



**Stratham Planning Board  
AGENDA  
August 17, 2022  
Stratham Municipal Center  
Hutton Room  
Time: 7:00 PM**

The public may also access this meeting at the date and time above using this conference call information. Please dial **1-800-764-1559** and input **4438** when prompted for a user pin/code. Please follow the Chair's instructions delivered at the meeting in order to register comments during the public meeting.

*If at any time during the meeting you have difficulty hearing the proceedings, please e-mail [mconnors@strathamnh.gov](mailto:mconnors@strathamnh.gov).*

**1. Call to Order/Roll Call**

**2. Approval of Minutes:**

- a. August 3, 2022 Planning Board Minutes

**3. Public Hearing:**

- a. Tulip Tree, LLC (Owner), Kyle & Sophie Saltonstall (Applicants) - Request for approval of a site plan amendment to allow for modifications to the landscape plan associated with an event venue, non-profit lodge, and private school use at 61 Stratham Heights Road (Tax Map 5, Lot 81) approved by the Planning Board on March 6, 2019, Zoned Residential Agricultural.

**4. Public Meeting:**

- a. InvestNH Grant Opportunities Discussion
- b. Open Space & Connectivity Plan Update
- c. Discussion of potential 2023 zoning amendments
- d. Discussion of method of distributing Planning Board materials
- e. Miscellaneous Community Planning Issues

**5. Adjournment**

Full text of the agenda and related information can be found on file with the Stratham Planning Department and posted on the Town website at <https://www.strathamnh.gov/planning-board>. All interested persons may be heard. Persons needing special accommodations and/or those interested in viewing the application materials should contact the Stratham Planning Department at (603) 772-7391 ext. 180.



**Stratham Planning Board Meeting Minutes**  
**August 3, 2022**  
**Stratham Municipal Center**  
**Time: 7:00 pm**

**Member Present:** Thomas House, Chair  
David Canada, Vice Chair  
Chris Zaremba, Regular Member

**Members Absent:** Mike Houghton, Select Board's Representative  
Pamela Hollasch, Regular Member  
John Kunowski, Alternate Member

**Staff Present:** Mark Connors, Town Planner

**1. Call to Order/Roll Call**

Mr. House called the meeting to order and took roll call.

**2. Approval of Minutes**

**a. July 13, 2022**

The approval of minutes from July 13, 2022. Mr. House made a motion to approve the meeting minutes. Mr. Canada seconded the motion. All voted in favor.

**3. Public Meeting:**

**a. Update on Transportation Planning Priorities including proposed NHDOT Route 33 Improvements**

Mr. Connors presented the topic. An NHDOT engineer attended the Select Board meeting on August 1, 2022 and explained the proposed Route 33 improvements. The project extends for about 2 miles from just east of the tech college to Winnicut Road in Greenland. NHDOT would like to take the existing 2 lane road and convert it to a 2 lane road with a center turn lane, reduce the lane widths from 12 feet to 11 feet per lane, and add a 12 foot center turn lane for the entire length with no added green space. The shoulders would be reduced from 10 feet to 5 feet. The road is due for reconstruction, so NHDOT needs to update the pavement anyway. NHDOT's concern is that when turning left off the road in this section, vehicles drive onto the shoulder to go around a turning vehicle which puts pedestrians and cyclists in danger. NHDOT also believes

42 that being a high speed road, the shoulders will never feel comfortable even at the existing 10  
43 feet width, so they could be reduced. Mr. Zaremba commented that he does not agree with  
44 NHDOT on the shoulder width comment. NHDOT will commission an engineering study for the  
45 speed limit. The Town has received numerous complaints from residents in Pheasant Run  
46 regarding the speed limit being too high at 50 mph. The speed limit drops to 40 mph closer to  
47 Stratham Hill Park.

48  
49 NHDOT committed to holding a public hearing in Greenland or Stratham. Mr. Connors  
50 suggested targeted advertising of the hearing to the list of property owners used for the rezoning  
51 project in that area as they will be most affected. NHDOT implied that the Select Board must  
52 endorse the project and Mr. Connors would like clarification from NHDOT if that is the case. He  
53 believes the Select Board would like to see mitigation for pedestrians and cyclists before  
54 supporting the project. David Moore, the Town Administrator, has talked to the State about  
55 getting a beacon signal for pedestrian crossing over Route 33 near the tech college. The NHDOT  
56 engineer suggested that the Town apply for separate grants for the pedestrian and cyclist  
57 mitigation. NHDOT will schedule the public hearing in about a month.

58  
59 Mr. Connors presented an update on the NHDOT Ten Year Plan. The Regional Planning  
60 Commission heads a Transportation Advisory Committee comprised of town staff (e.g. Planners  
61 and DPW directors). The TAC is seeking new projects to add to the Ten Year Plan. The Long  
62 Range Transportation Plan is a Master Plan for transportation projects, not engineered or  
63 budgeted, but projects the towns are interested in. Stratham has seven projects in the long range  
64 plan and as part of this process, Stratham nominated a new project: the Portsmouth Avenue  
65 pedestrian/bicycle improvement project in the Gateway District. Two projects from Stratham  
66 (the new Portsmouth Avenue pedestrian/bicycle project and the Stratham Circle reconstruction  
67 project) were in the final 15 projects that were reviewed by the TAC to determine which projects  
68 would receive a preliminary engineering with cost estimate, which is required before getting  
69 listed in the Ten Year Plan. The Portsmouth Avenue project was chosen by TAC to move  
70 forward.

71  
72 Mr. Connors suggested that the Town's zoning should be updated to include a driveway design  
73 that is more pedestrian friendly and presented examples of suggested improvements.

74  
75 **b. Source and Stormwater Protection**

76  
77 Mr. Connors presented the topic. The planning staff researched ways to enhance drinking water  
78 source quality and stormwater quality in Stratham. The Town is required to protect stormwater  
79 quality through the MS4 permit issued by the US EPA. The RPC submitted to the Town a review  
80 of the existing Aquifer Protection District Zoning District Overlay and suggested a considerable  
81 increase to the district boundary. That idea is being set aside for now.

82  
83 Mr. Connors presented a comparison of Stratham's stormwater regulations to other towns.  
84 Stratham's requirements are comparably lenient with regards to the size of the project subject to  
85 the stormwater regulations. The Town should also consider updating the inspections and  
86 maintenance requirements to clearly shift the burden to the landowner from the Town.

88 The planning staff researched ways to enhance drinking water quality and recommend increasing  
89 the setback between a well and septic system to 100 feet from 75 feet. The Town needs to  
90 demonstrate under the MS4 permit that we are taking steps to control nitrate contamination and  
91 this is one way to do that along with requiring enhanced nitrogen treatment in septic systems  
92 within 500 to 1,000 feet of a nitrogen-impaired waterbody.  
93

94 This topic will be tabled until a future meeting with a larger Planning Board attendance.  
95

96 **c. Sign Ordinance Revisions Workshop**  
97

98 Mr. Connors will draft changes to the ordinance for the Planning Board to review. Based on the  
99 Planning Board's input from the previous discussion on this issue, no significant policy changes  
100 to the Town's requirements are anticipated, but there will need to be some significant changes to  
101 the language of the Ordinance to comply with the caselaw established as a result of the Reed vs.  
102 Town of Gilbert Supreme Court decision. This topic will be tabled until a future meeting with a  
103 larger Planning Board attendance.  
104

105 **d. Miscellaneous Community Planning Issues.**  
106

107 The Select Board voted to move forward in the process to accept the 18 Jana Lane parcel  
108 donation. The Town will need to hold two public hearings and Mr. Connors anticipates the  
109 process for this will be completing in approximately three months.  
110

111 Mr. House asked about the RPC Regional Housing Needs Assessment. Mr. Connors said he  
112 participated in the municipal workshop last week and that it went well. It was interesting to  
113 hear other towns' perspectives on this issue and how they are approaching and addressing  
114 housing challenges. He said that Exeter was critical of Stratham and some of the surrounding  
115 communities, including North Hampton and Newington, for not having enough affordable  
116 housing and for not doing more to encourage it. Mr. Connors said that in his opinion it is not so  
117 much the zoning, but the lack of water and sewer infrastructure to support affordable housing  
118 that stymies efforts to create more affordable housing in Stratham. Mr. Connors noted that all  
119 of the new large workforce housing development in Exeter are serviced by public water and  
120 sewer. He indicated that the issues associated with the proposed Stoneybrook Lane  
121 development can be frustrating because it's an example where Exeter controls the provision of  
122 water and sewer service to the development and therefore has a significant amount of leverage  
123 over the development. Exeter could require the development to include a minimum number of  
124 workforce housing units in order to be served by water and sewer infrastructure, but that has  
125 not been pursued.  
126

127 The next Planning Board meeting is August 17, 2022. Mr. Connors said that depending on  
128 applications if there was the ability to cancel one of the September meetings, they would  
129 explore that.  
130

131 **Adjournment:**  
132

133 Mr. Zaremba made a motion to adjourn at 8:08 pm. Mr. Canada seconded the motion. All voted  
134 in favor and the motion was approved.  
135



# TOWN OF STRATHAM

*Incorporated 1716*

10 Bunker Hill Avenue · Stratham, NH 03885

Town Clerk/Tax Collector 603-772-4741

Select Board/Administration/Assessing 603-772-7391

Code Enforcement/Building Inspections/Planning 603-772-7391

Fax (All Offices) 603-775-0517

---

**TO:** Planning Board Members  
**FROM:** Mark Connors, Town Planner  
**FOR:** July 13, 2022  
**RE:** **Site Plan Amendment application, 61 Stratham Heights Road**

## **Background Information:**

On March 6, 2019, the Planning Board approved a site plan to allow the construction of site improvements to support an event venue at 61 Stratham Heights Road. On March 26, 2019, the Zoning Board of Adjustment approved a special exception to operate the event venue then classified as a ‘non-profit lodge’ and ‘private school.’ The use operates out of a barn on the property and the improvements included a driveway, parking lots, and landscaping, among other features.

The site plan that the Planning Board approved included a row of 35 arborvitae trees adjacent to one of the parking areas. Although at one point the landscaping was installed, it appears many of the trees died and no longer exist.

On February 25, 2022 and May 2, 2022, the Code Enforcement Officer mailed the property owners letters noting that the site was not operating in conformance with the approved site plan due to the absence of this landscaping. The Code Enforcement Officer’s letter of May 2, 2022 provided the property owners a deadline of June 15, 2022 to install the landscaping or to submit an application to the Planning Board requesting an amendment to the site plan. The applicants have chosen the latter option and an application was timely submitted.

On July 7, 2022, the applicants submitted a request that the application be postponed to August, noting that they are expecting a baby this month. Since the application was already publicly noticed, the Board will need to vote to postpone the application to a date certain and that will serve as the public notice.

## **Application Information:**

The applicants are requesting that the landscaping in question be replaced, as a short-term measure, with eight rows of sweet corn that they have already planted. The Saltonstalls have not provided a plan or photographs of the corn so it is difficult to visualize what they are proposing, however staff will attempt to visit the site to take photos in advance of the Planning Board meeting. The applicants have indicated that they are working with engineers and landscape architects to develop a more comprehensive site management and landscape plan “that will far exceed the intent of the

original site plan and Stratham’s site plan regulations,,” however they have not provided a timetable for when the plan will be completed or when it will be submitted to the Town for review.

Further, the applicants note the cost of installing landscaping and the fear that new landscaping will not survive. The applicants have also included a letter from a landscape architect, who requests “some time to consider the appropriateness of the proposed buffer in relationship to the other needs of the farm, the opportunity to entertain alternatives, and (at a minimum) the ability to delay any evergreen planting(s) till the fall to increase the chances of success.”

In the application, Mr. Saltonstall notes that the original intent behind the landscaping was to “shield the Cooper residence [abutters to the use] from nuisance noise and light emitted from usage of our eco-parking area.”

The Coopers have indicated that noise emitted from events and other disruptions associated with the use is a continuing nuisance. They have submitted a letter opposing the applicants’ request which is included in the Planning Board packets.

**Staff Recommendation:**

Staff does not believe corn is a reasonable alternative to the more comprehensive landscaping that was included in the approved site plan. It is important to note that the Town did not develop the landscaping plan; the applicants developed the plan likely with some input from abutting property owners. The Town is merely enforcing the approved site plan the applicants developed. The Town would welcome the opportunity to review a revised landscape plan, but the applicants have not provided one, only the promise to submit one at a later unspecified date. It could be years before one is submitted. It has been nearly five months since the Town first formally notified the applicants of this compliance issue. Staff believes that should have provided sufficient time for the applicants to develop and provide the Town a revised plan.

New Hampshire provides a good climate for a wide diversity of landscaping provided adequate site preparation is made, irrigation is installed, and that the plantings are maintained. The applicants have not provided any technical exhibits to indicate why the land is not appropriate for landscaping.

Because the applicants have not provided a viable revised plan, staff would recommend that the Board deny the request for an amendment to the plan and uphold the original site plan but provide the applicants a 60-day window in which to make the improvements. However, staff would recommend that the Board provide the applicants some additional flexibility and allow for some minor revisions to the landscaping plan at the discretion of the Town Planner if a certified professional develops an alternative plan that meets the intent of the original landscape plan (see language of Condition #1).

**DRAFT MOTION:**

I move that the Planning Board deny the request for a site plan amendment because the request is not in conformance with Section 5.2 of the Stratham Site Plan Regulations. Further, the Planning Board directs the Code Enforcement Officer to enforce the approved 2019 Site Plan for 61 Stratham Heights Road, but to withhold enforcement action for a period of 60 days to allow the applicants the opportunity to bring the property in compliance. This decision is subject to the following condition:

1.) The Town Planner may approve minor revisions to the approved landscape plan, at his discretion, if a certified professional provides written justification for the revisions and if the revised plan is consistent with the purpose and intent of the approved landscape plan.



# TOWN OF STRATHAM

INCORPORATED 1716  
10 BUNKER HILL AVENUE • STRATHAM NH 03885  
VOICE (603) 772-7391 • FAX (603) 775-0517 • [www.strathamnh.gov](http://www.strathamnh.gov)

February 25, 2022

Tulip Tree LLC  
Attn: Sophie and Kyle Saltonstall  
61 Stratham Heights Road  
Stratham, NH 03885

RE: 61 Stratham Heights Road, Map 5, Lot 81  
Planning Board Notice of Decision dated 3/22/2019

Dear Mr. and Ms. Saltonstall,

The purpose of this letter is to follow up on the Planning Board's site plan approval decision referenced above (and attached). The board's decision was based on a site plan, recorded at the R.C.R.D., as Plan D-41746 (also attached), which illustrates thirty-five 6' to 10' tall evergreens planted on a berm along the westerly and northerly sides of a 37-space parking area. Although this work was completed, some of the plantings have since died. As the property owner, you are required to maintain the property in accordance with the approved site plan and the plantings that are no longer standing or in poor health must be replaced. Please make preparations to perform this work in the Spring.

Please respond to this letter as soon as possible so that you can present me with a plan to bring the property back in compliance with the approved site plan.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Jim Marchese, Code Enforcement Officer

Cc: Mark Connors, Town Planner



# TOWN OF STRATHAM

INCORPORATED 1716  
10 BUNKER HILL AVENUE • STRATHAM NH 03885  
VOICE (603) 772-7391 • FAX (603) 775-0517 • [www.strathamnh.gov](http://www.strathamnh.gov)

May 2, 2022

Tulip Tree LLC  
Attn: Sophie and Kyle Saltonstall  
61 Stratham Heights Road  
Stratham, NH 03885

RE: 61 Stratham Heights Road, Map 5, Lot 81  
Planning Board Notice of Decision dated 3/22/2019

Dear Mr. and Ms. Saltonstall,

The purpose of this letter is to respond to an April 28, 2022 email from Kyle Saltonstall who was responding to a site visit by the office earlier in the day. The office appreciates Kyle's quick response to the questions raised during the site visit.

As stated in the 2/25/2022 letter you are required to maintain the property in accordance with the approved site plan by the Planning Board dated 3/22/2019. Spring of 2022 is now upon us. This office believes that a fair and reasonable expectation is to have the property in compliance by 6/15/2022. If your intention is not to regain compliance or to modify the approved plan you will need to file for an amendment to the site plan to the Planning Board by 6/15/2022. This will allow for the Planning Board to determine if your intended site modifications meet the goals established by the prior approval.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Jim Marchese, Code Enforcement Officer

Cc: Mark Connors, Town Planner



Town of Stratham, NH
Site Plan Review Application

Map# 5 Lot# 81

Project Name: Amendment to Landscaping

Location: 61 STRATHAM HEIGHTS ROAD

Project Description: Please see attached letter + supporting documents

Zone: RA New Industrial / Commercial Square Footage: or Number of Residential Units:



Applicant:

Name: SOPHIE SALTONSTALL Phone: 603 475 2144

Company: TULIP TREE LLC Fax:

Address: 61 STRATHAM HEIGHTS ROAD

Owner:

Name: SAME AS ABOVE Phone:

Company: Fax:

Address:

Agent:

Contact Name: KYLE SALTONSTALL Phone: 603 312 4806

Company: SALTONSTALL FARM LLC Fax:

Address: 61 STRATHAM HEIGHTS ROAD

Email Address: KYLE@SALTONSTALLFARM.COM

By signing this application, you are agreeing to all rules and regulations of the Town of Stratham, and are agreeing to allow agents of the Town of Stratham to conduct inspections, during normal business hours, of your property, to ensure compliance with all Stratham Zoning and Site Review regulations while your application is under consideration and during any construction and operational phases after approval is granted.

The Signor shall be the owner or the signor shall provide a letter signed by all the property owners giving the signor permission to represent the owner in presentation of this application.

Signed: Sophie Saltunll Date: 6-15-2022

Fees:

Notification Fee: \$150.00 plus Abutters Fee: 5 Abutters X \$8.00 = \$40.00

Site Review Fee\*: \$ One-Hundred (\$100) dollars for each 1,000 square feet of building construction - with a minimum of one-hundred (\$100) dollars.

Preliminary Consultation as provided for under Section 4.1, a filling fee of \$75.00.

Total Fees: \$190.00

See Section 4.2.7 of the Site Review Regulations for fee schedule. \*Additional fees may be charged to cover inspection and review cost.

For Office Use Only

Date Application Received: Total Fees Collected with Application: \$ Abutters List Received: Check List Received: PB Hearing Date: Notice Date: PB Jurisdiction Acceptance Date:

Site Review

K, Saltenstall  
ZBA

Abutters

~~BARR, DAVID P.  
BARR, ANNE Y.  
7 ORCHARD HILL ROAD  
STRATHAM, NH 03885~~

1 BENEFIELD KUNOWSKI FAMILY  
BENEFIELD, RICHARD D. -TR  
KUNOWSKI, JOHN F. -TRUSTEE  
55 STRATHAM HEIGHTS  
STRATHAM, NH 03885

2 COOPER FAMILY REVOCABLE T  
COOPER, JOSHUA M. & KIMBER  
9 ORCHARD HILL ROAD  
STRATHAM, NH 03885

3 MCCARTHY, NINA  
MCCARTHY, STEPHEN  
54 STRATHAM HEIGHTS ROAD  
STRATHAM, NH 03885

4 MCDONNELL, MICHAEL C. & C  
TRUSTEES OF MCDONNELL FAM  
P.O. BOX 186  
SEABROOK, NH 03874

5 TULIP TREE LLC  
61 STRATHAM HEIGHTS ROAD  
STRATHAM, NH 03885

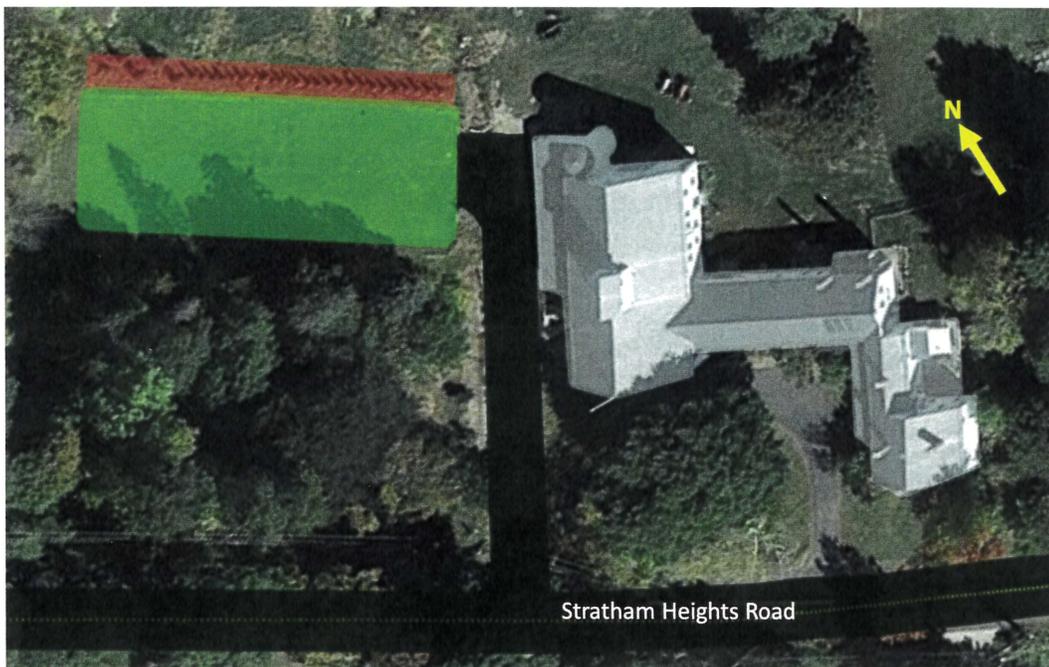
5 x 8  
\$40  
\$150 Base fee  
-----  
\$190.00

K Kyle Saltonstall  
61 Stratham Heights Road, Stratham, NH 03885  
(603)312-4806  
Kyle@SaltonstallFarm.com



Dear Stratham Planning Department and Planning Board,

I am writing to ask for an amendment to our current site plan for our property at 61 Stratham Heights Road. The site plan originally called for evergreen trees (highlighted in red) to be planted on the north side of our eco-parking area (highlighted in green).



Mr. Marchese informed me via in-person meeting and official letter that we must either “maintain the property in accordance with the approved site plan” or “file for an amendment to the Planning Board.” Given no other alternatives, we have chosen to pursue the latter option for the following reasons:

- ...the insufficiency of the previously approved landscaping to achieve the intents of the original site plan and Stratham’s Site Plan Review Regulations,
- ...our ongoing consultation with a landscape architect and site plan engineer to develop a whole property design which will implement landscaping and property management stratagem that will far exceed the intent of the original site plan and Stratham’s Site Plan Review Regulations,
- ...and the significant costs associated with reimplementing the previously approved landscaping in question, knowing that the trees would likely not be permanent.



The insufficiency of the previously approved landscaping to achieve the intent of the original site plan and Stratham's Site Plan Review Regulations

The original intent behind placing evergreen trees along the north side of the eco-parking area was to shield the Cooper residence (highlighted in orange) from nuisance noise and light emitted from usage of our eco-parking area. Stratham's Site Plan Review Regulations Section 5.2-C-2 states that "Landscaping... must be provided with proper regard to adjacent properties... including interior landscaping of parking areas." Because of this, the more than 40' of dense vegetation (highlighted in pink and blue) between properties was deemed inadequate and we added landscaping around our eco-parking area.



Unfortunately, after the trees required by the current site plan were planted in June of 2020, they did not fare well. This is despite using the best practices outlined in Stratham Site Plan Review Regulations Section 5.2-K, namely deep tillage and incorporation of organic matter. I suspect this is due to them being...

- ...located in an area generally inhospitable to evergreen trees. The eco-parking area is filled with several feet of exceptionally well drained gravel; the eco-parking area and its border are thus bone dry unless frequently irrigated. Frequent irrigation is not plausible during the winter months when our irrigation is shut off due to frozen ground conditions, yet evergreen trees still require soil moisture in those months.
- ...planted at a terrible time of year. June is possibly the worst time of year to plant evergreen trees, an activity best suited for the early spring as soon as soil is workable. Even fall or winter are more suitable times to plant evergreen trees, but the heat of summer will put incredible stresses on evergreen trees that they are not prepared for during transplant.
- ...killed by an unknown factor that I am unaware of. Plant pathology is something I'm still new to.

If my assumptions are correct and this area is poorly suited for evergreen trees, replanting this area with trees doomed to wither and die will not only fail the intent to shield our abutters from light or noise generated from the eco-parking area, but it will also fail Stratham's Site Plan Review Regulations Sections 5.2-C-5-b and 5.2-C-5-c, which state that "Plant varieties shall be selected to ensure long-term survival" and "Plant varieties shall be selected so as to reduce long-term maintenance." Furthermore, the trees as drawn on the site plan are drawn linearly along the edge of the eco-parking area, but Stratham's Site Plan Review Regulations Section 5.2-C-10 states that landscaping should "...be laid out in informal drifts rather than formal rows," and that "Linear solutions shall be avoided wherever possible." Finally, the approved plan did not, as is required by Stratham's Site Plan Review Regulations Section 5.2-C-16, "Use a variety of species to... Create visual depth in plant massing by layering plants of various textures, sizes and colors," or "Include flowering or fruiting species for color, interest, and wildlife habitat where appropriate."

Our ongoing consultation with a landscape architect and site plan engineer to develop a whole property management plan which will implement landscaping and property management stratagem that will far exceed the intent of the original site plan and Stratham's Site Plan Review Regulations

The previous plan was developed by a local engineering firm. While they are most certainly one of the best firms around for site planning and while we are 100% satisfied with their designs for the eco-parking area and related site drainage, we don't believe that an engineering firm is always the best choice for landscape design. Moving forward, we've chosen to enlist the services of a landscape architect to help us landscape much of our property on the north side of Stratham Heights Road.

I have attached a letter from Cornelius Murphy, the Principal Landscape Architect from Whole Systems Design Collective, LLC. Our conversations with Mr. Murphy have centered our values in property management, which include soil health regeneration, sustainable water use & reduction of run-off, creation of wildlife habitat, and beautification of the property. We have also stressed the need for landscaping to create a visual screen and noise buffer between our property and our abutters.

Although the process of generating a high quality property management plan can be frustratingly slow, especially during COVID times, we feel confident that the wait will be worth it. If we take the time to create a well-designed plan now, we believe that we can create a very special space that benefits our town far into the future. We also believe that the only way to do this correctly is by enlisting the aid of seasoned experts who are able to correctly interpret pertinent regulations while also designing a durable system that meets our needs.

The significant costs associated with reimplementing the previously approved landscaping in question, knowing that the trees would not be permanent

Twenty-five 6' evergreen trees at wholesale costs will likely amount to over \$3,000 in trees alone. Add to this the cost of irrigation lines, soil amendments, and the labor to plant the trees, and I feel confident that my out-of-pocket costs would be greater than \$5,000. If I believed that these trees would survive a summer planting and would meet the intent of the original site plan, \$5,000 would clearly be a reasonable cost. However, I believe that this would be a \$5,000 expenditure that would fail to screen our eco-parking area from our abutters, fail to meet the requirements set forth in Stratham's Site Plan Review Regulations, and would genuinely be an unnecessary economic stress on one of Stratham's few remaining agricultural operations.

## Our Proposal for a Site Plan Amendment

Seeing as we are currently working on a superior plan with long term durability – yet are still very interested in meeting the intent of the original site plan in the meantime – we are asking for the approval of the Planning Board to amend the site plan to allow us to continue maintaining the area in question using a more “farm-ish” practice. The area immediately north of our eco-parking area is currently growing eight closely spaced rows of sweet corn. The plants are well on track to meet the adage of “knee-high by the Fourth of July,” and are well fertilized and well irrigated. Anyone who has visited the Scamman Farm’s corn maze knows how effective a corn wall can be at screening sound and light, and we have planted the area far thicker than the walls in the Scamman Farm corn maze. We expect that our corn will be well over head height by the time that our season gets busy in September and October.

We are currently expecting our second child to be born any day now and have worked to keep our schedule clear of any responsibilities for the summer. Knowing this, the only use of our barn, and thus the eco-parking area, will be for a community Yoga class on Mondays. The instructor uses a novel system to instruct her students; they all wear headphones tied into her microphone. It is quite literally silent, save for the gently exhalations of the yogis. The Yoga class is over by 7 pm, well before sunset. Although the corn barrier will still be growing to its maximum height during these months and will not provide a complete screen, we believe that it will provide a better screen and be less disruptive to our abutters than tilling the soil, amending the soil, and planting twenty-five trees.

This is clearly an ongoing conversation between my family, our abutters, and the Town of Stratham. To best assist Stratham’s Planning Department and Planning Board in helping us make decisions which will best improve our neighborhood and our town, we have included maps and photographs which show the physical locations and conditions of the areas in question. While we understand that sometimes no simple solutions can be found, we hope that given enough time, all parties can come to a compromise that will allow us to exist and thrive as healthy and active participants in our community.

Very Respectfully,



K Kyle Saltonstall



This map is included for the purpose of understanding changes to the property since the satellite images were taken in October of 2021.

- The area highlighted in red shows twenty-five 6' arborvitae trees. These trees died and are no longer in this area.
- The areas highlighted in blue shows a large mound of soil displaced during the construction of our parking area and a brush pile. Both the dirt and the brush have been removed and this area is currently covered in a lush field of clover and fescue.
- The area highlighted in green shows a bare dirt field. This area is currently planted in a cover crop consisting of phacelia, marigold, and cosmos, plant species selected for their ability to improve soil conditions and offer beauty as they bloom throughout the summer and fall.



This map is included to show the cone of noise emitted from both barn doors when fully open. Highlighted in orange is the Cooper Residence.



This map show the locations and directions from which the photos on the following three pages were taken.



Blue arrow, taken on June 15, 2022 from the center of the eco-parking area, facing directly at the Cooper Residence.



Red arrow, taken on June 15, 2022 from our lawn, facing directly at the Cooper Residence.



Green arrow, taken from our rear barn door, facing directly at the Cooper Residence.



**Stratham Planning Board**  
Stratham Municipal Center  
10 Bunker Hill Avenue  
Stratham, NH 03885

June 14, 2022

Dear Stratham Planning Board Members,

We are writing to express our support for Saltonstall Farm regarding their efforts to mitigate noise and viewshed influences on neighboring properties and the concerns over a previously proposed planting buffer. Kyle & Sophie have recently engaged our firm to provide them with a comprehensive landscape plan for the area surrounding the north side of the event barn, an area that includes the planting buffer in question. We are in the early phases of design but hope to have a plan in place by the fall that would address any and all of the outstanding concerns but in a way that better meets the needs of the farm compared to the previously proposed planting.

We understand the alternative to waiting for our work to be complete would be to plant a stand of evergreen trees this summer. While we can appreciate the intent of a quick resolution, the plantings are much more likely to fail given the time of year which would leave the issues still unresolved. We are advocating for some time to consider the appropriateness of the proposed buffer in relationship to the other needs of the farm, the opportunity to entertain alternatives, and (at a minimum) the ability to delay any evergreen planting(s) till the fall to increase the chances of success.

Thank you for your time and consideration. Please let us know if there is anything else we can do to assist in this matter

Cheers,

Cornelius Murphy // RLA  
Principal and Co-Founder  
Whole Systems Design Collective, LLC

**CLIENT**

SOPHIE ROBINSON  
 ROBINWOOD CENTER  
 61 STRATHAM HEIGHTS ROAD  
 STRATHAM, NH 03885

**CIVIL ENGINEER**  
 EMANUEL ENGINEERING, INC.  
 118 PORTSMOUTH AVENUE, SUITE A202  
 STRATHAM, NH 03885

**LAND SURVEYOR**  
 RICHARD PARKER  
 146 DRINKWATER ROAD  
 KENSINGTON, NH 03833

**ARCHITECT**  
 AMY DUTTON HOME  
 9 WALKER STREET  
 KITTERY, ME 03904

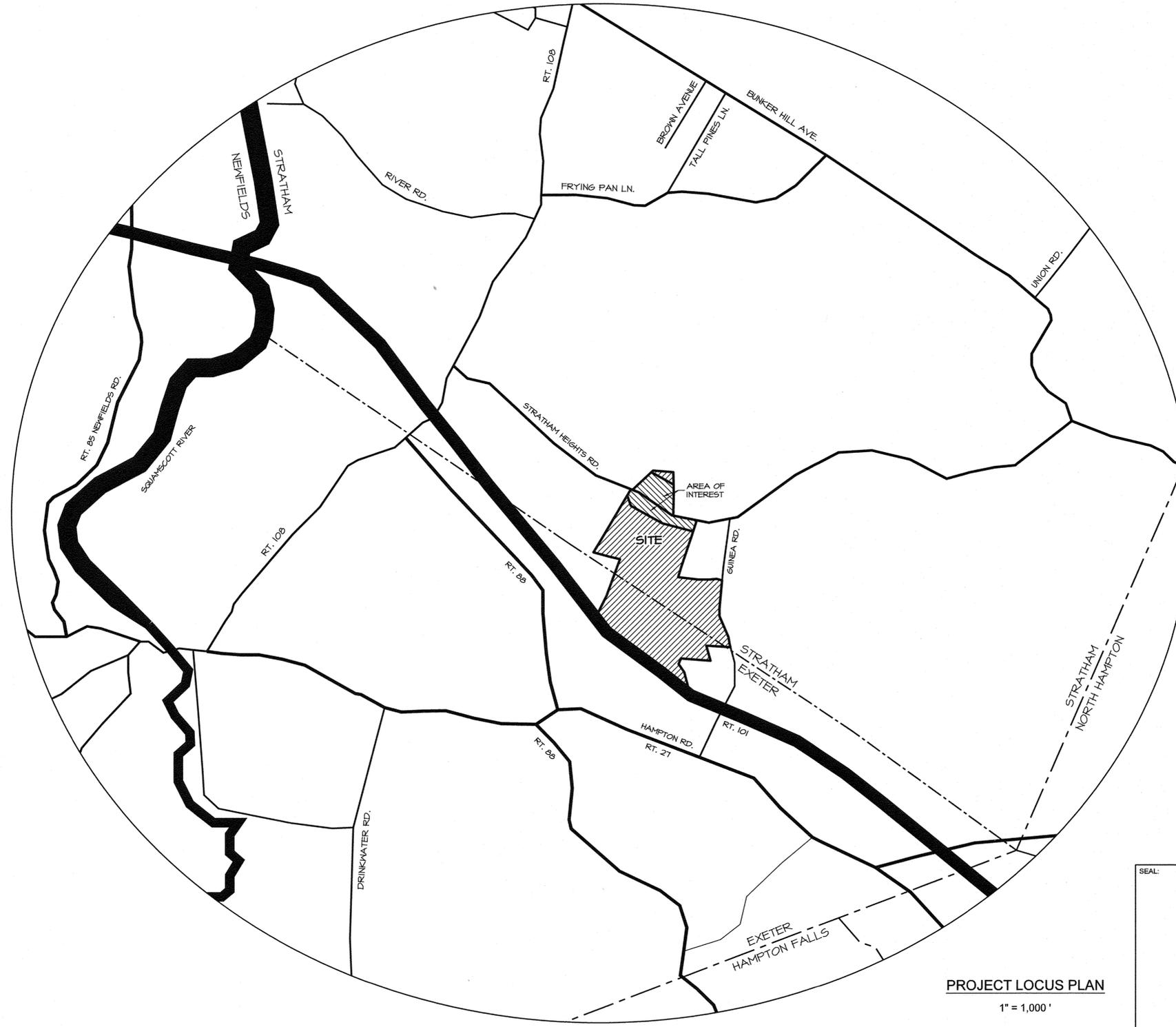
# SITE PLAN FOR THE ROBINWOOD CENTER

STRATHAM TAX MAP 2 LOT 14 & TAX MAP 5 LOT 81

EXETER TAX MAP 67 LOT 3 & TAX MAP 67 LOT 3-1

61 & 62 STRATHAM HEIGHTS ROAD

STRATHAM, NH 03885



**PROJECT DRAWING SET:**

- COVER SHEET
- 1461-2 PLAT OF LAND FOR DR. HENRY SALTONSTALL
- C1 EXISTING CONDITIONS
- C2A SITE PLAN
- C2B SITE PLAN
- C3 GRADING & DRAINAGE PLAN
- D1 & D2 NOTES
- D3 & D4 DETAILS
- A12 ARCHITECTURAL ELEVATION

PROJECT LOCUS PLAN

1" = 1,000'

SEAL:



*Bruce D. Scamman*  
 7/16/19

3	JULY 9, 2019	FOR APPROVAL	
2	FEB 28, 2019	FOR APPROVAL	
1	JAN 16, 2019	FOR APPROVAL	

ISS. DATE:	DESCRIPTION OF ISSUE:	CHK.
DRAWN: JJM	DESIGN: JJM	
CHECKED: BDS	CHECKED: BDS	



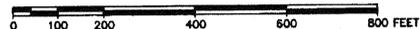
CLIENT:  
 SOPHIE ROBINSON  
 ROBINWOOD CENTER  
 61 STRATHAM HEIGHTS ROAD  
 STRATHAM, NH 03885

TITLE:  
 COVER SHEET  
 FOR  
 ROBINWOOD CENTER  
 61 STRATHAM HEIGHTS ROAD  
 STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
18-150	AS SHOWN	COVER

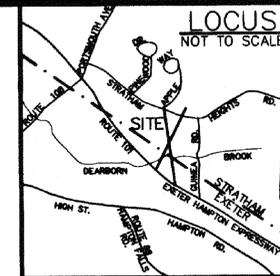
PLAT OF LAND FOR DR. HENRY SALTONSTALL IN STRATHAM & EXETER, N.H.

SCALE 1"=200' NOVEMBER 1996



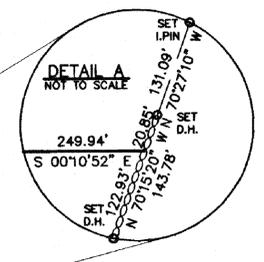
PARKER SURVEY ASSOC., INC. 13 HAMPTON RD. EXETER, N.H.

• DENOTES CORRECTIONS



NOTES

- 1. NO FIELD WORK DONE BY PARKER SURVEY AT THIS TIME. PLAN DERIVED FROM "PLAT OF LAND FOR DR. HENRY SALTONSTALL IN STRATHAM & EXETER, N.H. - SCALE: 1"=200' - MARCH 1973 - REVISED DEC. 1986 - PARKER SURVEY ASSOC., INC." PSA #1461
2. SEE "PLAT OF LAND FOR DR. HENRY SALTONSTALL TO BE CONVEYED TO WILLIAM L. WHITE IN STRATHAM, N.H. - SCALE: 1"=40' - FEB. 1973 - PARKER SURVEY ASSOC., INC." PSA #1444
3. SEE "DRURY PLAINS SUBDIVISION, STRATHAM, N.H. - SCALE: 1"=40' - DATE: 1/15/86 - KIMBALL CHASE COMPANY INC." RCR #D-14569



LEGEND

- FND. FOUND
D.H. DRILL HOLE
I.PIN IRON PIN
BND. BOUND
NHMB N.H. HIGHWAY BOUND
TL TOWN LINE
N/F NOW OR FORMERLY
--- STONE WALL
--- FENCE

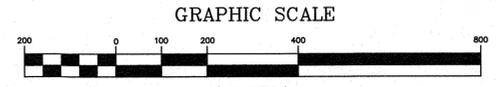
D-25932

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

NOVEMBER 8, 1996 DATE

Richard K. Parker, Jr. RICHARD K. PARKER, JR. LLS #8





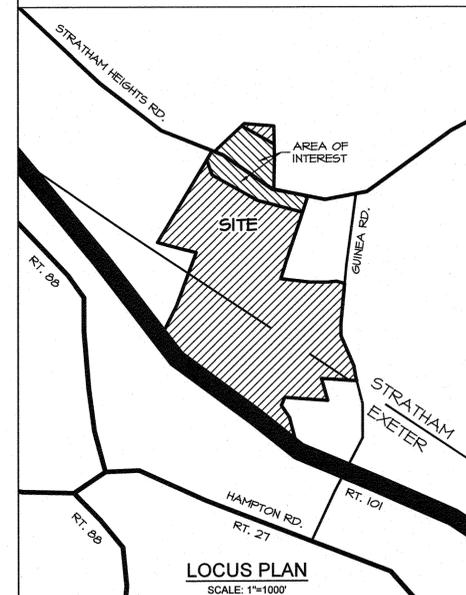
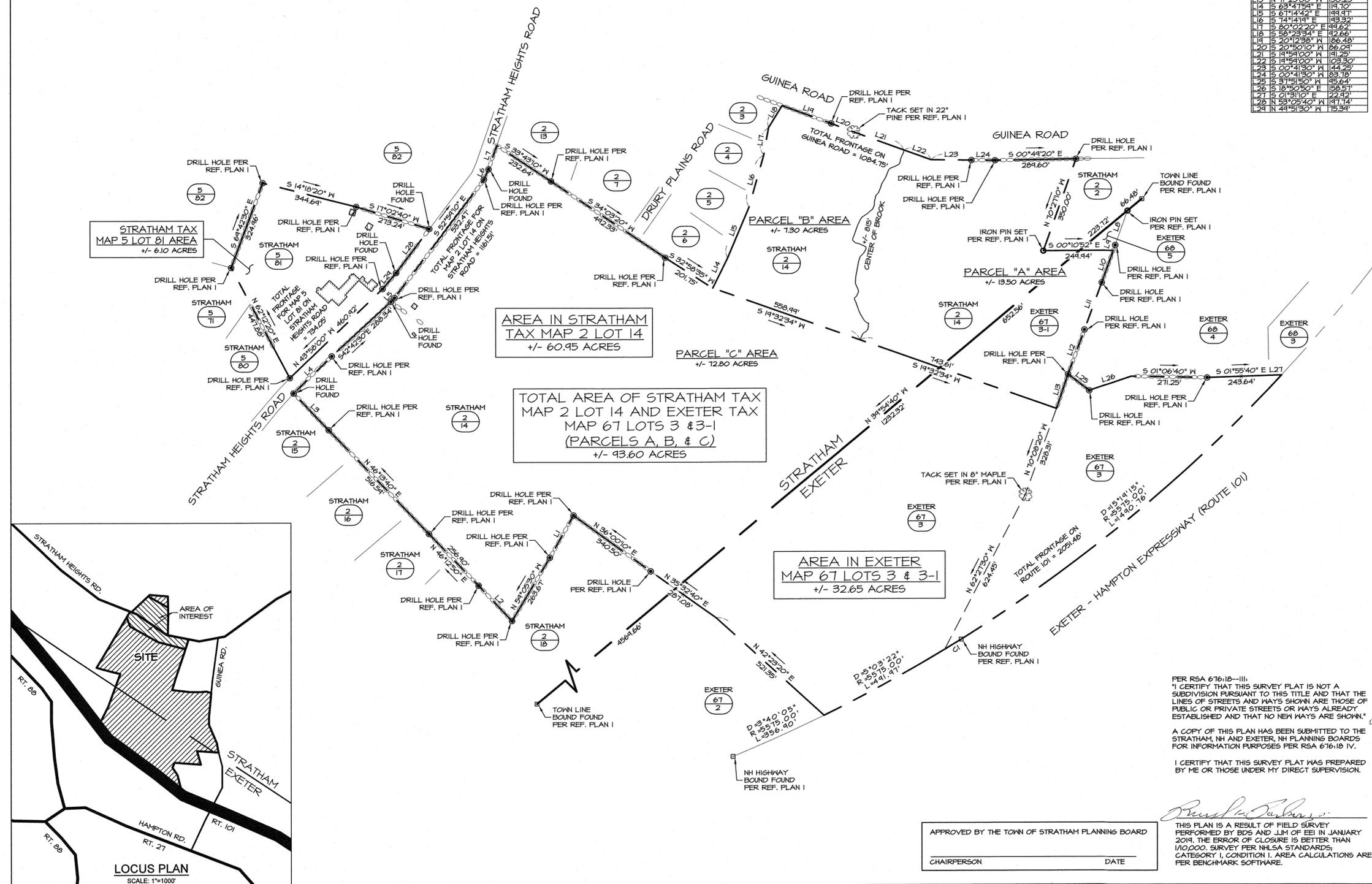
CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	168.15'	15515.00'	10°42'24"	S 31°30'55" E	168.15'

LINE BEARING	DISTANCE
L1 N 60°45'10" W	172.83'
L2 N 46°44'00" E	178.83'
L3 N 46°14'30" E	181.84'
L4 S 44°25'50" E	141.56'
L5 S 46°54'10" E	171.68'
L6 S 28°23'30" E	49.74'
L7 S 10°54'00" E	40.12'
L8 N 10°27'10" W	31.03'
L9 N 10°15'30" W	22.85'
L10 N 10°15'20" W	122.48'
L11 N 64°51'20" W	114.48'
L12 N 64°48'00" W	110.12'
L13 N 71°23'00" W	130.23'
L14 S 63°41'54" E	114.10'
L15 S 61°14'42" E	144.47'
L16 S 74°41'41" E	148.33'
L17 S 20°02'20" E	94.62'
L18 S 58°23'34" E	47.66'
L19 S 20°14'18" W	144.29'
L20 S 20°50'10" W	85.04'
L21 S 14°54'00" W	141.25'
L22 S 14°54'00" W	103.50'
L23 S 02°41'30" W	144.29'
L24 S 00°41'30" W	83.16'
L25 S 91°51'50" W	45.64'
L26 S 18°50'30" E	150.51'
L27 S 01°31'10" E	22.42'
L28 N 53°05'40" W	141.74'
L29 N 44°51'30" W	119.34'

LINE BEARING	DISTANCE
L1 N 60°45'10" W	172.83'
L2 N 46°44'00" E	178.83'
L3 N 46°14'30" E	181.84'
L4 S 44°25'50" E	141.56'
L5 S 46°54'10" E	171.68'
L6 S 28°23'30" E	49.74'
L7 S 10°54'00" E	40.12'
L8 N 10°27'10" W	31.03'
L9 N 10°15'30" W	22.85'
L10 N 10°15'20" W	122.48'
L11 N 64°51'20" W	114.48'
L12 N 64°48'00" W	110.12'
L13 N 71°23'00" W	130.23'
L14 S 63°41'54" E	114.10'
L15 S 61°14'42" E	144.47'
L16 S 74°41'41" E	148.33'
L17 S 20°02'20" E	94.62'
L18 S 58°23'34" E	47.66'
L19 S 20°14'18" W	144.29'
L20 S 20°50'10" W	85.04'
L21 S 14°54'00" W	141.25'
L22 S 14°54'00" W	103.50'
L23 S 02°41'30" W	144.29'
L24 S 00°41'30" W	83.16'
L25 S 91°51'50" W	45.64'
L26 S 18°50'30" E	150.51'
L27 S 01°31'10" E	22.42'
L28 N 53°05'40" W	141.74'
L29 N 44°51'30" W	119.34'

- REFERENCE PLANS:**
- "PLAT OF LAND FOR DR. HENRY SALTONSTALL" BY PARKER SURVEY ASSOC., INC., DATED NOVEMBER 8, 1946; SCALE: 1"=200'; RCRD D-25432.
  - "PLAT OF LAND FOR DR. HENRY SALTONSTALL TO BE CONVEYED TO WILLIAM L. WHITE" BY PARKER SURVEY ASSOC., INC., DATED FEBRUARY 1913; SCALE: 1"=40'; RCRD B-3115.
  - "LOT LINE RELOCATION PLAN MAP 2, LOTS 1-3 & 1-4" BY AMBIT ENGINEERS, INC., DATED MAY 6, 2003; SCALE: 1"=30'; RCRD D-30764.
  - "SUBDIVISION OF LAND LOCATED IN STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC., DATED NOVEMBER 14, 1986; SCALE: 1"=100'; RCRD D-15141.
  - "AMENDED LOT CONSOLIDATION PLAN - TAX MAP 2 LOTS 1-6 & 1-7" BY KIMBALL CHASE, DATED SEPTEMBER 1, 1995; SCALE: 1"=100'; RCRD D-24147.
  - "LOT CONSOLIDATION PLAN - TAX MAP 2 LOTS 1-6 & 1-7" BY KIMBALL CHASE, DATED DECEMBER 1, 1992; SCALE: 1"=100'; RCRD D-22203.
  - "DRURY PLAINS SUBDIVISION - STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC., DATED JANUARY 15, 1986; SCALE: 1"=40'; RCRD D-14564.
  - "SUBDIVISION PLAN ORCHARD HILL ROAD STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC., DATED APRIL 14, 1981; SCALE: 1"=40'; RCRD D-10241.
  - "SUBDIVISION PLAN FOR AMEDEO A. BAILLARGEON - EXETER & STRATHAM, NH" BY ENERY ENGINEERS, DATED AUGUST 17, 1983; SCALE: 1"=50'; RCRD D-12047.
  - "LOT LINE ADJUSTMENT PLAN OF LAND" BY CIVILWORKS ENGINEERS & SURVEYORS, DATED OCTOBER 15, 2005; SCALE: 1"=50'; RCRD D-33456.
  - "PROPOSED LOT LINE REVISION PLAN - LAND OF MARY V. SANBORN" BY JONES & BEACH ENGINEERS, INC., DATED NOVEMBER 3, 1948; SCALE: 1"=100'; RCRD D-26851.
  - "PLAN OF LAND STRATHAM, NH FOR E. HANDLER SANBORN" BY GILBERT A. STEVENS, DATED NOVEMBER 1975; SCALE: 1"=200'; RCRD 2256-0891.

- NOTES:**
- OWNER OF RECORD: STRATHAM TAX MAP 5, LOT 81 TULIP TREE LLC 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885 RCRD BOOK 6005 PAGE 2412
  - STRATHAM TAX MAP 2, LOT 14 & EXETER TAX MAP 67 LOT 3 TULIP TREE LLC 62 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885 RCRD BOOK 6005 PAGE 2412
  - THE INTENT OF THIS PLAN IS TO SHOW THE BOUNDARY LINES FOR THE SITE.
  - PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL DISTRICT PER THE MARCH 2018 STRATHAM ZONING DISTRICT MAP.
  - PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C04066, DATED MAY 17, 2005.
  - FIELDWORK CONDUCTED BY BDS AND JJM OF EMANUEL ENGINEERING, INC. IN JANUARY 2014.
  - THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND REFERENCE PLAN #1. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
  - SEE RCRD BOOK 3261 PAGE 0246 FOR CONSERVATION EASEMENT DEED.



PER RSA 616:16-III:  
"I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN."

A COPY OF THIS PLAN HAS BEEN SUBMITTED TO THE STRATHAM, NH AND EXETER, NH PLANNING BOARDS FOR INFORMATION PURPOSES PER RSA 616:18 IV.

I CERTIFY THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION.

APPROVED BY THE TOWN OF STRATHAM PLANNING BOARD  
CHAIRPERSON \_\_\_\_\_ DATE \_\_\_\_\_

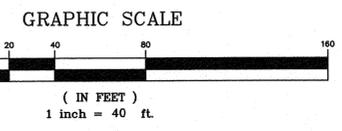
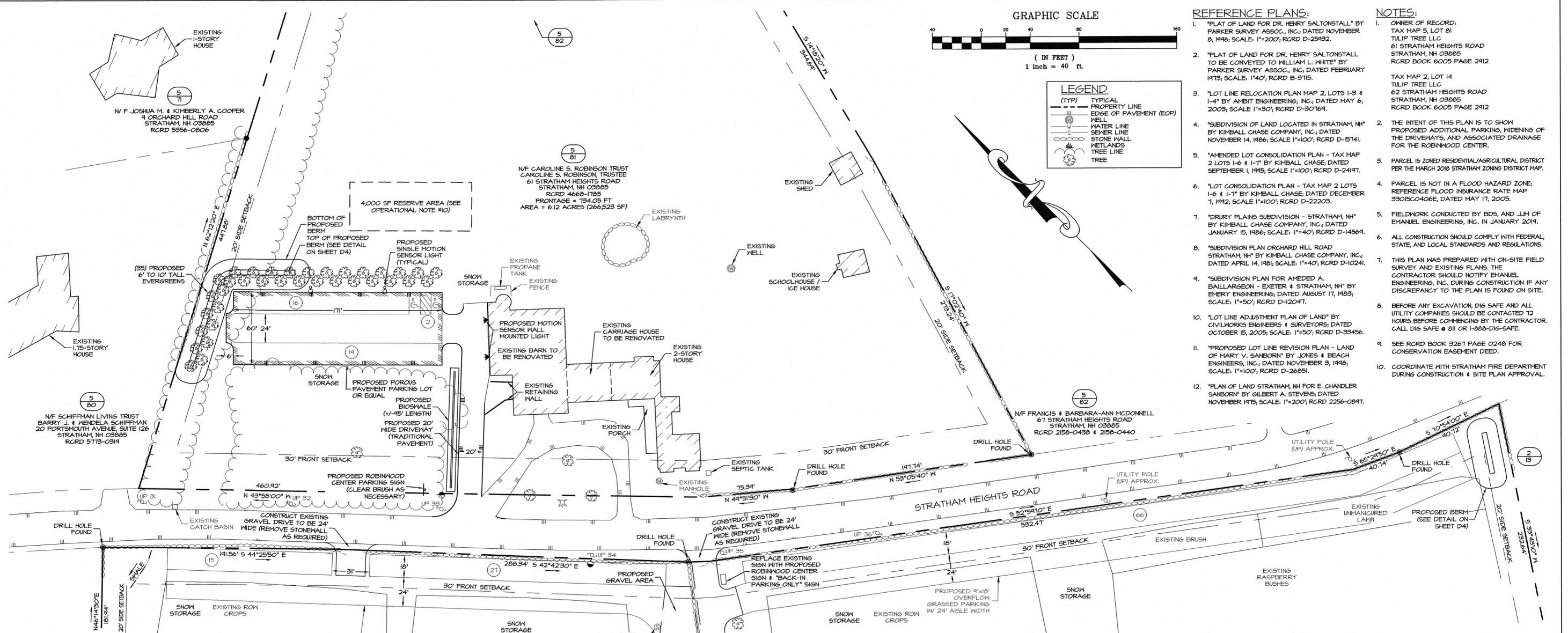
THIS PLAN IS A RESULT OF FIELD SURVEY PERFORMED BY BDS AND JJM OF EEI IN JANUARY 2014. THE ERROR OF CLOSURE IS BETTER THAN 1/10,000. SURVEY PER NHLSA STANDARDS, CATEGORY I, CONDITION I. AREA CALCULATIONS ARE PER BENCHMARK SOFTWARE.

I CERTIFY THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. THIS PLAN IS A RESULT OF FIELD SURVEY PERFORMED BY BDS AND JJM OF EEI IN JANUARY 2014. THE ERROR OF CLOSURE IS BETTER THAN 1/10,000. SURVEY PER NHLSA STANDARDS, CATEGORY I, CONDITION I. AREA CALCULATIONS ARE PER CARLSON CIVIL SUITE 2018 SOFTWARE.

*Bruce D. Scamman* 7/16/19  
LICENSED LAND SURVEYOR, DATE

SEAL:

1	JULY 9, 2019	FOR RECORDING	
ISS. DATE:		DESCRIPTION OF ISSUE:	CHK.
DRAWN: JJM		DESIGN: JJM	
CHECKED: BDS		CHECKED: BDS	
<b>EMANUEL ENGINEERING</b> <small>civil &amp; structural consultants, land planners</small> 118 PORTSMOUTH AVENUE, A202 STRATHAM, NH 03885 P: 603-772-4400 F: 603-772-4487 WWW.EMANUELENGINEERING.COM			
CLIENT: <b>SOPHIE ROBINSON</b> <b>ROBINWOOD CENTER</b> <b>61 STRATHAM HEIGHTS ROAD</b> <b>STRATHAM, NH 03885</b>			
TITLE: <b>SITE PLAN</b> <b>FOR</b> <b>TULIP TREE LLC (OWNER)</b> <b>AND</b> <b>ROBINWOOD CENTER</b> <b>61 STRATHAM HEIGHTS ROAD</b> <b>STRATHAM, NH 03885</b>			
PROJECT:	SCALE:	SHEET:	
18-150	1"=40'	C2A	

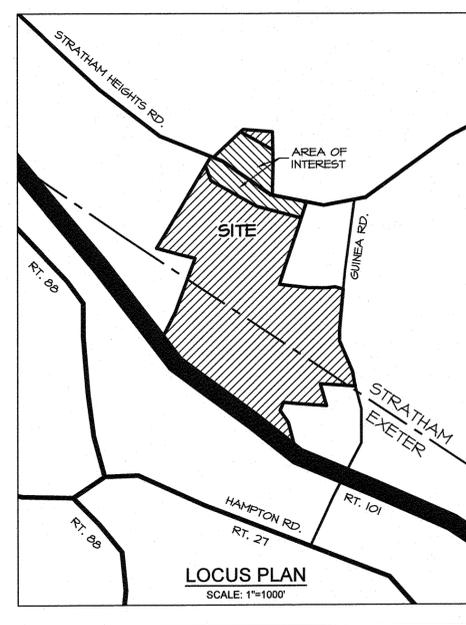


**LEGEND**

(TYP)	TYPICAL
---	PROPERTY LINE
---	EDGE OF PAVEMENT (EOP)
○	WELL
— —	SEWER LINE
— —	STONE WALL
— —	WETLANDS
— —	TREE LINE
○	TREE

- REFERENCE PLANS:**
- "PLAT OF LAND FOR DR. HENRY SALTONSTALL" BY PARKER SURVEY ASSOC., INC.; DATED NOVEMBER 8, 1946; SCALE: 1"=200'; RCRD D-25432.
  - "PLAT OF LAND FOR DR. HENRY SALTONSTALL TO BE CONVEYED TO WILLIAM L. WHITE" BY PARKER SURVEY ASSOC., INC.; DATED FEBRUARY 1973; SCALE: 1"=40'; RCRD B-3715.
  - "LOT LINE RELOCATION PLAN MAP 2, LOTS 1-3 & 1-4" BY AMBIT ENGINEERING, INC.; DATED MAY 6, 2003; SCALE: 1"=30'; RCRD D-30764.
  - "SUBDIVISION OF LAND LOCATED IN STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC.; DATED NOVEMBER 14, 1986; SCALE: 1"=100'; RCRD D-15741.
  - "AMENDED LOT CONSOLIDATION PLAN - TAX MAP 2 LOTS 1-6 & 1-7" BY KIMBALL CHASE, DATED SEPTEMBER 1, 1945; SCALE: 1"=100'; RCRD D-24197.
  - "LOT CONSOLIDATION PLAN - TAX MAP 2 LOTS 1-6 & 1-7" BY KIMBALL CHASE, DATED DECEMBER 7, 1942; SCALE: 1"=100'; RCRD D-22203.
  - "DRURY PLAINS SUBDIVISION - STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC.; DATED JANUARY 15, 1986; SCALE: 1"=40'; RCRD D-14564.
  - "SUBDIVISION PLAN ORCHARD HILL ROAD STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC.; DATED APRIL 14, 1981; SCALE: 1"=40'; RCRD D-10241.
  - "SUBDIVISION PLAN FOR AMENDED A. BAILLARGEON - EXETER & STRATHAM, NH" BY EMERY ENGINEERS, DATED AUGUST 17, 1983; SCALE: 1"=50'; RCRD D-12047.
  - "LOT LINE ADJUSTMENT PLAN OF LAND" BY CIVILWORKS ENGINEERS & SURVEYORS, DATED OCTOBER 15, 2005; SCALE: 1"=50'; RCRD D-33456.
  - "PROPOSED LOT LINE REVISION PLAN - LAND OF MARY V. SANBORN" BY JONES & BEACH ENGINEERS, INC.; DATED NOVEMBER 3, 1949; SCALE: 1"=100'; RCRD D-26851.
  - "PLAN OF LAND STRATHAM, NH FOR E. CHANDLER SANBORN" BY GILBERT A. STEVENS, DATED NOVEMBER 1975; SCALE: 1"=200'; RCRD 2256-0897.

- NOTES:**
- OWNER OF RECORD: TAX MAP 5, LOT 81 TULIP TREE LLC 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885 RCRD BOOK 6005 PAGE 2412
  - TAX MAP 2, LOT 14 TULIP TREE LLC 62 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885 RCRD BOOK 6005 PAGE 2412
  - THE INTENT OF THIS PLAN IS TO SHOW PROPOSED ADDITIONAL PARKING, WIDENING OF THE DRIVEWAYS, AND ASSOCIATED DRAINAGE FOR THE ROBINWOOD CENTER.
  - PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL DISTRICT PER THE MARCH 2018 STRATHAM ZONING DISTRICT MAP.
  - PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0406E, DATED MAY 17, 2005.
  - FIELDWORK CONDUCTED BY BDS, AND JIM OF EMANUEL ENGINEERING, INC. IN JANUARY 2019.
  - ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
  - THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
  - BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
  - SEE RCRD BOOK 3267 PAGE 0248 FOR CONSERVATION EASEMENT DEED.
  - COORDINATE WITH STRATHAM FIRE DEPARTMENT DURING CONSTRUCTION & SITE PLAN APPROVAL.



- OPERATIONAL NOTES:**
- FOR ANY NON-FAMILY EVENT OF 100 OR MORE PEOPLE, A POLICE DETAIL WILL BE REQUESTED.
  - FOR ANY WEDDING RECEPTION OF OVER 100 PEOPLE, BUSES AND/OR SHUTTLES SHALL BE PROVIDED TO AVOID ON-SITE PARKING AND DRIVING.
  - FOR ALL EVENTS OVER 100 PEOPLE, THE NEIGHBORS AT MAP-LOTS 5-7I, 5-80, 5-82, AND 2-13 SHALL BE NOTIFIED AS TO THE DATE AND TIME.
  - A TRASH PLAN SHALL BE CREATED DURING NON-FAMILY EVENTS WITH GREATER THAN 100 PEOPLE.
  - ALL EVENTS SHALL BE HELD WITHIN THE STRATHAM NOISE ORDINANCE AND WILL CONCLUDE AT 9PM AT THE LATEST. ANY LOUDSPEAKERS WITH MUSIC SHALL BE KEPT INSIDE THE BARN DURING EVENTS.

- LARGE EVENTS WILL BE LIMITED TO ONE LARGE AGRICULTURAL EVENT (200-400 PEOPLE) AND NO MORE THAN 10 OTHER EVENTS OF MORE THAN 100 PEOPLE PER YEAR. THESE EVENTS WILL BE LIMITED TO OCCURRING BETWEEN APRIL 1 AND OCTOBER 31.
- LIGHTING SHALL AUTOMATICALLY SHUT OFF FOR LATE NIGHT HOURS AT 11PM.
- HOURS OF OPERATION FOR CLASSES SHALL BE 8AM TO 9PM MONDAY TO SUNDAY.
- PARKING EAST OF THE EXISTING FARM STAND ON THE SOUTH SIDE OF STRATHAM HEIGHTS ROAD SHALL BE REAR IN PARKING ALONG THE STONEWALL.
- BATHROOMS INSIDE OF THE RENOVATED BARN ARE TO HAVE COMPOSTING TOILETS. SHOULD THE TOILETS BE CONVERTED FROM COMPOSTING TOILETS TO STANDARD TOILETS, A NEW SEPTIC SYSTEM MUST BE DESIGNED AND INSTALLED. A NEW SEPTIC SYSTEM MUST ALSO BE DESIGNED AND INSTALLED, IF A COMMERCIAL KITCHEN IS BUILT.

APPROVED BY THE TOWN OF STRATHAM PLANNING BOARD

CHAIRPERSON \_\_\_\_\_ DATE \_\_\_\_\_

PER RSA 676:10-III, I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

A COPY OF THIS PLAN HAS BEEN SUBMITTED TO THE STRATHAM, NH AND EXETER, NH PLANNING BOARDS FOR INFORMATION PURPOSES PER RSA 676:10 IV.

I CERTIFY THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION.

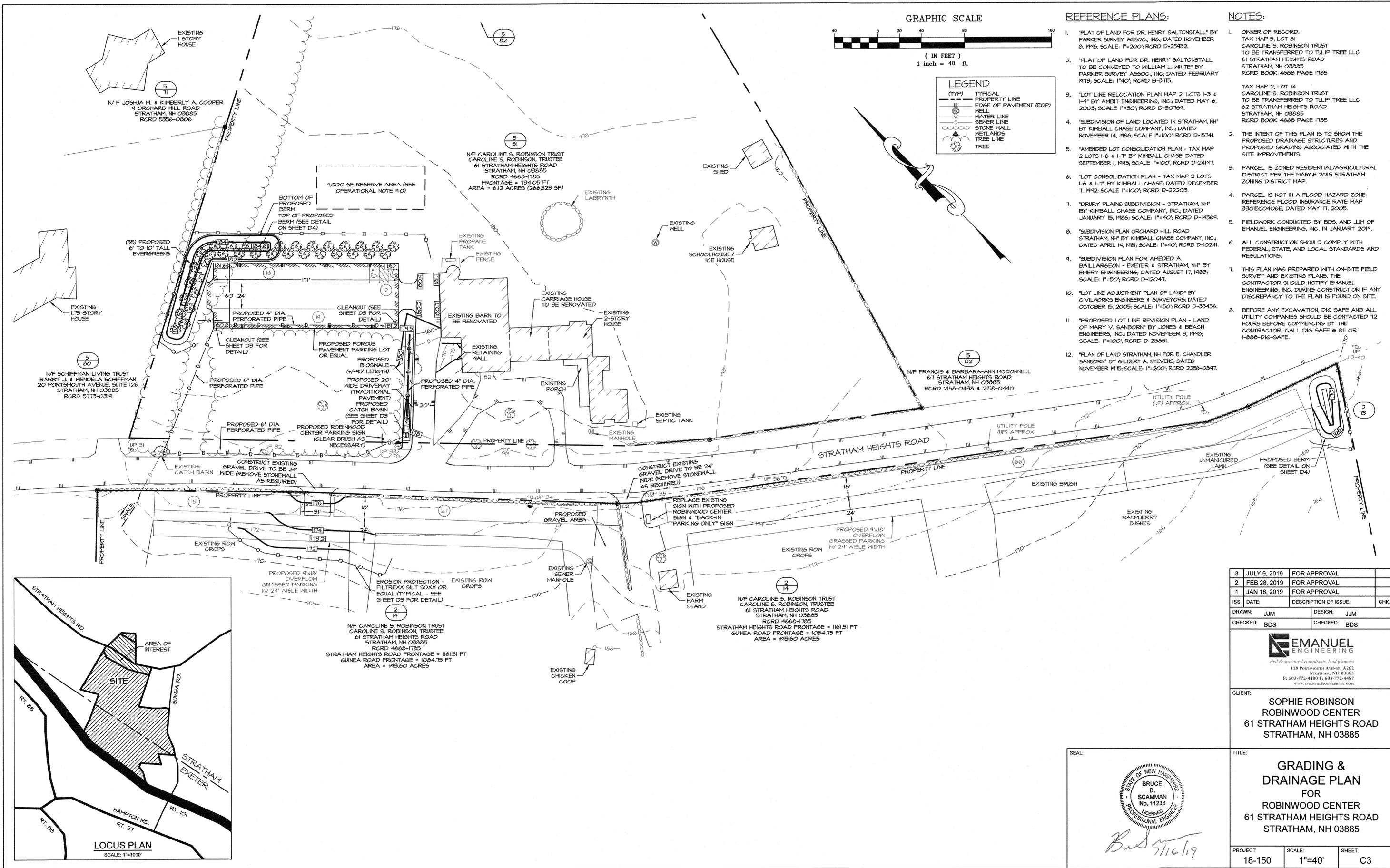
THIS PLAN IS A RESULT OF FIELD SURVEY PERFORMED BY BDS AND JIM OF EEL IN JANUARY 2019. THE ERROR OF CLOSURE IS BETTER THAN 1/10,000. SURVEY PER NHLSA STANDARDS; CATEGORY I, CONDITION I. AREA CALCULATIONS ARE PER BENCHMARK SOFTWARE.

I CERTIFY THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. THIS PLAN IS A RESULT OF FIELD SURVEY PERFORMED BY BDS AND JIM OF EEL IN JANUARY 2019. THE ERROR OF CLOSURE IS BETTER THAN 1/10,000. SURVEY PER NHLSA STANDARDS; CATEGORY I, CONDITION I. AREA CALCULATIONS ARE PER CARLSON CIVIL SUITE 2018 SOFTWARE.

SEAL: BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER

SEAL: RICHARD D. PARKER, JR. No. 8 LICENSED LAND SURVEYOR

3	JULY 9, 2019	FOR RECORDING	
2	FEB 28, 2019	FOR APPROVAL	
1	JAN 16, 2019	FOR APPROVAL	
ISS. DATE:		DESCRIPTION OF ISSUE:	CHK.
DRAWN: JUM		DESIGN: JJM	
CHECKED: BDS		CHECKED: BDS	
<b>EMANUEL ENGINEERING</b> Civil & Structural Consultants, Land Planners 118 PORTSMOUTH AVENUE, A202 STRATHAM, NH 03885 P: 603-772-4400 F: 603-772-4487 WWW.EMANUELENGINEERING.COM			
CLIENT: SOPHIE ROBINSON ROBINWOOD CENTER 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885			
TITLE: <b>SITE PLAN</b> FOR TULIP TREE LLC (OWNER) AND ROBINWOOD CENTER 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885			
PROJECT:	SCALE:	SHEET:	
18-150	1"=40'	C2B	

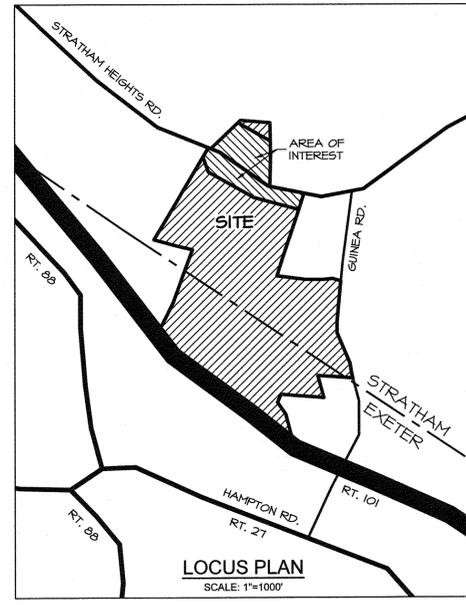


**REFERENCE PLANS:**

- "PLAT OF LAND FOR DR. HENRY SALTONSTALL" BY PARKER SURVEY ASSOC., INC.; DATED NOVEMBER 8, 1946; SCALE: 1"=200'; RCRD D-25492.
- "PLAT OF LAND FOR DR. HENRY SALTONSTALL TO BE CONVEYED TO WILLIAM L. WHITE" BY PARKER SURVEY ASSOC., INC.; DATED FEBRUARY 1973; SCALE: 1"=40'; RCRD B-3715.
- "LOT LINE RELOCATION PLAN MAP 2, LOTS 1-3 & 1-4" BY AMBIT ENGINEERING, INC.; DATED MAY 6, 2003; SCALE: 1"=30'; RCRD D-30764.
- "SUBDIVISION OF LAND LOCATED IN STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC.; DATED NOVEMBER 14, 1986; SCALE: 1"=100'; RCRD D-15741.
- "AMENDED LOT CONSOLIDATION PLAN - TAX MAP 2 LOTS 1-6 & 1-7" BY KIMBALL CHASE, DATED SEPTEMBER 1, 1995; SCALE: 1"=100'; RCRD D-24197.
- "LOT CONSOLIDATION PLAN - TAX MAP 2 LOTS 1-6 & 1-7" BY KIMBALL CHASE, DATED DECEMBER 7, 1992; SCALE: 1"=100'; RCRD D-22203.
- "DRURY PLAINS SUBDIVISION - STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC.; DATED JANUARY 15, 1986; SCALE: 1"=40'; RCRD D-14564.
- "SUBDIVISION PLAN ORCHARD HILL ROAD STRATHAM, NH" BY KIMBALL CHASE COMPANY, INC.; DATED APRIL 14, 1981; SCALE: 1"=40'; RCRD D-10241.
- "SUBDIVISION PLAN FOR AMEDEE A. BAILLARGEON - EXETER & STRATHAM, NH" BY EMERY ENGINEERING; DATED AUGUST 17, 1983; SCALE: 1"=50'; RCRD D-12047.
- "LOT LINE ADJUSTMENT PLAN OF LAND" BY CIVILWORKS ENGINEERS & SURVEYORS; DATED OCTOBER 15, 2005; SCALE: 1"=50'; RCRD D-33456.
- "PROPOSED LOT LINE REVISION PLAN - LAND OF MARY V. SANBORN" BY JONES & BEACH ENGINEERS, INC.; DATED NOVEMBER 3, 1998; SCALE: 1"=100'; RCRD D-26851.
- "PLAN OF LAND STRATHAM, NH FOR E. CHANDLER SANBORN" BY GILBERT A. STEVENS; DATED NOVEMBER 1975; SCALE: 1"=200'; RCRD 2256-0847.

**NOTES:**

- OWNER OF RECORD, TAX MAP 5, LOT 81 CAROLINE S. ROBINSON TRUST TO BE TRANSFERRED TO TULIP TREE LLC 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885 RCRD BOOK 4668 PAGE 1785
- TAX MAP 2, LOT 14 CAROLINE S. ROBINSON TRUST TO BE TRANSFERRED TO TULIP TREE LLC 62 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885 RCRD BOOK 4668 PAGE 1785
- THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED DRAINAGE STRUCTURES AND PROPOSED GRADING ASSOCIATED WITH THE SITE IMPROVEMENTS.
- PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL DISTRICT PER THE MARCH 2018 STRATHAM ZONING DISTRICT MAP.
- PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33050C0406E, DATED MAY 17, 2005.
- FIELDWORK CONDUCTED BY BDS, AND JIM OF EMANUEL ENGINEERING, INC. IN JANUARY 2019.
- ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
- THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
- BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.



3	JULY 9, 2019	FOR APPROVAL	
2	FEB 28, 2019	FOR APPROVAL	
1	JAN 16, 2019	FOR APPROVAL	
ISS. DATE:	DESCRIPTION OF ISSUE:		CHK.
DRAWN: JIM	DESIGN: JIM		
CHECKED: BDS	CHECKED: BDS		



CLIENT:  
**SOPHIE ROBINSON  
 ROBINWOOD CENTER  
 61 STRATHAM HEIGHTS ROAD  
 STRATHAM, NH 03885**

SEAL:

TITLE:  
**GRADING &  
 DRAINAGE PLAN  
 FOR  
 ROBINWOOD CENTER  
 61 STRATHAM HEIGHTS ROAD  
 STRATHAM, NH 03885**

PROJECT:	SCALE:	SHEET:
18-150	1"=40'	C3

**EROSION AND SEDIMENTATION CONTROL CONSTRUCTION PHASING AND SEQUENCING:**

1. SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
2. INSTALL SILT FENCING AND/OR HAY BALE BARRIERS AS PER DETAILS AND AT SEDIMENT MIGRATION.
3. CONSTRUCT TREATMENT SNALES, LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES) AS PER DETAIL AND AT LOCATIONS SHOWN ON THE DRAWINGS. MAINTAIN (TOP DRESS) REGULARLY TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS.
5. STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL.
6. ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
7. FINISH GRADE AND COMPACT SITE.
8. RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
9. STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
10. RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
11. SILT FENCING AND HAY BALES TO REMAIN AND BE MAINTAINED FOR THENTY FOUR MONTHS AFTER CONSTRUCTION TO INSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT FENCING, HAY BALES AND TRAPPED SILT ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
12. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
13. PONDS AND SNALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
14. ALL DITCHES AND SNALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
15. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
16. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
17. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

**WINTER CONSTRUCTION NOTES (OCTOBER 15 TO MAY 1):**

1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENT.
2. ALL DITCHES OR SNALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 8 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

**GRASS SNALE MAINTENANCE:**

1. TIMELY MAINTENANCE IS IMPORTANT TO KEEP THE VEGETATION IN THE SNALE IN GOOD CONDITION. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO KEEP THE VEGETATION IN VIGOROUS CONDITION AND TO CONTROL ENCROACHMENT OF WEEDS AND MOODY VEGETATION. HOWEVER, IT SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE FILTERING EFFECT. FERTILIZE ON AN "AS NEEDED" BASIS TO KEEP THE GRASS HEALTHY. OVER FERTILIZATION CAN RESULT IN THE SNALE BECOMING A SOURCE OF POLLUTION.
2. THE SNALE SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE SNALE. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND RE-VEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

**EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:**

1. CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON NEW HAMPSHIRE STORM-WATER MANUAL, VOLUMES 1-3, DATED DECEMBER 2008, PREPARED BY NHDES.
3. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
  - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED.
  - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED.
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
5. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
6. ALL DITCHES, SNALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
7. ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED IN THE SHORTEST PRACTICAL TIME. ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE.
8. EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED.
9. TEMPORARY & LONG TERM SEEDINGS, USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
10. STRAW OR HAY BALE BARRIERS AND SILTATION FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILT FENCE AND ANY EDGE OF NET AREA.
11. SEEDING AREAS WILL BE FERTILIZED AND SEEDED AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
12. SEDIMENT BASINS), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
13. STRAW BALE AND/OR SILT FENCE BARRIERS WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
14. TREATMENT SNALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
15. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:58 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
16. TEMPORARY WATER DIVERSION (SNALES, BASINS, ETC.) MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.

**SEEDING AND STABILIZATION FOR LOAMED SITE:**

1. FOR TEMPORARY & LONG TERM SEEDINGS (BY SEPTEMBER 15 OF THE SAME YEAR OF DISTURBANCE) USE AGWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL.
2. COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE.
3. FERTILIZER & LIME:
  - NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P2O5) 100 LBS/ACRE, POTASH (K2O) 100 LBS/ACRE, LIME 2000 LBS/ACRE.
4. MULCH: HAY OR STRAW 1.5-2 TONS/ACRE.
5. GRADING AND SHAPING:
  - SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED.
  - WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
6. SEED BED PREPARATION
  - SURFACE AND SUBSURFACE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
  - STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

**STABILIZATION CONSTRUCTION ENTRANCE SPECIFICATIONS:**

1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE (MINIMUM), RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 75 FEET (OR 50 FEET WITH A 3 TO 6 INCH MOUNTABLE BERM), EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THE THICKNESS OF THE STONE FOR THE STABILIZATION ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARDS THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED PROMPTLY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

**FILTREXX LAND IMPROVEMENT SYSTEMS INSPECTION & MAINTENANCE:**

1. CONSULT FILTREXX SHPP CUT SHEETS FOR ALL FILTREXX PRODUCTS PRIOR TO INSTALLATION AND FOR MAINTENANCE GUIDELINES. [HTTP://WWW.FILTREXX.COM/DESIGN\\_CUT\\_SHEETS.htm](http://www.filtrexx.com/DESIGN_CUT_SHEETS.htm)
2. ROUTINE INSPECTION SHOULD BE CONDUCTED WITHIN 24 HRS OF A RUNOFF EVENT OR AS DESIGNATED BY THE REGULATING AUTHORITY. UNITS SHOULD BE REGULARLY INSPECTED TO MAKE SURE THEY MAINTAIN THEIR SHAPE AND ARE PRODUCING ADEQUATE HYDRAULIC FLOW-THROUGH. DITCH/CANAL EROSION CONTROL, AND SEDIMENT REMOVAL.
3. IF PONDING BECOMES EXCESSIVE, ADDITIONAL CHECK DAMS, LEVEL SPREADERS, OR SEDIMENT CONTROL UNITS FOR SEDIMENT REMOVAL MAY BE REQUIRED.
4. SEDIMENT ACCUMULATION SHOULD BE REMOVED ONCE IT REACHES THE HEIGHT OF THE CHECK DAM OR UNIT. ALTERNATIVELY, ANOTHER UNIT MAY BE INSTALLED SLIGHTLY UPSLOPE, ON TOP OF THE EXISTING ONE. THIS PROCESS IS NOT CONSIDERED A SOIL DISTURBING ACTIVITY.
5. STORM DEBRIS ACCUMULATION BEHIND CHECK DAMS, LEVEL SPREADER, SEDIMENT CONTROL UNIT, ETC. SHOULD NEVER BE HIGHER THAN THE SIDES OF THE CHECK DAM UNIT. STORM RUNOFF OVERFLOW SHALL MAINTAIN THE UNITS IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
6. IF A UNIT HAS BEEN DAMAGED, IT SHALL BE REPAIRED, OR REPLACED IF BEYOND REPAIR.
7. THE CONTRACTOR SHALL REMOVE SEDIMENT AT THE BASE OF THE UPSLOPE SIDE OF UNITS WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE SOXX, OR AS DIRECTED BY THE ENGINEER.
8. AS AN ALTERNATIVE, ANOTHER SOXX UNIT MAY BE INSTALLED ADJACENT AND PARALLEL TO THE UPSLOPE SIDE OF THE ORIGINAL TO INCREASE SEDIMENT STORAGE CAPACITY. SOXX UNITS INSTALLED BACK TO BACK WITHIN THE DITCH/CANAL SHALL REMAIN LOWER THAN THE SIDES.
9. IF SOXX UNIT BECOMES CLOGGED WITH DEBRIS AND SEDIMENT, IMMEDIATE REMOVAL OF DEBRIS AND SEDIMENT SHOULD BE CONDUCTED TO ASSURE PROPER DRAINAGE AND WATER FLOW THROUGH THE DITCH OR CHANNEL. STORM RUNOFF OVERFLOW OF THE SOXX UNIT IS ACCEPTABLE.
10. SOXX UNITS SHALL BE MAINTAINED UNTIL DISTURBED AREA AROUND THE DEVICE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.
11. THE FILTERMEDIUM MAY BE DISPERSED ON SITE ONCE DISTURBED AREA HAS PERMANENTLY STABILIZED/CONSTRUCTION ACTIVITY CEASED, OR DETERMINED BY THE ENGINEER.
12. PERMANENT VEGETATED FILTER STRIPS WILL BE LEFT INTACT.

**SECTION I- GENERAL (POROUS ASPHALT PAVEMENTS)**

- 1.01 SUBMITTALS
  - A. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE PROPOSED SOURCE AND QUALIFICATIONS OF THE PROPOSED SOURCE(S) OF THE HOT MIX ASPHALT AT LEAST 14 DAYS IN ADVANCE OF ANTICIPATED PAVING DATE.
  - B. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE PROPOSED INSTALLER QUALIFICATIONS AT LEAST 14 DAYS IN ADVANCE OF ANTICIPATED PAVING DATE.
  - C. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE CONTRACTOR'S PROPOSED CONSTRUCTION PHASING PLAN AT LEAST 14 DAYS IN ADVANCE OF MOBILIZING TO THE SITE FOR CONSTRUCTION. UPDATES TO THE CONSTRUCTION PHASING PLAN SHALL BE PROVIDED TO THE SUPERVISORY ENGINEER AT LEAST 48 HOURS IN ADVANCE OF THE PROPOSED. THE CONSTRUCTION PHASING PLAN SHALL CONTAIN THE ELEMENTS AS DETAILED WITHIN THIS SECTION AND DRAWINGS.
  - D. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE PROPOSED THIRD PARTY QUALITY CONTROL FIRM TO CONDUCT THIRD PARTY QUALITY CONTROL OF THE ASPHALT HOT MIX PLANT PRODUCTION AT LEAST 14 DAYS IN ADVANCE OF ANTICIPATED PAVING DATE.
  - E. THE CONTRACTOR SHALL SUBMIT TO THE SUPERVISORY ENGINEER THE QUALITY CONTROL RESULTS AND JOB MIX FORMULA FOR THE POROUS ASPHALT MATERIAL AT LEAST 14 DAYS IN ADVANCE OF THE ANTICIPATED PAVING DATE.
- 1.02 QUALIFICATIONS
  - A. THE POROUS ASPHALT SHALL BE SUPPLIED FROM A HOT MIX MATERIAL PROVIDER THAT HAS THE FOLLOWING MINIMUM QUALIFICATIONS:
    1. SHALL HAVE SUCCESSFULLY PRODUCED A MINIMUM OF THREE (3) POROUS ASPHALT PAVING JOBS IN THE PAST FIVE (5) YEARS.
    2. CAPABLE OF PRODUCING POROUS ASPHALT WITH A PG56-28 BINDER, UNDER NO CIRCUMSTANCES IS A PG68 64-28 ACCEPTABLE IN REPLACEMENT OF PG56-28.
    3. CAPABLE OF PROVIDING THE MATERIALS TESTING FOR QUALITY CONTROL AS DOCUMENTED IN SECTION IV PART 4, TABLE 3, TABLE 4, TABLE 5.
    4. CAPABLE OF PROVIDING MATERIAL CERTIFICATES SIGNED BY THE PLANTS' AUTHORIZED REPRESENTATIVE, AND
    5. CAPABLE OF PROVIDING THE MOST RECENT ANNUAL PLANT SCALE TESTING DOCUMENTATION.
  - B. THE POROUS ASPHALT INSTALLER SHALL HAVE THE FOLLOWING MINIMUM QUALIFICATIONS.
    1. SHALL HAVE SUCCESSFULLY COMPLETED A MINIMUM OF THREE (3) POROUS ASPHALT PAVING JOBS IN THE PAST FIVE (5) YEARS.
    2. PROVIDE A SITE SUPERINTENDENT THAT WILL BE ON-SITE DURING THE PROJECT THAT HAS SUCCESSFULLY COMPLETED A MINIMUM OF THREE (3) POROUS ASPHALT PAVING JOBS IN THE PAST FIVE (5) YEARS.
- 1.03 TRANSPORTATION AND SHIPPING
  - A. POROUS ASPHALT MATERIALS SHALL BE TRANSPORTED TO THE SITE SUCH THAT THE TEMPERATURE OF THE ASPHALT AT THE TIME OF DISCHARGE FROM THE HAUL VEHICLE SHALL BE AS PER SECTION IV - 3.02 E TEMPERATURE REQUIREMENTS, UNLESS OTHERWISE SPECIFIED BY THE HOT MIX PLANT AND APPROVED BY THE SUPERVISORY ENGINEER.
- 1.04 ENVIRONMENTAL CONDITIONS
  - A. THE ASPHALT PAVING CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY EROSION AND SEDIMENT CONTROLS THAT ARE DAMAGED FROM PAVING ACTIVITIES.
  - B. WASTE GENERATED DURING ASPHALT PAVING SHALL BE PROPERLY DISPOSED OF ACCORDING TO THE PROJECT SPECIFICATIONS AND LOCAL, STATE, AND FEDERAL REGULATIONS.
  - C. ASPHALT HAUL TRUCKS SHALL EXIT THE SITE THROUGH THE DESIGNATED STABILIZED CONSTRUCTION ENTRANCE TO PREVENT TRACK OUT.
- 1.05 SCHEDULE FOR CONSTRUCTION DATES
  - A. AFTER MAY 15 OR THE DATE OF ASPHALT PLANT OPENING UNTIL DECEMBER 1 OR THE DATE OF ASPHALT PLANT CLOSURE OR PER APPROVAL OF SUPERVISING ENGINEER.
- 1.06 REQUIREMENTS FOR CONSTRUCTION PHASING
  - A. CONSTRUCTION PHASING, SEQUENCING AND ENGINEERING OVERSIGHT IS REQUIRED TO ENSURE THE SUCCESSFUL PRODUCTION, INSTALLATION, AND LONG-TERM PERFORMANCE OF POROUS PAVEMENT SYSTEMS. PROPER COORDINATION OF THESE PROCEDURES WITH THE CONTRACTOR AND INSPECTION OF THE PAVEMENT SUBGRADE DURING CONSTRUCTION IS CRITICAL TO PROVIDE ACCESS AND PREVENT DAMAGE TO POROUS PAVEMENT SYSTEM COMPONENTS. TEMPORARY CONSTRUCTION METHODS AND PHASING CONSIDERATIONS ACCOUNT FOR THE NECESSARY USE OF LARGE CONSTRUCTION EQUIPMENT OVER THE POROUS PAVEMENT LAYERS WHILE MAINTAINING ITS STRUCTURAL INTEGRITY AND INFILTRATIVE CAPACITY. THE CONTRACTOR'S CONSTRUCTION PHASING SEQUENCE PLAN SHALL INCLUDE PROTECTIVE AND CORRECTIVE ACTIONS DETAILED BELOW FOR EXPECTED IMPACTS FROM CONSTRUCTION ACTIVITIES.
    - B. THE FOLLOWING CONSTRUCTION PHASING IS REQUIRED TO BE MAINTAINED UNTIL STABILIZATION OF THE PAVEMENT IS COMPLETED. THE PHASING PLAN WILL BE ADAPTED TO THE PROJECT BACK WITH THE CLIENT, THE SUPERVISORY ENGINEER, AND THE CONTRACTOR.

- C. THE CONTRACTOR SHALL INCLUDE THE ELEMENTS OF THIS PHASING PLAN IN THE CONTRACTOR'S CONSTRUCTION PHASING PLAN.
  1. CONTRACTOR SUBMITTALS AND APPROVALS
  2. MOST A PRE-CONSTRUCTION MEETING AT THE SITE
  3. EROSION AND SEDIMENTATION CONTROL BMPs ESTABLISHED INCLUDING SEDIMENTATION POND AT DOWNHILL END OF SITE. POROUS PAVEMENT RESERVOIRS MAY BE USED FOR TEMPORARY SEDIMENTATION PONDS. ACCUMULATED FINES SHALL BE REMOVED PRIOR TO PLACEMENT OF AGGREGATE AND APPROVED BY THE SUPERVISORY ENGINEER.
  4. ROUGH GRADE SITE (GUT/FILL)
  5. FINE GRADE SUBGRADE
  6. PERFOM TOPOGRAPHICAL SURVEY OF SUBGRADE
  7. SUPERVISORY ENGINEER TO INSPECT SUBGRADE AND PERFORM INFILTRATION TESTS TO VERIFY SUITABILITY OF SUBGRADE FROM COMPACTION DURING CONSTRUCTION OR WHERE EROSION HAS CAUSED ACCUMULATION OF FINE MATERIALS. REWORK MATERIALS THAT DO NOT MEET INFILTRATION REQUIREMENTS PER THE DRAWINGS AND SPECIFICATIONS. THESE MATERIALS SHALL BE REMOVED AND/OR SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES, AND RETESTED FOR COMPACTION AND INFILTRATION AS PER SPECIFICATIONS.
  8. INSTALL GEOTEXTILE VERTICAL BARRIERS PLACED ALONG PERIMETER OF POROUS PAVEMENT PARKING AREA PER THE DRAWINGS.
  9. INSTALL CAPILLARY BARRIER AND GEOTEXTILE INTERNAL GRADE CONTROLS 10. PLACE UTILITIES LINES OVER THE GRADED CAPILLARY BARRIER LAYER.
  11. PLACE AND COMPACT FILTER COURSE PER THIS SECTION
  12. SUPERVISORY ENGINEER TO INSPECT FILTER COURSE AND PERFORM INFILTRATION TESTS TO VERIFY SUITABILITY OF COMPACTION AND INFILTRATION PER THIS SECTION.
  13. PLACE AND GRADE CHOKER COARSE INFILTRATION COURSE
  14. PLACE AND COMPACT POROUS ASPHALT BINDER COURSE.

- 1.07 PLACEMENT OF TEMPORARY ROAD OF POROUS ASPHALT BINDER COURSE
  - A. INSTALL THICKNESS INDICATED ON DRAWINGS (IN PLACE) LAYER OF BINDER COURSE PER THIS SECTION.
  - B. INSTALL FRAME, GRATES, AND LANDSCAPING. SPECIAL CARE IS TO BE TAKEN TO PROTECT FRESH BINDER COURSE.
  - C. ALL TRUCKS (INCLUDING CONCRETE TRUCKS) WILL BE STOPPED PRIOR TO ENTERING THE SITE AND INSTRUCTED AS TO SPECIAL CONCERNS FOR PAVEMENT DURABILITY.
  - D. A WASHOUT AREA FOR ALL CONCRETE TRUCKS SHALL BE DESIGNATED OUTSIDE OF POROUS PAVEMENT AREA ON THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN.
  - E. POROUS PAVEMENT SURFACE SHALL BE PROTECTED ON HOT DAYS DURING THE PAVEMENT CURE PERIOD (2-3' M AT SURFACE TEMPERATURES CAN DEFINED BY THE TOTAL 145°F IN DIRECT SUN.
  - F. A TEMPERATURE GUN SHALL BE AVAILABLE ON-SITE TO ASSESS PAVEMENT SURFACE TEMPERATURES. PAVEMENT TEMPERATURES GREATER THAN 100°F SHOULD BE OBSERVED CAREFULLY FOR PAVEMENT DURABILITY. AS NEEDED, COOLING OF PAVEMENT SURFACE BY FLOWING WATER FROM A WATER TRUCK SHOULD OCCUR WHEN HEAVY VEHICULAR TRAFFIC IS EXPECTED SUCH AS CONCRETE TRUCKS FOR DRY HELL FRAME AND GRATE INSTALLATION. IN THE EVENT THIS IS INEFFECTIVE FOR COOLING AND PAVEMENT DEFORMATION IS STILL OBSERVED, THE USE OF 3/4" PLYWOOD UNDER LARGE VEHICLE WHEELS MAY BE REQUIRED.
  - G. TRUCKS AND OTHER CONSTRUCTION TRAFFIC WILL NOT BE ALLOWED TO ACCESS THE SITE WHILE THE PAVEMENT IS EXCESSIVELY HOT TOYOR IF UNACCEPTABLE DAMAGE IS OBSERVED. COSMETIC DAMAGE TO BINDER COURSE IS ACCEPTABLE NOT INCLUDING LOSS OF INFILTRATION CAPACITY.
  - H. NO STOCKPILING OF MATERIALS (E.G. SOIL, STONE, LANDSCAPING MATERIALS) WILL BE ALLOWED ON POROUS PAVEMENTS.
  - I. MATERIALS EXCAVATED FOR FINISH WORKS SHALL BE PLACED OUTSIDE OF POROUS PAVEMENT AREAS.
  - J. VACUUMING THROUGHOUT CONSTRUCTION MAY BE NECESSARY FOR SURROUNDING PAVED AREAS TO PREVENT RUN-ON OR TRACKING ONTO POROUS PAVEMENTS. FREQUENCY SHALL BE ADJUSTED AS NEEDED.
  - K. REPEAT PHASE 1 AND 2 INCREMENTALLY UNTIL FULL PAVING IS COMPLETED.

**SECTION II-PAVEMENT SUBGRADE (POROUS ASPHALT PAVEMENTS)**

- 1.01 EXAMINATION
  - A. EXAMINE SPACES TO BE FILLED BEFOREHAND AND REMOVE ALL UNSUITABLE MATERIALS AND DEBRIS INCLUDING SHEETING, FORMS, TRASH, STUMPS, PLANT LIFE, ETC.
  - B. INSPECT BACKFILL AND FILL MATERIALS BEFOREHAND AND REMOVE ALL UNSUITABLE MATERIALS INCLUDING ORGANIC MATTER, OR OTHER FOREIGN DEBRIS, STONES LARGER THAN 12 INCHES IN ANY DIMENSION SHALL ALSO BE REMOVED OR BROKEN INTO SMALLER PIECES.
  - C. NO BACKFILL OR FILL MATERIAL SHALL BE PLACED ON FROZEN GROUND NOR SHALL THE MATERIAL ITSELF BE FROZEN OR CONTAIN FROZEN SOIL FRAGMENTS.
  - D. VERTICALLY TO BE FILLED SHALL BE FREE FROM STANDING WATER SO THAT PLACEMENT AND COMPACTION OF THE FILL MATERIALS CAN BE ACCOMPLISHED IN "DRY" CONDITIONS.
  - E. ALL UNDERGROUND UTILITIES INSTALLATIONS, INCLUDING CULVERTS, SHALL BE COMPLETED, BACKFILLED AND COMPACTED PRIOR TO COMPLETION OF SUBGRADE.
  - F. VERIFY THAT TRAFFIC CONTROLS AND EROSION AND SEDIMENT CONTROLS ARE IN PLACE.
- 1.02 EDGE LINER INSTALLATION
  - A. EDGE GEOTEXTILE OR PVC LINER SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION.
  - B. THE EDGE LINER IS TO BE PLACED ALONG THE ENTIRE PERIMETER OF THE VERTICAL WALLS OF BOTH SIDES OF THE EXCAVATION AND LOCATED BEHIND THE CURB, SIDEWALK, OR TRAILWAY TO FUNCTION AS EROSION CONTROL AND LOCATIONS AS SHOWN WITHIN THE CONTRACT DRAWINGS.
  - C. THE LINER IS TO BE PLACED BEHIND THE CURB OR TRANSITION WITHIN CONCRETE CURBS.
  - D. THE EDGE LINER SHOULD TEMPORARILY BE STAKED VERTICALLY AT 12-18" ABOVE THE SUBGRADE, PRIOR TO PLACEMENT BEHIND CURB TO FUNCTION AS EROSION CONTROL MEASURE TO PREVENT FINES FROM WASHING INTO RESERVOIR BASE.
  - E. PENETRATIONS TO THE PVC LINER SHALL BE REPAIRED WITH 1/2" DIA. GALVANIZED STEEL CLAMP, REINFORCED BY HEAT-SHRINK OR SIMILAR METHOD TO ACHIEVE LOW PRESSURE WATER TIGHT SEAL OR APPROVED EQUAL TO PREVENT THE MIGRATION OF SEDIMENT ACROSS THE PENETRATION.

- 1.02 PREPARATION
  - A. TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF SUBGRADE.
  - B. TAKE ANY OTHER NECESSARY STEPS TO PREVENT FLOW OF WATER INTO INFILTRATION BEDS DURING CONSTRUCTION. WHEN THE SITE IS FULLY STABILIZED, TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED.
  - C. TEMPORARY DRAINS AND DITCHES SHALL BE CONSTRUCTED AS NECESSARY TO REMOVE WATER FROM THE SUBGRADE AREA.
  - D. TEMPORARY RESERVOIRS IN EXISTING CATCH BASINS MAY BE MADE IN A MANNER ACCEPTABLE TO THE ENGINEER. SUCH OPENINGS TO BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.
  - E. CONTRACTOR TO PREVENT THE ENTRANCE OF DEBRIS, STONES AND SILT FROM ENTERING DRAINAGE SYSTEMS, INCLUDING THE USE OF BALES OF HAY, SCREENS AND OTHER DESLTING METHODS.
  - F. BACKFILLED AREAS SHALL BE RETESTED AT THE DISCRETION OF THE ENGINEER.
  - G. MINIMIZE TRAFFIC AND COMPACTION UPON SUBGRADE.
  - H. IN MOST INSTANCES TRAVEL UPON SUBGRADE IS UNAVOIDABLE, AND A CAREFUL ASSESSMENT OF DEGREE OF SUBGRADE COMPACTION IS NEEDED. TILING AND/OR REMOVAL OF COMPACTED SUBGRADE MAY BE NEEDED.
  - I. SUBGRADE COMPACTED DURING EXCAVATION OR WHERE EROSION HAS CAUSED AREAS OF SUBGRADE TO BE REMOVED AND/OR SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES.
  - J. PRIOR TO PLACEMENT OF THE AGGREGATE, INFILTRATION RATE OF THE SUBGRADE SHALL BE DETERMINED BY ASTM D3385 OR APPROVED ALTERNATE AT THE DISCRETION OF THE ENGINEER. INFILTRATION RATE SHALL BE NO LESS 5-30 FT/DAY OR 50% OF THE HYDRAULIC CONDUCTIVITY (D2434) AT 95% STANDARD PROCTOR COMPACTION.
  - K. SEE TABLE 2 FOR COMPACTION AND INFILTRATION REQUIREMENTS.
  - L. THE DENSITY OF SUBGRADE COURSES SHALL BE DETERMINED BY AASHTO T 191 (SAND-CONE METHOD), AASHTO T 204 (DRIVE CYLINDER METHOD), OR AASHTO T 238 (NUCLEAR METHOD) OR OTHER APPROVED METHODS AT THE DISCRETION OF THE ENGINEER.
  - M. UNSUITABLE MATERIALS SHALL BE REMOVED AND REWORKED TO THE SATISFACTION OF THE SUPERVISING ENGINEER.
  - N. UPON COMPLETION OF SUBGRADE WORK, THE ENGINEER SHALL BE NOTIFIED AND SHALL INSPECT AT HIS/HER DISCRETION BEFORE PROCEEDING WITH THE POROUS MEDIA BED INSTALLATION.
- 1.03 FIELD QUALITY CONTROL
  - A. FOR COMPACTION REQUIREMENTS SEE TABLE 2.
  - B. TOLERANCES - THE FINAL SUBGRADE SURFACE SHALL NOT VARY MORE THAN 1/2" INCH FROM THE DESIGN GRADE ELEVATION AT ANY LOCATION, PARALLEL TO THE FINAL ROAD SURFACE. TOLERANCES SHALL BE DEFINED BY THE TOTAL ROADWAY THICKNESS.
  - C. PROOF ROLLED - PRIOR TO THE PLACEMENT OF THE NEXT PAVING COURSE, THE SUBGRADE SURFACE SHALL BE PROOF ROLLED TO LOCATE AREAS OF INADEQUATE COMPACTION OR DEFLECTIONS OR SOFT OR RUTTING AREAS REQUIRING UNDERCUTTING, WITH A CORRECT AN AREA OF INSTABLE CONDITION, THEN THIS AREA AND SOFT OR RUTTED AREAS SHALL BE REMOVED AND REPLACED WITH SELECT ON-SITE MATERIAL AND COMPACTED.
  - D. WHERE NO SUITABLE ON-SITE MATERIAL IS AVAILABLE, GRANULAR MATERIALS SHALL BE INSTALLED AND COMPACTED) AREAS ACCESSIBLE TO ROLL SHALL BE COMPACTED BY MECHANICAL METHODS.

**SECTION III: AGGREGATE BASE COURSE (POROUS ASPHALT PAVEMENTS)**

- PART I EXECUTION
  - 1.01 EXAMINATION
    - A. VERIFY PAVEMENT SUBGRADE HAS BEEN ACCEPTED FOR PLACEMENT OF AGGREGATE BASE COURSE.
    - B. GRADIENTS, CROWNS AND ELEVATIONS ARE CORRECT.
    - C. SUBGRADE IS DRY.
    - D. PRIOR TO PLACEMENT OF THE AGGREGATE, THE INFILTRATION RATE OF THE SUBGRADE SHALL BE DETERMINED BY ASTM D3385 OR APPROVED ALTERNATE AT THE DISCRETION OF THE ENGINEER. THE INFILTRATION RATE SHALL BE NO LESS 5-30 FT/DAY OR 50% OF THE HYDRAULIC CONDUCTIVITY (D2434) AT 95% STANDARD PROCTOR COMPACTION.
    - B. VERIFY THAT TRAFFIC CONTROLS ARE IN PLACE.
  - 1.02 EDGE LINER INSTALLATION
    - A. EDGE GEOTEXTILE OR PVC LINER SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION.
    - B. THE EDGE LINER IS TO BE PLACED ALONG THE ENTIRE PERIMETER OF THE VERTICAL WALLS OF BOTH SIDES OF THE EXCAVATION AND LOCATED BEHIND THE CURB, SIDEWALK, OR TRAILWAY TO FUNCTION AS EROSION CONTROL AND LOCATIONS AS SHOWN WITHIN THE CONTRACT DRAWINGS.
    - C. THE LINER IS TO BE PLACED BEHIND THE CURB OR TRANSITION WITHIN CONCRETE CURBS.
    - D. THE EDGE LINER SHOULD TEMPORARILY BE STAKED VERTICALLY AT 12-18" ABOVE THE SUBGRADE, PRIOR TO PLACEMENT BEHIND CURB TO FUNCTION AS EROSION CONTROL MEASURE TO PREVENT FINES FROM WASHING INTO RESERVOIR BASE.
    - E. PENETRATIONS TO THE PVC LINER SHALL BE REPAIRED WITH 1/2" DIA. GALVANIZED STEEL CLAMP, REINFORCED BY HEAT-SHRINK OR SIMILAR METHOD TO ACHIEVE LOW PRESSURE WATER TIGHT SEAL OR APPROVED EQUAL TO PREVENT THE MIGRATION OF SEDIMENT ACROSS THE PENETRATION.

- F. INTERNAL GRADE PVC LINER GRADE CONTROL TO BE PLACED EVERY 12" OF GRADE LOSS AT EQUAL ELEVATION ALONG THE CONTOUR. THE INTERNAL GRADE CONTROL ARE TO CONTAIN THE FLOW ON SLOPE WITHIN THE PAVEMENT RESERVOIR AND MUST BE KEYED INTO EDGE PVC LINER AND CONTAIN THE RESERVOIR BED AND SUBGRADE.
- G. THE INTERNAL GRADE CONTROL PVC LINER IS TO BE PLACED ALONG AN EQUAL ELEVATION CONTOUR AS PER THE DIMENSIONS AND LOCATIONS AS SHOWN WITHIN THE CONTRACT DRAWINGS.
- H. PENETRATIONS FROM UTILITIES TO THE PVC LINER ARE TO BE MINIMIZED AND LOCATED BENEATH THE PVC LINER IF POSSIBLE.
- I. UTILITY PIPING WITHIN THE ROADBED SHALL BE WATER TIGHT AND SEALED WITH FOAM, CAULKING, OR OTHER SUITABLE METHOD.
- J. ALL UTILITY TRENCHES THAT INTERSECT OR TRAVEL BELOW THE PAVEMENT SUBBASE SHALL HAVE CONSIDERATIONS TO PREVENT SOIL PIPING AND INFILTRATION AND INFLOW. THIS MAY INCLUDE SEEPAGE COLLAR COVER WITH LINER, OR OTHER METHOD APPROVED BY ENGINEER.
- K. IN AREAS WHERE THE LINER IS NOT CONTINUOUS, A 12-INCH OVERLAP IS REQUIRED.

- 1.03 FILTER COURSE PREPARATION
  - A. RESERVOIR COURSE AND CAPILLARY BARRIER AGGREGATE SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF EDGE GEOTEXTILE, ANY ACCUMULATION OF DEBRIS OR SEDIMENT WHICH HAS TAKEN PLACE AFTER APPROVAL OF SUBGRADE SHALL BE REMOVED PRIOR TO INSTALLATION OF GEOTEXTILE AT NO EXTRA COST TO THE OWNER.
  - B. SEE TABLE 1 FOR SPECIFICATIONS FOR FILTER COURSE AND RESERVOIR COURSE / CAPILLARY BARRIER.
  - C. SEE TABLE 2 FOR COMPACTION AND INFILTRATION REQUIREMENTS OF SUBBASE.
  - D. INSTALL FILTER COURSE AGGREGATE IN 12-INCH MAXIMUM LIFTS TO 95 TO 98% STANDARD PROCTOR COMPACTION (ASTM D648 / AASHTO T94). INSTALL AGGREGATE TO GRADES INDICATED ON THE DRAWINGS.
  - E. THE INFILTRATION RATE OF THE FILTER COURSE SHALL BE DETERMINED BY THE SUPERVISING ENGINEER. THE INFILTRATION RATE SHALL BE NO LESS 5-30 FT/DAY OR 50% OF THE HYDRAULIC CONDUCTIVITY (D2434) AT 95% STANDARD PROCTOR COMPACTION.
  - F. THE DENSITY OF FILTER COURSE SHALL BE DETERMINED BY AASHTO T 191 (SAND-CONE METHOD), AASHTO T 204 (DRIVE CYLINDER METHOD), OR AASHTO T 238 (NUCLEAR METHOD) OR OTHER APPROVED METHODS AT THE DISCRETION OF THE SUPERVISING ENGINEER.
  - G. VIBRATORY COMPACTION SHALL BE PERFORMED USING TWO-AXLE TANDEN ROLLERS WITH A GROSS WEIGHT OF NOT LESS THAN 5 METRIC TONS (5.5 TONS) AND NOT MORE THAN 10 METRIC TONS (12 TONS) AND SHALL BE CAPABLE OF PROVIDING A MINIMUM COMPACTIVE EFFORT OF 44 KNM (250 POUNDS PER INCH) OF WIDTH OF THE DRIVE ROLL. ALL ROLLS SHALL BE AT LEAST 1 M (42 INCHES) IN DIAMETER.
  - H. COMPACTION OF SUBGRADE COURSE MATERIAL SHALL BE DONE WITH A METHOD AND ADEQUATE WATER TO MEET THE REQUIREMENTS. ROLLING AND SHAPING SHALL CONTINUE UNTIL THE REQUIRED DENSITY IS ATTAINED. WATER SHALL BE UNIFORMLY APPLIED OVER THE SUBGRADE COURSE MATERIALS DURING COMPACTION IN THE AMOUNT NECESSARY FOR PROPER CONSOLIDATION.
- 1.04 POROUS AGGREGATE SUBBASE INSTALLATION
  - A. RESERVOIR BED AGGREGATE SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF EDGE PVC LINER. ANY ACCUMULATION OF DEBRIS OR SEDIMENT WHICH HAS TAKEN PLACE AFTER APPROVAL OF SUBGRADE SHALL BE REMOVED PRIOR TO INSTALLATION OF PVC LINER AT NO EXTRA COST TO THE OWNER.
  - B. SEE TABLE 2 FOR COMPACTION AND INFILTRATION REQUIREMENTS.
  - C. INSTALL RESERVOIR BED AGGREGATE IN 12-INCH MAXIMUM LIFTS TO 95 TO 98% STANDARD PROCTOR COMPACTION (ASTM D648 / AASHTO T94). INSTALL AGGREGATE TO GRADES INDICATED ON THE DRAWINGS.
  - D. VIBRATORY COMPACTION SHALL BE PERFORMED USING TWO-AXLE TANDEN ROLLERS WITH A GROSS WEIGHT OF NOT LESS THAN 5 METRIC TONS (5.5 TONS) AND NOT MORE THAN 10 METRIC TONS (12 TONS) AND SHALL BE CAPABLE OF PROVIDING A MINIMUM COMPACTIVE EFFORT OF 44 KNM (250 POUNDS PER INCH) OF WIDTH OF THE DRIVE ROLL. ALL ROLLS SHALL BE AT LEAST 1 M (42 INCHES) IN DIAMETER.
  - E. COMPACTION OF SUBGRADE COURSE MATERIAL SHALL BE DONE WITH A METHOD AND ADEQUATE WATER TO MEET THE REQUIREMENTS. ROLLING AND SHAPING SHALL CONTINUE UNTIL THE REQUIRED DENSITY IS ATTAINED. WATER SHALL BE UNIFORMLY APPLIED OVER THE SUBGRADE COURSE MATERIALS DURING COMPACTION IN THE AMOUNT NECESSARY FOR PROPER CONSOLIDATION.
  - F. ADD SMALL QUANTITIES OF FINE AGGREGATE TO COARSE AGGREGATE AS APPROPRIATE TO ASSIST COMPACTION.
  - G. IF EXCESS WATER IS APPARENT, REMOVE AGGREGATE AND AERATE TO REDUCE MOISTURE CONTENT.
  - H. USE MECHANICAL VIBRATING TAMPING IN AREAS UNACCESSIBLE TO ROLLERS.
  - I. THE ENGINEER SHALL BE NOTIFIED AND SHALL INSPECT THE LINER AND SUBBASE INFILTRATION CAPACITY AT HIS/HER DISCRETION BEFORE PROCEEDING WITH THE PLACEMENT OF SELECT ROAD BASE MATERIALS.
  - J. INSPECTION OF INFILTRATION CAPACITY WILL VERIFY SUITABILITY OF SUBBASE FROM COMPACTION DURING CONSTRUCTION OR WHERE EROSION HAS CAUSED TRACKING OF FINE MATERIALS. IF NEEDED, COMPACTED/ACCUMULATED MATERIALS SHALL BE REMOVED AND/OR SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES AND RETESTED FOR COMPACTION AND INFILTRATION PER THIS SECTION.
  - K. INSTALL INFILTRATION TRENCH PER CONSTRUCTION DETAIL. INFILTRATION TRENCH MAY BE ELIMINATED IN THE EVENT OF SHALLOW UTILITIES THAT WILL INTERSECT THE EXCAVATION.
- 1.05 PROTECTION
  - A. IN THE EVENT THE SUBBASE IS USED FOR MAINTENANCE OF TRAFFIC OR IS DISTURBED OR LOOSENED BY ANY CAUSE, THEN PRIOR TO PLACING OF THE NEXT PAVING COURSE, THE SUBBASE SHALL BE REGRADED AND RECOMPACTED TO ITS FINISHED GRADE AND SPECIFIED DENSITY.

SEAL			
1 JAN 16, 2019			
ISS. DATE:		DESCRIPTION OF ISSUE:	CHK.
DRAWN: JUM		DESIGN: JUM	
CHECKED: BDS		CHECKED: BDS	
CLIENT: SOPHIE ROBINSON ROBINWOOD CENTER 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885			
TITLE: NOTES FOR ROBINWOOD CENTER 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885			
PROJECT: 18-150	SCALE: AS SHOWN	SHEET: D1	

**SECTION IV - POROUS ASPHALT PAVING (POROUS ASPHALT PAVEMENTS)**

DR. ROBERT ROSEEN OF WATERSTONE ENGINEERING, INC. (OR EQUAL) SHALL REVIEW ALL ASPECTS OF PREPARATION, INSTALLATION, AND TESTING FOR THE POROUS PAVEMENT SECTIONS. PHONE: (603) 686-2488

**PART 1**

- 1.01 SCHEDULING**
- A. SCHEDULE THE PAVING OPERATIONS SUCH THAT ALL PAVING NECESSARY TO PROVIDE SAFE AND ADEQUATE MAINTENANCE AND PROTECTION OF TRAFFIC OR FOR PROTECTION OF PREVIOUSLY LAID COURSES IS COMPLETED WITHIN THE WEATHER AND SEASONAL LIMITATIONS.
1. SUCH SCHEDULING SHALL INCLUDE EXPEDITING CONSTRUCTION OPERATIONS TO PERMIT PAVING BEFORE THE SEASONAL LIMITATIONS OR BY LIMITING THE LENGTH OF WORK TO THAT WHICH CAN BE COMPLETED BEFORE THE SEASONAL SHUTDOWN.
2. THE COST OF SCHEDULING AND SEQUENCING OF WORK TO CONFORM TO THE SEASONAL LIMITATIONS SHALL BE REFLECTED IN THE BID PRICES FOR THE RELATED CONTRACT ITEMS.

**PART 2**

- 2.01 ASPHALT CONCRETE**
- A. BINDER COURSE - THE PAVEMENT BINDER COURSE SHALL BE CONSTRUCTED TO THE FOLLOWING TYPE AND TO THE WIDTHS AND DEPTHS AS SHOWN ON THE DRAWINGS.
1. THIS BINDER COURSE SHALL BE IN ACCORDANCE WITH INDOT SPECIFICATION FOR BITUMINOUS CONCRETE.
- A. PAVEMENT WEARING COURSE (SURFACE COURSE) - PAVEMENT WEARING COURSE SHALL BE CONSTRUCTED OF THE FOLLOWING TYPE AND TO THE WIDTH AND DEPTH AS SHOWN ON THE DRAWINGS.
1. THIS WEARING COURSE SHALL BE IN ACCORDANCE WITH INDOT SPECIFICATION FOR BITUMINOUS CONCRETE.
- A. PAINTED TRAFFIC MARKINGS - CONTRACTOR SHALL REPLACE ALL MARKINGS IN ACCORDANCE WITH LOCAL, COUNTY, OR STATE SPECIFICATIONS (DEPENDING ON JURISDICTION).

**2.02 POROUS ASPHALT**

- A. THIS IS A PERFORMANCE SPECIFICATION. ALTERNATIVES CAN BE SUBMITTED IF THE MIX DESIGN MEETS THE MINIMUM QC PERFORMANCE CRITERIA FOR GRADATION, ASPHALT CONCRETE (AC) CONTENT, PERCENT (%) VOID SPACE, % DRAIN DOWN, RETAINED TENSILE STRENGTH (TSR), AND CANTABRO NEAR TEST AND ACCEPTED IN WRITING BY THE ENGINEER.
- B. POLYMER MODIFIED PERFORMANCE GRADED ASPHALT BINDER AND MIX DESIGNS
1. POROUS ASPHALT COURSE, GRADATION, AC CONTENT, & VOID SPACE, & DRAIN DOWN, TSR, CANTABRO AS INDICATED IN TABLE 3. THE ASPHALT BINDER SHALL BE TERMINAL BLEND PG16-28 MODIFIED WITH A STYRENE BUTADIENE STYRENE.
2. POROUS ASPHALT BINDER COURSE, GRADATION, AC CONTENT, & VOID SPACE, & DRAIN DOWN, TSR, CANTABRO AS INDICATED IN TABLE 3. THE ASPHALT BINDER SHALL BE A TERMINAL BLENDED PG16-28 MODIFIED WITH A STYRENE BUTADIENE STYRENE.
3. POROUS ASPHALT MIX DESIGNS, THE CONTRACTOR SHALL SIZE, UNIFORMLY GRADE, AND COMBINE THE AGGREGATE FRACTIONS IN PROPORTIONS THAT PROVIDE A MIXTURE MEETING THE REQUIREMENTS SPECIFIED.

**PART 3**

- 3.01 PREPARATION - RESET MANHOLE FRAMES**
- A. PRIOR TO PLACING WEARING (TOP) COURSE, MAKE FINAL ADJUSTMENTS TO DRY, AND HEAT THE AGGREGATES FOR THE BINDER COURSE TO THE REQUIRED TEMPERATURE.
1. MANHOLE FRAMES, VALVE BOXES AND ANY OTHER UTILITY STRUCTURES LOCATED IN THE PAVEMENT IN RELATION TO FINISHED GRADE.
2. CATCH BASIN FRAMES TO SET 1/2 INCH BELOW FINISHED GRADE AND PARALLEL TO FINISHED CROWN.
3. CATCH BASIN FRAMES TO SET 1 INCH BELOW FINISHED GRADE AND PARALLEL TO FINISHED CROWN.
- a. BEVEL SLOPE OF WEARING COURSE (FOR 6-INCH WIDTH) AROUND CATCH BASIN FRAME.
- 3.02 POROUS ASPHALT BINDER COURSE INSTALLATION**
- A. TEST STRIP (OPTIONAL)
1. AN OPTIONAL TEST STRIP SHALL BE CONDUCTED TO DETERMINE OPTIMAL COMPACTION PROCEDURES FOR THE BINDER COURSE AT A THICKNESS AS INDICATED IN THE DRAWINGS. THE TEST STRIP WILL BE CONSTRUCTED IN A PORTION OF THE SITE TO ESTABLISH AND ENSURE THE PROPER MIX DESIGN, PRODUCTION AND POROSITY.
2. THE TEST STRIP SHALL BE OVERSEEN BY THE ENGINEER.
3. TWO MIX SAMPLES SHALL BE COLLECTED AT THE ASPHALT PLANT BY A 3RD PARTY QC TECHNICIAN DURING BINDER COURSE PRODUCTION FROM EACH TEST STRIP FOR ASPHALT CONTENT, AND GRADATION.
4. FIELD TESTING OF INFILTRATION CAPACITY SHALL BE PERFORMED ON THE TEST STRIP FOR INFILTRATION BY THE ENGINEER.
5. TWO CORES SHALL BE COLLECTED FROM EACH TEST STRIP AND EVALUATED FOR COMPACTION, DENSITY, AND POROSITY.
6. THESE CRITERIA ONCE ESTABLISHED WILL BE APPLIED TO ALL POROUS ASPHALT INSTALLATIONS.
- A. CONDITIONING OF EXISTING SURFACE
1. THE CONTRACTOR SHALL THOROUGHLY CLEAN THE SURFACE UPON WHICH THE BINDER COURSE IS TO BE PLACED OF ALL OBJECTIONABLE MATERIAL.
- A. PREPARATION OF AGGREGATES
1. THE CONTRACTOR SHALL DRY AND HEAT THE AGGREGATES FOR THE BINDER COURSE TO THE REQUIRED TEMPERATURE.
- A. MIXING
1. THE CONTRACTOR SHALL COMBINE THE DRIED AGGREGATE IN THE MIXER IN THE AMOUNT OF EACH FRACTION OF AGGREGATE REQUIRED TO MEET THE SPECIFICATIONS. ONCE MIXED THE BINDER COURSE SHALL BE PLACED AS SOON AS POSSIBLE.

**E. SPREADING AND FINISHING**

1. ON AREAS WHERE IRREGULARITIES OR UNAVOIDABLE OBSTACLES MAKE THE USE OF MECHANICAL SPREADING AND FINISHING IMPRACTICABLE, THE CONTRACTOR SHALL SPREAD AND RAKE THE BINDER COURSE WITH HAND TOOLS TO PROVIDE THE REQUIRED COMPACTED THICKNESS.
2. SOLVENT BASED AGENTS DEVELOPED TO JOIN ASPHALTS FROM AGGREGATES WILL NOT BE ALLOWED AS A RELEASE AGENT.
3. STRIPS SHALL BE FULLY COATED WITH PGAB 16-28 JUST PRIOR TO THE PLACEMENT OF THE ADJOINING COURSE. AREAS THAT CONTAIN CONTAMINATED OR STRIPPED OF ASPHALT COATING WILL BE RETREATED WITH ASPHALT PRIOR TO PLACING THE ADJOINING COURSE.
- A. COMPACTORS
1. THE ACTUAL METHODS AND EQUIPMENT USED TO COMPACT THE BINDER COURSE WILL BE DETERMINED DURING THE PLACEMENT AND COMPACTION OF THE TEST STRIP AND AS TABLE 2.
2. IMMEDIATELY AFTER THE ASPHALT TREATED PERMEABLE BASE HAS BEEN SPREAD, ASPHALT SHALL BE SPREAD AND FINISHED BY IRREGULARITIES ADJUSTED, THE CONTRACTOR SHALL THOROUGHLY AND UNIFORMLY COMPACT THE BINDER COURSE BY ROLLING.
3. THE BINDER COURSE SHALL BE COMPACTED BY A MAXIMUM OF THREE COMPLETE PASSES OF A STEEL ROLLER HAVING A MINIMUM HEIGHT OF 12 TONS OPERATED IN MITTAK MODE OR 10 TONS IF EQUIPPED WITH OSCILLATING COMPACTION AND OPERATED IN LOW FREQUENCY, LOW AMPLITUDE MODE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PNEUMATIC ROLLERS WILL NOT BE USED TO COMPACT THE BINDER COURSE.
4. THE CONTRACTOR SHALL ROLL THE SURFACE WHEN THE MIXTURE IS IN THE PROPER CONDITION AND WHEN THE ROLLING DOES NOT CAUSE UNDUE DISPLACEMENT, CRACKING, OR SHOVING. THE CONTRACTOR SHALL PREVENT ADHESION OF THE BINDER COURSE TO THE ROLLERS BY THE USE OF FUEL OIL OR OTHER PETROLEUM, OR SOLVENT BASED RELEASE AGENTS. SOLVENTS DESIGNED TO STRIP ASPHALT FROM THE ENGINEER'S AGGREGATES WILL NOT BE PERMITTED AS RELEASE AGENTS ON EQUIPMENT, TOOLS OR BINDER COURSE SURFACES.
5. THE CONTRACTOR SHALL IMMEDIATELY CORRECT ANY DISPLACEMENT OCCURRING AS A RESULT OF THE REVERSING OF THE DIRECTION OF A ROLLER OR FROM OTHER CAUSES TO THE SATISFACTION OF THE ENGINEER.
6. ANY OPERATION THAT RESULTS IN BREAKDOWN OF THE AGGREGATE SHALL BE DISCONTINUED.
- A. TRAFFIC
1. AFTER A 24 HOUR CURING PERIOD OF THE BINDER COURSE, LIMITED TRAFFIC MAY BE ROUTED OVER THE BINDER COURSE SURFACE, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, CONSTRUCTION EQUIPMENT AND TRAFFIC SHALL BE PROHIBITED FROM TRAVELING OVER THE BINDER COURSE SURFACE UNTIL THE ENTIRE PAVEMENT STRUCTURE IS IN PLACE.
2. DAMAGE TO THE BINDER COURSE LAYER CAUSED BY CONSTRUCTION EQUIPMENT OR TRAFFIC SHALL BE REMEDIED BY COMPLETE REMOVAL REPLACEMENT OF THE DAMAGED AREA TO THE LIMITS DETERMINED BY THE ENGINEER. THERE WILL BE NO ADDITIONAL PAYMENT FOR REPAIRS, OR ASSOCIATED WORK.

**3.03 PLACEMENT OF POROUS ASPHALT BINDER COURSE**

- A. INSTALL THE BINDER COURSE AT A THICKNESS AS INDICATED IN THE DRAWINGS.
- B. INSTALL FRAME, GRATES, AND LANDSCAPING. SPECIAL CARE IS TO BE TAKEN TO PROTECT FRESH BINDER COURSE.
- C. ALL TRUCKS (INCLUDING CONCRETE TRUCKS) WILL BE STOPPED PRIOR TO ENTERING THE SITE AND INSTRUCTED AS TO SPECIAL CONCERNS FOR PAVEMENT DURABILITY.
- D. A WASHOUT AREA FOR ALL CONCRETE TRUCKS SHALL BE DESIGNATED OUTSIDE OF POROUS PAVEMENT AREA ON THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN.
- E. POROUS PAVEMENT SURFACE SHALL BE PROTECTED ON HOT DAYS DURING THE PAVEMENT CURE PERIOD (2-3 DAYS). SURFACE TEMPERATURES CAN QUICKLY REACH OVER 145°F IN DIRECT SUN.
- A TEMPERATURE GUN SHALL BE AVAILABLE ON SITE TO ASSESS PAVEMENT SURFACE TEMPERATURES. PAVEMENT TEMPERATURES GREATER THAN 100°F SHOULD BE OBSERVED CAREFULLY FOR PAVEMENT DURABILITY. AS NEEDED, COOLING OF PAVEMENT SURFACE BY APPLICATION OF WATER FROM A WATER TRUCK SHOULD OCCUR WHEN HEAVY VEHICULAR TRAFFIC IS EXPECTED SUCH AS CONCRETE TRUCKS FOR DRY WELL FRAME AND GRATE INSTALLATION. IN THE EVENT THIS IS INEFFECTIVE FOR COOLING AND PAVEMENT DEFORMATION IS STILL OBSERVED, THE USE OF 3/4" PLYWOOD UNDER LARGE VEHICLE WHEELS MAY BE REQUIRED.
6. TRUCKS AND OTHER CONSTRUCTION TRAFFIC WILL NOT BE ALLOWED TO ACCESS THE SITE WHILE THE PAVEMENT IS EXCESSIVELY HOT >150°F.
- H. NO STOCKPILING OF MATERIALS (E.G. SOIL, STONE, LANDSCAPING MATERIALS) WILL BE ALLOWED ON POROUS PAVEMENTS.
- I. MATERIALS EXCAVATED FOR FINISH WORKS SHALL BE PLACED OUTSIDE OF POROUS PAVEMENT AREAS.
- J. VACUUMING THROUGHOUT CONSTRUCTION MAY BE NECESSARY FOR SURROUNDING PAVED AREAS TO PREVENT RUN-ON OR TRACKING ONTO POROUS PAVEMENTS. FREQUENCY SHALL BE ADJUSTED AS NEEDED.

**3.05 POROUS ASPHALT WEARING COURSE INSTALLATION**

- A. GENERAL
1. VERIFY BINDER COURSE CONDITION AND PREPARATION FOLLOWING CONSTRUCTION PRIOR TO PAVING THE POROUS ASPHALT WEARING COURSE AS DESCRIBED IN SECTION 3.01.
2. THE ENGINEER SHALL BE NOTIFIED AND INSPECT THE BINDER COURSE AT THEIR DISCRETION BEFORE PAVING THE POROUS ASPHALT WEARING COURSE.
3. TEMPORARY CONSTRUCTION FENCING WILL BE USED TO CLOSE POROUS PAVEMENT AREAS TO CONSTRUCTION TRAFFIC AFTER PAVING DURING PROJECT COMPLETION.
- B. TEST STRIP
1. A TEST STRIP SHALL BE CONDUCTED TO PROPER CONDITION AND WHEN THE ROLLING DOES NOT CAUSE UNDUE DISPLACEMENT, CRACKING, OR SHOVING. THE CONTRACTOR SHALL PREVENT ADHESION OF THE BINDER COURSE TO THE ROLLERS BY THE USE OF FUEL OIL OR OTHER PETROLEUM, OR SOLVENT BASED RELEASE AGENTS. SOLVENTS DESIGNED TO STRIP ASPHALT FROM THE ENGINEER'S AGGREGATES WILL NOT BE PERMITTED AS RELEASE AGENTS ON EQUIPMENT, TOOLS OR BINDER COURSE SURFACES.
2. IMMEDIATELY AFTER THE ASPHALT TREATED PERMEABLE BASE HAS BEEN SPREAD, ASPHALT SHALL BE SPREAD AND FINISHED BY IRREGULARITIES ADJUSTED, THE CONTRACTOR SHALL THOROUGHLY AND UNIFORMLY COMPACT THE BINDER COURSE BY ROLLING.
3. THE BINDER COURSE SHALL BE COMPACTED BY A MAXIMUM OF THREE COMPLETE PASSES OF A STEEL ROLLER HAVING A MINIMUM HEIGHT OF 12 TONS OPERATED IN MITTAK MODE OR 10 TONS IF EQUIPPED WITH OSCILLATING COMPACTION AND OPERATED IN LOW FREQUENCY, LOW AMPLITUDE MODE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PNEUMATIC ROLLERS WILL NOT BE USED TO COMPACT THE BINDER COURSE.
4. THE CONTRACTOR SHALL ROLL THE SURFACE WHEN THE MIXTURE IS IN THE PROPER CONDITION AND WHEN THE ROLLING DOES NOT CAUSE UNDUE DISPLACEMENT, CRACKING, OR SHOVING. THE CONTRACTOR SHALL PREVENT ADHESION OF THE BINDER COURSE TO THE ROLLERS BY THE USE OF FUEL OIL OR OTHER PETROLEUM, OR SOLVENT BASED RELEASE AGENTS. SOLVENTS DESIGNED TO STRIP ASPHALT FROM THE ENGINEER'S AGGREGATES WILL NOT BE PERMITTED AS RELEASE AGENTS ON EQUIPMENT, TOOLS OR BINDER COURSE SURFACES.
5. THE CONTRACTOR SHALL IMMEDIATELY CORRECT ANY DISPLACEMENT OCCURRING AS A RESULT OF THE REVERSING OF THE DIRECTION OF A ROLLER OR FROM OTHER CAUSES TO THE SATISFACTION OF THE ENGINEER.
6. ANY OPERATION THAT RESULTS IN BREAKDOWN OF THE AGGREGATE SHALL BE DISCONTINUED.
- A. TRAFFIC
1. AFTER A 24 HOUR CURING PERIOD OF THE BINDER COURSE, LIMITED TRAFFIC MAY BE ROUTED OVER THE BINDER COURSE SURFACE, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, CONSTRUCTION EQUIPMENT AND TRAFFIC SHALL BE PROHIBITED FROM TRAVELING OVER THE BINDER COURSE SURFACE UNTIL THE ENTIRE PAVEMENT STRUCTURE IS IN PLACE.
2. DAMAGE TO THE BINDER COURSE LAYER CAUSED BY CONSTRUCTION EQUIPMENT OR TRAFFIC SHALL BE REMEDIED BY COMPLETE REMOVAL REPLACEMENT OF THE DAMAGED AREA TO THE LIMITS DETERMINED BY THE ENGINEER. THERE WILL BE NO ADDITIONAL PAYMENT FOR REPAIRS, OR ASSOCIATED WORK.

**3.06 DRIVEWAYS AND PARKING AREAS**

- A. PAVING MATERIALS OF PAVING, DEPTH OF VARIOUS COURSES, ETC., SHALL BE AS SHOWN ON THE DRAWINGS.
1. THE DRIVEWAYS AND PARKING AREAS SHALL BE CUT BACK 12 INCHES FROM SURFACE DISTURBED OR DAMAGED AREAS AS DESCRIBED ABOVE.
2. THE MINIMUM DEPTH OF SUBBASE SHALL BE AS INDICATED ON THE DRAWINGS. THE MINIMUM DEPTH OF SUBBASE SHALL BE AS INDICATED ON THE DRAWINGS. THE MINIMUM DEPTH OF SUBBASE SHALL BE AS INDICATED ON THE DRAWINGS. THE MINIMUM DEPTH OF SUBBASE SHALL BE AS INDICATED ON THE DRAWINGS.
3. CRUSHED STONE SURFACES SHALL BE RESTORED MATCHING EXISTING SURFACE, BUT FILLING NO CASE SHALL BE LESS THAN 2 INCHES OF BINDER AND 1 INCH OF SUBBASE AS SPECIFIED IN THE APPLICABLE ARTICLES OF THIS SECTION.
- C. NON-BITUMINOUS SURFACES - WHERE SHOWN ON THE DRAWINGS, CONSTRUCTION DRIVEWAYS AND PARKING AREAS OR RESTORE EXISTING DRIVEWAYS AND PARKING AREAS AS FOLLOWS:
1. GRAVEL SURFACES SHALL BE RESTORED USING GREENEED GRAVEL, MATCHING EXISTING, BUT IN NO CASE SHALL BE LESS THAN 6 INCHES THICK. THE GRAVEL SHALL BE GRANULAR AND NOT COMPACTED. LARGE STONES SHALL BE REMOVED.
2. CRUSHED STONE SURFACES SHALL BE RESTORED MATCHING EXISTING SURFACE, BUT FILLING NO CASE SHALL BE LESS THAN 1 INCH THICKNESS OF STONE SHALL BE COMPACTED WITH A ROLLER.

**3.07 SEAL AND TACK COAT**

- A. APPLY SEAL COAT TO DENSE MIX ASPHALT AND ASPHALT CURBS ONLY AND IN ACCORDANCE WITH INDOT STANDARD SPECIFICATIONS.
- B. BITUMINOUS MATERIAL FOR THE TACK COAT SHALL BE EMULSIFIED ASPHALT, GRADE RS-1 CONFORMING TO INDOT SPECIFICATION.
- 3.08 TOLERANCES**
- A. SURFACE TOLERANCE - THE PAVEMENT SURFACE SHALL BE CONSTRUCTED TO A 1/4-INCH TOLERANCE, IF, IN THE OPINION OF THE ENGINEER, THE PAVEMENT SURFACE IS NOT BEING CONSTRUCTED OR HAS NOT BEEN CONSTRUCTED TO THIS TOLERANCE BASED UPON VISUAL OBSERVATION OR UPON RIDING QUALITY, HE MAY TEST THE SURFACE WITH A 16-FOOT STRAIGHT EDGE (FURNISHED BY THE CONTRACTOR) OR STRING LINE PLACED PARALLEL TO THE CENTERLINE OF THE PAVEMENT AND WITH A 10-FOOT STRAIGHT EDGE OR STRING LINE PLACED TRANSVERSELY TO THE CENTERLINE OF THE PAVEMENT ON ANY PORTION OF THE PAVEMENT.
1. VARIATIONS EXCEEDING 1/4-INCH SHALL BE SATISFACTORILY CORRECTED OR THE PAVEMENT RELAYED AT NO ADDITIONAL COST AS ORDERED BY THE ENGINEER.
- B. THICKNESS TOLERANCE - THE THICKNESS INDICATED FOR EACH OF THE VARIOUS COURSES OF BITUMINOUS PAVEMENT IS THE NOMINAL THICKNESS. THE PAVEMENT SHALL BE SO CONSTRUCTED THAT THE FINAL COMPACTED THICKNESS IS AS NEAR TO THE NOMINAL THICKNESS AS IS PRACTICAL, AND WITHIN THE TOLERANCES SPECIFIED BELOW.
1. MATERIAL WHICH IS PART OF A TRUING OR LEVELING COURSE OR SHIM COURSE WILL NOT BE CONSIDERED IN PAVEMENT THICKNESS DETERMINATIONS.

**4.01 QUALITY ASSURANCE AND QUALITY CONTROL**

- A. PERFORM WORK IN ACCORDANCE WITH THE INDOT STANDARD SPECIFICATIONS FOR HIGHWAYS, PARKING AREAS, AND OTHER PAVED AREAS TO DATE AND AS THEY APPLY TO THE FOLLOWING AND UNISC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS OR MOST RECENT UPDATE LOCATED AT [HTTP://WWW.NHDOT.GOV/UNISC/SPECS-AND-FACT-SHEETS-01](http://www.nhdot.gov/UNISC/SPECS-AND-FACT-SHEETS-01).
3. MATERIALS AND BATCH PLANT SUPPLIER
4. CONSTRUCTION PROCEDURES EXCEPT AS MODIFIED HEREIN.
5. WEATHER AND SEASONAL LIMITATIONS
- A. PAVING WORK SHALL BE PERFORMED BY A QUALIFIED PAVING CONTRACTOR OR SUBCONTRACTOR ACCEPTABLE TO THE OWNER AND ENGINEER.
- B. OBTAIN ASPHALT CONCRETE MATERIALS FROM SAME SOURCE THROUGHOUT PROJECT.

**4.02 QUALITY ASSURANCE/CONTROL DURING PAVING**

- A. THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE AND AT THE ENGINEER'S APPROVAL A THIRD PARTY QUALITY CONTROL INSPECTOR TO OVERSEE AND DOCUMENT BOTH 1) MIX PRODUCTION OF THE POROUS ASPHALT BINDER COURSE AND 2) FIELD TESTING FOR IN PLACE MATERIALS, AS PER TABLE 5.
- B. THE MIXING PLANT SHALL EMPLOY A QUALITY CONTROL INSPECTOR. THE INSPECTOR WILL PERFORM QA/QC TESTING AND WILL BE CERTIFIED IN THE DISCIPLINE OF HMA PLANT TECHNICIAN BY THE RELEVANT CERTIFYING AGENCY (E.G. NETCP IN NEW ENGLAND). THE CONTRACTOR SHALL SAMPLE, TEST, AND EVALUATE THE MIX IN ACCORDANCE WITH THE METHODS AND MINIMUM FREQUENCIES SUMMARIZED IN TABLE 5.
- C. IF AN ANALYZED SAMPLE IS OUTSIDE THE TESTING TOLERANCES IMMEDIATE CORRECTIVE ACTION WILL BE TAKEN. AFTER THE CORRECTIVE ACTION HAS BEEN TAKEN THE RESULTING MIX WILL BE SAMPLED AND TESTED. IF THE RE-SAMPLED MIX TEST VALUES ARE OUTSIDE THE TOLERANCES THE ENGINEER WILL BE IMMEDIATELY INFORMED. THE ENGINEER MAY DETERMINE THAT IT IS IN THE BEST INTEREST OF THE PROJECT THAT PRODUCTION IS CEASED.
- D. TESTING TOLERANCES DURING CONSTRUCTION. THE PAVING MIXTURE PRODUCED SHOULD NOT VARY FROM THE DESIGN CRITERIA FOR AGGREGATE GRADATION AND BINDER CONTENT BY MORE THAN +/- 5 PERCENT (5%) OR APPROVAL BY ENGINEER.
- E. SHOULD THE PAVING MIXTURE PRODUCED VARY FROM THE DESIGNATED GRADATION AND ASPHALT CONTENT SPECIFIED BY MORE THAN THE ABOVE TOLERANCES, THE APPROPRIATE PRODUCTION MODIFICATIONS ARE TO BE MADE UNTIL THE POROUS ASPHALT MIX IS WITHIN THESE TOLERANCES.

**4.03 PART 5: SIGNAGE FOR OPERATIONS AND MAINTENANCE**

- RECOMMENDED SIGNAGE SHOULD READ AS FOLLOWS:
- POROUS PAVEMENT PARKING FACILITY FOR STORMWATER MANAGEMENT
- POROUS ASPHALT ROADWAY-ENVIRONMENTALLY FRIENDLY STREET
- REDUCES POLLUTION AND FLOODING FROM STORMWATER
  - PROTECTS AND CONSERVES WATER RESOURCES
  - REDUCES EXCESS URBAN HEAT
  - REDUCES WINTER SALTS FOR DEICING
- ROUTINE MAINTENANCE
- SANDING, SEAL COATING, AND CRACK SEALING PROHIBITED.
  - DO NOT STORE STOCKPILES ON POROUS SURFACE SUCH AS SAND, SALT, MULCH, LOAM, OR GRASS CLIPPINGS.
  - VACUUM 3X PER YEAR (SPRING, SUMMER, FALL) OR AS NEEDED.
  - POWERWASH AT A 45° ANGLE FOR CHRONICALLY CLOGGED AREAS.
  - ALL SLEEPINGS MUST BE DISPOSED OF IN A LEGAL MANNER.
  - SNOW PLOWING AND REMOVAL OF DEBRIS THROUGH EROSION CONTROL OF NEARBY AREAS.
  - WINTER MAINTENANCE
  - MECHANICAL REMOVAL OF SNOW AND ICE BY SNOW PLOWING.
  - APPLY DEICING TREATMENTS DURING, AND AFTER STORMS AS NECESSARY TO CONTROL COMPACT SNOW AND ICE NOT REMOVED BY PLOWING.
  - LITTLE OR NO USE OF SALT. MINIMUM USE OF ROAD SALT MAY BE FEASIBLE AND MINIMIZE POTENTIAL IMPACT TO GROUNDWATER AND NEARBY RESOURCES.
  - WETLANDS MATERIALS SHALL BE STORED ON SITE.

TABLE 1: SUB-BASE MATERIAL GRADATION REQUIREMENTS

MATERIAL TYPE	CHOKER COURSE	RESERVOIR COURSE PER ASTM NO. 67	FILTER COURSE (INDOT 204.1 MODIFIED)
SIIEVE DESIGNATION (INCH/MM)	PERCENT PASSING (%), CRITERIA	PERCENT PASSING (%), CRITERIA	PERCENT PASSING (%), CRITERIA
6/150			100
2/50			
1 1/2/75	100		
1/25	75 - 100	100	
3/4/19	45 - 65	90-100	
1/2/12.5	20 - 35		
1/4/9.5	0 - 25	20-55	
#4/7.5	0-10		70-100
#8/2.36	0-5		
#200/0.075			0-6**
VOIDS (ASTM C29)	>40%	>40%	

\*\* ALL RANGE +5% OR APPROVAL BY REVIEW ENGINEER  
\*\*\* PREFERABLY LESS THAN 4% FINES

TABLE 2: TESTING REQUIREMENTS FOR COMPACTION AND INFILTRATION FOR SUBGRADE AND SUBBASE

CONSTRUCTION ELEMENT	LAYER THICKNESS (IN)	FIELD TESTING REQ.	COMPACTION TO STANDARD PROCTOR (98%)	INFILTRATION RATE (FT/DAY)	FREQUENCY NCY 11 PER SF
1. EMBANKMENTS AND FILLS					
A. NON-POROUS AREAS FILL AND SUBGRADE UNDER STREETS, PARKING AREAS, AND OTHER PAVED AREAS	12	T138	96%	NA	
B. POROUS AREAS FILL AND SUBGRADE	12	T138	96-99%	>5-30"	10,000
C. POROUS AREAS SUBBASE	12	T138	96-99%	>5-30"	40,000
D. ROUGH SITE GRADING	24	T138	85%	NA	
E. TRENCHES					
A. PIPE SIDELINES AND TOP 4 FEET OF PIPE BACKFILL UNDER PAVEMENTS	12	T138	93%	NA	
B. BACKFILL BELOW 4 FEET UNDER PAVEMENT	18	T138	90%	NA	

\*\* THE INFILTRATION RATE SHALL BE NO LESS 5.30 FT/DAY OR 50% OF THE HYDRAULIC CONDUCTIVITY (D2434) AT 6% STANDARD PROCTOR COMPACTION. SUBGRADE MATERIALS TO EVERYTHING 2' BELOW IN-SHED GRADE OF PAVEMENT SUBBASES REFER TO CONSTRUCTION PAVEMENT MATERIALS ABOVE SUBGRADE AND BELOW PAVEMENT SURFACE.

TABLE 3: POROUS ASPHALT MIX DESIGN CRITERIA.

SIIEVE DESIGNATION (INCH/MM)	PERCENT PASSING (%), CRITERIA
6/150	100
0.50/12.5	85-100
0.375/9.5	55-75
NO. 4/4.75	10-25
NO. 10/2.0	0-10
NO. 200/0.075 (#200)	2-4
PGAB CONTENT (ASHTO T164)	6.7-8.2%
MIXING TEMPERATURE RANGE	280°F-350°F OR AS PER PGAB SUPPLIER
PGAB GRADE	PG 78-28
STYRENE BUTADIENE STYRENE (SBS)	3% OR TBD
AIR VOID CONTENT (ASTM D6752/ASHTO T276)	18.0-22.0%
DRAINDOWN (ASTM D698)	<0.3%
RETAINED TENSILE STRENGTH (TSR) (ASHTO 283)	>80%
CANTABRO ABRASION TEST ON UNAGED SAMPLES	<12%

\*\* TESTING TOLERANCES SHOULD BE WITHIN THE SPECIFIED RANGE, OR FOR SINGLE TESTER SHOULD NOT VARY BY MORE THAN +/- 5 PERCENT (5%) OR BY APPROVAL BY THE ENGINEER. \*\* THESE VALUES MAY BE USED TO DEDUCE GRADATION. \*\* THE TSR (RETAINED TENSILE STRENGTH) VALUES FALL BELOW 80% WHEN TESTED PER NAPA IS 131 (WITH SINGLE FREEZE THAW CYCLE RATHER THAN 5). THEREIN STEP 4, THE CONTRACTOR SHALL EMPLOY AN ANTIFREEZE AGENT, SUCH AS HYDRATED LIME (ASTM C97) OR A FATTY AMINE, TO RAISE THE TSR VALUE ABOVE 80%. \*\*\* UNDERNO CIRCUMSTANCES IS A PGAB 64-28 ACCEPTABLE IN REPLUCE OF PG 78-28.

TABLE 4: QA/QC REQUIREMENTS DURING PAVING

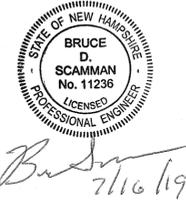
ACTIVITY	SCHEDULE/ FREQUENCY	TOLERANCE
INSPECT TRUCK BEDS FOR POOLING (DRAIN DOWN)	EVERY TRUCK	N/A
TAKE SURFACE TEMP. BEHIND JOINT HEATER	EACH PULL	6°C (10°F) OF COMPACTION TEMP.
CONSULT WITH ENGINEER TO DETERMINE LOCATIONS OF BUTT JOINTS	AS NEEDED	N/A
TEST SURFACE SMOOTHNESS & POSITIVE DRAINAGE WITH 10 FT STRAIGHTEDGE	AFTER COMPACTION	4.5 MM (3/16")
CONSULT WITH ENGINEER TO MARK CORE LOCATIONS FOR QA TESTING	AFTER COMPACTION	N/A

TABLE 5: QA/QC TESTING REQUIREMENTS BY SAMPLES AT ASPHALT PLANT AND FIELD SAMPLES BY CORE

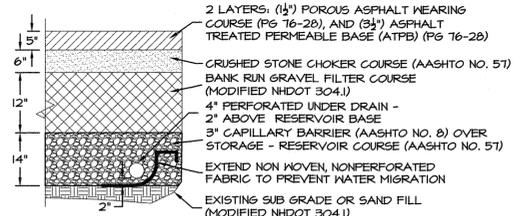
TEST	POROUS ASPHALT HEARING COURSE RANGE/SAMPLE LOCATION	ASPHALT TREATED PERMEABLE BASE RANGE/SAMPLE LOCATION	FREQUENCY MINIMUM X PER DAY, CRITERIA
BINDER CONTENT (ASHTO T164)	6.7 - 8.25% ASPHALT PLANT	2.7%, ASPHALT PLANT	2X, PER 500 TONS
AIR VOID CONTENT (ASTM D6752/ASHTO T276)	16 - 22%, FIELD CORE	>27%, FIELD CORES	2X, PER 500 TONS
DRAINDOWN (ASTM D698)	<0.3%, ASPHALT PLANT	N/A	2X, PER 500 TONS
CANTABRO ABRASION TEST ON UNAGED SAMPLES (ASTM D7084-04)	<12%, ASPHALT PLANT	N/A	2X, PER 500 TONS
INFILTRATION RATE (HOSE TEST)	>1000 INHR	>3000 INHR	2X, PER 500 TONS

\*\* INFILTRATION WILL BE REDUCED FOR TESTS PERFORMED ON SLOPE. HOSE TESTS WILL BE PERFORMED BY USE OF A WATER TRUCK WITH HOSE AND MEASURED FLOW, AND DETERMINED BY DIAMETER OF PUDDLE. \*\* INFILTRATION TESTS WILL BE COLLECTED WITH CORE SAMPLES. \*\* TESTING TOLERANCES SHOULD NOT VARY FROM THE DESIGN CRITERIA BY MORE THAN +/- 5 PERCENT (5%) OR APPROVAL BY ENGINEER.

ISS. DATE:	1 JAN 16, 2019	FOR APPROVAL	CHK:
DRAWN:	JUM	DESIGN:	JUM
CHECKED:	BDS	CHECKED:	BDS
CLIENT:	SOPHIE ROBINSON ROBINWOOD CENTER 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885		
TITLE:	NOTES FOR ROBINWOOD CENTER 61 STRATHAM HEIGHTS ROAD STRATHAM, NH 03885		
PROJECT:	18-150	SCALE:	AS SHOWN
SHEET:			D2

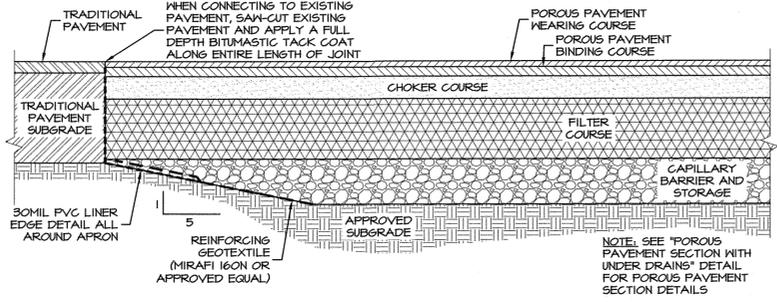


*Handwritten signature and date: 7/16/19*



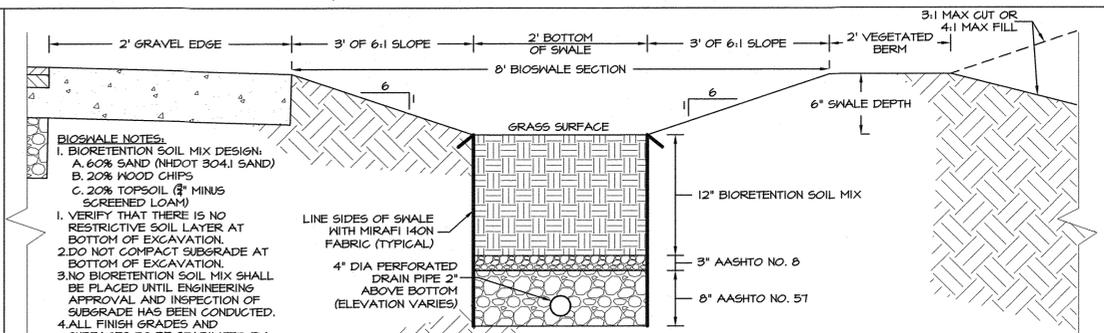
NOTE:  
1. SEE SHEETS D1 & D2 FOR ADDITIONAL NOTES ON POROUS PAVEMENT, AND TABLE I SPECIFICALLY FOR MODIFIED NHDOT 304.1 GRADATION.

**POROUS PAVEMENT SECTION WITH UNDER DRAINS**  
N.T.S.



NOTE: SEE "POROUS PAVEMENT SECTION WITH UNDER DRAINS" DETAIL FOR POROUS PAVEMENT SECTION DETAILS

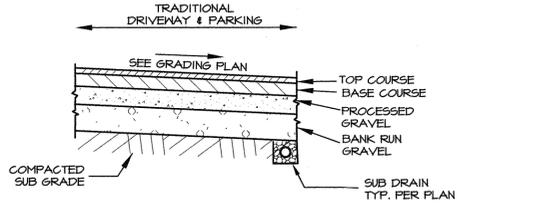
**POROUS PAVEMENT TRANSITION DETAIL**  
N.T.S.



**BIOSWALE NOTES:**  
1. BIORETENTION SOIL MIX DESIGN:  
A. 60% SAND (NHDOT 304.1 SAND)  
B. 20% WOOD CHIPS  
C. 20% TOPSOIL (3" MINUS SCREENED LOAM)  
2. DO NOT COMPACT SUBGRADE AT BOTTOM OF EXCAVATION.  
3. NO BIORETENTION SOIL MIX SHALL BE PLACED UNTIL ENGINEERING APPROVAL AND INSPECTION OF SUBGRADE HAS BEEN CONDUCTED.  
4. ALL FINISH GRADES AND SURFACES TO BE STABILIZED BY VEGETATION UPON COMPLETION UNLESS NOTED OTHERWISE.  
5. SEE LAYOUT PLAN FOR STRUCTURE ELEVATION AND INVERTS, PIPE TYPE, LENGTH, AND SLOPE, AND BIORETENTION AREA DIMENSIONS

NOTES:  
1. 4" PERFORATED PIPE IS TO BE SDR-35 WITH 1/4" DIAMETER PERFORATIONS, 3 HOLES MINIMUM PER FOOT OF LENGTH

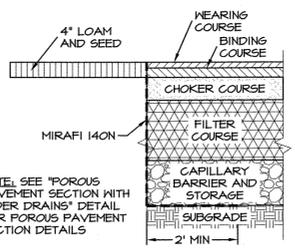
**BIOSWALE DETAIL**  
NOT TO SCALE



PAVEMENT COMPONENTS:  
MATERIALS AND PLACEMENT METHODS SHOULD MEET CURRENT NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) REQUIREMENTS.

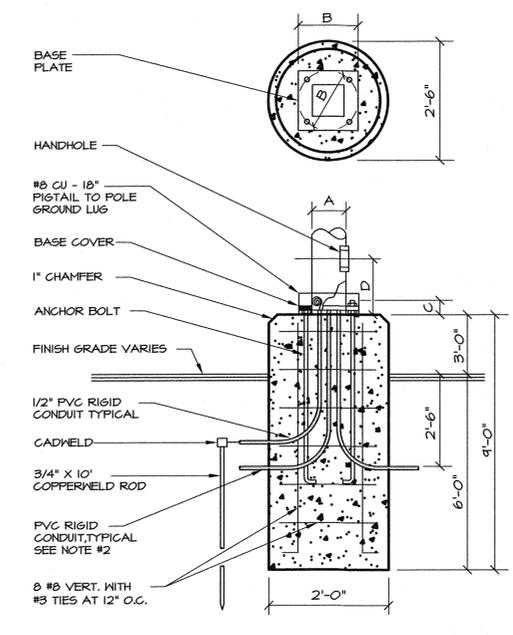
DRIVEWAY:  
2" ASPHALT WEARING SURFACE, NHDOT 1/2" NOMINAL MAXIMUM AGGREGATE SIZE  
3" ASPHALT BASE, NHDOT 3/4" NOMINAL MAXIMUM AGGREGATE SIZE  
6" CRUSHED GRAVEL BASE, NHDOT TYPE 304.3  
12" GRAVEL SUB BASE, NHDOT TYPE 304.2

**TRADITIONAL DRIVEWAY & PARKING LOT SECTION**  
N.T.S.



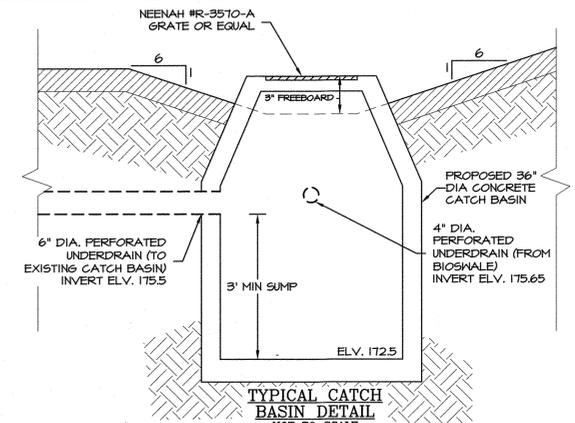
NOTE: SEE "POROUS PAVEMENT SECTION WITH UNDER DRAINS" DETAIL FOR POROUS PAVEMENT SECTION DETAILS

**POROUS PAVEMENT EDGE DETAIL**  
N.T.S.



NOTES:  
1. REFER TO MANUFACTURER FOR A, B, C AND D DIMENSIONS.  
2. FIELD COORDINATE QUANTITY AND SIZE OF CONDUITS AT EACH LOCATION.  
3. CONCRETE BASE BY GENERAL CONTRACTOR.

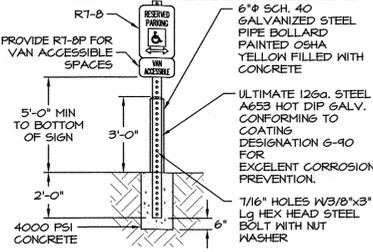
**LIGHT POLE CONCRETE BASE DETAIL**  
N.T.S.



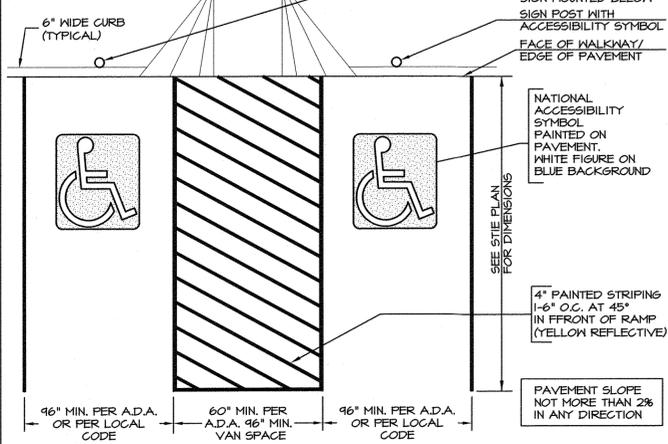
**TYPICAL CATCH BASIN DETAIL**  
NOT TO SCALE

**PARKING & PASSENGER LOADING ZONES**

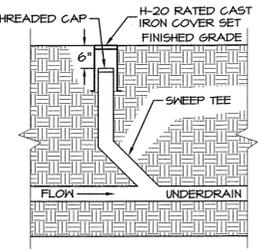
TOTAL # PARKING SPACES	STAND.	VAN	TOTAL
1 - 25	0	1	1
26 - 50	1	1	2
51 - 75	2	1	3
76 - 100	3	1	4
101 - 150	4	1	5
151 - 200	5	1	6
201 - 300	6	1	7
301 - 400	7	1	8
401 - 500	8	2	10
501 - 550	9	2	11
551 - 600	10	2	12
601 - 650	11	2	13



SIGN POST WITH ACCESSIBILITY SYMBOL & "VAN ACCESSIBLE" SIGN MOUNTED BELOW  
SIGN POST WITH ACCESSIBILITY SYMBOL  
FACE OF WALKWAY/ EDGE OF PAVEMENT

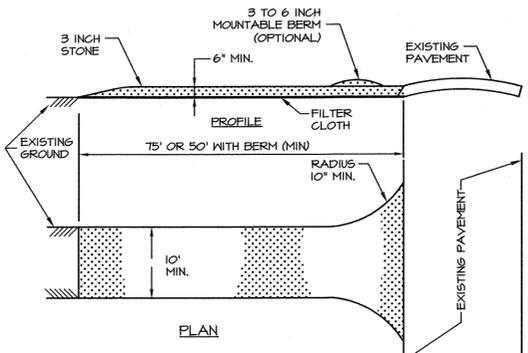


**PARKING STALL FOR THE PHYSICALLY CHALLENGED**  
N.T.S.

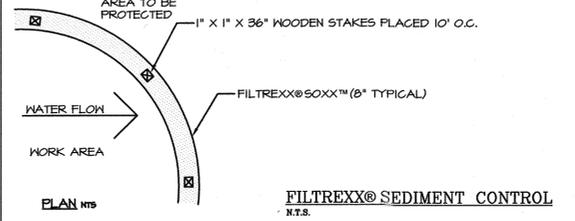
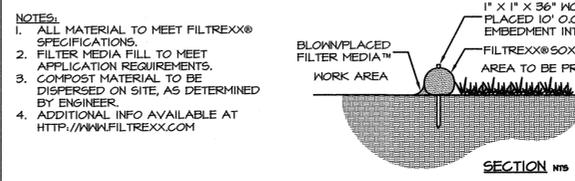


NOTE: SEE SHEET C2 FOR CLEANOUT LOCATIONS

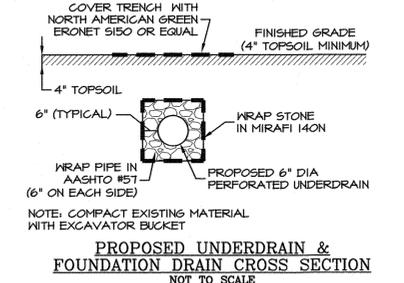
**UNDERDRAIN CLEANOUT DETAIL**  
NOT TO SCALE



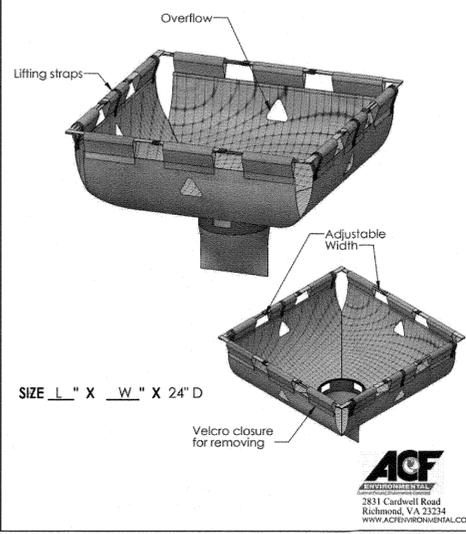
**STABILIZED CONSTRUCTION ENTRANCE**  
N.T.S.



**FILTRREXX® SEDIMENT CONTROL**  
N.T.S.



**Silt Sack - Type C**



ACF  
2831 Curdwell Road  
Richmond, VA 23234  
WWW.ACFENGINEERING.COM

SEAL

BRUCE D. SCAMMAN  
No. 11236  
LICENSED PROFESSIONAL ENGINEER

*Bruce D. Scamman*

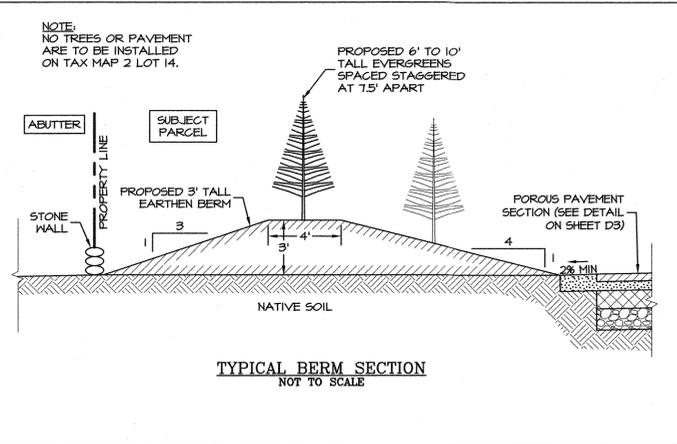
1	JAN 16, 2019	FOR APPROVAL	
ISS. DATE:		DESCRIPTION OF ISSUE:	CHK.
DRAWN:	JJM	DESIGN:	JJM
CHECKED:	BDS	CHECKED:	BDS

**EMANUEL ENGINEERING**  
civil & structural consultants, land planners  
118 PORTSMOUTH AVENUE, A202  
STRATHAM, NH 03885  
P: 603-772-4400 F: 603-772-4487  
WWW.EMANUELENGINEERING.COM

CLIENT:  
**SOPHIE ROBINSON  
ROBINWOOD CENTER  
61 STRATHAM HEIGHTS ROAD  
STRATHAM, NH 03885**

TITLE:  
**DETAILS  
FOR  
ROBINWOOD CENTER  
61 STRATHAM HEIGHTS ROAD  
STRATHAM, NH 03885**

PROJECT:	SCALE:	SHEET:
18-150	AS SHOWN	D3



**WALL MOUNT FIXTURE**

MANUFACTURER: BETA LED  
MODEL: SEC ED5 4M 1M 08 C UL XX (COLOR)  
LAMP WATTS / TYPE: LED  
INITIAL LUMENS: 6677  
MOUNTING: EXT WALL MOUNT AT 12 FEET  
COORDINATE COLOR WITH STEEL MANUFACTURER OR ARCHITECT  
COORDINATE WITH AVAILABLE VOLTAGE



**LIGHT POLE**

MANUFACTURER: HUBBELL SPAULDING LIGHT  
MODEL: GLI-A-30L-I U-5K-4 TYPEIV-DB-BL  
LAMP WATTS / TYPE: LED  
BL-BI LEVEL CONTROL  
VOLTS: 240  
LUMENS: 8088  
LLF: 1.00  
I/WATTS: 10  
T/WATTS: 10  
MOUNTING: 1" SQUARE POLE ON 3" BASE (20' TOTAL HEIGHT)  
IDA APPROVED DARK SKY FRIENDLY FIXTURE  
MOTION SENSOR  
FULL CUT OFF

SEAL

*Bruce D. Scamman* 7/16/19

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
1	FEB 29 2019	FOR APPROVAL	
DRAWN:	JJM	DESIGN:	JJM
CHECKED:	BDS	CHECKED:	BDS

**EMANUEL ENGINEERING**  
civil & structural consultants, land planners  
118 PORTSMOUTH AVENUE, 2ND  
STRATHAM, NH 03885  
P: 603-772-4400 F: 603-772-4487  
WWW.EMANUELENGINEERING.COM

CLIENT:  
SOPHIE ROBINSON  
ROBINWOOD CENTER  
61 STRATHAM HEIGHTS ROAD  
STRATHAM, NH 03885

TITLE:  
**DETAILS**  
FOR  
ROBINWOOD CENTER  
61 STRATHAM HEIGHTS ROAD  
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
18-150	AS SHOWN	D4



**SOUTH ELEVATION | FRONT VIEW**

SCALE: 1/4" = 1'-0"

NOTE: ALL EXISTING DIMENSIONS ARE TO ROUGH FRAMING / EXISTING POSTS WHICH ARE NOT CONSISTENT IN FIELD. THEREFORE, FIELD VERIFY ALL DIMENSIONS.

preliminary set for bid set only - not for construction use.



NUMBER	DATE	REVISION TABLE	REVISED BY	DESCRIPTION

SCALED FOR:  
SIZE D: 24 X 36

**THE TULIP TREE, LLC  
ROBINWOOD CENTER**

© AMY DUTTON HOME  
DRAWINGS USED  
EXPRESSLY FOR DESIGN  
ONLY FOR NOTED CLIENT. ALL  
STRUCTURAL ENGINEERING  
PROVIDED BY OTHER.

AMY DUTTON HOME  
1 Walker Street, Kittery, ME 03904  
email: amy@amyduttonhome.com  
C: 207-337-2020

DATE:

1/16/19

SCALE:

1/4" = 1'-0"

SHEET:

**A12**

Dear Stratham Planning Department and Planning Board,

As an abutter at 9 Orchard Hill Road, I am writing to you to address the request for amendment to the site plan at 61 Stratham Heights Road property. Firstly, I would like to say that we would welcome any improvement to the plan that improves shielding, both of unsightly view, light and noise pollution. However, I do not see a concrete proposal here.

I would like to point out the original site plan was sorted out between abutters and the Saltonstalls over three years ago and was a result of attending multiple meetings of the planning board as well as multiple mediations between the abutters and the Saltonstalls. The trees required by the site plan have been out of compliance for the past two years. Now that they are finally being forced to address it, you are asking us to come to another meeting to discuss changing the plan with no clear proposal and no timeline.

The former residents abutting at 55 Stratham Heights Road chose to move specifically because of their dissatisfaction with the parking lot and associated zoning changes. The berm with more mature trees protecting 55 Stratham Heights Road are still in place, shielding that abutting property. That property also has two additional buildings shielding their home.

We wanted the berm to continue along the north side of the applicant's parking lot as well but only having the trees as a shield was a compromise. Perhaps if the berm was installed, all the trees shielding our home would have lived. Nonetheless, the trees should have grown several feet by now and actually be to the point where we wouldn't have to see an 80 car parking lot from our bedroom window.

Please see my key points below. I will reference the Site Plan Review Application page numbers if possible:

1. On pg#2. Suggesting why the trees died or that they can't be replaced, is unfounded personal conjecture. At the very least an arborist should have been consulted. Maybe the addition of a berm, or simply moving the trees a few feet away from the edge of the parking lot may have been the solution.
2. On pg#3. The specifics of the original site plan was created by the applicants, not forced on them by either the abutters or the planning board. The only direction from the planning board was that a berm and trees be added to shield the abutters.
3. On Pg#4. There was no "high quality property management plan" mentioned until now. In fact, when we very politely asked when they were going to replant the trees (last summer), they told us they didn't have to and that they planted some nice sunflowers there instead. They also suggested that if we were to pay to replant the trees, they would consider it. The only reason they are addressing this now is because the town is forcing them to.
4. Also on Pg#4. How does this "very special space" benefit our town far into the future and what does that have to do with shielding a parking lot? This parking lot only benefits the applicants.

5. On Pg#6. Corn is not an adequate replacement for maturing pine trees, which was the long-term goal. Corn will never grow tall enough to shield our second-floor bedroom windows from the parking lot, however, trees will. Corn provides no acoustic barrier and dies in the fall. Usage of the parking lot is not seasonally restricted.
6. Also on Pg#6. It is untrue to categorize this as “an ongoing conversation between my family, our abutters, and the Town of Stratham”. We are the only abutter that is no longer shielded and any attempt with a conversation has been rebuffed as mentioned above.
7. In general, the corn or the sunflowers and the “40’ of existing trees” that supposedly shield our abutting property are nearly all deciduous and are scant protection in September and October when the majority of their events take place. The only non-deciduous trees shielding us are evergreens that we personally added to our side of the property at significant expense. Also, the 40’ of existing trees and brush can simply be removed at the whim of the applicants. A fact that was made painfully plain to us when prior to their first big event last year, they cut down a significant portion of the shielding brush so that they could put up pup tents for their guests. There is nothing in the site plan keeping them from developing and changing the landscape along our property line at will. Is the planning board willing to restrict the applicants from removing any more trees or brush from along the property line?
8. The un-numbered pages providing photographs of sight lines from a distance in the showing the leaf-heavy foliage of spring/summer give a pointedly one-sided seasonal snapshot of the situation. Additionally, the sight lines (shown as red and blue and green arrows) are separate from the parking lot and have no bearing on the discussion.
9. The map showing the trees on the north side of the parking lot is from Google and is not from October of 2021, but from October of 2020, you can check it with Google Earth. Although the applicants may have grabbed the screen shot in October of 2021, the arborvitaes were removed prior to the 2021 season, making this current summer (2022) the second year the parking lot is not following the site plan.
10. The visual showing noise from the barn doors (regardless of being acoustically inaccurate) have no bearing on the parking lot site plan.

In summation, this has been an ongoing issue that needs action. The trees have been absent since 2020. No substantial effort has been made to address it, in fact just the opposite. The applicant’s request has no concrete plan and no timeline with which to be held. The amount of time and effort that the applicants are requiring of abutters and board members to attend additional board meetings, review additional proposals and mediate them is a frustrating waste of everyone’s time. If they want to implement a “high quality property management plan” then let them do so after they have made their parking lot compliant.

My final question is this. The site plan approved by the Planning Board in 2019 made the use of the parking lot contingent on the installation of the trees and a berm. Why are they being allowed to use this parking lot for two years out of compliance? From our point of view, making sure that there are trees to shield their neighbors from the nuisance of the parking lot is the absolute minimum that they could have done, and they haven’t.

Thank you to the Stratham Planning Department and Planning Board for your time and attention. We appreciate your ongoing patience, time and effort to attempt to resolve this issue.

Regards,  
Joshua & Kimberly Cooper  
9 Orchard Hill Road  
Stratham, NH 03885



## TOWN OF STRATHAM

*Incorporated 1716*

10 Bunker Hill Avenue · Stratham, NH 03885

Town Clerk/Tax Collector 603-772-4741

Selectmen's Office/Administration/Assessing 603-772-7391

Code Enforcement/Building Inspections/Planning 603-772-7391

Fax (All Offices) 603-775-0517

---

### Planning Board NOTICE OF DECISION

- Petition of:** Bruce Scamman, Emanuel Engineering, Inc.
- Project Name:** **Site Plan Application**, to facilitate installation of an off-street parking area, widening of a driveway, and associated infrastructure for the Robinwood Center, at 61 & 62 Stratham Heights Road, Stratham, NH; Stratham Tax Map 2 & 5 Lots 81 & 14; Exeter Tax Map 67 Lots 3 and 3-1.
- Premises Affected:** 61 & 62 Stratham Heights Road, Stratham, NH; Stratham Tax Map 2 & 5 Lots 81 & 14; Exeter Tax Map 67 Lots 3 and 3-1
- So as to permit:** The installation of an off-street parking area, widening of a driveway, and associated infrastructure for the Robinwood Center, at 61 & 62 Stratham Heights Road, Stratham, NH.

The Stratham Planning Board, at its meeting of March 06, 2019 and after a public hearing, completed its consideration of the application for the Site Plan Review application to installation of an off-street parking area, widening of a driveway, and associated infrastructure for the Robinwood Center, at 61 & 62 Stratham Heights Road, Stratham, NH, Tax Map 2 & 5 Lots 81 & 14; Exeter Tax Map 67 Lots 3 and 3-1.

The Board based its decision on plans, supporting oral and written information, and records provided by the Applicant, professional staff, consultants for both the Applicant and the Board, and abutters, as reflected in the minutes on file at the Stratham Town Hall. This information shall be incorporated into the decision by reference.

As a result of such consideration, at its meeting of March 06, 2019, the Planning Board found that the application for amendment was complete and in Substantial Compliance with the Stratham Zoning Ordinance and Site Plan Review Regulations. The Planning Board voted unanimously in favor to *Approve the Site Plan Review with Conditions* based on the information and stated conditions attached and incorporated hereto.

During the review process, the Applicant and its professional consultants submitted various revisions to the plans along with various supplemental memoranda and correspondence in response to requests by the Planning Board and the Planning Department that reviewed the project. All of these plans, reports and correspondence, and meeting minutes are contained in the Planning Department's files and are hereby incorporated by reference into the public record for this public hearing.

On March 06, 2019, Mr. Canada made a motion approve this application, as received on March 6, 2019, with the understanding that the operational notes as presented on Sheet C-2, specifically #1, #2, #3, #5, #6, and #8 be included in an advisory opinion memorandum to the Zoning Board of Adjustment, reviewed and approved by the planning board at the March 20, 2019 hearing, and operational notes #4 and #7 be relocated to the general operating notes in the upper right hand corner, and the February 6, 2019 staff review conditions of approval as the following:

**Conditions Precedent:**

1. Remove the cross walk and coordinate with DPW at a later date.
2. Applicant to coordinate with Town Assessing Department relating to current use stipulations and modifications on the property prior to recordation of the site plan.
3. Applicant to obtain NH DES septic approval prior to issuance of building permits.
4. Clerical changes of removing the snow storage from south side of Stratham Heights Road.

Mr. Canada amended the motion to include the Planning Board Chair is authorized to sign the advisory opinion memorandum instead it coming back to the board. Mr. House seconded the motion. Motion carried unanimously.

  
-----  
Planning Board Chair

  
-----  
Date



# TOWN OF STRATHAM

*Incorporated 1716*

10 Bunker Hill Avenue · Stratham, NH 03885

Town Clerk/Tax Collector 603-772-4741

Select Board/Administration/Assessing 603-772-7391

Code Enforcement/Building Inspections/Planning 603-772-7391

Fax (All Offices) 603-775-0517

---

**TO:** Planning Board Members  
**FROM:** Mark Connors, Town Planner  
**FOR:** August 17, 2022  
**RE:** **Potential 2023 Zoning Amendments**

---

Although it may not feel particularly imminent, the season for proposing revisions to the Zoning Ordinance for the 2023 Town Ballot is approaching. The Planning Board can start to hold public hearings on proposed zoning amendments as early as early November 2022 and must complete the process by late January 2023 at the latest in order for proposed amendments to be considered for the March 2023 Town Ballot.

If Planning Board members have any ideas for amendments to the Zoning Ordinance, it would be helpful if those could be brought up over the next approximately 30 days so that staff can begin the process of proposing re-writes to the Ordinance language and to allow for adequate time so that the language can be comprehensively reviewed by the Board.

Below staff has offered a couple ideas for different amendments based on previous discussions with the Board or common public sentiments that have been offered.

**1.) Automobile Dealerships Use:** A common comment among some townspeople is that Stratham has “too many” automobile dealerships. The Portsmouth Avenue corridor in the Gateway Commercial District is home to automobile dealerships for Nissan, Honda, Subaru, Porsche, BMW, Audi, and a used car dealership selling various makes and models. Certainly auto dealerships are one of the most common and visible commercial uses in Stratham. One advantage of car dealerships is that they don’t tend to have significant water and waste-water needs, so the lack of public infrastructure in Stratham has not restrained their growth here.

However, they do have some shortcomings. Auto dealerships tend to include large surface lots for displaying and storing vehicles. Car lots (excluding buildings) have low assessed values so they do not generate significant tax revenues. On a per-acre basis, when factoring in the car lot areas of these uses, dealerships tend to be lower commercial tax generators. Additionally, some consider large dealerships to be unattractive aesthetically.

The Town currently permits automobile dealerships by Conditional Use Permit in the Gateway District. The Board could consider limiting auto dealerships only to parcels where they currently exist in Stratham or could make them a prohibited use altogether.

This would require any proposals for new dealerships or expansions of existing dealerships to be approved for a zoning variance. Alternatively, the Board could leave the status quo in place. There are pros and cons to the various approaches that staff will discuss with the Board.

**2.) Gateway District Setbacks and Access Management Standards:** The Town currently allows for zero-distance front setbacks along Portsmouth Avenue in the Gateway District. This became a subject of discussion during the approval process for Optima Dermatology. Although the addition of more dense and engaging development is desired in the Gateway District, more sidewalks, pedestrian facilities, street trees and other landscaping feature is also helpful to creating a more active and pleasant environment. Staff would be supportive of a front setback in the range of 15-30 feet to allow these facilities to be installed in the front setback areas.

Recently, there have been more extensive discussions regarding improving pedestrian and bicycle conditions along Portsmouth Avenue. One mechanism to improve these conditions is to limit the number of driveways or access points that direct traffic off the main thoroughfare as these present more conflict points for cyclists and pedestrians. The Board could update the Gateway Standards to require certain geometric standards for new driveways to make them more pedestrian- and cyclist-friendly, to discourage or further restrict new driveways, or to require shared driveways when an existing driveway is located in close proximity.

**3.) Residential Buffer for Professional/Residential zoned properties bordering residential uses:** The Professional/Residential District includes a footnote in the Table of Dimensional Regulations that requires a 100-foot front setback, 50-foot side and rear setback when a commercial use there abuts a residential use or residential zone. In the case of the Sweet Dreams Bakery at 100 Portsmouth Avenue, this requirement places all of the existing buildings within the setback district.

This requirement, particularly as it relates to the front setback, appears overly restrictive and staff would recommend the Board revisit so as not to discourage redevelopment opportunities along the corridor.

**4.) Zoning Amendments necessary to address new state legislation:** The State Legislature has approved some fairly significant land use reform legislation this session particularly related to land utilized for religious uses. Staff will present these legislative changes to the Board as well as potential means to address the new laws.