#2: Study Point #2

1841 PRE*Type III 24-hr 10 Year Rainfall=4.60"*

Prepared by {enter your company name here}

Printed 12/11/2018

HydroCAD® 10.00-22 s/n 10466 © 2018 HydroCAD Software Solutions LLC

Page 5

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Reach SP#1: Study Point #1

Inflow=13.94 cfs 5.157 af

Outflow=13.94 cfs 5.157 af

Reach SP#2: Study Point #2

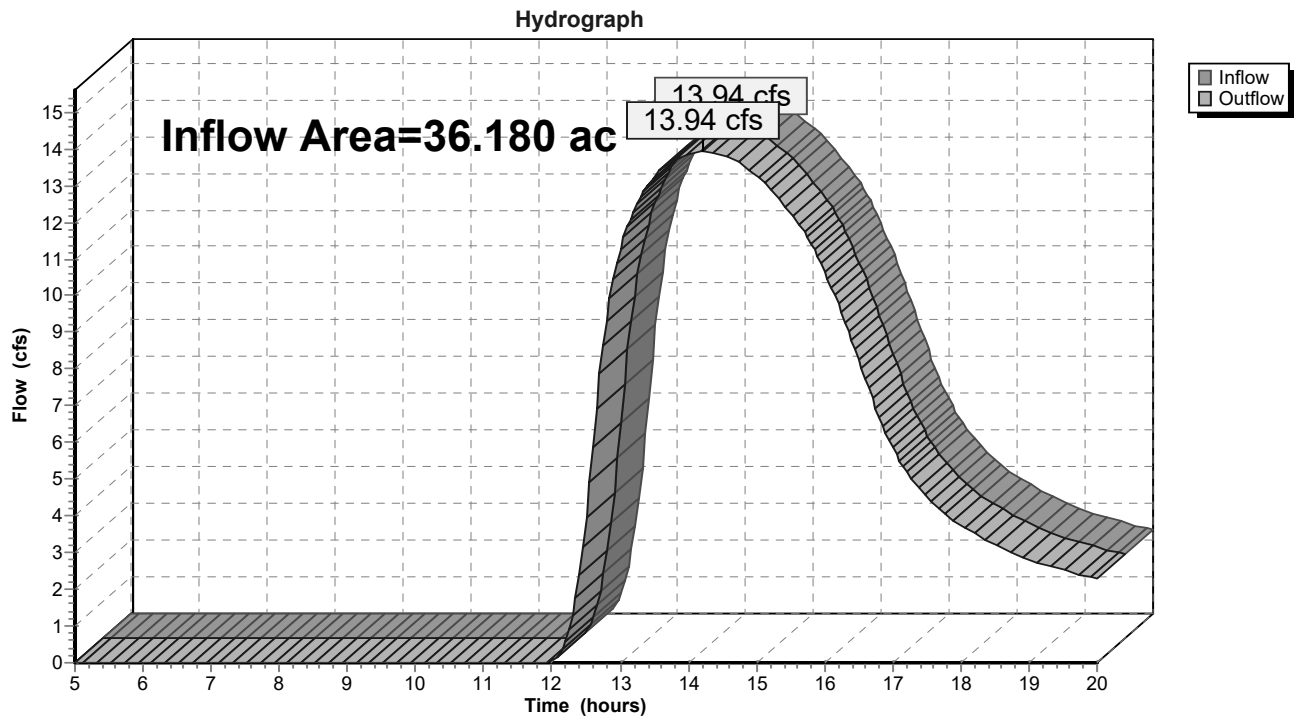
Inflow=1.28 cfs 0.107 af

Outflow=1.28 cfs 0.107 af

Summary for Reach SP#1: Study Point #1

Inflow Area = 36.180 ac, 4.06% Impervious, Inflow Depth > 1.71" for 10 Year event
Inflow = 13.94 cfs @ 14.22 hrs, Volume= 5.157 af
Outflow = 13.94 cfs @ 14.22 hrs, Volume= 5.157 af, Atten= 0%, Lag= 0.0 min

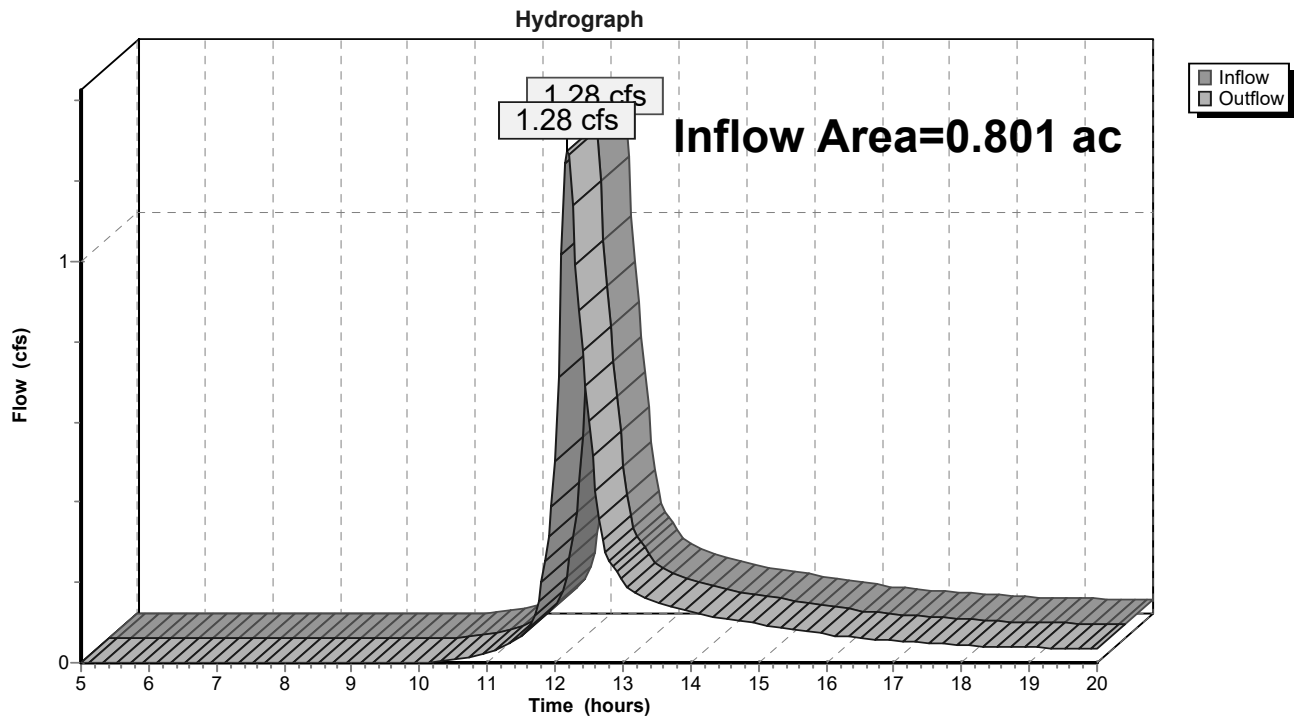
Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP#1: Study Point #1

Summary for Reach SP#2: Study Point #2

Inflow Area = 0.801 ac, 0.00% Impervious, Inflow Depth > 1.60" for 10 Year event
Inflow = 1.28 cfs @ 12.18 hrs, Volume= 0.107 af
Outflow = 1.28 cfs @ 12.18 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP#2: Study Point #2

1841 PRE*Type III 24-hr 25 Year Rainfall=5.80"*

Prepared by {enter your company name here}

Printed 12/11/2018

HydroCAD® 10.00-22 s/n 10466 © 2018 HydroCAD Software Solutions LLC

Page 8

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Reach SP#1: Study Point #1

Inflow=17.11 cfs 7.781 af

Outflow=17.11 cfs 7.781 af

Reach SP#2: Study Point #2

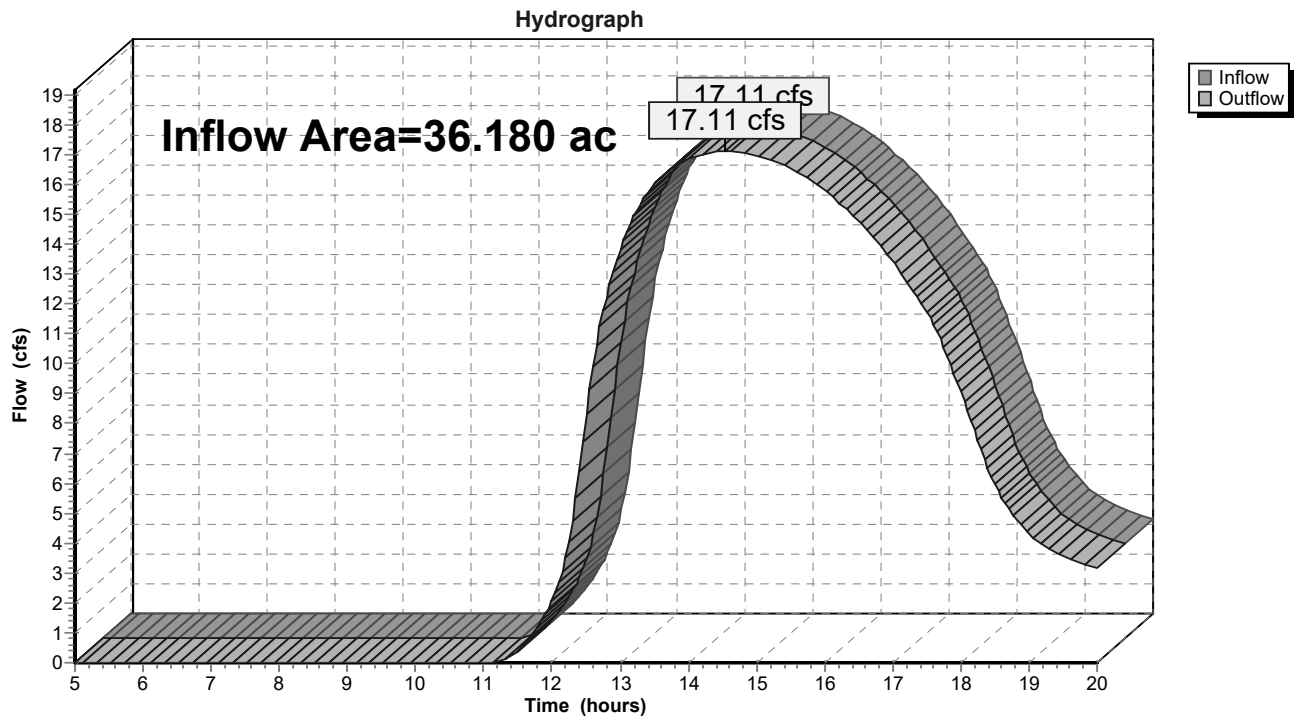
Inflow=1.98 cfs 0.163 af

Outflow=1.98 cfs 0.163 af

Summary for Reach SP#1: Study Point #1

Inflow Area = 36.180 ac, 4.06% Impervious, Inflow Depth > 2.58" for 25 Year event
Inflow = 17.11 cfs @ 14.55 hrs, Volume= 7.781 af
Outflow = 17.11 cfs @ 14.55 hrs, Volume= 7.781 af, Atten= 0%, Lag= 0.0 min

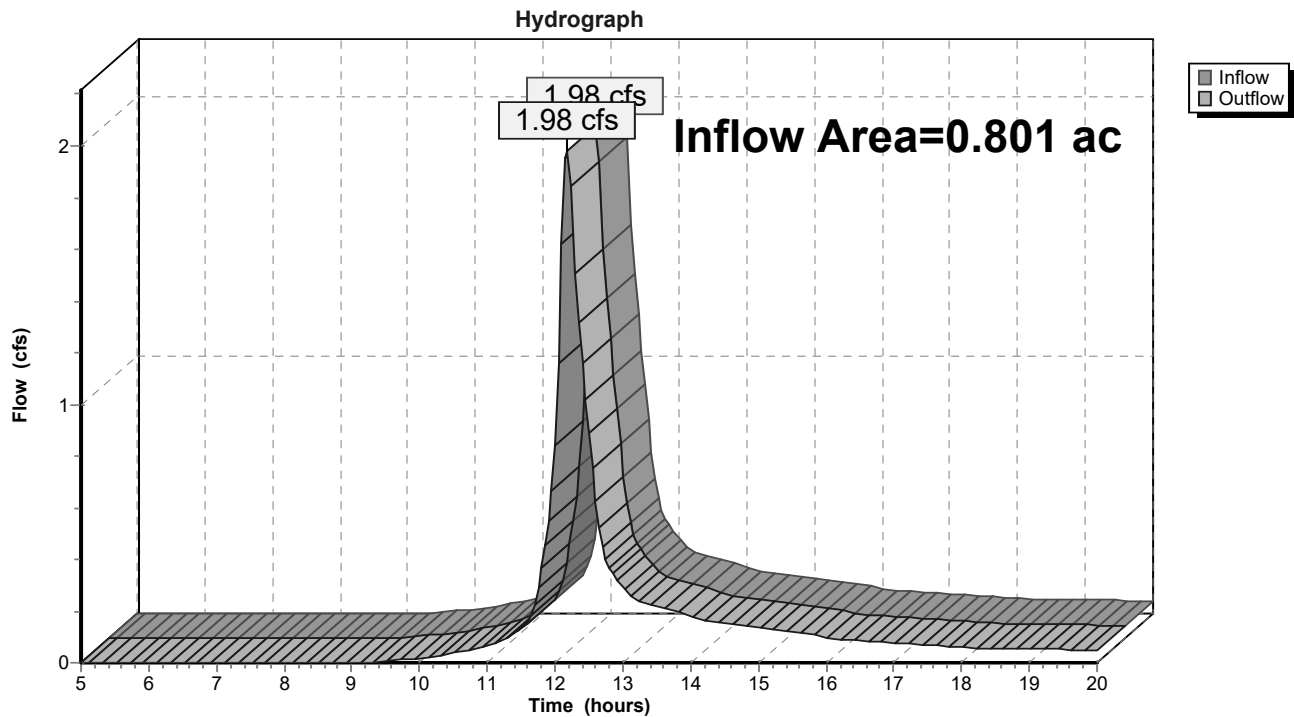
Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP#1: Study Point #1

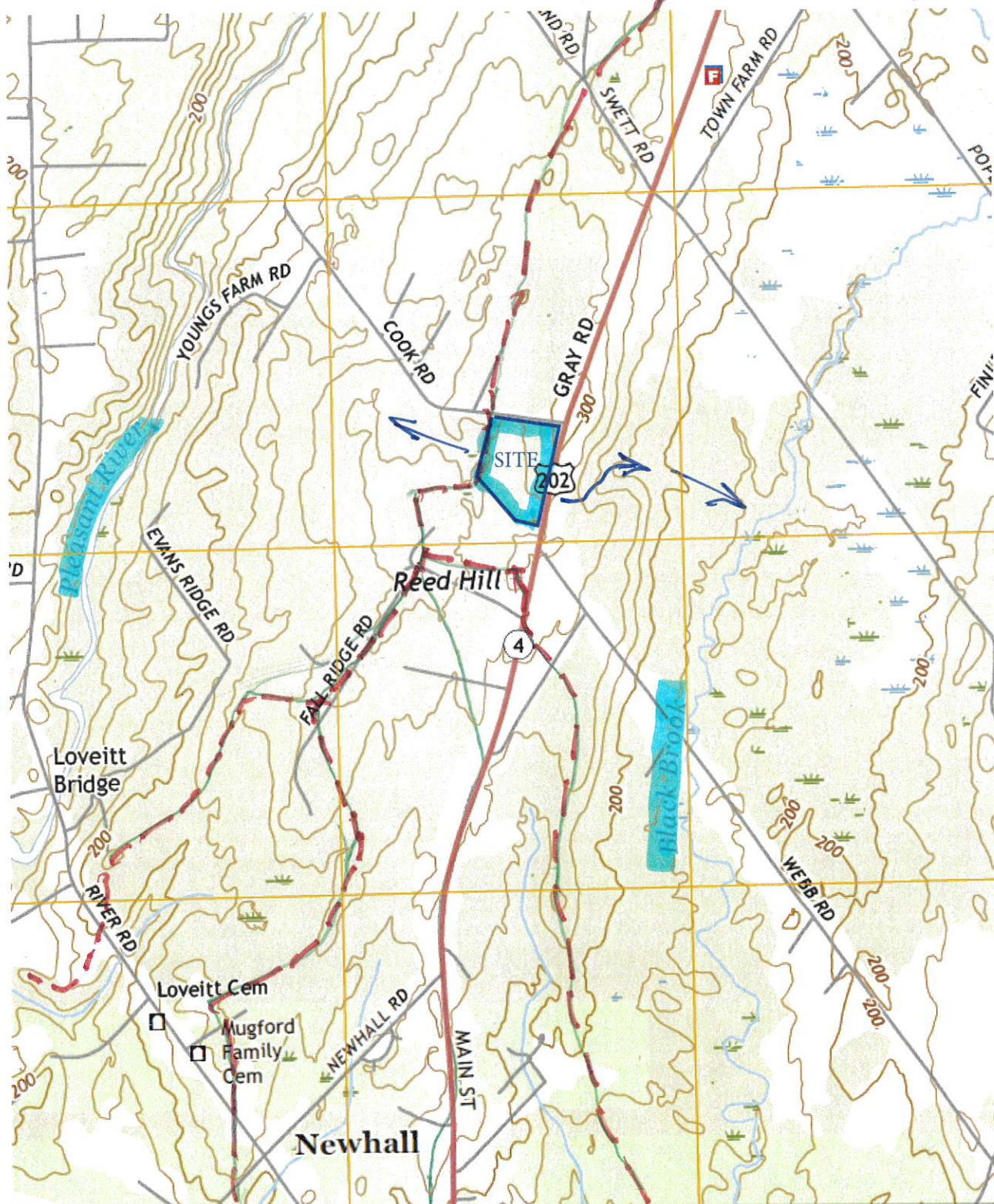
Summary for Reach SP#2: Study Point #2

Inflow Area = 0.801 ac, 0.00% Impervious, Inflow Depth > 2.44" for 25 Year event
Inflow = 1.98 cfs @ 12.18 hrs, Volume= 0.163 af
Outflow = 1.98 cfs @ 12.18 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP#2: Study Point #2

PLEASANT R. ← → BLACK BROOK



USGS WATERSHEDS

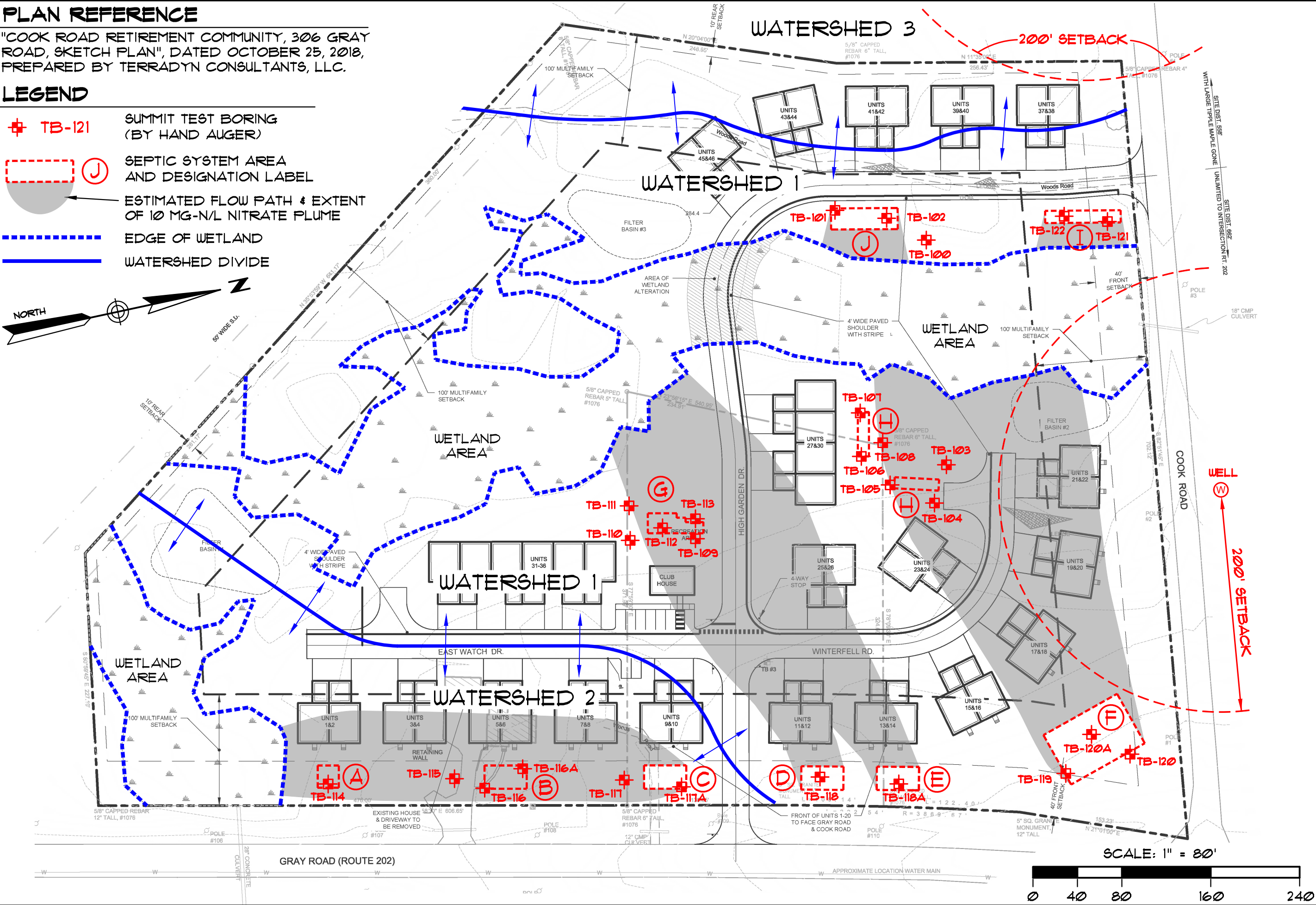
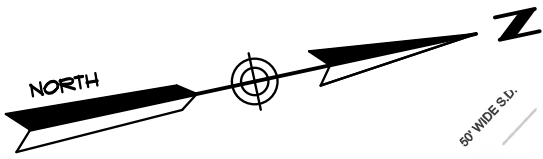
12.17.2018

PLAN REFERENCE

"COOK ROAD RETIREMENT COMMUNITY, 306 GRAY ROAD, SKETCH PLAN", DATED OCTOBER 25, 2018, PREPARED BY TERRADYN CONSULTANTS, LLC.

LEGEND

- ✚ TB-121 SUMMIT TEST BORING (BY HAND AUGER)
- Ⓜ SEPTIC SYSTEM AREA AND DESIGNATION LABEL
- ESTIMATED FLOW PATH & EXTENT OF 10 MG-N/L NITRATE PLUME
- - - EDGE OF WETLAND
- WATERSHED DIVIDE



PROJECT: COOK ROAD RETIREMENT COMMUNITY 306 GRAY ROAD - WINDHAM, ME	CLIENT: JIM CUMMINGS	TITLE: NITRATE-NITROGEN ASSESSMENT SITE PLAN	
		SCALE: 1" = 80'	DRAWN BY: KRF
DATE: DECEMBER 14, 2018		APPR BY: SBM	
173 PLEASANT STREET ROCKLAND, ME 04841 Tel: (207) 318-1161		SUMMIT GEOENGINEERING SERVICES	
145 LEBRON ST. - SUITE 101 LEWISTON, ME 04240 Tel: (207) 516-3313		PROJ.#: 18218	
FIGURE: 2			