TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION
Regular Meeting Agenda
Tuesday, October 20, 2020
6:30 p.m.

To join this hearing via the web or phone, follow the below instructions:	
Web **Go to www.webex.com** **On the top right, click Join** **Enter meeting information: 173 976 3851** **Enter meeting password: FaLL1031MumS** **Click join meeting**	**Phone** **Dial 1-408-418-9388** **Enter meeting number: 173 976 3851** **You can bypass attendee number by pressing #**

I. Call to Order
II. Roll Call
III. Seating of Alternates
IV. Adoption of Minutes: Regular Meeting September 15, 2020
V. Public Commentary
VI. Unfinished Business:
- **a. Reading of Legal Notice:**
- **b. New Public Hearings:**
  1. **SP 20-002** – Special Permit for additional vehicle storage, Applicant: Vachon Brooklyn, LLC, 512 Providence Road, Proposed construction of two 16' wide access drives to proposed new vehicle storage lots.
- **c. Continued Public Hearings:**
- **d. Other Unfinished Business:**
  1. **SP 20-002** – Special Permit for additional vehicle storage, Applicant: Vachon Brooklyn, LLC, 512 Providence Road, Proposed construction of two 16' wide access drives to proposed new vehicle storage lots. (Public hearing scheduled for September 15, 2020.)
  2. **SD 20-003** – 3-lot Subdivision, Applicant: David and Nancy Bell, 6 acres on the east side of Prince Hill Road (131 Prince Hill Road, Map 34, Lot 52) in the RA Zone; Proposed creation of 3 residential buildings lots, two sharing a common driveway.

VII. New Business:
- **a. Applications:**
  1. **ZC 20-003 –** Zone Boundary Change from RA to VC; Applicant: Ronald Sorel, Location: 94-102 Hartford Road, Approximately 4 acres on the north side of Hartford Road.
- **b. Other New Business:**

VIII. Reports of Officers and Committees:
- a. Staff Reports
- b. Budget Update
- c. Correspondence.
- d. Chairman's Report.

IX. Public Commentary
X. Adjourn

Michelle Sigfridson, Chairman

TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION
Regular Meeting
Tuesday, September 15, 2020
6:30 p.m.

To join this meeting via the web or phone, follow the below instructions:	
Web **Go to www.webex.com** **On the top right, click Join** **Enter meeting information: 173 885 3793** **Enter meeting password: 6HxYpaiym67** **Click join meeting**	**Phone** **Dial 1-408-418-9388** **Enter meeting number: 173 885 3793** **You can bypass attendee number by pressing #**

MINUTES

I. Call to Order – Carlene Kelleher, Acting Chair, called the meeting to order at 6:35 p.m.

II. Roll Call – Carlene Kelleher, Earl Starks, Alan Fitzgerald, Austin Tanner, Charles Sczuroski. Michelle Sigfridson was absent with notice.

Staff Present: Jana Roberson, Director of Community Development; Rick Ives, First Selectman and ex officio Member of the PZC.

Also Present: Keith Crossman, 340 Christian Hill Road; David Held, Provost & Rovero; Paul Terwilliger, P.C. Survey Associates; Paul Archer, Archer Surveying.

III. Seating of Alternates – None.

IV. Adoption of Minutes: Regular Meeting September 2, 2020

Motion was made by A. Tanner to accept the Minutes of the Regular Meeting of September 2, 2020. Second by A. Fitzgerald. No discussion. Motion carried unanimously by voice vote (5-0-0).

V. Public Commentary – None.

Motion was made by A. Fitzgerald to add the following to the PZC September 15, 2020 Agenda:
- Item VII.b.1. – Request for extension to record the mylars for 6 lot subdivision on Day Street.
- Item VII.b.2 - Authorization of back-up Zoning Enforcement Officer.

Second by A. Tanner. No discussion.
Roll Call Vote: A. Tanner – yes; E. Starks – yes; A. Fitzgerald – yes; C. Sczuroski - yes; C. Kelleher – yes. No discussion. Motion carried unanimously (5-0-0).

VI. Unfinished Business:

a. Reading of Legal Notice:

J. Roberson read aloud the Legal Notice for ZC 20-002 and SP 20-002.

b. New Public Hearings:

1. **ZC 20-002** – Zone Boundary Change from R-30 to RA, Applicant: Keith Crossman, 340 Christian Hill Road, proposed adjustment to 6.75 acres on east side of Christian Hill Road.

   Keith Crossman was present and explained that he would like to change the zoning to Residential Agriculture because he would like to pursue his childhood dream of starting a hobby farm with possibly more than the zone allows now (no large livestock).

   Ms. Roberson displayed an aerial map showing the parcel and surrounding neighborhood (included in packets to Commission Members). She explained that the parcel is largely forested, the front is open and power lines go through it.

   Ms. Roberson displayed the tax map superimposed on the zoning map and orientated the area indicating the zones. She explained that the bock of R-30 (84 parcels with Mr. Crossman's being the largest) is surrounded by RA. She noted that Mr. Crossman's parcel is somewhat anomalous in the zone.

   Ms. Kelleher asked for comments from the public. There were none.

   Ms. Kelleher asked for comments from the Commission. There were none.

   A. Fitzgerald motioned to approve the Application (there was no second). Ms. Roberson noted that the public hearing had not been closed yet. Ms. Kelleher stated that if there were no further comments from the Commission, the motion would be appropriate under Agenda Item VI.d.4. She then moved on to open the next public hearing (SP 20-002).

2. **SP 20-002** – Special Permit for additional vehicle storage, Applicant: Vachon Brooklyn, LLC, 512 Providence Road, Proposed construction of two 16' wide access drives to proposed new vehicle storage lots.

   Ms. Roberson stated that the agent for the Applicant has requested that the opening of the public hearing be delayed due to an error in the notice requirement. They had not posted the sign. The public hearing for this Application will be moved to the next regular meeting of the PZC on October 7, 2020 at 6:30 p.m.

c. Continued Public Hearings:

1. **SPG 20-001** – Gravel Special Permit, Paul R. Lehto, 71.34 acres on the east side of Allen Hill Road (Map 32, Lot 148) in the RA Zone; Excavation of approximately 90,000 cubic yards of sand and gravel on 6.7 acres.

   David Held, Professional Engineer and Land Surveyor with Provost & Rovero, represented the Applicant. Mr. Held stated that he had nothing new to present and that the reason for the continuation of the public hearing was due to waiting for the motion to be drafted. He confirmed that he had received the revised draft motion from Ms. Roberson earlier in the day and that he had reviewed it.

   Mr. Held commented that the main item of discussion had been clarification of how the bonding requirement would be worded regarding repairing the access road at the conclusion of the excavation. He suggested more discussion for clarification.

There was discussion regarding Condition #2 of the draft motion which was read aloud by Ms. Kelleher. Suggested changes to the draft language were considered, but it was decided, by a poll of the Commission (see below), to leave the language as it had been drafted by Ms. Roberson and Peter Alter, Land Use Attorney. Ms. Kelleher had asked if the Commission would like to add language suggested by Ms. Roberson "…$38,000 to repave Riverwalk Drive with a 2" overlay, ***if necessary for repairs***, as directed by the town's consulting engineer." Results of poll: " A. Tanner – no; E. Starks – no; A. Fitzgerald – no; C. Sczuroski – no; C. Kelleher – no. Unanimous (5-0-0).

Ms. Roberson asked if there would be any backfilling. Mr. Held explained that there is no over-excavation proposed and it is not counted for in any of the quantities with the proposed contours shown. However, he explained that, although they don't anticipate any, there may be a small amount if the Applicant wants to flatten an area out. He said they don't anticipate any significant backfill. Ms. Roberson referred to Draft Condition #7 relating to backfilling. Mr. Held stated that it would be appropriate to leave that Condition in.

Motion was made by A. Tanner to close the public hearing for **SPG 20-001** – Gravel Special Permit, Paul R. Lehto, 71.34 acres on the east side of Allen Hill Road (Map 32, Lot 148) in the RA Zone; Excavation of approximately 90,000 cubic yards of sand and gravel on 6.7 acres. Second by A. Fitzgerald. No discussion. Motion carried unanimously by voice vote (5-0-0).

d. Other Unfinished Business:

1. **SPG 20-001** – Gravel Special Permit, Paul R. Lehto, 71.34 acres on the east side of Allen Hill Road (Map 32, Lot 148) in the RA Zone; Excavation of approximately 90,000 cubic yards of sand and gravel on 6.7 acres.

Motion was made by A. Tanner to approve the Gravel Special Permit application of Paul Lehto limited to 6.7 acres within the 71.34 acres on the east side of Allen Hill Road (Map 32, Lot 148), identified in the files of the Brooklyn Land Use Office as SPG 20-001. This Gravel Special Permit is to excavate and remove up to 90,000 cubic yards of sand and gravel from the 6.7 acre site, with the finding that the standards of Section 6.O - Excavation Operations and Section 9.D -Special Permit Applications are satisfied in accordance with all final documents and testimony submitted with the application and subject to and including the following conditions:

1. The Inland Wetlands and Watercourses Commission approval with conditions and the Planning and Zoning Commission approval with conditions must be included on the final recorded special permit plans. Draft final approved plans shall be printed on paper and submitted to Town Staff for review prior to printing on archival material. The final approved plans bearing the seal and signature of the appropriate professionals, signed by Commission Chairs, shall be recorded along with the Special Permit in the office of the Town Clerk.
2. Prior to the commencement of any activity undertaken in accordance with this approval, a performance bond in favor of the Town of Brooklyn in the amount of $115,000 will be submitted to the Brooklyn Land Use Department. The form and content of the bond shall be reviewed and approved by Town Staff. The bond shall include: $67,000 to restore the 6.7 acre excavation area, $10,000 to repair erosion on the gravel access road as directed by the Town's consulting engineer, and $38,000 to repave Riverwalk Drive with a 2" overlay as directed by the Town's consulting engineer. Once the repair work on the gravel access road and Riverwalk Drive is completed to the reasonable satisfaction of the Town's consulting engineer, the portion of the bond attributed to that particular activity can be released. The Town shall document the condition of Riverwalk Drive and the gravel access road prior to the commencement of work on the site. No activity shall occur on the site until the bond has been provided in final form to the Town and approved. Except

as otherwise provided, the bond shall remain in place for the life of the operation including restoration of the property to the satisfaction of the Town unless this requirement is subsequently modified by the Planning and Zoning Commission.

3. Prior to the commencement of any activity undertaken in accordance with this approval, the limit of disturbance shall be flagged in the field by a licensed land surveyor and such flags shall be posted high above grade on trees or on construction fence so as not to be disturbed by clearing or excavation activities. The limits of disturbance markings shall remain in place for the duration of the excavation activity and shall be replaced if disturbed. Additionally, property lines within 300' of the area of disturbance shall be flagged. All flagging as required by this approval shall be checked no less frequently than quarterly by the operator to ensure they are in place and shall be restored if disturbed or removed.
4. Prior to the commencement of any activity undertaken in accordance with this approval, erosion and sedimentation control measures as shown on the approved plans shall be installed to the satisfaction of the Land Use Office. The Land Use Office shall have the authority to direct that additional erosion and sedimentation control measures be installed if deemed necessary to maintain adequate protection from erosion and sedimentation.
5. Excavation activity and the volume of material to be excavated shall be as shown on the plans titled "Proposed Gravel Excavation Allen Hill Road Brooklyn, Connecticut" prepared by Provost & Rovero dated June 2, 2020, and as further revised by these conditions. The excavation area is limited to 6.7 acres and the volume of material is not to exceed a total of 90,000 cubic yards. No on-site processing of excavated material is permitted and no earth material shall be imported to the site except as is required for restoration of the site in accordance with Condition 7 below.
6. Restoration shall commence upon completion of each phase of excavation as provided in the Zoning Regulations and as noted in the Restoration Notes on page 5 of the approved plans.
7. Any fill that is imported to the site for the purpose of backfilling the excavation area shall be "clean" as defined by the CT DEEP Regulations of State Agencies Sec. 22a-209-1. Prior to the acceptance of any imported fill to be used to restore the site, the source of the imported fill and the proper certification as to the condition of the fill shall be provided in writing to the Town. No imported fill may enter the site unless proper documentation is provided in advance to the Laud Use Office.
8. Dust shall be controlled throughout the year using water or calcium chloride treatment on surfaces as appropriate for conditions. All trucks exiting or entering the site must have their tarp covers closed. Sweeping of the entrance area shall occur regularly and as needed. The Land Use Office shall have the authority to direct that additional dust control measures be installed and employed if deemed necessary to maintain adequate protection from ambient dust within or beyond the site.
9. Written reports of the volume of excavated materials shall be submitted by the permittee to the Brooklyn Zoning Enforcement Officer quarterly in March, June, September, and December.
10. The permit renewal date is September 15, 2022. The renewal procedure shall be as specified in Section 6.O.7 of the Brooklyn Zoning Regulations (effective 10-15-2019).

Second by E. Starks.

Discussion: Mr. Tanner asked for clarification regarding whether portions of the bond can be released separately (e.g. if the gravel access road and Riverwalk Drive are completed). Ms. Roberson explained that, although it is awkward the way it is written, the idea is that the bond can be released in phases, but it would have to be by action of the Commission. She said that it probably won't be a cash bond.

Roll Call Vote: E. Starks – yes; A. Fitzgerald – no; C. Sczuroski - yes; A. Tanner - yes; C. Kelleher – yes. Motion carried (4-1-0).

2. **SD 20-002** – 3-lot Subdivision, Applicant: David and Nancy Bell, 25.65 acres on the east side of Church St. (Map 35, Lot 4) in the RA Zone; Proposed creation of 3 residential buildings lots on a common driveway.

   Paul Terwilliger, Licensed Land Surveyor with P.C. Survey Associates, represented the Applicant and gave an overview:

   - IWWC approval has been received.

- This is the remaining portion of the Kingswood Estates Subdivision that was done in the 1980's.
- Comments from Syl Pauley, Consulting Engineer:
  - There were two wetlands related comments. IWWC granted approval.
  - Drainage calculations for the cross drain were done by Norm Thibeault of Killingly Engineering and have been submitted to the Town. Mr. Terwilliger stated that he has not heard and further comments, so he assumes that comment has been addressed satisfactorily.

  Ms. Roberson referred to page 73 of 120 of the packet to Commission Members (the second and final review by Mr. Pauley). She confirmed that submitting the drainage report addresses Mr. Pauley's Item #2. She confirmed that Item #1 is a IWWC concern and that they must be satisfied becaused they issued an approval with only the standard conditions.

  Ms. Roberson displayed the plan that shows the two conservation easements most clearly (Open Space Conservation Easement A - .59 acres and Area B - 6.43 acres. She stated that this more than meets the open space dedication requirement of 15 percent. This was the recommendation of the Conservation Commission. She commented that the legal instrument should be a deed restriction rather than an easement She had forwarded a copy (of the one used for Mr. Weaver on Tripp Hollow Road as well as others) to Mr. Terwilliger, earlier in the day, to review with the Applicant. Mr. Terwilliger stated that he had not had a chance to review it with the Applicant, however, he had looked at it and explained that some tweaking would need to be done to address this particular scenario. He said that it seems to be what they were looking for as the solution to address this easement. It would be more of a covenant over the property rather than an easement that the Town would have possession of. Ms. Roberson explained that it is basically a permanent restriction on the land that says that you can never develop it. She asked Mr. Terwilliger if he thought the Applicant would have a desire to retain the right to hunt on the property (as others have in the past). Mr. Terwilliger stated that since it is a 16-acre piece of property, the potential buyer may wish to retain that right. Mr. Terwilliger noted that the property is referred to as a lot, but that it is not a separate lot, it is an area across the lot. Ms. Roberson explained that it is part of the standard template and that the deed restriction would reflect the fact that this is an area within a parcel. Ms. Roberson explained that the final language of the legal document is not needed at this meeting, but the content should be discussed. She read aloud the list of ten restrictions in the standard template which she had sent to Mr. Terwilliger earlier in the day. She omitted the last sentence of number ten as she said that it is not appropriate for this Application.

  Mr. Terwilliger voiced concern regarding the following:
  - Hunting
  - Gaining public access

    Mr. Terwilliger explained that if you can't clear anything, you can't put a trail in to get to the back. He said that in his original submission, he had left a provision for some kind of means of

access to the back/other side of the easement area in a suitable spot.
Ms. Roberson asked Mr. Terwilliger to explain how he delineated the conservation areas. Mr. Terwilliger explained that he created a corridor for the two wetland areas where the ponds are so that migrating species could get from one to the other utilizing the undisturbed land.

- No agricultural use of the land. He said there are prime farmland soils in that area.
  Ms. Roberson stated that she does not think it prohibits agriculture. But, due to the slopes, it doesn't seem likely that they would be clearing for cropland.
  Mr. Terwilliger stated that he would let the Commission decide what they want to do around agriculture.

There was discussion regarding possibly continuing the public hearing and about agriculture. Ms. Kelleher asked the Commission Members and Ms. Roberson to let Mr. Terwilliger know of anything else that he should prepare for the next meeting so that nothing new would be brought up then. There were no comments from the Commission. Ms. Roberson stated that it is just deciding what to include in the restrictive covenant. She feels that it is not likely, due to steep slopes, that there would be any agriculture on the property. She suggested that the language regarding agriculture could be removed. There were no objections.

Mr. Terwilliger stated that if the Commission is agreeable to removing the agricultural language, he feels that the Applicant would accept the language that gets drafted.

Ms. Roberson asked that Mr. Terwilliger give clear guidance regarding the list of restrictions. She re-read aloud the list of restrictions leaving out agriculture, hunting, potential future public access (which she thinks was written for a specific property and not part of the standard template).
Ms. Roberson asked the Commission if they were comfortable with the following list:

- No structures.
- No motorized vehicles.
- No herbicides or pesticides.
- No dumping.
- No fires.
- No mining or natural resource extraction.
- No harvesting of timber or firewood except as part of a forest management plan.

Poll of the Commission: A. Fitzgerald – yes; C. Sczuroski – no (because of hunting/trapping); A. Tanner – yes; E. Starks – yes; C. Kelleher – yes. (4-1-0).

Mr. Terwilliger asked about the language in Condition #4 of draft motion regarding stone walls. Ms. Roberson read it aloud and explained that it addresses cutting through for the driveway and what they ask is to rebuild the edges in the same style as the wall (the ends of the wall where you have to break through). Ms. Roberson displayed the Lot Development Plan and

the next sheet. Mr. Terwilliger indicated which stone walls would be impacted by the driveway and the development. Ms. Roberson stated that stone walls had been used as property lines where it makes sense to. The stone walls that will be impacted are not along the frontage and are not what is seen when riding by.

Ms. Kelleher asked if there were any other comments regarding stone walls. There were none. She asked if everyone was okay with the language as is. There were no objections voiced.

Motion was made by A. Fitzgerald to approve the Subdivision application of David and Nancy Bell, identified in the files of the Brooklyn Land Use Office as SD 20-002, to create three residential lots on a shared driveway on 25.65 acres on the east side of Church St., (Map 35, Lot 4) in the RA Zone in accordance with all final plans, documents and testimony submitted with the application and including the following conditions:

1. Prior to the endorsement by the Commission of the Final Subdivision Plan(s) for filing in the office of the Town Clerk:
    a. The Inland Wetlands and Watercourses Commission approval with conditions and the Planning and Zoning Commission approval with conditions must be included on the final recorded subdivision plans. Draft final approved plans shall be printed on paper and submitted to Town Staff for review prior to printing on archival material. The final approved plans bearing the seal and signature of the appropriate professionals, signed by Commission Chairs, shall be recorded in the office of the Town Clerk.
    b. A Shared Driveway and Maintenance Agreement for the shared driveway in a form acceptable to the Town Attorney shall be filed simultaneously with the recording of the subdivision mylars in the office of the Town Clerk.
    c. A Conservation Deed Restriction for conservation area "A" comprising 0.59 acres on Lot 17 and conservation area "B" comprising 6.43 acres on Lots 18 and 19 in a form acceptable to the Town Attorney shall be filed simultaneously with the recording of the subdivision mylars in the office of the Town Clerk.
    d. All boundary pins and monuments shall be set and field verified by the surveyor.
2. Prior to the issuance of a Zoning Permit on any lot:
    a. The developer shall notify the Zoning Enforcement Officer and Town Planner at least seven days in advance of any site work to schedule a pre-construction meeting.
    b. Driveway permits must be obtained from the Road Foreman in accordance with the adopted policy concerning driveways.
    c. The applicant and/or individual lot developers shall minimize impacts to natural features both on private lots and in the Town of Brooklyn r.o.w. to the greatest extent possible. This shall include but is not limited to the preservation of stonewalls, the protection of mature trees lining any public road, and the minimization of clearing and grading.
    d. No stonewalls, mature trees, or ledge within the r.o.w. shall be removed or modified unless necessary for safety. The responsibility of clearing, grubbing, blasting, and earthmoving within the Town of Brooklyn r.o.w. shall be the responsibility of the individual lot developer.
    e. Any cutting of trees greater than 30" d.b.h. for sightlines shall require prior approval by the Town of Brooklyn Tree Warden upon finding that the removal of trees is unavoidable to guarantee adequate driveway sightlines.
3. Stonewalls must be finished on the edges prior to the issuance of a Certificate of Zoning Compliance on any lot containing a stone wall.

Second by E. Starks. No discussion.
Roll Call Vote: C. Sczuroski - yes; A. Tanner - yes; E. Starks – yes; A. Fitzgerald – yes; C. Kelleher - yes. Motion carried unanimously (5-0-0).

3. **SD 20-003** – 3-lot Subdivision, Applicant: David and Nancy Bell, 6 acres on the east side of Prince Hill Road (131 Prince Hill Road, Map 34, Lot 52) in the RA Zone; Proposed creation of 3 residential buildings lots, two sharing a common driveway.

   Paul Terwilliger, Licensed Land Surveyor with P.C. Survey Associates, represented the Applicant and gave an overview:

   - IWWC approval has been received last week.
   - They are proposing a fee-in-lieu of open space dedication as requested by the Commission. However, they have not been able to obtain an appraisalas of this date. Mr. Terwilliger asked if the Town's appraisal for the assessment of the lots could be used to come up with a number. Using ¾ of the appraised land value on the Assessor's card because it is for six acres, he multiplied it by ten percent and divided that by three. He suggested $1,500 per lot to be paid at the time of the sale of each lot (a total of $4,500 for the parcel). He said the Applicant is amenable to that amount.

     Discussion ensued. Rick Ives commented that the assessment is five years old and that the Town is being revalued at this time. Values have changed. Ms. Roberson commented that it is for eight acres, not six acres and she checked the Regulations, "The fair market value shall be determined by the appraiser jointly selected by the Commission and the applicant." She stated that an appraisal may come in at a lower value than the current appraisal for tax purposes. Ms. Kelleher asked for comments from the Commission. Mr. Fitzgerald and Mr. Sczuroski expressed that they feel an appraisal should be obtained.

     Ms. Kelleher called for a poll of the Commission as to whether they agree that an appraisal should be obtained:

     Results of poll: A. Fitzgerald – yes; C. Sczuroski – yes; E. Starks – yes; A. Tanner – yes (he doesn't want to set a precedent); C. Kelleher – yes.

     Ms. Kelleher stated that the public hearing would be continued to the next meeting. Mr. Terwilliger stated that as long as they can get an appraisal by the next meeting that should be good.

     Ms. Roberson displayed the plan showing Lot 3 and she commented regarding stonewalls. She had visited the site and took a picture. She indicated where clearing and grading would need to take place. She said that there isn't much stone wall along Prince Hill Road with the exception of the spot where the driveway goes in. She doesn't think there is another location for the driveway. She noted a small retention area and some grading in the Town r.o.w. that would lead to the removal of more stone wall. She was happy that nothing needed to be removed to get a sightline, but she asked if there were an alternative to cutting down some of the stone wall (which is 3-4 feet tall and in good shape) as this section of the wall will be much more visible after clearing. Mr. Terwilliger stated that they will see if they can work out something or maybe they could rebuild that section after the grading is done.

Ms. Kelleher asked if there are any other issues to discuss. There were no comments. Ms. Kelleher stated that the public hearing is tabled until the next meeting (October 7, 2020).

4. **ZC 20-002** – Zone Boundary Change from R-30 to RA, Applicant: Keith Crossman, 340 Christian Hill Road, proposed adjustment to 6.75 acres on east side of Christian Hill Road.

Motion was made by A. Fitzgerald to approve ZC 20-002 – Zone Boundary Change from R-30 to RA, Applicant: Keith Crossman, 340 Christian Hill Road, proposed adjustment to 6.75 acres on east side of Christian Hill Road, with the finding that it is suitable for the location, will aid in the protection of protect public health, safety, welfare, and property values and is consistent with the Plan of Conservation and Development and the intent of the Zoning Regulations. The zone boundary change shall become effective 15 days from the date of publication on the website. Second by E. Starks. No discussion.
Roll Call Vote: A. Tanner – yes (He stated that he does not like the idea of cutting a different zone out of the middle of another zone. He would rather see it contiguous, but this is a big parcel in a small zone.); E. Starks – yes; A. Fitzgerald – yes; C. Sczuroski - yes; C. Kelleher - yes.
Motion carried unanimously (5-0-0).

5. **SP 20-002** – Special Permit for additional vehicle storage, Applicant: Vachon Brooklyn, LLC, 512 Providence Road, Proposed construction of two 16' wide access drives to proposed new vehicle storage lots. (Public hearing scheduled for September 15, 2020.) – No discussion.

6. **SD 20-004** – 2-lot Subdivision, Applicant: A. Kausch & Sons, LLC, 4.07 acres on the west side of Tripp Hollow Road (Map 15, Lot 4) in the RA Zone; Proposed creation of 2 residential buildings lots.

   Ms. Kelleher asked if Ms. Roberson had a chance to review this Application. Ms. Roberson stated that she had reviewed it. She said there is no open space proposed and that the Applicant would like to propose fee-in-lieu of open space (ten percent of the value of the land prior to subdivision).

   Paul Archer, Archer Surveying, represented the Applicant. He explained that Mr. Kausch purchased the property in December 2019 at a price of $32,000 (3.5 acres). He suggested $32,000 multiplied by ten percent is $3,200, divided by two lots, so $1,600 per lot as open space fee at the time that each lot is transferred. He stated that no appraisal had been done prior to Mr. Kausch purchasing the property.

   Ms. Roberson spoke with the Assessor earlier in the day about the sale price and the Assessor felt that it was appropriate price.

   Mr. Tanner asked about the difference in acreage 3.50 acres vs. 4.07. Mr. Archer explained Mr. Kausch owns a piece of land that abuts to the west (comes off of Tatnic Road). Mr. Archer referred to a boundary line modification that had been done which allowed for the two lots (parcel history was included in packets to Commission Members). There was discussion regarding adding the additional acreage (which Mr. Archer stated is all wetlands) to figure the fee-in-lieu of open space which was determined to be $1,808 per lot instead of the $1,600 per lot proposed by Mr. Archer.

Ms. Kelleher commented that the Commission would need to decide whether to require an appraisal or to accept what Mr. Archer proposed. There was discussion regarding amending the fee-in-lieu to include the additional acreage. The amount of $1,808 fee-in-lieu for each lot was agreed upon.
Do you want to accept Mr Archer's amended fee-in-lieu proposal of $1,808 per lot? Results of Poll: A. Tanner – yes; E. Starks – yes; A. Fitzgerald – yes; C. Sczuroski – not present at this time due to technical difficulties; C. Kelleher – yes. (4-0-0).

Ms. Kelleher asked if Ms. Roberson had any further comments regarding her review of this Application. Ms. Roberson stated that all of the standard language regarding stone walls, street trees and such is applicable, the sightlines are acceptable, it is just really squeezed up on the wetlands, but the IWWC approved it. She said that this piece of land is about 50 percent wetlands and the developable space is between the wetlands and the road. She said that the concerns are addressed to the extent that they can be.

Motion was made by E. Starks to approve the Subdivision application of A. Kausch & Sons, LLC, identified in the files of the Brooklyn Land Use Office as SD 20-004, to create two residential lots on 4 acres on the west side of Tripp Hollow Rd. (Map 15, Lot 4) in the RA Zone in accordance with all final plans, documents and testimony submitted with the application and including the following conditions:

1. Prior to the endorsement by the Commission of the Final Subdivision Plan(s) for filing in the office of the Town Clerk:
    a. The Inland Wetlands and Watercourses Commission approval with conditions and the Planning and Zoning Commission approval with conditions must be included on the final recorded subdivision plans. Draft final approved plans shall be printed on paper and submitted to Town Staff for review prior to printing on archival material. The final approved plans bearing the seal and signature of the appropriate professionals, signed by Commission Chairs, shall be recorded in the office of the Town Clerk.
    b. All boundary pins and monuments shall be set and field verified by the surveyor.
2. At the time of sale of any building lot, a payment in lieu of open space dedication shall be paid by the Applicant to the Town in the amount of $ 1,808 per lot in accordance with the requirements of CT General Statutes 8-25 and Brooklyn Subdivision Regulation Sec. 8. An open space lien may be placed on the building lots to ensure that the fee-in-lieu of open space is paid at the time of sale.
3. Prior to the issuance of a Zoning Permit on any lot:
    a. The developer shall notify the Zoning Enforcement Officer and Town Planner at least seven days in advance of any site work to schedule a pre-construction meeting.
    b. Driveway permits must be obtained from the Road Foreman in accordance with the adopted policy concerning driveways.
    c. The Applicant and/or individual lot developers shall minimize impacts to natural features both on private lots and in the Town of Brooklyn r.o.w. to the greatest extent possible. This shall include but is not limited to the preservation of stonewalls, the protection of mature trees lining any public road, and the minimization of clearing and grading.
    d. No stonewalls, mature trees, or ledge within the r.o.w. shall be removed or modified unless necessary for safety. The responsibility of clearing, grubbing, blasting, and earthmoving within the Town of Brooklyn r.o.w. shall be the responsibility of the individual lot developer.
    e. Any cutting of trees greater than 30" d.b.h. for sightlines shall require prior approval by the Town of Brooklyn Tree Warden upon finding that the removal of trees is unavoidable to guarantee adequate driveway sightlines.
4. Stonewalls must be finished on the edges prior to the issuance of a Certificate of Zoning Compliance on any lot containing a stone wall.

Second by A. Fitzgerald. No discussion.
Roll Call Vote: E. Starks – yes; A. Fitzgerald – yes; C. Sczuroski - yes; A. Tanner - yes; C. Kelleher - yes. Motion carried unanimously (5-0-0).

VII. New Business:

a. Applications – None.

b. Other New Business:

1. Request for extension to record the mylars for 6 lot subdivision on Day Street.

Motion was made by A. Fitzgerald approve the filing extension for SD 20-001 6 Lot Subdivision on Day Street an additional 90 days in accordance with state statutes. Second by E. Starks. No discussion.
Roll Call Vote: A. Fitzgerald – yes; C. Sczuroski - yes; A. Tanner - yes; E. Starks – yes; C. Kelleher - yes. Motion carried unanimously (5-0-0).

2. Authorization of back-up Zoning Enforcement Officer.

Motion was made by C. Sczuroski to authorize Jana Roberson to perform the duties of the Zoning Enforcement Officer if necessary in the absence of the Margaret Washburn. Second by E. Starks. Discussion:
Ms. Roberson explained that she had been authorized back in 2013, but Ms. Washburn had taken vacation time and there was an instance where Ms. Roberson needed to authorize a final certificate of zoning compliance in Ms. Washburn's absence. It is appropriate to have a backup for Ms. Washburn so as not to cause delays to developers. Ms. Roberson stated that, although not certified, she has passed CASIO exams twice and is qualified and comfortable to fill in as a backup when absolutely necessary.
Roll Call Vote: C. Sczuroski - yes; A. Tanner - yes; E. Starks – yes; A. Fitzgerald – yes; C. Kelleher - yes. Motion carried unanimously (5-0-0).

VIII. Reports of Officers and Committees:

a. Staff Reports – None.
b. Budget Update – None.
c. Correspondence – None.
d. Chairman's Report – None.

IX. Public Commentary – None.

There was discussion regarding when the PZC will be able to meet in person again. The Town does not have the ability to livestream meetings. Ms. Kelleher spoke of how Pomfret is doing hybrid meetings. Ms. Roberson will contact Pomfret for information. At the last meeting, Ms. Sigfridson had offered to speak with Mr. Ives.

There was discussion regarding the POCD. Ms. Roberson hopes to have time to work on it in the coming months. The Town will likely conract with a housing market professional for a portion of the research. She is working on a contract with NECCOG. She will be allowed four more hours per week. She suggested that the PZC look at a chart of tasks involved at a future meeting.

There was discussion regarding Saveway because it looks like they are closing down.

X. Adjourn

Motion was made by A. Fitzgerald to adjourn at 8:51 p.m. Second by E. Starks. No vote was taken.

Respectfully submitted,

J.S. Perreault
Recording Secretary

TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION
PUBLIC HEARING
LEGAL NOTICE

The Planning and Zoning Commission will hold a public hearing on Wednesday, October 7, 2020, at 6:30 p.m. via Webex meeting on the following:

SP 20-002 Special Permit for additional vehicle storage, Applicant: Vachon Brooklyn, LLC, 512 Providence Road, Proposed construction of two 16 ft. wide access drives to proposed new vehicle storage lots.

The hearing was originally scheduled for September 15, 2020 but was rescheduled.

Copies of applications are attached for review.

All interested parties may attend the meeting, be heard and written correspondence received.

Dated this 22nd day of September 2020.

Michelle Sigfridson
Chairman

To join this hearing via the web or phone, follow the below instructions:	
Web **Go to www.webex.com** **On the top right, click Join** **Enter meeting information: 173 473 4237** **Enter meeting password: YMyNemsP767** **Click join meeting**	**Phone** **Dial 1-408-418-9388** **Enter meeting number: 173 473 4237** **You can bypass attendee number by pressing #**

RECEIVED
JUL 28 2020
By

PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONECTICUT

Received Date _____ Application #SP 20-002
Check # _____

APPLICATION FOR SPECIAL PERMIT

Name of Applicant VACHON BROOKLYN, LLC Phone 401-692-1459
Mailing Address 957 WASHINGTON ST, ATTLEBORO, MA 02703 Phone _____

Name of Engineer/Surveyor KILLINGLY ENGINEERING ASSOCIATES
Address PO BOX 421 KILLINGLY CT 06241
Contact Person NORMAND THIBEAULT, JR Phone 779-7299 Fax ——

Name of Attorney N/A
Address _____
Phone _____ Fax _____

Property location/address 512 PROVIDENCE ROAD (RTE. 6)
Map# 91 Lot# 13A & 14 Zone PC Total Acres 10.526
Sewage Disposal: Private _____ Public X Existing X Proposed _____
Water: Private _____ Public X Existing X Proposed _____

Proposed Activity CONSTRUCTION OF (2) 16' WIDE ACCESS DRIVES TO ACCESS PROPOSED NEW VEHICLE STORAGE LOTS.

Compliance with Article 4, Site Plan Requirements

Is parcel located within 500 feet of an adjoining Town? NO

The following shall accompany the application when required:

Fee $_____ State Fee ($60.00) _____ 3 copies of plans _____ Sanitary Report _____
4.5.5 Application/ Report of Decision from the Inland Wetlands Commission
4.5.5 Applications filed with other Agencies
12.1 Erosion and Sediment Control Plans

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: _____ Date 7/28/20

Owner: _____ Date 7/28/20

*Note: All consulting fees shall be paid by the applicant

PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONECTICUT

Received Date _____ Application #SPR_____
Action Date_____ Check#_____

APPLICATION FOR SITE PLAN REVIEW

Name of Applicant VACHON BROOKLYN, LLC Phone 401-692-1459
Mailing Address 957 WASHINGTON ST, ATTLEBORO, MA 02703 Phone_____
Name of Owner SAME Phone_____
Mailing Address_____ Phone_____

Name of Engineer/Surveyor KILLINGLY ENGINEERING ASSOCIATES
Address PO BOX 421 KILLINGLY CT 06241
Contact Person NORMAND THIBEAULT, JR. Phone 779-7299 Fax ——

Property location/address PROVIDENCE ROAD (RTE. 6)
Map # 41 Lot # 13A #14 Zone PC Total Acres 10.5260
Proposed Activity CONSTRUCTION OF (2) 16' WIDE ACCESS DRIVES TO ACCESS PROPOSED NEW VEHICLE STORAGE LOTS

Change of Use: Yes____ No X If Yes, Previous Use_____
Area of Proposed Structure(s) or Expansion 2.69 AC

Utilities - Septic: On Site_____ Municipal X Existing X Proposed_____
Water: Private_____ Public X Existing X Proposed_____

Compliance with Article 4, Site Plan Requirements

The following shall accompany the application when required:

Fee$_____ **State Fee ($60.00)** _____ 3 copies of plans_____ Sanitary Report_____
4.5.5 Application/ Report of Decision from the Inland Wetlands Commission
4.5.5 Applications filed with other Agencies
12.1 Erosion and Sediment Control Plans
See also Site Plan Review Worksheet

Variances obtained_____ Date_____

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: _____ Date 7/24/20

Owner: _____ Date 7/24/20

* Note: Any consulting fees will be paid by the applicant

LIST OF AJACENT LAND OWNERS INCLUDING ACROSS THE STREET as of 7/28/2020 GIS

Vachon Brooklyn, LLC
Vachon Chevrolet
Providence Road (Route 6)
Brooklyn, CT

Job No. 19129

MAP//LOT	NAME
41/ / 13	ALDIN ASSOCIATES LIMITED PARTNERSHIP 77 STERLING ROAD EAST HARTFORD, CT 06108
41/ / 12	JEWETT CITY SAVINGS BANK PO BOX 335 JEWETT CITY, CT 06351-0335
41/ / 10A	CONNECTICUT LIGHT & POWER CO PO BOX 270 HARTFORD, CT 06141-2335
42/ / 22-106	MORGAN THE PATRICIA A REVOCABLE TRUST 49 WESTVIEW DR BROOKLYN, CT 06234
42/ / 22	MARQUIS GARY W & MICHELLE D 43 WESTVIEW DR BROOKLYN, CT 06234
41/ / 15	KCTT PROPERTIES LLC C/O KENNETH CARDINAL 520 PROVIDENCE RD BROOKLYN, CT 06234
41/ / 108	CASEY BRIAN & ETHIER EILEEN 9 ALLEN HILL RD BROOKLYN, CT 06234-0156
41/ / 109	CASEY BRIAN M 9 ALLEN HILL RD BROOKLYN, CT 06234-0156

Joseph R. Theroux
~ Certified Forester/ Soil Scientist ~
Phone 860-428-7992~ Fax 860-376-6842
P.O. Box 32, Voluntown, CT. 06384
Forestry Services ~ Wetland Impact Assessments
Wetland Delineations and Permitting ~ E&S/Site Monitoring
Wetland Function & Value Assessments

3/5/20

Killingly Engineering Associates
P.O. Box 421
Dayville, CT. 06241

Re: Wetland function/value and impact assessment report for proposed parking expansion for Vachon Chevrolet, Providence Road, Brooklyn, Connecticut.

Dear Mr. Glaude,

At your request, I have reviewed the site plans entitled: "PROPOSED PARKING EXPANSION, "VACHON CHEVROLET" PROVIDENCE ROAD (ROUTE 6) BROOKLYN CONNECTICUT, dated 1/7/2020 and the above referenced property for the purposes of assessing the wetland functions and values and potential impacts to the inland wetlands and watercourses in proximity to the proposed parking area expansion.

The wetland function and value assessment was conducted on 2/26/20.

Existing Conditions

The property composed by two separate lots is 10.52 acres in size and is located on the north side of Providence Road, (Route 6), in Brooklyn, CT.

The southeast portion of the site is occupied by the car dealership with both paved and gravel parking areas. The remaining portion of the property is occupied by a large palustrine forested/scrub-shrub wetland & watercourse complex and adjacent forested uplands.

Upland Review Areas

The 125 foot upland review area around the delineated forested/scrub-shrub wetland/watercourse is vegetated in the overstory with a mix of white pine and mixed hardwoods in the sawtimber and polewood size classes. The mixed hardwoods include white and scarlet oaks, and red maple.

The understory is comprised of polewood and saplings in these species as well as shrub species such as highbush blueberry. Herbaceous vegetation includes hay scented ferns and miscellaneous grasses.

Wetlands

A palustrine forested/scrub-shrub wetland/watercourse was delineated in the central portion of the property. (See wetland delineation report). The wetland was inundated on the date of the delineation, (11/14/19) and the assessment, (2/26/20).

This area has formed due to the presence of a perched or seasonal ground water table that provides the hydrology to allow it to remain inundated throughout the year.

The wetland/watercourse is vegetated around its perimeter with scarlet oaks, white pine and red maple in the sawtimber size classes.

The majority of this wetland/watercourse is densely vegetated with red maple saplings and typical wetland shrub species such as highbush blueberry, speckled alder, sweet pepperbush, winterberry and spicebush.

Herbaceous vegetation included sphagnum moss, sensitive & cinnamon ferns, sedges, rushes, skunk cabbage, tussock sedges and misc. grasses. Floating duckweed was also noted in one area.

Wildlife tracks/sign found and directly observed in and adjacent to the wetland/watercourse included mammals and bird species such as: white tailed deer, eastern coyote, red tailed fox, raccoon gray & red squirrels, red tailed hawk, American crow, red wing blackbird, and numerous songbird species.

Due to the time of year, no amphibians or reptiles were observed although undoubtedly the main wetland/watercourse serves as habitat for numerous species.

A small depressed area containing wetland soils was also delineated in the northeast portion of the property, (delineated by the "C" series flags). This area was most likely a historic excavation, in which these wetland soils have formed due to prolonged wetness.

The perimeter of this area is vegetated in the overstory with red maple sawtimber and polewood, and the understory is comprised of shrubs such as highbush blueberry, and speckled alder. Herbaceous vegetation included sensitive and cinnamon ferns. Sedges were found within the inundated portion of the wetland.

It is my opinion that this small wetland may possibly serve as vernal habitat, although no wood frogs, salamanders or egg masses were found on the date of the assessment, (2/25/20).

Wetland Functions and Values

The forested/scrub-shrub wetland/watercourse, and the small wetland were inspected to determine wetland functions and values utilizing the Army Corps. Of Engineers methodology as outlined in "The Highway Methodology Workbook Supplement".

This methodology recognizes 8 separate wetland functions: groundwater recharge/discharge, floodflow alteration/storage, fish/shellfish habitat, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, sediment/shoreline stabilization and wildlife habitat. The 4 wetland values include: recreational value, educational/scientific value, uniqueness/heritage value and threatened/endangered species habitat.

For each wetland function or value to be determined, 2 to 31 different considerations/or qualifiers are considered as rationale to apply or eliminate that specific function or value.

Palustrine forested/scrub-shrub wetland/watercourse functions:

The following is a list of the wetland functions exhibited by this wetland/watercourse and their descriptions:

Floodflow alteration: the large wetland/watercourse exhibits flood storage potential due to the flat topography, and valuable properties, structures and resources are located adjacent to the wetland.

Ground water recharge and discharge: Ground water recharge function is possible due to the perched water table being trapped and slowly infiltrating during dry season. This is a primary function of this wetland.

Sediment/toxicant retention: herbaceous vegetation, shrubs and flat topography in the wetlands can effectively trap sediments/toxicants from surface flows from the adjacent topography and gravel parking areas.

Nutrient removal/retention: herbaceous and shrub vegetation in the wetlands can effectively trap and utilize potential nutrients before reaching watercourses. Nitrogen fixing bacteria in wetland soils also trap nitrogen. Although with no current sources of nutrients present, this wetland has little opportunity to provide this function.

Production export: numerous tree, shrub and herbaceous plant species in the wetlands provide food, berries and seeds for wildlife. Amphibians provide food for birds and mammals.

Sediment and shoreline stabilization: Roots from herbaceous grasses and plants, shrub species and trees found in wetlands bind and stabilize soils which helps prevent erosion along steeper edges of wetlands. Although with no significant currents or shoreline waves, this wetland/watercourse has little opportunity to provide this function.

Wildlife habitat: Numerous amphibians, reptile, mammal, and bird species inhabit this wetland. The wetland and upland riparian zones adjacent to the wetland serve as wildlife habitat. Wildlife habitat is another primary function of this wetland.

This wetland did not exhibit the wetland functions of fish habitat due to the lack of significant deep water habitat areas capable of sustaining fish.

Palustrine forested Scrub-shrub Wetland/Watercourse Values

The following wetland values were exhibited by this wetland/watercourse:

Educational/scientific value: this wetland/watercourse is relatively undisturbed, contains multiple wetland classes, and is considered as valuable wildlife habitat, although with no public access on this property, this wetland has little opportunity to provide this value.

Uniqueness/heritage value: this wetland/watercourse serves an important role in the ecological system of the area, it is a typical wetland class for the area, and serves as valuable wildlife habitat.

Visual/aesthetic value: the wetland/watercourse is visible from multiple viewing locations, it contains a diversity of vegetation that turns vibrant colors during different seasons, it is considered valuable wildlife habitat, and is not significantly disturbed.

This wetland/watercourse did not exhibit the value of threatened/endangered species habitat as the site was not shown within the shaded areas on the current natural diversity database maps.

"C Series" Wetland Functions:

The following is a list of the wetland functions exhibited by this wetland and their descriptions:

Ground water recharge and discharge: Ground water recharge function is possible due to the perched water table being trapped and slowly infiltrating during dry season. This is a primary function of this wetland.

Wildlife habitat: It is possible that amphibians, reptile, mammal, and bird species inhabit this wetland. The wetland and upland riparian zones adjacent to the wetland serve as wildlife habitat.

This wetland did not exhibit the wetland functions of floodflow alteration, sediment/toxicant retention, nutrient removal/retention, production export, sediment & shoreline stabilization and fish habitat due to the lack of floodwater storage capacity, its small area, lack of dense vegetation, lack of significant deep water habitat areas capable of sustaining fish, and it is not associated with stream flows or a large body of water.

"C Series" Wetland Values

The following wetland values were exhibited by this wetland:

Educational/scientific value: this wetland is relatively undisturbed, and is considered as wildlife habitat, although with no public access on this property, this wetland has little opportunity to provide this value.

Uniqueness/heritage value: this wetland serves an important role in the ecological system of the area, it is a typical wetland class for the area, and serves as wildlife habitat.

This wetland did not exhibit the visual/aesthetic value as it is not visible to the public, and does not contain vegetation that turn vibrant colors. It does not exhibit the value of threatened/endangered species habitat as the site was not shown within the shaded areas on the current natural diversity database maps.

Potential wetland impacts

The project plans and site were reviewed to assess the potential impacts to the wetlands from the proposed parking area expansion.

On the two parcels, an expansion of the existing parking areas is proposed, one area in the northern portion of both of the lots, and one in the southern portion of lot 13A.

Northern parking area:

In order to access the uplands in the northern portion of the parcels, a 1,860 square foot direct wetland disturbance is proposed for the 12 foot wide paved access drive. This will consist of excavation and installation of two 30 inch diameter class IV concrete pipes which will be filled along the bottom with native soil material.

Within the majority of the 125 foot upland review area and remaining uplands, the 12 foot wide access drive and a 340 foot long by 60 foot wide paved parking area is proposed with a storm water treatment basin located to the south of the parking area. In the bottom of the storm water basin, a 2,850 square foot wetland mitigation is also proposed. This area is designed to have a wet bottom which will fluctuate with the existing water table and will be seeded in with New England Wetmix.

The clearing limits and E&S measures shown on the plans vary from approx. 40 feet in width to immediately adjacent to the wetlands.

The topsoil stockpile is shown a reasonable distance from the wetlands and silt fencing is shown along the southern side.

Southern parking area:

In order to access the proposed 112 foot long by 44 foot wide paved parking area, a 1,250 square foot direct wetland disturbance is proposed for the construction of the access road.

To the north of the paved parking area, a storm water treatment basin is shown, and in the bottom of the basin a 1,150 square foot wetland mitigation is proposed. This area is also designed to have a wet bottom which will fluctuate with the existing water table and will be seeded in with New England Wetmix.

Also shown on the project plans are proposed plantings of common spicebush and sweetgale shrubs along the northern edge of the storm water treatment basin, to help revegetate and stabilize the side slopes.

The clearing limits and E&S measures on the plans for the most part are depicted immediately adjacent to the wetlands.

No topsoil stockpile is shown for this small construction area so I would assume that the topsoil will be hauled off site, or stored elsewhere on site, preferably with silt fencing around the perimeter.

E&S Measures:

The submitted project plans show the proposed E&S measures around the perimeter of the clearing limits adjacent to the wetlands as silt fencing and/or staked hay bales.

It would be my recommendation that the E&S measures be installed as soon as possible after the initial timber cutting and before the stumping and topsoil removal operation. It is during this phase where the most likely opportunity will occur for erosion and sedimentation. In some areas the slopes adjacent to the wetlands are steep, and the excavation, filling and grading are proposed directly adjacent to the wetlands.

Along the clearing limits adjacent to the wetlands, I would recommend either super silt fencing or silt fencing backed by staked hay bales should be proposed and implemented. This silt fencing will also prevent reptiles and amphibians from entering the excavation areas.

I would recommend that the storm water basins be constructed first before the remaining areas so they can serve as temporary sediment basins until the parking areas are constructed.

I would also recommend that E&S inspections be conducted on a frequent basis during the land clearing/stumping/topsoil stripping phases, and prior to significant storm events.

Direct wetland impacts:

The combined direct wetland disturbance for both of the wetland crossings totals 3,110 square feet. In this area all the specifically listed wetland functions and values for each wetland will be negated.

It is my opinion however, that the proposed 4,000 square foot wetland mitigation will compensate for this loss.

Potential short term impacts:

The potential short term impacts associated with the land clearing, stumping, top soil stripping and construction would be limited to potential sediment discharges during significant storm events.

Provided that the proposed/recommended E&S measures/inspections are correctly implemented and maintained throughout the project timeframe, the disturbance directly

adjacent to the wetlands will not significantly impact the wetlands or their existing functions due to erosion and sedimentation. Once the top soils are removed, the well-drained, sandy/gravelly soils will allow for good infiltration of storm water runoff until the construction is complete.

The quick and permanent establishment of vegetation in the disturbed areas is crucial to the prevention of erosion. To minimize the potential for these impacts, E&S control measures have been incorporated into the project plans on sheet 5 of 5.

Potential long term impacts:

Wetland hydrology

I see no direct or long term impacts to the wetland hydrology as a result of the proposed access roads, parking areas or storm water treatment basins. As the access drives and parking areas are paved, storm water runoff will be an input to the existing hydrology, through some minor overland flow, but mostly through the storm water basins, as ground water recharge or as direct discharge during significant storm events after treatment.

Water quality:

Due to the incorporation of the paved parking surfaces, stone water quality trenches, storm water treatment basins, and some direct infiltration of storm water in the well-drained, sandy, gravelly soils, I see no significant or adverse impacts to the existing water quality of the wetlands from storm water discharges.

Adjacent upland wildlife habitat

Potential long term impacts to the upland habitat from the project would include the loss of a significant portion of the URA serving as riparian zones and upland wildlife habitat adjacent to the wetlands. This intrusion will force wildlife into the narrow vegetated corridor in and around the wetlands during and after the construction timeframe, and into other areas where the uplands are not disturbed. However, because this vegetated wildlife corridor is not proposed to be totally cleared and still exists in minimal widths in some areas, the wetlands and adjacent riparian zone will still provide for some wetland function and wildlife habitat.

It is my opinion that the proposed 4,000 square foot wetland mitigation will help compensate for these impacts to the upland/riparian habitat.

In summary, the design of the project implements features intended to minimize or eliminate potential impacts to the wetlands such as storm water runoff, significant loss of wetland habitat, and erosion and sedimentation associated with construction activities.

I feel these proposed measures are adequate to protect the wetlands provided that the recommended erosion and sedimentation control features are implemented and maintained throughout the excavation and reclamation timeframe.

The construction of the proposed 4,000 square foot wetland mitigation will assist in the remaining wetlands ability to provide the same wetland functions and values they currently provide.

If you have any questions concerning the site assessment or this report, please feel free to contact me.

Sincerely,

Joseph R. Theroux
Certified Forester and Soil Scientist
Member SSSSNE, NSCSS, SSSA

March 23, 2020

Ms. Jana Roberson, AICP
Director of Community Development / Town Planner
Town of Brooklyn
5 Wolf Den Road
P.O. Box 356
Brooklyn, CT 06234

SUBJECT: Proposed Parking Expansion
Vachon Chevrolet
Assessor's Map 41, Lot Nos. 13A & 14
Providence Road (Route 6)
Brooklyn, Connecticut

Dear Ms. Roberson:

As you requested, I have reviewed the devloper's consulting engineer's plans for the above captioned project. A copy of my comments are enclosed pertaining to my review of the plans, consisting of five sheets, entitled "Proposed Parking Expansion, 'Vachon Chevrolet', Providence Road (Route 6), Brooklyn, Connecticut, Prepared for Vachon Brooklyn, LLC.," which were created by Killingly Engineering Associates, dated January 2020 with revision date of March 10, 2020.

If you should have any questions, please do not hesitate to email me at syl.pauley@neccog.com.

Sincerely,

Syl Pauley, Jr., P.E.
NECCOG Regional Engineer

SP/s
cc: File
JRLtr_ProposedParkingExpansionVachonChevrolet_Xmit 03202020 Review Cmts.doc

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

ENGINEERING PLAN REVIEW
PERTAINING TO
PROPOSED PARKING EXPANSION
VACHON CHEVROLET
(ASSESSOR'S MAP 41, LOTS 13A & 14)
PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CT

(March 20, 2020)

The comments contained herein pertain to my review of plans, consisting of five sheets, entitled "Proposed Parking Expansion, 'Vachon Chevrolet', Providence Road (Route 6), Brooklyn, Connecticut, Prepared for Vachon Brooklyn, LLC.," prepared by Killingly Engineering Associates, dated January 2020 with revision date of March 10, 2020.

SHEET 2 OF 5 – EXISTING CONDITIONS

1. The northing and eastling coordinates should be noted for CGS Random Points B9262 and B9264. It would also be helpful to include a large scale diagram as to where these points are relative to the project.

SHEET 3 OF 5 – SITE DEVELOPMENT PLAN NO. 1

1. A construction entrance symbol is drawn at the entrance to the new "paved vehicle storage area." However, a note should be included to indicate that this will be removed at the time the first course of paving is installed for the vehicle storage area. Additionally, it would be helpful for this explanation to be included in Note 17 under "Development Schedule/Sequence of Operations" that appears on Sheet 5 of 5 of the plan set.
2. The note "Silt Fence Backed with Staked Haybales or Wood Chip Berms" should read the same as the note on Sheet 4 of 5, "Provide Super Silt Fence, Silt Fence Backed with Staked Haybales, or Silt Fence Backed with Wood Chip Berms at Clearing Limits," for consistency.

SHEET 4 OF 5 – SITE DEVELOPMENT PLAN NO. 2

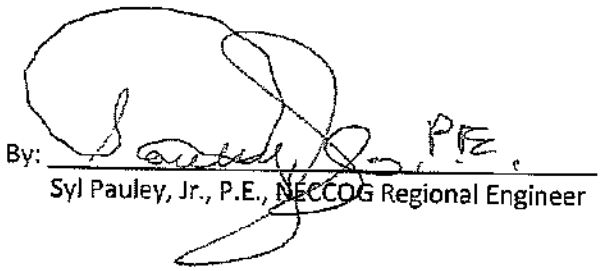
1. Proposed slopes in the detention basin range from 1:1 to 3:1. It is recommended that slope be uniform and that no slopes be steeper than 3:1 to reduce the tendency of soil erosion
2. Pedestal lighting, with dual light fixtures, is shown at three (3) locations in the middle of the proposed vehicle parking area. No description of the lighting assembly (pedestal height, pedestal base, full cutoff design, wattage, etc.) can be found in the plans under review. This is important since there is a house on adjacent Lot No. 22 that is not too distant from the north property line in the vicinity of the proposed construction on the Vachon property. It should also be noted that the

majority of the visual/sound barrier created by the existing mature forest in this area between the house and the proposed development is going to be removed, only to be replaced by young plantings that will take many years to reestablish the buffer. Therefore, has the impact of lighting and noise on the adjacent residence been evaluated to determine if there will be any significant impact to it?

3. How will snow removal be handled in this area so as not to impact the adjacent wetlands (salt or other ice removal chemicals) and proposed landscaping?
4. It is unclear on how the "island" in the middle of the proposed parking area is going to be constructed, i.e., raised island with landscaping; raised island paved with no landscaping; flush with whatever in between; etc.? Can this area be used as a rain garden to mitigate some of the runoff from the pavement?
5. Is there any consideration to provide some form of "tall" landscaping in the center island, considering how much impervious pavement is being proposed?
6. As an aid to construction, it would be helpful to include a cross-section profile from the detention basin outlet structure to just beyond the level spreader.

SHEET 5 OF 5 – DETAIL SHEET

1. In the "Stormwater Basin Outlet Detail," a smooth outer wall PVC pipe may be less susceptible to upheaval or degradation (breakage) by icing conditions than a corrugated type of pipe. It is recommended that this be evaluated by the designer. Furthermore, over time, ultraviolet rays in sunlight degrades unprotected plastic pipe, which causes it to lose structural integrity and stability. Considering this, concrete may be a better choice.
2. In the "Stone Berm" detail, what specific type of filter fabric should be used to minimize sediment transport and at the same time allow the efficient transmission of water toward the outlet structure? This should be specified in the detail. Also, what are the conditions as to when the berm should be replaced to function as designed due to sediment build up?
3. It is recommended that the "Silt Fence – Backed with Haybales" detail title be modified to read "Super Silt Fence (Silt Fence Backed with Haybales or Wood Chip Berms)."
4. In the "Chain Link Fence Detail" the gauge of the fence fabric and size of the selvage should be specified and also what type of material it is manufactured from (galvanized steel, PVC coated steel, etc.). The same goes for the posts and hardware, too, and depth of bury/concrete anchorage for the posts.
5. In the "Stone Berm" detail, will CONNDOT crushed stone M.01.01 #3 remain stable at a 2:1 angle of repose?
6. In the "Slope Stabilization Detail" it is recommended that the slope be 3:1 or flatter, NOT 2:1 or steeper, as shown.
7. In the "Bituminous Lip Curb" detail it is recommended that the curb be formed on the binder course (locked in) for better stability/longevity, which should provide more resistance to deformation by snowplowing operations or other vehicle impacts.



By: _____
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

Killingly Engineering Associates
Civil Engineering & Surveying
P.O. Box 421 Killingly, CT 06241
Phone: 860-779-7299
www.killinglyengineering.com

March 30, 2020

Ms. Jana Roberson, AICP
Director of Community Development/Town Planner
Town of Brooklyn Department of Planning
Clifford B. Green Memorial Center
69 South Main Street
Brooklyn, CT 06234

RE: Proposed Parking Expansion
Vachon Chevrolet

Dear Ms. Roberson;

In response to NECCOG review comment on the aforementioned project, we offer the following:

Sheet 2 of 5 – Existing Conditions

1. The CGS random points referenced on the survey plan were used to establish the horizontal location of the project and have no bearing on the design. These points are not located adjacent to the site and we do not see the need or purpose of providing coordinates or creating a large-scale diagram of their locations at the expense of our client. Additionally, the Town of Brooklyn's regulations do not require such information.

Sheet 3 of 5 – Site Development Plan No. 1

1. A note has been added to the plan to direct the contractor to remove the anti-tracking construction entrance prior to installing the first course of pavement. This has also been noted on sheet 5 of 5 in the development schedule/sequence of operations.
2. The note "silt fence backed with staked haybales or wood chip berms" has been modified to read the same on all sheets.

Sheet 4 of 5 – Site Development Plan No. 2

1. Slopes in the detention basin have been modified so that they do not exceed 2:1 (center berm only). We have also noted that jute netting shall be installed to stabilized the basin after topsoil and seed have been applied. The center berm is designed to extend detention time in the basin and we do not anticipate erosive conditions once stabilized.
2. A detail for the lighting fixture with the make and model number has been added to the plans. We have also enclosed a cut sheet for the lighting as well. The chosen fixtures will be mounted no higher than 12' and are dark sky compliant. In addition, the landscaping proposed between the parking and the residences to the north will provide a very good vegetated buffer; cut sheets for the chosen plantings is included with this submission. Currently, the existing pine trees do not provide any visual buffer. As with most larger pine trees, there are minimal branches at the bottoms of the trees up to 20' or more. With regard to noise, this area will be utilized to store inventory and will not be accessed by the general public unless accompanied by a sales representative.
3. Snow will be stockpiled at the top of the slope adjacent to the proposed stormwater basin. Sheet 5 of the plans specify that no salt or chemical applications for snow removal shall be used.

4. The island in the center of the site will be depressed. We will incorporate rain garden plantings into the island to promote stormwater treatment and infiltration.
5. As the center island will be utilized in the capacity of a rain garden, we do feel that taller vegetation would be appropriate.
6. A cross section of the basin outlet has been added to the plans as requested.

Sheet 5 of 5 – Detail Sheet

1. The manufacturer of ADS N-12 HDPE pipe states a life expectancy of 100 years. For the upright outlet structure, the base will be embedded in concrete to anchor it in place to prevent upheaval and the depth of bury for the outlet pipe will for the most part be installed below frost level. We have utilized this design and application for dozens of projects throughout the years and we are not aware of any failures for this application. Additionally, the installation of the outlet pipe and structure in this location does not present any structural constraints (i.e. it is not an installation subject to traffic). It is our professional opinion that HDPE pipe is sufficient for this application.
2. For the stone berm, specifications for the filter fabric have been called out and conditions for maintenance are defined.
3. The silt fence detail has been modified to read "super silt fence" as requested.
4. The detail for the fence installation has been modified as requested. In addition, neighbors who attended the public hearing for wetlands requested an 8' fence in lieu of a 6' fence which has been accommodated.
5. In our experience, the 2:1 angle of repose for the DOT #3 stone is stable. Section 5-10-12 of the 2002 CT Guidelines for Soil and Erosion Control ("the *2002 Guidelines*") specify slopes no steeper than 1:1 and heights no greater than 3'.
6. We have modified the slope stabilization detail to call for application on slopes 2:1 or flatter per 5-4-10 of the 2002 Guidelines.
7. Bituminous curb installation detail has been modified accordingly as requested.

We trust that the plans as modified address the March 23rd review comments. Please feel free to contact us if there are any further questions or concerns.

Sincerely;

Normand Thibeault, Jr., P.E.

VIPER S optics STRIKE

SMALL VIPER LUMINAIRE

Cat.#	
Job	Type

BEACON

Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is ≥.90 at full load.
- Dimming drivers are standard, but OD must be selected in options to obtain external wiring leads for dimming controls
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components
- Surge protection - 20kA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Installation:

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured. IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Certifications/Ratings:

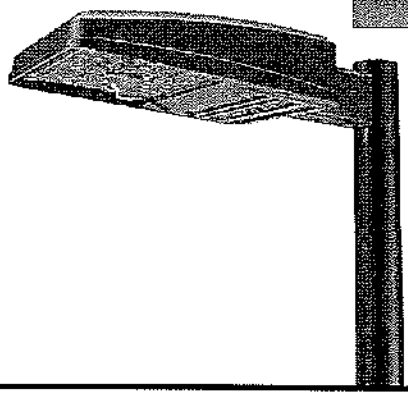
- Certified to UL 1598, UL 8750 and CSA C22.2 No.250.0
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://www.beaconproducts.com/products/viperstrike

Warranty:

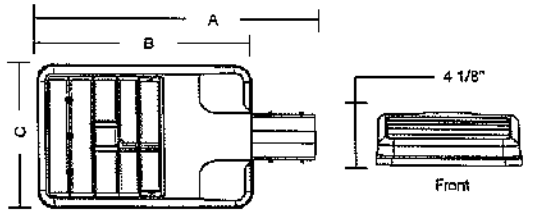
Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

PRODUCT IMAGE(S)

Dark-Sky Friendly

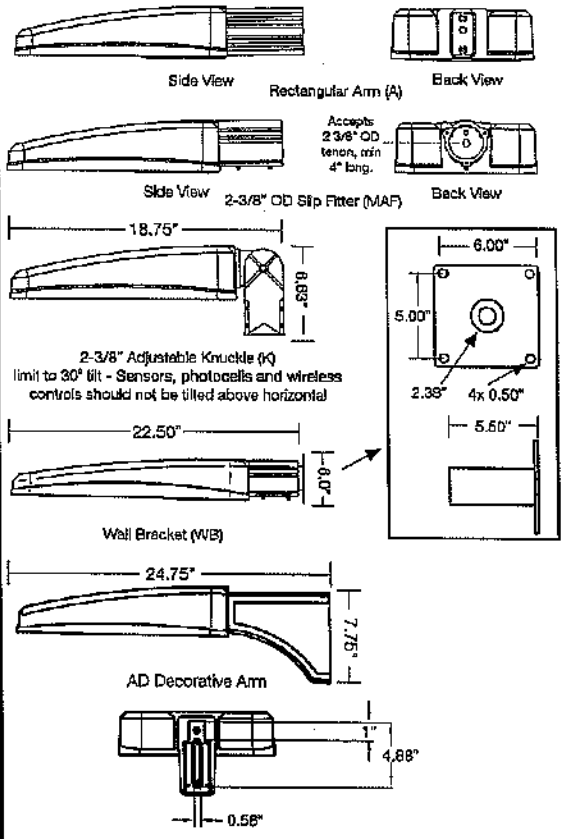


DIMENSIONS



A	B	C	Weight:	EPA
21.75" (552 mm)	16.75" (425 mm)	11.25" (286 mm)	15.0 lbs (6.8 kg)	.67 ft²

MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS

*3000K and warmer CCTs only

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HUBBELL Lighting

ORDERING INFORMATION

ORDERING EXAMPLE: VPS/24L-45/AM/4W/UNV/A/DBT/BC

VPS | | | | | | | | | |

SERIES	LED ENGINE	CCT	ROTATION	VOLTAGE	COLOR	OPTIONS
VPS Viper	24L-45 45W, LED array	AM Amber	Leave blank for no rotation	UNV 120-277V	BLT Black Matte Textured	CD Continuous Dimming
	36L-65 65W, LED array		L[1] Optic rotation left	120 120V	BLS Black Gloss Smooth	F Fusing
	48L-85 80W, LED array		R[1] Optic rotation right	208 208V	DBT Dark Bronze Matte Textured	BSP Bird Spikes
	60L-105 105W, LED array			240 240V	DBS Dark Bronze Gloss Smooth	BC Backshield (available for FR, 2, 3, 4, 4W Optics)
				277 277V	GTT Graphite Matte Textured	TB Terminal Block
				347 347V	LGS Light Grey Gloss Smooth	
				480 480V	PSS Platinum Silver Smooth	
					WHT White Matte Textured	
					WHS White Gloss Smooth	
					VGT Verde Green Textured	

DISTRIBUTION

- FR Type 1/Front Row
- 2 Type 2
- 3 Type 3
- 4F (formerly 4) Type 4
- 4W Type 4 Wide
- 5QM Type 5QM
- 5R Type 5R (rectangular)
- 5W Type 5W (round wide)
- TC Tennis Court

COLOR OPTION

- CC Custom Color

CONTROL OPTIONS

- 7PR 7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)
- 7PR-SC 7-Pin Receptacle w/Shorting Cap
- 7PR-TL 7-Pin Receptacle w/Twist Lock photo control

HOUSE SIDE SHIELD ACCESSORIES

- HSS/VP-S/90-FB/XXX 90° shield front or back
- HSS/VP-S/90-LR/XXX 90° shield left or right
- HSS/VP-S/270-FB/XXX 270° shield front or back
- HSS/VP-S/270-LR/XXX 270° shield left or right
- HSS/VP-S/360/XXX Full shield

(Replace XXX with notation for desired finish color)
(Refer to page 5 for shield images)

MOUNTING

- A Rectangular Arm (formerly RA) for square or round pole
- MAF Mast Arm Fitter (formerly SF2) for 2-3/8" OD horizontal arm
- K Knuckle (formerly PK2) limit to 45° tilt or 2-3/8" OD horizontal arm or vertical tenon
- WB Wall Bracket
- AD Universal Arm for square pole
- AD3 Universal Arm for 2.4"-4.1" round pole
- AD4 Universal Arm for 4.2" -5.3" round pole
- AD5 Universal Arm for 5.5" -5.9" round pole
- AD6 Universal Arm for 6.0"-6.5" round pole

MOUNTING ACCESSORIES

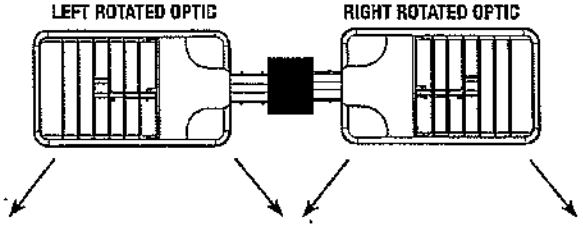
- VPL-AD-RPA3 2.4"-4.1" Round Pole Adapter for AD arm
- VPL-AD-RPA4 4.2"-5.3" Round Pole Adapter for AD arm
- VPL-AD-RPA5 5.5"-5.9" Round Pole Adapter for AD arm
- VPL-AD-RPA6 6.0"-6.5" Round Pole Adapter for AD arm

[1] Only available with 1A, 2, 3, 4, 4W and 5R distributions

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-automation.com/products/sitesync/ or contact Hubbell Lighting tech support at 864-678-1000.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VPS/24L-55/4K7/3/UNV/A/DBT/SWP/ — SiteSync only
VPS/24L-55/4K7/3/UNV/A/DBT/SWPM-40F/ — SiteSync with Motion Control



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PERFORMANCE DATA

# LED'S	SYSTEM WATTS	DISTRIBUTION TYPE	AMB amber 590nm (std.) LUMENS	LPW'	B	U	G
24	45W	FR	1238	28	0	0	0
		2	1194	27	0	0	0
		3	1171	26	0	0	1
		4	1152	26	0	0	0
		4W	1127	25	0	0	1
		5QM	1173	26	1	0	0
		5R	1181	26	1	0	1
		5W	1260	28	1	0	0
		TC	1204	27	0	0	0
36	65W	FR	1857	29	0	0	0
		2	1791	28	0	0	0
		3	1757	27	0	0	1
		4	1728	27	0	0	1
		4W	1690	26	0	0	1
		5QM	1759	27	1	0	0
		5R	1771	27	1	0	1
		5W	1726	27	1	0	0
48	85W	FR	2476	29	0	0	0
		2	2389	28	1	0	1
		3	2343	28	0	0	1
		4	2304	27	0	0	1
		4W	2254	27	0	0	1
		5QM	2346	28	1	0	0
		5R	2362	28	1	0	1
		5W	2301	27	2	0	1
		TC	2408	28	0	0	0
60	105W	FR	3095	29	1	0	0
		2	2986	28	1	0	1
		3	2927	27	1	0	2
		4	2880	27	0	0	1
		4W	2817	26	0	0	1
		5QM	2933	27	1	0	0
		5R	2953	28	2	0	2
		5W	2879	27	2	0	1
		TC	3011	28	0	0	1

# LED'S	SYSTEM WATTS	DISTRIBUTION TYPE	AMB amber 590nm (std.) LUMENS	LPW'	B	U	G
24	45W	FR-BC	1064	24	0	0	0
		2-BC	880	20	0	0	0
		3-BC	802	18	0	0	0
		4-BC	887	20	0	0	0
		4W-BC	2014	45	0	0	1
		TC-BC	930	21	0	0	0
36	65W	FR-BC	1596	25	0	0	0
		2-BC	1320	20	0	0	0
		3-BC	1202	18	0	0	0
		4-BC	1330	20	0	0	0
		4W-BC	2014	31	0	0	1
		TC-BC	1396	21	0	0	0
48	85W	FR-BC	2128	25	0	0	0
		2-BC	1761	21	0	0	0
		3-BC	1603	19	0	0	1
		4-BC	1774	21	0	0	1
		4W-BC	1450	17	0	0	0
		TC-BC	1861	22	0	0	0
		5R	2362	28	1	0	1
60	105W	FR-BC	2661	25	0	0	0
		2-BC	2201	21	0	0	0
		3-BC	2004	19	0	0	1
		4-BC	2217	21	0	0	1
		4W-BC	1813	17	0	0	1
		TC-BC	2326	22	0	0	0
		5R	2953	28	2	0	2

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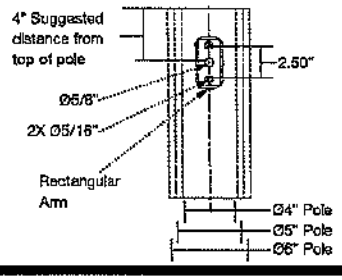
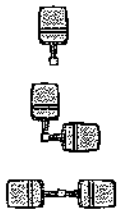
DRILL PATTERN

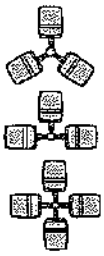
RECTANGULAR ARM (A)
Compatible with Pole drill pattern B3



EPA



Config.	EPA
1	.67
2 @ 90°	1.06
2 @ 180°	1.34



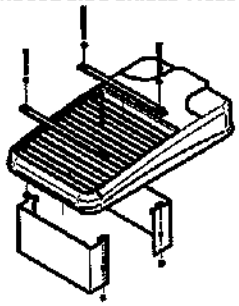
Config.	EPA
3 @ 120°	1.68
3 @ 90°	1.73
4 @ 90°	2.12

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)

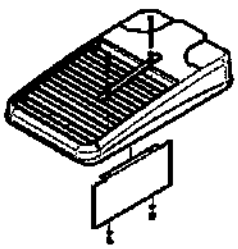
(2 3/8" OD tenon)

Catalog Number	Description
SETAVP-XX	Square tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
RETAVP-XX	Round tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
TETAVP-XX	Hexagonal tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
SETA2XX	Square tenon adapter (4 at 90°) for AD - Universal Arm mounting option only
RETA2XX	Round tenon adapter (4 at 90°) for AD3 - Universal Arm mounting option only
TETA2XX	Hexagonal tenon adapter (3 at 120°) for AD - Universal Arm mounting option only

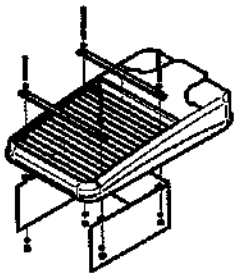
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



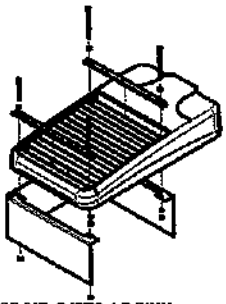
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



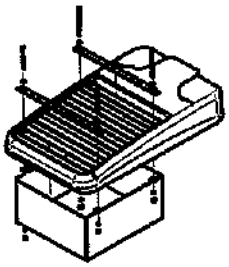
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)

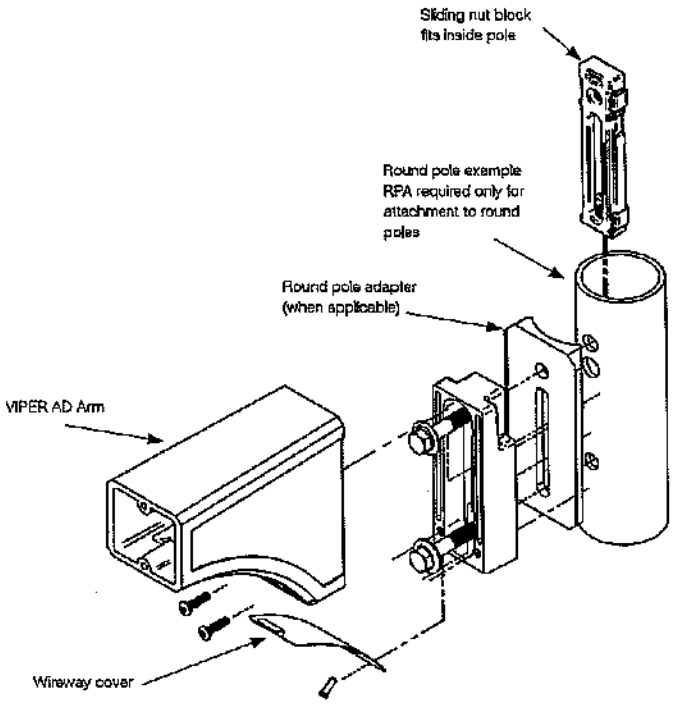


HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)

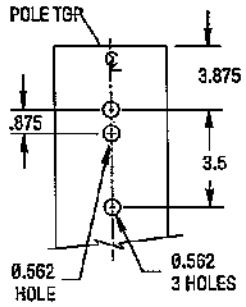


HSS/VP-S/360/XXX
Full shield (1 shield shown)

AD ARM MOUNTING INSTRUCTIONS



DECORATIVE ARM (AD)
Compatible with pole drill pattern S2



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Brooklyn Inland Wetlands
Commission
P.O. Box 356
Brooklyn, Connecticut 06234

9489 0090 0027 6215 9002 16

June 10, 2020

CERTIFIED#

Vachon Brooklyn, LLC
957 Washington Street
Attleboro, MA 02703

RE: Notice of Decision – 021120B Vachon Brooklyn, LLC, 512 Providence Road, Map 41, Lot 13A/14, PC Zone; Construction of (2) 16 ft. wide access driveways to access proposed new vehicle storage lots. Drive to the larger of the two proposed marking areas will be in an area historically used for an agricultural crossing.

Dear Vachon Brooklyn, LLC:

At the June 9, 2020 Inland Wetlands and Watercourses Commission meeting application 021120B Vachon Brooklyn, LLC, 512 Providence Road, Map 41, Lot 13A/14, PC Zone; Construction of (2) 16 ft. wide access driveways to access proposed new vehicle storage lots. Drive to the larger of the two proposed marking areas will be in an area historically used for an agricultural crossing was approved with the following conditions:

1. The detention basins shall be constructed, stabilized, and seeded before the parking lots are constructed.

2. Install the sediment/erosion controls as shown on the approved plans and call the Wetlands Officer at 860-779-3411, extension 31, for an inspection prior to starting any earth disturbance activities. Written approval of the sediment/erosion controls must be given by the Wetlands Enforcement Officer prior to starting any earth disturbance activities.

3. Only new vehicles stored in back lot, no used vehicles or employee parking.

4. Contractor to eradicate invasive species during construction.

5. Standard Conditions.

A legal notice of this approval will be published in the Villager Newspaper on Friday June 19, 2020. Please note that this action of the Brooklyn Inland Wetlands and Watercourses Commission may be appealed for fifteen-day period following the publication of the legal notice.

If you have any questions, please call Margaret Washburn at 860-779-3411 Extension 31.

Signed,

Margaret Washburn

Margaret Washburn
Wetlands Agent

MW/acl
CC: File, Killingly Engineering

BROOKLYN INLAND WETLANDS AND WATERCOURSES COMMISSION
STANDARD CONDITIONS FOR IWWC PERMITS 12/13/16

APPLICANT: READ CAREFULLY

IWWC Permit Document. A copy of the IWWC approval motion and the conditions stated herein shall constitute the IWWC permit for the approved activity when the permit document is signed and dated by the IWWC Agent.

Notice of Start and Finish. Permittee shall notify the IWWC agent at **least 48 hours** before the approved activity commences and within 72 hours after completion of the activity.

Permit Duration. This permit is valid for a period in accordance with Section 11.6 of the Brooklyn Inland Wetlands and Watercourses Regulations and the Connecticut General Statutes. Any request to renew or extend the expiration date of a permit can be granted only as authorized by the IWWC Regulations. Expired permits may not be renewed.

Erosion and Sedimentation Controls. Permittee is responsible for implementing the approved erosion and sediment control plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan. The permittee shall inspect the erosion controls weekly and after rains and repair deficiencies within twenty-four hours. The IWWC and its staff may require additional erosion if needed to prevent erosion and sedimentation. Restabilization of the site shall take place as soon as possible.

Stockpile locations. During construction, piles of fill, erodible material and debris shall not be created within regulated areas. The locations of debris and other stockpiled materials shall be shown on the submitted plans. Any material excavated at the site shall be disposed of at upland or off-site locations reviewed and approved by staff.

Permit Transfer. The permittee shall not transfer this permit without the written permission of the IWWC.

Work in Watercourse to Occur During Low Flow. Work within a watercourse is limited to periods of low flow. Low flow periods normally occur between August and October. Upon request of permittee, wetlands staff can determine if the activity can occur at other times following an on-site field investigation.

Scope of Permit. This permit is for the approved activity ONLY. Additional activity may require an additional permit. Note that if an approval or permit is granted by another agency and

(1) the approved activity will affect wetlands and/or watercourses; and/or

(2) the activity occurs within 125 feet of flagged boundaries and 175 feet from watercourses;

and such activities have not been addressed by this permit, then the applicant shall resubmit the application for further consideration by the Inland Wetlands and Watercourses Commission before any work begins.

Ongoing Compliance with Permit. The permittee shall comply at all times with the permit.

Other Approvals May be Required. Other permits may be required from Town, state or federal agencies. An Army Corps of Engineers permit may be required: U.S. Army Corps of Engineers, 424 Trapelo Rd., Waltham, MA 02254 1-800-362-4367.

DRAINAGE REPORT

Prepared for

VACHON BROOKLYN, LLC
PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CT

March 2020

Prepared for

Proposed Parking Expansion

Prepared by

Killingly Engineering Associates
Civil Engineering & Surveying

Normand Thibeault Jr., P.E.
CT License #22834

Introduction

Plainfield Garages & Storage, LLC has submitted a proposal to the Town of Brooklyn to construct two paved vehicle parking areas for Vachon Chevrolet with access from Providence Road (Route 6) in Brooklyn. The site has been utilized for numerous automobile sales facilities for many years and currently has a small show room for up to 4 vehicle and outdoor display area for over 100 vehicles. The new proposed parking will be utilized to provide more vehicle inventory on site and will not be typical ñdisplayò as the public will have to be escorted to these areas by sales associates. No customer access will be permitted by vehicle.

Summary

According to the USDA-SCS Soil Survey, the area of disturbance consists Merrimac fine sandy loams and Hinckley loamy sands. Previous excavation on the property appears to verify that these descriptions are accurate. These soils are associated with hydrologic soil group A and are considered excessively drained. All of the stormwater from the developed and undeveloped areas of the site sheet flow to a centrally located wetlands system that is substantially flat. The proposed drainage design will maintain the existing drainage patterns for post development condition.

The existing paved vehicle display area will remain and a small paved area will be constructed on the south side of the wetlands system. Drainage from this area will sheet flow to a water quality basin before discharging to the wetlands; this basin is not designed to provide detention. The larger proposed vehicle display area is proposed to be constructed on the north side of the wetlands and a large stormwater basin is proposed to be constructed. This will be a vegetated wet basin with a bermed center to allow for longer retention time in the basin and water quality treatment. Discharge from the basin is minimized by installation of a tiered outlet structure and weir overflow that will ultimately drain to the existing wetland if it is ever required.

The calculations utilized HydroCAD® Stormwater Modeling System, a computer model, to analyze pre-and post-development drainage conditions, and to aid in the design of the stormwater detention system. The model used the Soil Conservation Service TR-20 method with a Type III 24-hour rainfall to calculate the runoff. The 2 through 100-year frequency storms were analyzed to evaluate peak runoff for pre-and post-construction conditions to an existing isolated wetland pocket, sheet flow off site, and to the central wetland. Table 1 summarizes our findings for pre and post construction flows to the isolated wetland pocket:

Table 1. Existing & Proposed Peak Flows to

Design Storm	Depth (in)	Existing peak	Proposed peak	Difference
2-Year	3.36	0.00 CFS	0.00 CFS	0.00 CFS
5-Year	4.28	0.00 CFS	0.00 CFS	0.00 CFS
10-Year	5.08	0.00 CFS	0.00 CFS	0.00 CFS
25-Year	6.08	0.01 CFS	0.01 CFS	0.00 CFS
50-Year	6.86	0.02 CFS	0.02 CFS	0.00 CFS
100-Year	7.69	0.05 CFS	0.04 CFS	-0.01 CFS

This wetland pocket is the result of historical excavation into the water table and the drainage areas to that pocket is limited. All or most of the rainfall for all design storms infiltrates into the excessively drained soils around the perimeter of the excavation. The water level in this area fluctuates seasonally with the groundwater table.

Drainage from the existing paved parking area will not be altered and will continue to flow off site as it does presently (drainage area 4S). Pre and post construction drainage are identical for sheet flow off site to the east.

The large centrally positioned wetland system that extends off site to both the east and west provides natural attenuation. It appears that the relatively flat nature of the wetlands and surrounding terrain on the parcel and abutting properties results in more of a leveling effect than runoff. The smaller stormwater basin at on the south side of the wetlands is designed to provide the required water quality volume (WGV) for the paved surface that is proposed to be constructed. The larger basin on the northern side of the wetlands will serve to treat the required WQV as well as limit the rate of discharge to the wetlands. Table 2 shows the existing and proposed peak to the wetland system.

Table 2. Summary of Drainage to Wetlands

Design Storm	Depth (in)	Existing peak	Proposed peak	Difference
2-Year	3.36	6.61 CFS	6.61 CFS	0.00 CFS
5-Year	4.28	9.00 CFS	9.06 CFS	+0.06 CFS
10-Year	5.08	11.00 CFS	11.24 CFS	+0.24 CFS
25-Year	6.08	13.74 CFS	14.38 CFS	+0.64 CFS
50-Year	6.86	15.77 CFS	16.75 CFS	+0.98 CFS
100-Year	7.69	17.92 CFS	19.46 CFS	+1.54 CFS

These proposed peaks are the rates discharged to the wetlands system. Table 3 summarizes flows over the existing driveway crossing at the eastern end of the wetlands vs. flows through the pipes that will be installed at that point.

Table 3. Summary of Drainage from Wetlands East

Design Storm	Depth (in)	Existing peak	Proposed peak	Difference
2-Year	3.36	0.00 CFS	0.00 CFS	0.00 CFS
5-Year	4.28	0.00 CFS	0.05 CFS	+0.05 CFS
10-Year	5.08	0.04 CFS	0.16 CFS	+0.12 CFS
25-Year	6.08	0.25 CFS	0.36 CFS	+0.11 CFS
50-Year	6.86	0.48 CFS	0.55 CFS	+0.07 CFS
100-Year	7.69	0.81 CFS	0.78 CFS	+0.03 CFS

As the computations demonstrate, the increases in flow rates through the proposed pipes is negligible and as previously stated, it appears that the wetlands on the site and off the site fluctuate to retain a level surface throughout

In addition to addressing pre and post construction peak runoff rates from the property to the wetlands and adjacent property, the design considers stormwater treatment and water quality for the project. The detention/water quality basin accounts for Water Quality Volume (WQV) in accordance with the parameters set forth in the 2004 CTDEEP Stormwater Quality Guidelines. Following are computation for each basin and the WQV provided.

Basin 1 (South) Water Quality Volume (WQV)

WQV = (1ò) (R)(A)/12

R= 0.05 + 0.009(I) I = % Impervious = 45.3% (Total Drainage Area)

R = 0.05 + 0.009(45.3) = 0.4577

A = 13,500 s.f. = 0.31 acres

WQV = (1ò) (0.4577) (.31)/12 = 0.0116 ac-ft

506 c.f.

Basin provides 2,230 c.f. to elevation 485.0

Basin 2 (North) Water Quality Volume (WQV)

WQV = (1ò) (R)(A)/12

R= 0.05 + 0.009(I) I = % Impervious = 40.1% (Total Drainage Area)

R = 0.05 + 0.009(40.1) = 0.411

A = 105,609 s.f. = 2.42 acres

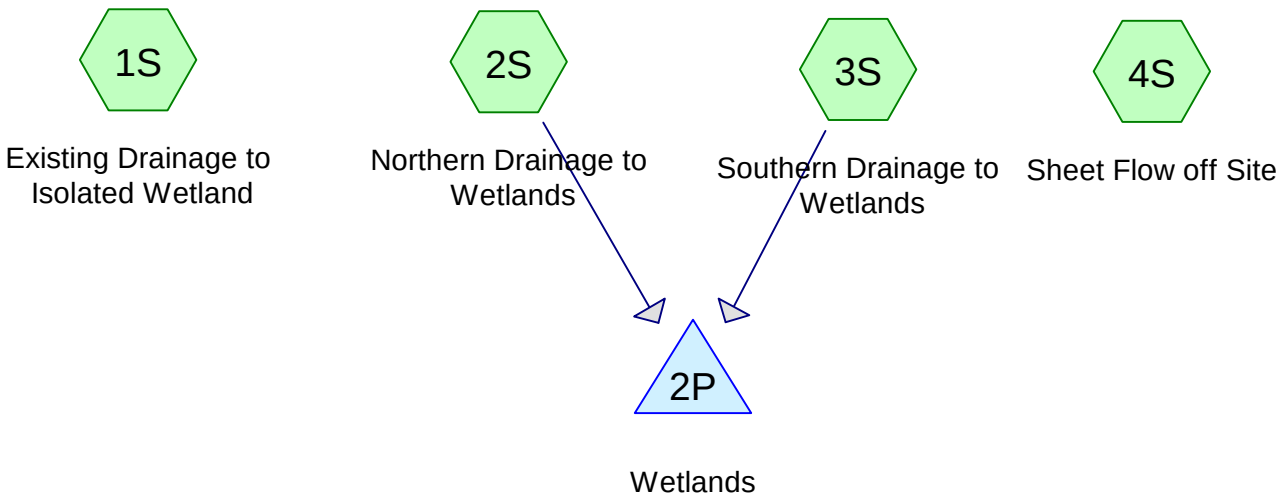
WQV = (1ò) (2.42) (.411)/12 = 0.083 ac-ft

3,671 c.f.

Basin provides 3,785 c.f. to elevation 485.0

HYDROCAD CALCULATIONS

EXISTING CONDITIONS



Subcat Reach Pond Link

Routing Diagram for Existing Drainage
Prepared by Killingly Engineering Associates, LLC, Printed 10/6/2020
HydroCAD® 10.00 s/n 07240 © 2011 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.053	30	Woods, Good, HSG A (1S, 2S)
0.706	68	<50% Grass cover, Poor, HSG A (3S)
0.541	96	Gravel surface, HSG A (3S, 4S)
0.539	98	Paved parking, HSG B (4S)
1.458	98	Paved parking/Building, HSG B (3S)
6.297	**61**	**TOTAL AREA**

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=30,710 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Northern Drainage to Runoff Area=102,280 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=300' Slope=0.0530 '/' Tc=20.5 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>2.24"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=6.61 cfs 0.477 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>3.08"
Tc=2.0 min CN=98 Runoff=2.47 cfs 0.178 af

Pond 2P: Wetlands Peak Elev=482.12' Storage=0.477 af Inflow=6.61 cfs 0.477 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 6.297 ac Runoff Volume = 0.655 af Average Runoff Depth = 1.25"
68.28% Pervious = 4.300 ac 31.72% Impervious = 1.998 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

Area (sf)	CN	Description
30,710	30	Woods, Good, HSG A
30,710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Wetlands

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

Area (sf)	CN	Description
102,280	30	Woods, Good, HSG A
102,280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0530	0.24		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 6.61 cfs @ 12.08 hrs, Volume= 0.477 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 2.47 cfs @ 12.03 hrs, Volume= 0.178 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 2P: Wetlands

Inflow Area = 4.900 ac, 29.76% Impervious, Inflow Depth > 1.17" for 2-Year event
Inflow = 6.61 cfs @ 12.08 hrs, Volume= 0.477 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.12' @ 24.00 hrs Surf.Area= 3.960 ac Storage= 0.477 af

Plug-Flow detention time= (not calculated: initial storage excedes outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.20'	**25.0' long x 6.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65

2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=482.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=30,710 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Northern Drainage to Runoff Area=102,280 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=300' Slope=0.0530 '/' Tc=20.5 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>3.09"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=9.00 cfs 0.658 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>3.96"
Tc=2.0 min CN=98 Runoff=3.15 cfs 0.228 af

Pond 2P: Wetlands Peak Elev=482.17' Storage=0.658 af Inflow=9.00 cfs 0.658 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 6.297 ac Runoff Volume = 0.886 af Average Runoff Depth = 1.69"
68.28% Pervious = 4.300 ac 31.72% Impervious = 1.998 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

Area (sf)	CN	Description
30,710	30	Woods, Good, HSG A
30,710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S**
					Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Wetlands

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

Area (sf)	CN	Description
102,280	30	Woods, Good, HSG A
102,280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0530	0.24		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 9.00 cfs @ 12.08 hrs, Volume= 0.658 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 3.15 cfs @ 12.03 hrs, Volume= 0.228 af, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 2P: Wetlands

Inflow Area = 4.900 ac, 29.76% Impervious, Inflow Depth > 1.61" for 5-Year event
Inflow = 9.00 cfs @ 12.08 hrs, Volume= 0.658 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.17' @ 24.00 hrs Surf.Area= 3.961 ac Storage= 0.658 af

Plug-Flow detention time= (not calculated: initial storage excedes outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.20'	**25.0' long x 6.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65

2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=482.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=30,710 sf 0.00% Impervious Runoff Depth>0.01"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Northern Drainage to Runoff Area=102,280 sf 0.00% Impervious Runoff Depth>0.01"
Flow Length=300' Slope=0.0530 '/' Tc=20.5 min CN=30 Runoff=0.00 cfs 0.001 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>3.82"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=11.00 cfs 0.812 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>4.68"
Tc=2.0 min CN=98 Runoff=3.71 cfs 0.270 af

Pond 2P: Wetlands Peak Elev=482.20' Storage=0.809 af Inflow=11.00 cfs 0.813 af
Outflow=0.04 cfs 0.003 af

Total Runoff Area = 6.297 ac Runoff Volume = 1.083 af Average Runoff Depth = 2.06"
68.28% Pervious = 4.300 ac 31.72% Impervious = 1.998 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.00 cfs @ 23.79 hrs, Volume= 0.000 af, Depth> 0.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

Area (sf)	CN	Description
30,710	30	Woods, Good, HSG A
30,710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Wetlands

Runoff = 0.00 cfs @ 23.81 hrs, Volume= 0.001 af, Depth> 0.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

Area (sf)	CN	Description
102,280	30	Woods, Good, HSG A
102,280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0530	0.24		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 11.00 cfs @ 12.08 hrs, Volume= 0.812 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 3.71 cfs @ 12.03 hrs, Volume= 0.270 af, Depth> 4.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 2P: Wetlands

Inflow Area = 4.900 ac, 29.76% Impervious, Inflow Depth > 1.99" for 10-Year event
Inflow = 11.00 cfs @ 12.08 hrs, Volume= 0.813 af
Outflow = 0.04 cfs @ 24.00 hrs, Volume= 0.003 af, Atten= 100%, Lag= 715.3 min
Primary = 0.04 cfs @ 24.00 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.20' @ 24.00 hrs Surf.Area= 3.962 ac Storage= 0.809 af

Plug-Flow detention time= 1,045.3 min calculated for 0.003 af (0% of inflow)
Center-of-Mass det. time= 605.4 min (1,399.3 - 793.8)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.20'	**25.0' long x 6.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65

2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.02 cfs @ 24.00 hrs HW=482.20' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.16 fps)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=30,710 sf 0.00% Impervious Runoff Depth>0.08"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.01 cfs 0.005 af

Subcatchment 2S: Northern Drainage to Runoff Area=102,280 sf 0.00% Impervious Runoff Depth>0.08"
Flow Length=300' Slope=0.0530 '/' Tc=20.5 min CN=30 Runoff=0.02 cfs 0.016 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>4.82"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=13.74 cfs 1.026 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>5.68"
Tc=2.0 min CN=98 Runoff=4.49 cfs 0.328 af

Pond 2P: Wetlands Peak Elev=482.23' Storage=0.892 af Inflow=13.74 cfs 1.042 af
Outflow=0.25 cfs 0.164 af

Total Runoff Area = 6.297 ac Runoff Volume = 1.374 af Average Runoff Depth = 2.62"
68.28% Pervious = 4.300 ac 31.72% Impervious = 1.998 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.01 cfs @ 15.58 hrs, Volume= 0.005 af, Depth> 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

Area (sf)	CN	Description
30,710	30	Woods, Good, HSG A
30,710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Wetlands

Runoff = 0.02 cfs @ 15.59 hrs, Volume= 0.016 af, Depth> 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

Area (sf)	CN	Description
102,280	30	Woods, Good, HSG A
102,280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0530	0.24		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 13.74 cfs @ 12.08 hrs, Volume= 1.026 af, Depth> 4.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 4.49 cfs @ 12.03 hrs, Volume= 0.328 af, Depth> 5.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 2P: Wetlands

Inflow Area = 4.900 ac, 29.76% Impervious, Inflow Depth > 2.55" for 25-Year event
Inflow = 13.74 cfs @ 12.08 hrs, Volume= 1.042 af
Outflow = 0.25 cfs @ 18.72 hrs, Volume= 0.164 af, Atten= 98%, Lag= 398.3 min
Primary = 0.25 cfs @ 18.72 hrs, Volume= 0.164 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.23' @ 18.72 hrs Surf.Area= 3.963 ac Storage= 0.892 af

Plug-Flow detention time= 590.3 min calculated for 0.164 af (16% of inflow)
Center-of-Mass det. time= 380.9 min (1,173.1 - 792.2)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.20'	**25.0' long x 6.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65

2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.24 cfs @ 18.72 hrs HW=482.23' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.24 cfs @ 0.38 fps)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=30,710 sf 0.00% Impervious Runoff Depth>0.19"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.02 cfs 0.011 af

Subcatchment 2S: Northern Drainage to Runoff Area=102,280 sf 0.00% Impervious Runoff Depth>0.19"
Flow Length=300' Slope=0.0530 '/' Tc=20.5 min CN=30 Runoff=0.06 cfs 0.037 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>5.57"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=15.77 cfs 1.185 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>6.42"
Tc=2.0 min CN=98 Runoff=5.07 cfs 0.371 af

Pond 2P: Wetlands Peak Elev=482.24' Storage=0.952 af Inflow=15.77 cfs 1.222 af
Outflow=0.48 cfs 0.330 af

Total Runoff Area = 6.297 ac Runoff Volume = 1.604 af Average Runoff Depth = 3.06"
68.28% Pervious = 4.300 ac 31.72% Impervious = 1.998 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.02 cfs @ 14.76 hrs, Volume= 0.011 af, Depth> 0.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

Area (sf)	CN	Description
30,710	30	Woods, Good, HSG A
30,710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Wetlands

Runoff = 0.06 cfs @ 14.78 hrs, Volume= 0.037 af, Depth> 0.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

Area (sf)	CN	Description
102,280	30	Woods, Good, HSG A
102,280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0530	0.24		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 15.77 cfs @ 12.08 hrs, Volume= 1.185 af, Depth> 5.57"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 5.07 cfs @ 12.03 hrs, Volume= 0.371 af, Depth> 6.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 2P: Wetlands

Inflow Area = 4.900 ac, 29.76% Impervious, Inflow Depth > 2.99" for 50-Year event
Inflow = 15.77 cfs @ 12.08 hrs, Volume= 1.222 af
Outflow = 0.48 cfs @ 16.23 hrs, Volume= 0.330 af, Atten= 97%, Lag= 248.9 min
Primary = 0.48 cfs @ 16.23 hrs, Volume= 0.330 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.24' @ 16.23 hrs Surf.Area= 3.963 ac Storage= 0.952 af

Plug-Flow detention time= 472.1 min calculated for 0.329 af (27% of inflow)
Center-of-Mass det. time= 308.9 min (1,100.8 - 791.9)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.20'	**25.0' long x 6.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65

2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.48 cfs @ 16.23 hrs HW=482.24' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.48 cfs @ 0.48 fps)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=30,710 sf 0.00% Impervious Runoff Depth>0.35"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.05 cfs 0.020 af

Subcatchment 2S: Northern Drainage to Runoff Area=102,280 sf 0.00% Impervious Runoff Depth>0.35"
Flow Length=300' Slope=0.0530 '/' Tc=20.5 min CN=30 Runoff=0.15 cfs 0.068 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>6.38"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=17.92 cfs 1.356 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>7.21"
Tc=2.0 min CN=98 Runoff=5.69 cfs 0.416 af

Pond 2P: Wetlands Peak Elev=482.26' Storage=1.017 af Inflow=17.92 cfs 1.424 af
Outflow=0.81 cfs 0.518 af

Total Runoff Area = 6.297 ac Runoff Volume = 1.860 af Average Runoff Depth = 3.55"
68.28% Pervious = 4.300 ac 31.72% Impervious = 1.998 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.05 cfs @ 12.67 hrs, Volume= 0.020 af, Depth> 0.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

Area (sf)	CN	Description
30,710	30	Woods, Good, HSG A
30,710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Wetlands

Runoff = 0.15 cfs @ 12.69 hrs, Volume= 0.068 af, Depth> 0.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

Area (sf)	CN	Description
102,280	30	Woods, Good, HSG A
102,280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	300	0.0530	0.24		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 17.92 cfs @ 12.08 hrs, Volume= 1.356 af, Depth> 6.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 5.69 cfs @ 12.03 hrs, Volume= 0.416 af, Depth> 7.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 2P: Wetlands

Inflow Area = 4.900 ac, 29.76% Impervious, Inflow Depth > 3.49" for 100-Year event
Inflow = 17.92 cfs @ 12.08 hrs, Volume= 1.424 af
Outflow = 0.81 cfs @ 15.18 hrs, Volume= 0.518 af, Atten= 96%, Lag= 185.9 min
Primary = 0.81 cfs @ 15.18 hrs, Volume= 0.518 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.26' @ 15.18 hrs Surf.Area= 3.963 ac Storage= 1.017 af

Plug-Flow detention time= 403.6 min calculated for 0.518 af (36% of inflow)
Center-of-Mass det. time= 260.5 min (1,052.3 - 791.8)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

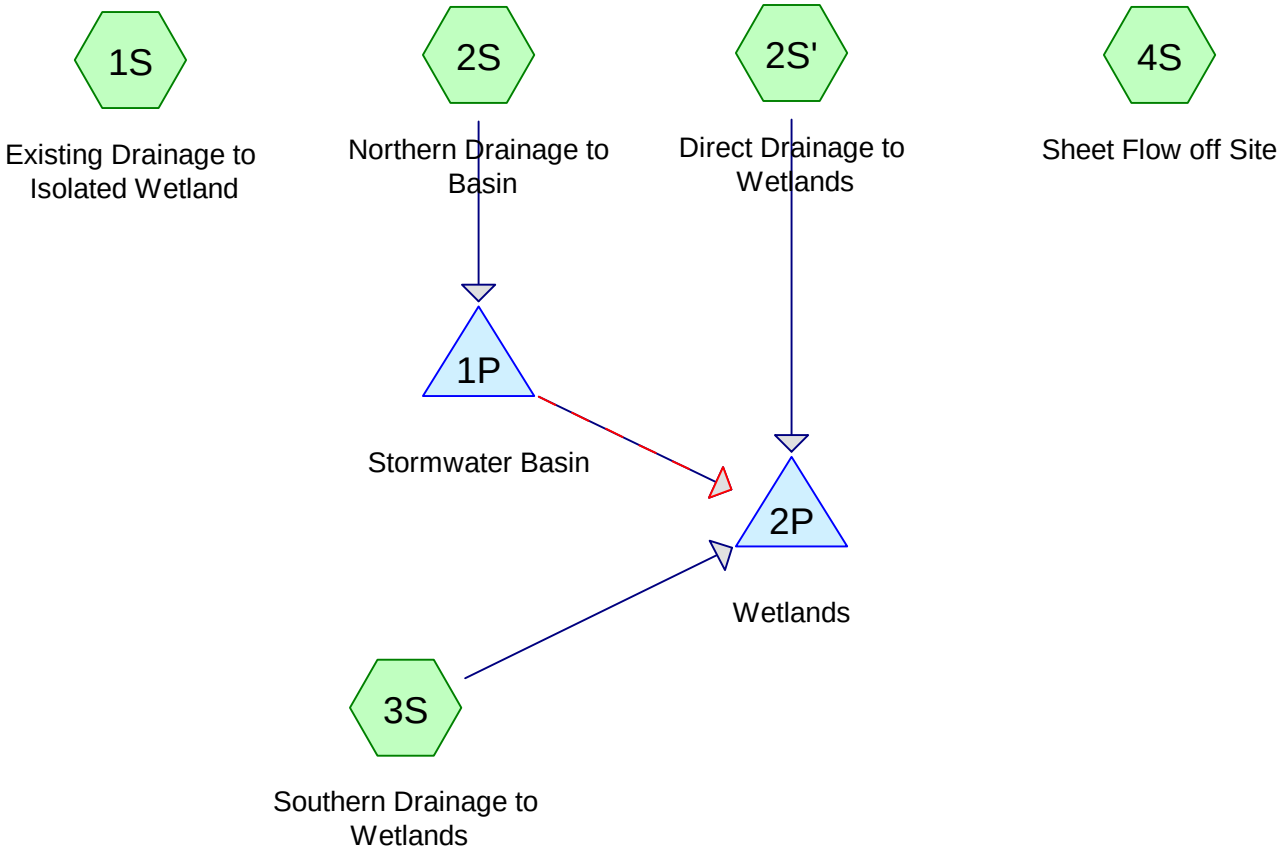
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.20'	**25.0' long x 6.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65

2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.80 cfs @ 15.18 hrs HW=482.26' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.80 cfs @ 0.56 fps)

PROPOSED CONDITIONS



Subcat Reach Pond Link

Routing Diagram for Proposed Drainage
Prepared by Killingly Engineering Associates, LLC, Printed 10/6/2020
HydroCAD® 10.00 s/n 07240 © 2011 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.638	30	Woods, Good, HSG A (1S)
0.864	32	Woods/grass comb., Good, HSG A (2S')
0.576	39	>75% Grass cover, Good, HSG A (2S)
0.706	68	<50% Grass cover, Poor, HSG A (3S)
0.541	96	Gravel surface, HSG A (3S, 4S)
1.512	98	Paved parking, HSG B (2S, 2S', 4S)
1.458	98	Paved parking/Building, HSG B (3S)
6.296	**73**	**TOTAL AREA**

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=27,807 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Northern Drainage to Basin Runoff Area=50,735 sf 50.51% Impervious Runoff Depth>0.88"
Flow Length=300' Slope=0.0530 '/' Tc=7.2 min CN=69 Runoff=1.02 cfs 0.086 af

Subcatchment 2S': Direct Drainage to Wetlands Runoff Area=54,394 sf 30.79% Impervious Runoff Depth>0.22"
Flow Length=275' Slope=0.0290 '/' Tc=14.1 min CN=52 Runoff=0.09 cfs 0.023 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>2.24"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=6.61 cfs 0.477 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>3.08"
Tc=2.0 min CN=98 Runoff=2.47 cfs 0.178 af

Pond 1P: Stormwater Basin Peak Elev=485.99' Storage=3,724 cf Inflow=1.02 cfs 0.086 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 2P: Wetlands Peak Elev=482.13' Storage=0.500 af Inflow=6.61 cfs 0.500 af
30.0" Round Culvert w/ 10.0" inside fill x 2.00 n=0.013 L=30.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 6.296 ac Runoff Volume = 0.764 af Average Runoff Depth = 1.46"
52.82% Pervious = 3.326 ac 47.18% Impervious = 2.971 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

Area (sf)	CN	Description
27,807	30	Woods, Good, HSG A
27,807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Basin

Runoff = 1.02 cfs @ 12.12 hrs, Volume= 0.086 af, Depth> 0.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

Area (sf)	CN	Description
25,626	98	Paved parking, HSG B
25,109	39	>75% Grass cover, Good, HSG A
50,735	69	Weighted Average
25,109		49.49% Pervious Area
25,626		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	300	0.0530	0.69		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 2S': Direct Drainage to Wetlands

Runoff = 0.09 cfs @ 12.50 hrs, Volume= 0.023 af, Depth> 0.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

Area (sf)	CN	Description
16,750	98	Paved parking, HSG B
37,644	32	Woods/grass comb., Good, HSG A
54,394	52	Weighted Average
37,644		69.21% Pervious Area
16,750		30.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	275	0.0290	0.33		**Lag/CN Method, Tc-2s'**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 6.61 cfs @ 12.08 hrs, Volume= 0.477 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 2.47 cfs @ 12.03 hrs, Volume= 0.178 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.38"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.165 ac, 50.51% Impervious, Inflow Depth > 0.88" for 2-Year event
Inflow = 1.02 cfs @ 12.12 hrs, Volume= 0.086 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 485.99' @ 24.00 hrs Surf.Area= 4,711 sf Storage= 3,724 cf

Plug-Flow detention time= (not calculated: initial storage excedes outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	485.00'	33,139 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
485.00	2,835	0	0
486.00	4,735	3,785	3,785
488.00	7,176	11,911	15,696
489.00	8,825	8,001	23,697
490.00	10,060	9,443	33,139

Device	Routing	Invert	Outlet Devices
#1	Primary	486.00'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 486.00' / 485.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	486.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	486.80'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Secondary	487.50'	**16.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=485.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)
  └**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=485.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Wetlands

Inflow Area = 4.965 ac, 48.96% Impervious, Inflow Depth > 1.21" for 2-Year event
Inflow = 6.61 cfs @ 12.08 hrs, Volume= 0.500 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.13' @ 24.00 hrs Surf.Area= 3.961 ac Storage= 0.500 af

Plug-Flow detention time= (not calculated: initial storage excedes outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.13'	**30.0" Round Culvert X 2.00 w/ 10.0" inside fill** L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 481.30' / 481.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.48 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=482.00' (Free Discharge)
↑—**1=Culvert** (Controls 0.00 cfs)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=27,807 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Northern Drainage to Basin Runoff Area=50,735 sf 50.51% Impervious Runoff Depth>1.46"
Flow Length=300' Slope=0.0530 '/' Tc=7.2 min CN=69 Runoff=1.80 cfs 0.141 af

Subcatchment 2S': Direct Drainage to Wetlands Runoff Area=54,394 sf 30.79% Impervious Runoff Depth>0.51"
Flow Length=275' Slope=0.0290 '/' Tc=14.1 min CN=52 Runoff=0.32 cfs 0.053 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>3.09"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=9.00 cfs 0.658 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>3.96"
Tc=2.0 min CN=98 Runoff=3.15 cfs 0.228 af

Pond 1P: Stormwater Basin Peak Elev=486.17' Storage=4,615 cf Inflow=1.80 cfs 0.141 af
Primary=0.06 cfs 0.040 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.040 af

Pond 2P: Wetlands Peak Elev=482.18' Storage=0.732 af Inflow=9.06 cfs 0.751 af
30.0" Round Culvert w/ 10.0" inside fill x 2.00 n=0.013 L=30.0' S=0.0000 '/' Outflow=0.05 cfs 0.019 af

Total Runoff Area = 6.296 ac Runoff Volume = 1.081 af Average Runoff Depth = 2.06"
52.82% Pervious = 3.326 ac 47.18% Impervious = 2.971 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

Area (sf)	CN	Description
27,807	30	Woods, Good, HSG A
27,807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Basin

Runoff = 1.80 cfs @ 12.11 hrs, Volume= 0.141 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

Area (sf)	CN	Description
25,626	98	Paved parking, HSG B
25,109	39	>75% Grass cover, Good, HSG A
50,735	69	Weighted Average
25,109		49.49% Pervious Area
25,626		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	300	0.0530	0.69		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 2S': Direct Drainage to Wetlands

Runoff = 0.32 cfs @ 12.34 hrs, Volume= 0.053 af, Depth> 0.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

Area (sf)	CN	Description
16,750	98	Paved parking, HSG B
37,644	32	Woods/grass comb., Good, HSG A
54,394	52	Weighted Average
37,644		69.21% Pervious Area
16,750		30.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	275	0.0290	0.33		**Lag/CN Method, Tc-2s'**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 9.00 cfs @ 12.08 hrs, Volume= 0.658 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 3.15 cfs @ 12.03 hrs, Volume= 0.228 af, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.29"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.165 ac, 50.51% Impervious, Inflow Depth > 1.46" for 5-Year event
Inflow = 1.80 cfs @ 12.11 hrs, Volume= 0.141 af
Outflow = 0.06 cfs @ 17.33 hrs, Volume= 0.040 af, Atten= 96%, Lag= 312.9 min
Primary = 0.06 cfs @ 17.33 hrs, Volume= 0.040 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 486.17' @ 17.33 hrs Surf.Area= 4,944 sf Storage= 4,615 cf

Plug-Flow detention time= 426.8 min calculated for 0.040 af (29% of inflow)
Center-of-Mass det. time= 286.7 min (1,146.1 - 859.4)

Volume	Invert	Avail.Storage	Storage Description
#1	485.00'	33,139 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
485.00	2,835	0	0
486.00	4,735	3,785	3,785
488.00	7,176	11,911	15,696
489.00	8,825	8,001	23,697
490.00	10,060	9,443	33,139

Device	Routing	Invert	Outlet Devices
#1	Primary	486.00'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 486.00' / 485.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	486.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	486.80'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Secondary	487.50'	**16.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.06 cfs @ 17.33 hrs HW=486.17' (Free Discharge)
└**1=Culvert** (Passes 0.06 cfs of 0.13 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 1.41 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=485.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Wetlands

Inflow Area = 4.965 ac, 48.96% Impervious, Inflow Depth > 1.82" for 5-Year event
Inflow = 9.06 cfs @ 12.08 hrs, Volume= 0.751 af
Outflow = 0.05 cfs @ 24.00 hrs, Volume= 0.019 af, Atten= 99%, Lag= 715.2 min
Primary = 0.05 cfs @ 24.00 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.18' @ 24.00 hrs Surf.Area= 3.962 ac Storage= 0.732 af

Plug-Flow detention time= 768.1 min calculated for 0.019 af (3% of inflow)
Center-of-Mass det. time= 423.8 min (1,250.5 - 826.7)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.13'	**30.0" Round Culvert X 2.00 w/ 10.0" inside fill** L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 481.30' / 481.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.48 sf

Primary OutFlow Max=0.05 cfs @ 24.00 hrs HW=482.18' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.05 cfs @ 0.25 fps)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=27,807 sf 0.00% Impervious Runoff Depth>0.01"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Northern Drainage to Basin Runoff Area=50,735 sf 50.51% Impervious Runoff Depth>1.99"
Flow Length=300' Slope=0.0530 '/' Tc=7.2 min CN=69 Runoff=2.52 cfs 0.193 af

Subcatchment 2S': Direct Drainage to Wetlands Runoff Area=54,394 sf 30.79% Impervious Runoff Depth>0.82"
Flow Length=275' Slope=0.0290 '/' Tc=14.1 min CN=52 Runoff=0.66 cfs 0.086 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>3.82"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=11.00 cfs 0.812 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>4.68"
Tc=2.0 min CN=98 Runoff=3.71 cfs 0.270 af

Pond 1P: Stormwater Basin Peak Elev=486.29' Storage=5,226 cf Inflow=2.52 cfs 0.193 af
Primary=0.15 cfs 0.090 af Secondary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.090 af

Pond 2P: Wetlands Peak Elev=482.23' Storage=0.893 af Inflow=11.24 cfs 0.987 af
30.0" Round Culvert w/ 10.0" inside fill x 2.00 n=0.013 L=30.0' S=0.0000 '/' Outflow=0.16 cfs 0.094 af

Total Runoff Area = 6.296 ac Runoff Volume = 1.361 af Average Runoff Depth = 2.59"
52.82% Pervious = 3.326 ac 47.18% Impervious = 2.971 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.00 cfs @ 23.79 hrs, Volume= 0.000 af, Depth> 0.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

Area (sf)	CN	Description
27,807	30	Woods, Good, HSG A
27,807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Basin

Runoff = 2.52 cfs @ 12.11 hrs, Volume= 0.193 af, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

Area (sf)	CN	Description
25,626	98	Paved parking, HSG B
25,109	39	>75% Grass cover, Good, HSG A
50,735	69	Weighted Average
25,109		49.49% Pervious Area
25,626		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	300	0.0530	0.69		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 2S': Direct Drainage to Wetlands

Runoff = 0.66 cfs @ 12.26 hrs, Volume= 0.086 af, Depth> 0.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

Area (sf)	CN	Description
16,750	98	Paved parking, HSG B
37,644	32	Woods/grass comb., Good, HSG A
54,394	52	Weighted Average
37,644		69.21% Pervious Area
16,750		30.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	275	0.0290	0.33		**Lag/CN Method, Tc-2s'**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 11.00 cfs @ 12.08 hrs, Volume= 0.812 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 3.71 cfs @ 12.03 hrs, Volume= 0.270 af, Depth> 4.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.05"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.165 ac, 50.51% Impervious, Inflow Depth > 1.99" for 10-Year event
Inflow = 2.52 cfs @ 12.11 hrs, Volume= 0.193 af
Outflow = 0.15 cfs @ 15.14 hrs, Volume= 0.090 af, Atten= 94%, Lag= 181.6 min
Primary = 0.15 cfs @ 15.14 hrs, Volume= 0.090 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 486.29' @ 15.14 hrs Surf.Area= 5,093 sf Storage= 5,226 cf

Plug-Flow detention time= 325.6 min calculated for 0.090 af (47% of inflow)
Center-of-Mass det. time= 199.5 min (1,049.5 - 850.0)

Volume	Invert	Avail.Storage	Storage Description
#1	485.00'	33,139 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
485.00	2,835	0	0
486.00	4,735	3,785	3,785
488.00	7,176	11,911	15,696
489.00	8,825	8,001	23,697
490.00	10,060	9,443	33,139

Device	Routing	Invert	Outlet Devices
#1	Primary	486.00'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 486.00' / 485.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	486.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	486.80'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Secondary	487.50'	**16.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.15 cfs @ 15.14 hrs HW=486.29' (Free Discharge)
└**1=Culvert** (Passes 0.15 cfs of 0.35 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.15 cfs @ 1.84 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=485.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Wetlands

Inflow Area = 4.965 ac, 48.96% Impervious, Inflow Depth > 2.39" for 10-Year event
Inflow = 11.24 cfs @ 12.08 hrs, Volume= 0.987 af
Outflow = 0.16 cfs @ 24.00 hrs, Volume= 0.094 af, Atten= 99%, Lag= 715.1 min
Primary = 0.16 cfs @ 24.00 hrs, Volume= 0.094 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.23' @ 24.00 hrs Surf.Area= 3.963 ac Storage= 0.893 af

Plug-Flow detention time= 625.5 min calculated for 0.094 af (10% of inflow)
Center-of-Mass det. time= 368.1 min (1,194.6 - 826.5)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.13'	**30.0" Round Culvert X 2.00 w/ 10.0" inside fill** L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 481.30' / 481.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.48 sf

Primary OutFlow Max=0.15 cfs @ 24.00 hrs HW=482.23' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.15 cfs @ 0.47 fps)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=27,807 sf 0.00% Impervious Runoff Depth>0.08"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.01 cfs 0.004 af

Subcatchment 2S: Northern Drainage to Basin Runoff Area=50,735 sf 50.51% Impervious Runoff Depth>2.79"
Flow Length=300' Slope=0.0530 '/' Tc=7.2 min CN=69 Runoff=3.58 cfs 0.271 af

Subcatchment 2S': Direct Drainage to Wetlands Runoff Area=54,394 sf 30.79% Impervious Runoff Depth>1.34"
Flow Length=275' Slope=0.0290 '/' Tc=14.1 min CN=52 Runoff=1.25 cfs 0.139 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>4.82"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=13.74 cfs 1.026 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>5.68"
Tc=2.0 min CN=98 Runoff=4.49 cfs 0.328 af

Pond 1P: Stormwater Basin Peak Elev=486.55' Storage=6,566 cf Inflow=3.58 cfs 0.271 af
Primary=0.26 cfs 0.164 af Secondary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.164 af

Pond 2P: Wetlands Peak Elev=482.27' Storage=1.077 af Inflow=14.38 cfs 1.329 af
30.0" Round Culvert w/ 10.0" inside fill x 2.00 n=0.013 L=30.0' S=0.0000 '/' Outflow=0.35 cfs 0.268 af

Total Runoff Area = 6.296 ac Runoff Volume = 1.768 af Average Runoff Depth = 3.37"
52.82% Pervious = 3.326 ac 47.18% Impervious = 2.971 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.01 cfs @ 15.58 hrs, Volume= 0.004 af, Depth> 0.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

Area (sf)	CN	Description
27,807	30	Woods, Good, HSG A
27,807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Basin

Runoff = 3.58 cfs @ 12.11 hrs, Volume= 0.271 af, Depth> 2.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

Area (sf)	CN	Description
25,626	98	Paved parking, HSG B
25,109	39	>75% Grass cover, Good, HSG A
50,735	69	Weighted Average
25,109		49.49% Pervious Area
25,626		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	300	0.0530	0.69		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 2S': Direct Drainage to Wetlands

Runoff = 1.25 cfs @ 12.23 hrs, Volume= 0.139 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

Area (sf)	CN	Description
16,750	98	Paved parking, HSG B
37,644	32	Woods/grass comb., Good, HSG A
54,394	52	Weighted Average
37,644		69.21% Pervious Area
16,750		30.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	275	0.0290	0.33		**Lag/CN Method, Tc-2s'**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 13.74 cfs @ 12.08 hrs, Volume= 1.026 af, Depth> 4.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 4.49 cfs @ 12.03 hrs, Volume= 0.328 af, Depth> 5.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.10"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.165 ac, 50.51% Impervious, Inflow Depth > 2.79" for 25-Year event
Inflow = 3.58 cfs @ 12.11 hrs, Volume= 0.271 af
Outflow = 0.26 cfs @ 14.07 hrs, Volume= 0.164 af, Atten= 93%, Lag= 117.4 min
Primary = 0.26 cfs @ 14.07 hrs, Volume= 0.164 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 486.55' @ 14.07 hrs Surf.Area= 5,404 sf Storage= 6,566 cf

Plug-Flow detention time= 282.3 min calculated for 0.164 af (61% of inflow)
Center-of-Mass det. time= 172.3 min (1,012.4 - 840.1)

Volume	Invert	Avail.Storage	Storage Description
#1	485.00'	33,139 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
485.00	2,835	0	0
486.00	4,735	3,785	3,785
488.00	7,176	11,911	15,696
489.00	8,825	8,001	23,697
490.00	10,060	9,443	33,139

Device	Routing	Invert	Outlet Devices
#1	Primary	486.00'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 486.00' / 485.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	486.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	486.80'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Secondary	487.50'	**16.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.26 cfs @ 14.07 hrs HW=486.55' (Free Discharge)
└**1=Culvert** (Passes 0.26 cfs of 1.11 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 2.98 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=485.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Wetlands

Inflow Area = 4.965 ac, 48.96% Impervious, Inflow Depth > 3.21" for 25-Year event
Inflow = 14.38 cfs @ 12.08 hrs, Volume= 1.329 af
Outflow = 0.35 cfs @ 20.54 hrs, Volume= 0.268 af, Atten= 98%, Lag= 507.5 min
Primary = 0.35 cfs @ 20.54 hrs, Volume= 0.268 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.27' @ 20.54 hrs Surf.Area= 3.964 ac Storage= 1.077 af

Plug-Flow detention time= 519.9 min calculated for 0.268 af (20% of inflow)
Center-of-Mass det. time= 323.2 min (1,149.1 - 825.9)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.13'	**30.0" Round Culvert X 2.00 w/ 10.0" inside fill** L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 481.30' / 481.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.48 sf

Primary OutFlow Max=0.35 cfs @ 20.54 hrs HW=482.27' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.35 cfs @ 0.70 fps)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=27,807 sf 0.00% Impervious Runoff Depth>0.19"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.02 cfs 0.010 af

Subcatchment 2S: Northern Drainage to Basin Runoff Area=50,735 sf 50.51% Impervious Runoff Depth>3.41"
Flow Length=300' Slope=0.0530 '/' Tc=7.2 min CN=69 Runoff=4.41 cfs 0.331 af

Subcatchment 2S': Direct Drainage to Wetlands Runoff Area=54,394 sf 30.79% Impervious Runoff Depth>1.77"
Flow Length=275' Slope=0.0290 '/' Tc=14.1 min CN=52 Runoff=1.78 cfs 0.184 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>5.57"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=15.77 cfs 1.185 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>6.42"
Tc=2.0 min CN=98 Runoff=5.07 cfs 0.371 af

Pond 1P: Stormwater Basin Peak Elev=486.80' Storage=7,950 cf Inflow=4.41 cfs 0.331 af
Primary=0.33 cfs 0.222 af Secondary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.222 af

Pond 2P: Wetlands Peak Elev=482.31' Storage=1.209 af Inflow=16.75 cfs 1.592 af
30.0" Round Culvert w/ 10.0" inside fill x 2.00 n=0.013 L=30.0' S=0.0000 '/' Outflow=0.53 cfs 0.430 af

Total Runoff Area = 6.296 ac Runoff Volume = 2.082 af Average Runoff Depth = 3.97"
52.82% Pervious = 3.326 ac 47.18% Impervious = 2.971 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.02 cfs @ 14.76 hrs, Volume= 0.010 af, Depth> 0.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

Area (sf)	CN	Description
27,807	30	Woods, Good, HSG A
27,807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Basin

Runoff = 4.41 cfs @ 12.11 hrs, Volume= 0.331 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

Area (sf)	CN	Description
25,626	98	Paved parking, HSG B
25,109	39	>75% Grass cover, Good, HSG A
50,735	69	Weighted Average
25,109		49.49% Pervious Area
25,626		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	300	0.0530	0.69		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 2S': Direct Drainage to Wetlands

Runoff = 1.78 cfs @ 12.22 hrs, Volume= 0.184 af, Depth> 1.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

Area (sf)	CN	Description
16,750	98	Paved parking, HSG B
37,644	32	Woods/grass comb., Good, HSG A
54,394	52	Weighted Average
37,644		69.21% Pervious Area
16,750		30.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	275	0.0290	0.33		**Lag/CN Method, Tc-2s'**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 15.77 cfs @ 12.08 hrs, Volume= 1.185 af, Depth> 5.57"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 5.07 cfs @ 12.03 hrs, Volume= 0.371 af, Depth> 6.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.88"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.165 ac, 50.51% Impervious, Inflow Depth > 3.41" for 50-Year event
Inflow = 4.41 cfs @ 12.11 hrs, Volume= 0.331 af
Outflow = 0.33 cfs @ 13.88 hrs, Volume= 0.222 af, Atten= 92%, Lag= 106.1 min
Primary = 0.33 cfs @ 13.88 hrs, Volume= 0.222 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 486.80' @ 13.88 hrs Surf.Area= 5,708 sf Storage= 7,950 cf

Plug-Flow detention time= 279.7 min calculated for 0.221 af (67% of inflow)
Center-of-Mass det. time= 179.0 min (1,013.3 - 834.3)

Volume	Invert	Avail.Storage	Storage Description
#1	485.00'	33,139 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
485.00	2,835	0	0
486.00	4,735	3,785	3,785
488.00	7,176	11,911	15,696
489.00	8,825	8,001	23,697
490.00	10,060	9,443	33,139

Device	Routing	Invert	Outlet Devices
#1	Primary	486.00'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 486.00' / 485.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	486.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	486.80'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Secondary	487.50'	**16.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.33 cfs @ 13.88 hrs HW=486.80' (Free Discharge)
└**1=Culvert** (Passes 0.33 cfs of 2.04 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.33 cfs @ 3.82 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=485.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Wetlands

Inflow Area = 4.965 ac, 48.96% Impervious, Inflow Depth > 3.85" for 50-Year event
Inflow = 16.75 cfs @ 12.08 hrs, Volume= 1.592 af
Outflow = 0.53 cfs @ 19.06 hrs, Volume= 0.430 af, Atten= 97%, Lag= 418.5 min
Primary = 0.53 cfs @ 19.06 hrs, Volume= 0.430 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.31' @ 19.06 hrs Surf.Area= 3.964 ac Storage= 1.209 af

Plug-Flow detention time= 478.8 min calculated for 0.429 af (27% of inflow)
Center-of-Mass det. time= 301.3 min (1,128.4 - 827.1)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.13'	**30.0" Round Culvert X 2.00 w/ 10.0" inside fill** L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 481.30' / 481.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.48 sf

Primary OutFlow Max=0.53 cfs @ 19.06 hrs HW=482.31' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.53 cfs @ 0.86 fps)

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Drainage to Isolated Runoff Area=27,807 sf 0.00% Impervious Runoff Depth>0.35"
Flow Length=135' Slope=0.0440 '/' Tc=19.4 min CN=30 Runoff=0.04 cfs 0.018 af

Subcatchment 2S: Northern Drainage to Basin Runoff Area=50,735 sf 50.51% Impervious Runoff Depth>4.10"
Flow Length=300' Slope=0.0530 '/' Tc=7.2 min CN=69 Runoff=5.31 cfs 0.398 af

Subcatchment 2S': Direct Drainage to Wetlands Runoff Area=54,394 sf 30.79% Impervious Runoff Depth>2.27"
Flow Length=275' Slope=0.0290 '/' Tc=14.1 min CN=52 Runoff=2.37 cfs 0.236 af

Subcatchment 3S: Southern Drainage to Runoff Area=111,153 sf 57.15% Impervious Runoff Depth>6.38"
Flow Length=245' Slope=0.0200 '/' Tc=5.3 min CN=89 Runoff=17.92 cfs 1.356 af

Subcatchment 4S: Sheet Flow off Site Runoff Area=30,168 sf 77.90% Impervious Runoff Depth>7.21"
Tc=2.0 min CN=98 Runoff=5.69 cfs 0.416 af

Pond 1P: Stormwater Basin Peak Elev=487.02' Storage=9,246 cf Inflow=5.31 cfs 0.398 af
Primary=0.52 cfs 0.285 af Secondary=0.00 cfs 0.000 af Outflow=0.52 cfs 0.285 af

Pond 2P: Wetlands Peak Elev=482.34' Storage=1.348 af Inflow=19.37 cfs 1.878 af
30.0" Round Culvert w/ 10.0" inside fill x 2.00 n=0.013 L=30.0' S=0.0000 '/' Outflow=0.76 cfs 0.626 af

Total Runoff Area = 6.296 ac Runoff Volume = 2.425 af Average Runoff Depth = 4.62"
52.82% Pervious = 3.326 ac 47.18% Impervious = 2.971 ac

Summary for Subcatchment 1S: Existing Drainage to Isolated Wetland

Runoff = 0.04 cfs @ 12.67 hrs, Volume= 0.018 af, Depth> 0.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

Area (sf)	CN	Description
27,807	30	Woods, Good, HSG A
27,807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	135	0.0440	0.12		**Sheet Flow, Tc-1S** Woods: Light underbrush n= 0.400 P2= 3.38"

Summary for Subcatchment 2S: Northern Drainage to Basin

Runoff = 5.31 cfs @ 12.11 hrs, Volume= 0.398 af, Depth> 4.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

Area (sf)	CN	Description
25,626	98	Paved parking, HSG B
25,109	39	>75% Grass cover, Good, HSG A
50,735	69	Weighted Average
25,109		49.49% Pervious Area
25,626		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	300	0.0530	0.69		**Lag/CN Method, Tc-2S**

Summary for Subcatchment 2S': Direct Drainage to Wetlands

Runoff = 2.37 cfs @ 12.22 hrs, Volume= 0.236 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

Area (sf)	CN	Description
16,750	98	Paved parking, HSG B
37,644	32	Woods/grass comb., Good, HSG A
54,394	52	Weighted Average
37,644		69.21% Pervious Area
16,750		30.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	275	0.0290	0.33		**Lag/CN Method, Tc-2s'**

Summary for Subcatchment 3S: Southern Drainage to Wetlands

Runoff = 17.92 cfs @ 12.08 hrs, Volume= 1.356 af, Depth> 6.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

	Area (sf)	CN	Description
*	63,520	98	Paved parking/Building, HSG B
	16,900	96	Gravel surface, HSG A
	30,733	68	<50% Grass cover, Poor, HSG A
	111,153	89	Weighted Average
	47,633		42.85% Pervious Area
	63,520		57.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	245	0.0200	0.77		**Lag/CN Method, Tc-3S**

Summary for Subcatchment 4S: Sheet Flow off Site

Runoff = 5.69 cfs @ 12.03 hrs, Volume= 0.416 af, Depth> 7.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.71"

Area (sf)	CN	Description
23,500	98	Paved parking, HSG B
6,668	96	Gravel surface, HSG A
30,168	98	Weighted Average
6,668		22.10% Pervious Area
23,500		77.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-4S**

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.165 ac, 50.51% Impervious, Inflow Depth > 4.10" for 100-Year event
Inflow = 5.31 cfs @ 12.11 hrs, Volume= 0.398 af
Outflow = 0.52 cfs @ 13.11 hrs, Volume= 0.285 af, Atten= 90%, Lag= 60.3 min
Primary = 0.52 cfs @ 13.11 hrs, Volume= 0.285 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 487.02' @ 13.11 hrs Surf.Area= 5,979 sf Storage= 9,246 cf

Plug-Flow detention time= 265.7 min calculated for 0.285 af (72% of inflow)
Center-of-Mass det. time= 173.2 min (1,002.1 - 829.0)

Volume	Invert	Avail.Storage	Storage Description
#1	485.00'	33,139 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
485.00	2,835	0	0
486.00	4,735	3,785	3,785
488.00	7,176	11,911	15,696
489.00	8,825	8,001	23,697
490.00	10,060	9,443	33,139

Device	Routing	Invert	Outlet Devices
#1	Primary	486.00'	**12.0" Round Culvert** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 486.00' / 485.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	486.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	486.80'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Secondary	487.50'	**16.0' long x 16.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.52 cfs @ 13.11 hrs HW=487.02' (Free Discharge)
└**1=Culvert** (Passes 0.52 cfs of 2.73 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 4.45 fps)
  └**3=Orifice/Grate** (Orifice Controls 0.13 cfs @ 1.59 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=485.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Wetlands

Inflow Area = 4.965 ac, 48.96% Impervious, Inflow Depth > 4.54" for 100-Year event
Inflow = 19.37 cfs @ 12.08 hrs, Volume= 1.878 af
Outflow = 0.76 cfs @ 17.66 hrs, Volume= 0.626 af, Atten= 96%, Lag= 334.8 min
Primary = 0.76 cfs @ 17.66 hrs, Volume= 0.626 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 482.34' @ 17.66 hrs Surf.Area= 3.965 ac Storage= 1.348 af

Plug-Flow detention time= 447.4 min calculated for 0.624 af (33% of inflow)
Center-of-Mass det. time= 283.4 min (1,109.6 - 826.2)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	7.958 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

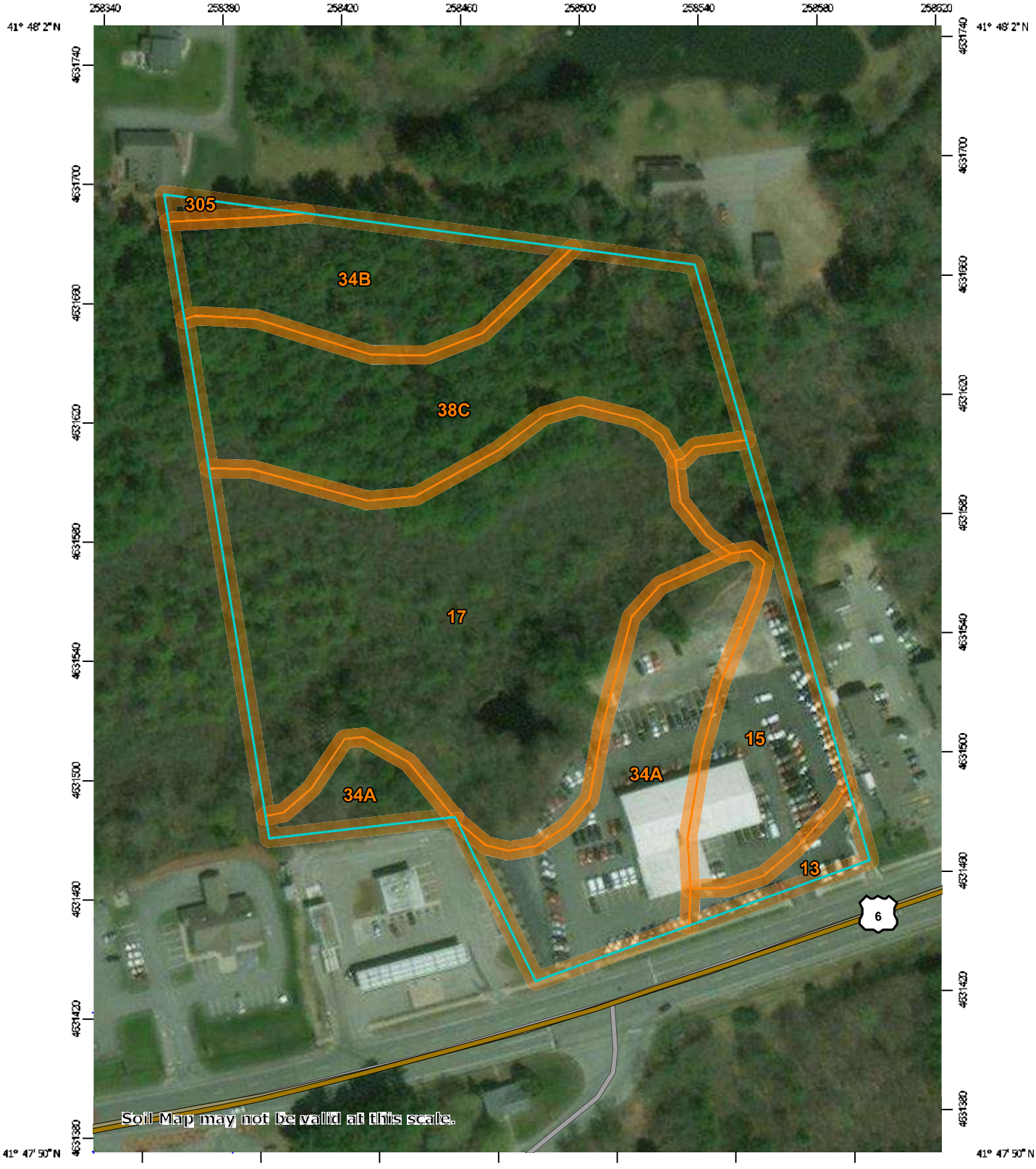
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
482.00	3.960	0.000	0.000
482.10	3.960	0.396	0.396
484.00	4.000	7.562	7.958

Device	Routing	Invert	Outlet Devices
#1	Primary	482.13'	**30.0" Round Culvert X 2.00 w/ 10.0" inside fill** L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 481.30' / 481.30' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.48 sf

Primary OutFlow Max=0.76 cfs @ 17.66 hrs HW=482.34' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.76 cfs @ 1.01 fps)

SUPPORTING DOCUMENTATION

NOAA Point Precipitation Estimates
Web Soil Survey
Soil Scientists Delineation & Impact Reports



Map Scale: 1:1,840 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 19, Sep 13, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 14, 2011—Aug 27, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Walpole sandy loam, 0 to 3 percent slopes	0.2	1.9%
15	Scarboro muck, 0 to 3 percent slopes	1.1	10.6%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	3.9	37.8%
34A	Merrimac fine sandy loam, 0 to 3 percent slopes	1.7	16.9%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	1.1	10.7%
38C	Hinckley loamy sand, 3 to 15 percent slopes	2.2	21.5%
305	Udorthents-Pits complex, gravelly	0.1	0.5%
Totals for Area of Interest		**10.3**	**100.0%**

NOAA Atlas 14, Volume 10, Version 3
Location name: Brooklyn, Connecticut, USA*
Latitude: 41.7997°, Longitude: -71.9033°
Elevation: 232.98 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.335** (0.257-0.434)	**0.399** (0.305-0.517)	**0.503** (0.384-0.654)	**0.588** (0.446-0.768)	**0.706** (0.520-0.957)	**0.796** (0.575-1.10)	**0.888** (0.623-1.26)	**0.987** (0.663-1.44)	**1.13** (0.729-1.69)	**1.24** (0.782-1.89)
10-min	**0.475** (0.364-0.615)	**0.565** (0.433-0.732)	**0.712** (0.543-0.926)	**0.833** (0.633-1.09)	**1.00** (0.736-1.36)	**1.13** (0.813-1.56)	**1.26** (0.883-1.79)	**1.40** (0.937-2.04)	**1.59** (1.03-2.40)	**1.75** (1.11-2.68)
15-min	**0.559** (0.429-0.724)	**0.664** (0.509-0.861)	**0.836** (0.639-1.09)	**0.979** (0.744-1.28)	**1.18** (0.866-1.60)	**1.33** (0.957-1.83)	**1.48** (1.04-2.11)	**1.65** (1.10-2.40)	**1.88** (1.21-2.82)	**2.06** (1.30-3.16)
30-min	**0.773** (0.593-1.00)	**0.919** (0.704-1.19)	**1.16** (0.884-1.51)	**1.36** (1.03-1.77)	**1.63** (1.20-2.21)	**1.83** (1.33-2.53)	**2.05** (1.44-2.92)	**2.28** (1.53-3.32)	**2.59** (1.68-3.90)	**2.85** (1.80-4.37)
60-min	**0.987** (0.757-1.28)	**1.17** (0.899-1.52)	**1.48** (1.13-1.92)	**1.73** (1.32-2.26)	**2.08** (1.53-2.82)	**2.34** (1.69-3.23)	**2.61** (1.84-3.72)	**2.91** (1.95-4.24)	**3.31** (2.15-4.99)	**3.64** (2.30-5.58)
2-hr	**1.26** (0.975-1.63)	**1.50** (1.16-1.94)	**1.89** (1.45-2.45)	**2.21** (1.69-2.88)	**2.66** (1.97-3.59)	**2.99** (2.18-4.12)	**3.34** (2.37-4.76)	**3.74** (2.52-5.42)	**4.32** (2.80-6.46)	**4.79** (3.04-7.30)
3-hr	**1.46** (1.13-1.88)	**1.74** (1.34-2.23)	**2.18** (1.68-2.82)	**2.55** (1.96-3.31)	**3.07** (2.28-4.14)	**3.45** (2.52-4.75)	**3.86** (2.75-5.50)	**4.33** (2.92-6.26)	**5.02** (3.27-7.49)	**5.60** (3.56-8.50)
6-hr	**1.87** (1.45-2.39)	**2.22** (1.72-2.84)	**2.80** (2.16-3.59)	**3.27** (2.52-4.22)	**3.93** (2.94-5.28)	**4.42** (3.25-6.06)	**4.94** (3.54-7.02)	**5.56** (3.76-7.99)	**6.48** (4.23-9.60)	**7.26** (4.63-10.9)
12-hr	**2.36** (1.84-3.00)	**2.81** (2.19-3.58)	**3.55** (2.76-4.53)	**4.16** (3.22-5.34)	**5.00** (3.76-6.68)	**5.63** (4.15-7.67)	**6.30** (4.53-8.89)	**7.09** (4.81-10.1)	**8.26** (5.40-12.1)	**9.24** (5.91-13.8)
24-hr	**2.82** (2.21-3.57)	**3.38** (2.65-4.28)	**4.30** (3.36-5.46)	**5.06** (3.93-6.46)	**6.11** (4.61-8.12)	**6.89** (5.10-9.34)	**7.73** (5.58-10.8)	**8.71** (5.93-12.4)	**10.2** (6.67-14.9)	**11.4** (7.31-16.9)
2-day	**3.17** (2.50-4.00)	**3.85** (3.03-4.85)	**4.94** (3.88-6.25)	**5.86** (4.57-7.44)	**7.11** (5.39-9.41)	**8.04** (5.99-10.9)	**9.04** (6.57-12.6)	**10.2** (6.99-14.4)	**12.0** (7.91-17.5)	**13.5** (8.71-20.0)
3-day	**3.44** (2.72-4.32)	**4.17** (3.29-5.24)	**5.37** (4.22-6.77)	**6.36** (4.97-8.05)	**7.72** (5.87-10.2)	**8.74** (6.52-11.8)	**9.83** (7.16-13.7)	**11.1** (7.63-15.7)	**13.1** (8.65-19.0)	**14.8** (9.55-21.8)
4-day	**3.68** (2.91-4.61)	**4.46** (3.53-5.59)	**5.73** (4.51-7.21)	**6.78** (5.31-8.57)	**8.23** (6.27-10.8)	**9.30** (6.96-12.5)	**10.5** (7.64-14.6)	**11.9** (8.13-16.6)	**14.0** (9.23-20.2)	**15.8** (10.2-23.2)
7-day	**4.36** (3.46-5.44)	**5.23** (4.15-6.53)	**6.65** (5.27-8.34)	**7.84** (6.17-9.87)	**9.47** (7.24-12.4)	**10.7** (8.02-14.3)	**12.0** (8.78-16.6)	**13.6** (9.32-18.9)	**16.0** (10.6-22.9)	**18.0** (11.7-26.3)
10-day	**5.04** (4.02-6.28)	**5.97** (4.75-7.44)	**7.48** (5.94-9.35)	**8.74** (6.90-11.0)	**10.5** (8.02-13.7)	**11.8** (8.84-15.6)	**13.1** (9.62-18.1)	**14.8** (10.2-20.5)	**17.2** (11.4-24.7)	**19.3** (12.5-28.1)
20-day	**7.20** (5.77-8.93)	**8.19** (6.56-10.2)	**9.81** (7.83-12.2)	**11.2** (8.85-13.9)	**13.0** (9.98-16.8)	**14.4** (10.8-18.9)	**15.9** (11.5-21.4)	**17.4** (12.1-24.0)	**19.6** (13.1-27.8)	**21.4** (13.9-30.8)
30-day	**9.03** (7.25-11.1)	**10.0** (8.06-12.4)	**11.7** (9.36-14.5)	**13.1** (10.4-16.3)	**15.0** (11.5-19.2)	**16.4** (12.3-21.4)	**17.9** (13.0-23.8)	**19.3** (13.5-26.5)	**21.2** (14.2-30.0)	**22.6** (14.7-32.5)
45-day	**11.3** (9.09-13.9)	**12.3** (9.92-15.2)	**14.0** (11.3-17.3)	**15.4** (12.3-19.2)	**17.4** (13.4-22.1)	**18.9** (14.2-24.4)	**20.4** (14.7-26.9)	**21.7** (15.2-29.6)	**23.3** (15.6-32.8)	**24.4** (15.9-34.9)
60-day	**13.2** (10.6-16.2)	**14.2** (11.5-17.5)	**16.0** (12.8-19.7)	**17.4** (13.9-21.6)	**19.4** (15.0-24.6)	**21.0** (15.8-27.0)	**22.5** (16.3-29.5)	**23.8** (16.6-32.3)	**25.2** (17.0-35.3)	**26.1** (17.1-37.3)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

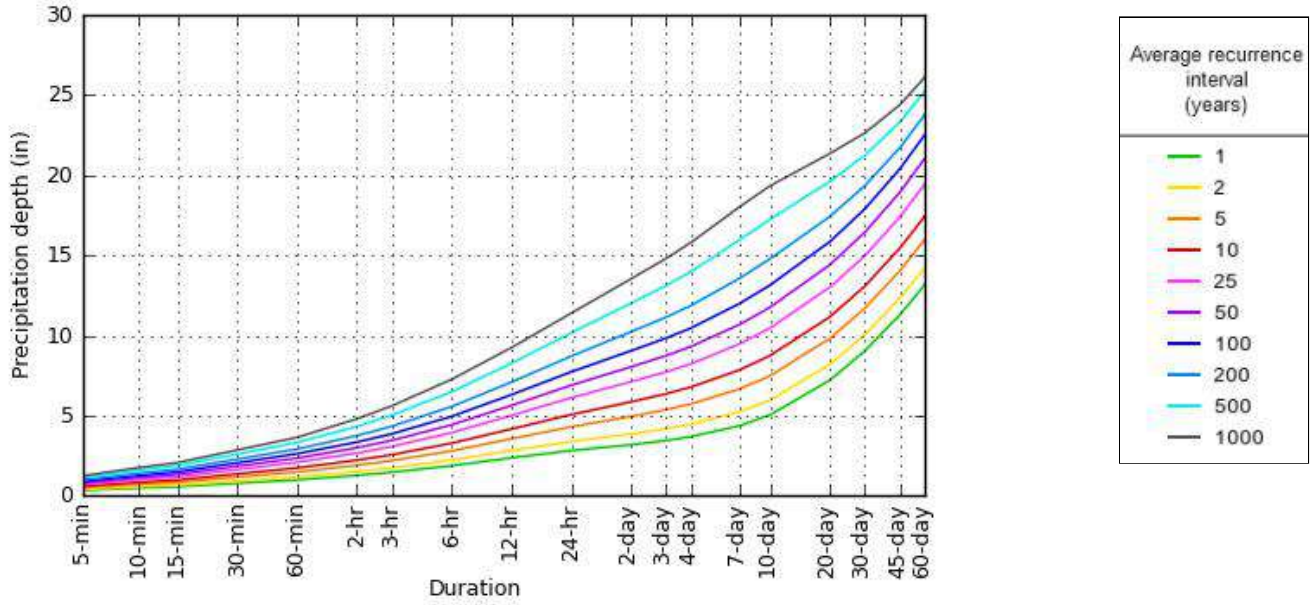
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

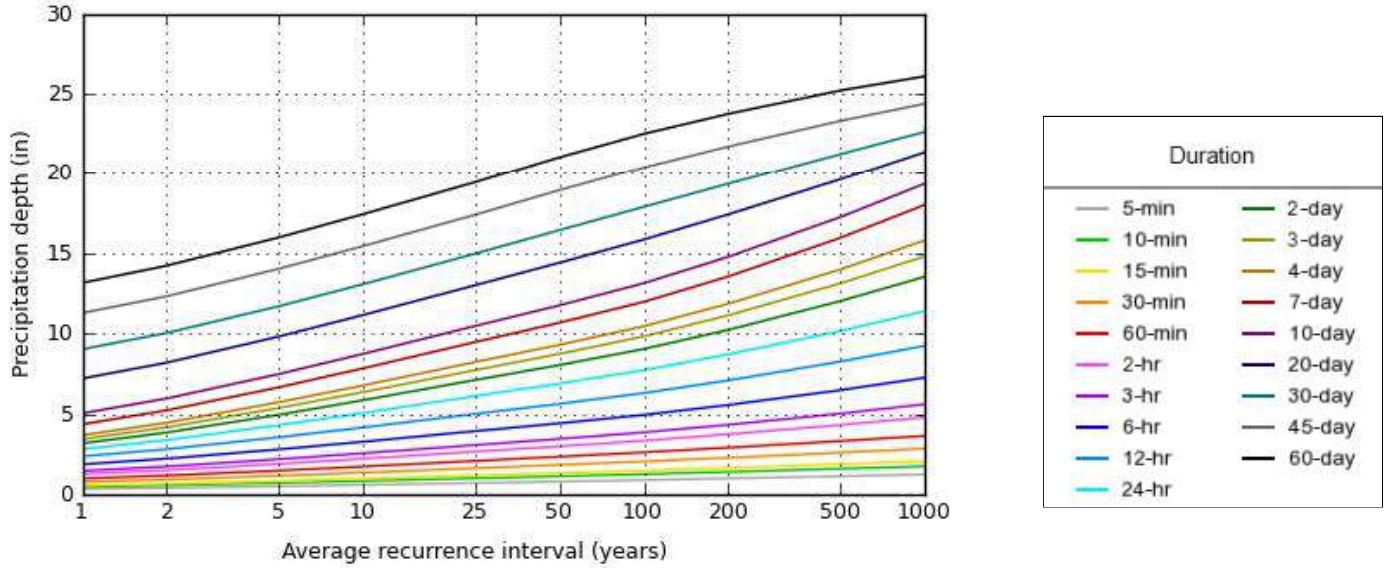
Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.7997°, Longitude: -71.9033°



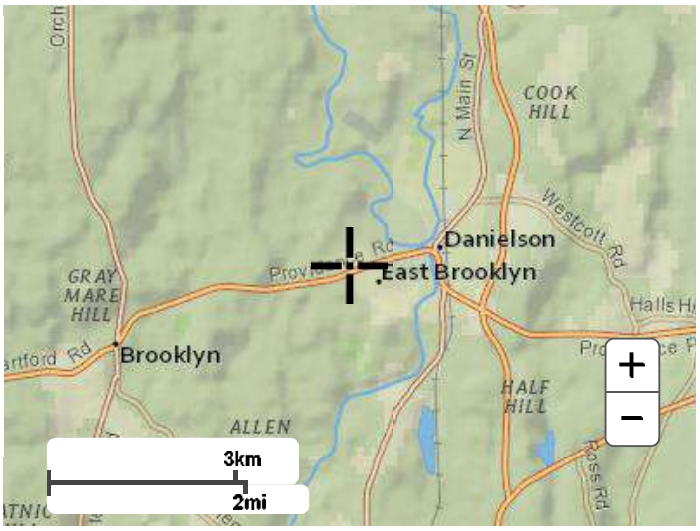


NOAA Atlas 14, Volume 10, Version 3 Created (GMT): Tue Oct 6 19:36:47 2020

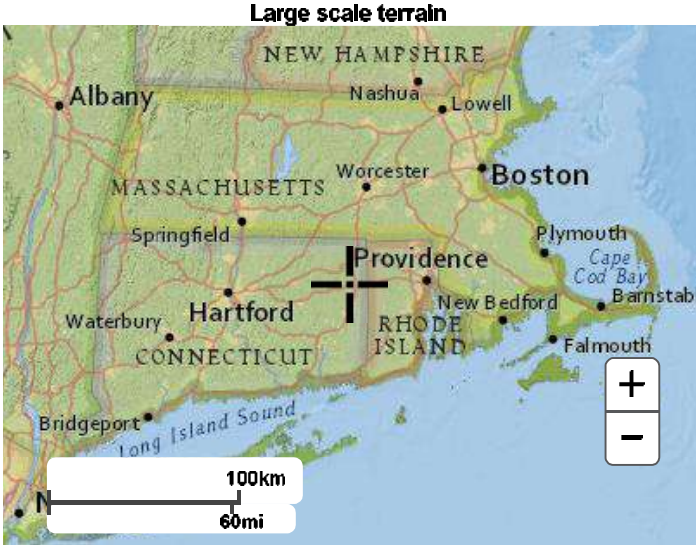
Back to Top

Maps & aerials

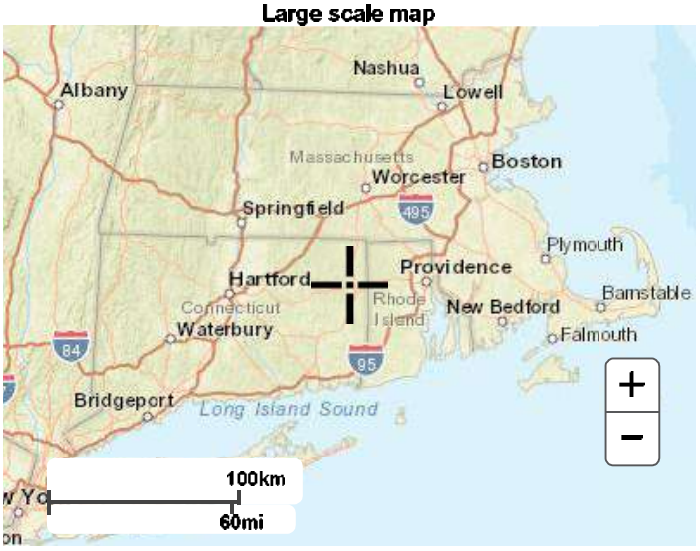
Small scale terrain



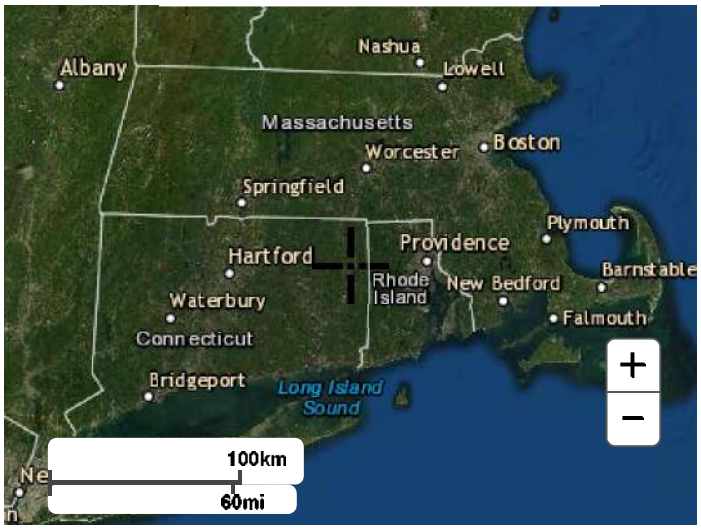
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Joseph R. Theroux
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P.O. Box 32, Voluntown, CT. 06384
Forestry Services ~ Environmental Impact Assessments
Wetland Delineations and Permitting ~ E&S/Site Monitoring
Wetland function and value assessments

11/14/19

Killingly Engineering Associates
P.O. Box 421
Dayville, CT. 06241

Re: Wetland delineation, Vachon Chevrolet site, Brooklyn, CT.

Dear Mr. Glaude,

At your request I have delineated the inland wetlands/watercourse on the above referenced 4.68 acre & 5.84 properties shown as lot#13A and lot 14.

These wetlands have been delineated in accordance with the standards of the National Cooperative Soil Survey and the definitions of wetlands as found in the Connecticut Statutes, Chapter 440, Sections 22A-38.

Fluorescent pink flags with a corresponding location number delineate the boundary between the upland soils and the inland wetlands/watercourse that was found.

Flag numbers WF-1 thru WF-21, WF-1-1 thru WF-1-12 and WF-1A thru WF-18A delineate the southern boundary of the palustrine forested/scrub-shrub wetland/watercourse that bisect the properties.

Flag numbers WF-1B thru WF42B delineate the northern boundary of the palustrine forested/scrub-shrub wetland/watercourse. This wetland was inundated on the date of the delineation, (11/14/19).

Flag numbers WF-1C thru WF-11C delineate an isolated pocket of wetland soils that have formed in an old shallow excavated area. As this depressed area was partially inundated on the date of the delineation and has no inlet or outlet, it may be classified as a vernal pool or as vernal habitat.

These wetland soils are characterized by thick mineral and/or organic "A" horizons and low chroma colors within 20 inches of the soil surface.

The remainder of these parcels was inspected for inland wetlands and watercourses and none were found.

In conclusion, if you have any questions concerning the delineation or this report, please feel free to contact me.

Thank you,

Joseph R. Theroux
Certified Soil Scientist
Member SSSSNE, NSCSS.

Joseph R. Theroux
~ Certified Forester/ Soil Scientist ~
Phone 860-428-7992~ Fax 860-376-6842
P.O. Box 32, Voluntown, CT. 06384
Forestry Services ~ Wetland Impact Assessments
Wetland Delineations and Permitting ~ E&S/Site Monitoring
Wetland Function & Value Assessments

3/5/20

Killingly Engineering Associates
P.O. Box 421
Dayville, CT. 06241

Re: Wetland function/value and impact assessment report for proposed parking expansion for Vachon Chevrolet, Providence Road, Brooklyn, Connecticut.

Dear Mr. Glaude,

At your request, I have reviewed the site plans entitled: "PROPOSED PARKING EXPANSION, "VACHON CHEVROLET" PROVIDENCE ROAD (ROUTE 6) BROOKLYN CONNECTICUT, dated 1/7/2020 and the above referenced property for the purposes of assessing the wetland functions and values and potential impacts to the inland wetlands and watercourses in proximity to the proposed parking area expansion.

The wetland function and value assessment was conducted on 2/26/20.

Existing Conditions

The property composed by two separate lots is 10.52 acres in size and is located on the north side of Providence Road, (Route 6), in Brooklyn, CT.

The southeast portion of the site is occupied by the car dealership with both paved and gravel parking areas. The remaining portion of the property is occupied by a large palustrine forested/scrub-shrub wetland & watercourse complex and adjacent forested uplands.

Upland Review Areas

The 125 foot upland review area around the delineated forested/scrub-shrub wetland/watercourse is vegetated in the overstory with a mix of white pine and mixed hardwoods in the sawtimber and polewood size classes. The mixed hardwoods include white and scarlet oaks, and red maple.

The understory is comprised of polewood and saplings in these species as well as shrub species such as highbush blueberry. Herbaceous vegetation includes hay scented ferns and miscellaneous grasses.

Wetlands

A palustrine forested/scrub-shrub wetland/watercourse was delineated in the central portion of the property. (See wetland delineation report). The wetland was inundated on the date of the delineation, (11/14/19) and the assessment, (2/26/20).

This area has formed due to the presence of a perched or seasonal ground water table that provides the hydrology to allow it to remain inundated throughout the year.

The wetland/watercourse is vegetated around its perimeter with scarlet oaks, white pine and red maple in the sawtimber size classes.

The majority of this wetland/watercourse is densely vegetated with red maple saplings and typical wetland shrub species such as highbush blueberry, speckled alder, sweet pepperbush, winterberry and spicebush.

Herbaceous vegetation included sphagnum moss, sensitive & cinnamon ferns, sedges, rushes, skunk cabbage, tussock sedges and misc. grasses. Floating duckweed was also noted in one area.

Wildlife tracks/sign found and directly observed in and adjacent to the wetland/watercourse included mammals and bird species such as: white tailed deer, eastern coyote, red tailed fox, raccoon gray & red squirrels, red tailed hawk, American crow, red wing blackbird, and numerous songbird species.

Due to the time of year, no amphibians or reptiles were observed although undoubtedly the main wetland/watercourse serves as habitat for numerous species.

A small depressed area containing wetland soils was also delineated in the northeast portion of the property, (delineated by the "C" series flags). This area was most likely a historic excavation, in which these wetland soils have formed due to prolonged wetness.

The perimeter of this area is vegetated in the overstory with red maple sawtimber and polewood, and the understory is comprised of shrubs such as highbush blueberry, and speckled alder. Herbaceous vegetation included sensitive and cinnamon ferns. Sedges were found within the inundated portion of the wetland.

It is my opinion that this small wetland may possibly serve as vernal habitat, although no wood frogs, salamanders or egg masses were found on the date of the assessment, (2/25/20).

Wetland Functions and Values

The forested/scrub-shrub wetland/watercourse, and the small wetland were inspected to determine wetland functions and values utilizing the Army Corps. Of Engineers methodology as outlined in "The Highway Methodology Workbook Supplement".

This methodology recognizes 8 separate wetland functions: groundwater recharge/discharge, floodflow alteration/storage, fish/shellfish habitat, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, sediment/shoreline stabilization and wildlife habitat. The 4 wetland values include: recreational value, educational/scientific value, uniqueness/heritage value and threatened/endangered species habitat.

For each wetland function or value to be determined, 2 to 31 different considerations/or qualifiers are considered as rationale to apply or eliminate that specific function or value.

Palustrine forested/scrub-shrub wetland/watercourse functions:

The following is a list of the wetland functions exhibited by this wetland/watercourse and their descriptions:

Floodflow alteration: the large wetland/watercourse exhibits flood storage potential due to the flat topography, and valuable properties, structures and resources are located adjacent to the wetland.

Ground water recharge and discharge: Ground water recharge function is possible due to the perched water table being trapped and slowly infiltrating during dry season. This is a primary function of this wetland.

Sediment/toxicant retention: herbaceous vegetation, shrubs and flat topography in the wetlands can effectively trap sediments/toxicants from surface flows from the adjacent topography and gravel parking areas.

Nutrient removal/retention: herbaceous and shrub vegetation in the wetlands can effectively trap and utilize potential nutrients before reaching watercourses. Nitrogen fixing bacteria in wetland soils also trap nitrogen. Although with no current sources of nutrients present, this wetland has little opportunity to provide this function.

Production export: numerous tree, shrub and herbaceous plant species in the wetlands provide food, berries and seeds for wildlife. Amphibians provide food for birds and mammals.

Sediment and shoreline stabilization: Roots from herbaceous grasses and plants, shrub species and trees found in wetlands bind and stabilize soils which helps prevent erosion along steeper edges of wetlands. Although with no significant currents or shoreline waves, this wetland/watercourse has little opportunity to provide this function.

Wildlife habitat: Numerous amphibians, reptile, mammal, and bird species inhabit this wetland. The wetland and upland riparian zones adjacent to the wetland serve as wildlife habitat. Wildlife habitat is another primary function of this wetland.

This wetland did not exhibit the wetland functions of fish habitat due to the lack of significant deep water habitat areas capable of sustaining fish.

Palustrine forested Scrub-shrub Wetland/Watercourse Values

The following wetland values were exhibited by this wetland/watercourse:

Educational/scientific value: this wetland/watercourse is relatively undisturbed, contains multiple wetland classes, and is considered as valuable wildlife habitat, although with no public access on this property, this wetland has little opportunity to provide this value.

Uniqueness/heritage value: this wetland/watercourse serves an important role in the ecological system of the area, it is a typical wetland class for the area, and serves as valuable wildlife habitat.

Visual/aesthetic value: the wetland/watercourse is visible from multiple viewing locations, it contains a diversity of vegetation that turns vibrant colors during different seasons, it is considered valuable wildlife habitat, and is not significantly disturbed.

This wetland/watercourse did not exhibit the value of threatened/endangered species habitat as the site was not shown within the shaded areas on the current natural diversity database maps.

"C Series" Wetland Functions:

The following is a list of the wetland functions exhibited by this wetland and their descriptions:

Ground water recharge and discharge: Ground water recharge function is possible due to the perched water table being trapped and slowly infiltrating during dry season. This is a primary function of this wetland.

Wildlife habitat: It is possible that amphibians, reptile, mammal, and bird species inhabit this wetland. The wetland and upland riparian zones adjacent to the wetland serve as wildlife habitat.

This wetland did not exhibit the wetland functions of floodflow alteration, sediment/toxicant retention, nutrient removal/retention, production export, sediment & shoreline stabilization and fish habitat due to the lack of floodwater storage capacity, its small area, lack of dense vegetation, lack of significant deep water habitat areas capable of sustaining fish, and it is not associated with stream flows or a large body of water.

"C Series" Wetland Values

The following wetland values were exhibited by this wetland:

Educational/scientific value: this wetland is relatively undisturbed, and is considered as wildlife habitat, although with no public access on this property, this wetland has little opportunity to provide this value.

Uniqueness/heritage value: this wetland serves an important role in the ecological system of the area, it is a typical wetland class for the area, and serves as wildlife habitat.

This wetland did not exhibit the visual/aesthetic value as it is not visible to the public, and does not contain vegetation that turn vibrant colors. It does not exhibit the value of threatened/endangered species habitat as the site was not shown within the shaded areas on the current natural diversity database maps.

Potential wetland impacts

The project plans and site were reviewed to assess the potential impacts to the wetlands from the proposed parking area expansion.

On the two parcels, an expansion of the existing parking areas is proposed, one area in the northern portion of both of the lots, and one in the southern portion of lot 13A.

Northern parking area:

In order to access the uplands in the northern portion of the parcels, a 1,860 square foot direct wetland disturbance is proposed for the 12 foot wide paved access drive. This will consist of excavation and installation of two 30 inch diameter class IV concrete pipes which will be filled along the bottom with native soil material.

Within the majority of the 125 foot upland review area and remaining uplands, the 12 foot wide access drive and a 340 foot long by 60 foot wide paved parking area is proposed with a storm water treatment basin located to the south of the parking area. In the bottom of the storm water basin, a 2,850 square foot wetland mitigation is also proposed. This area is designed to have a wet bottom which will fluctuate with the existing water table and will be seeded in with New England Wetmix.

The clearing limits and E&S measures shown on the plans vary from approx. 40 feet in width to immediately adjacent to the wetlands.

The topsoil stockpile is shown a reasonable distance from the wetlands and silt fencing is shown along the southern side.

Southern parking area:

In order to access the proposed 112 foot long by 44 foot wide paved parking area, a 1,250 square foot direct wetland disturbance is proposed for the construction of the access road.

To the north of the paved parking area, a storm water treatment basin is shown, and in the bottom of the basin a 1,150 square foot wetland mitigation is proposed. This area is also designed to have a wet bottom which will fluctuate with the existing water table and will be seeded in with New England Wetmix.

Also shown on the project plans are proposed plantings of common spicebush and sweetgale shrubs along the northern edge of the storm water treatment basin, to help revegetate and stabilize the side slopes.

The clearing limits and E&S measures on the plans for the most part are depicted immediately adjacent to the wetlands.

No topsoil stockpile is shown for this small construction area so I would assume that the topsoil will be hauled off site, or stored elsewhere on site, preferably with silt fencing around the perimeter.

E&S Measures:

The submitted project plans show the proposed E&S measures around the perimeter of the clearing limits adjacent to the wetlands as silt fencing and/or staked hay bales.

It would be my recommendation that the E&S measures be installed as soon as possible after the initial timber cutting and before the stumping and topsoil removal operation. It is during this phase where the most likely opportunity will occur for erosion and sedimentation. In some areas the slopes adjacent to the wetlands are steep, and the excavation, filling and grading are proposed directly adjacent to the wetlands.

Along the clearing limits adjacent to the wetlands, I would recommend either super silt fencing or silt fencing backed by staked hay bales should be proposed and implemented. This silt fencing will also prevent reptiles and amphibians from entering the excavation areas.

I would recommend that the storm water basins be constructed first before the remaining areas so they can serve as temporary sediment basins until the parking areas are constructed.

I would also recommend that E&S inspections be conducted on a frequent basis during the land clearing/stumping/topsoil stripping phases, and prior to significant storm events.

Direct wetland impacts:

The combined direct wetland disturbance for both of the wetland crossings totals 3,110 square feet. In this area all the specifically listed wetland functions and values for each wetland will be negated.

It is my opinion however, that the proposed 4,000 square foot wetland mitigation will compensate for this loss.

Potential short term impacts:

The potential short term impacts associated with the land clearing, stumping, top soil stripping and construction would be limited to potential sediment discharges during significant storm events.

Provided that the proposed/recommended E&S measures/inspections are correctly implemented and maintained throughout the project timeframe, the disturbance directly

adjacent to the wetlands will not significantly impact the wetlands or their existing functions due to erosion and sedimentation. Once the top soils are removed, the well-drained, sandy/gravelly soils will allow for good infiltration of storm water runoff until the construction is complete.

The quick and permanent establishment of vegetation in the disturbed areas is crucial to the prevention of erosion. To minimize the potential for these impacts, E&S control measures have been incorporated into the project plans on sheet 5 of 5.

Potential long term impacts:

Wetland hydrology

I see no direct or long term impacts to the wetland hydrology as a result of the proposed access roads, parking areas or storm water treatment basins. As the access drives and parking areas are paved, storm water runoff will be an input to the existing hydrology, through some minor overland flow, but mostly through the storm water basins, as ground water recharge or as direct discharge during significant storm events after treatment.

Water quality:

Due to the incorporation of the paved parking surfaces, stone water quality trenches, storm water treatment basins, and some direct infiltration of storm water in the well-drained, sandy, gravelly soils, I see no significant or adverse impacts to the existing water quality of the wetlands from storm water discharges.

Adjacent upland wildlife habitat

Potential long term impacts to the upland habitat from the project would include the loss of a significant portion of the URA serving as riparian zones and upland wildlife habitat adjacent to the wetlands. This intrusion will force wildlife into the narrow vegetated corridor in and around the wetlands during and after the construction timeframe, and into other areas where the uplands are not disturbed. However, because this vegetated wildlife corridor is not proposed to be totally cleared and still exists in minimal widths in some areas, the wetlands and adjacent riparian zone will still provide for some wetland function and wildlife habitat.

It is my opinion that the proposed 4,000 square foot wetland mitigation will help compensate for these impacts to the upland/riparian habitat.

In summary, the design of the project implements features intended to minimize or eliminate potential impacts to the wetlands such as storm water runoff, significant loss of wetland habitat, and erosion and sedimentation associated with construction activities.

I feel these proposed measures are adequate to protect the wetlands provided that the recommended erosion and sedimentation control features are implemented and maintained throughout the excavation and reclamation timeframe.

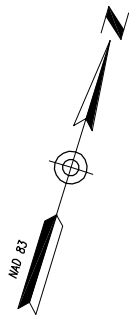
The construction of the proposed 4,000 square foot wetland mitigation will assist in the remaining wetlands ability to provide the same wetland functions and values they currently provide.

If you have any questions concerning the site assessment or this report, please feel free to contact me.

Sincerely,

Joseph R. Theroux
Certified Forester and Soil Scientist
Member SSSSNE, NSCSS, SSSA

DRAINAGE AREA PLANS



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CH = S 71°56'28" W	CH = S 73°04'30" W	CH = S 74°27'37" W
174.32'	50.48'	224.16'

LINE DATA		
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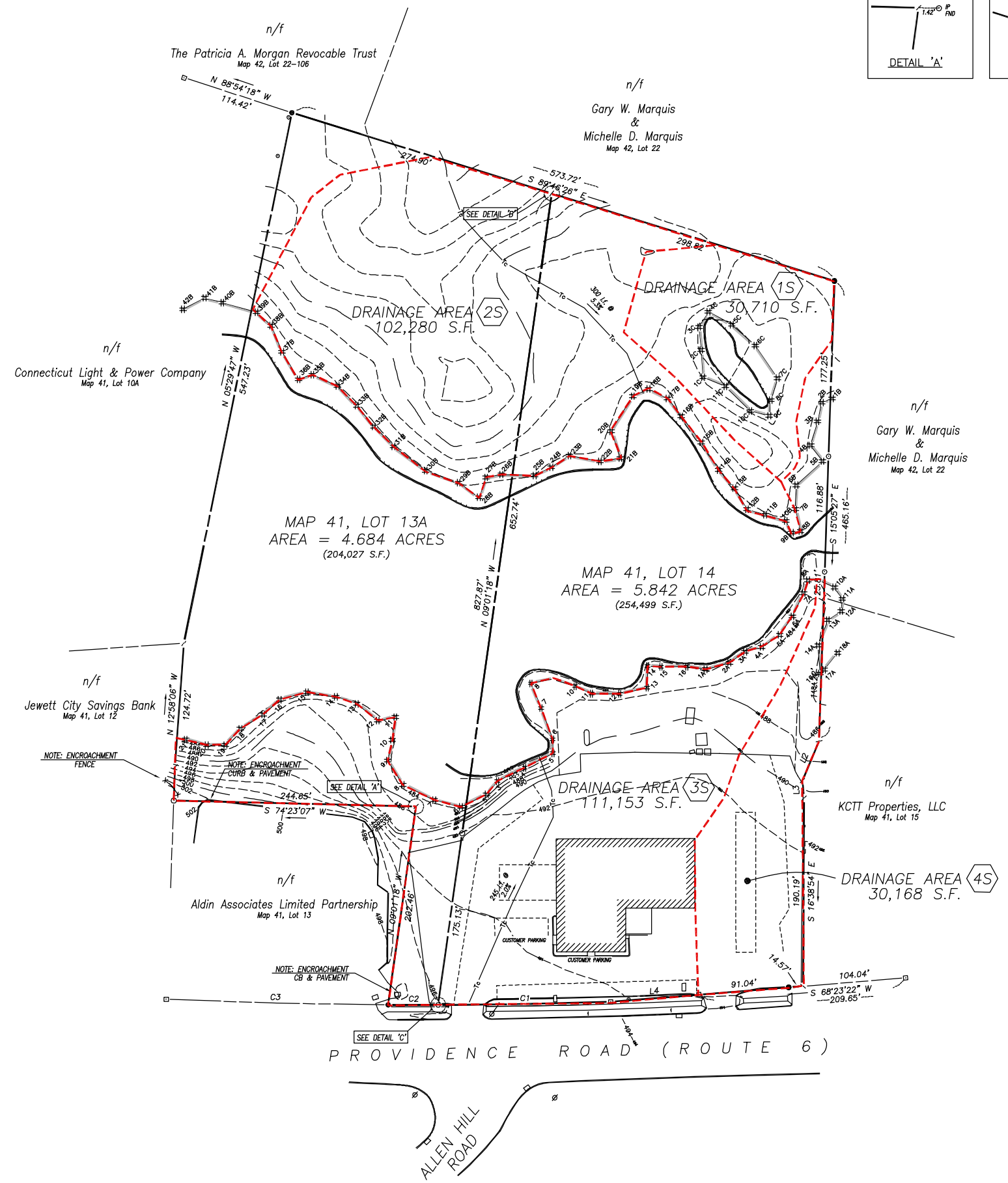
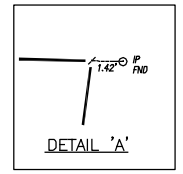
L2	S 06°00'57" W	43.34'
L3	S 23°24'09" E	17.56'
L4	S 68°21'47" W	89.41'





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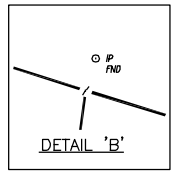

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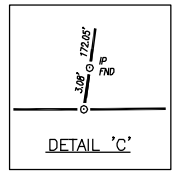

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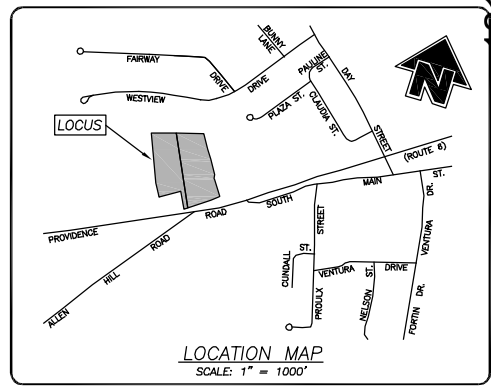

LOCATION MAP
SCALE: 1" = 1000'

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
- CHD MONUMENT POINT
- SIGN
- UTILITY POLE
- CATCH BASIN
- MANHOLE
- SANITARY SEWER MANHOLE
- INLAND WETLANDS FLAG

DATE	DESCRIPTION

REVISIONS

IMPROVEMENT LOCATION SURVEY
SHOWING EXISTING DRAINAGE AREAS
PREPARED FOR

VACHON BROOKLYN, LLC

PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 1/07/2020	DRAWN: AMR
SCALE: 1" = 60'	DESIGN: NET
SHEET: 2 OF 5	CHK BY: ----
DWG. No: CLIENT FILE	JOB No: 19129

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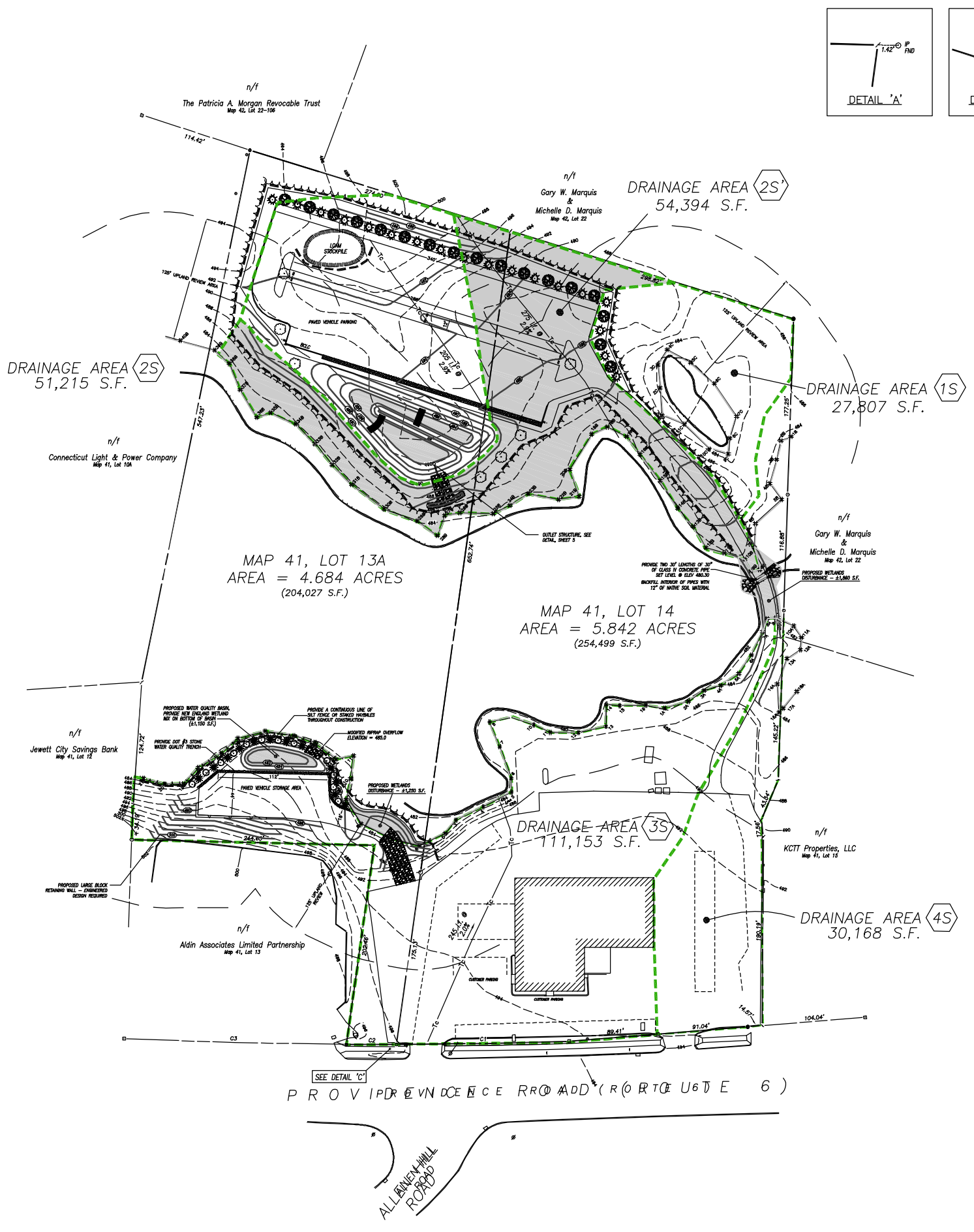

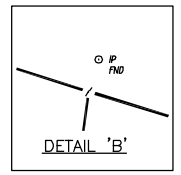

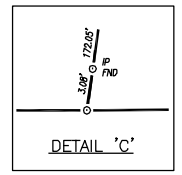

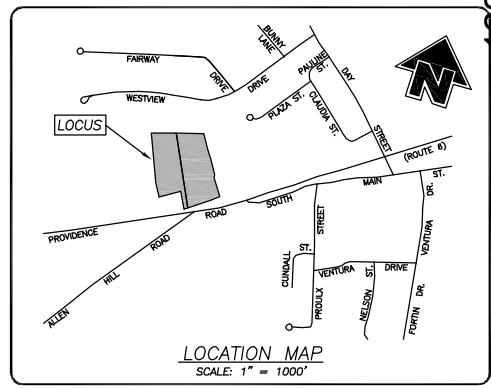

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- CHD MONUMENT POINT
- SIGN
- UTILITY POLE
- CATCH BASIN
- MANHOLE
- SANITARY SEWER MANHOLE
- INLAND WETLANDS FLAG

DATE	DESCRIPTION
REVISIONS	

IMPROVEMENT LOCATION SURVEY
SHOWING PROPOSED DRAINAGE AREAS
PREPARED FOR

VACHON BROOKLYN, LLC

PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 1/07/2020	DRAWN: AMR
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SHEET: 2 OF 5	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 19129

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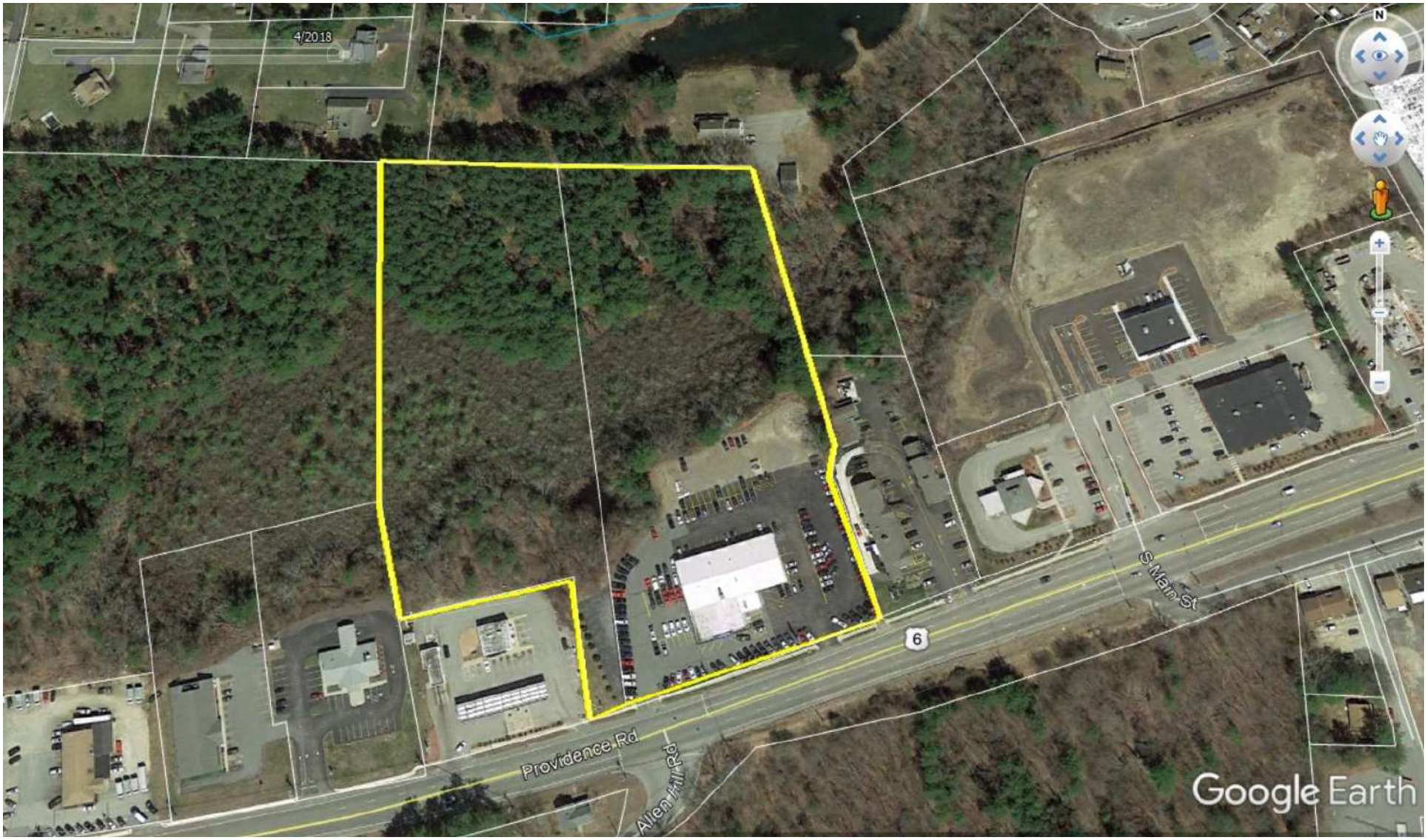
MAJOR WETLAND


EX. WHITE PINE W/SAPLINGS


HOUSE ON WESTVIEW DR.

NW WETLAND / HOUSE ON WESTVIEW DR


4/2018
Providence Rd
Allen Hill Rd
S Main St
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Google Earth

PROPOSED PARKING EXPANSION

"VACHON CHEVROLET"

PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CONNECTICUT

PREPARED FOR:

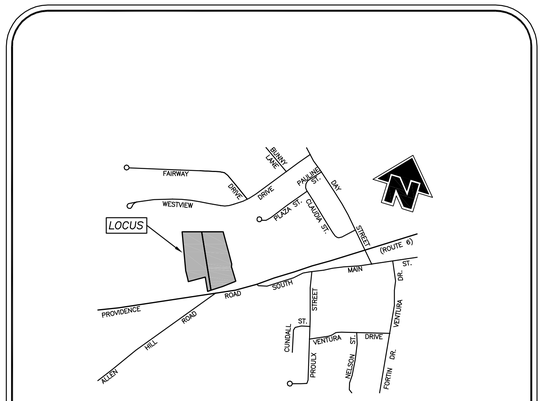
VACHON BROOKLYN, LLC

CONSTRUCTION NOTES/GENERAL PROVISIONS

1. The locations of existing utilities are based upon visible field observations, record mapping and interviews with the property owner and abutting property owners. They are shown for informational purposes only. Contractor shall coordinate exploratory test hole excavation with the Engineer if necessary to verify and/or determine actual locations of some utilities & structures. It is the responsibility of the contractor to verify the location and elevation of all utilities. Contact "CALL BEFORE YOU DIG" at 1-800-922-4455, and obtain all applicable permits, prior to any excavation around utilities.
2. All existing site features not scheduled to remain shall be removed and disposed of in a proper manner, by the contractor.
3. All Materials and methods of construction shall conform to "State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 816", and supplements thereto.
4. The Contractor shall obtain copies of all regulatory agency permits from the Owner prior to any site disturbance.
5. Unless otherwise noted on the plans, the contractor shall use the geometry provided on the construction plans. Benchmark information shall be provided to the contractor by the Owner or the Owner's surveyor. Any discrepancies between field measurements and construction plan information shall be brought to the attention of the Engineer or Surveyor immediately.
6. The Contractor shall not revise elevations or locations of items shown on the plans without written consent of the project Engineer or Surveyor.
7. The Contractor shall protect benchmarks, property corners, and other survey monuments from damage or displacement. If a marker needs to be removed, it shall be referenced by a licensed land surveyor and replaced as necessary by the same.
8. The Contractor shall be responsible for preparing and compacting base for proposed pavement. Owner shall provide general fill to establish subgrade – contractor shall spread and compact. Contractor shall provide, spread and compact required processed aggregate
9. The entire project site shall be thoroughly cleaned at the completion of the work. Clean all installed paved areas, accumulated silt and sediment, plus all adjacent areas affected by the construction activities as directed by the Owner or the jurisdictional Agency.

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
- CHD PNT — CHD MONUMENT POINT
- SIGN
- UTILITY POLE
- CB — CATCH BASIN
- MH — MANHOLE
- SMH — SANITARY SEWER MANHOLE
- INLAND WETLANDS FLAG
- 100 — EXISTING CONTOURS
- 100 — PROPOSED CONTOURS
- SILT FENCE



LOCATION MAP
SCALE: 1" = 1000'

INDEX TO DRAWINGS

BEFORE YOU DIG
CALL BEFORE YOU DIG
AT LEAST TWO FULL BUSINESS DAYS
BEFORE DIGGING OR DISTURBING EARTH
DIAL 811 OR 1-800-922-4455

APPROVED BY THE BROOKLYN
PLANNING AND ZONING COMMISSION

CHAIRMAN DATE

Expiration date per Sec. 8.26C,
Connecticut General Statutes: _____

ENDORSED BY THE BROOKLYN INLAND
WETLANDS COMMISSION

CHAIRMAN DATE

PREPARED BY:

REVISIONS	
DATE	DESCRIPTION
3/10/2020	*PER SOIL SCIENTIST & STAFF*
3/31/2020	*PER NECCOG REVIEW*

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

JANUARY 2020

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

SHEET 1 OF 5
JOB NO: 19129

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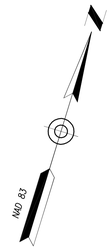

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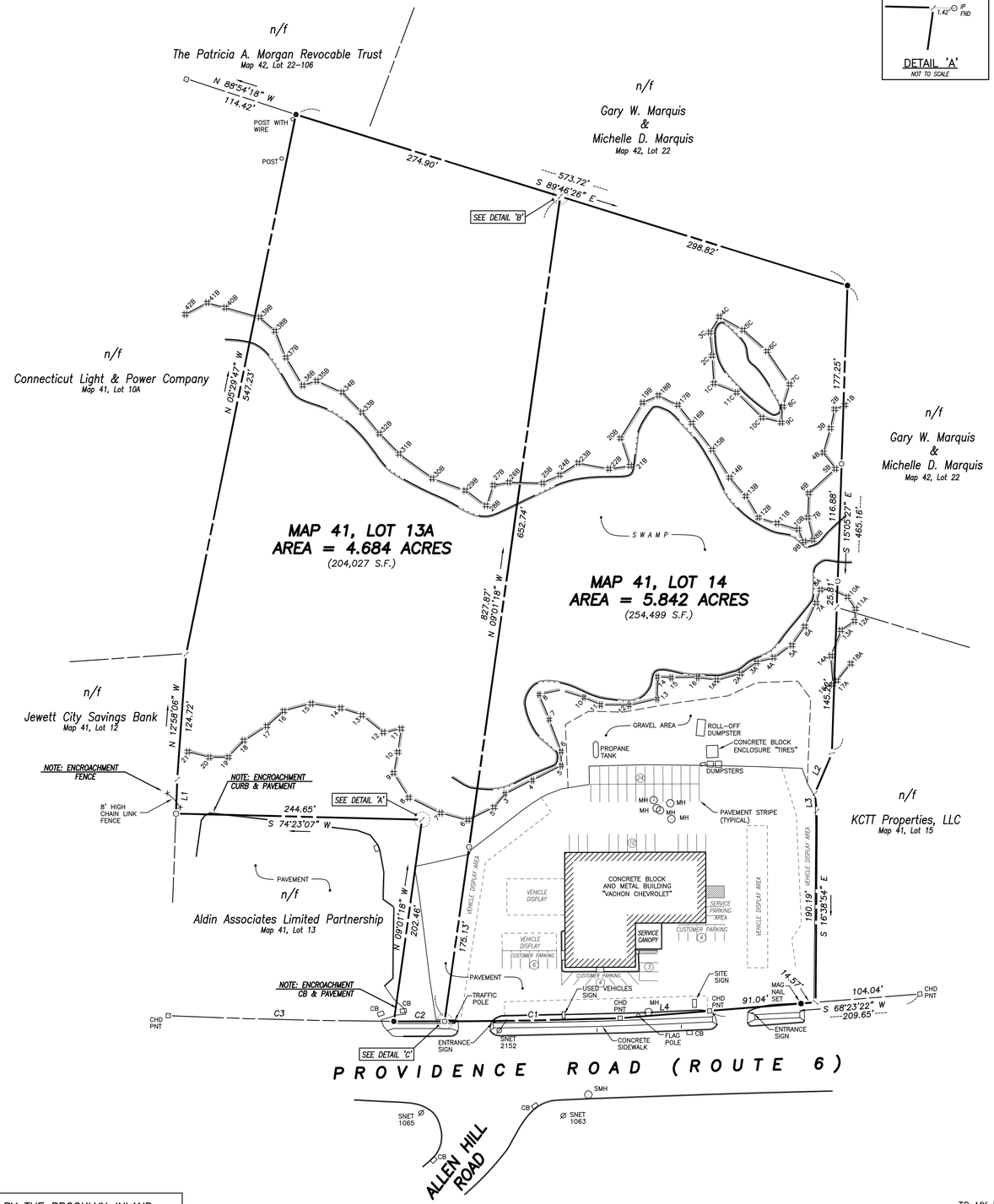

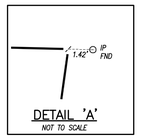

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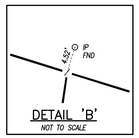

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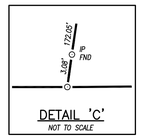

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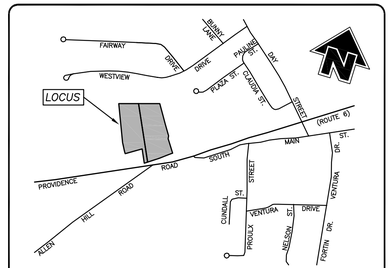

LOCATION MAP
SCALE: 1" = 1000'

LEGEND

●	IRON PIN TO BE SET
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□	CONCRETE MONUMENT FOUND
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——#——	INLAND WETLANDS FLAG

MAP REFERENCES:

1. "Connecticut State Highway Department — Right of Way Map — Town of Brooklyn — Brooklyn—Danielson Road — From the Old Pomfret Road — Easterly About 12,000 Feet — Route U.S.6. — Scale: 1" = 40' Date: June 29, 1934 — Number 19—06 — Sheet No. 4 of 4."
2. "Town of Brooklyn — Map Showing Land & Easement Acquired By — The SAtate of Connecticut — From — Mildred Chase Hopkins — Relocation of Route U.S. 6 — Scale: 1" = 40' — Date: June 1953 — Town No. 19 — Project No. 43 — Serial No. 1 — Sheet 1 of 1 — Prepared by: Ernest T. Perkins." On file in the Brooklyn Land Records as Map Book 2 Page 98.
3. "Boundary Survey — property of — Stephen Castle — Route 6, Brooklyn, Conn. — Scale: 1" = 40' — Date: July 30, 1964 — Sheet 1 of 1 Prepared by: Morton S. Fine & Associates." On file in the Brooklyn Land Records as Map Book 3 Page 52.
4. "Map Showing Portion of Land of — Stephen Castle — Brooklyn, Connecticut — Scale: 1" = 20' — Date: March 19, 1982 — Prepared By: Thomas A. Brennan, Jr." On file in the Brooklyn Land Records as Map Book 7 Page 18.
5. "Subdivision Map — Prepared for — Gary D. Kuchy — Westview Drive Brooklyn, Connecticut — Scale: 1" = 80' — Date: June 16, 1999 Revised to: 11/1/99 — Sheet 1 of 11 — Prepared by: J&D Civil Engineers and Provost Rovero Fitzback." On file in the Brooklyn Land Records.
6. "Boundary Survey — Property of Gertrude M. Markley — Providence Road — Route 6 — Brooklyn, Connecticut — Scale: 1" = 40' — Date: Nov. 2002 — Sheet No. 1 — prepared by: Archer Surveying, LLC." On file in the Brooklyn Land Records as Map Book 15 Page 90.
7. "Improvement Location Survey — Prepared for — Premier Chevrolet 512 Providence Road (Route 6) — Brooklyn, Connecticut — Scale: 1" = 50' — Date: 10/12/2011 — Sheet 1 of 1 — Prepared by: Killingly Engineering Associates." On file in the Brooklyn Land Records.
8. "Property Survey — Property Line Relocation — Prepared for KCTT Properties, LLC — Route #6 (Providence Road) — Brooklyn, Connecticut — Scale: 1" = 20' — Date: October 2016 — Revised to: 1/5/2017 — Sheet No. 1 of 1 — Prepared by: PC Survey Associates." On file in the Brooklyn Land Records.

APPROVED BY THE BROOKLYN PLANNING AND ZONING COMMISSION

CHAIRMAN DATE

Expiration date per Sec. 8.26C, Connecticut General Statutes: _____

ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION

CHAIRMAN DATE

NOTES:

1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996;
   - This survey conforms to a Class "A-2" horizontal accuracy.
   - Survey Type: Improvement Location Survey.
   - Boundary Determination Category: Dependent Resurvey.
2. Zone = PC.
3. Owner of record:
   Map 41, Lot 14 = Vachon Brooklyn, LLC
   957 Washington St., Attleboro, MA 02703
   Volume 620, Page 163
   Map 41, Lot 13A = Vachon Brooklyn, LLC
   957 Washington Street, Attleboro, MA 02703
   Volume 632, Page 114
4. Wetlands shown were delineated in the field by Joseph Theroux, Certified Soil Scientist, in September 2019.
5. North orientation, bearings and coordinate values shown are based on North American Datum of 1983 (NAD 83) and are taken from actual field measurements of CGS Random Points B9262 and B9264.

03/31/2020	PER NECCOG REVIEW
03/10/2020	PER SOIL SCIENTIST REPORT & STAFF COMMENTS
DATE	DESCRIPTION
REVISIONS	

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON,

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

IMPROVEMENT LOCATION SURVEY
SHOWING EXISTING CONDITIONS
PREPARED FOR

VACHON BROOKLYN, LLC

PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 1/07/2020	DRAWN: AMR
SCALE: 1" = 60'	DESIGN: NET
SHEET: 2 OF 5	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 19129

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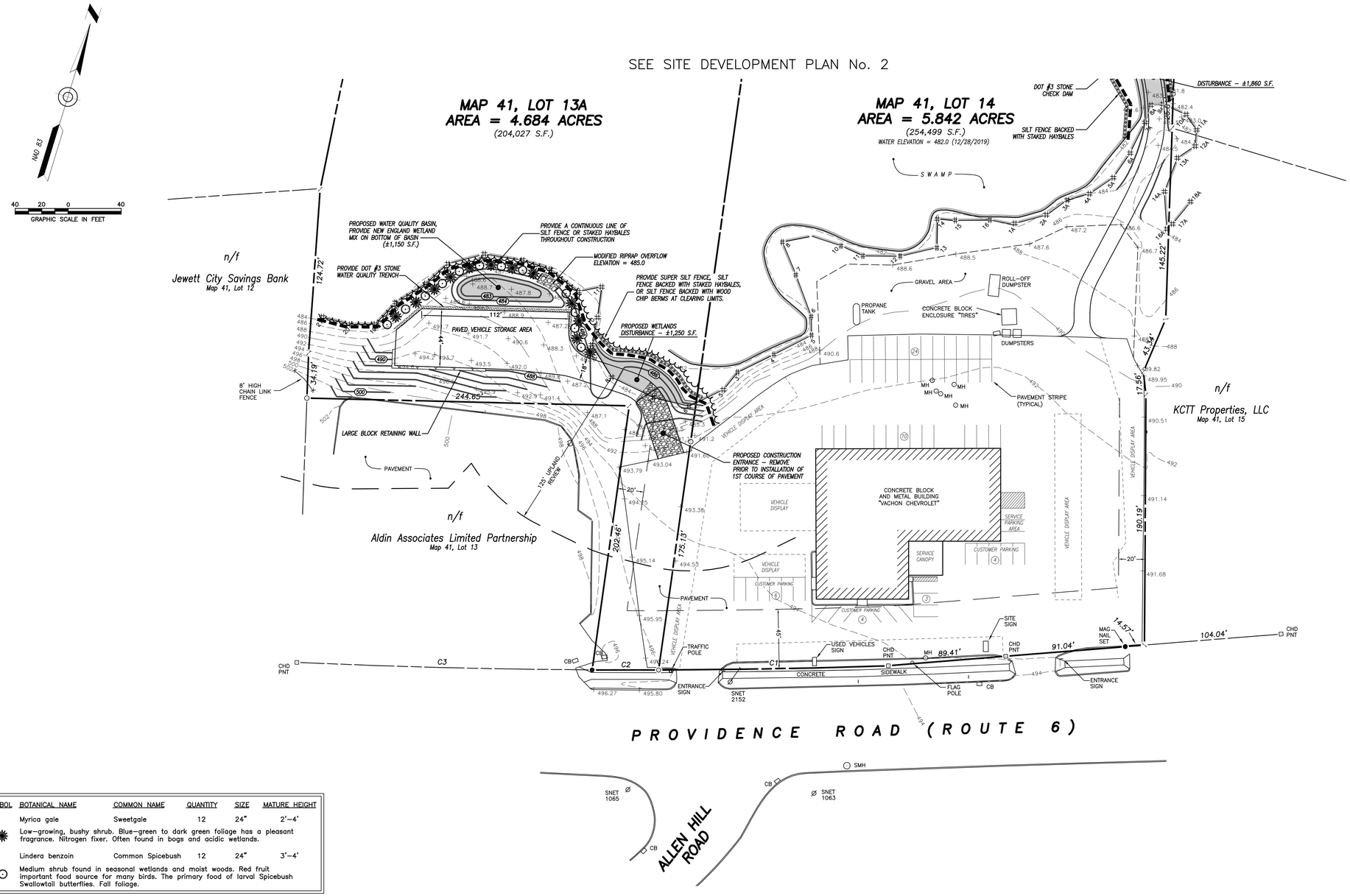
SEE SITE DEVELOPMENT PLAN No. 2



CURVE DATA		
C1	C2	C3
R = 5680.00'	R = 5680.00'	R = 5680.00'
D = 1°45'30"	D = 0°30'33"	D = 2°15'41"
L = 174.32'	L = 50.48'	L = 224.18'
CH = S 71°56'28" W 174.32'	CH = S 73°04'30" W 50.48'	CH = S 74°27'37" W 224.16'

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- CHD MONUMENT FOUND
- CHD PNT — CHD MONUMENT POINT
- SIGN
- UTILITY POLE
- CB — CATCH BASIN
- MH — MANHOLE
- SMH — SANITARY SEWER MANHOLE
- INLAND WETLANDS FLAG
- 100 — EXISTING CONTOURS
- 100 — PROPOSED CONTOURS
- SILT FENCE

NOTES:

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   - Topographic features conform to a Class "T–2", "V–2" vertical accuracy.
   - Survey Type: Improvement Location Survey.
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6. Elevations shown are based on an assumed datum. Contours shown are taken from actual field survey. Contour interval = 2'.
7. Before any construction is to commence contact "CALL BEFORE YOU DIG" at 1–800–922–4455 or 811.

SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	MATURE HEIGHT
	Myrica gale	Sweetgale	12	24"	2'–4'
✹	Low–growing, bushy shrub. Blue–green to dark green foliage has a pleasant fragrance. Nitrogen fixer. Often found in bogs and acidic wetlands.				
	Lindera benzoin	Common Spicebush	12	24"	3'–4'
⊙	Medium shrub found in seasonal wetlands and moist woods. Red fruit important food source for many birds. The primary food of larval Spicebush Swallowtail butterflies. Fall foliage.				

DATE	DESCRIPTION
03/31/2020	PER NECCOG REVIEW
03/10/2020	PER SOIL SCIENTIST REPORT & STAFF COMMENTS
	REVISIONS

IMPROVEMENT LOCATION SURVEY
SITE DEVELOPMENT PLAN No. 1
PREPARED FOR

VACHON BROOKLYN, LLC

512 PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CONNECTICUT

APPROVED BY THE BROOKLYN PLANNING AND ZONING COMMISSION

CHAIRMAN DATE

Expiration date per Sec. 8.26C, Connecticut General Statutes: _____

ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION

CHAIRMAN DATE

BEFORE YOU DIG CALL BEFORE YOU DIG
AT LEAST TWO FULL BUSINESS DAYS BEFORE DIGGING OR DISTURBING EARTH
DIAL 811 OR 1-800-922-4455

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON,

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE

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Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
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DATE: 1/07/2020	DRAWN: AMR
SCALE: 1" = 40'	DESIGN: NET
SHEET: 3 OF 5	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 19129

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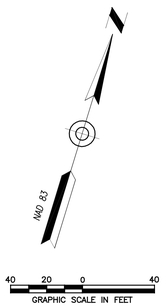

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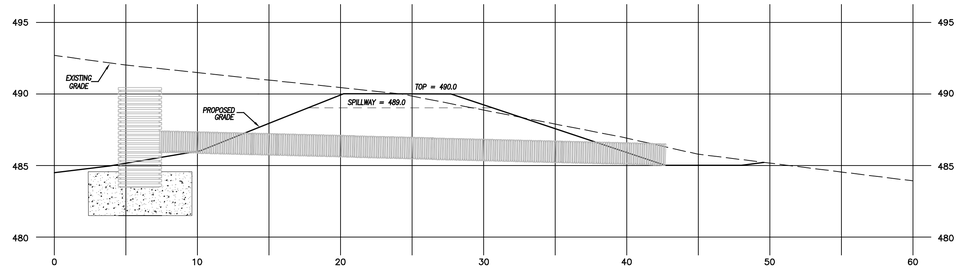
GRAPHIC SCALE IN FEET



CROSS SECTION "A–A"

SCALE: 1" = 5'

SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	MATURE HEIGHT
	Juniperus scopolorum	Moonglow Juniper	18	5'	16'–20'
	Exceptionally showy, silvery blue foliage and broad pyramidal form makes a most attractive screen. A tough plants with dense branching that grows to 20' tall.				
	Viburnum rhytidophyllum	Leatherleaf Viburnum	17	3–4'	6'–10'
	This evergreen Viburnum (most are deciduous) has this olive green leaves that form a great green wall for screening. White fragrant flowers in the spring followed by red berries in the fall that provide food for birds.				
	Acer rubrum	Red Maple	5	3" Caliper	60'–80'

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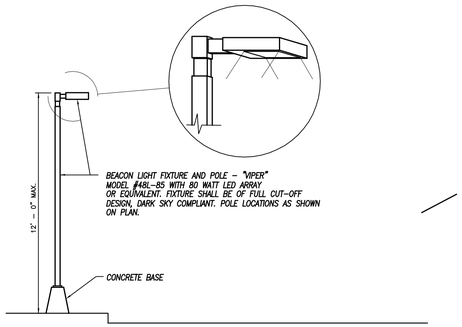
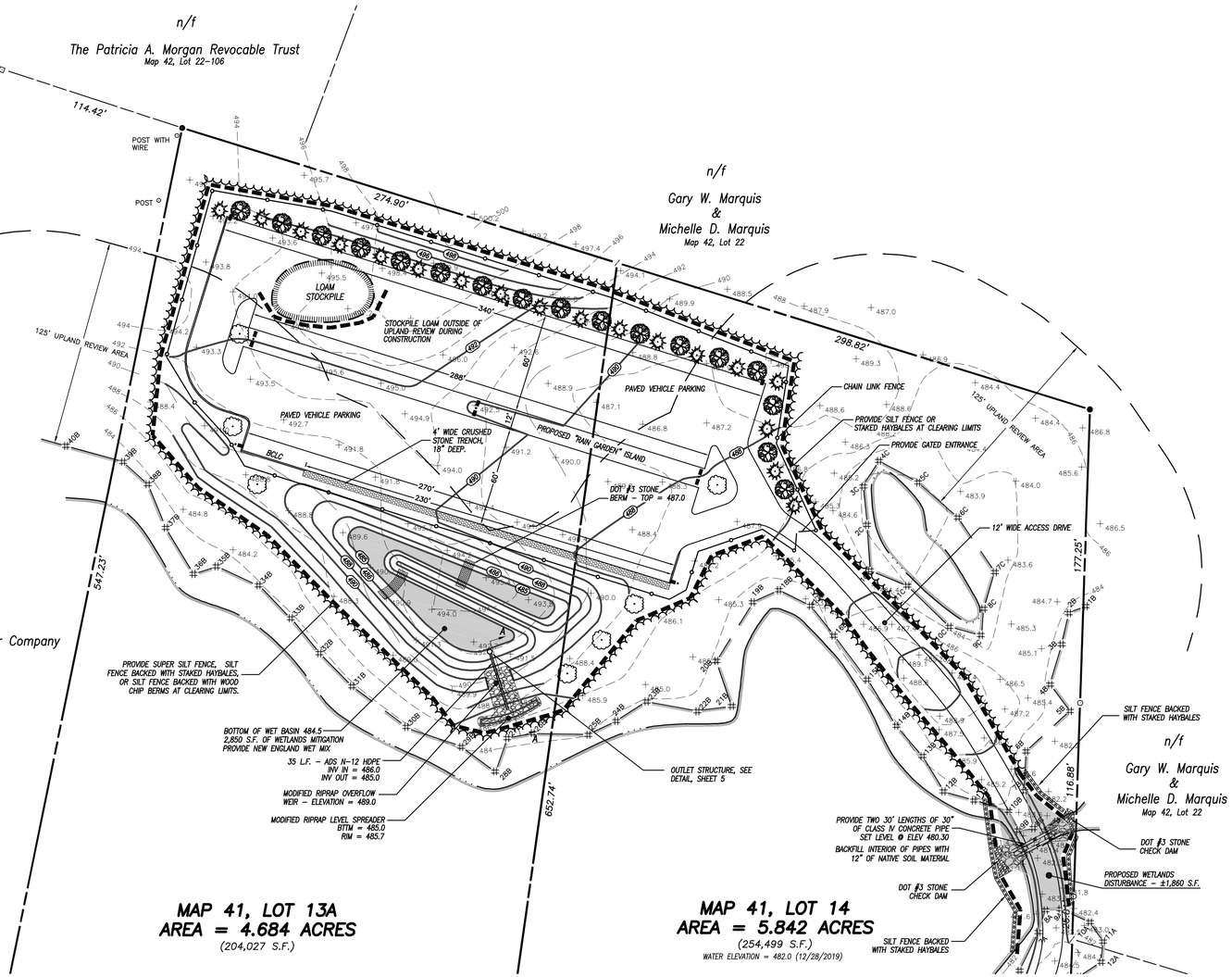


LIGHT STANDARD

NOT TO SCALE

NOTES:

1. PROVIDE JUTE NETTING OVER TOPSOIL & SEED MIX IN BASIN TO STABILIZED SLOPES.
2. NO SALTS OR CHEMICAL APPLICATIONS SHALL BE USED FOR SNOW AND ICE REMOVAL IN PROPOSED PARKING AREAS.



SEE SITE DEVELOPMENT PLAN No. 1

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IMPROVEMENT LOCATION SURVEY
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PREPARED FOR

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512 PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CONNECTICUT

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EROSION AND SEDIMENT CONTROL PLAN:

REFERENCE IS MADE TO:

1. Connecticut Guidelines for Soil Erosion and Sediment Control 2002 (2002 Guidelines).
2. U.S.D.A. N.R.C.S. Web Soil Survey.

DEVELOPMENT CONTROL PLAN:

1. Development of the site will be performed by the Contractor, who will be responsible for the installation and maintenance of erosion and sediment control measures required throughout construction.
2. The sedimentation control mechanisms shall remain in place from start of construction until permanent vegetation has been established. The representative for the Town of Brooklyn will be notified when sediment and erosion control structures are initially in place. Any additional soil & erosion control measures requested by the Town or its agent, shall be installed immediately. Once the proposed development, seeding and planting have been completed, the representative shall again be notified to inspect the site. The control measures will not be removed until this inspection is complete.
3. All stripping is to be confined to the immediate construction area. Topsoil shall be stockpiled so that slopes do not exceed 2 to 1. A hay bale sediment barrier is to surround each stockpile and a temporary vegetative cover shall be provided.
4. Dust control will be accomplished by spraying with water. The application of calcium chloride is not permitted adjacent to wetland resource areas or within 100' of these areas.
5. The proposed planting schedule is to be adhered to during the planting of disturbed areas throughout the proposed construction site.
6. Final stabilization of the site is to follow the procedures outlined in "Permanent Vegetative Cover". If necessary a temporary vegetative cover is to be provided until a permanent cover can be applied.

SILT FENCE INSTALLATION AND MAINTENANCE:

1. Dig a 6" deep trench on the uphill side of the barrier location.
2. Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
3. Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
4. Inspect and repair barrier after heavy rainfall.
5. Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.
6. Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.
7. Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:
   - the fence has been overtopped, undercut or bypassed by runoff water,
   - the fence has been moved out of position (knocked over), or
   - the geotextile has decomposed or been damaged.

HAY BALE INSTALLATION AND MAINTENANCE:

1. Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.
2. Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.
3. Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.
4. Remove sediment behind the bales when it reaches half the height of the bale and deposit in an area which is not regulated by the Inland Wetlands Commission.
5. Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:
   - the barrier has been overtopped, undercut or bypassed by runoff water,
   - the barrier has been moved out of position, or
   - the hay bales have deteriorated or been damaged.

TEMPORARY VEGETATIVE COVER:

SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure TS–2 in the 2002 Guidelines.

TIMING CONSIDERATIONS

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

SEEDBED PREPARATION

Loosen the soil to a depth of 3–4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10–10–10 or equivalent. Additionally, lime may be applied using rates given in Figure TS–1 in the 2002 Guidelines.

SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

MULCHING

Temporary seedings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 95%–100% coverage.

MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent reoccurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

1. Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a minimum compacted depth of 4".
2. Once the topsoil has been spread, all stones 2" or larger in any dimension will be removed as well as debris.
3. Apply agricultural ground limestone at a rate of 2 tons per acre or 100 lbs. per 1000 s.f. Apply 10–10–10 fertilizer or equivalent at a rate of 300 lbs. per acre or 7.5 lbs. per 1000 s.f. Work lime and fertilizer into the soil to a depth of 4".
4. Inspect seedbed before seeding. If traffic has compacted the soil, retill compacted areas.
5. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 – October 1.
6. Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

DEVELOPMENT SCHEDULE/SEQUENCE OF OPERATIONS:

1. Flag the limits of disturbance and schedule pre–construction meeting with Town of Brooklyn wetlands Agent.
2. Install the anti–tracking construction entrance.
3. Install temporary logging crossing (corduroy crossing or slash mat) in the area of the wetlands crossing to allow for logging access.
4. Cut trees within the defined clearing limits and remove the cut wood.
5. Install perimeter erosion and sedimentation controls in accordance with the site development plan.
6. Excavate for proposed stormwater basin; area shall be utilized for a temproary sedimentation basin during construction.
7. Chip brush and slash; stockpile chips for use on site or remove off site.
8. When all logging activities have been completed, remove temporary crossing and install proposed pipes; counter sink pipes a minimum of 12" and fill bottoms with native material.
9. Box out areas to be paved and stockpile topsoil in locations shown on the plans. Install erosion controls around stockpiles and apply temporary seeding and divert water around the perimeter of the stockpile.
10. Install and compact processed gravel for driveway and parking area base.
11. Remove tree stumps and dispose of at an approved disposal site. Alternatively, stumps may be chipped in place. No stumps shall be buried on site.
12. Make all required cuts and fills. Establish the subgrade for the driveway as required and install additional erosion controls as necessary and as shown on the plans.
13. Inspect perimeter erosion and sedimentation controls weekly and after rain events in excess of 0.5". Repair any damaged controls and provide additional erosion control devices as necessary to address areas of concentrated runoff that may develop as a result of the construction activities. The contractor shall review discharge conditions with the design engineer or the Town of Brooklyn prior to installing additional erosion controls. Apply water as necessary for dust control.
14. Install required utilities.
15. Prepare sub–base for driveway and remainder of the parking areas for final grading.
16. Place topsoil where required and install any proposed landscaping.
17. Remove anti– tracking construction entrance and install first course of pavement.
18. When the remainder of the site work is near completion, sweep all paved areas for the final course of paving. Inspect erosion controls and remove any accumulated sediment. Clean accumulate sediment from the stormwater basin, apply topsoil & seed, and cover with jute netting.
19. Install final course of pavement upon the completion of the final structure.
20. Fine grade, rake, seed and mulch to within 2' of the pavement.
21. Remove and dispose of all silt fence and hay bales after the site has been stabilized to the satisfaction of the Town of Brooklyn.

RESPONSIBLE PARTY FOR E&S MAINTENANCE:

Joe Simon
Vachon Chevrolet
512 Providence Road
Brooklyn, CT 06234
(401) 692–1459

WETLAND SEED MIX FOR WETLANDS MITIGATION

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

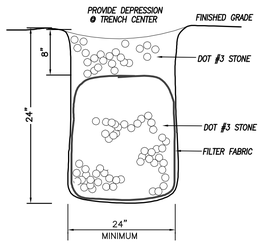
The wetland seeds in this mix can be sown by hand, with a hand–held spreader, or hydro–seeded on large or hard to reach sites. Lightly rake to insure good seed–to–soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.

APPLICATION RATE: 1 LB/2500 sq. ft

SPECIES: Fox Sedge, (Carex vulpinoidea), Lurid Sedge, (Carex lurida), Blunt Broom Sedge, (Carex scoparia), Sensitive Fern, (Onoclea sensibilis), Blue Vervain, (Verbena hastata), Hop Sedge, (Carex lupulina), Green Bulrush, (Scirpus atrovirens), Nodding Bur Marigold, (Bidens cer–nua), Bristly Sedge, (Carex comosa), Fringed Sedge, (Carex crinita), American Mannagrass, (Glyceria grandis), Wool Grass, (Scirpus cyperinus), Soft Rush, (Juncus effusus), Spotted Joe Pye Weed, (Eupatorium maculatum), Boneset, (Eupatorium perfoliatum), Mud Plantain, (Alisma subcordatum), New England Aster, (Aster novae–angliae), Rattlesnake Grass, (Glyceria canadensis), Purplestem aster (Aster puniceus), Soft Stem Bulrush, (Scirpus validus), Blueflag (Iris versicolor), Swamp Milkweed, (Asclepias incarnata), Monkey Flower, (Mimulus ringens). The functionality of each mix will remain unchanged, although mix composition may vary during the year.

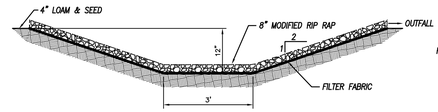
CONSTRUCTION NOTES/GENERAL PROVISIONS

1. The locations of existing utilities are based upon visible field observations, record mapping and interviews with the property owner and abutting property owners. They are is shown for informational purposes only. Contractor shall coordinate exploratory test hole excavation with the Engineer if necessary to verify and/or determine actual locations of some utilities & structures. It is the responsibility of the contractor to verify the location and elevation of all utilities. Contact "CALL BEFORE YOU DIG" at 1–800–922–4455, and obtain all applicable permits, prior to any excavation around utilities.
2. All existing site features not scheduled to remain shall be removed and disposed of in a proper manner, by the contractor.
3. All Materials and methods of construction shall conform to "State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 817", and supplements thereto.
4. The Contractor shall obtain copies of all regulatory agency permits from the Owner prior to any site disturbance.
5. Unless otherwise noted on the plans, the contractor shall use the geometry provided on the construction plans. Benchmark information shall be provided to the contractor by the Owner or the Owner's surveyor. Any discrepancies between field measurements and construction plan information shall be brought to the attention of the Engineer or Surveyor immediately.
6. The Contractor shall not revise elevations or locations of items shown on the plans without written consent of the project Engineer or Surveyor.
7. The Contractor shall protect benchmarks, property corners, and other survey monuments from damage or displacement. If a marker needs to be removed, it shall be referenced by a licensed land surveyor and replaced as necessary by the same.
8. The Contractor shall be responsible for preparing and compacting base for proposed pavement. Owner shall provide general fill to establish subgrade – contractor shall spread and compact. Contractor shall provide, spread and compact required processed aggregate
9. The entire project site shall be thoroughly cleaned at the completion of the work. Clean all installed paved areas, accumulated silt and sediment, plus all adjacent areas affected by the construction activities as directed by the Owner or the jurisdictional Agency.



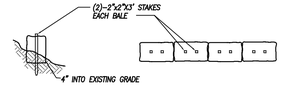
WATER QUALITY TRENCH DETAIL

NOT TO SCALE



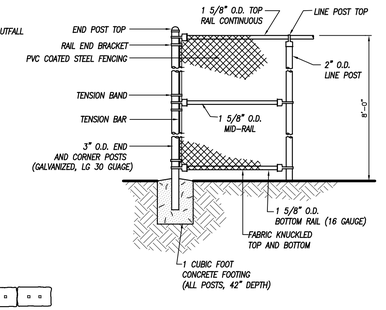
SECTION THROUGH LEVEL SPREADER

NOT TO SCALE



HAYBALE BARRIER

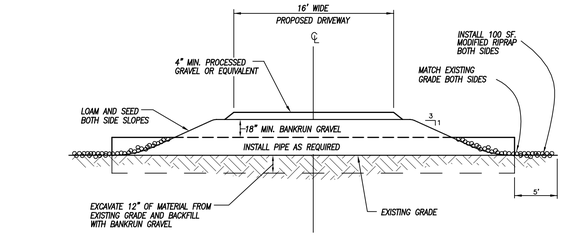
NOT TO SCALE



CHAIN LINK FENCE DETAIL

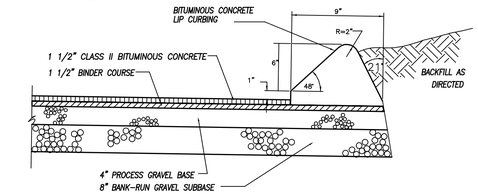
NOT TO SCALE

NOTE: PROVIDE PRIVACY SLATS, FOREST GREEN OR BLACK



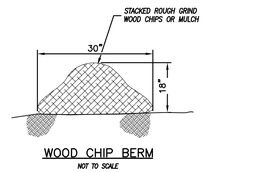
DRIVEWAY CULVERT DETAIL

NOT TO SCALE



BITUMINOUS CONCRETE LIP CURBING

NOT TO SCALE



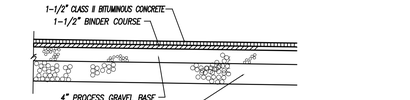
SILT FENCE – BACKED WITH HAYBALES

NOT TO SCALE

NOTE: SUPER SILT FENCE MAY BE UTILIZED IN LIEU OF SILT FENCE BACKED WITH STAKED HAYBALES OR WOOD CHIP BERMS MAY BE SUBSTITUTED FOR STAKED HAYBALES

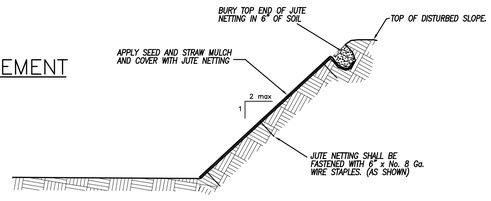
WOOD CHIP BERM

NOT TO SCALE



BITUMINOUS CONCRETE PAVEMENT

NOT TO SCALE



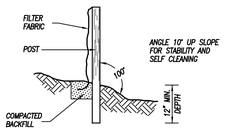
SLOPE STABILIZATION DETAIL

NOT TO SCALE

STONE BERM

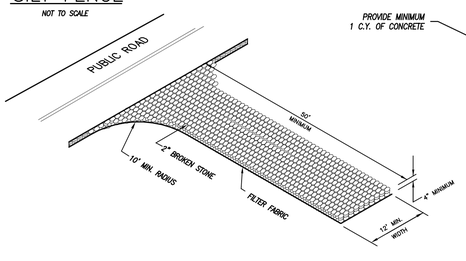
NOT TO SCALE

NOTE: REMOVE SEDIMENT OR REPLACE BERM WHEN SEDIMENT DEPTH REACHED HALF THE HEIGHT OF THE BERM



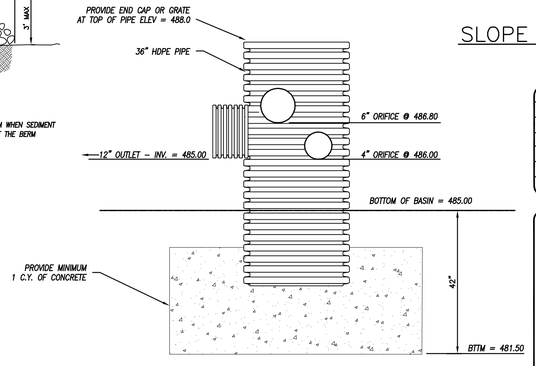
SILT FENCE

NOT TO SCALE



CONSTRUCTION ENTRANCE

NOT TO SCALE



STORMWATER BASIN OUTLET STRUCTURE DETAIL

NOT TO SCALE

03/31/2020	PER NECCOG REVIEW
03/10/2020	PER SOIL SCIENTIST REPORT & STAFF COMMENTS
DATE	DESCRIPTION
	REVISIONS

DETAIL SHEET

PREPARED FOR

VACHON BROOKLYN, LLC

PROVIDENCE ROAD (ROUTE 6)
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 1/07/2020	DRAWN: AMR
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 5 OF 5	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 19129

APPROVED BY THE BROOKLYN PLANNING AND ZONING COMMISSION

CHAIRMAN DATE

Expiration date per Sec. 8.26C, Connecticut General Statutes: _____

ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION

CHAIRMAN DATE

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

K:\19129\Drawings\05_19129 DET.dwg Jul 28, 2020 - 10:16 AM

RECEIVED
JUL 0 7 2020

PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONNECTICUT

Received Date _____

Application # SD 5D20-003

Check # 5206

APPLICATION FOR SUBDIVISON/RESUBDIVISION

Name of Applicant David & Nancy Bell Phone 860 774 3838
Mailing Address PO Box 358, Brooklyn, CT 06234
Applicants Interest in the Property owner

Property Owner SAME Phone _____
Mailing Address _____

Name of Engineer/Surveyor pc survey associates, llc / Killingly Engineering Associates
Address 63 Snake Meadow Road, Killingly, CT 06239
Contact Person Paul A. Terwilliger, LS Phone 860 774 6230 Fax _____

Name of Attorney _____
Address _____
Phone _____ Fax _____

Subdivision ____ Re subdivision ____
Property location 131 Prince Hill Road
Map # 34 Lot # 52 Zone RA Total Acres 6 Acres to be Divided 6
Number of Proposed Lots 3 Length of New Road Proposed n/a
Sewage Disposal: Private X Public _____
Note: Hydrological report required by Section 11.6.2
Length of new Sewer proposed: Sanitary n/a Storm n/a
Water: Private X Public _____

Is parcel located within 500 feet of an adjoining Town? no

The following shall accompany the application when required: Public Fee WAIVED
4.2.2 Fee $ 1000 State ($60.00) 60 4.2.3 Sanitary Report ____ 4.2.5, 3 copies of plans ____
4.2.4 Application/ Report of Decision from the Inland Wetlands Com. & the Conservation Com.
4.2.6 Erosion & Sediment Control Plans
4.2.7 Certificate of Public Convenience and Necessity
4.2.8 Applications filed with other Agencies

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: X David & P. Bell Date 7/6/20

Owner: X David P. Bell Date 7/6/20

*Note: All consulting fees shall be paid by the applicant

Soil Map—State of Connecticut
(Bell - Prince Hill Subdivision)

Map Scale: 1:6,000 if printed on A portrait (8.5" x 11") sheet.

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

ABUTTERS WITHIN 200' OF SUBDIVISION - BELL , PRINCE HILL ROAD

MAP 34, LOT 2
RZEZNIKIEWICZ RUDOLPH
12 GORMAN RD
BROOKLYN CT 06234-1804

MAP 34, LOT 2A
PERRY BRITTANY L
158 MAIN ST - PO BOX 682
PUTNAM CT 06260-0682

MAP 34, LOT 3A
SIMONZI MARK
25 TOWER HILL RD
BRIMFIELD MA 01010-9756

MAP 34, LOT 3B
148 PRINCE HILL LLC
59 SOUTH ST
BROOKLYN CT 6234

MAP 34, LOT 4
ENNIS JOHN F & EGGERS FREDERICK S
289 PROVIDENCE RD
BROOKLYN CT 06234-1818

SUBJECT PROPERTY MAP 34, LOT 52
BELL DAVID P & NANCY M
P.O. BOX 358
BROOKLYN CT 06234-1521

MAP 34, LOT 51
RZEZNIKIEWICZ RUDOLPH & RITA N (TIC)
12 GORMAN RD
BROOKLYN CT 06234-1804

MAP 34, LOT 53
ENNIS JOHN F & EGGERS FREDERICK S
289 PROVIDENCE RD
BROOKLYN CT 06234-1818

MAP 34, LOT 3
CIL REALTY INCORPORATED
157 CHARTER OAK AVE 3RD FLOOR
HARTFORD CT 6106

PHONE: 860 774 6230 EMAIL: pcsurvey@snet.net

pc survey associates, llc
63 Snake Meadow Road, Killingly, CT 06239

July 6, 2020

Dear Sir or Madame,

This notice is being sent as required by Section 4.2, subsection 2.10 of the Brooklyn subdivision regulations to inform you of an application for a subdivision within 200 feet of property you own in the town of Brooklyn.

David & Nancy Bell are proposing a **three lot subdivision** of a 6 acre tract of land located on the southerly side of Prince Hill Road. This property is shown as Map 34, Lot 52 of the Brooklyn assessor's records.

Inquiries may be directed to the Town of Brooklyn Planning office at 860 779 3411, ext. 14.

Thank You,

Paul A. Terwilliger, L.S. #70155

NORTHEAST DISTRICT DEPARTMENT OF HEALTH
69 SOUTH MAIN STREET, UNIT 4, BROOKLYN, CT 06234
860-774-7350/FAX 860-774-1308 WWW.NDDH.ORG

September 2, 2020

David & Nancy Bell
PO Box 358
Brooklyn, CT 06234

SUBJECT: FILE #90001344 – PRINCE HILL ROAD #131, MAP #34, LOT #52, BROOKLYN, CT

Dear David & Nancy Bell:

Upon review of the subdivision plan PC SURVEY ASSOCIATES, LLC., JOB# 18015, DRAWN JUNE 2020, REVISED 07/06/2020, REVISED 07/29/2020 submitted to this office on 08/12/2020 for the above referenced subdivision, The Northeast District Department of Health concurs with the feasibility of this parcel of land for future development. Additionally, approval to construct individual subsurface sewage disposal systems may be granted based on compliance with appropriate regulations and the Technical Standards as they apply to individual building lots with the following notations:

1. Lots # 1, 2, 3 require that a Professional Engineer design and submit individual plot plan(s) for review and approval prior to construction.
2. Proposed lots are based on 4 bedroom homes at the locations tested. If the number of bedrooms are increased, septic system sizes will require an increase per the Technical Standards.
3. If the proposed septic area is moved, additional testing may be required.
4. Existing septic system on existing house Lot (131 Prince Hill Road) must be properly abandoned per the Connecticut Public Health Code.
5. New Septic System for existing house is to be installed per approved plan (PC Survey Associates, Job# 18015, Dated June 2020, Revised 07/06/2020, Revised 07/29/2020, Revised 08/28/2020).

Be advised you must receive approval from the appropriate commissions in the Town of Brooklyn prior to construction of these lots.

This letter is NOT to be construed as an APPROVAL TO CONSTRUCT the septic system and DOES NOT indicate that the Northeast District Department of Health endorses approval for issuance of any building permit.

Should you have any questions, please feel free to contact the sanitarian that reviewed your plan.

Sincerely,

Sherry McGann, RS
Registered Sanitarian-NDDH

cc: Town of Brooklyn; PC Survey Associates, LLC.

Brooklyn Inland Wetlands
Commission
P.O. Box 356
Brooklyn, Connecticut 06234

9489 0090 0027 6215 9001 48

September 9, 2020

CERTIFIED#

David and Nancy Bell
P.O. Box 358
Brooklyn, CT 06234

RE: Notice of Decision – 071420A David and Nancy Bell, 131 Prince Hill Road, Map 34, Lot 52, RA Zone; 3-Lot Subdivision.

Dear Mr. and Mrs. Bell:

At the September 8, 2020 Inland Wetlands and Watercourses meeting your application 071420A David and Nancy Bell, 131 Prince Hill Road, Map 34, Lot 52, RA Zone; 3-Lot Subdivision was approved with standard conditions.

A legal notice of this approval was posted on the Town of Brooklyn's Website on September 9, 2020. Please note that this action of the Brooklyn Inland Wetlands and Watercourses Commission may be appealed for fifteen-day period following the publication of the legal notice.

If you have any questions, please call Margaret Washburn at 860-779-3411 Ext. 31.

Signed,

Margaret Washburn

Margaret Washburn
Wetlands Agent

MW/acl
CC: File, PC Survey
Encl: Standard Conditions of Approval

KLYN INLAND WETLANDS AND WATERCOURSES COMMISSION
IDARD CONDITIONS FOR IWWC PERMITS 12/13/16

LICANT: READ CAREFULLY

C Permit Document. A copy of the IWWC approval motion and the conditions stated herein shall constitute the
: permit for the approved activity when the permit document is signed and dated by the IWWC Agent.

e of Start and Finish. Permittee shall notify the IWWC agent **at least 48 hours** before the approved activity
iences and within 72 hours after completion of the activity.

t Duration. This permit is valid for a period in accordance with Section 11.6 of the Brooklyn Inland Wetlands
atercourses Regulations and the Connecticut General Statutes. Any request to renew or extend the expiration
f a permit can be granted only as authorized by the IWWC Regulations. Expired permits may not be renewed.

n and Sedimentation Controls. Permittee is responsible for implementing the approved erosion and
nt control plan. This responsibility includes the installation and maintenance of control measures, informing
ies engaged on the construction site of the requirements and objectives of the plan. The permittee shall
the erosion controls weekly and after rains and repair deficiencies within twenty-four hours. The IWWC and
f may require additional erosion if needed to prevent erosion and sedimentation. Restabilization of the site
ke place as soon as possible.

le locations. During construction, piles of fill, erodible material and debris shall not be created within
ed areas. The locations of debris and other stockpiled materials shall be shown on the submitted plans. Any
l excavated at the site shall be disposed of at upland or off-site locations reviewed and approved by staff.

Transfer. The permittee shall not transfer this permit without the written permission of the IWWC.

Watercourse to Occur During Low Flow. Work within a watercourse is limited to periods of low flow. Low
iods normally occur between August and October. Upon request of permittee, wetlands staff can determine
tivity can occur at other times following an on-site field investigation.

Permit. This permit is for the approved activity ONLY. Additional activity may require an additional permit.
t if an approval or permit is granted by another agency and
1) the approved activity will affect wetlands and/or watercourses; and/or
2) the activity occurs within 125 feet of flagged boundaries and 175 feet from watercourses;
activities have not been addressed by this permit, then the applicant shall resubmit the application for
onsideration by the Inland Wetlands and Watercourses Commission before any work begins.

Compliance with Permit. The permittee shall comply at all times with the permit.

provals May be Required. Other permits may be required from Town, state or federal agencies. An Army
Engineers permit may be required: U.S. Army Corps of Engineers, 424 Trapelo Rd., Waltham, MA 02254
2-4367.

Brooklyn Conservation Commission
P. O. Box 356
Brooklyn, CT 06234

August 3, 2020

Attn: Planning and Zoning Commission, Town Planner

Re: David & Nancy Bell, Prince Hill Road, Map #34, Lot #52, Zone RA, Total Acres 6, Number of Lots 3

The Brooklyn Conservation Commission reviewed the above application on August 3, 2020 via Webex, based on the Brooklyn Natural Resource Inventory maps and the Plan of Conservation and Development (POCD).

The Brooklyn Conservation Commission recommends that the proposed Permanent Conservation Easement Covenant be accepted with the additional provision that while construction and building is underway that the owners take preventative measures to ensure that the conservation easement area is not disturbed and that it remains intact in its current natural state.

Respectfully submitted,

Jeannine Noel

Jeannine Noel

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

ENGINEERING PLAN REVIEW
PERTAINING TO A
3-LOT SUBDIVISION
(ASSESSOR'S MAP 34, LOT 52)
PRINCE HILL ROAD
BROOKLYN, CT

(July 12, 2020)

The comments contained herein pertain to my review of plans for a 3-lot residential subdivision on Prince Hill Road in Brooklyn, Connecticut, consisting of four (4) sheets, prepared for David P. Bell and Nancy M. Bell by PC Survey Associates, LLC and Killingly Engineering Associates, dated June 220. My comments are as follows:

Sheet 2 of 4 – Subdivision Map

1. It is recommended that the Conservation Easement boundary across Lot Nos. 2 and 3 be marked with durable aluminum signs, no less than 12" wide in any dimension, mounted on pressure treated posts at beginning and end points, angle points and intervals between said points at a distance of no more than 100' apart.

Sheet 3 of 4 – Lot Development Plan

1. Below the test hole data listing, there is a note that states *"Additional percolation tests at depths above restrictive later to be performed on Lots 1 and 3 at the time of lot development."* Why is this caveat here and is there a potential negative impact on building a house on this lot? Please explain.

Sheet 3 of 4 – E&S Controls / Details

1. In the "Curtain Drain – Lot 3" detail, it is recommended that a detectable warning tape be placed over the PVC pipe to allow tracing once it is buried.

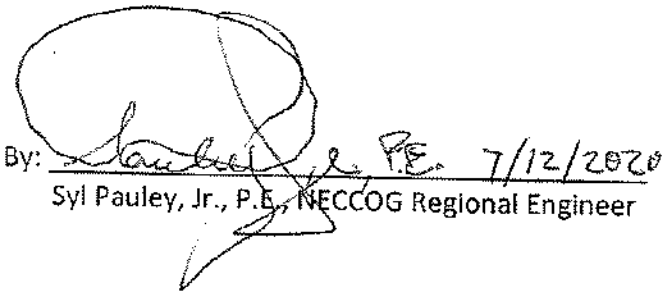
2. Again, in the "Curtain Drain – Lot 3" detail, how are the perforations to be oriented – up or down? Also, the current Connecticut Department of Transportation publication is Form 818, thus the note should be corrected.

3. In the "Anti-Tracking Pad" detail, the note regarding special riprap, change Form 814 to Form 818 and recheck the Material Article to ensure the reference is correct in the latest Form.

4. In the "Residential Driveway Detail," it should be noted that side slopes in cut or fill shall be no steeper than 3H:1V and a reference be made to the Brooklyn Public Improvement Specifications.

General Comment

1. The signature and seal of the professional engineer is missing on the plans. Also, the soil scientist signature block is missing. These should be added to the plans.



By: _____ P.E. 7/12/2020
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

ENGINEERING PLAN REVIEW
PERTAINING TO A
3-LOT SUBDIVISION
(ASSESSOR'S MAP 34, LOT 52)
PRINCE HILL ROAD
BROOKLYN, CT

(September 1, 2020)

The comments contained herein pertain to my review of plans for a 3-lot residential subdivision on Prince Hill Road in Brooklyn, Connecticut, consisting of four (4) sheets, prepared for David P. Bell and Nancy M. Bell by PC Survey Associates, LLC and Killingly Engineering Associates, dated June 2020 with most recent revision date of August 26, 2020.

The Applicant's consultant addressed some of the comments I made on July 12, 2020 and, accordingly, made modifications to the plans. My following comments address the most recent plan submission:

1. The Conservation Easement shown on previous plan submissions has been removed. A note on Sheet 2 of 4 of the most recent plans states that the Applicant shall pay an Open Space Fee in lieu of adding further protection to the wetland with a Conservation Easement.

2. The Sight Line Easement shown on previous plan submissions on the Subdivision Plan, Sheet 2 of 4, has been eliminated. It is my opinion that the easement is required and should be redrawn on this plan sheet and on the Lot Development Plan, Sheet 3 of 4. Incidentally, proposed grading is shown on Sheet 3 of 4 to provide a good sight line to the east for a vehicle exiting the driveway of Lot 2 and motorists traveling eastbound on Prince Hill Road.

3. On Sheet 3 of 4 there is a note under the test hole data columns stating that "*Additional percolation tests at depths above restrictive layer to be performed on Lots 1 and 3 at the time of lot development.*" As far as I know, the need for this note remains unexplained. The consultant submitted a letter from the Northeast District Department of Health, dated July 20, 2020 and addressed to David and Nancy Bell, regarding the feasibility of future development of their land to be subdivided into three (3) lots with 4 bedroom houses. Said letter makes no mention of performing additional percolation tests and, therefore, I would like an explanation of what this means from the Applicant's consulting professional engineer (engineered septic systems are required).

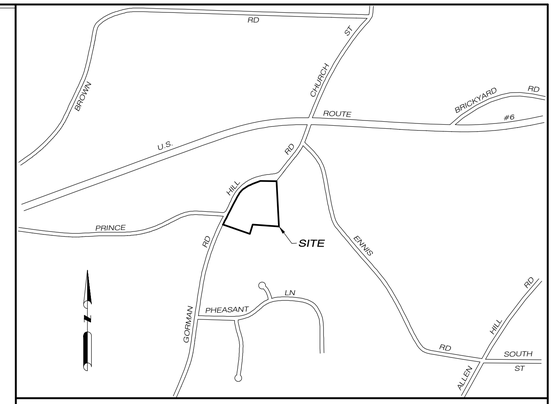
4. There is no certified soil scientist signature block on Sheet 3 of 4 attesting to the validity of the flag line delineating the wetlands on the subject property.

By: _____ C. PE. 9/1/2020
Syl Pauley, Jr., P.E., NECCOG Regional Engineer


LOOKING SOUTHWEST


LOOKING NORTH EAST


STONEWALL



LOCATION MAP SCALE: 1" = 1000'

NOTES:

1. THIS MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THRU 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS A COMPILATION PLAN CONFORMING TO HORIZONTAL ACCURACY CLASS "D". THIS MAP HAS BEEN COMPILED FROM OTHER MAPS, DEED DIMENSIONS, AND OTHER SOURCES, IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
2. PROPERTY LINES SHOWN BASED ON BROOKLYN ASSESSOR'S MAPPING.
3. ZONING DISTRICT: RA
4. TOTAL AREA OF SUBDIVISION = 6.00± ACRES.
5. SUBDIVIDED PARCEL IS SHOWN AS MAP 34, LOT 52 OF THE TOWN OF BROOKLYN ASSESSOR'S MAPS.

PARCEL HISTORY

GRANTOR	GRANTEE	VOL.	PG.	DATE	
WILLIAM COOKE, TRUSTEE	DAVID P. & NANCY M. BELL	165	217	6/9/1988	8 ACRES, MORE OR LESS
ROBERT A. DUMAINE	WILLIAM COOKE, TRUSTEE	91	559	6/8/1988	8 ACRES, MORE OR LESS
GEORGE I. & SARA H. JOHNSON	ROBERT A. DUMAINE	91	1	4/29/1988	8 ACRES, MORE OR LESS
PAUL B. & RUTH Y. KERR	GEORGE I. & SARA H. JOHNSON	29	425	7/22/1948	8 ACRES, MORE OR LESS

SURVEYOR: PAUL A. TERWILLIGER, L.S.
PC SURVEY ASSOCIATES, LLC
KILLINGLY, CT 06239

ENGINEER: NORMAND THIBEAULT, P.E.
KILLINGLY ENGINEERING ASSOCIATES
KILLINGLY, CT 06239

OWNER/APPLICANT: DAVID & NANCY BELL
PO BOX 358
BROOKLYN, CT 06234

APPROVED BY THE BROOKLYN INLAND WETLANDS AND WATERCOURSES COMMISSION.

_____ CHAIRMAN _____ DATE

THE SUBDIVISION REGULATIONS OF THE TOWN OF BROOKLYN ARE A PART OF THIS PLAN. APPROVAL OF THIS PLAN IS CONTIGENT ON COMPLETION OF THE REQUIREMENTS OF SAID REGULATIONS, EXCEPTING ANY VARIANCE OR MODIFICATIONS MADE BY THE COMMISSION. ANY SUCH VARIANCE OR MODIFICATIONS ARE ON FILE IN THE OFFICE OF THE COMMISSION.

APPROVED BY THE BROOKLYN PLANNING & ZONING COMMISSION

_____ CHAIRMAN _____ DATE

PER SECTION 8-26 OF THE CONNECTICUT GENERAL STATUTES, AMENDED, APPROVAL AUTOMATICALLY EXPIRES _____ IF ALL PHYSICAL IMPROVEMENTS REQUIRED BY THIS PLAN ARE NOT COMPLETED BY THAT DATE

SHEET INDEX

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

_____ PAUL A. TERWILLIGER, L.S. NO. 70155 _____ 8/26/2020 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE EMBOSSED SEAL OF THE LAND SURVEYOR WHOSE SIGNATURE APPEARS HEREON.

COMPILATION MAP

SUBDIVISION OF LAND
PREPARED FOR
DAVID P. BELL
AND
NANCY M. BELL

PRINCE HILL ROAD
BROOKLYN , CONNECTICUT

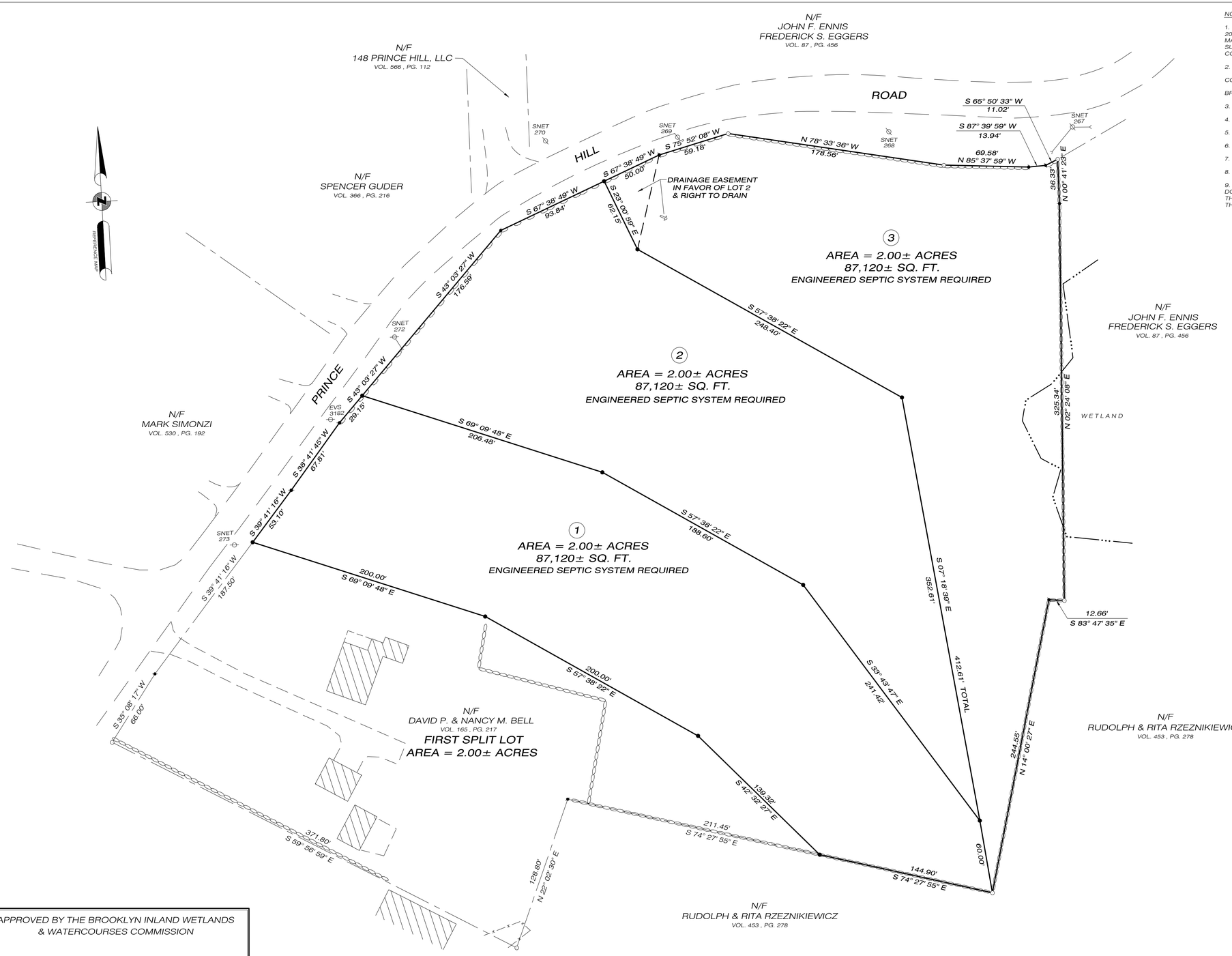
DATE: JUNE 2020
SCALE: 1" = 100'
0 50' 100' 200' 300'

JOB NO: 18015 | F.B. NO: N/A | DRAWN BY: P.A.T. | MAP NO:

SURVEYING • MAPPING • PLOT PLANS
LAND • RECORD • RESEARCH • TOPOGRAPHY • SUBDIVISION
email pcsurveyor@snet.net
63 SNAKE MEADOW RD
KILLINGLY, CT 06239
860 774 6230

SHEET NO: 1 OF 4

REVISED:
7/6/2020 - OPEN SPACE
7/29/2020 - LOT LINES
8/26/2020 - TOWN COMMENTS



NOTES:

1. THIS MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THRU 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT"; AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS A SUBDIVISION MAP BASED ON A DEPENDENT RESURVEY AND ORIGINAL SURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2.

2. REFERENCE IS MADE TO THE FOLLOWING MAPS:
   A. SUBDIVISION PLAN PREPARED FOR DAVID BELL - PRINCE HILL ROAD & GORMAN ROAD, BROOKLYN, CONNECTICUT - SCALE: 1"=40' - DATE: 1/15/1990 - REVISED 7/15/1991 - SHEET 1 OF 4 - BY: KWP ASSOCIATES
   B. PERIMETER SURVEY PREPARED FOR DAVID P. BELL AND NANCY M. BELL - PRINCE HILL ROAD - BROOKLYN, CONNECTICUT - DATE: JANUARY 2020 - SCALE: 1"=40' - BY: PC SURVEY ASSOCIATES, LLC

3. TOTAL AREA OF SUBDIVISION = 6.00± ACRES.

4. ZONING DISTRICT: RA

5. THIS SUBDIVISION DOES NOT CONTAIN LAND AREAS WITHIN F.E.M.A.'s 100-YEAR FLOOD HAZARD ZONE.

6. ALL LOTS REQUIRE ENGINEER DESIGNED SEPTIC SYSTEMS.

7. WETLANDS SHOWN AS FIELD DELINEATED BY JOSEPH THEROUX, CPSS, NOVEMBER, 2019.

8. BEARING SYSTEM IS BASED ON REFERENCE MAP "A".

9. OPEN SPACE REQUIREMENTS ARE TO BE MET BY A FEE IN LIEU OF OPEN SPACE DEDICATION. A DOCUMENT STIPULATING THIS REQUIREMENT SHALL BE RECORDED IN THE BROOKLYN LAND RECORDS. ONE THIRD OF THE REQUIRED OPEN SPACE FEE SHALL BE PAID AT THE TIME OF THE INITIAL SALE OF EACH OF THE LOTS.

THE SUBDIVISION REGULATIONS OF THE TOWN OF BROOKLYN ARE A PART OF THIS PLAN. APPROVAL OF THIS PLAN IS CONTIGENT ON COMPLETION OF THE REQUIREMENTS OF SAID REGULATIONS, EXCEPTING ANY VARIANCE OR MODIFICATIONS MADE BY THE COMMISSION. ANY SUCH VARIANCE OR MODIFICATIONS ARE ON FILE IN THE OFFICE OF THE COMMISSION.

APPROVED BY THE BROOKLYN INLAND WETLANDS & WATERCOURSES COMMISSION

CHAIRMAN _____ DATE _____

APPROVED BY THE BROOKLYN PLANNING & ZONING COMMISSION

CHAIRMAN _____ DATE _____

PER SECTION 8-26c OF THE CONNECTICUT GENERAL STATUTES, AMENDED, APPROVAL AUTOMATICALLY EXPIRES _____ IF ALL PHYSICAL IMPROVEMENTS REQUIRED BY THIS PLAN ARE NOT COMPLETED BY THAT DATE

LEGEND

- IRON PIN FOUND
- ANGLE POINT
- IRON ROD TO BE SET
- STONE WALL
- EDGE OF WETLAND

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

PAUL A. TERWILLIGER, L.S. NO. 70155 — 8/26/2020 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE EMBOSSED SEAL OF THE LAND SURVEYOR WHOSE SIGNATURE APPEARS HEREON.

SUBDIVISION MAP

PREPARED FOR

DAVID P. BELL

AND

NANCY M. BELL

PRINCE HILL ROAD

BROOKLYN , CONNECTICUT

DATE: JUNE 2020

SCALE: 1" = 40'

0 20' 40' 80' 120'

JOB NO: 18015 | F.B. NO: N/A | DRAWN BY: P.A.T. | MAP NO:

SURVEYING • MAPPING • PLOT PLANS
LAND RECORD RESEARCH • TOPOGRAPHY • SUBDIVISION
PC SURVEY ASSOCIATES, LLC
email: pcsurvey@snet.net
63 SNAKE MEADOW RD
KILLINGLY, CT 06239
860 774 6230

SHEET NO: 2 OF 4

REVISED:
7/6/2020 - OPEN SPACE
7/29/2020 - LOT LINES
8/26/2020 - TOWN COMMENTS

THE SUBDIVISION REGULATIONS OF THE TOWN OF BROOKLYN ARE A PART OF THIS PLAN. APPROVAL OF THIS PLAN IS CONTIGENT ON COMPLETION OF THE REQUIREMENTS OF SAID REGULATIONS, EXCEPTING ANY VARIANCE OR MODIFICATIONS MADE BY THE COMMISSION. ANY SUCH VARIANCE OR MODIFICATIONS ARE ON FILE IN THE OFFICE OF THE COMMISSION.

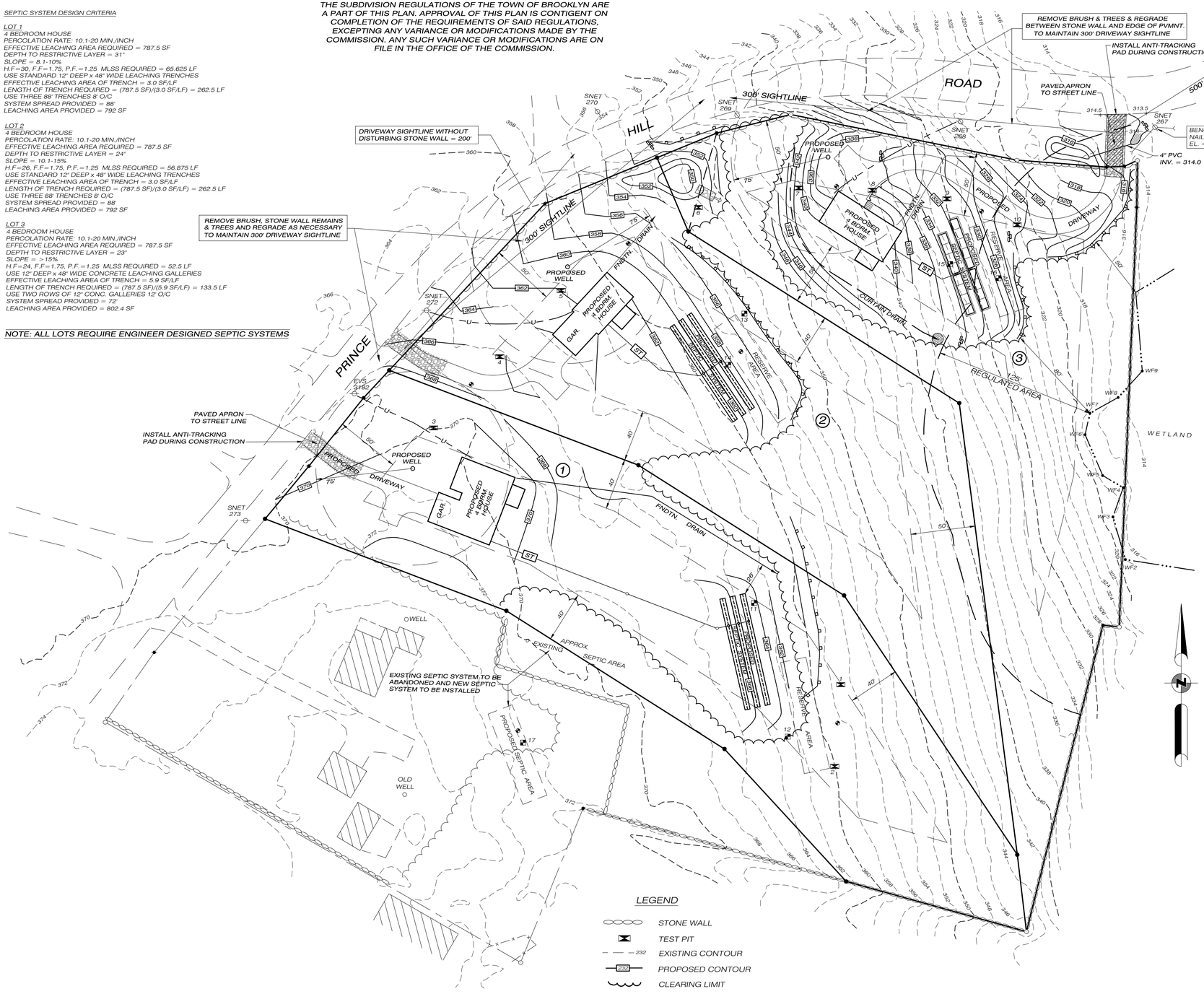
SEPTIC SYSTEM DESIGN CRITERIA

LOT 1
4 BEDROOM HOUSE
PERCOLATION RATE: 10.1-20 MIN./INCH
EFFECTIVE LEACHING AREA REQUIRED = 787.5 SF
DEPTH TO RESTRICTIVE LAYER = 31"
SLOPE = 8.1-10%
H.F.=30, F.F.=1.75, P.F.=1.25 MLSS REQUIRED = 65.625 LF
USE STANDARD 12" DEEP x 48" WIDE LEACHING TRENCHES
EFFECTIVE LEACHING AREA OF TRENCH = 3.0 SF/LF
LENGTH OF TRENCH REQUIRED = (787.5 SF)/(3.0 SF/LF) = 262.5 LF
USE THREE 88' TRENCHES 8' O/C
SYSTEM SPREAD PROVIDED = 88'
LEACHING AREA PROVIDED = 792 SF

LOT 2
4 BEDROOM HOUSE
PERCOLATION RATE: 10.1-20 MIN./INCH
EFFECTIVE LEACHING AREA REQUIRED = 787.5 SF
DEPTH TO RESTRICTIVE LAYER = 24"
SLOPE = 10.1-15%
H.F.=26, F.F.=1.75, P.F.=1.25 MLSS REQUIRED = 56.875 LF
USE STANDARD 12" DEEP x 48" WIDE LEACHING TRENCHES
EFFECTIVE LEACHING AREA OF TRENCH = 3.0 SF/LF
LENGTH OF TRENCH REQUIRED = (787.5 SF)/(3.0 SF/LF) = 262.5 LF
USE THREE 88' TRENCHES 8' O/C
SYSTEM SPREAD PROVIDED = 88'
LEACHING AREA PROVIDED = 792 SF

LOT 3
4 BEDROOM HOUSE
PERCOLATION RATE: 10.1-20 MIN./INCH
EFFECTIVE LEACHING AREA REQUIRED = 787.5 SF
DEPTH TO RESTRICTIVE LAYER = 23"
SLOPE = >15%
H.F.=24, F.F.=1.75, P.F.=1.25 MLSS REQUIRED = 52.5 LF
USE 12" DEEP x 48" WIDE CONCRETE LEACHING GALLERIES
EFFECTIVE LEACHING AREA OF TRENCH = 5.9 SF/LF
LENGTH OF TRENCH REQUIRED = (787.5 SF)/(5.9 SF/LF) = 133.5 LF
USE TWO ROWS OF 12" CONC. GALLERIES 12' O/C
SYSTEM SPREAD PROVIDED = 72'
LEACHING AREA PROVIDED = 802.4 SF

NOTE: ALL LOTS REQUIRE ENGINEER DESIGNED SEPTIC SYSTEMS



LEGEND

- STONE WALL
- TEST PIT
- 232 EXISTING CONTOUR
- 230 PROPOSED CONTOUR
- CLEARING LIMIT
- EROSION CONTROL BARRIER

TEST HOLE 1
0-8" TOPSOIL
8"-27" FINE SANDY LOAM
27"-80" MOD. COMPACT GRAVELLY LOAMY SAND, SANDY LOAM w/ COBBLES
WATER AT 54"
MOTTLING AT 48"
NO LEDGE

TEST HOLE 2
0-8" TOPSOIL
8"-25" FINE SANDY LOAM
25"-84" MOD. COMPACT GRAVELLY LOAMY SAND & SANDY LOAM w/ COBBLES, SOME STONES
WATER AT 54"
MOTTLING AT 50"
NO LEDGE

PERCOLATION RATE: 11.4 MIN./INCH

TEST HOLE 3
0-9" TOPSOIL
9"-23" SANDY LOAM
23"-42" FINE SANDY LOAM & SANDY LOAM, SOME FINE/MED. SAND
WATER AT 67"
MOTTLING AT 62"
NO LEDGE

TEST HOLE 4
0-9" TOPSOIL
9"-21" SANDY LOAM
21"-36" LOAMY SAND
36"-100" MOD. COMPACT GRAVELLY LOAMY SAND & SANDY LOAM w/ COBBLES, POCKET LOAMY VERY FINE SAND
WATER AT 60"
MOTTLING AT 40"
NO LEDGE

PERCOLATION RATE: 11.4 MIN./INCH

TEST HOLE 5
0-9" TOPSOIL
9"-24" SANDY LOAM
24"-30" GRAY LOAMY FINE SAND
30"-37" BROWN LOAMY FINE/MED. SAND
37"-96" MOD. COMPACT GRAVELLY LOAMY FINE SAND & FINE SANDY LOAM w/ COBBLES
WATER AT 79"
MOTTLING AT 64"
NO LEDGE

TEST HOLE 6
0-9" TOPSOIL
9"-18" FINE SANDY LOAM
18"-36" FINE SANDY LOAM & SANDY LOAM
36"-89" MOD. COMPACT GRAVELLY LOAMY SAND & SANDY LOAM w/ COBBLES, SOME FLAT ROCK
WATER AT 65"
MOTTLING AT 60"
NO LEDGE

PERCOLATION RATE: 8.9 MIN./INCH

TEST HOLE 7
0-8" TOPSOIL
8"-22" FINE SANDY LOAM
22"-66" MOD. COMPACT GRAVELLY FINE SANDY LOAM, SOME LOAMY FINE SAND w/ COBBLES
WATER AT 24"
MOTTLING AT 23"
NO LEDGE

TEST HOLE 8
0-8" TOPSOIL
8"-24" SANDY LOAM & FINE SANDY LOAM
24"-96" MOD. COMPACT GRAVELLY LOAMY FINE SAND, SOME FINE SANDY LOAM, SOME FINE/MED. SAND w/ COBBLES
NO WATER
NO MOTTLING
NO LEDGE

PERCOLATION RATE: 16-20 MIN./INCH

TEST HOLE 9
0-8" TOPSOIL
8"-24" FINE SANDY LOAM
24"-38" FINE SANDY LOAM & LOAMY FINE SAND
38"-84" COMPACT GRAVELLY LOAMY FINE SAND & SANDY LOAM w/ COBBLES
WATER AT 68"
MOTTLING AT 31"
NO LEDGE

TEST HOLE 10
0-21" TOPSOIL
21"-31" SANDY LOAM
31"-42" SANDY LOAM & FINE SANDY LOAM
42"-84" MOD. COMPACT FINE SANDY LOAM, SOME LOAMY SAND
WATER AT 58"
MOTTLING AT 50"
NO LEDGE

PERCOLATION RATE: 16 MIN./INCH

TEST HOLE 11
0-12" TOPSOIL
12"-32" FINE SANDY LOAM
32"-80" MOTTLED GRAVELLY SANDY LOAM
80-84" GROUNDWATER
WATER AT 80"
MOTTLING AT 32"
NO LEDGE

TEST HOLE 12
0-12" TOPSOIL
12"-31" FINE SANDY LOAM
31"-76" MOTTLED GRAVELLY SANDY LOAM
76-80" GROUNDWATER
WATER AT 76"
MOTTLING AT 31"
NO LEDGE

TEST HOLE 13
0-11" TOPSOIL
11"-24" FINE SANDY LOAM
24"-69" MOTTLED/WET GRAVELLY SANDY LOAM
69"-73" GROUNDWATER
WATER AT 69"
MOTTLING AT 24"
NO LEDGE

TEST HOLE 14
0-10" TOPSOIL
10"-26" FINE SANDY LOAM
26"-59" MOTTLED SANDY LOAM w/ GRAVEL
59"-70" GROUNDWATER
WATER AT 59"
MOTTLING AT 26"
NO LEDGE

PERCOLATION RATE: 10 MIN./INCH

TEST HOLE 15
0-9" TOPSOIL
9"-23" FINE SANDY LOAM
23"-81" MOTTLED GRAVELLY LOAMY SAND
NO WATER
MOTTLING AT 23"
NO LEDGE

TEST HOLE 16
0-12" TOPSOIL
12"-28" FINE SANDY LOAM
28"-70" MOTTLED GRAVELLY LOAMY SAND
NO WATER
MOTTLING AT 28"
NO LEDGE

TEST HOLE 17
0-9" TOPSOIL
9"-28" FINE SANDY LOAM
28"-70" MOTTLED FINE SANDY LOAM w/ GRAVEL
70"-78" GROUNDWATER
WATER AT 70"
MOTTLING AT 28"
NO LEDGE

PERCOLATION RATE: 10 MIN./INCH

NOTE:
ADDITIONAL PERCOLATION TESTS AT DEPTHS ABOVE RESTRICTIVE LAYER TO BE PERFORMED ON LOTS 1 AND 3 AT THE TIME OF LOT DEVELOPMENT.

NOTES:

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2. ZONING DISTRICT: RA
3. PROPOSED IMPROVEMENTS ARE CONCEPTUAL LOCATIONS TO SHOW LOT SUITABILITY ONLY.
4. SOLAR ACCESS WAS CONSIDERED IN THE DESIGN OF THIS SUBDIVISION.
5. THE INLAND WETLANDS AND WATERCOURSES WERE FIELD DELINEATED IN NOVEMBER 2019 BY JOSEPH R. THEROUX, CPSS.
6. MAXIMUM DRIVEWAY GRADE PERMITTED IS 12%. GRADES OF 10% OR GREATER ARE TO BE PAVED.
7. SEE SHEET 4 FOR EROSION & SEDIMENT CONTROL PLAN.
8. THERE ARE NO APPARENT EXISTING OR PROPOSED WELLS WITHIN 75 FEET OF THE PROPOSED SEPTIC AREAS DEPICTED. THERE ARE NO APPARENT SEPTIC AREAS WITHIN 75 FEET OF THE PROPOSED WELL LOCATIONS DEPICTED.
9. IF UNDERGROUND UTILITIES ARE INSTALLED, NO TRENCH SHALL BE LOCATED WITHIN 25' OF A SEPTIC SYSTEM OR WELL.

Killingly Engineering Associates
114 Westcott Road
P.O. Box 421
Dayville, Connecticut 06241
860 779 7299

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

APPROVED BY THE BROOKLYN INLAND WETLANDS AND WATERCOURSES COMMISSION.

CHAIRMAN DATE

APPROVED BY THE BROOKLYN PLANNING & ZONING COMMISSION

CHAIRMAN DATE

PER SECTION 8-26 OF THE CONNECTICUT GENERAL STATUTES, AMENDED, APPROVAL AUTOMATICALLY EXPIRES IF ALL PHYSICAL IMPROVEMENTS REQUIRED BY THIS PLAN ARE NOT COMPLETED BY THAT DATE

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

PAUL A. TERWILLIGER, L.S. NO. 70155 8/26/2020 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE EMBOSSED SEAL OF THE LAND SURVEYOR WHOSE SIGNATURE APPEARS HEREON.

GENERAL LOCATION SURVEY

LOT DEVELOPMENT PLAN
SUBDIVISION OF LAND
PREPARED FOR

DAVID P. BELL
AND
NANCY M. BELL

PRINCE HILL ROAD
BROOKLYN , CONNECTICUT

DATE: JUNE 2020
SCALE: 1" = 40'
0 20' 40' 80' 120'

JOB NO: 18015 | F.B. NO: N/A | DRAWN BY: P.A.T. | MAP NO:

SURVEYING • MAPPING • PLOT PLANS • TOPOGRAPHY • SUBDIVISION • RESEARCH • RECORD LAND
email: pcsurvey@snet.net
63 SNAKE MEADOW RD
KILLINGLY, CT 06239
860 774 6230

SHEET NO: 3 OF 4

REVISED:
7/6/2020 - OPEN SPACE
7/29/2020 - LOT LINES/COMMENTS
8/26/2020 - TOWN COMMENTS

REFERENCE IS MADE TO:

1. CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, MAY 2002.
2. SOIL SURVEY OF WINDHAM COUNTY CONNECTICUT, U.S.D.A. SOIL CONSERVATION SERVICE 1983.

DEVELOPMENT

PROPOSED DEVELOPMENT WILL CREATE THREE 2 ACRE BUILDING LOTS.

CONSTRUCTION SEQUENCE:

1. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES ALONG THE PROPOSED LIMITS OF DISTURBANCE.
2. PROVIDE ANTI TRACKING PAD AND TEMPORARY POWER TO THE SITE.
3. REMOVE AND STOCKPILE TOPSOIL AND INSTALL SEDIMENT BARRIER.
4. EXCAVATE FOUNDATION AND BEGIN HOUSE CONSTRUCTION.
5. INSTALL SEPTIC SYSTEM AND WELL.
6. INSTALL DRIVEWAY AND UTILITIES TO THE RESIDENCE.
7. LOAM, SEED & MULCH DISTURBED AREAS.
8. REMOVE EROSION AND SEDIMENT CONTROL.

GENERAL DEVELOPMENT PLAN

PRIOR TO THE COMMENCEMENT OF OPERATIONS IN ACCORDANCE WITH ANY PERMIT ISSUED BY THE TOWN OF BROOKLYN PLANNING AND ZONING COMMISSION, THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES.

THE CONTRACTOR SHALL OBTAIN A SITE INSPECTION FROM THE TOWN OF BROOKLYN ZONING ENFORCEMENT OFFICER OR WETLANDS AGENT TO ENSURE THAT ALL EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED IN ACCORDANCE WITH THIS NARRATIVE. UPON APPROVAL WITH RESPECT TO THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES, THE CONTRACTOR MAY COMMENCE OPERATIONS PURSUANT TO THE PERMIT. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE "SILT FENCE INSTALLATION & MAINTENANCE" AND "HAY BALE INSTALLATION & MAINTENANCE" SECTIONS OF THIS NARRATIVE.

ALL STRIPPING IS TO BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. TOPSOIL SHALL BE STOCKPILED SO THAT SLOPES DO NOT EXCEED 2 TO 1. THERE SHALL BE NO BURIAL OF STUMPS. A HAY BALE SEDIMENT BARRIER IS TO SURROUND EACH STOCKPILE AND A TEMPORARY VEGETATIVE COVER PROVIDED IF NECESSARY.

DUST CONTROL WILL BE ACCOMPLISHED BY SPRAYING WITH WATER.

FINAL STABILIZATION OF THE SITE IS TO FOLLOW THE PROCEDURES OUTLINED IN PERMANENT VEGETATIVE COVER. IF NECESSARY A TEMPORARY VEGETATIVE COVER IS TO BE PROVIDED UNTIL A PERMANENT COVER CAN BE APPLIED.

DURING THE STABILIZATION PERIOD, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN PROPER WORKING ORDER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL EROSION AND SEDIMENT CONTROL ON A TWICE-WEEKLY BASIS DURING THE STABILIZATION PERIOD AND AFTER EACH STORM EVENT. DURING THE STABILIZATION PERIOD WITH RESPECT TO THE SITE, ANY EROSION WHICH OCCURS WITHIN DISTURBED AREAS SHALL BE IMMEDIATELY REPAIRED, RESEEDED AND RE-ESTABLISHED.

ALL DISTURBED SLOPES SHALL BE STABILIZED WITHIN ONE SEASON (SPRING OR FALL) OF THE COMPLETION OF THE PROJECT BEFORE A CERTIFICATE OF COMPLIANCE WILL BE ISSUED.

ONCE STABILIZATION HAS BEEN COMPLETED AND APPROVED BY THE TOWN OF BROOKLYN ZONING ENFORCEMENT OFFICER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED BY THE CONTRACTOR.

SILT FENCE INSTALLATION AND MAINTENANCE:

1. DIG A 6" DEEP TRENCH ON THE UPHILL SIDE OF THE BARRIER LOCATION.
2. POSITION THE POSTS ON THE DOWNHILL SIDE OF THE BARRIER AND DRIVE THE POSTS 1.5 FEET INTO THE GROUND.
3. LAY THE BOTTOM 6" OF THE FABRIC IN THE TRENCH TO PREVENT UNDERMINING AND BACKFILL.
4. INSPECT AND REPAIR BARRIER AFTER HEAVY RAINFALL.
5. INSPECTIONS WILL BE MADE AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER TO DETERMINE MAINTENANCE NEEDS.
6. SEDIMENT DEPOSITS ARE TO BE REMOVED WHEN THEY REACH A HEIGHT OF 1 FOOT BEHIND THE BARRIER OR HALF THE HEIGHT OF THE BARRIER AND ARE TO BE DEPOSITED IN AN AREA WHICH IS NOT REGULATED BY THE INLAND WETLANDS COMMISSION.
7. REPLACE OR REPAIR THE FENCE WITHIN 24 HOURS OF OBSERVED FAILURE. FAILURE OF THE FENCE HAS OCCURRED WHEN SEDIMENT FAILS TO BE RETAINED BY THE FENCE BECAUSE:
   - THE FENCE HAS BEEN OVERTOPPED, UNDERCUT OR BYPASSED BY RUNOFF WATER,
   - THE FENCE HAS BEEN MOVED OUT OF POSITION, OR
   - THE GEOTEXTILE HAS DECOMPOSED OR BEEN DAMAGED.

HAY BALE INSTALLATION AND MAINTENANCE:

1. BALES SHALL BE PLACED AS SHOWN ON THE PLANS WITH THE ENDS OF THE BALES TIGHTLY ABUTTING EACH OTHER.
2. EACH BALE SHALL BE SECURELY ANCHORED WITH AT LEAST 2 STAKES AND GAPS BETWEEN BALES SHALL BE WEDGED WITH STRAW TO PREVENT WATER FROM PASSING BETWEEN THE BALES.
3. INSPECT BALES AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCHES OR GREATER TO DETERMINE MAINTENANCE NEEDS.
4. REMOVE SEDIMENT BEHIND THE BALES WHEN IT REACHES HALF THE HEIGHT OF THE BALE AND DEPOSIT IN AN AREA WHICH IS NOT REGULATED BY THE INLAND WETLANDS COMMISSION.
5. REPLACE OR REPAIR THE BARRIER WITHIN 24 HOURS OF OBSERVED FAILURE. FAILURE OF THE BARRIER HAS OCCURRED WHEN SEDIMENT FAILS TO BE RETAINED BY THE BARRIER BECAUSE:
   - THE BARRIER HAS BEEN OVERTOPPED, UNDERCUT OR BYPASSED BY RUNOFF WATER,
   - THE BARRIER HAS BEEN MOVED OUT OF POSITION, OR
   - THE HAY BALES HAVE DETERIORATED OR BEEN DAMAGED.

TEMPORARY VEGETATIVE COVER

A TEMPORARY SEEDING OF RYE GRASS WILL BE COMPLETED WITHIN 15 DAYS OF THE FORMATION OF STOCKPILES. IF THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS IT SHALL BE LOOSENED TO A DEPTH OF 2 INCHES BEFORE THE FERTILIZER, LIME AND SEED IS APPLIED. 10-10-10 FERTILIZER AT A RATE OF 7.5 POUNDS PER 1000 S.F. LIMESTONE AT A RATE OF 90 LBS. PER 1000 S.F. SHALL BE USED. RYE GRASS APPLIED AT A RATE OF 1 LB. PER 1000 S.F. SHALL PROVIDE THE TEMPORARY VEGETATIVE COVER. STRAW FREE FROM WEEDS AND COARSE MATTER SHALL BE USED AT A RATE OF 70-90 LBS. PER 1000 S.F. AS A TEMPORARY MULCH. APPLY A JUTE NETTING COVER TO SLOPES OF 3:1 OR GREATER SLOPE.

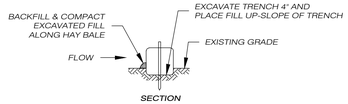
PERMANENT VEGETATIVE COVER

TOPSOIL WILL BE REPLACED ONCE THE EXCAVATION AND FILL PLACEMENT HAS BEEN COMPLETED AND THE SLOPES ARE GRADED TO A SLOPE NO GREATER THAN 2 TO 1. PROVIDE SLOPE PROTECTION ON ALL CUT SLOPES. TOPSOIL WILL BE SPREAD AT A MINIMUM COMPACTED DEPTH OF 4 INCHES. ONCE THE TOPSOIL HAS BEEN SPREAD, ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION WILL BE REMOVED AS WELL AS DEBRIS, APPLY AGRICULTURAL GROUND LIMESTONE AT THE RATE OF TWO TONS PER ACRE OR 100 LBS. PER 1000 S.F. APPLY 10-10-10 FERTILIZER OR EQUIVALENT AT A RATE OF 300 LBS. PER ACRE OR 7.5 LBS. PER S.F. WORK LIMESTONE INTO THE SOIL TO A DEPTH OF 4 INCHES. INSPECT SEEDBED BEFORE SEEDING. IF TRAFFIC HAS COMPACTED THE SOIL, RETILL COMPACTED AREAS. APPLY THE FOLLOWING GRASS SEED MIX:

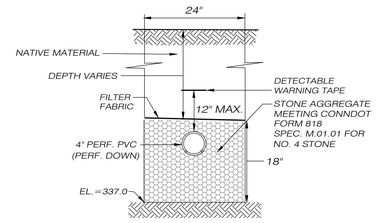
SEED MIXTURE	LBS./ACRE	LBS./1000 S.F.
KENTUCKY BLUEGRASS	20	0.45
CREEPING RED FESCUE	20	0.45
PERENNIAL RYEGRASS	5	0.10
	45	1.00

THE RECOMMENDED SEEDING DATES ARE: APRIL 1 - JUNE 15 AND AUGUST 1 - SEPTEMBER 15

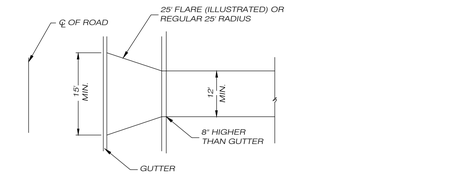
FOLLOWING SEEDING MULCH WITH WEED FREE STRAW AND APPLY A JUTE NETTING COVER TO AREAS OF 3:1 OR GREATER SLOPE

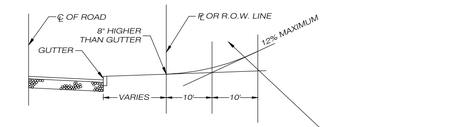


HAY BALE BARRIER DETAIL
NOT TO SCALE

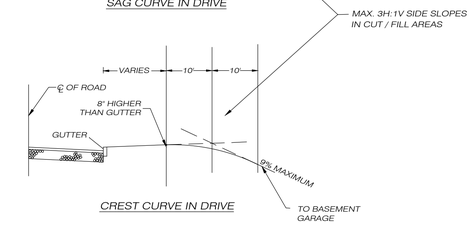


CURTAIN DRAIN - LOT 3
NOT TO SCALE





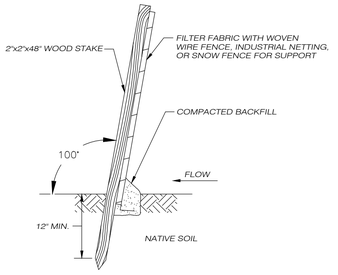
SAG CURVE IN DRIVE



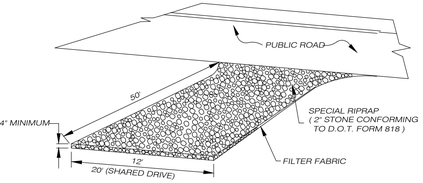
CREST CURVE IN DRIVE

REF: BROOKLYN PUBLIC IMPROVEMENT SPECIFICATIONS

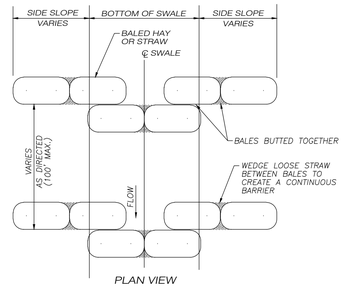
RESIDENTIAL DRIVEWAY DETAIL
NOT TO SCALE



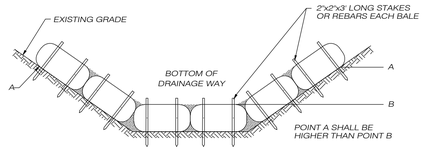
SILT FENCE SECTION
NOT TO SCALE



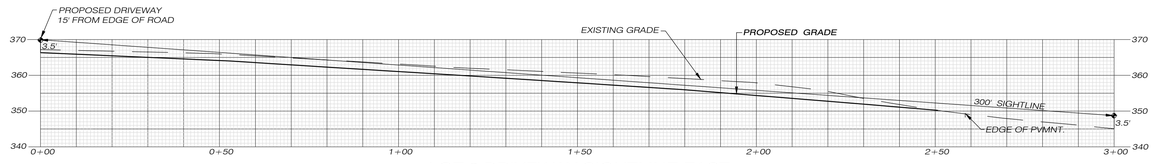
ANTI-TRACKING PAD
NOT TO SCALE



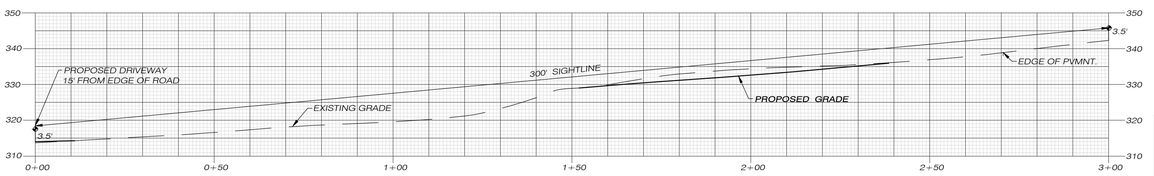
PLAN VIEW



HAYBALE CHECK DAM
NOT TO SCALE



LOT 2 DRIVEWAY SIGHTLINE EAST
1" = 20'



LOT 3 DRIVEWAY SIGHTLINE WEST
1" = 20'

APPROVED BY THE BROOKLYN INLAND WETLANDS AND WATERCOURSES COMMISSION.

CHAIRMAN _____ DATE _____

APPROVED BY THE BROOKLYN PLANNING & ZONING COMMISSION

CHAIRMAN _____ DATE _____

PER SECTION 8-26 OF THE CONNECTICUT GENERAL STATUTES, AMENDED, APPROVAL AUTOMATICALLY EXPIRES _____ IF ALL PHYSICAL IMPROVEMENTS REQUIRED BY THIS PLAN ARE NOT COMPLETED BY THAT DATE

Killingly Engineering Associates
114 Westcott Road
P.O. Box 421
Dayville, Connecticut 06241
860 779 7299

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

SUBDIVISION OF LAND

E&S CONTROL / DETAILS

PREPARED FOR

DAVID P. BELL

AND

NANCY M. BELL

PRINCE HILL ROAD

BROOKLYN , CONNECTICUT

DATE: JUNE 2020

SCALE: 1" = AS NOTED

0 1/2" 1" 2" 3"

SURVEYING • MAPPING • PLOT PLANS • LAND RECORD RESEARCH • TOPOGRAPHY • SUBDIVISION

email pcsurvey@snet.net

63 SNAKE MEADOW RD
KILLINGLY, CT 06239
860 774 6230

SHEET NO: 4 OF 4

REVISED: 7/13/2020

7/29/2020 - SIGHTLINE

8/26/2020 - TOWN COMMENTS

JOB NO: 18015 | F.B. NO: N/A | DRAWN BY: P.A.T. | MAP NO:

APPRAISAL OF

Vacant Land

LOCATED AT:

Prince Hill Road
Brooklyn, CT 06234-1521

FOR:

PC Survey Associates
63 Snake Meadow Road, Killingly, CT

BORROWER:

NA

AS OF:

September 21, 2020

BY:

Robert F. Monahan
Certified General Appraiser RCG.0000981

September 23, 2020

PC Survey Associates
63 Snake Meadow Road, Killingly, CT

File Number: 20-Prince Hill

In accordance with your request, I have appraised the real property at:

Prince Hill Road
Brooklyn, CT 06234-1521

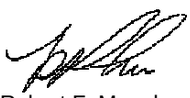
The purpose of this appraisal is to develop an opinion of the market value of the subject property, as vacant. The property rights appraised are the fee simple interest in the site.

In my opinion, the market value of the property as of September 21, 2020 is:

$48,000
Forty-Eight Thousand Dollars

The attached report contains the description, analysis and supportive data for the conclusions, final opinion of value, descriptive photographs, limiting conditions and appropriate certifications.

Respectively submitted,



Robert F. Monahan
Certified General Appraiser RCG.0000981
Practicing Affiliate of the Appraisal Institute

Appraisal Report

LAND APPRAISAL REPORT

File No. 20-Prince Hill

SUBJECT

Property Address: Prince Hill Road | Census Tract: 9051
City: Brooklyn | County: Windham | State: CT | Zip Code: 06234-1521
Legal Description: See Attached Addendum
Owner/Occupant: David and Nancy Bell | Map Reference:
Sale Price $: NA | Date of Sale: NA
Loan charges/concessions to be paid by seller $: 0.00
R.E. Taxes $: TBD | Tax Year: 2019 | HOA $/Mo.:
Lender/Client: PC Survey Associates
63 Snake Meadow Road, Killingly, CT

Property Rights Appraised: [X] Fee Simple [ ] Leashold [ ] Condominium (HUD/VA) [ ] PUD

LENDER DISCRETIONARY USE
Sale Price $
Date
Mortgage Amount $
Mortgage Type
Discount Points and Other Concessions
Paid by Seller $
Source

NEIGHBORHOOD

LOCATION	[ ] Urban	[X] Suburban	[ ] Rural
BUILT UP	[ ] Over 75%	[X] 25-75%	[ ] Under 25%
GROWTH RATE	[ ] Rapid	[X] Stable	[ ] Slow
PROPERTY VALUES	[ ] Increasing	[X] Stable	[ ] Declining
DEMAND/SUPPLY	[ ] Shortage	[X] In Balance	[ ] Over Supply
MARKETING TIME	[ ] Under 3 Mos.	[X] 3-6 Mos.	[ ] Over 6 Mos.

PRESENT LAND USE %		LAND USE CHANGE		PREDOMINANT OCCUPANCY		SINGLE FAMILY HOUSING	
Single Family	25%	Not Likely	[X]	Owner	[X]	PRICE $(000)	AGE (yrs)
2-4 Family	10%	Likely	[ ]	Tenant	[ ]	75 Low	1
Multi-Family	5%	In process	[ ]	Vacant (0-5%)	[X]	500 High	100+
Commercial	20%	To:		Vacant (over 5%)	[ ]	Predominant	
Industrial	1%					225	30
Vacant	39%						

NEIGHBORHOOD ANALYSIS	Good	Avg.	Fair	Poor
Employment Stability	[ ]	[X]	[ ]	[ ]
Convenience to Employment	[ ]	[X]	[ ]	[ ]
Convenience to Shopping	[ ]	[X]	[ ]	[ ]
Convenience to Schools	[ ]	[X]	[ ]	[ ]
Adequacy of Public Transportation	[ ]	[X]	[ ]	[ ]
Recreation Facilities	[ ]	[X]	[ ]	[ ]
Adequacy of Facilities	[ ]	[X]	[ ]	[ ]
Property Compatibility	[ ]	[X]	[ ]	[ ]
Protection from Detrimental Cond.	[ ]	[X]	[ ]	[ ]
Police & Fire Protection	[ ]	[X]	[ ]	[ ]
General Appearance of Properties	[ ]	[X]	[ ]	[ ]
Appeal to Market	[ ]	[X]	[ ]	[ ]

Note: Race or the racial composition of the neighborhood are not considered reliable appraisal factors. COMMENTS: The subject property is located in the eastern half of the town just south of Route 6, just east of the junction of Routes 169 and Route 6 and just west of Brooklyn's commercial center. The neighborhood is predominately residential with residents having good access to local shopping and to interstate 395.

SITE

Dimensions: 895.64+/- feet x Irregular See Addendum
Site Area: 6+/-acres | Corner Lot: No
Zoning Classification: Rural Agricultural | Zoning Compliance: Legal
HIGHEST & BEST USE: Present Use: Vacant | Other Use: Residential Development

UTILITIES	Public	Other	SITE IMPROVEMENTS	Type	Public	Private
Electricity	[X]	Available	Street	Asphalt	[X]	[ ]
Gas	[ ]	None	Curb/Gutter	None	[ ]	[ ]
Water	[ ]	Well Necessary	Sidewalk	None	[ ]	[ ]
Sanitary Sewer	[ ]	Septic Necessary	Street Lights	None	[ ]	[ ]
Storm Sewer	[ ]	None	Alley	None	[ ]	[ ]

Topography	Sloping
Size	Adequate
Shape	Irregular
Drainage	Appears Adequate
View	Average
Landscaping	Raw Land
Driveway	None
Apparent Easements	None noted
FEMA Flood Hazard	Yes* [ ] No [X]
FEMA* Map/Zone	090164 0006 A/C

Comments (Apparent adverse easements, encroachments, special assessments, slide areas, etc.): The subject land is described in the addendum. See Addendum

SALES COMPARISON ANALYSIS

The undersigned has recited three recent sales of properties most similiar and proximate to subject and has considered these in the market analysis. The description includes a dollar adjustment, reflecting market reaction to those items of significant variation between the subject and comparable properties. If a significant item in the comparable property is superior to, or more favorable than, the subject property, a minus (-) adjustment is made, thus reducing the indicated value of subject; if a significant item in the comparable is inferior to, or less favorable than, the subject property, a plus (+) adjustment is made, thus increasing the indicated value of the subject.

ITEM	SUBJECT	COMPARABLE NO. 1		COMPARABLE NO. 2		COMPARABLE NO. 3	
Address	Prince Hill Road Brooklyn, CT	Tripp Hollow Road Brooklyn, CT		49 Pomfret Road Brooklyn, CT		Costello Road Brooklyn, CT	
Proximity to Subject		3.54 miles SW		1.07 miles SW		1.79 miles NW	
Sales Price	$ NA		$ 32,000		$ 58,000		$ 55,000
Price/ Acre	$ ☑	$ 7,207 ☑		$ 11,508 ☑		$ 5,612 ☑	
Data Source	TnRec/Survey	Tn Records/MLS/Mappings		Tn Records/MLS/Mappings		Tn Records/MLS/Mappings	
VALUE ADJUSTMENTS	DESCRIPTION	DESCRIPTION	+(-)$ Adjustment	DESCRIPTION	+(-)$ Adjustment	DESCRIPTION	+(-)$ Adjustment
Sales or Financing Concessions		Cash None Noted		Construction Mort None Noted		No Mort Noted None Noted	
Date of Sale/Time	9/22/2020	12/13/2019		2/21/2019		1/10/2020	
Location	Average	Average		Average		Average	
Site/View	6+/-ac/Average	4.44+/-ac/Average		5.04+/-ac/Average		9.80+/-ac/Resid	+561
Wetland	Average	Above Average	+721	Average		Average	
Topography	Sloping	Sloping		Gentle Slope	-575	Sloping	
Ground Cover	Wooded	Wooded		Open	-2,877	Wooded	
Subdivision Pot	Above Average	Above Average		Avg w Garage	0	Average	+1,403
Net Adj. (total)		[X] + [ ] -	$ 721	[ ] + [X] -	$ 3,452	[X] + [ ] -	$ 1,964
Indicated Value of Subject		Gross: 10.0 Net: 10.0	$ 7,928	Gross: 30.0 Net: -30.0	$ 8,056	Gross: 35.0 Net: 35.0	$ 7,576

Comments of Sales Comparison: The above sales are considered to be the most comparable sales available. All the sales are located in Brooklyn and closed in a stable market between February of 2019 and January of this year. See Addendum

RECONCILIATION

Comments and Conditions of Appraisal: See Attached Addendum

Final Reconciliation: The Sales Comparison Approach is considered the best indicator of value as the subject property is vacant land. The Cost and Income Approaches are not applicable.

I (WE) ESTIMATE THE MARKET VALUE, AS DEFINED, OF THE SUBJECT PROPERTY AS OF September 21, 2020 **to be $** 48,000

I (We) certify: that to the best of my (our) knowledge and belief, the facts and data used herein are true and correct; that I (we) personally inspected the subject property and inspected all comparable sales cited in this report; and that I (we) have no undisclosed interest, present or prospective therein.

Appraiser(s): Robert F. Monahan
Review Appraiser (if applicable):
[ ] Did [ ] Did Not Inspect Property

ADDENDUM

Borrower: NA		File No.: 20-Prince Hill
Property Address: Prince Hill Road		Case No.:
City: Brooklyn	State: CT	Zip: 06234-1521
Lender: PC Survey Associates		

Legal Description

The function of this Appraisal Report is to estimate the Market Value of a property owned by Nancy and David Bell located on Prince Hill Road, identified as Map 34 Lot 52. The subject property consists of 6+/-acres in the process of being split from a larger 8+/-acre parcel. This appraisal will assist the client with the proposed subdivision of the land.

There is no formal deed description of the proposed 6+/-acre lot at this time. The client is PC Survey Associates. The intended users are the client and their appointees.

This Appraisal Report has been completed in accordance with the requirements of the Uniform Standards of Professional Appraisal Practice.

Site Comments

Map: 34/52 (Portion of)

Size: 6+/-acres

Road Frt: 895.64+/- feet on the south and east side of Prince Hill Road

Shape: Irregular

Topography: Slope down to the northeast, about 60 foot drop in elevation. The land is mostly wooded

Soil Make up: The majority of the land is made up of Canton and Charlton soils which are sandy well draining soils. There is a small area of wetland near the northeast boundary.

Utilities: No municipal water or sewer lines in this area. Onsite well and septic systems are required for development.

Easements: None Noted

Remarks: The subject property is situated in RA Residential Zone, which requires 2.07 acres of land with 150 feet of road frontage. Based on the land characteristics and zoning requirements the subject parcel has subdivision potential.

Comments on Sales Comparison

The sales are adjusted on a peer acre basis. Sale #3 is adjusted upward for size (+10%) as it is much larger than the subject. This adjustment is based on sales data that indicates a larger parcel will typically have a lower per unit value and vice versa. Sales #1 and #2 are much more similar in size with no adjustment warranted.

Sale #1 is adjusted upward (+10%) as the rear of this lot is encumbered by wetland. The lot has 581 feet of road frontage with subdivision potential.

Sale #2 includes the lot which is most similar in size. This lot was improved with an oversized 2-car garage. There was a single family house on the site that burned down in 2014 and demolished in 2015. The land is less sloping.

Sale #3 is located on Costello Road in Brooklyn and includes 374+/- feet of road frontage with inferior subdivision potential. This property was purchased by an abutter after being on the market for several months. The original listing price was $64,900.

After all the necessary adjustments the adjusted sales indicate a potential market value of $7,576 to $8,056 per acre. Based on the data a market value of $8,000/acre is estimated for the subject.

Then: 6 acres x $8,000/ac = $48,000

Exposure time is the estimated length of time prior to the effective date of the appraisal the property being appraised would have had to be exposed to the open market in order to contract a buyer at market value. To the appraiser's knowledge the subject is not currently offered for sale nor has it been on the market in recent months. If offered for sale at the appraised market value an exposure time of 3-12 months is estimated.

Condition of Appraisal Comments

Extraordinary assumptions made are that there are no known legal, structural, environmental or economic concerns affecting the subject property as of the date of appraisal. If these assumptions were found to be false, it could alter the appraiser’s opinion of value.

The final estimate of value is made based on the hypothetical condition that the subject land is divided as described.

Extra Comments

Scope of Work:

As part of the complete appraisal process the following steps were taken:

1.) I physically inspected the land from the roadside on September 22, 2020. All available mappings of the proposed lot were reviewed. .

2.) Comparable sales, sales listings, rental data, etc.. was accumulated from in house records, public records from the Town of Brooklyn and surrounding towns and in conversations with other real estate professionals, local builders and town officials.

Borrower: NA	File No.: 20-Prince Hill
Property Address: Prince Hill Road	Case No.:
City: Brooklyn	State: CT Zip: 06234-1521
Lender: PC Survey Associates	

3.) The three approaches to value i.e. Cost, Income and Sales Comparison, were then considered and those deemed applicable were executed. A final opinion of value was then provided.

4.) The report was prepared then submitted in accordance with the guidelines of the Uniform Standards of Professional Appraisal Practice.

Borrower: NA		File No.: 20-Prince Hill
Property Address: Prince Hill Road		Case No.:
City: Brooklyn	State: CT	Zip: 06234-1521
Lender: PC Survey Associates		

CERTIFICATION OF THE APPRAISER

I I have personally inspected the subject property. I have no present or contemplated future interest in the subject property or to the parties involved.

2. I have no personal interests or bias with respect to the subject matter of this appraisal report or to the parties involved.

3. To the best of this appraiser's knowledge, the statements of fact contained in this appraisal report upon which the analyses, opinions and conclusions expressed herein are based, are true and correct.

4. The compensation obtained for this project is not contingent upon the property analysis, opinions, or conclusions enclosed in this report.

5. This appraisal was not based on or requires a minimum or specified valuation, or occurrence of any subsequence event.

6. The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Appraisal Institute's Code of Professional Ethics and Standards of Professional Appraisal Practice, which include the Uniform Standards of Professional Appraisal Practice.

7. In addition to the statements required by USPAP, that the assignment was completed in accordance with the Standards of Professional Practice of the Appraisal Institute. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

8. The appraiser has completed all continuing educational requirements of the State of Connecticut as well as the continuing education requirements of the Appraisal Institute.

DEFINITION OF MARKET VALUE: The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby: (1) buyer and seller are typically motivated; (2) both parties are well informed or well advised, and each acting in what he considers his own best interest; (3) a reasonable time is allowed for exposure in the open market; (4) payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and (5) the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions* granted by anyone associated with the sale.

*Adjustments to the comparables must be made for special or creative financing or sales concessions. No adjustments are necessary for those costs which are normally paid by sellers as a result of tradition or law in a market area; these costs are readily identifiable since the seller pays these costs in virtually all sales transactions. Special or creative financing adjustments can be made to the comparable property by comparisons to financing terms offered by a third party institutional lender that is not already involved in the property or transaction. Any adjustment should not be calculated on a mechanical dollar for dollar cost of the financing or concession but the dollar amount of any adjustment should approximate the market's reaction to the financing or concessions based on the Appraiser's judgment.

STATEMENT OF LIMITING CONDITIONS AND APPRAISER'S CERTIFICATION

CONTINGENT AND LIMITING CONDITIONS: The appraiser's certification that appears in the appraisal report is subject to the following conditions:

1. The appraiser will not be responsible for matters of a legal nature that affect either the property being appraised or the title to it. The appraiser assumes that the title is good and marketable and, therefore, will not render any opinions about the title. The property is appraised on the basis of it being under responsible ownership.

2. The appraiser has provided a sketch in the appraisal report to show approximate dimensions of the improvements and the sketch is included only to assist the reader of the report in visualizing the property and understanding the appraiser's determination of its size.

3. The appraiser has examined the available flood maps that are provided by the Federal Emergency Management Agency (or other data sources) and has noted in the appraisal report whether the subject site is located in an identified Special Flood Hazard Area. Because the appraiser is not a surveyor, he or she makes no guarantees, express or implied, regarding this determination.

4. The appraiser will not give testimony or appear in court because he or she made an appraisal of the property in question, unless specific arrangements to do so have been made beforehand.

5. The appraiser has estimated the value of the land in the cost approach at its highest and best use and the improvements at their contributory value. These separate valuations of the land and improvements must not be used in conjunction with any other appraisal and are invalid if they are so used.

6. The appraiser has noted in the appraisal report any adverse conditions (such as, needed repairs, depreciation, the presence of hazardous wastes, toxic substances, etc.) observed during the inspection of the subject property or that he or she became aware of during the normal research involved in performing the appraisal. Unless otherwise stated in the appraisal report, the appraiser has no knowledge of any hidden or unapparent conditions of the property or adverse environmental conditions (including the presence of hazardous wastes, toxic substances, etc.) that would make the property more or less valuable, and has assumed that there are no such conditions and makes no guarantees or warranties, express or implied, regarding the condition of the property. The appraiser will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because the appraiser is not an expert in the field of environmental hazards, the appraisal report must not be considered as an environmental assessment of the property.

7. The appraiser obtained the information, estimates, and opinions that were expressed in the appraisal report from sources that he or she considers to be reliable and believes them to be true and correct. The appraiser does not assume responsibility for the accuracy of such items that were furnished by other parties.

8. The appraiser will not disclose the contents of the appraisal report except as provided for in the Uniform Standards of Professional Appraisal Practice.

9. The appraiser has based his or her appraisal report and valuation conclusion for an appraisal that is subject to satisfactory completion, repairs, or alterations on the assumption that completion of the improvements will be performed in a workmanlike manner.

10. The appraiser must provide his or her prior written consent before the lender/client specified in the appraisal report can distribute the appraisal report (including conclusions about the property value, the appraiser's identity and professional designations, and references to any professional appraisal organizations or the firm with which the appraiser is associated) to anyone other than the borrower; the mortgagee or its successors and assigns; the mortgage insurer; consultants; professional appraisal organizations; any state or federally approved financial institution; or any department, agency, or instrumentality of the United States or any state or the District of Columbia; except that the lender/client may distribute the property description section of the report only to data collection or reporting service(s) without having to obtain the appraiser's prior written consent. The appraiser's written consent and approval must also be obtained before the appraisal can be conveyed by anyone to the public through advertising, public relations, news, sales, or other media.

APPRAISERS CERTIFICATION: The Appraiser certifies and agrees that:

1. I have researched the subject market area and have selected a minimum of three recent sales of properties most similar and proximate to the subject property for consideration in the sales comparison analysis and have made a dollar adjustment when appropriate to reflect the market reaction to those items of significant variation. If a significant item in a comparable property is superior to , or more favorable than, the subject property, I have made a negative adjustment to reduce the adjusted sales price of the comparable and, if a significant item in a comparable property is inferior to, or less favorable than the subject property, I have made a positive adjustment to increase the adjusted sales price of the comparable.

2. I have taken into consideration the factors that have an impact on value in my development of the estimate of market value in the appraisal report. I have not knowingly withheld any significant information from the appraisal report and I believe, to the best of my knowledge, that all statements and information in the appraisal report are true and correct.

3. I stated in the appraisal report only my own personal, unbiased, and professional analysis, opinions, and conclusions, which are subject only to the contingent and Limiting Conditions specified in this form.

4. I have no present or prospective interest in the property that is the subject to this report, and I have no present or prospective personal interest or bias with respect to the participants in the transaction. I did not base, either partially or completely, my analysis and/or the estimate of market value in the appraisal report on the race, color, religion, sex, handicap, familial status, or national origin of either the prospective owners or occupants of the subject property or of the present owners or occupants of the properties in the vicinity of the subject property.

5. I have no present or contemplated future interest in the subject property, and neither my current or future employment nor my compensation for performing this appraisal is contingent on the appraised value of the property.

6. I was not required to report a predetermined value or direction in value that favors the cause of the client or any related party, the amount of the value estimate, the attainment of a specific result, or the occurrence of a subsequent event in order to receive my compensation and/or employment for performing the appraisal. I did not base the appraisal report on a requested minimum valuation, a specific valuation, or the need to approve a specific mortgage loan.

7. I performed this appraisal in conformity with the Uniform Standards of Professional Appraisal Practice that were adopted and promulgated by the Appraisal Standards Board of The Appraisal Foundation and that were in place as of the effective date of this appraisal, with the exception of the departure provision of those Standards, which does not apply. I acknowledge that an estimate of a reasonable time for exposure in the open market is a condition in the definition of market value and the estimate I developed is consistent with the marketing time noted in the neighborhood section of this report, unless I have otherwise stated in the reconciliation section.

8. I have personally inspected the subject property and the exterior of all properties listed as comparables in the appraisal report. I further certify that I have noted any apparent or known adverse conditions in the subject improvements, on the subject site, or on any site within the immediate vicinity of the subject property of which I am aware and have made adjustments for these adverse conditions in my analysis of the property value to the extent that I had market evidence to support them. I have also commented about the effect of the adverse conditions on the marketability of the subject property.

9. I personally prepared all conclusions and opinions about the real estate that were set forth in the appraisal report. If I relied on significant professional assistance from any individual or individuals in the performance of the appraisal or the preparation of the appraisal report, I have named such individual(s) and disclosed the specific tasks performed by them in the reconciliation section of this appraisal report. I certify that any individual so named is qualified to perform the tasks. I have not authorized anyone to make a change to any item in the report; therefore, if an unauthorized change is made to the appraisal report, I will take no responsibility for it.

SUPERVISORY APPRAISER'S CERTIFICATION: If a supervisory appraiser signed the appraisal report, he or she certifies and agrees that: I directly supervise the appraiser who prepared the appraisal report, have reviewed the appraisal report, agree with the statements and conclusions of the appraiser, agree to be bound by the appraiser's certifications numbered 4 through 7 above, and am taking full responsibility for the appraisal and the appraisal report.

ADDRESS OF PROPERTY APPRAISED: Prince Hill Road, Brooklyn, CT, 06234-1521

APPRAISER:	**SUPERVISORY APPRAISER (only if required)**
Signature: 	Signature:
Name: Robert F. Monahan	Name:
Date Signed: 09/28/2020	Date Signed:
State Certification #: Certified General Appraiser RCG0000981	State Certification #:
or State License #:	or State License #:
State: CT	State:
Expiration Date of Certification or License: 04/30/2021	Expiration Date of Certification or License:
	☐ Did ☐ Did Not Inspect Property

Practicing Affiliate of the Appraisal Institute

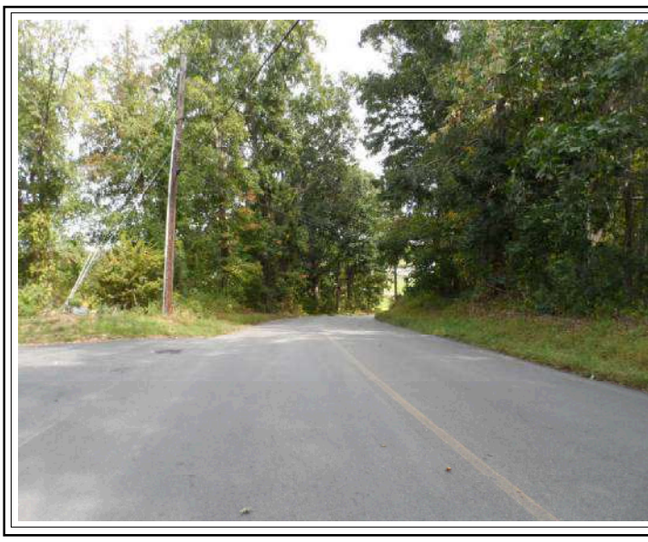
Subject Photos

Borrower: NA		File No.: 20-Prince Hill
Property Address: Prince Hill Road		Case No.:
City: Brooklyn	State: CT	Zip: 06234-1521
Lender: PC Survey Associates		

Land Looking NE from road

Land Looking NE from road

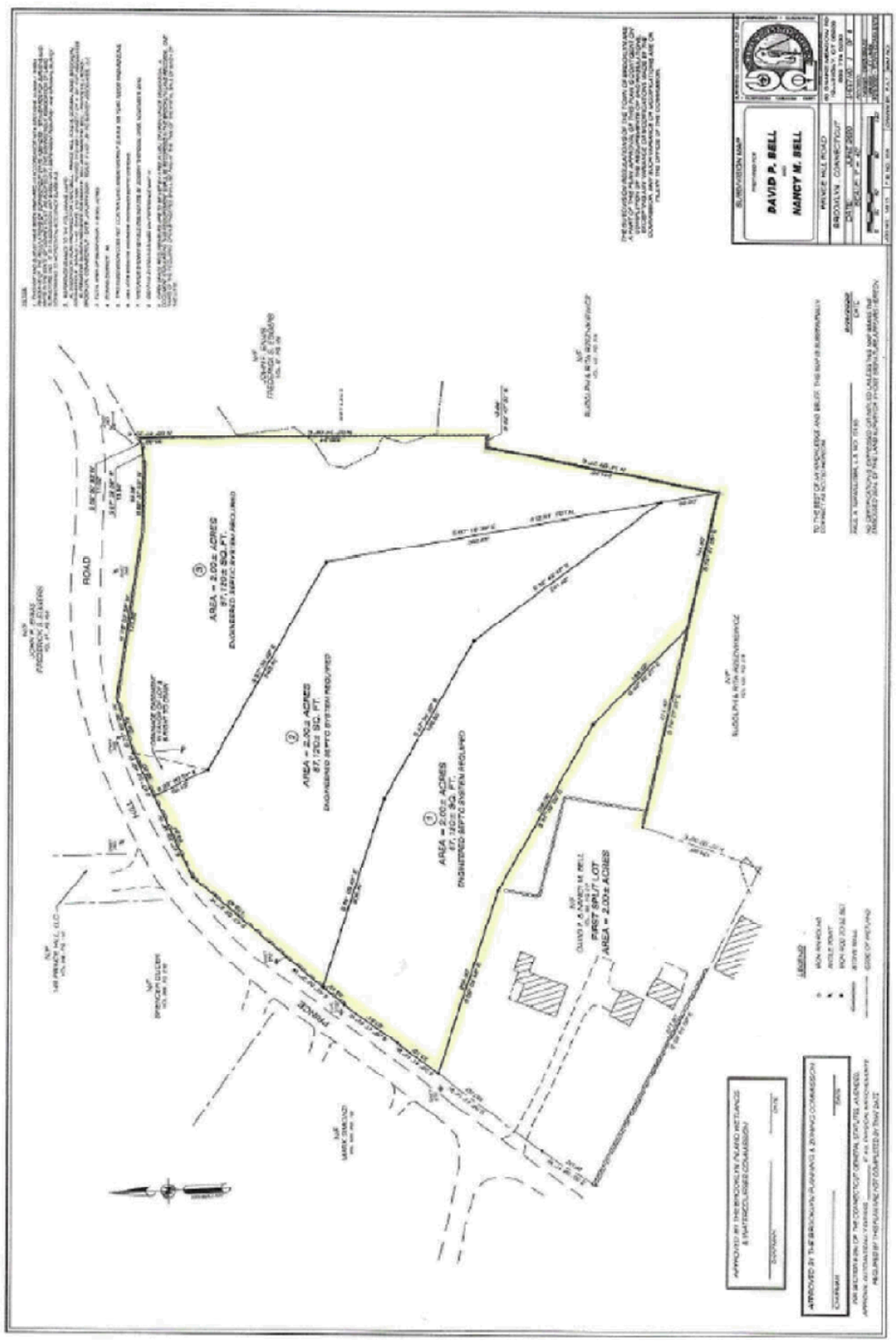
Land Looking SE from road



Street Scene Looking NE
Subject frontage on right.

PLAT MAP

Borrower: NA		File No.: 20-Prince Hill
Property Address: Prince Hill Road		Case No.:
City: Brooklyn	State: CT	Zip: 06234-1521
Lender: PC Survey Associates		

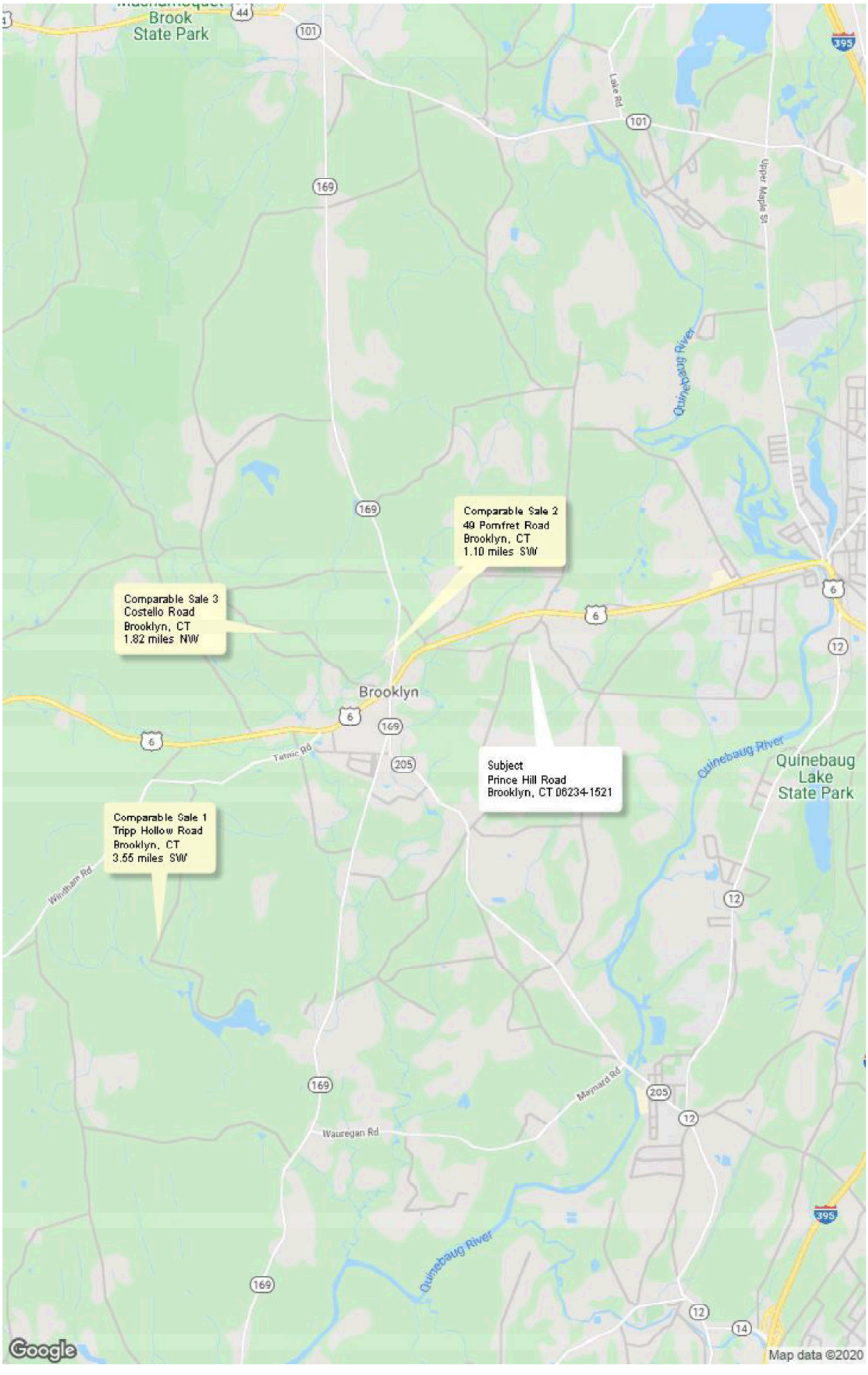


AERIAL MAP

Borrower: NA		File No.: 20-Prince Hill
Property Address: Prince Hill Road		Case No.:
City: Brooklyn	State: CT	Zip: 06234-1521
Lender: PC Survey Associates		

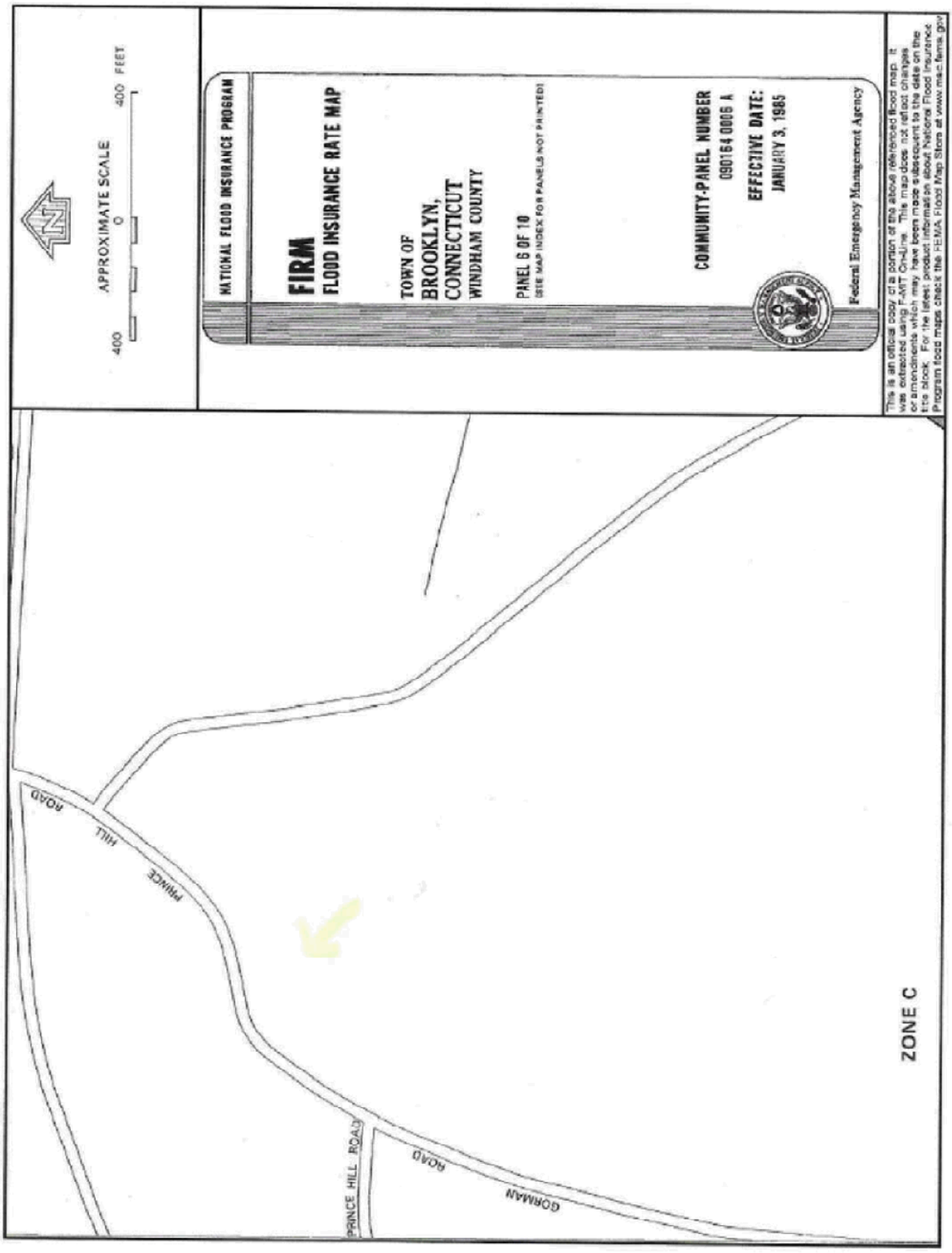
LOCATION MAP

Borrower: NA		File No.: 20-Prince Hill
Property Address: Prince Hill Road		Case No.:
City: Brooklyn	State: CT	Zip: 06234-1521
Lender: PC Survey Associates		

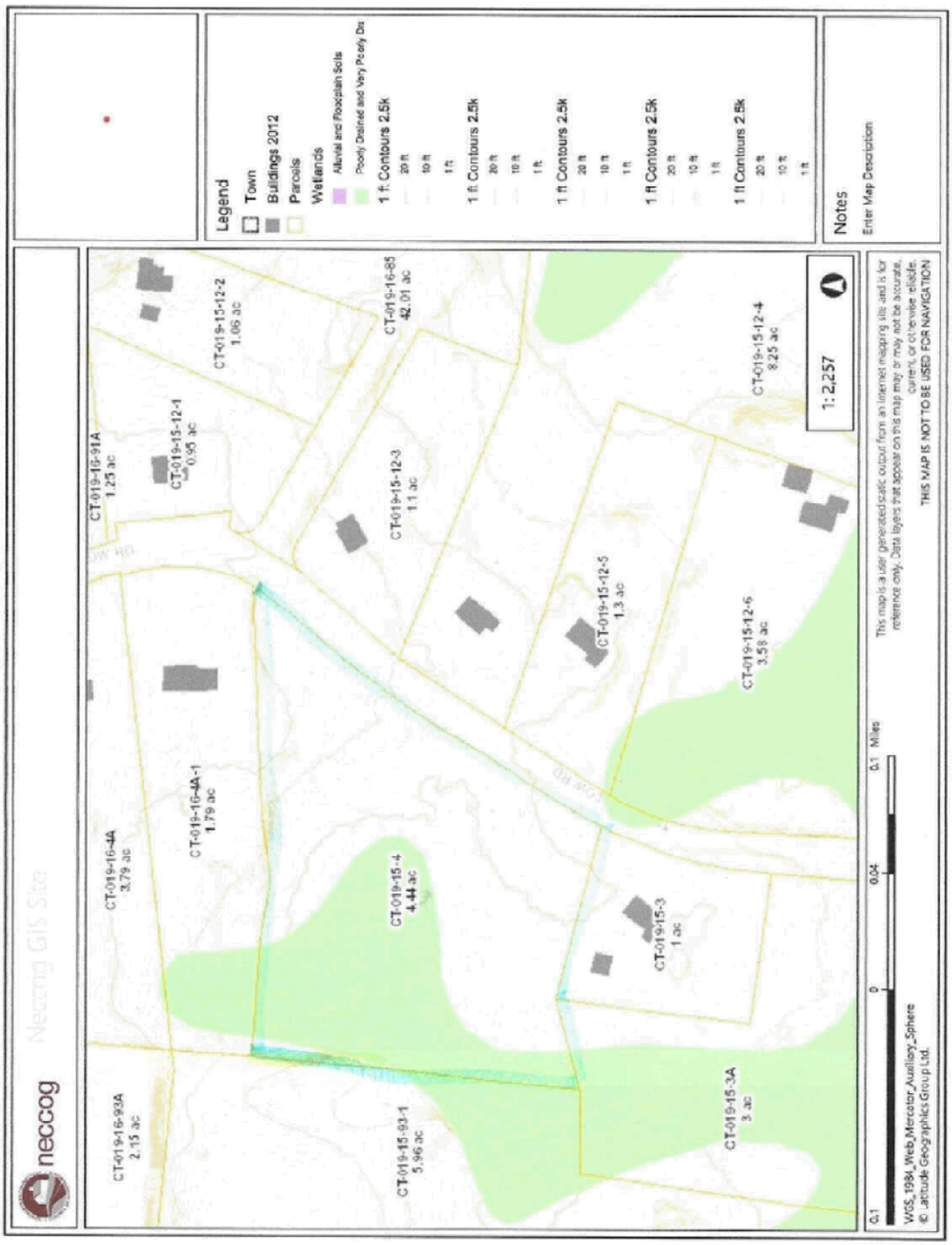


Flood Map

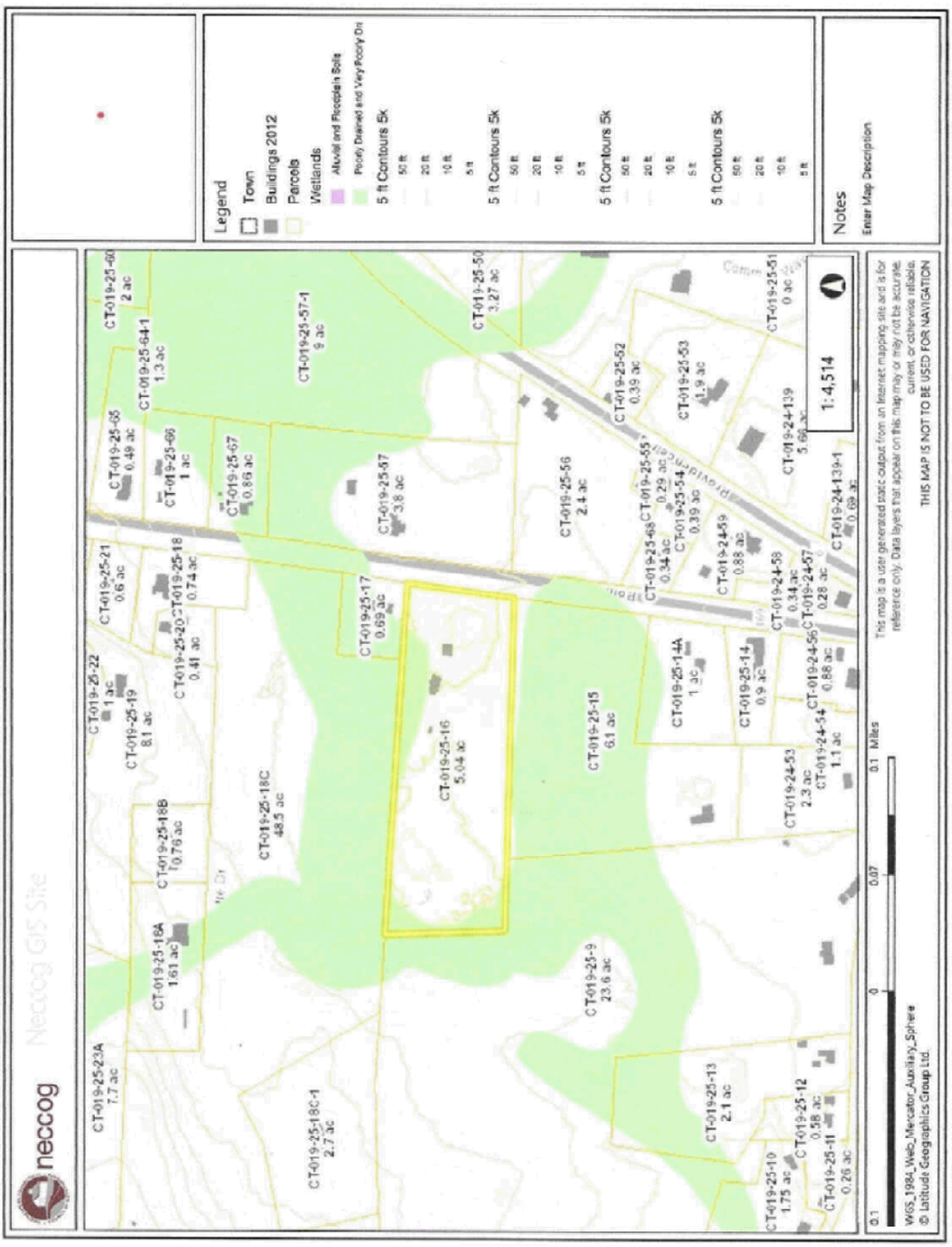
Borrower: NA	File No.: 20-Prince Hill
Property Address: Prince Hill Road	Case No.:
City: Brooklyn	State: CT Zip: 06234-1521
Lender: PC Survey Associates	



Borrower: NA	File No.: 20-Prince Hill
Property Address: Prince Hill Road	Case No.:
City: Brooklyn State: CT	Zip: 06234-1521
Lender: PC Survey Associates	

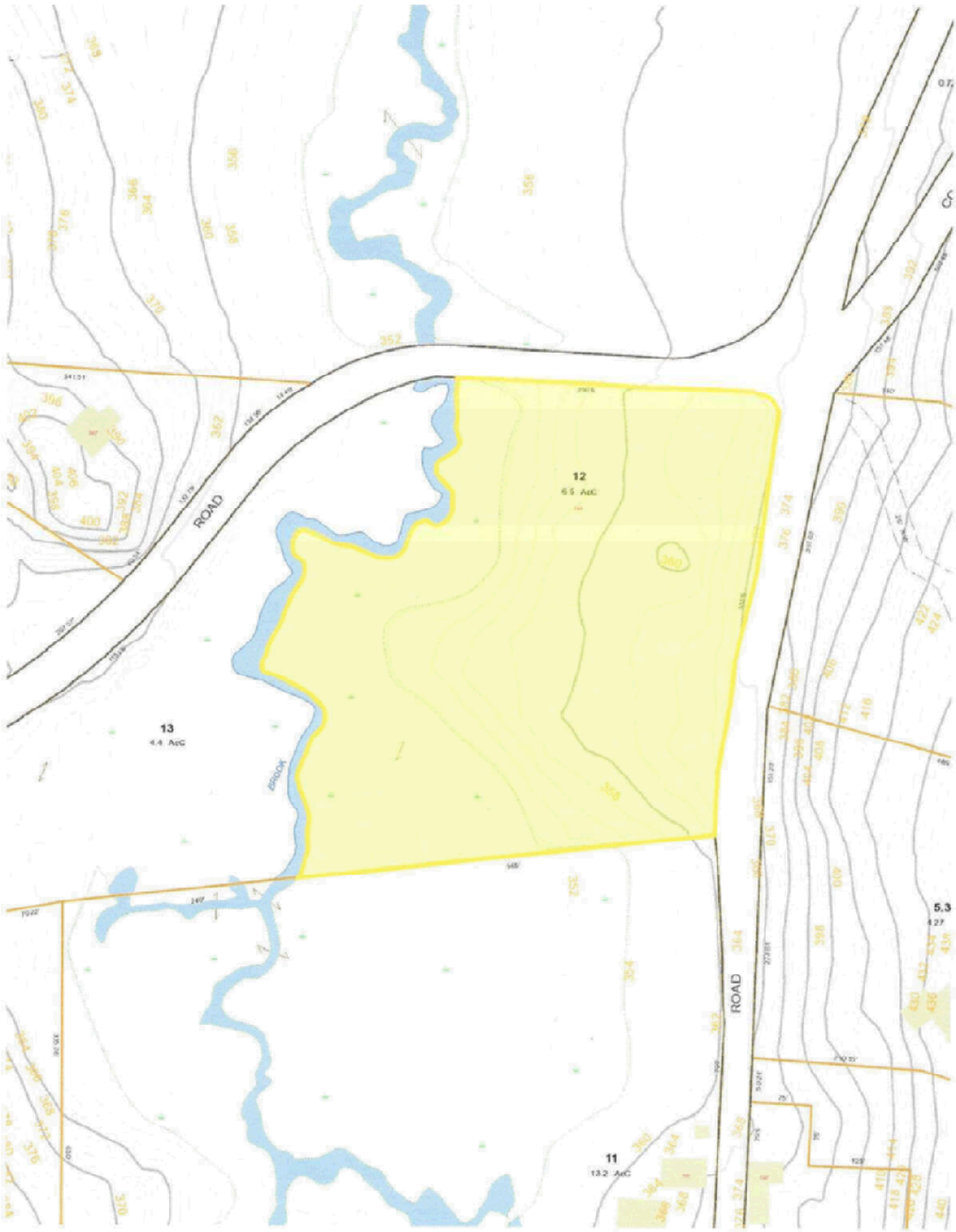


Borrower: NA	File No.: 20-Prince Hill
Property Address: Prince Hill Road	Case No.:
City: Brooklyn State: CT	Zip: 06234-1521
Lender: PC Survey Associates	



Map Comparable Sale #4 Costello Road Brooklyn, CT

Borrower: NA	File No.: 20-Prince Hill	
Property Address: Prince Hill Road	Case No.:	
City: Brooklyn	State: CT	Zip: 06234-1521
Lender: PC Survey Associates		



********* INVOICE *********

File Number: 20-Prince Hill 9/28/2020

Borrower : NA

Invoice # : 20-Prince Hill
Order Date :
Reference/Case # :
PO Number :

Prince Hill Road
Brooklyn, CT 06234-1521

Appraisal Fee:	$	600.00
	$	
Invoice Total	$	600.00
State Sales Tax @	$	0.00
Deposit	($	)
Deposit	($	)
Amount Due	$	600.00

Terms: Due upon receipt

Please Make Check Payable To:

Platt Associates

Fed. I.D. #: 06-1575716

PLANNING AND ZONING COMMISSION

REQUEST FOR CHANGE
IN
ZONING BOUNDARY

RECEIVED
OCT 0 6 2020

Date 10-6-20

FEE $ 250.00
State Fee $ 60.00

Application # ZC 20-003

Check # 1004

Public Hearing Date_____ Commission Action_____
Effective Date_____

Name of Applicant Ronald Sorel Phone 860-208-8833

Mailing Address Po Box 795 Brooklyn Ct 06234

Applicants Interest in the Property OWNER

Property Owner Ronald Sorel Phone 860-208-8833

Mailing Address Po Box 795 Brooklyn Ct 06234

MAP 24 LOT 33 LOT SIZE_____
MAP 24 LOT 32 LOT SIZE_____
MAP _____ LOT_____ LOT SIZE_____
More lots , repeat above on separate sheet

ZONE: R10___ R30___ RA___ VCD___ NC___ RB___ PC___ I___

REQUEST CHANGE: FROM RA TO VC
REQUEST CHANGE: FROM_____ TO_____
REQUEST CHANGE: FROM_____ TO_____
More changes , repeat above on separate sheet

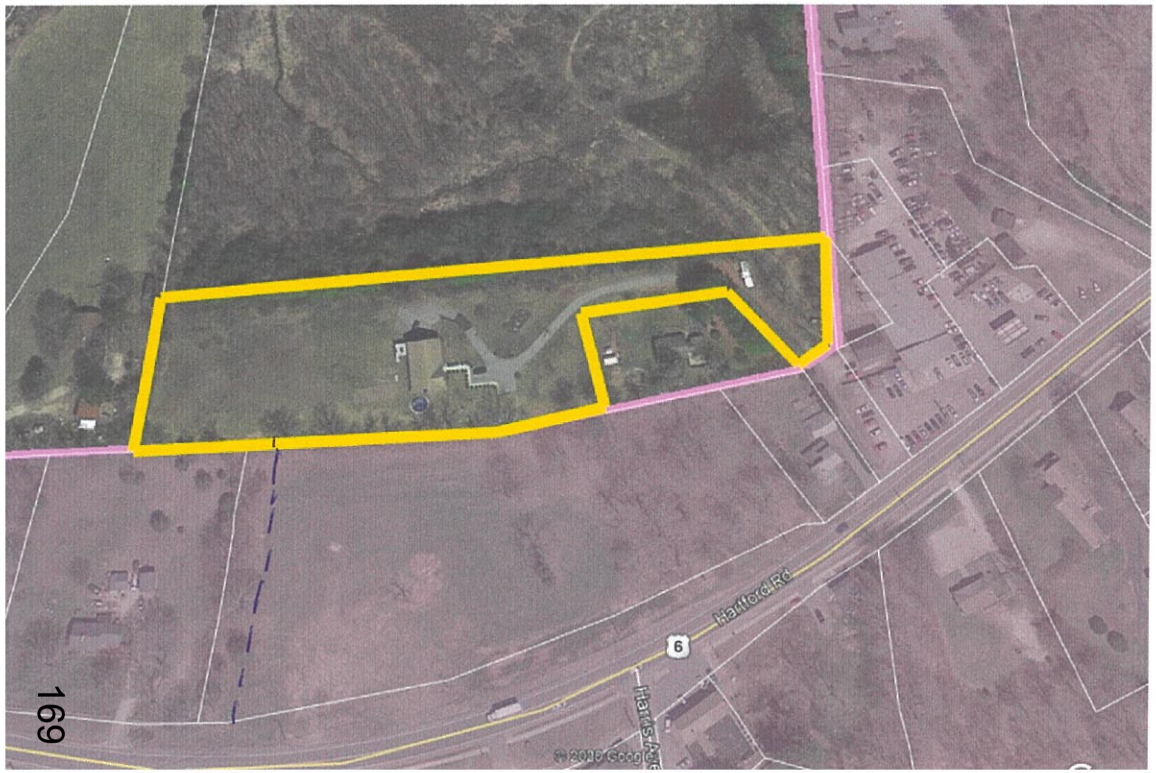
REASON FOR REQUEST: See attached with MAPS

Note: A petition may be filed at the Hearing by 20% or more of the area lots included in such a change within 500 ft of the property under Section 16.5 of the Zoning Regulations

Hello,

Originally I thought my property was zoned Village. I am requesting a zone change because I want to give my son land to build a house. If my land can be changed to Village zone, I will be able to give him a house lot. I would also request a Right of way to Rt 6 as shown on map.

Thank You,
Ron Sorel



The village gone goes right around my property.

Margaret's Report 10/1/2020

Final Certificates of Zoning Compliance issued:

335 South Street – Barry Builders. New single-family dwelling.

208 Providence Road – Jason Donahey/Aisling Crossfit. Change in use from existing non-residential building for a gym.

25 Juniper Way – Ben and Meaghan Wakely. New 24 ft x 24 ft barn. New 18 ft above-ground swimming pool.

211 Windham Road – Patrick Riley. New single-family dwelling with basement garage.

Zoning Permits issued:

38 Herrick Road – Michael Valente. New 28 ft x 36 ft detached garage.

30 Almada Drive – Steven Gilman. New 22 ft x 34 ft in-ground swimming pool with fence and alarm.

30 Almada Drive – Steven Gilman. New swimming pool house.

249 Windham Road – Joseph Tatro. New single-family dwelling with finished basement and basement garage.

7 Hartford Road – Unitarian Universalist Association. Strip and re-roof in the VC Zone.

169 Old Tatnic Hill Road – Sandra Blanchard. New 14 ft x 24 ft attached garage. New 25-foot above-ground swimming pool and deck.

594 Hartford Road – Gilbert Maiato. New 20 ft x 24 ft steel garage on a slab.

367 Tripp Hollow Road – Square 1 Building Associates. New single-family dwelling; 1st floor 824 sf; 2nd floor 1,206 sf; attached garage 576 sf.

7 Erin Drive – Greg Lehto. New single-family dwelling, 1st floor 1320 sf; basement bath 81 sf; basement garage 616 sf.

29 Tripp Hollow Road - Kausch & Sons LLC. New residential dwelling; 1st floor 1,196 sf; basement bathroom 96 sf; basement garage – 600 sf.

68 Almada Drive - Joseph G. Clark. Construct a 24 ft x 42 ft garage with a 12 ft x 24 ft open shed roof; construct a screen porch 12 ft x 15 ft on an existing deck and relocate existing shed.

229 Allen Hill Road - Erwin Sanchez. 22 ft x 36 ft in-ground swimming pool with a 4 ft self-closing/self-latching gate/fence.

333 South Street – Kausch & Sons LLC. New residential dwelling.

38 Herrick Road – Michael Valente. New 28 ft x 36 ft detached garage.

Permit to Sell Pistols or Revolvers at Retail:

106 Tripp Hollow Road – Neil A. Delmonico.

Sign Permits issued: None.

Home Office Permits Issued: None.

Zoning and Blight Complaints:

77 South Main Street – Steven Mailloux. I inspected and took photos for junkyard and blight conditions on 7/2. On 7/7, CT State Marshal Joseph Rijs served Mr. Mailloux a Cease and Desist Order (C&DO) that I prepared for junkyard conditions, blight conditions and operating an illegal automotive service station. The C&DO required Mr. Mailloux to 1) clean up the junkyard and blight conditions, 2) cease and desist from operating an illegal automotive service station and 3) contact me by 7/28 to schedule an inspection of the corrective actions taken. As of 8/3, Mr. Mailloux had not cleaned up the junkyard conditions, nor had he called me for a follow-up inspection, as required. This violation will be referred to the State of CT Housing Prosecutor.

On 7/8, DMV Inspector Edwin Bailey inspected the premises at my request, and gave Mr. Mailloux until 7/28 to clean up the junkyard conditions. Inspector Bailey has said that he will re-inspect after 7/28. Inspector Bailey re-inspected and determined that there were two unregistered vehicles, which is allowed as per his regulations. Two or more unregistered vehicles are not allowed as per the Brooklyn Zoning Regulations.

On 9/9/2020, CT Supervisory Assistant State's Attorney, Judith Dicine, issued a letter to Mr. Mailloux requiring him to comply with the Cease & Desist Order issued on 7/2. As of 9/24, Mr. Mailloux had not complied with the Cease & Desist Order issued on 7/2. As of 9/24, there were still two unregistered vehicle present when I inspected and took photographs. According to Ms. Dicine, the next step would have been to issue an arrest warrant.

As of 10/1, there was only one unregistered vehicle present. This zoning violation has been resolved, at least temporarily.

20 Tiffany Street – Phoumano Somviengxay. I received a complaint from the highway department foreman about someone living in a trailer at this address. The highway department workers who were supposed to clean out the catch basin in front of the trailer noticed the smell

of sewage coming from the catch basin. I inspected and took photos on 7/29. The smell of sewage in the catch basin at 11:00 am on a very hot day was overwhelming, although no one has apparently witnessed anyone dumping sewage into the catch basin. I immediately contacted NDDH. They have issued a statement to the effect that their investigation is over. On 8/31, I inspected and took photographs documenting that the trailer is unregistered. There is no visible license plate. On 9/1, I issued a Notice of Violation to Mr. Somviengxay for violations of the zoning regulations and blight ordinance, via certified mail and regular mail. As required, Mr. Somviengxay contacted me immediately and told me that he did not own the unregistered trailer, and that it belonged to someone named Gary (last name unknown), who had put the trailer on his property without Mr. Somviengxay's permission. Mr. Somviengxay became aware that the trailer was there in July, and asked Gary to take it away. Gary did not comply.

On 9/10/2020, I taped a Cease & Desist Order to the trailer door with Resident State Trooper Steve Corradi. By 9/21, the trailer had been removed. Gary failed to contact me as required to report where the trailer would be relocated. On 9/22, I contacted Mr. Somviengxay and requested that he cut the tall weeds and mow the vegetation on the property. Mr. Somviengxay agreed to do the mowing. The zoning violation regarding the trailer has been resolved but the tall weeds represent a blight condition that I will work to see corrected.

10 Lasalette Drive – Gloria Smith. I received a complaint from Craig Dunlop of 60 Lasalette Drive, regarding Mrs. Smith's son, Marc Provost, running a business selling wood on the side of Route 169 in the VC Zone. Mr. Dunlop complained about Mr. Provost using portions of Mr. Dunlop's property and portions of Lasalette Drive to store his equipment and process wood in the past. Mr. Dunlop said that Mr. Provost has piled logs on Mr. Dunlop's property and left it there for days. Mr. Dunlop said that Mr. Provost parks his excavator and truck on Mr. Dunlop's right-of-way, blocking Lasalette Drive. I explained that my job is not to resolve civil matters.

Mr. Dunlop feels that the wood Mr. Provost has stored "looks bad in the VC Zone" Mr. Dunlop claimed that Mr. Provost is "selling logs" and "camp wood".

Mr. Dunlop has questioned whether Mr. Provost should be allowed to sell wood out of his truck in the VC Zone. Mr. Dunlop said that Mr. Provost parks his truck on the edge of Route 169 and pits a "For Sale" sign on the truck to sell wood.

Mr. Dunlop said that there is a feud going on between him and Mr. Provost because Mr. Provost's grandfather used to own all the land owned my Mr. Dunlop now.

On 10-1-2020 I met Marc Provost, inspected and took photographs. Mr. Provost has a business in Brooklyn that has been registered with the Town Clerks office since 2/24/2020, Turned Wooden Heirlooms (crafting wooden bowls, etc.). Mr. Provost said that he only sells these items at shows, and no business associated with Turned Wooden Heirlooms is transacted at 10 Lasalette Drive.

Mr. Provost admitted to selling scrap wood on the side of Route 169 occasionally. The wood is a by-product of his registered business. Mr. Provost said he parks his truck on land owned by the owners of 73 Pomfret Road, near Route 169. The wood is a by-product of his registered business.

Mr. Provost said that he has permission from his neighbor to the west, David Chenail, of 93 Pomfret Road, to store wood on Mr. Chenail's property.

Mr. Provost admitted that he had parked his equipment and processed wood in the past on Mr. Dunlop's land. Mr. Provost said that in the future he could park his equipment in his own driveway.

I reviewed the zoning file for 10 Lasalette Drive. Although Turned Wooden Heirlooms is registered with the Town Clerk, there are no zoning permits for any businesses at 10 Lasalette Drive. My review of this complaint is ongoing.

4 Elm Street – Aaron-James Puzzo Kerouac. I received a complaint about more than one unregistered vehicles. On 9/24, I inspected and took photographs. A Notice of Violation will be issued.

128 South Main Street – Keith Allen Smith. I received a complaint about tall weeds and poison ivy blocking passage on a neighbor's driveway and the public sidewalk. I will do an inspection and take photographs.

Revenue Report

From Date: 7/1/2020 To Date: 9/30/2020

Fiscal Year: 2020-2021

☐ Subtotal by Collapse Mask ☐ Include pre encumbrance ☐ Print accounts with zero balance ☑ Filter Encumbrance Detail by Date Range

☐ Exclude Inactive Accounts with zero balance

Account Number	Description	GL Budget	Range To Date	YTD	Balance	Encumbrance	Budget Balance	% Bud
1005.00.0000.42203	Planning & Zoning Fees	($9,000.00)	($1,850.00)	($1,850.00)	($7,150.00)	$0.00	($7,150.00)	79.44%
	Grand Total:	($9,000.00)	($1,850.00)	($1,850.00)	($7,150.00)	$0.00	($7,150.00)	79.44%

End of Report

Expenditure Report

From Date: 7/1/2020 To Date: 9/30/2020

Fiscal Year: 2020-2021

☐ Subtotal by Collapse Mask ☐ Include pre encumbrance ☑ Print accounts with zero balance ☑ Filter Encumbrance Detail by Date Range

☐ Exclude Inactive Accounts with zero balance

Account Number	Description	GL Budget	Range To Date	YTD	Balance	Encumbrance	Budget Balance	% Bud
1005.41.4153.51620	Planning & Zoning-Wages PT	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.51900	Planning & Zoning-Wages-Rec. S	$3,600.00	$875.00	$875.00	$2,725.00	$1,225.00	$1,500.00	41.67%
1005.41.4153.53020	Planning & Zoning-Legal Servic	$12,500.00	$536.30	$536.30	$11,963.70	$0.00	$11,963.70	95.71%
1005.41.4153.53200	Planning & Zoning-Professional	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.53220	Planning & Zoning-In Service T	$1,500.00	$0.00	$0.00	$1,500.00	$0.00	$1,500.00	100.00%
1005.41.4153.53400	Planning & Zoning-Other Profes	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
1005.41.4153.55400	Planning & Zoning-Advertising	$2,500.00	$97.50	$97.50	$2,402.50	$0.00	$2,402.50	96.10%
1005.41.4153.55500	Planning & Zoning-Printing & P	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
1005.41.4153.55800	Planning & Zoning-Transportati	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.56900	Planning & Zoning-Other Suppli	$250.00	$0.00	$0.00	$250.00	$0.00	$250.00	100.00%
1005.41.4153.56950	Planning & Zoning-State Marsha	$2,500.00	$0.00	$0.00	$2,500.00	$0.00	$2,500.00	100.00%
	Grand Total:	$24,850.00	$1,508.80	$1,508.80	$23,341.20	$1,225.00	$22,116.20	89.00%

End of Report

Expense/Revenue Report

From Date: 7/1/2020 To Date: 9/30/2020

Fiscal Year: 2020-2021 ☐ Subtotal by Collapse Mask ☐ Include pre encumbrance ☑ Print accounts with zero balance ☑ Filter Encumbrance Detail by Date Range

☐ Exclude Inactive Accounts with zero balance

Account Number	Description	GL Budget	Range To Date	YTD	Balance	Encumbrance	Budget Balance	% Bud
1005.00.0000.42203	Planning & Zoning Fees	($9,000.00)	($1,850.00)	($1,850.00)	($7,150.00)	$0.00	($7,150.00)	79.44%
	OBJECT: Planning & Zoning Fees - 42203	($9,000.00)	($1,850.00)	($1,850.00)	($7,150.00)	$0.00	($7,150.00)	79.44%
1005.41.4153.51620	Planning & Zoning-Wages PT	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
	OBJECT: Part Time Payroll - 51620	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.51900	Planning & Zoning-Wages-Rec. S	$3,600.00	$875.00	$875.00	$2,725.00	$1,225.00	$1,500.00	41.67%
	OBJECT: Recording Secretary-Payroll - 51900	$3,600.00	$875.00	$875.00	$2,725.00	$1,225.00	$1,500.00	41.67%
1005.41.4153.53020	Planning & Zoning-Legal Servic	$12,500.00	$536.30	$536.30	$11,963.70	$0.00	$11,963.70	95.71%
	OBJECT: Legal Services Town - 53020	$12,500.00	$536.30	$536.30	$11,963.70	$0.00	$11,963.70	95.71%
1005.41.4153.53200	Planning & Zoning-Professional	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
	OBJECT: Professional Educational Services - 53200	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.53220	Planning & Zoning-In Service T	$1,500.00	$0.00	$0.00	$1,500.00	$0.00	$1,500.00	100.00%
	OBJECT: In Service - 53220	$1,500.00	$0.00	$0.00	$1,500.00	$0.00	$1,500.00	100.00%
1005.41.4153.53400	Planning & Zoning-Other Profes	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
	OBJECT: Other Professional Services - 53400	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
1005.41.4153.55400	Planning & Zoning-Advertising	$2,500.00	$97.50	$97.50	$2,402.50	$0.00	$2,402.50	96.10%
	OBJECT: Advertising - 55400	$2,500.00	$97.50	$97.50	$2,402.50	$0.00	$2,402.50	96.10%
1005.41.4153.55500	Planning & Zoning-Printing & P	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
	OBJECT: Printing & Publications - 55500	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
1005.41.4153.55800	Planning & Zoning-Transportati	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
	OBJECT: Travel Reimbursement - 55800	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.56900	Planning & Zoning-Other Suppli	$250.00	$0.00	$0.00	$250.00	$0.00	$250.00	100.00%
	OBJECT: Other Supplies - 56900	$250.00	$0.00	$0.00	$250.00	$0.00	$250.00	100.00%
1005.41.4153.56950	Planning & Zoning-State Marsha	$2,500.00	$0.00	$0.00	$2,500.00	$0.00	$2,500.00	100.00%
	OBJECT: State marshal Surveyor/Support - 56950	$2,500.00	$0.00	$0.00	$2,500.00	$0.00	$2,500.00	100.00%
	Grand Total:	$15,850.00	($341.20)	($341.20)	$16,191.20	$1,225.00	$14,966.20	94.42%

End of Report

CONNECTICUT FEDERATION OF PLANNING AND ZONING AGENCIES
QUARTERLY NEWSLETTER

Fall 2020 Volume XXIV, Issue 4

PROPOSED CHANGES TO ZONING LAWS ENDANGER SINGLE FAMILY ZONE

A Bill was presented to the State Legislature proposing substantial revisions to Sec. 8-2 of the General Statutes. This statute is part of the enabling statutes that provide authority to municipalities to regulate land use. The purpose of the proposed amendment goes beyond the goal of providing more affordable housing. Instead, its purpose is to "replace segregated living patterns with integrated and balanced living patterns" and "foster inclusive communities based on protected characteristics".

In order to reach these goals, this legislation proposes that certain types of multi-family housing must be regulated in the same fashion as single-family dwellings. Thus, if a single-family home requires only a zoning permit, then a four-unit apartment building must also only require a zoning permit. Furthermore, certain named types of multi-family housing, such as townhouses and triplexes, must be allowed on 10% of a municipality's area and 50% of the area within its town center.

It is the opinion of the Federation that this proposed legislation removes the authority of a local land use agency to preserve what is known as the single-family neighborhood. Instead, the State would usurp this authority and impose in its place a uniform statewide plan. This legislation is unnecessary as nearly all municipalities have taken steps to amend their zoning regulations so that a variety of housing choices are available to residents of this state. The proposed bill requests significant changes to how zoning authority is exercised in Connecticut and continues the uncomfortable trend of transferring power from local government and concentrating it at the state level. Federation members are encouraged to contact their state representative about this legislation.

In addition, members should also submit to www.cfpza.org any efforts they have made to improve housing diversity. The Federation can then present this to the legislature to demonstrate that this radical proposal is unnecessary.

PERSON WHO APPEALED ZONING DECISION PROTECTED FROM LAWSUIT

An eventually successful applicant that gained approval for its special exception application to construct a combined child care apartment housing complex sued an abutting property owner. This abutting property owner had opposed the various applications filed by the developer, both before the planning and zoning commission and then in court.

Written and Edited by
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CONNECTICUT FEDERATION OF PLANNING AND ZONING AGENCIES
QUARTERLY NEWSLETTER
Fall 2020 Volume XXIV, Issue 4

In its lawsuit, the developer accused the abutting property owner of, among other things, interfering with its plans to construct its development by taking frivolous appeals to court which were bound to be unsuccessful and only served the purpose of delay and causing expense. The property owner raised the defense of what is known as the Noerr-Pennington Doctrine. This doctrine shields a person from liability for petitioning a governmental entity for redress.

The court found that this doctrine applies to an appeal of a decision by a zoning commission and that just because a favorable result was unlikely, it was not frivolous or vexatious for the appeal to be brought. *Procurement LLC v. Ahuja, 197 Conn. App. 696 (2020).*

VARIANCE CANNOT BE APPROVED IF PROPERTY HAS A REASONABLE PERMITTED USE

The owner of a shorefront residentially zoned parcel of land sought to rebuild his home which had been destroyed by Super-Storm Sandy. Due to the revised flood zone regulations issued by FEMA, the proposed replacement building would exceed the permitted building height. The owner sought a variance from the height restriction, which was denied by the zoning board of appeals. The board believed that any hardship was self-created as the proposed building exceeded the building height limit by only 3.5 feet, which the board believed could be met by revising the building plans. An appeal to court followed.

The trial court sustained the appeal for two reasons. First, the court believed the hardship was not self-created as the increased building height was due to the revised FEMA regulations. Second, the proposed building would actually decrease an existing nonconformity in that the new building would now comply with lot coverage requirements which the destroyed building exceeded.

The trial court's ruling was then appealed to the Appellate Court, which reinstated the board's decision and dismissed the appeal. The court found that even though the revised FEMA regulations imposed a hardship on the property owner, this hardship did not prevent the property from being put to a reasonable use. A single-family home could still be built on the property, just not the one the property owner wanted. Disappointment does not provide a hardship worthy of a variance.

In its decision, the court reminds us that "A variance is not a tool of convenience, but one of necessity ... They are not to be granted when a reasonable use already is present, or plainly is possible under the regulations but an owner prefers otherwise."

In regard to the elimination of a nonconformity, the court dismissed this argument stating that the creation of a

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CONNECTICUT FEDERATION OF PLANNING AND ZONING AGENCIES
QUARTERLY NEWSLETTER
Fall 2020 Volume XXIV, Issue 4

new nonconforming aspect to the property, in this case building height, cannot be the basis for a variance even when another nonconformity would be reduced. *Turek v. Zoning Board of Appeals, 196 Conn. App. 122 (2020).*

LOT LINE ADJUSTMENT IS NOT A SUBDIVSION

Just what constitutes a subdivision of land was answered by our State Appellate Court recently. The owner of 2 adjoining parcels of property sought to shift the boundary line shared by the parcels. One lot was 10 acres in size while the other was 15 acres. The lot line would result in a transfer of 10 acres from one lot to the other, resulting in a 20-acre lot and a 5 acres lot. When this plan was presented to the town planner, he referred it the Planning Commission for a determination as to whether it constituted a subdivision of land. Apparently, one of the existing lots had been split off from another parcel a number of years earlier.

The Commission said it was a subdivision due to the large amount of land that was transferred from one lot to the other and that there were actually 3 lots involved due to the earlier lot split. This substantial change, the commission believed, required that a subdivision application be filed. The property owner unsuccessfully appealed to the Superior Court. However, he met a more favorable result with the Appellate Court.

The Appellate Court found that a boundary line change, no matter how large the amount of land is transferred, is not a subdivision. Instead, what constitutes a subdivision of land is clearly setforth in Connecticut General Statutes Sec. 8-18. It is the division of a parcel of land into 3 or more lots. In this case, there were 3 lots before the boundary line adjustment, and there would be only 3 lots afterward. Thus, no subdivision because there were no new lots created by the boundary line adjustment. *500 North Avenue LLC v. Planning Commission, 199 Conn. App. 115 (2020).*

ANNOUNCEMENTS

CFPZA Website

The Federation's website has been up and running for nearly 6 months. The web address is www.cfpza.org. On the website you can find educational materials published by the Federation as well as news items and Federation webinars. Please take time to visit us.

Workshops

If your land use agency recently had an influx of new members or could use a refresher course in land use law, contact us to arrange for a workshop to be held at your next meeting. At the price of $180.00 per session for each agency attending, it is an affordable way for your commission or board to keep informed.

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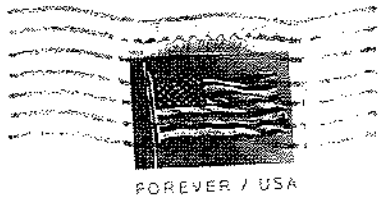

Brooklyn Planning & Zoning Commission
Town Hall
P. O. Box 356
Brooklyn, CT 06234

SP 20-002 – Special Permit for additional vehicle storage, Applicant: Vachon Brooklyn, LLC, 512 Providence Road, Proposed construction of two 16' wide access drives to proposed new vehicle storage lots.

-The Inland Wetlands and Watercourses Commission has issued an approval for the proposal.

- We will be discussing the application of the landscaping and stormwater runoff requirements for parking areas as well as buffering to nearby residences.

- You may wish to consider bonding for maintenance of the drainage structures or landscaping.

Sample Motion to Approve

Move to approve the Special Permit application of Vachon Brooklyn, LLC for construction of two new vehicle storage lots and 16' wide access drives at 512 Providence Road (Map 41, Lots 13A and 14), identified in the files of the Brooklyn Land Use Office as SP 20-002, in accordance with all final documents and testimony submitted with the application with the finding that the design is consistent with the Special Permit criteria including those specific to the Planned Commercial Zone with the following conditions:

1. The Inland Wetlands and Watercourses Commission approval with conditions and the Planning and Zoning Commission approval with conditions must be included on the final recorded special permit plans. Draft final approved plans shall be printed on paper and submitted to town staff for review prior to printing on archival material. The final approved plans bearing the seal and signature of the appropriate professionals and signed by Commission Chairs shall be recorded along with the Special Permit in the office of the Town Clerk.
2. Prior to the commencement of any activity undertaken in accordance with this approval, the limit of disturbance shall be flagged in the field by a licensed land surveyor and such flags shall be posted high above grade on trees or on construction fence so as not to be disturbed by clearing activities. The limits of disturbance markings shall remain in place for the duration of the excavation activity and shall be replaced if disturbed. Additionally, property lines within 50' of the area of disturbance shall be flagged. All flagging as required by this approval shall be

checked no less frequently than quarterly by the operator to ensure they are in place and shall be restored if disturbed or removed.

3. Prior to the commencement of any activity undertaken in accordance with this approval, erosion and sedimentation control measures as shown on the approved plans shall be installed to the satisfaction of the Land Use Office. The Land Use Office shall have the authority to direct that additional erosion and sedimentation control measures be installed if deemed necessary to maintain adequate protection from erosion and sedimentation.

SD 20-003 – 3-lot Subdivision, Applicant: David and Nancy Bell, Location: 6 acres on the east side of Prince Hill Road (131 Prince Hill Road, Map 34, Lot 52) in the RA Zone, Proposal: Proposed creation of 3 residential buildings lots

Sample motion

Move to approve the Subdivision application of David and Nancy Bell, identified in the files of the Brooklyn Land Use Office as SD 20-003, to create three residential lots on 6 acres on the east side of Prince Hill Rd. (Map 34, Lot 52) in the RA Zone in accordance with all final plans, documents and testimony submitted with the application and including the following conditions:

1. Prior to the endorsement by the Commission of the Final Subdivision Plan(s) for filing in the office of the Town Clerk:
    a. The Inland Wetlands and Watercourses Commission approval with conditions and the Planning and Zoning Commission approval with conditions must be included on the final recorded subdivision plans. Draft final approved plans shall be printed on paper and submitted to town staff for review prior to printing on archival material. The final approved plans bearing the seal and signature of the appropriate professionals and signed by Commission Chairs shall be recorded in the office of the Town Clerk.
    b. All boundary pins and monuments shall be set and field verified by the surveyor.
2. At the time of sale of any building lot, a payment in lieu of open space dedication shall be paid by the applicant to the Town in the amount of $ 1,600 per lot in accordance with the requirements of CT General Statutes 8-25 and Brooklyn Subdivision Regulation Sec. 8.

An open space lien may be placed on the building lots to ensure that the fee-in-lieu of open space is paid at the time of sale.

3. Prior to the issuance of a Zoning Permit on any lot:
    a. The developer shall notify the Zoning Enforcement Office and Town Planner at least seven days in advance of any site work to schedule a pre-construction meeting.
    b. Driveway permits must be obtained from the Road Foreman in accordance with the adopted policy concerning driveways.
    c. The applicant and/or individual lot developers shall minimize impacts to natural features both on private lots and in the Town of Brooklyn r.o.w. to the greatest extent possible. This shall include but is not limited to the preservation of stonewalls, the protection of mature trees lining any public road, and the minimization of clearing and grading.
    d. No stonewalls, mature trees, or ledge within the r.o.w. shall be removed or modified unless necessary for safety. The responsibility of clearing, grubbing, blasting, and earthmoving with the Town of Brooklyn r.o.w. shall be the responsibility of the individual lot developer.
    e. Any cutting of trees greater than 30” d.b.h. for sightlines shall require prior approval by the Town of Brooklyn Tree Warden upon finding that the removal of trees is unavoidable to guarantee adequate driveway sightlines.
4. Stonewalls must be finished on the edges prior to the issuance of a Certificate of Zoning Compliance on any lot containing a stone wall.

ZC 20-003 – Zone Boundary Change from RA to VC, Applicant: Ronald Sorel, Location: 94-102 Hartford Road, Approximately 4 acres on the north side of Hartford Road.

Sample Motion

Move to schedule a public hearing on ZC 20-003 – A proposal to change the zoning designation for 94-102 Hartford Road (Assessor's Map 24, Lots 32-33) from RA to VC for the regular meeting of the Planning and Zoning Commission to be held on November 17, 2020 at 6:30 p.m. via Webex meeting.